

Sensotec Sensors

Honeywell



Pressure. Load. Force. Torque.
Displacement. Vibration. Instrumentation.

Full Line Catalog 27th Edition, 2006

Introduction

Whether you need measurements in a laboratory, industrial, or hazardous environment, ...whether your application involves a vacuum, 200,000 psi, 10 gms, or 3 million lbs., ...whether you need one unit or several thousand, ...Honeywell Sensotec can help you achieve your measurement goals.

For more than 30 years, Sensotec has provided quality, high performance pressure transducers, load cells, torque cells, accelerometers, LVDTs and associated instrumentation to a wide variety of industries. Having produced nearly 5000 different types of transducers and instruments, we will frequently have an existing design to meet your specific needs.

Our sales and R & D engineers have accumulated years of experience in pressure and force measurement applications. This knowledge, combined with the industry's broadest line of products and options, allows Honeywell Sensotec to provide transducers and instrumentation which meet your specific needs at the minimum cost.

How To Use This Catalog

This catalog is designed to help you:

Select the transducer and/or instrument models, options and accessories which best meet your needs.

Place an order.

Set up and operate transducers and instrumentation in the field.

First time users and individuals with limited knowledge about Sensotec products should consult the **product selection flow chart** located at the beginning of each section to identify the best model for their application and to determine its page location in the catalog.

Individuals who have already identified the model or order code for the required product can use the index on pages 2 and 3 to determine its page location in the catalog and in the price book.

After selecting the appropriate product model, refer to the appendix for guidelines on selecting range codes, options and accessories, building an order code string, and preparing a purchase order.

If you need help selecting the proper transducer or instrument, or have requirements that aren't met by the models described, call our Customer Service department or your local Sensotec Sales Representative for assistance.

Design and Specifications

Honeywell Sensotec Engineers are continually working to improve our products. Honeywell reserves the right to make changes, without notice, in design and specifications of any product as engineering advances and necessity requires.



WARNING

MISUSE OF DOCUMENTATION

- The information presented in this catalog is for reference only, DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.



WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

SENSOTEC is a registered trademark of HONEYWELL

1-888-282-9891

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Notation Key:
 (A) — absolute pressure
 (D) — differential pressure
 (G) — gage pressure
 (H) — high range
 (L) — low range
 (M) — mid range

Index By Order Code

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Test & Measurement Solutions from Honeywell Sensotec

Honeywell Sensotec...one of the broadest product ranges in the industry.

Sensotec products, part of Honeywell Sensing and Control, has one of the broadest product ranges in the industry. We design and manufacture a comprehensive product line of pressure transducers (10 inches of water to 170,000 psi), load cells (25 gms to 3 million pounds), torque cells (0.02 in.-oz. to 3000k in.-lb.) and electronic sensor instrumentation. In addition Sensotec manufactures a full line of sensors for acceleration and position (LVDT's). As a leader in the measurement market we work to integrate our extensive capability to meet our customers' quality, reliability, cost and performance requirements.



Honeywell's facility in Columbus, Ohio



Automotive industry instrumentation.

Honeywell Sensotec...providing customers with a single source for the measurement of load, pressure, position, torque and vibration.

Sensotec products provide you with complete engineered solutions whether they are standard off-the-shelf transducers developed for general applications or sensors developed to meet your unique requirements. Sensotec transducers can be designed for the harshest environments such as temperatures as low as -325°F or as high as $+425^{\circ}\text{F}$ or ambient conditions up to 10,000 ft. of sea water. Our breadth of core sensor and electronic engineering competencies has supported our continuous growth through 30 years of working to build a full product line directed to solve thousands of specific customer needs.

Honeywell Sensotec...Creating a name in miniature pressure and load.



Sensotec supplies many medical instrument manufacturers.

Sensotec's unique expertise is in the packaging of its sensor technology. Sensotec's roots are in the specialization and manufacturing technology of subminiature sensors. Customer demand drove the expansion of the product range into the areas that today form one of the most comprehensive product lines of strain gage based, piezoelectric and coil wound transducers. Accuracies of 0.05% are available in pressure sensors and calibration standard load cells have accuracies of 0.02%

Honeywell Sensotec... manufacturing excellence sets us apart from the competition.

At Sensotec much of the design, manufacturing, assembly, testing and calibration is done in house. This enables Sensotec to have complete control over the manufacturing process. At all stages of production individual sensors are tracked as they go through each stage of the manufacturing process. Individual product testing records are maintained during manufacture. Several times throughout manufacture, transducers and instruments are tested in environmental chambers or fixtures that simulate the customer's exact field conditions.



Jet engine and gas turbine monitoring.

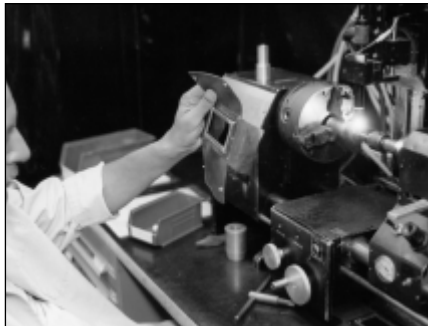
Honeywell Sensotec...sensors and instrumentation when you need them.



The original patented miniature pressure transducer.

Sensotec's stocking program is based on having thousands of finished and calibrated pressure, load, acceleration, transducers and associated instrumentation available on the shelf for immediate delivery. Those products available in the stocking program are listed in the catalog and regularly updated on the website. The FP2000 Pressure Sensor is a unique new concept in producing a

tailored product in a very short delivery time. We have found that customers often need products with a particular connector, wiring code, output, pressure port, but they need delivery quickly. Tailoring an FP2000 model to meet each customer's needs does not mean long delivery. The Sensotec FP2000 manufacturing cells have an inventory of pre-tested modular sub assemblies. As soon as the order hits the manufacturing cell your transducer is built from these interchangeable sub assemblies in a matter of days. The result is a pressure transducer for your specific requirements in short time delivery. Sensotec offers the most sophisticated and extensive Custom Engineering capabilities in the test and measurement industry and allows us to expand the product range "outside the catalog". Our customer special products program works because we have an internal culture of process and people that can respond to



Welding technology for hermetic sealing of transducers.

small batch sizes. Our in-house manufacturing, flexible designs and technologies are structured to support this extensive custom engineering program. Whether you need a simple modification of a standard product or complete customized engineering product, we are organized to accommodate your special product request.



Sensotec machine shop and prototype workshop.

Honeywell Sensotec...keeping ahead of fast growing markets by constant investment in engineering and product development.

Sensotec is at heart a production engineering facility. We know that the key to sustained growth and customer satisfaction is a strong engineering foundation that is responsive to be able to meet customer delivery dates. Every year Sensotec invests more and more in engineering and manufacturing to ensure our designs and assembly processes continue to be at the forefront of the industry. Sensotec embraces the new technologies of ASIC chips, smart transducers, micro machining, digital compensation and wireless technology and fits them into the constantly evolving product line. The use of lean manufacturing processes and the latest in engineering software tools ensure we stay ahead of the competition by bringing fast delivery, customer configured and technologically advanced products.



Extensive stock ensures next day shipment for a large portion of our customer orders.

Honeywell Sensotec... quality control by involvement of everyone in the company.

Sensotec has a stringent quality control regime that governs the way the whole company operates. This all encompassing quality control program is based on and certified in ISO 9001:2000 standards.



FP2000 manufacturing cells provide total customer configurable transducers.



Our engineering capability can design custom built transducers for your unique requirements.

Our final inspection and testing is based upon ANSI Z540-1 and NIST traceable standards. Like all good quality control programs Sensotec's procedures are based on constant quality audits and self-improvement programs.

Honeywell Sensotec...customer service is the sustainable competitive advantage that our people strive to maintain every working hour of their day.

We are dedicated to providing responsive local support where it is needed. At Sensotec we believe in working in a consultative partnership with our customers. All of our application engineers, service engineers and sales



people are trained in our products, applications and our customer's needs. Customers can use our website www.honeywell.com/sensing or www.sensotec.com as a resource, they can call into our technical sales engineers and application engineers or they can call our customer service hotline. Our aim is to be your choice as business partner because we care about customer service.

One of the first internally amplified pressure sensors.

Honeywell Sensotec...known by the company it keeps.

Honeywell Sensing and Control is a worldwide leader in advanced switching and sensing technology and our reputation for technology, quality and reliability is second to none. Honeywell is a recognized technology leader in the development and manufacture of pressure and position-sensing transducers and controls, as well as speed and position sensors for the industrial marketplace.



Sensotec transducers undergo extensive environmental testing during manufacture.



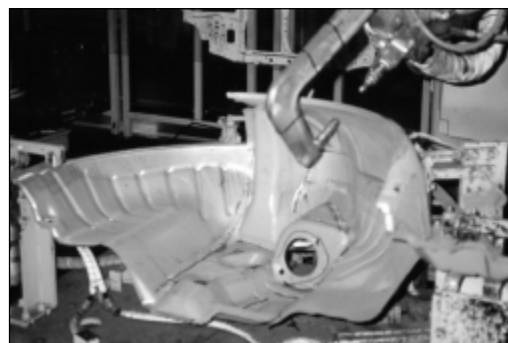
Marine propulsion monitoring.



Stringent process control and ongoing inspections ensures quality and reliability.



Sensotec supplies specially designed sensors for harsh applications.



Weld automation and control.

Honeywell Sensotec on the Web

www.honeywell.com/sensing
www.sensotec.com

Bookmark Us Today as Your Sensor Supplier and Resource



Sensotec Home Page

Honeywell Sensotec manufactures a wide range of absolute, gauge, and true gauge pressure transducers, sensors, and transmitters. All of these products are manufactured to standard, modified standard, and custom specifications to provide fast delivery.

Many units can ship from our extensive stocking program within 24 hours.

	TJE gauge	TJE absolute	Z gauge	LM gauge	A105 gauge	S gauge	440 gauge
psi							
5	✓	✓	✓				✓
15	✓	✓	✓				✓
25	✓	✓	✓				✓
50	✓	✓	✓				✓
100	✓	✓	✓				✓
200	✓	✓	✓				✓
500	✓	✓	✓				✓
1000	✓	✓	✓				✓
2000	✓	✓	✓				✓
5000	✓	✓	✓				✓
10000	✓	✓	✓				✓
20000	✓	✓	✓				✓
50000	✓	✓	✓				✓
100000	✓	✓	✓				✓

✓ = In Stock

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Sensotec Stocking Program and Online Purchasing



Download Datasheets and user Manuals Online

Linking Literature to
More Detailed
Information

Visit www.honeywell.com/sensing or www.sensotec.com to get all the latest product news and information from the people who understand sensors, test and measurement and customer service!

The site is continually being updated to provide the latest information. At www.honeywell.com/sensing or www.sensotec.com you can access detailed data sheets, view new product releases, or locate the nearest Sensotec Representative. Existing customers can download instruction manuals or obtain return material authorization to ensure speedy repairs or calibration. You can even order products on line! Browse through our extensive stocking program and, with your credit card handy, you can painlessly be on your way to next day delivery.

You can also configure your own FP2000 pressure transducer from one of 19,000 permutations. Day or night you can order a specially-configured FP2000 transducer to meet the needs of your application. And FP2000 delivery is guaranteed in only 2 weeks!

Whatever your needs, www.sensotec.com is a resource that you should be making the most of. Bookmark and return to the site whenever you need sensor information.

Do You Have Internet Access?
GET MORE INFORMATION AT www.dctainstruments.com

For additional information on any gauge shown in this brochure, you may wish to visit our web site: www.dctainstruments.com. To see data sheets on a specific gauge, enter the main address listed here, followed by the partial "URLs" listed throughout the brochure. For example, to view information on the Model AC, point your web browser to "www.dctainstruments.com/dctacdata.htm". You may also wish to browse through the rest of the site to see the latest information on DCT's other products for your calibration, force measurement, and process monitoring needs.

Details at: www.dctainstruments.com (insert product URL here)

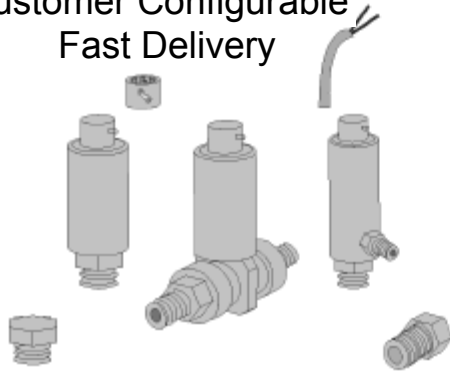
JD	JG	JP	JH	JV	JR
Vertical Differential	Low Line Differential	SA Food/ Pharmaceutical	High Pressure	VCR Filtrage	Pancake Filtrage
High line pressure vertical differential	Low line pressure differential	Hy pharmaceutical approved	Range 20K, 25K, 30K, 40K, 50K, 60K, 80K, 100K PSI	VCR pressure ports size 4 VCR fitting	Extreme Pressure non-toxic 4 ft. cable between gauge and mount
Full scale measurements as low as 0.1psi and up to 36,000psi	Low pressure output	Flat display 1.5, 2.2, 2.5, and 3.0 in approved Range view	Display reading x 3.0	Zero distance installation	Range up to 40psi
Line Pressure 1500 to 120psi	Overloads to 6X full scale	PT material NIST/CEC M-28	0.5% accuracy pressure pins	Optional porting	Shockproof connector
Horizontal	1/4 High static pressure pins	316 stainless steel parts	NEMA 4 standard	Optional oxygen cleaning	
Overload protection	Compact construction				

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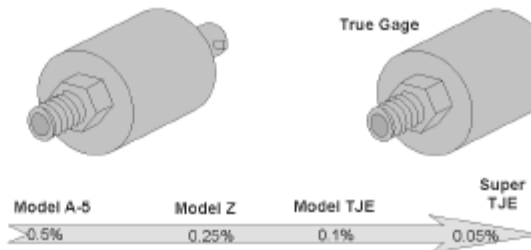
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Pressure

Customer Configurable
Fast Delivery



Test & Measurement
Industrial

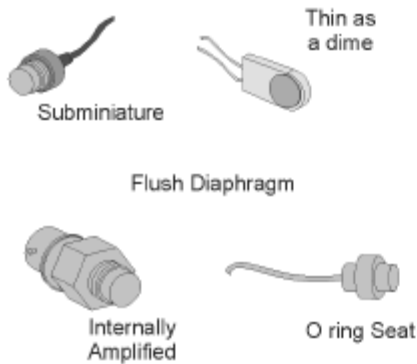


High
Precision

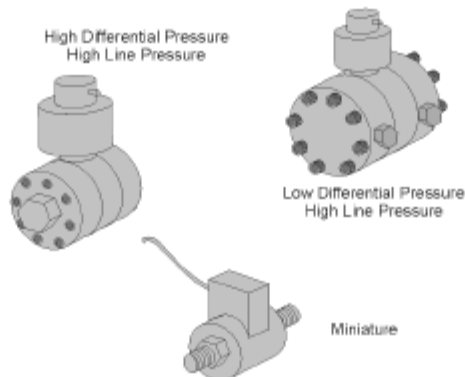
OEM



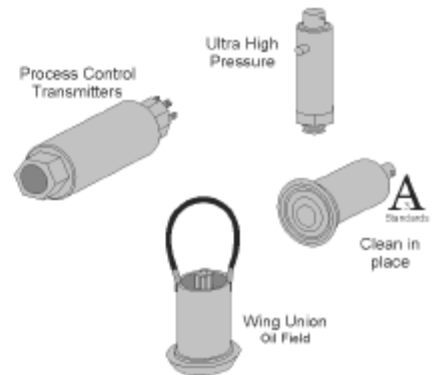
Miniature



Wet/Wet Differential

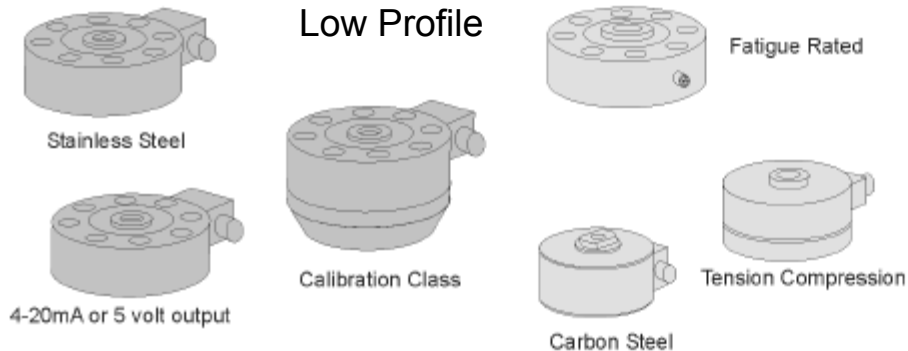


Special Application

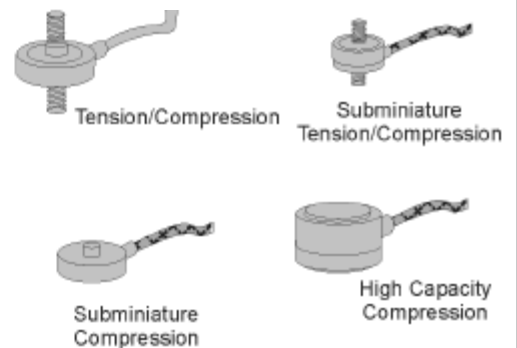


Load

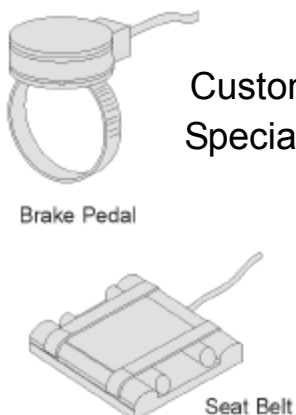
Low Profile



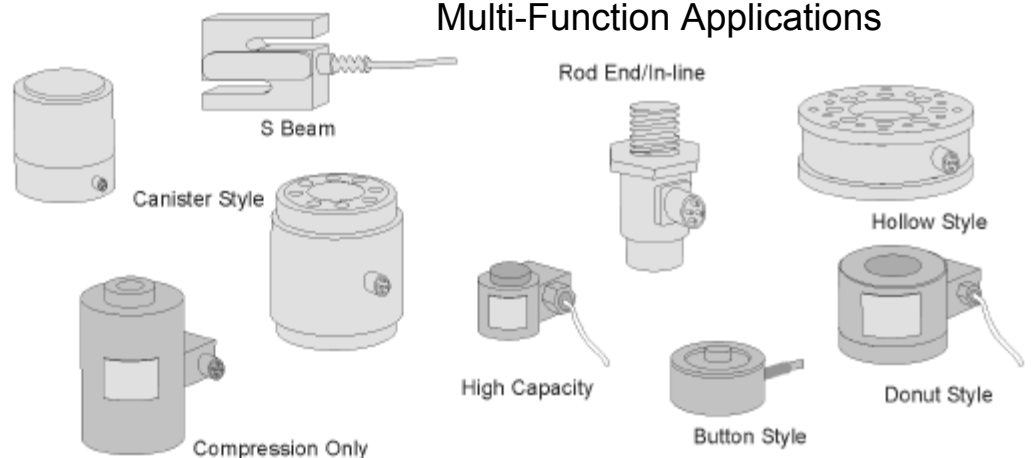
Miniature



Custom
Specials



Multi-Function Applications

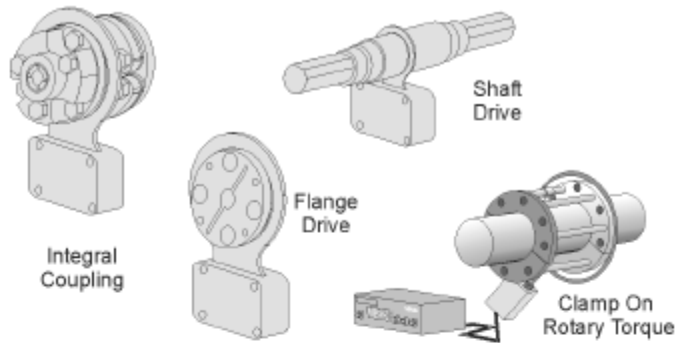


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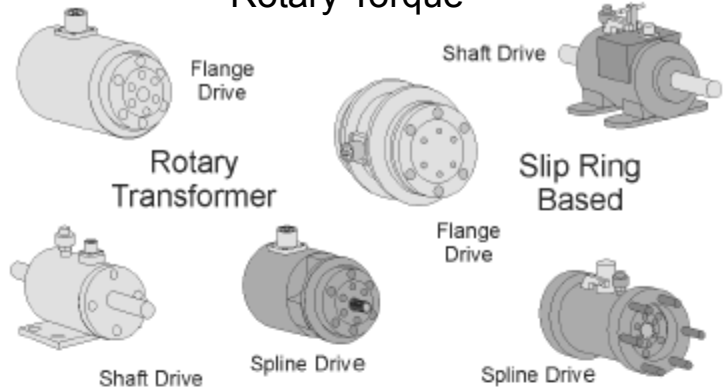
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Torque

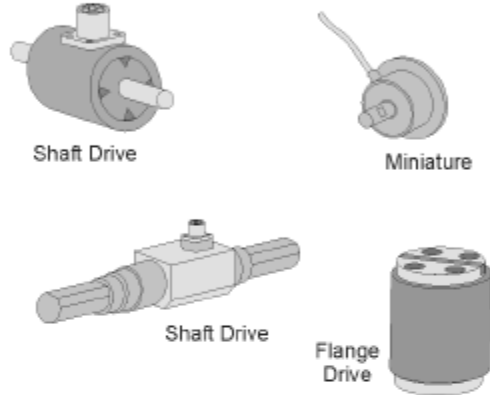
Wireless Telemetry Rotary Torque



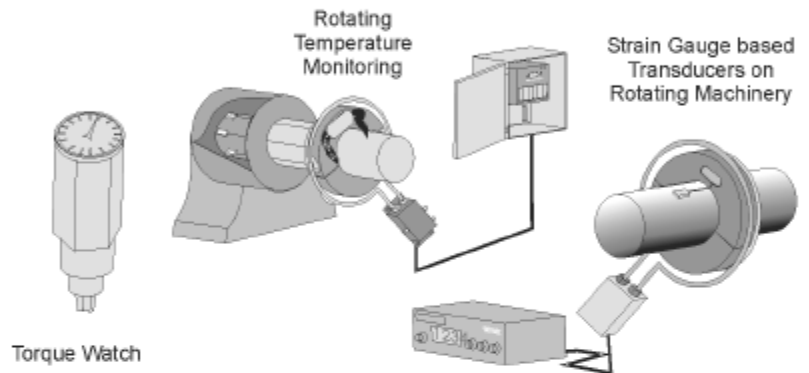
Rotary Torque



Reaction Torque

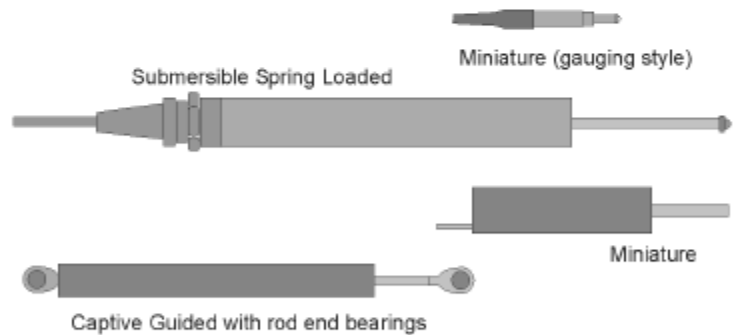
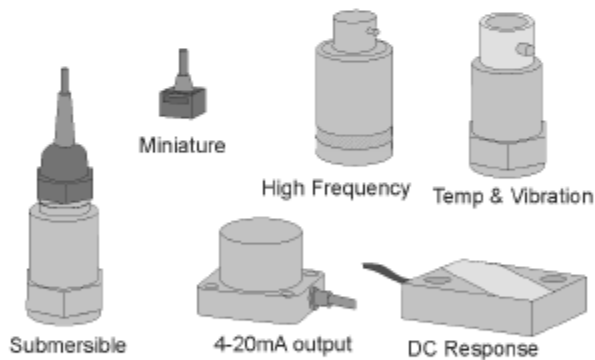


Special Applications



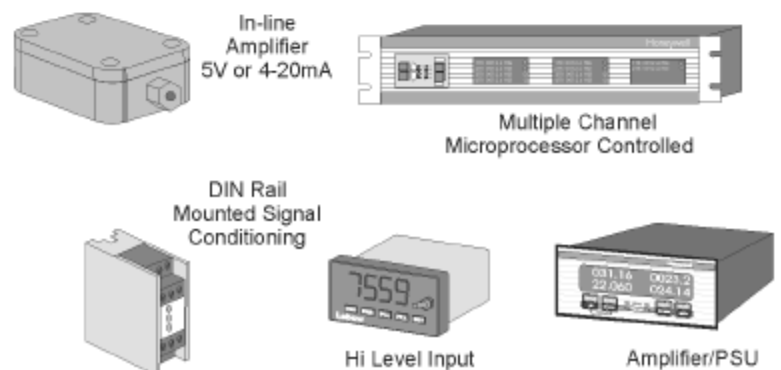
Accelerometers

LVDTs



Digital Gauges

Instrumentation



Flexibility is the Cornerstone of Honeywell's Sensotec Sensors

Honeywell Sensotec offers a wide array of product and delivery options to meet even the most stringent requirements. From same day shipping of stock items to custom designed and built from scratch, Honeywell Sensotec offers you an option to fit your needs.

Meeting Design Challenges

We step up to the design challenge and aim to meet almost any need. For some applications, it is a situation where our team works with you to develop the necessary sensor to fit your requirements and we manufacture the sensor. In other cases, your needs can be easily met by configuring standard products. Sensotec has 185 standard products. Each of those products can be configured to meet most requirements. As an example, each model listed in this catalog has typically 12 different ranges. Additionally, each model has typically 5 different amplifiers and typically 4 different temperature compensations. A model can have an average of 4 electrical termination options and as many as 6 different pressure ports. Plus there are 5 other miscellaneous categories with 2 options in each. That means each model in the catalog has approximately 921,000 different permutations. With 229 models in the catalog this gives you the option of 210 million different permutations that can be ordered to meet your needs.

Delivery Program for which the selected production and option is supplied.

	Same Day Ship	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 100; 200 psig/a 600; 1000; 2000; 5000; 7500; 10,000 psig	75; 500; 750; 1500; 2000 psig/a 600; 1000; 2000; 5000; 7500; 10,000 psia		1; 2; 5; 10; 15,000; 20,000; 30,000; 50,000; 80,000 psig/a
Temperature Compensation	1a. 00° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F	1g. 70° to 325° F 1i. -65° to 250° F	
Internal Amplifiers	2u. Unamplified mV/V output 2c. 0-5 VDC output	2a. 0-5 VDC (4-wire) output 2j. 4-20 mA (3-wire) output 2t. 0-10 VDC output	2k. 4-20 mA (2-wire) output 2N (2w); 4-20 mA (2-wire) Intrinsically safe	
Internal Amplifier Enhancements			3a. Input/Output Isolation 3d. Remote Buffered Shunt Cal	
Pressure Ports		5a. 1/4"-18 NPT Female 5b. 1/4"-18 NPT Male 5d. 7/16"-20 UNF Male 5g. 6 1/4" Male	5e. 7/16"-20 UNF Female (per MS 33049-4)	
Electrical Termination	6a. Bendix PTIH-10-0P-(or equiv.) 8 pin (max. 400 °F)		8b. M8 type connector mates with MS 3106-14 8 pin (max. 160 °F) 8i. Submersible Cable 8j. 1/2-14 conduit fitting with 6 ft. of 4 conductor PVC cable	
Shunt Calibration		8a. Precision Internal Resistor		
Special Calibration		9a. 10 point (5 up/5 down) 20 % increments @ 70 °F 9b. 20 point (10 up/10 down) 10 % increments @ 70 °F		
Potentiometers		14g. No access to pots 14h. Top access to pots		
Shock & Vibration			44a. Shock & vibration resistance	
Interboxes		53e. Signature Calibration 53t. T.E.D.S. IEEE1451.4 Module		

Options Category

Gray indicates standard options

Specific option (with option code) in the delivery column under which it is supplied.

The products listed in this catalog are only part of the story. Most sensor manufacturers' story ends after the standard products chapter. Honeywell Sensotec's sensor capability extends beyond the standard published product catalog, which is only about 50 percent of what we actually build.

Delivery Options to Meet Your Needs

Honeywell offers a variety of delivery options to meet your needs. If you need fast delivery, our same day shipping program is designed to help you. We offer Same Day Ship, Fast Track Manufacture, Built to Order and Built From Scratch programs on key products to help you meet your schedules. Not all customer needs and time tables are the same and that is exactly why we have developed these delivery programs.

Fast Track Program

Our fast track program is designed to give you "Made to Order Product" from the millions of permutations available. We have committed additional resources to be able to offer you quicker delivery for engineered products. We accomplish this through utilizing common sub assemblies that have been pre-tested and are in stock. With the Fast Track program you have the ability to have special options or requirements. Yet, your projected delivery will only be 2 to 6 weeks depending on the degree of customization required.

Built to Order

We also will configure your order to your requirements. Many times, customers will a solution to their that requires options that are not as common. Generally, the products that fall in this category have components kept in stock. All that is required is for us to take these components and build a sensor to your selected configuration. The estimated delivery time is 6 to 8 weeks.

Built From Scratch

Our "Built From Scratch" program is for products without a predictable annual usage but can still be considered standard product. As annual usages are low many components are not stocked so they have to be sourced and fabricated upon receipt of an order. However, our experience in building these products and the relationships we have with our many vendors will help shorten the delivery time. Generally, an engineered order takes approximately 10-12 weeks for delivery.



One of the keys to success in manufacturing specials is to have the ability to quickly produce prototypes.

Custom Designed

Honeywell Sensotec offers the most sophisticated and extensive Custom Engineering capabilities in the test and measurement industry and allows us to expand the product range "outside the catalog". Our experience in designing and building custom sensors began in the late 60's and continues today with modified standard products, or complete custom solutions for difficult sensor requirements. Every year Honeywell Sensotec supplies nearly 100,000 sensors to our industrial markets of which 30-40% will have some customized feature. The chances are that whatever your pressure, load, torque, displacement or vibration application that we have encountered the problem before and have already found the solution.

Flexible Design Capability

Our Model FP 2000 pressure sensors and Model 41 load cells are available through our Custom Express delivery Program. Our Custom Express Delivery program offers guarantees a 2 week delivery on products that the customer configures using a "features configurator" to meet their unique needs.

Many of the pressure sensors and load cells that we build today are built-up (all welded) from groups of pre-engineered and pre-tested subassemblies with over 25,000 specification possibilities from just the FP2000 Series Pressure Sensors alone. The modular design of many of these sensors allows the customer to have the flexibility of selecting a modified standard, or a custom sensor configured from standard components.



The FP2000 Manufacturing cell. Custom configuration with fast delivery.

The manufacturing of the FP2000 series pressure sensors starts with the completion of the FP2000 configurator. The configurator is sent directly to one of the FP2000 manufacturing cells. The manufacturing cell is completely self contained. All of the subassemblies for each of the 49 different configurations (that's 25,000 different permutations) are stored in bins at the cell and are constantly replenished. The cell technician kits the parts, assembles the sensors, welds them, tests them and packs the units ready for fast delivery.

Same Day Ship Program

The Honeywell Sensotec stocking program includes thousands of finished transducers, load cells, accelerometers, LVDTs, instrumentation and amplifiers in a wide variety of models and ranges. This stock diversity readily accommodates most applications, and provides immediate solutions to your urgent challenges. Orders for stock complete units placed before Noon can ship the same day – at no additional cost to you!



Many pre-assembled, temperature compensated and pre-tested subassemblies are stocked at Honeywell Sensotec to aid fast delivery.

Pressure

Honeywell Sensotec manufactures a wide range absolute, gauge, and true gauge pressure transducers, sensors, and transmitters. All of these pressure sensors are manufactured as standard, modified standard, and custom transducers to provide fast delivery.

Gauge and Absolute Pressure Stocked Models							
	TJE gauge	TJE absolute	Z gauge	LM gauge	A105 gauge	S gauge	440 gauge
psi							
5							X
10	X	X	X				X
15	X	X	X				
25	X	X	X				
50	X	X	X				X
100	X	X	X	X			X
200	X	X	X	X	X	X	X
300				X			
500	X		X	X	X	X	X
1000	X		X	X	X	X	X
2000				X	X	X	
3000	X			X	X	X	X
5000	X			X	X	X	X
7500	X			X			
10,000	X				X	X	X

X = In Stock

Differential Pressure

Honeywell Sensotec manufactures a wide range of wet/wet and wet/dry differential pressure transducers, sensors, and transmitters. These differential sensors are manufactured to provide the fastest possible delivery. Many of these pressure sensors can ship from our extensive stocking program within 24 hours.

Honeywell Sensotec offers a wide range of transducer technologies such as bonded foil, semiconductor, sputtered, etc., so that your sensor will provide the best measurements possible given the conditions encountered.

Differential Pressure Stocked Models			
	TJE wet/wet	Z wet/wet	A-5 wet/wet
psi			
50	X	X	X
100	X	X	X
200	X	X	X
500	X	X	X

X = In Stock

Load Cells

Our load cells are stocked in a variety of configurations to suit customer needs. These industrially rugged load cells are constructed from stainless steel and are hermetically welded to insure performance in the most hostile environments. The stocking program includes miniature load cell units in compression only or tension and compression models.

Load Cell Stocked Models				
	Model 41	Model 31	Model 13	Model 53
	Low Profile, Hermetic, Stainless	Welded, Stainless, Rugged, Miniature	Subminiature, Height 0.12" to 0.30", High Frequency	Low Cost, Stainless
				
Accuracy (+/-%F.S.)	0.1%	0.2%	0.25%	0.25%
250 grams		X		
1000 grams		X	X	
5 lbs.		X		
10 lbs.		X	X	
25 lbs.		X	X	
50 lbs.	X	X	X	
100 lbs.	X	X	X	
250 lbs.		X	X	
500 lbs.	X	X	X	X
1000 lbs.	X	X	X	X
2000 lbs.	X			X
5000 lbs.	X			X
10,000 lbs.	X			X
20,000 lbs.				X
50,000 lbs.	X			X

X = In Stock

Accelerometers

We offer both strain gauge and piezoelectric accelerometers aimed to provide you the best measurements possible given the conditions encountered.

Our accelerometers measure a wide range of frequencies and are available with a range of outputs as varied as any manufacturer in the world.

Accelerometer Stocked Models			
	JTF Flat Pack	JTF Donut	PA Internal Amp.
			
Piezoelectric			X
Strain Gauge	X	X	
10G	X	X	
50G	X	X	

X = In Stock

Instrumentation

Honeywell Sensotec manufactures a wide range of low to medium priced instruments including single-channel, multi-channel, and microprocessor-based units. These instruments are manufactured as standard and modified standard units to provide the fastest possible delivery.

Instrumentation Stocked Models						
	SC	GM	GM-A	DM	NK	HH
						
RS 232 Output	X			X		
+/- VDC Output	X	X	X	X		
4-20mA Output	X	X		X		
5-40mV F.S. Input	X	X			X	X
5 VDC F.S. Input	X	X	X			
0-2 VDC Input	X	X				
6 Digit Display	X					
4 1/2 Digit Display		X	X	X	X	
3 1/2 Digit Display						X
Dummy Zero	X			X		X
Peak and Hold	X	X		X		X
Limits	X	X		X		
Switchable Gain	X	X			X	X
Shunt Calibration	X	X				X
Auto Zero	X					
Signature Calibration	X					
100% Tare	X					
Can Drive 4 Sensors	X					

X = In Stock

X = Available with Short Lead Time

All of Honeywell Sensotec products are ISO9001:2000 Registered and Atex Certified where appropriate. These certifications and implementation of Six Sigma Quality programs ensure that both the product and delivery are at optimal levels.

Honeywell Sensotec provides customers with a single source for the measurement of load, pressure, position, torque and vibration. Our expertise in design and production planning gives you the flexibility you need to meet your needs.

PRESSURE TRANSDUCERS

Potential Application	Model	Order Code	Accuracy	Page	
Quick Ship	FP2000	FPA,FPB,FPG, FPV,FDD,FDW	0.10% - 0.25%	16	
General Purpose	A-5 Z TJE	AP141,AP142 AP131,AP132 AP121,AP122	0.5% 0.25% 0.1%	21 25 29	
Ultra High Accuracy	Super TJE	AP111,AP112	0.05%	33	
Miniature Flush Diaphragm	S G F A-105 A-105a A-205 A-205a	BP357,BP358 BP386,BP387 BP340-BP346 AP311 AP313-AP318 BP312 BP314-316	1% 1% 1% 0.5% 0.5% 0.5% 0.5%	36 39 42 45 48 50 52	
Flush Diaphragm	355	BP313	0.25%	54	
Transmitters	440 415 811	AP415,AP416 AP411,AP412 BP421,BP422	0.2% 0.1% 0.25%	57 60 63	
High Pressure	HP	BP521	0.5%	65	
OEM	LM BDR LCP	BP211 BP217 BP223,BP224	0.10% 0.5% - 0.75% 1%	68 70 73	
Digital O/P	DS	AP611-AP614	0.1%	75	
Special Applications	LL-V CIP-Ultra 424 425 AS17A AS19G	BP712 see datasheet BP424 BP425 AP161 AP162	0.1% 0.15% - 0.5% 0.25% 0.25% 0.15% 0.15%	77 79 82 84 86 86	
Calibration	Accugage	AG400,AG401	0.05% - 0.10%	88	

1-888-282-9891

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Model FP2000 Configurable Pressure Transducers

Order Code (see below)

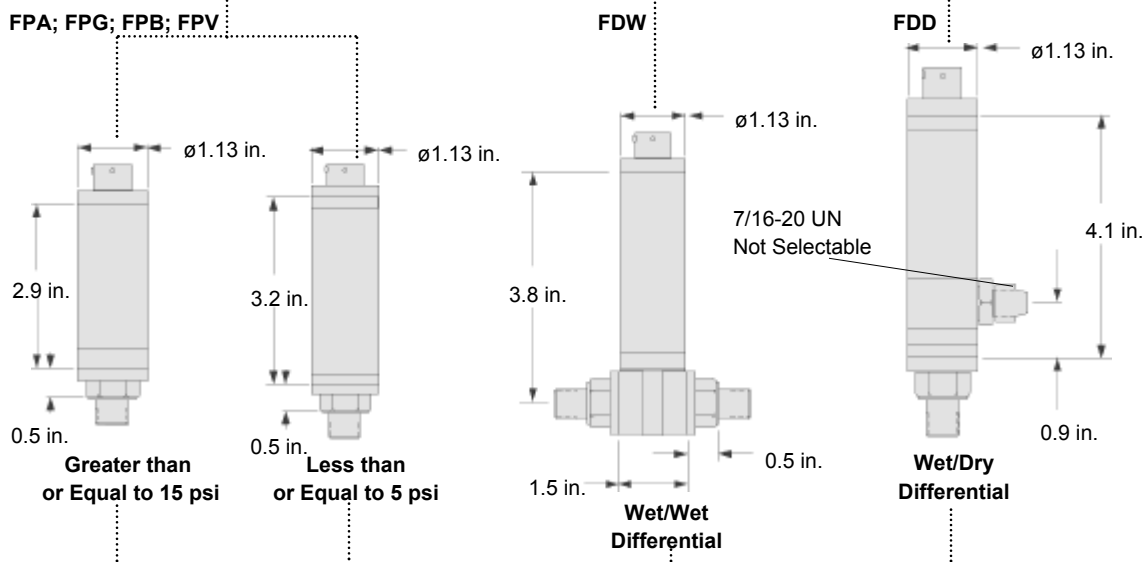
- 2-Week Delivery
- mV/V, 0-5, 0-10 VDC, or 4-20 mA
- Gage, Absolute, Barometric, Vacuum
- Differential (Wet/ Wet, Wet/ Dry)



Dimensions

Electrical Termination

Code 6a 6-Pin, Vented, Bendix Style 	Code 6m 4-Pin, Vented, Standard DIN (43650) 	Code 6n 4-Pin, Vented, Mini DIN 	Code 6q 4-Conductor, Vented, Integral Cable, 5 ft. 	Code 6r 4-Conductor, Vented, Integral Cable, Conduit Fitting 5 ft.



Pressure Ports

	Code 5a 1/4-18 NPT Female	Code 5b 1/4-18 NPT Male	Code 5c 7/16-20 UNF Female	Code 5d 7/16-20 UNF Male	Code 5f G 1/4 B Female	Code 5g G 1/4 B Male
Less than 1000 psi	0.5"	1.1"	0.6"	1.0"	0.7"	1.2"
Greater than 1500 psi	1.0"	1.3"	1.0"	1.3"	1.0"	1.2"
	Code 5h 1/8-27 NPT Female	Code 5i 1/8-27 NPT Male	Code 5p M12-1.5 Male	Code 5q M12-1.5 Female	Code 5r 9/16-18 SAE Male	Code 5s 9/16-18 SAE Female
Less than 1000 psi	0.525"	0.905"	1.025"	0.500"	1.075"	0.625"
Greater than 1500 psi	1.05"	1.12"	1.32"	1.05"	1.353"	1.05"

1-888-282-9891

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Model FP2000

Performance

Pressure Ranges & Range codes

	psi	Range Code	torr	Range Code	mBar	Range Code	kPa	Range Code	Bar	Range Code	in Hg	Range Code	mm Hg	Range Code	in H ₂ O	Range Code
Gage, Absolute (Order Codes FPG, FPA)	0.5*	AN	15	HA	35	JA	2	KA	0.035	MA	1	UB	15	VA	5	WB
	1*	AP	50	HB	70	JB	7	KB	0.1	MB	2	UD	50	VB	10	WA
	2*	AR	135	HC	175	JC	15	KC	0.2	MC	5	UF	135	VC	20	WC
	2.5*	AS	250	HD	350	JD	35	KD	0.5	MD	10	UA	250	VD	30	WE
	5	AT	750	HE	700	JE	70	KE	1	ME	15	UC	750	VE	50	WG
	10	AV	1500	HF	750	JF	100	KF	2	MF	20	UE	1500	VF	100	WI
	15	BJ			1000	JG	200	KG	3.5	NA	30	UG			120	WK
	25	BL			3500	JH	300	KH	5	MG	50	UI			150	WM
	30	BM			7000	JI	700	KJ	7	NB	60	UK			200	WP
	50	BN			10000	JK	1000	KL	10	MH	80	UM			300	WR
	75	BP					1500	KM	20	MI	100	UP			500	WS
	100	BR					1700	KN	30	MJ	200	UH				
	150	CJ					2000	KP	35	NC	300	UJ				
	200	CL					3000	KQ	50	MK	500	UL				
	150	CN					5000	KR	70	ND	1000	UN				
	300	CP					7000	KS	100	ML	0-32	US				
	400	CQ					10000	KT	135	NE	16-32	UQ				
	500	CR					15000	KU	350	NG	26-32	UR				
	600	CS					20000	KV	500	MM						
	750	CT					35000	KW	700	NH						
	1000	CV					50000	KY								
	1500	DJ					70000	KZ								
	2000	DL														
	2500	DM														
	3000	DN														
	5000	DR														
	6000	DS														
	7500	DT														
	10000	DV														
Barometric (Order Code FPB)											0-30	UG				
											16-32	UQ				
											26-32	UR				
Vacuum (Order Code FPV)	1	AP	50	HB	35	JA	7	KB	0.035	MA	10	UA	15	VA	10	WA
	5	AT	135	HC	70	JB	15	KC	0.1	MB	20	UE	50	VB	20	WC
	10	AV	250	HD	175	JC	35	KD	0.2	MC	30	UG	135	VC	30	WE
	15	BJ	750	HE	350	JD	100	KF	0.5	MD			250	VD	50	WG
					700	JE			1	ME			750	VE	100	WI
					750	JF										
					1000	JG										
Differential (Order Codes FDD, FDW)	0.5	AN	15	HA	35	JA	2	KA	0.035	MA	1	UB	15	VA	5	WB
	1	AP	50	HB	70	JB	7	KB	0.1	MB	2	UD	50	VB	10	WA
	2	AR	135	HC	175	JC	15	KC	0.2	MC	5	UF	135	VC	20	WC
	2.5	AS	250	HD	350	JD	35	KD	0.5	MD	10	UA	250	VD	30	WE
	5	AT	750	HE	700	JE	70	KE	1	ME	15	UC	750	VE	50	WG
	10	AV	1500	HF	750	JF	100	KF	2	MF	20	UE	1500	VF	100	WI
	15	BJ			1000	JG	200	KG	3.5	NA	30	UG			120	WK
	25	BL			3500	JH	300	KH	5	MG	50	UI			150	WM
	30	BM			7000	JI	700	KJ	7	NB	60	UK			200	WP
	50	BN			10000	JK	1000	KL	10	MH	80	UM			300	WR
	75	BP					1500	KM	20	MI	100	UP			500	WS
	100	BR					1700	KN	30	MJ	200	UH				
	150	CJ					2000	KP	35	NC	300	UJ				
	200	CL					3000	KQ	50	MK	500	UL				
	150	CN					5000	KR	70	ND	1000	UN				
	300	CP					7000	KS	100	ML	0-32	US				
	400	CQ					10000	KT	135	NE	16-32	UQ				
	500	CR					15000	KU	350	NG	26-32	UR				
	600	CS					20000	KV	500	MM						
	750	CT					35000	KW								
	1000	CV					50000	KY								

*0.5 to 2.5 psi ranges not available for absolute pressure

Performance

Accuracy (note 1).....See table below
 Output (selectable).....mV/V (See table below), 0-5 VDC, 0-10 VDC, or 4-20 mA (2 wire)
 Resolution.....Infinite

Non-amplified output

@ 10 VDC excitation	Gage & Absolute	Vacuum	Barometric	Differential
0.10% accuracy	50 mV (note 4)	25 mV	40 mV	50 mV (note 4)
0.25% accuracy	100 mV	50 mV	80 mV	100 mV

Environmental

Temperature, Operating.....-40° to 240°F
 Temperature, Compensated.....40° to 140°F (note 2)
 Temperature, Error Band (note 2)
 0.10% accuracy.....+/- 0.5% F.S.
 0.25% accuracy.....+/- 1.0% F.S.

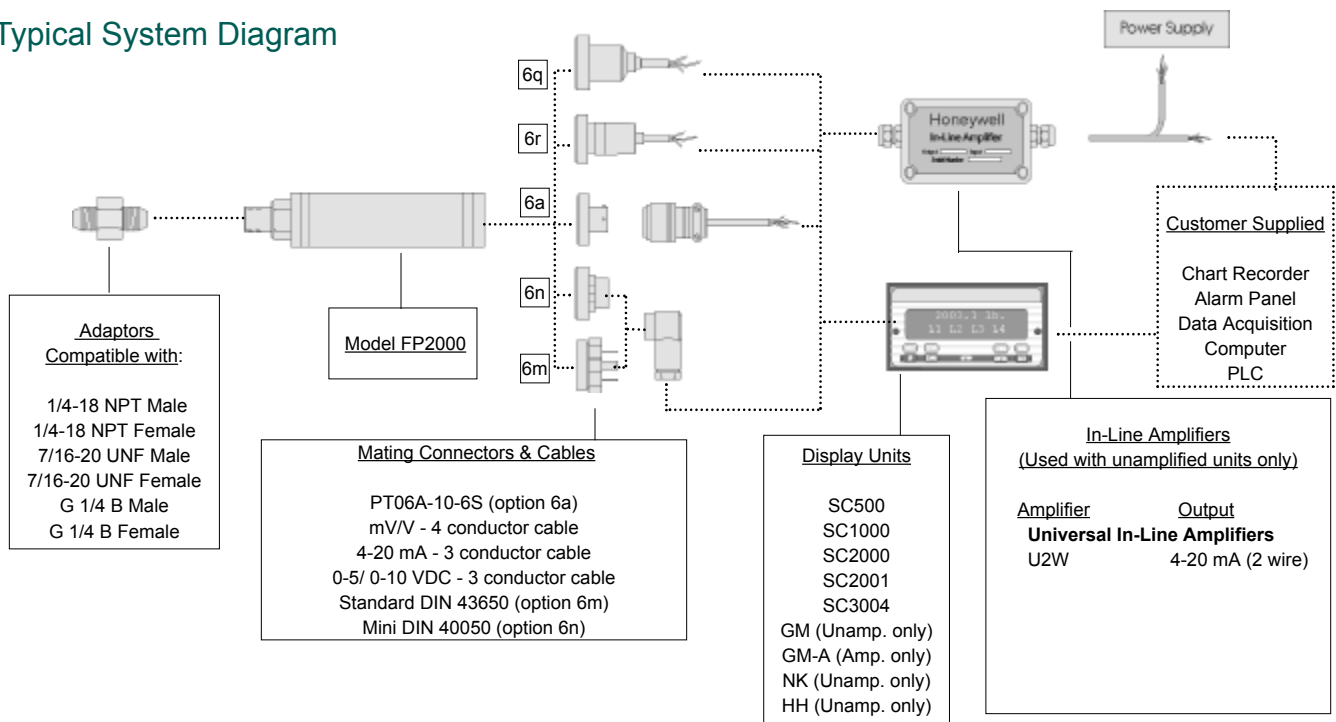
Electrical

Excitation (calibration)
 Amplified (4-20 mA, 0-5 VDC).....9-28 VDC
 Amplified (0-10 VDC).....15-28 VDC
 Unamplified (mV/V).....10 VDC

Mechanical

Media (note 3).....Gas, Liquid
 Overload-Safe
 1000 psi and below.....4x Full Scale or 3,000 psi, whichever is less
 1500 psi and above.....4x Full Scale or 15,000 psi, whichever is less
 Negative Direction (for Differential).....4x Full Scale or 250 psi, whichever is less
 Overload-Burst.....300% over capacity
 Pressure Port.....200% over capacity
 Wetted Parts Material.....Ha C276 & 316L Stainless Steel

Typical System Diagram



Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
2. For low pressure ranges, temperature effects may vary.
3. The Wet/Wet differential pressure transducer has two separate, welded Hastelloy diaphragms. In the Wet/Dry unit, the wet port (high port) has all-welded stainless and Hastelloy construction. The dry port (low port) has no isolation diaphragm.
4. For low gage and differential pressure ranges at 0.10% accuracy, non-amplified output @ 10 VDC excitation = 100mV.

Internal Amplifiers

Amplifier Specifications	Unamplified Output Option 2u	Voltage Output Option 2d	Voltage Output Option 2g	Current 2 Wire Option 2p	Intrinsically Safe Amp 2n (2N)***
Output Signal	see table on previous page	0-5 VDC	0-10 VDC	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC	9-28 VDC	15-28VDC	9-32 VDC	9-28 VDC
Input Power (Current)	2mA @ 10 VDC	10mA	15mA	4-24 mA	4-24 mA
Frequency Response	Natural Frequency	300Hz	300Hz	300 Hz	2000 Hz
Power Supply Rejection	N/A	60db	60db	60 db	60 db
Operating Temperature	-100° to 250°F	-20° to 185°F	-20° to 185°F	-20° to 185° F	-20° to 185° F
Reverse Voltage Protection	N/A	Yes	Yes	Yes	Yes
Short Circuit Protection	N/A	Momentary	Momentary	Yes	Yes
Amplifier Specifications	Unamplified Output Option 2u	Voltage Output Option 2e	Voltage Output Option 2f	Current 2 Wire Option 2y	Intrinsically Safe Amp 2n (2N)***
Output Signal	see table on previous page	0-5 VDC	0-10 VDC	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC	9-28 VDC	15-28VDC	9-32 VDC	9-28 VDC
Input Power (Current)	2mA @ 10 VDC	10mA	15mA	4-24 mA	4-24 mA
Frequency Response	Natural Frequency	2000Hz	2000Hz	2000 Hz	2000 Hz
Power Supply Rejection	N/A	60db	60db	60 db	60 db
Operating Temperature	-100° to 250°F	-20° to 185°F	-20° to 185°F	-20° to 185° F	-20° to 185° F
Reverse Voltage Protection	N/A	Yes	Yes	Yes	Yes
Short Circuit Protection	N/A	Momentary	Momentary	Yes	Yes

Wiring Codes

	Unamplified Output Option 2u	Voltage Output Option 2d/ 2e	Voltage Output Option 2g/ 2f	Current 2 Wire Option 2p/ 2y	Intrinsically Safe Amp Option 2n (2N)***
Bendix PTIH-10-6P (Opt. 6a)					
No Shunt Cal	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (+) Output F (-) Output	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-5VDC E No Connection F No Connection	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-10VDC E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E Case Ground F No Connection
With Shunt Cal (Opt. 3d)	A (+) Excitation B (-) Excitation C (+) Output D (-) Output E No Connection F Shunt Cal	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-5VDC E No Connection F Shunt Cal	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-10VDC E No Connection F Shunt Cal	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E No Connection F Shunt Cal	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E No Connection F Shunt Cal
Std. DIN 43650 (Opt. 6m)					
No Shunt Cal	1 (+) Excitation 2 (+) Output 3 (-) Output 4 (-) Excitation	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND No Connect. to case	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND No Connect. to case	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GND No Connection	1 (+) Supply 2 (+) Output 3 Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND Shunt Cal	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND Shunt Cal	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GND Shunt Cal	1 (+) Supply 2 (+) Output 3 Case Ground GND Shunt Cal
Mini DIN 40050 (Opt. 6n)					
No Shunt Cal	1 (+) Excitation 2 (+) Output 3 (-) Output 4 (-) Excitation	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND No Connect. to case	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND No Connect. to case	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GND No Connection	1 (+) Supply 2 (+) Output 3 Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND Shunt Cal	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GND Shunt Cal	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GND Shunt Cal	1 (+) Supply 2 (+) Output 3 Case Ground GND Shunt Cal
5' Integral Cable (Opt. 6q)					
No Shunt Cal	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA	R (+) Supply Bl (+) Output 4-20 mA W Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA G Shunt Cal	R (+) Supply Bl (+) Output 4-20 mA W Case Ground G Shunt Cal
Conduit Fitting (Opt. 6r)					
No Shunt Cal	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA	R (+) Supply Bl (+) Output 4-20 mA W Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA G Shunt Cal	R (+) Supply Bl (+) Output 4-20 mA W Case Ground G Shunt Cal

Note: For Wiring Codes, R=Red; Bl = Black; W = White; G = Green.

Color specifies cable and letter or number specifies connection

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

How To Order

The **FP2000 Order Code** is an easy way for you to order exactly what you want the factory to build. Simply make one selection in each of the six required categories. Choose adders and accessories only if you require them. By visiting our website at www.honeywell.com/sensotec you can view complete technical specifications for the FP2000, or click to our on-line shopping site and actually place your order.

Step 1

TRANSDUCER TYPE

	Type Code
O Pressure - Gage	FPG
O Pressure - Absolute	FPA
O Diff - wet/wet	FDW
O Pressure - barometric	FPB
O Diff - wet/dry	FDD
O Pressure - vacuum	FPV

UNIT

O psi	O bar
O torr	O in Hg
O mBar	O mm Hg
O kPa	O in H2O

Step 2

PRESSURE RANGE

Gage, Absolute and Differential

Range	Code	Range	Code
O 0.5 psi	AN	O 250 psi	CN
O 1 psi	AP	O 300 psi	CP
O 2 psi	AR	O 400 psi	CQ
O 2.5 psi	AS	O 500 psi	CR
O 5 psi	AT	O 600 psi	CS
O 10 psi	AV	O 750 psi	CT
O 15 psi	BJ	O 1,000 psi	CV
O 25 psi	BL	O 1,500 psi	DJ
O 30 psi	BM	O 2,000 psi	DL
O 50 psi	BN	O 2,500 psi	DM
O 75 psi	BP	O 3,000 psi	DN
O 100 psi	BR	O 5,000 psi	DR
O 150 psi	CJ	O 6,000 psi	DS
O 200 psi	CL	O 7,500 psi	DT
		O 10,000 psi	DV

Barometric		Vacuum	
O 16-32"Hga	UQ	O 1 psi	AP
O 26-32"Hga	UR	O 5 psi	AT
O 0-30"Hga	UG	O 10 psi	AV
		O 15 psi	BJ

ACCURACY

Accuracy Code	
O 0.10%	1
O 0.25%	2

Step 3

OUTPUT

	Basic Output	If Adding 9d or 9f Code (<5,000 psi)	If Adding 1y, 3d, 9e or 14c
O mV/V	2u	N.A.	2u
O 5 VDC	2d	N.A.	2e
O 10 VDC	2g	N.A.	2f
O 4-20 mA	2p	2n(2N)	2y

Note: If any ADDERS are required, the output code must be revised. See Screen 4.

PRESSURE PORT

	Port Code
O 1/4-18 NPT Female	5a
O 1/4-18 NPT Male	5b
O 7/16-20 UNF Female	5c
O 7/16-20 UNF Male	5d
O G 1/4 B Female	5f
O G 1/4 B Male	5g
O 1/8-27 NPT Female	5h
O 1/8-27 NPT Male	5i
O M12 x 1.5 Male	5p
O M12 x 1.5 Female	5q
O 9/16-18 UNF SAE Male	5r
O 9/16-18 UNF SAE Female	5s

ELECTRICAL CONNECTOR

	Connector Code
O Bendix PTIH-10-6P	6a
O DIN 43650	6m
O Mini DIN (40050)	6n
O Integral Polyurethane 5' Cable	6q
O 1/2 x 14 NPT Conduit 5' Cable Exit	6r

Step 4

ADDERS

	Adder Code
O Enhanced Thermals	1y
O Shunt Cal	3d
O IS Rating	9d
O CE Rating	9e
O IS & CE Rating	9f
O Potentiometers	14c

Note: If you choose any Adder Output from Screen 4, you must revise your output code selection using this output code chart. I.S. Outputs available only on ranges up to 5,000 psi.

Adder Output Code

O mV/V	2u
O 5 VDC	2e
O 10VDC	2f
O 4-20mA	2y
(CE only)	
O 4-20 mA	2n(2N)
(I.S. only)	
O 4-20mA	2n(2N)
(I.S. & CE)	

ACCESSORIES

Mating Connectors Only		Acc.Code
O Mini Din		AA161
O Bendix		AA111
Mating Connectors with 15' Cable for Bendix Connector (6A)		
O mV/V	AA113	AA513
O 4-20mA	AA116	AA516
O 0-5/0-10VDC	AA117	AA517

Step 5

DESCRIPTION	BASIC CODE						ADDER CODE			
	TYPE	ACCU- RACY	RANGE	OUT- PUT	PRES- SURE	ELECT. CONN.	EX- TENDED	SHUNT CAL	I.S./CE RATED	POTS
Order Code										
Accessory Code										

EXAMPLE ORDER CODE:

Selection	Description	Code
Transducer Type	Differential wet/wet	FDW
Accuracy	0.10%	1
Pressure Range	250 psi	CN
Output	4-20mA	2y
Pressure Port	1/4 - 18 NPT Male	5b
Electrical Output Connections	Bendix PTIH-10-6P	6a
Adders	Enhanced Temp. Range	1y
Accessories	Mating Connector w/Cable	AA116

There must be a code in each of the 6 Basic Code Boxes.

If there are no Adders or Accessories chosen, leave their boxes blank.

COMMENTS: Potentiometers are located on the side. See drawing for details.

No potentiometers are available on mV/V output option.



Approved



Approved

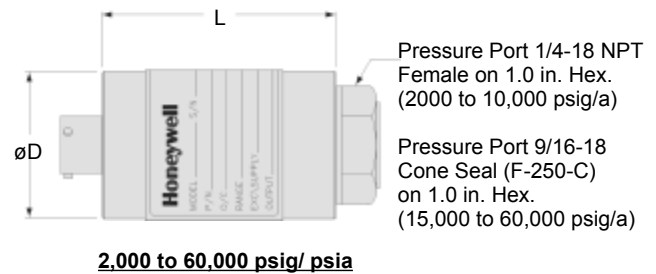
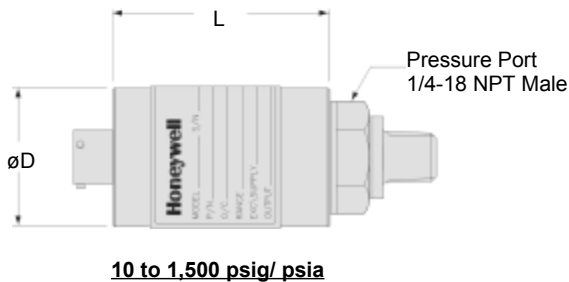
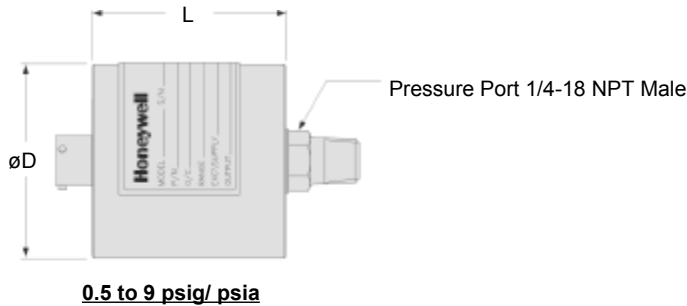


Approved
Intrinsically Safe Amp

Model A-5 General Purpose Gage/ Absolute Pressure Transducer

Order Code AP141 (gage) AP142 (absolute)

- 0.5 to 60,000 psig/a Range
- mV/V, 4-20 mA, 0-5 VDC or 0-10 VDC Output
- Stainless Steel, Hermetically Sealed
- 0.5% Accuracy



Dimensions

		Pressure Ranges (psi)																	
		0.5**	1	2	5	10	15	25	50	75	100	150	200	300	500	750	1,000	1,500	
Range Code		AN	AP	AR	AT	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ	
D (in./ mm) for psia/g		2.25/ 57				1.50/ 38													
L (in./ mm) for psia		N/A	2.54/ 65				2.35/ 60												
L* (in./ mm) for psia		N/A	3.79/ 96				3.60/ 91												
L (in./ mm) for psig		2.41/ 61				2.35/ 60												2.13/ 54	
L* (in./ mm) for psig		3.66/ 93				3.60/ 91												3.38/ 86	
Over Pressure (test) (psi)		150% Full Scale				150% Full Scale													
Over Pressure (burst) (psi)		50				100		200		400		800		2k		3k	3.5k	4k	
Port Volume (in. ³ / cm ³)		0.32/ 5.2				0.25/ 4.1				0.17/ 2.8									
Natural Frequency (Hz)		500	500	550	1000	1.3k	2.1k	2.5k	2.9k	3.5k	4.6k	6k	7k	9k	9.5k	12k	17k	20k	

		Pressure Ranges (psi)									
		2,000	3,000	5,000	7,500	10,000	15,000	20,000	30,000	50,000	60,000
Range Code		DL	DN	DR	DT	DV	EJ	EL	EN	EP	ES
D (in./ mm)		1.50/ 38					1.50/ 38				
L (in./ mm)		1.90/ 48					2.21/ 56				
L* (in./ mm)		3.15/ 80					3.46/ 89				
Over Pressure (test) (psi)		150% Full Scale					Contact Factory				
Over Pressure (burst) (psi)		8k	12k	20k	25k	25k	40k	45k	60k	80k	80k
Port Volume (in. ³ / cm ³)		0.12/ 3.1					0.06/ 1.5				
Natural Frequency (Hz)		35k	40k	54k	60k	80k	100k	>100k	>100k	>100k	>100k

* Length of pressure transducer with amplified option (see options on third page)

** 0.5 psi is available for gage only.

Model A-5

Performance

Accuracy (note 1).....+/-0.5% Full Scale
Resolution.....Infinite
Calibration.....5 point calibration: 0%, 50% and 100% of Full Scale

Environmental

Temperature, Compensated.....60° to 160°F
Temperature, Effect
Zero.....0.0075% Full scale/ °F
Span.....0.01% Reading/ °F
Sealing.....Hermetically sealed IP68/ Nema 6P (AP142)

Electrical

Strain Gage Type.....Bonded foil
Insulation Resistance.....5000 Megohms @ 50VDC
Bridge Resistance.....350 Ohms
Shunt Calibration Data.....Included
Electrical Termination (std).....PTIH-10-6P or equiv. (Hermetic Stainless)
Mating Connector (not incl.).....PT06A-10-6S or equiv.

Mechanical

Media.....All gases/ liquids compatible with wetted parts
Wetted Parts Material
Less than 2000 psig/a.....17-4 PH Stainless Steel
Greater than or equal to 2000 psig/a.....15-5 PH Stainless Steel
Weight.....10 oz.
Case Material.....304 Stainless Steel
Marking.....Permanent metal nameplate MIL-STD130F 4.3;
Individual sequential serial number per sensor;
Country of origin and date of manufacture

Internal Amplifiers

Amplifier Specifications	mV/V Output Standard	Voltage Output Option 2a (note 4)	Vehicle Voltage Output Option 2c (note 4)	Vehicle Voltage Output Option 2t (note 4)	Current 3 Wire Option 2j (note 4)	Current 2 Wire Option 2k (note 4)	Intrinsically Safe Amp Option 2N (2n)
Output Signal	3 mV/V (note 2)	0-5VDC	0-5VDC or +/- 5VDC @ 5mA	0-10VDC or +/- 10VDC @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC Regulated	+/-15VDC or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC (note 3)	9-32 VDC (note 3)	9-28 VDC (note 3)
Input Power (Current)	28.5 mA @ 10 VDC	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	Natural Frequency	2000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	--	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-100° to 250° F	-20° to 185° F	-40° to 200° F	-40° to 185° F	-40° to 185° F	-40° to 185° F	-20° to 185° F
Reverse Voltage Protection	Not Applicable	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Not Applicable	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (-) Output F (+) Output	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground
For Current Information		Reference application sheet #008-0356-00 for current information.	Reference application sheet #008-0357-00 for current information.	Reference application sheet #008-0360-00 for current information.	Reference application sheet #008-0361-00 for current information.	Reference application sheet #008-0361-60 for current information.	See Sensotec web site for most up-to-date information regarding Intrinsically safe approvals ref. #008-0547-00.

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Notes:

1. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
2. Output for 0.5, 1, 2 psig/a units is 1-2mV/V.
3. Input power (voltage) for internal amplifier options 2j, 2k, 2n(2N) depends on load resistance.
4. CE mark requires options 6a & 3d.
5. Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
6. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
7. No mating connector necessary with cable option.

1-888-282-9891

www.honeywell.com/sensotec

Model A-5

Options

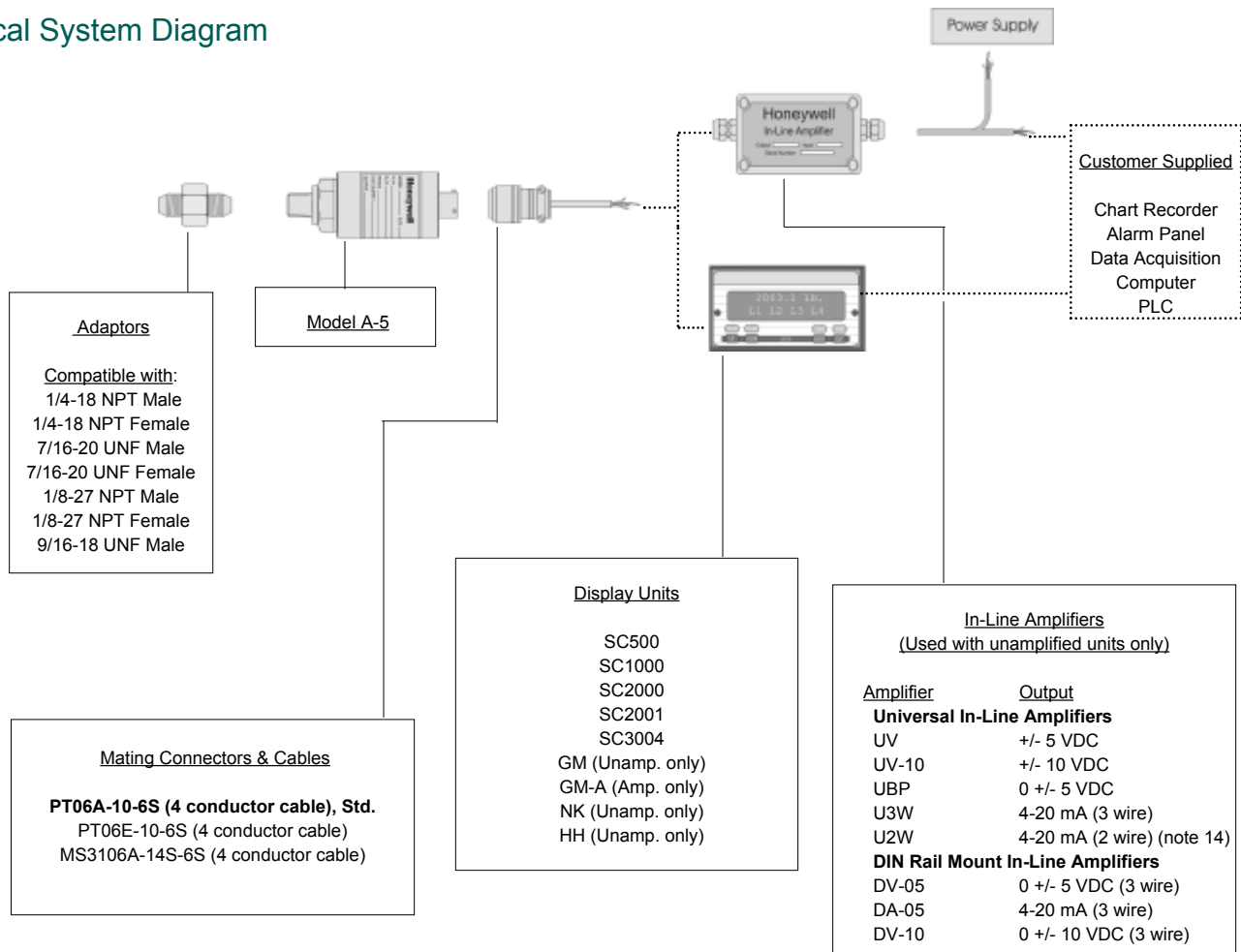
	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 75; 100; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500; 10,000 psig/a		0.5 psig 1; 2; 5; 10; 15,000; 20,000; 30,000; 50,000; 60,000 psig/a
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F	1g. 70° to 325° F (note 9) 1i. -65° to 250° F (note 9)	
Internal Amplifiers (note 10)	2u. Unamplified, mV/V Output 2c. 0-5 VDC output 2j. 4-20 mA (3-wire) output 2t. 0-10 VDC output	2a. 0-5 VDC (4-wire) output 2k. 4-20 mA (2-wire) output 2N (2n). 4-20 mA (2-wire) Intrinsically safe	
Internal Amplifier Enhancements		3a. Input/ Output Isolation 3d. Remote Buffered Shunt Cal.	
Pressure Ports (note 9)	5a. 1/4-18 NPT Female 5b. 1/4-18 NPT Male 5d. 7/16-20 UNF Male 5g. G 1/4 Male	5c. 7/16-20 UNF Female (per MS33649-4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250° F)	6b. MS type connector mates with MS3106-14S 6 pin (max. 160°F) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	
Shunt Calibration	8a. Precision Internal Resistor (note 11)		
Special Calibration (note 9)	9a. 10 point (5 up/5 down) 20% increments @ 70°F (gage) 9b. 20 point (10 up/10 down) 10% increments @ 70°F (gage)		
Wetted Diaphragm (note 9)			10a. 316 Stainless steel (note 9) 10b. Crucible A-286 10c. Hastelloy-C 10d. Monel K-500
Bridge Resistance (note 9)		12a. 1,000 Ohms (foil) (max. 400°F) 12b. 5,000 Ohms (foil) (max. 250°F)	
Potentiometers	14a. No access to pots 14b. Top access to pots		
Shock & Vibration		44a. Shock & vibration resistance	
Interfaces	53e. Signature Calibration (note 9) 53t. T.E.D.S. IEEE1451.4 Module (note 13)		

Supplied as standard

Notes:

9. Availability varies according to range.
10. Not available with temperatures below -20°F or above 185°F.
11. Cannot be used with amplified option.
12. Gage pressure units greater than 200 psi are sealed at atmospheric pressure.
13. Consult factory for TEDS availability with amplified models.

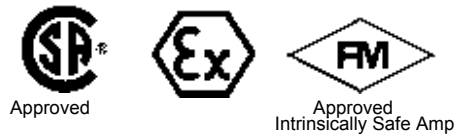
Typical System Diagram



Special Customer Requirements
(Consult Factory)

- Case pressure
- Different cable lengths
- Different materials
- ESD
- Fatigue rating
- Lightning protection
- O₂ Clean
- OEM labels
- Overload stops
- Radiation proof
- Sig Cal
- Special electrical O/P
- Special temp comp
- Special wiring codes
- Temperature & pressure calibration

Notes:
14. 5,000 Ohm bridge required



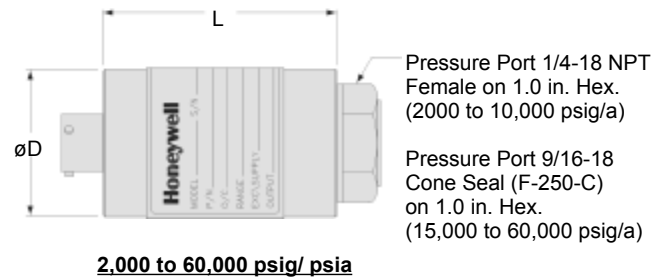
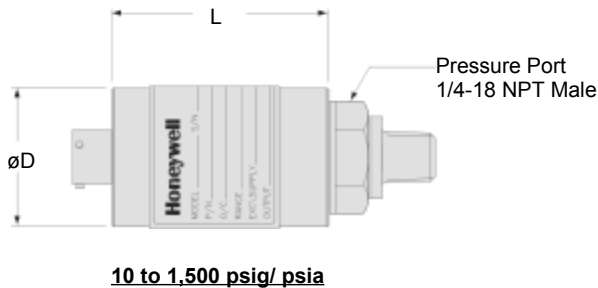
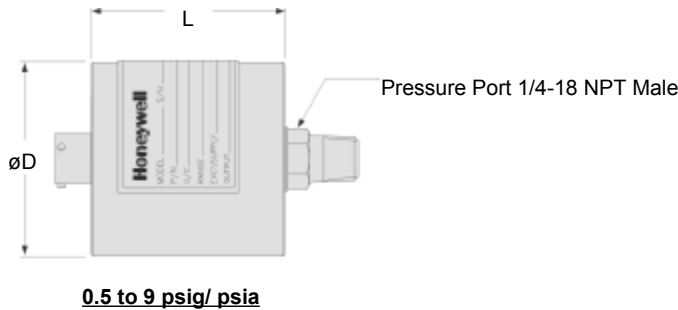
How to Order

Combine the order code, the range code and the options code.
Sample Code: **AP141** **AT** **1c,2a**
Order Code Range Code Options Code

Model Z General Purpose Gage/ Absolute Pressure Transducer

Order Code AP131 (gage) AP132 (absolute)

- 0.5 to 60,000 psig/a Range
- mV/V, 4-20 mA, 0-5 VDC or 0-10 VDC Output
- Stainless Steel, Hermetically Sealed
- 0.25% Accuracy



Dimensions

		Pressure Ranges (psi)																		
		0.5**	1	2	5	10	15	25	50	75	100	150	200	300	500	750	1,000	1,500		
Range Code		AN	AP	AR	AT	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ		
D (in./ mm) for psia/g		2.25/ 57					1.50/ 38													
L (in./ mm) for psia		N/A	2.54/ 65					2.35/ 60												
L* (in./ mm) for psia		N/A	3.79/ 96					3.60/ 91												
L (in./ mm) for psig		2.41/ 61					2.35/ 60													2.13/ 54
L* (in./ mm) for psig		3.66/ 93					3.60/ 91													3.38/ 86
Over Pressure (test) (psi)		150% Full Scale					150% Full Scale													
Over Pressure (burst) (psi)		50					100		200		400		800				2k	3k	3.5k	4k
Port Volume (in. ³ / cm ³)		0.32/ 5.2					0.25/ 4.1				0.17/ 2.8									
Natural Frequency (Hz)		500	500	550	1000	1.3k	2.1k	2.5k	2.9k	3.5k	4.6k	6k	7k	9k	9.5k	12k	17k	20k		

		Pressure Ranges (psi)									
		2,000	3,000	5,000	7,500	10,000	15,000	20,000	30,000	50,000	60,000
Range Code		DL	DN	DR	DT	DV	EJ	EL	EN	EP	ES
D (in./ mm)		1.50/ 38					1.50/ 38				
L (in./ mm)		1.90/ 48					2.21/ 56				
L* (in./ mm)		3.15/ 80					3.46/ 89				
Over Pressure (test) (psi)		150% Full Scale					Contact Factory				
Over Pressure (burst) (psi)		8k	12k	20k	25k	25k	40k	45k	60k	80k	80k
Port Volume (in. ³ / cm ³)		0.12/ 3.1					0.06/ 1.5				
Natural Frequency (Hz)		35k	40k	54k	60k	80k	100k	>100k	>100k	>100k	>100k

* Length of pressure transducer with amplified option (see options on third page)

** 0.5 psi is available for gage only.

Model Z

Performance

Accuracy (note 1).....	+/-0.25% Full Scale
Linearity.....	+/-0.15% Full Scale
Hysteresis.....	+/-0.10% Full Scale
Media.....	All gases/ liquids compatible with wetted parts
Resolution.....	Infinite
Calibration.....	5 point calibration: 0%, 50% and 100% of Full Scale

Environmental

Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	0.005% Full scale/ °F
Span.....	0.005% Reading/ °F
Sealing.....	Hermetically sealed IP68/ Nema 6P (AP132)

Electrical

Strain Gage Type.....	Bonded foil
Insulation Resistance.....	5000 Megohms @ 50VDC
Bridge Resistance.....	350 Ohms
Shunt Calibration Data.....	Included
Electrical Termination (std).....	PTIH-10-6P or equiv. (Hermetic Stainless)
Mating Connector (not incl.).....	PT06A-10-6S or equiv.

Mechanical

Wetted Parts Material	
Less than 2000 psig/a.....	17-4 PH Stainless Steel
Greater than or equal to 2000 psig/a.....	15-5 PH Stainless Steel
Weight.....	10 oz.
Case Material.....	304 Stainless Steel
Marking.....	Permanent metal nameplate MIL-STD130F 4.3; Individual sequential serial number per sensor; Country of origin and date of manufacture

Internal Amplifiers

Amplifier Specifications	mV/V Output Standard	Voltage Output Option 2a (note 4)	Vehicle Voltage Output Option 2c (note 4)	Vehicle Voltage Output Option 2t (note 4)	Current 3 Wire Option 2j (note 4)	Current 2 Wire Option 2k (note 4)	Intrinsically Safe Amp Option 2N (2n)
Output Signal	3 mV/V (note 2)	0-5VDC	0-5VDC or +/- 5VDC @ 5mA	0-10VDC or +/- 10VDC @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC Regulated	+/-15VDC or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC (note 3)	9-32 VDC (note 3)	9-28 VDC (note 3)
Input Power (Current)	28.5 mA @ 10 VDC	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	Natural Frequency	2000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	--	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-100° to 250° F	-20° to 185° F	-40° to 200° F	-40° to 185° F	-40° to 185° F	-40° to 185° F	-20° to 185° F
Reverse Voltage Protection	Not Applicable	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Not Applicable	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (-) Output F (+) Output	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground
For Current Information		Reference application sheet #008-0356-00 for current information.	Reference application sheet #008-0357-00 for current information.	Reference application sheet #008-0360-00 for current information.	Reference application sheet #008-0361-00 for current information.	Reference application sheet #008-0361-60 for current information.	See Sensotec web site for most up-to-date information regarding Intrinsically safe approvals ref. #008-0547-00.

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Notes:

1. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
2. Output for 0.5, 1, 2 psig/a units is 1-2mV/V.
3. Input power (voltage) for internal amplifier options 2j, 2k, 2n(2N) depends on load resistance.
4. CE mark requires options 6a & 3d.
5. Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
6. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
7. No mating connector necessary with cable option.

Model Z

Options

	Same Day Ship	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 100; 200; 500; 1000 psig	75; 300; 750; 1500; 2000; 3000; 5000; 7500; 10,000 psig/a 15; 25; 50; 100; 200; 500; 1000 psia		0.5 psig 1; 2; 5; 10; 15,000; 20,000; 30,000; 50,000; 60,000 psig/a
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F (note 11)	1g. 70° to 325° F (note 11) 1i. -65° to 250° F (note 11)	
Internal Amplifiers (note 10)	2u. Unamplified mV/V output	2c. 0-5 VDC output 2j. 4-20 mA (3-wire) output 2t. 0-10 VDC output	2a. 0-5 VDC (4-wire) output 2k. 4-20 mA (2-wire) output (note 8) 2N (2n). 4-20 mA (2-wire) Intrinsically safe (note 8)	
Internal Amplifier Enhancements			3a. Input/ Output Isolation 3d. Remote Buffered Shunt Cal.	
Pressure Ports (note 9)		5a. 1/4-18 NPT Female 5b. 1/4-18 NPT Male 5d. 7/16-20 UNF Male 5g. G 1/4 Male	5c. 7/16-20 UNF Female (per MS33649-4)	
Electrical Termination	6a. Bendix PTIH-10-6P-(or equiv.) 6 pin (max. 400°F)		6b. MS type connector mates with MS3106-14S 6 pin (max. 160°F) (note 13) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	
Shunt Calibration		8a. Precision Internal Resistor (note 11)		
Special Calibration (note 9)		9a. 10 point (5 up/5 down) 20% increments @ 70°F (gage) 9b. 20 point (10 up/10 down) 10% increments @ 70°F (gage)		
Wetted Diaphragm (note 9)				10a. 316 Stainless steel (note 9) 10b. Crucible A-286 10c. Hastelloy-C 10d. Monel K-500
Bridge Resistance (note 9)			12a. 1,000 Ohms (foil) (max. 400°F) 12b. 5,000 Ohms (foil) (max. 400°F)	
Potentiometers		14a. No access to pots 14b. Top access to pots		
Shock & Vibration			44a. Shock & vibration resistance	
Interfaces		53e. Signature Calibration (note 11) 53t. T.E.D.S. IEEE1451.4 Module (note 14)		

Supplied as standard

Notes:

8. Options 2k, 2n(2N) only available with option 12b.

9. Availability varies according to range.

10. Not available with temperatures below -20°F or above 185°F.

11. Cannot be used with amplified option.

12. Gage pressure units greater than 200 psi are sealed at atmospheric pressure.

13. No pot access available with MS type connector.

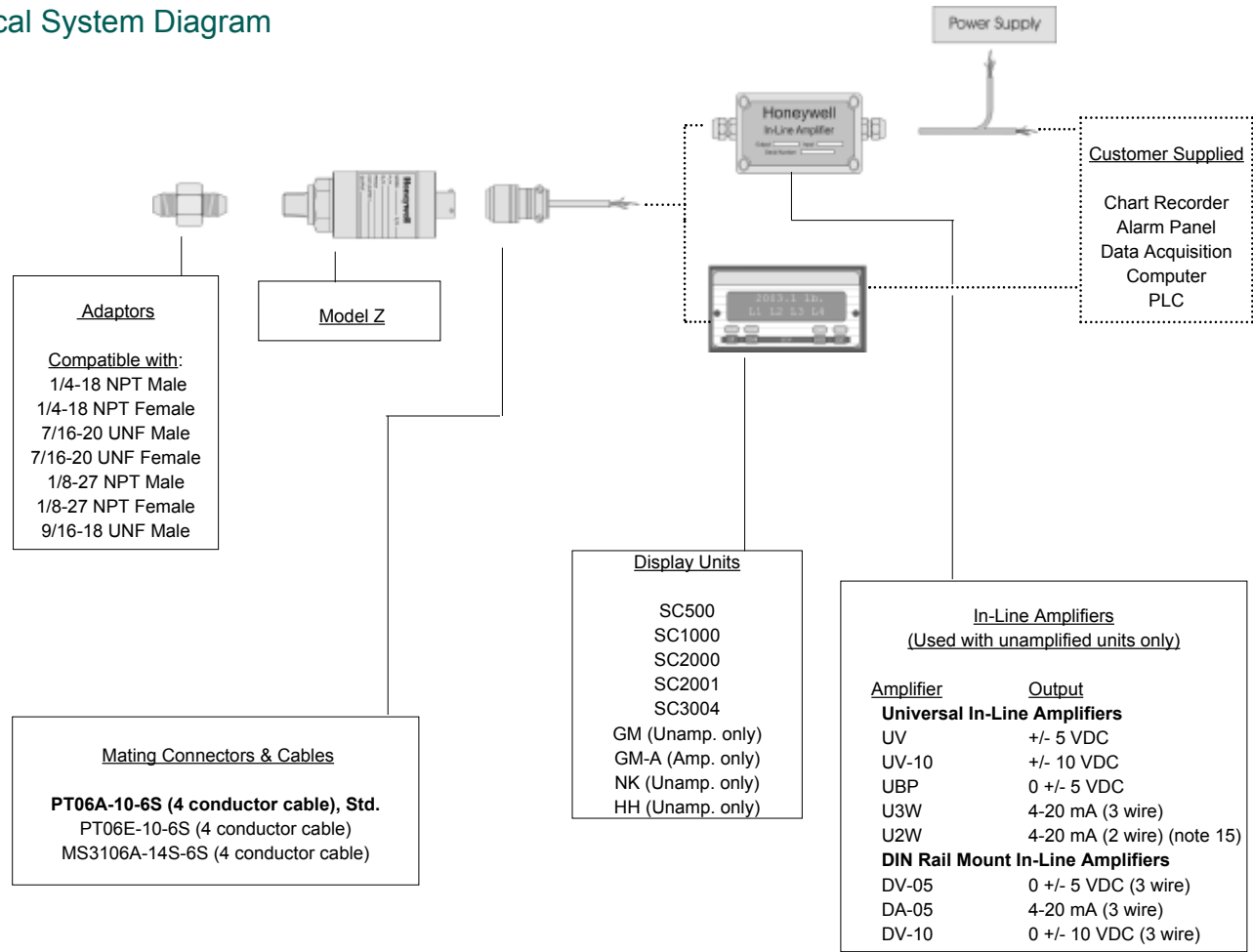
14. Consult factory for TEDS availability with amplified models.

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Model Z

Typical System Diagram



Special Customer Requirements (Consult Factory)

- Case pressure
- Different cable lengths
- Different materials
- ESD
- Fatigue rating
- Lightning protection
- O₂ Clean
- OEM labels
- Overload stops
- Radiation proof
- Sig Cal
- Special electrical O/P
- Special temp comp
- Special wiring codes
- Temperature & pressure calibration

Notes:

15. 5,000 Ohm bridge required



Approved
Intrinsically Safe Amp

How to Order

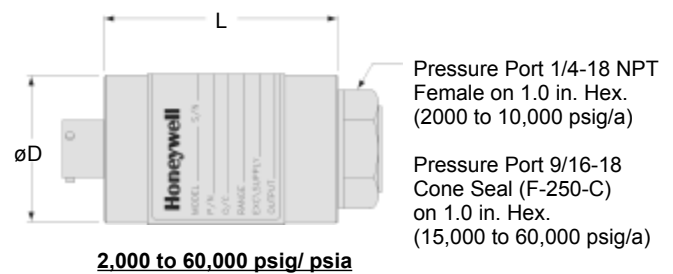
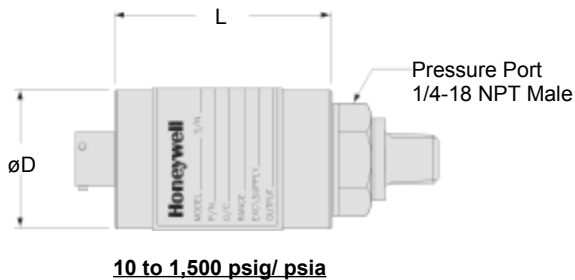
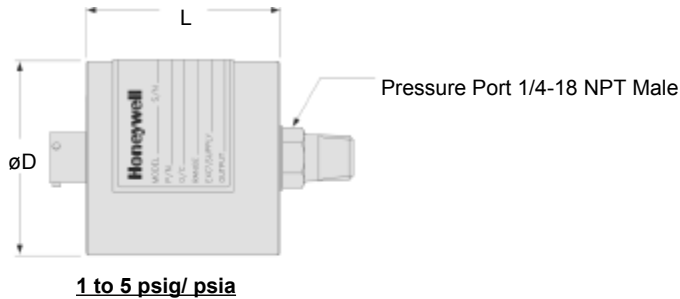
Combine the order code, the range code and the options code.

Sample Code: **AP131** **AT** **1c,2a**
Order Code Range Code Options Code

Model TJE Precision Gage/ Absolute Pressure Transducer

Order Code AP121 (gage) AP122 (absolute)

- 1 to 60,000 psig/a Range
- mV/V, 4-20 mA, 0-5 VDC or 0-10 VDC Output
- Stainless Steel, Hermetically Sealed
- 0.1% Accuracy



Dimensions

			Pressure Ranges (psi)															
			1	2	5	10	15	25	50	75	100	150	200	300	500	750	1,000	1,500
Range Code			AP	AR	AT	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ
D (in./ mm) for psia			2.25/ 57			1.50/ 38												
D (in./ mm) for psig			2.25/ 57			1.75/ 45		1.50/ 38										
L (in./ mm) for psia			2.54/ 65			2.35/ 60												
L* (in./ mm) for psia			3.79/ 96			3.60/ 91												
L (in./ mm) for psig			1.81/ 46			2.00/ 51		2.02/ 51										
L* (in./ mm) for psig			3.06/ 78			3.25/ 83		3.27/ 83										
Over Pressure (test) (psi)			150% Full Scale			150% Full Scale												
Over Pressure (burst) (psi)			50			100		200		400		800		2k		3k	3.5k	4k
Port Volume (in. ³ / cm ³)			0.32/ 5.2			0.25/ 4.1				0.17/ 2.8								
Natural Frequency (Hz)			500	550	1000	1.3k	2.1k	2.5k	2.9k	3.5k	4.6k	6k	7k	9k	9.5k	12k	17k	20k

	Pressure Ranges (psi)									
	2,000	3,000	5,000	7,500	10,000	15,000	20,000	30,000	50,000	60,000
Range Code	DL	DN	DR	DT	DV	EJ	EL	EN	EP	ES
D (in./ mm)	1.50/ 38					1.50/ 38				
L (in./ mm)	1.90/ 48					2.21/ 56				
L* (in./ mm)	3.15/ 80					3.46/ 89				
Over Pressure (test) (psi)	150% Full Scale					Contact Factory				
Over Pressure (burst) (psi)	8k	12k	20k	25k	25k	40k	45k	60k	80k	80k
Port Volume (in. ³ / cm ³)	0.12/ 3.1					0.06/ 1.5				
Natural Frequency (Hz)	35k	40k	54k	60k	80k	100k	>100k	>100k	>100k	>100k

* Length of pressure transducer with amplified option (see options on third page)

** 0.5 psi is available for gage only.

Model TJE

Performance

Accuracy (note 1).....	+/-0.10% Full Scale
Linearity.....	+/-0.10% Full Scale
Hysteresis.....	+/-0.05% Full Scale
Media.....	All gases/ liquids compatible with wetted parts
Resolution.....	Infinite
Calibration.....	5 point calibration: 0%, 50% and 100% of Full Scale

Environmental

Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	0.0025% Full scale/ °F
Span.....	0.0025% Reading/ °F
Sealing.....	Hermetically sealed IP68/ Nema 6P

Electrical

Strain Gage Type.....	Bonded foil
Insulation Resistance.....	5,000 Megohms @ 50VDC
Bridge Resistance.....	350 Ohms
Shunt Calibration Data.....	Included
Electrical Termination (std).....	PTIH-10-6P or equiv. (Hermetic Stainless)
Mating Connector (not incl.).....	PT06A-10-6S or equiv.

Mechanical

Wetted Parts Material	
Less than 2000 psig/a.....	17-4 PH Stainless Steel
Greater than or equal to 2000 psig/a.....	15-5 PH Stainless Steel
Weight.....	10 oz.
Case Material.....	304 Stainless Steel
Marking.....	Permanent metal nameplate MIL-STD130F 4.3; Individual sequential serial number per sensor; Country of origin and date of manufacture

Internal Amplifiers

Amplifier Specifications	mV/V Output Standard	Voltage Output Option 2a (note 4)	Vehicle Voltage Output Option 2c (note 4)	Vehicle Voltage Output Option 2t (note 4)	Current 3 Wire Option 2j (note 4)	Current 2 Wire Option 2k (note 4)	Intrinsically Safe Amp Option 2N (2n)
Output Signal	3 mV/V (note 2)	0-5VDC	0-5VDC or +/- 5VDC @ 5mA	0-10VDC or +/- 10VDC @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC Regulated	+/-15VDC or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC (note 3)	9-32 VDC (note 3)	9-28 VDC (note 3)
Input Power (Current)	28.5 mA @ 10 VDC	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	Natural Frequency	2000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	Not Applicable	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-100° to 250° F	-20° to 185° F	-40° to 200° F	-40° to 185° F	-40° to 185° F	-40° to 185° F	-20° to 185° F
Reverse Voltage Protection	Not Applicable	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Not Applicable	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (-) Output F (+) Output	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground
For Current Information		Reference application sheet #008-0356-00 for current information.	Reference application sheet #008-0357-00 for current information.	Reference application sheet #008-0360-00 for current information.	Reference application sheet #008-0361-00 for current information.	Reference application sheet #008-0361-60 for current information.	See Sensotec web site for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Notes:

1. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
2. Output for 0.5, 1, 2 psig/a units is 1-2mV/V.
3. Input power (voltage) for internal amplifier options 2j, 2k, 2n(2N) depends on load resistance.
4. CE mark requires options 6a & 3d.
5. Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
6. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
7. No mating connector necessary with cable option.

Model TJE

Options

	Same Day Ship	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 100; 200 psig/a 500; 1000; 3000; 5000; 7500; 10,000 psig	75; 300; 750; 1500; 2000 psig/a 500; 1000; 3000; 5000; 7500; 10,000 psia		1; 2; 5; 10; 15,000; 20,000; 30,000; 50,000; 60,000 psig/a
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F (note 11)	1g. 70° to 325° F (note 11) 1i. -65° to 250° F (note 11)	
Internal Amplifiers (note 10)	2u. Unamplified mV/V output 2c. 0-5 VDC output	2a. 0-5 VDC (4-wire) output 2j. 4-20 mA (3-wire) output 2t. 0-10 VDC output	2k. 4-20 mA (2-wire) output (note 8) 2N (2n). 4-20 mA (2-wire) Intrinsically safe (note 8)	
Internal Amplifier Enhancements			3a. Input/ Output Isolation (note 15) 3d. Remote Buffered Shunt Cal.	
Pressure Ports (note 9)		5a. 1/4-18 NPT Female 5b. 1/4-18 NPT Male 5d. 7/16-20 UNF Male 5g. G 1/4 Male	5c. 7/16-20 UNF Female (per MS33649-4)	
Electrical Termination	6a. Bendix PTIH-10-6P-(or equiv.) 6 pin (max. 400°F)		6b. MS type connector mates with MS3106-14S 6 pin (max. 160°F) (note 13) 6i. Submersible Cable (note 14) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	
Shunt Calibration		8a. Precision Internal Resistor (note 11)		
Special Calibration (note 9)		9a. 10 point (5 up/5 down) 20% increments @ 70°F (gage) 9b. 20 point (10 up/10 down) 10% increments @ 70°F (gage)		
Wetted Diaphragm (note 9)				10a. 316 Stainless steel (note 9) 10b. Crucible A-286 10c. Hastelloy-C 10d. Monel K-500
Bridge Resistance (note 9)			12a. 1,000 Ohms (foil) (max. 400°F) 12b. 5,000 Ohms (foil) (max. 400°F)	
Potentiometers		14a. No access to pots 14b. Top access to pots		
Shock & Vibration			44a. Shock & vibration resistance	
Interfaces		53e. Signature Calibration (note 11) 53t. T.E.D.S. IEEE1451.4 Module (note 16)		

Supplied as standard

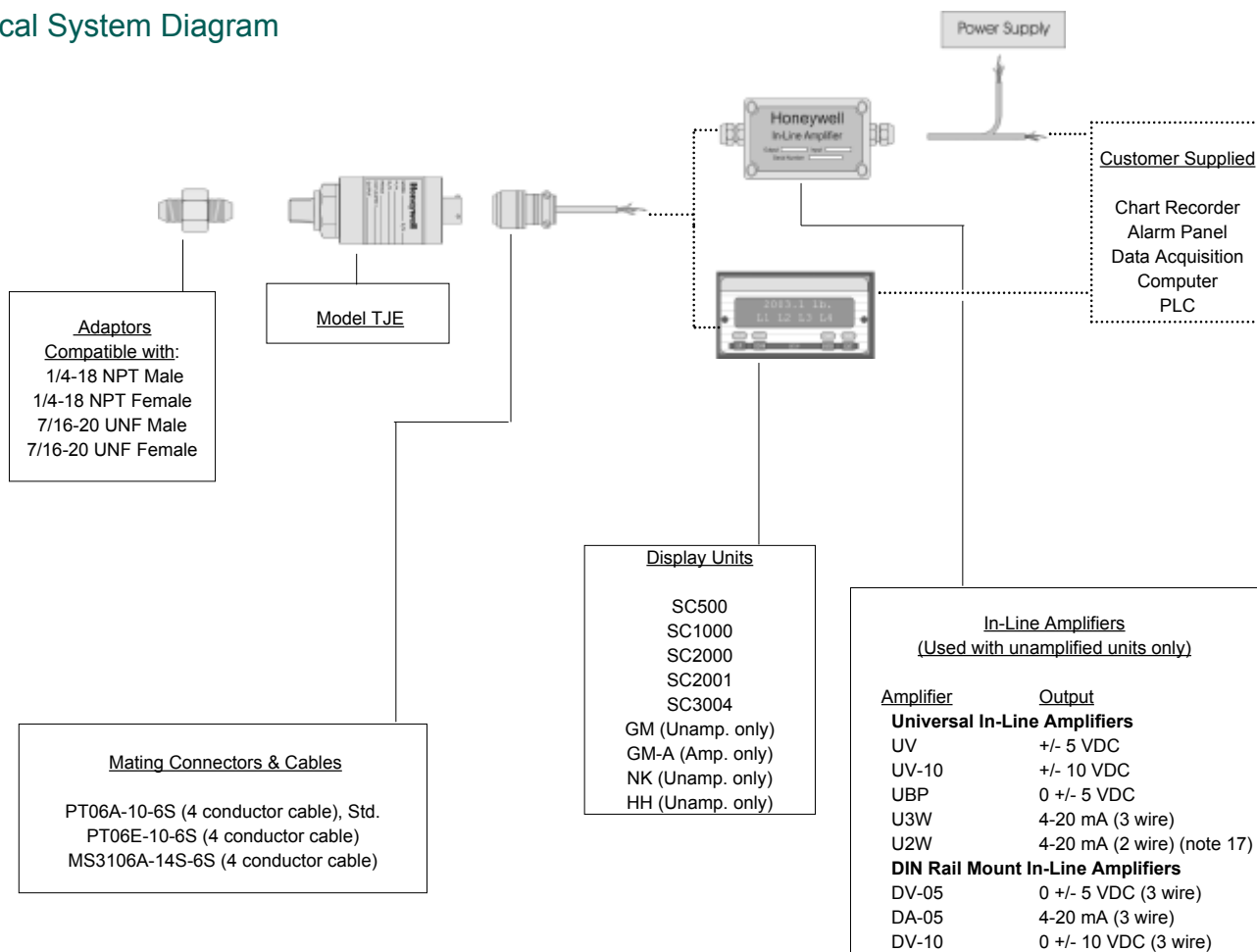
Notes:

8. Options 2k, 2n(2N) only available with option 12b.
9. Availability varies according to range.
10. Not available with temperatures below -20°F or above 185°F.
11. Cannot be used with amplified option.
12. Gage pressure units greater than 200 psi are sealed at atmospheric pressure.
13. No pot access available with MS type connector.
14. Temp 180° F max, nonshielded standard, shielded available.
15. Input/Output Isolation only available with Voltage output (options 2a, 2b, 2c).
16. Consult factory for TEDS availability with amplified models.

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Typical System Diagram



Special Customer Requirements (Consult Factory)

Case pressure
Different cable lengths
Different materials
ESD
Fatigue rating
Lightning protection
O₂ Clean
OEM labels
Overload stops
Radiation proof
Sig Cal
Special electrical O/P
Special temp comp
Special wiring codes
Temperature & pressure calibration

Notes:

17. 5,000 Ohm bridge required



How to Order

Combine the order code, the range code and the options code.

Sample Code: **AP121** **AT** **1c,2a**
Order Code Range Code Options Code

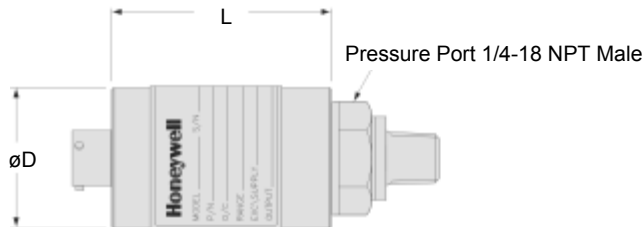
Model Super TJE Ultra Precision Pressure Transducer

Order Code AP111 (gage); AP112 (absolute)

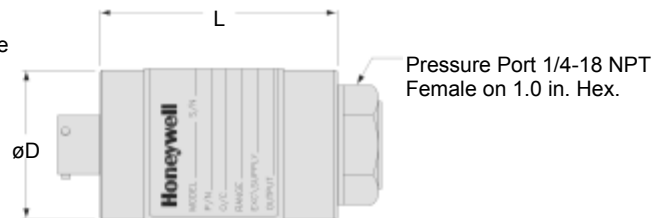
- 10 to 7500 psig Range
- Isolated Double Wall Construction
- Enhanced Temperature Stability
- 0.05% Accuracy



Dimensions



10 to 1500 psi



2000 to 7500 psi

Pressure Ranges (psi)	10**	15	25	50	75	100	150	200	300	500	750	1000	1500	2000	3000	5000	7500
Range Code	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ	DL	DN	DR	DT
D (in./mm) for psia	N/A	1.63/41															
D (in./mm) for psig	2.0/51		1.63/41														
L (in./mm) for psia	N/A	2.62/66															
L* (in./mm) for psia	N/A	3.63/92															
L (in./mm) for psig	2.5/64		2.62/66														
L* (in./mm) for psig	3.5/89		3.63/92														
Over Pressure (test) (psi)	150% F.S.																
Over Pressure (burst) (psi)	100		200		400		800		2000		3000	3500	4000	8000	12k	20k	25k
Port Volume (in. ³ / cm ³)	0.17/2.8													0.12/3.1			
Natural Frequency (Hz)	1.3k	2.1k	2.5k	2.9k	3.5k	4.5k	6k	7k	9k	9.5k	12k	17k	20k	35k	40k	54k	60k

*Length with amplified option.

**10 psi not available with absolute pressure

Performance

Pressure Ranges (note1).....10 psig; 15; 25; 50; 75; 100; 150; 200; 300; 500; 750;
.....1000; 1500; 2000; 3000; 5000; 7500 psig/a

Accuracy (note 10).....+/-0.05% Full Scale

Resolution.....Infinite

Calibration.....5 point calibration: 0%, 50% and 100% of Full Scale

Environmental

Temperature, Compensated.....60° to 160°F

Temperature, Effect

Zero.....0.0015% Full scale/ °F

Span.....0.0015% Reading/ °F

Sealing.....Hermetically Sealed IP68/ NEMA 6P

Electrical

Strain Gage Type.....Bonded foil

Insulation Resistance.....5000 Megohms @ 50VDC

Bridge Resistance.....350 Ohms

Shunt Calibration Data.....Included

Electrical Termination (std).....PTIH-10-6P or equiv. (Hermetic Stainless)

Mating Connector (not incl.).....PT06A-10-6S or equiv.

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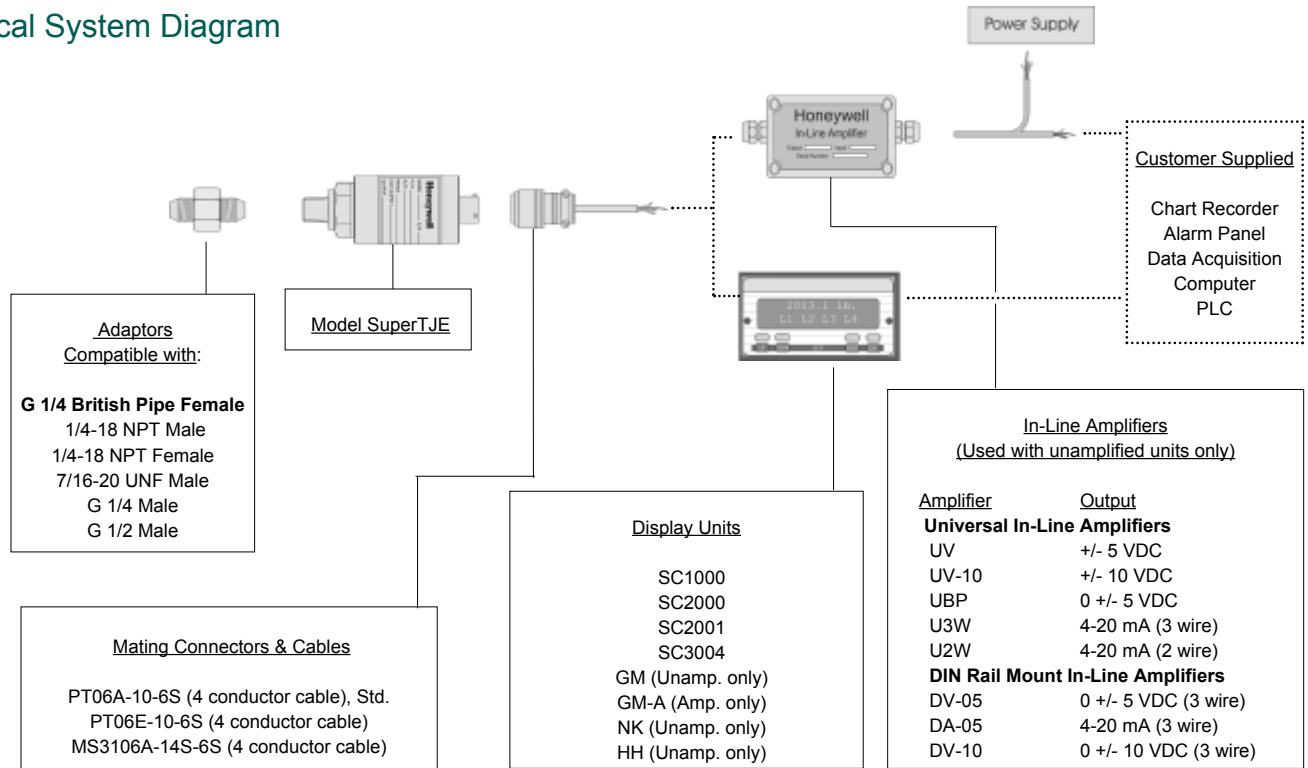
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Model Super TJE

Mechanical

Media.....	All gases and liquids compatible with wetted parts
Wetted Parts Material	
10-1500 psi.....	17-4 PH Stainless Steel
2000-7500 psi.....	15-5 PH Stainless Steel
Weight.....	12 oz.
Case Material.....	Stainless Steel
Marking.....	Permanent metal nameplate MIL-STD130F 4.3; Individual sequential serial number per sensor; Country of origin and date of manufacture

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	mV/V Output Standard	Voltage Output Option 2a (note 4)	Vehicle Voltage Output Option 2c (note 4)	Vehicle Voltage Output Option 2t (note 4)	Current 3 Wire Option 2j (note 4)	Current 2 Wire Option 2k (note 4)	Intrinsically Safe Amp Option 2N (2n)***
Output Signal	2 mV/V	0-5VDC	0-5VDC or +/- 5VDC @ 5mA	0-10VDC or +/- 10VDC @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC Regulated	+/-15VDC or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC (note 3)	9-32 VDC (note 3)	9-28 VDC (note 3)
Input Power (Current)	28.5 mA @ 10 VDC	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	Natural Frequency	2000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	Not Applicable	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-100° to 250° F	-20° to 185° F	-40° to 200° F	-40° to 185° F	-40° to 185° F	-40° to 185° F	-20° to 185° F
Reverse Voltage Protection	Not Applicable	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Not Applicable	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 3)	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (-) Output F (+) Output	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 3) (note 8) (note 9)	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

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Model Super TJE

Options

	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 75; 100; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500 psig/a		10 psig/a
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F (note 6) 1f. 70° to 250° F (note 6)	1g. 70° to 325° F (note 6)	
Internal Amplifiers (note 4)	2u. Unamplified, mV/V Output 2a. 0-5 VDC (4-wire) output 2c. 0-5 VDC output 2j. 4-20 mA (3-wire) output 2t. 0-10 VDC output	2k. 4-20 mA (2-wire) output 2N (2n). 4-20 mA (2-wire) Intrinsically safe	
Internal Amplifier Enhancements		3a. Input/ Output Isolation 3d. Remote Buffered Shunt Cal.	
Pressure Ports (note 6)	5b. 1/4-18 NPT Male (10 to 1500 psi) 5a. 1/4-18 NPT Female (2000 to 7500 psi) 5d. 7/16-20 UNF Male 5g. G 1/4 Male	5t. G 1/2 Male	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250° F) 6f. Integral cable: PVC (-20° to 160°F) 6i. Integral underwater cable (max. 180°F) (note 5) 6e. Integral cable: Teflon (0° top 180°F)	6g. Integral cable: Neoprene (0° to 180°F) (note 5) 6h. Integral cable: Silicone (-65° to 300°F) 6m. DIN 43650 6q. Molded integral cable: Polyurethane (max. 180°F) (note 5) 6t. Integral cable with Heyco Spring Strain relief (5ft.)	
Shunt Calibration	8a. Precision Internal Resistor (note 7)		
Special Calibration (note 6)	9a. 10 point (5 up/5 down) 20% increments @ 70°F (gage) 9b. 20 point (10 up/10 down) 10% increments @ 70°F (gage)		
Bridge Resistance (note 6)		12a. 1,000 Ohms (foil) (max. 400°F) 12b. 5,000 Ohms (foil) (max. 400°F)	
Potentiometers	14a. No access to pots 14b. Top access to pots		
Shock & Vibration		44a. Shock & vibration resistance	
Interfaces	53e. Signature Calibration (note 6) 53t. T.E.D.S. IEEE1451.4 Module (note 11)		

 Supplied as standard

Special Customer Requirements (Consult Factory)

Case pressure
Different cable lengths
Different electrical connectors
Different materials
Electro-static discharge immunity
Fatigue rating
Lightning protection
O₂ Clean
OEM labels
Special electrical output
Special ports
Special wiring codes
Temperature & pressure calibration

Notes

- Gage pressure units greater than 500 psi are sealed at atmospheric pressure
- Input power (voltage) for internal amplifier options 2j, 2k, 2n (2N) depends on load resistance.
- Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
- Not available with temperatures below -20°F or above 185°F.
- Not available with option 1c, 1e, 1f, 1g, 1h or 1i.
- Availability varies according to range.
- Cannot be used with amplified option.
- G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector.
- No mating connector necessary with cable option.
- Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
- Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

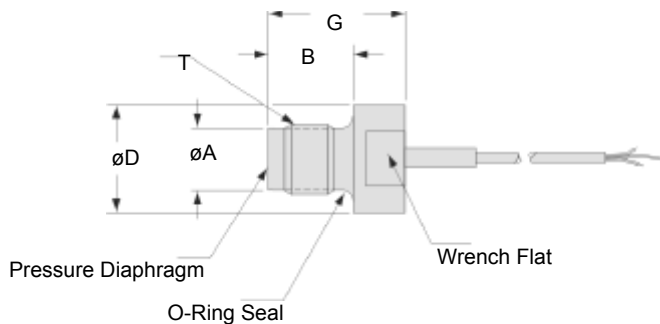
1-888-282-9891

www.honeywell.com/sensotec

Model S Subminiature, Flush Diaphragm Pressure Transducers

Order Code BP357; BP358 (note 1)

- 100 to 15,000 psi Range
- Flush Mount Design
- High Frequency
- mV/V Output
- 1% Accuracy



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Order Code	T (thread)	ø A (in.)	ø D (in.)	B (in.)	G (in.)	Diaphragm
BP357	3/8-24 UNF	0.310	0.50	0.45	0.69	Welded
BP358	7/16-20 UNF	0.375	0.56	0.50	0.75	Welded

Performance

Pressure Ranges	..
3/8-24 UNF Thread	100; 150; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500; 10,000; 15,000 psig
7/16-20 UNF Thread	150; 300; 750; 1500; 7500; 15,000 psig
Accuracy (note 2)	1.0% Full Scale (note 6)
Non-Linearity and Hysteresis	1.0% Full Scale (note 2)
Non-Repeatability	+/-0.15% Full Scale
Output	2 mV/V (note 6)
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 300°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	0.01% Full scale/ °F (note 6)
Span	0.02% Reading/ °F (note 6)

Electrical

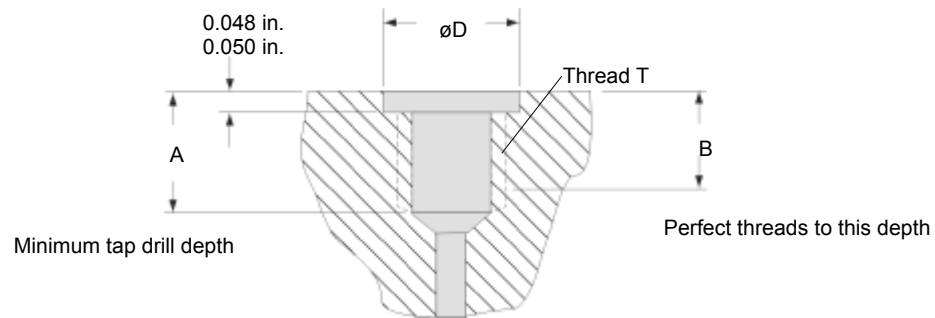
Strain Gage Type	Bonded Foil
Excitation (calibration)	5 VDC
Excitation (acceptable)	Up to 5VDC (or AC)
Insulation Resistance	5000 Megohm @ 50 VDC
Bridge Resistance	350 Ohms
Shunt Calibration Data	Included
Electrical Termination (std)	4 twisted leads (5 ft.) with external balance board

Mechanical

Media	Gases, Liquids compatible with wetted parts
Overload-Safe	50% over capacity
Overload-Burst	400% Full Scale
Dead Volume	Flush
Wetted Parts Material	17-4 PH Stainless Steel
Weight	2 oz.
Case Material	Stainless Steel

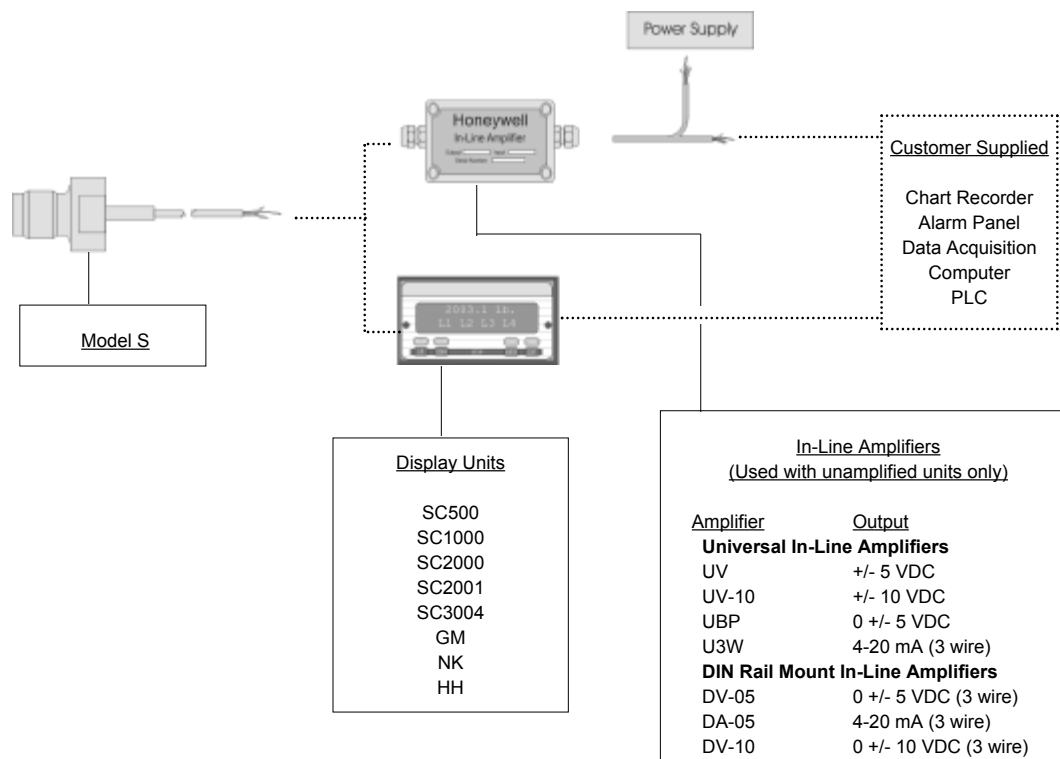
Model S

Installation (note 3)



T	A (in.) (note 5)	B (in.)	D (in.) +.000/- .002"	O-Ring	Max. Torque (for 17-4 PH only)
3/8-24 UNF	0.47	0.30	0.445	#11	300 in.-lb.
7/16-20 UNF	0.54	0.36	0.504	#12	500 in.-lb.

Typical System Diagram



Model S

Options

	Same Day Ship (BP357 only)	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	200; 500; 1000; 2000; 3000; 5000; 10,000 psig	100; 150; 300; 750; 1500; 7500 psig		15,000 psig
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1i. -65° to 250° F	1g. 70° to 325° F 1h. 70° to 400° F	
Internal Amplifiers	2u. Unamplified, mV/V output			
Pressure Ports	3/8-24 UNF		7/16 -20 UNF (BP358)	
Electrical Termination	4 Twisted Leads (5 ft.)	6d. Microtec DR-4S-4H 4 pin (max. 250° F) (note 4) 6i. Integral underwater cable (max. 180° F) (note 4)	6e. Integral cable: Teflon 6h. Integral cable: Silicone	
Special Calibration		9a. 10 point (5 up/ 5 down) 20% increments @ 70°F 9b. 20 point (10 up/ 10 down) 10% increments @ 70°F		
Wetted Diaphragm				10c. Hastelloy C 10e. Inconel X-750
Shock & Vibration		44a. Shock and Vibration Resistance		

Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
100 psig	BR	1,500 psig	DJ
150 psig	CJ	2,000 psig	DL
200 psig	CL	3,000 psig	DN
300 psig	CP	5,000 psig	DR
500 psig	CR	7,500 psig	DT
750 psig	CT	10,000 psig	DV
1,000 psig	CV	15,000 psig	EJ

Notes

- Order Code subject to change with varying thread, range and electrical termination
- Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
- Standard "S" type transducers have straight threads and use an O-ring for pressure sealing. To get the best seal with the O-ring on the transducer, the tapped hole should have the dimensions shown on previous page. For normal operating temperatures (-65° to 250° F) use BUNA-N (black) O-rings. For high temperatures (250° to 400° F) use silicone (red).
- Only available on certain models, consult factory.
- "A" dimension changes with different thread options. Consult factory for specifications for different thread options.
- Consult factory for specifications for ranges less than 100 psi.

Special Customer Requirements (Consult Factory)

Different electrical termination
 Different materials
 Different threads
 O ring material
 O₂ Clean
 Radiation proof
 Special temperature compensation
 Temperature and pressure calibration

How to Order

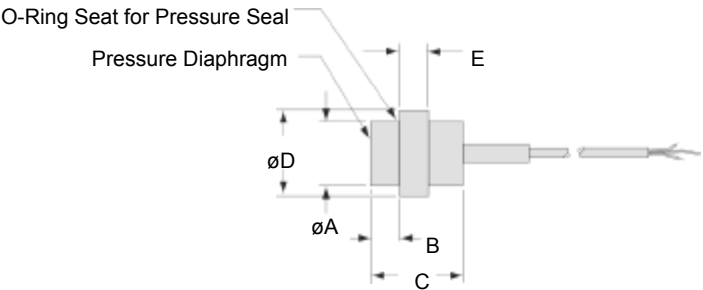
Combine the order code, the range code and the options code.

Sample Code: **BP357** **DN** **1c**
 Order Code Range Code Options Code

Model G Subminiature, Flush Diaphragm Pressure Transducer

Order Code BP386; BP387

- 10 to 20,000 psig Range
- Flush Mount Design
- High Frequency
- mV/V Output
- Sub-miniature Footprint
- 1% Accuracy



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Order Code	Range (psig)	ϕA (in.)	B (in.)	C (in.)	ϕD (in.)	E (in.)	Diaphragm
BP386	150 to 15,000	0.310	0.15	0.47	0.44	0.15	Welded
BP387	150 to 20,000	0.375	0.15	0.47	0.50	0.15	Welded

Performance

Pressure Ranges.....	150; 200; 250; 300; 400; 500; 600; 750; 1000; 1500; 2000; 2500; 3000; 4000; 5000; 6000; 7500; 10,000; 15,000; 20,000 psig
Accuracy (note 1).....	1.0% Full Scale
Linearity.....	+/-1.0% Full Scale
Hysteresis.....	+/-1.0% Full Scale
Non-Repeatability.....	+/-0.1% Full Scale
Output.....	2 mV/V
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 300°F
Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	0.01% Full scale/ °F
Span.....	0.02% Reading/ °F

Model G

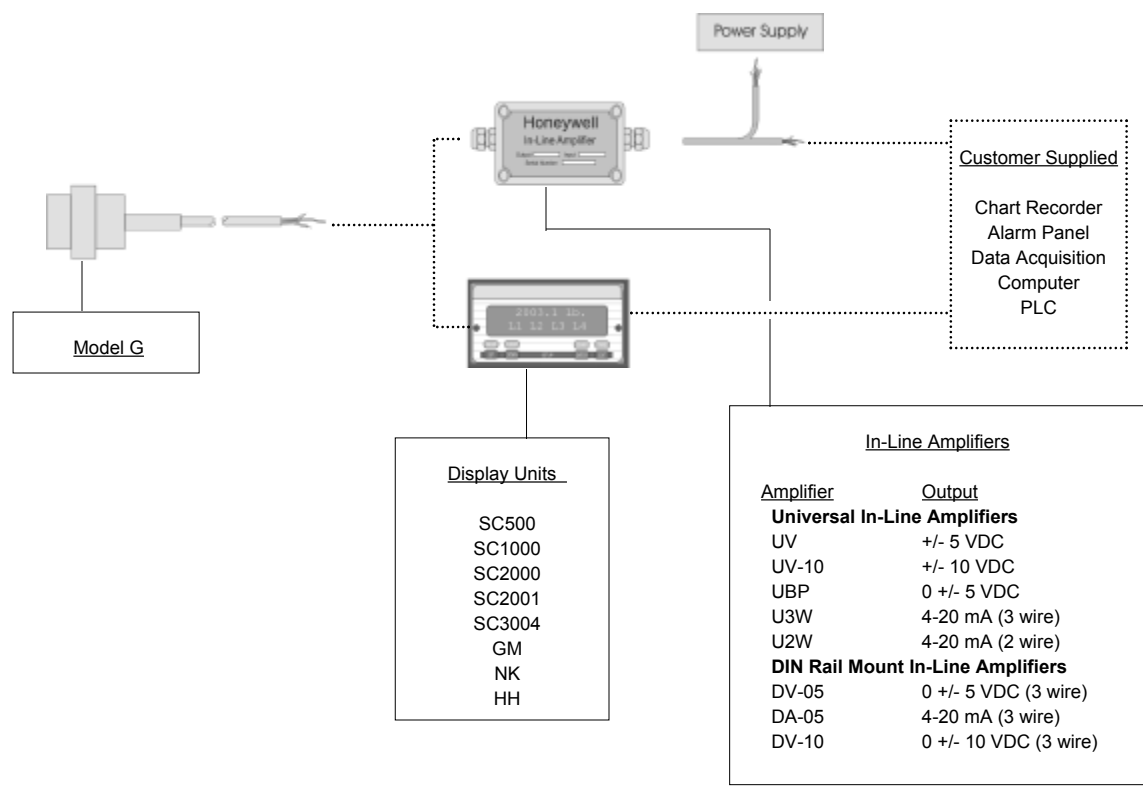
Electrical

Strain Gage Type.....	Bonded foil
Excitation (calibration).....	5 VDC
Bridge Resistance.....	350 Ohms
Shunt Calibration Data.....	Included
Electrical Termination (std).....	4 twisted leads (5 ft.) with external balance board
Proof Pressure.....	Not Applicable

Mechanical

Media.....	Gases, Liquids compatible with wetted material
Overload-Safe.....	50% over capacity
Wetted Parts Material.....	17-4 PH Stainless Steel
Case Material.....	Stainless Steel

Typical System Diagram



Model G

Options

	Built to Order	Built from Scratch
Pressure Ranges	150; 200; 250; 300; 400; 500; 600; 750; 1000; 1500; 2000; 2500; 3000; 4000; 5000; 6000; 7500; 10,000 psig	15,000; 20,000 psig
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1f. 70° to 250° F 1d. -20° to 130° F 1e. -20° to 200° F 1g. 70° to 325° F 1i. -65° to 250° F	
Internal Amplifiers	2u. Unamplified, mV/V Output	
Electrical Termination	4 Twisted Leads (5 ft.) 6d. Microtec DR-4S-4H 4 pin (max. 250° F) (note 2)	

 Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
150 psig	CJ	2,000 psig	DL
200 psig	CL	2,500 psig	DM
250 psig	CN	3,000 psig	DN
300 psig	CP	5,000 psig	DR
400 psig	CQ	6,000 psig	DS
500 psig	CR	7,500 psig	DT
600 psig	CS	10,000 psig	DV
750 psig	CT	15,000 psig	EJ
1,000 psig	CV	20,000 psig	EL
1,500 psig	DJ		

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
2. Only available on certain models, consult factory.

Special Customer Requirements (Consult Factory)

Extended temperature ranges
Different electrical connectors
Different materials
O ring material
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration
Low Pressure Ranges

How to Order

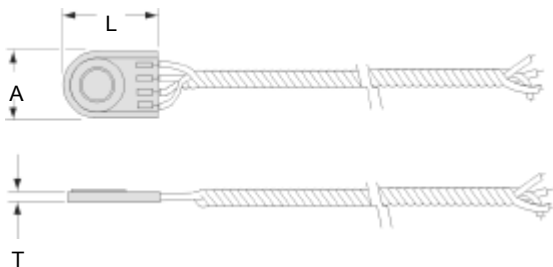
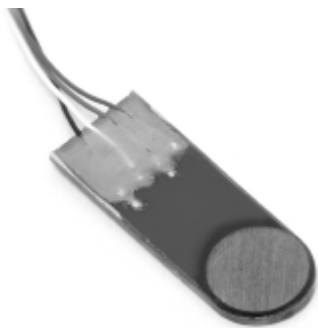
Combine the order code, the range code and the options code.

Sample Code: **BP386** **CN** **1c**
Order Code Range Code Options Code

Model F Subminiature Low Profile Pressure Transducer (note 3)

Order Code (see table below)

- 10 to 3000 psig Range
- mV/V Output
- Low Profile Design
- Sub-miniature Footprint
- High Frequency
- 1% Accuracy



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Order Code	Foil/ Semicond.	Range (psig)	A (in.)	T (in.)	L (in.)
BP340	Foil	150-500	0.275	0.042*	0.38
BP341	Foil	150-3000	0.320	0.042*	0.50
BP342	Foil	150-3000	0.425	0.060	0.56
BP343	Semiconductor	15-500	0.150	0.042	0.38
BP344	Semiconductor	10-500	0.275	0.042	0.38
BP345	Semiconductor	10-3000	0.320	0.042	0.50
BP346	Semiconductor	10-3000	0.425	0.060	0.56

* Nominal

Performance

Pressure Ranges.....	10; 15; 25; 30; 50; 75; 100; 150; 200; 250; 300; 400; 500; 600; 750; 1000; 1500; 2000; 2500; 3000 psig (note 2)
Accuracy (note 1).....	1.0% Full Scale
Linearity	
10 to 100 psig.....	+/-0.5 mV
150 to 3000 psig.....	+/-1.0% Full Scale
Hysteresis	
10 to 100 psig.....	+/-0.5 mV
150 to 3000 psig.....	+/-1.0% Full Scale
Non-Repeatability	
10 to 100 psig.....	+/-0.1 mV
150 to 3000 psig.....	+/-0.1% Full Scale
Output	
10 to 100 psig.....	2-5 mV/psi (@5 VDC)
150 to 3000 psig.....	2 mV/V
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 300°F (-20° to 250°F for semiconductor strain gage)
Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero	
10 to 100 psig.....	0.02 mV/°F
150 to 3000 psig.....	0.01% Full scale/ °F
Span	
10 to 100 psig.....	0.03 mV/°F
150 to 3000 psig.....	0.02% Reading/ °F

Model F

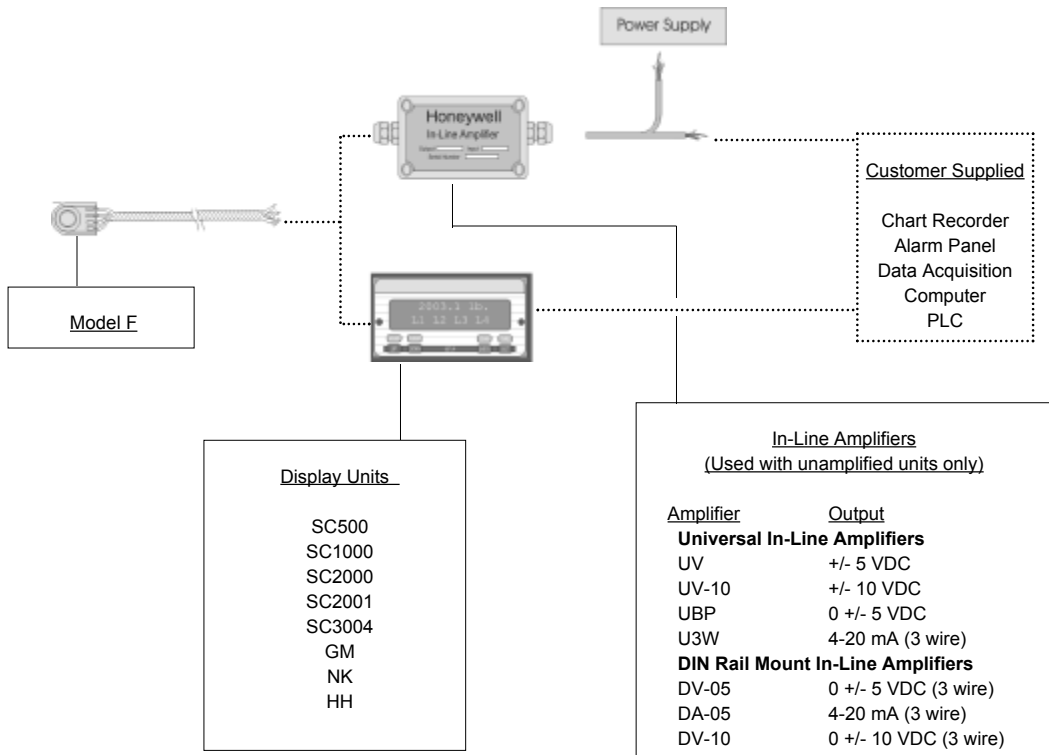
Electrical

Strain Gage Type	
10 to 100 psig.....	Bonded semiconductor
150 to 3000 psig.....	Bonded foil
Excitation (calibration).....	5 VDC
Bridge Resistance	
10 to 100 psig.....	500 Ohms
150 to 3000 psig.....	350 Ohms
Shunt Calibration Data.....	Included
Electrical Termination (std).....	4 twisted leads (5 ft.) with external balance board
Proof Pressure.....	Not Applicable

Mechanical

Media.....	Gas, Liquid
Overload-Safe	
10 to 100 psig.....	100% over capacity
150 to 3000 psig.....	50% over capacity
Wetted Parts Material	
10 to 100 psig.....	17-4 PH Stainless Steel or BeCu
150 to 3000 psig.....	17-4 PH Stainless Steel
Case Material.....	Stainless Steel

Typical System Diagram



Model F

Options

	Built from Scratch
Pressure Ranges	10; 15; 25; 30; 50; 75; 100; 150; 200; 250; 300; 400; 500; 600; 750; 1000; 1500; 2000; 2500; 3000 psig
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1f. 70° to 250° F 1d. -20° to 130° F 1e. -20° to 200° F 1g. 70° to 325° F (note 4) 1i. -65° to 250° F (note 4)
Internal Amplifiers	2u. Unamplified, mV/V Output
Electrical Termination	4 Twisted Leads (5 ft.)

Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
10 psig	AV	300 psig	CP
15 psig	BJ	400 psig	CQ
25 psig	BL	500 psig	CR
30 psig	BM	600 psig	CS
50 psig	BN	750 psig	CT
75 psig	BP	1,000 psig	CV
100 psig	BR	1,500 psig	DJ
150 psig	CJ	2,000 psig	DL
200 psig	CL	2,500 psig	DM
250 psig	CN	3,000 psig	DN

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
2. Low pressure ranges (10 to 100 psig) - Semiconductor gages (500 Ohms)
High pressure ranges (150 to 3000 psig) - Foil gages (350 Ohms)
3. All model F's have a cemented diaphragm.
4. Only available with foil strain gage.

Special Customer Requirements (Consult Factory)

Different materials
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP343** **BN** **1c**
Order Code Range Code Options Code

1-888-282-9891

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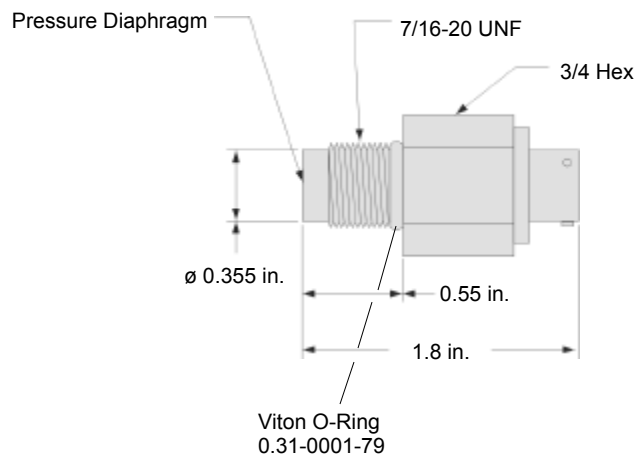
Model A-105 Flush Diaphragm Pressure Transducer

Order Code AP311

- 100 to 15,000 psig
- Flush Mount Design
- Miniature Footprint
- Stainless Steel



Dimensions



Wiring Code

Connector/ Unamplified

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	100; 150; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500; 10,000; 15,000 psig
Accuracy (note 6)	0.5% Full Scale
Non-Linearity and Hysteresis	+/-0.5% Full Scale
Non-Repeatability	+/-0.1% Full Scale
Output	2 mV/V nominal
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 300°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	0.01% Full scale/ °F
Span	0.02% Reading/ °F

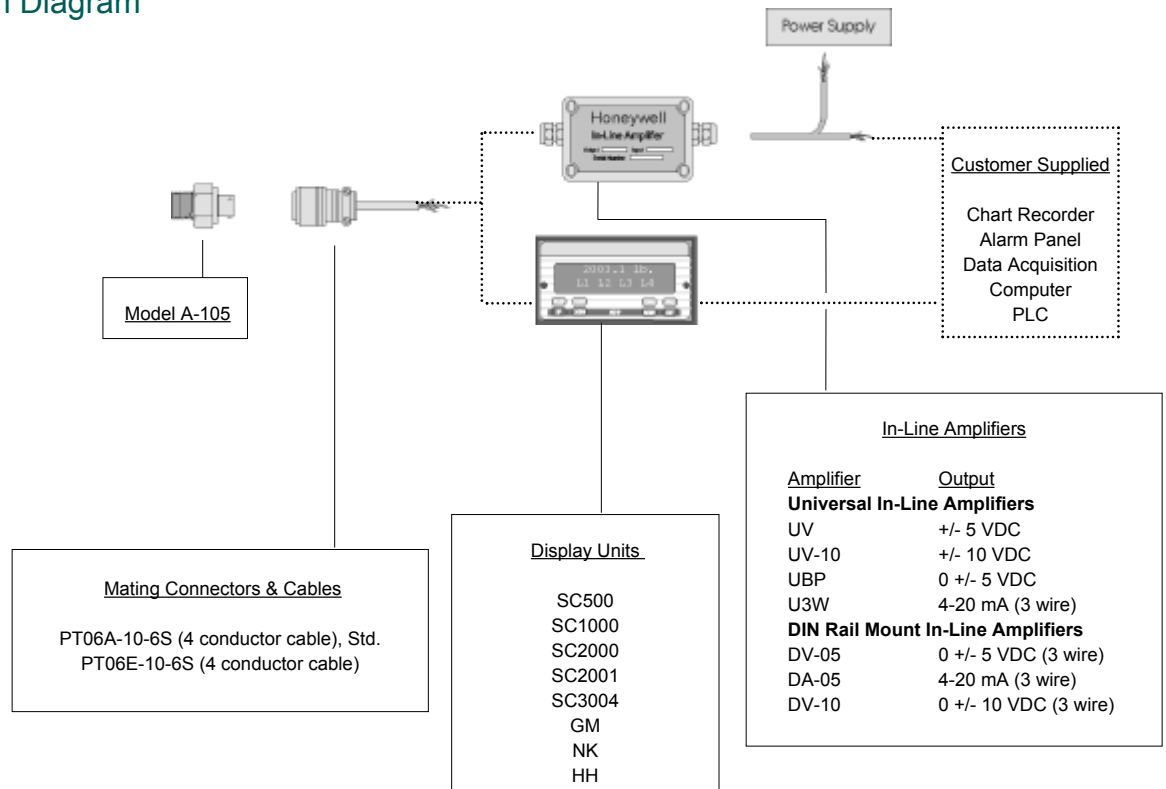
Electrical

Strain Gage Type	Bonded foil
Excitation (calibration)	5 VDC
Excitation (acceptable)	Up to 5 VDC or AC
Insulation Resistance	5000 Megohms @50 VDC
Bridge Resistance	350 Ohms
Shunt Calibration Data	Included
Electrical Termination (std)	PTIH-10-6P or equivalent (Hermetic)
Mating Connector (not incl.)	PT06-10-6S or equivalent (AA111)

Mechanical

Media	Gases, Liquids compatible with wetted parts
Overload-Safe	50% over capacity
Proof Pressure	400% (Max. 25 kpsi)
Dead Volume	Flush Diaphragm
Wetted Parts Material	17-4 PH Stainless Steel
Weight	2 oz
Case Material	Stainless Steel

Typical System Diagram



Options

	Same Day Ship	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	200; 500; 1000; 2000; 3000; 5000; 10,000 psig	150; 300; 750; 1500; 7500 psig	100 psig	15,000 psig
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1i. -65° to 250° F	1g. 70° to 325° F 1h. 70° to 400° F	
Internal Amplifiers	2u. Unamplified, mV/V output			
Pressure Ports	5d. 7/16-20 UNF Male	5p. M12 x 1.5 Male		
Electrical Termination	6a. Bendix PTIH-10-6P-(or equiv.) 6 pin (max. 250°F)		6e. Integral cable: Teflon (-65° to 475°F) 6h. Integral cable: Silicone (-65° to 300°F) 6i. Integral underwater cable (max. 180°F) (note 1) 6v. Phoenix connector on end of cable	
Special Calibration (note 3)		9a. 10 point (5 up/ 5 down) 20% increments @ 70°F (note 3) 9b. 20 point (10 up/ 10 down) 10% increments @ 70°F (note 3)		
Wetted Diaphragm				10c. Hastelloy C 10e. Inconel X-750
Shock & Vibration		44a. Shock and vibration resistance		

Supplied as standard

Model A105

Range Codes

Range	Range Code
100 psi	BR
150 psi	CJ
200 psi	CL
300 psi	CP
500 psi	CR
750 psi	CT
1,000 psi	CV
1,500 psi	DJ
2,000 psi	DL
3,000 psi	DN
5,000 psi	DR
7,500 psi	DT
10,000 psi	DV
15,000 psi	EJ

Notes

1. Not available with option 1c.
2. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
3. Availability varies with range.
4. No mating connector necessary with cable option.
5. Not available with temperatures below -20°F or above 185°F.
6. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.

Special Customer Requirements (Consult Factory)

Different electrical connectors
Different materials
Different threads
O ring material
O₂ Clean
Extended temperature ranges
Radiation proof
Special temperature compensation
Temperature and pressure calibration

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AP311** **BJ** **1b**
Order Code Range Code Options Code

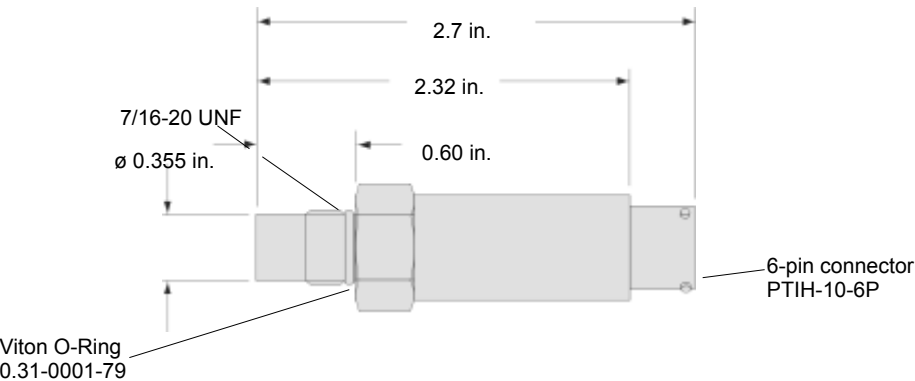
Model A-105a Flush Diaphragm, High Level Output Pressure Transducer

Order Code (see below)

- Flush Diaphragm
- Fully Welded Construction
- Stainless Steel



Dimensions



Order Codes

Mounting Threads		Output		
		4-20 mA	1-5 VDC	1-10 VDC
7/16-20 UNF	AP313	AP314	AP315	
M12 x 1.75-6G	AP316	AP317	AP318	

Performance

Pressure Ranges.....500; 1000; 2000; 3000; 5000; 10,000 psi
Accuracy.....+/-0.5% F.S.
Output.....4-20 mA @ 9-28 VDC
 ..1-5 or 1-10 VDC @ 16-28 VDC
Resolution.....Infinite

Environmental

Temperature, Operating.....-20° to 185°F
Temperature, Compensated.....30° to 160°F
Temperature, Effect
Zero.....0.015% Full scale/ °F
Span.....0.02% Reading/ °F

Electrical

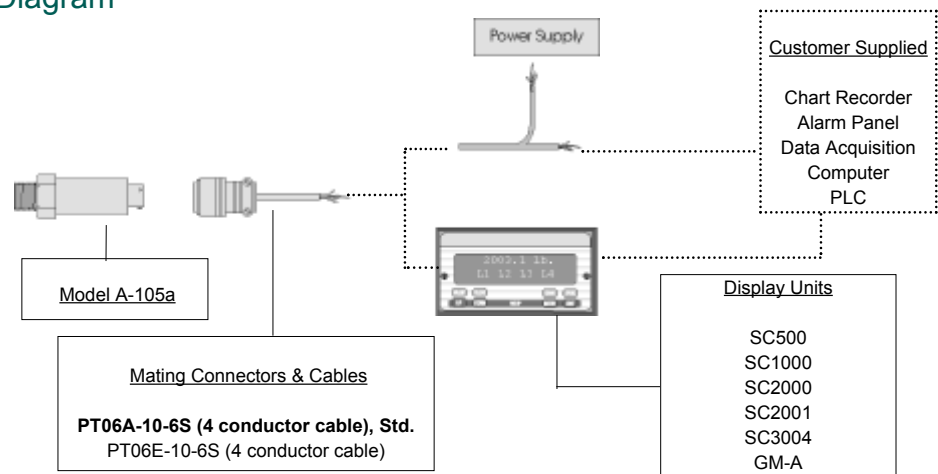
Electrical Termination (std).....PTIH-10-6P or equivalent
Mating Connector (not incl.).....AA111 (PT06A-10-6S)

Mechanical

Media.....Gases, Liquids compatible with wetted material
Overload-Safe.....200% over capacity
Overload-Burst.....500% over capacity to a max of 25,000 psi
Pressure Port.....7/16-20 UNF
Wetted Parts Material.....17-4 PH Welded Stainless Steel

Model A-105a

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Vehicle Voltage Output 2c	Vehicle Voltage Output 2t	Current 2 Wire Option 2k
Output Signal	1-5V @ 10mA	1-10V @ 10mA	4-20 mA
Input Power (Voltage)	16-28 VDC	16-28 VDC	9-28 VDC
Input Power (Current)	40 mA	40 mA	4-28 mA
Frequency Response	200 Hz	200 Hz	300 Hz
Power Supply Rejection	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	0° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Yes
Wiring Code: Connector	A (+) Supply B**Output Common/ C**Supply Return D (+) Output E No Connection F No Connection	A (+) Supply B**Output Common/ C**Supply Return D (+) Output E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

**Pins B & C are internally connected.

Range Codes

Range	Range Code
500 psi	CR
1000 psi	CV
2000 psi	DL
3000 psi	DN
5000 psi	DR
10,000 psi	DV

Options

	Build to Order
Pressure Ranges	500; 1000; 2000; 3000; 5000; 10,000 psi
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1j. 0° to 50° C 1k. -20° to 85° C
Internal Amplifiers	2k. 4-20mA (2-wire) output 2c. 1-5VDC 2t. 1-10 VDC output
Pressure Ports	5d. 7/16" - 20 UNF Male (per MS3365E4) 5p. M12 x 1.5
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 120° C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6h. Integral cable: Silicon (-54° to 150° C) 6i. Integral underwater cable (max 80° C) 6v. Phoenix connector on end of cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C

Supplied as standard

Special Customer Requirements
(Consult Factory)

Custom Pressure Ranges

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AP315** **DN** **2t**
Model Code Range Code Options Code

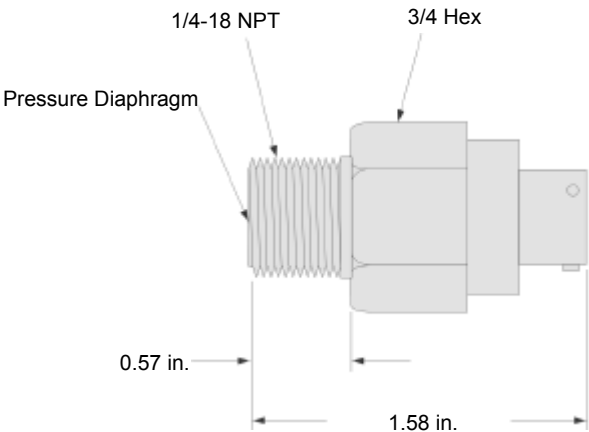
Model A-205 Flush Diaphragm Pressure Transducer

Order Code BP312

- Unitized Flush Diaphragm
- 100 to 10,000 psig
- Stainless Steel



Dimensions



Wiring Code

Connector/ Unamplified

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges (note 3)	100; 150; 200; 300; 500; 750; 1,000; 1,500; 2,000; 3,000; 5,000; 7,500; 10,000 psig/a
Accuracy (note 2)	0.5% Full Scale
Non-Linearity and Hysteresis	+/-0.5% Full Scale (note 3)
Non-Repeatability	+/-0.1% Full Scale (note 3)
Output	2 mV/V
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 300°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	0.01 Full Scale/°F (note 3)
Span	0.02% Reading/ °F (note 3)

Electrical

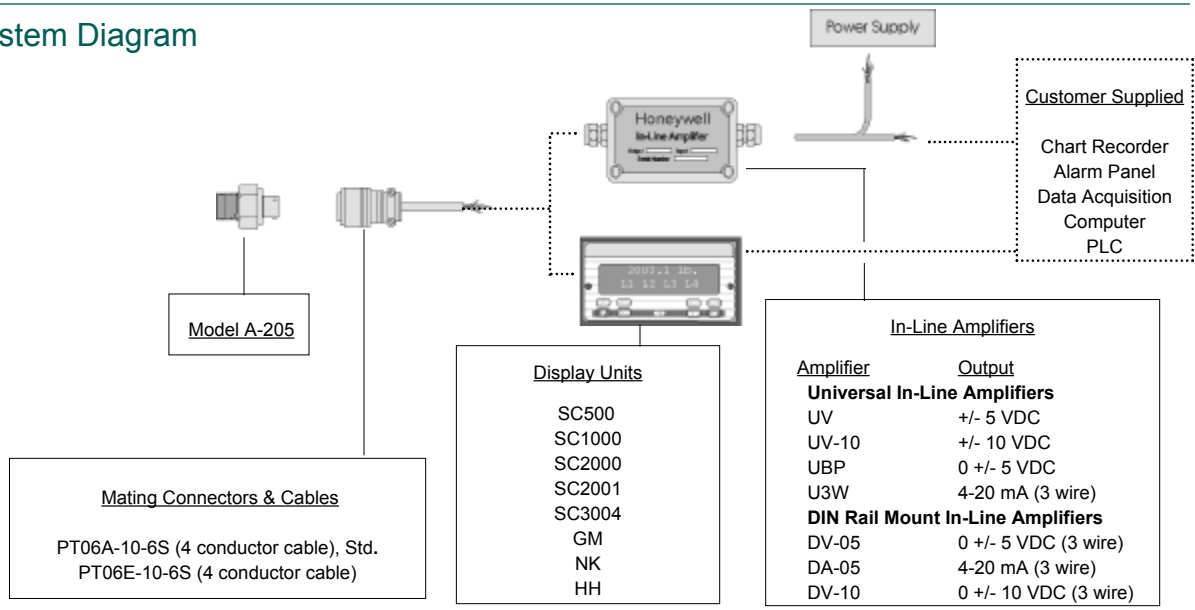
Strain Gage Type	Bonded foil
Excitation (calibration)	5 VDC
Excitation (acceptable)	Up to 5 VDC or AC
Insulation Resistance	5000 Megohms @50 VDC
Bridge Resistance	350 Ohms
Shunt Calibration Data	Included
Electrical Termination (std)	PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.)	PT06-10-6S or equivalent (AA111)

Mechanical

Media	Gases, Liquids compatible with wetted parts
Overload-Safe	50% over capacity
Proof Pressure	400% Full Scale (Max. 20,000 psi)
Dead Volume	Flush Diaphragm (Consult factory for charged volume)
Wetted Parts Material	17-4 PH Stainless Steel
Weight	2 oz.
Case Material	Stainless Steel

Model A205

Typical System Diagram



Options

	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	150; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500; 10,000 psi	100 psi	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1i. -65° to 250° F	1g. 70° to 325° F 1h. 70° to 400° F	
Internal Amplifiers	2u. Unamplified, mV/V output		
Pressure Ports	5b. 1/4-18 NPT Male		
Electrical Termination	6a. Bendix PTIH-10-6P-(or equiv.) 6 pin (max. 400°F) 6i. Integral underwater cable (max. 180° F) (note 1)	6e. Integral cable: Teflon (-65° to 475°F) 6h. Integral cable: Silicone (-65° to 300°F) 6v. Phoenix connector on end of cable	
Special Calibration	9a. 10 point (5 up/ 5 down) 20% increments @ 70°F (note 4) 9b. 20 point (10 up/ 10 down) 10% increments @ 70°F (note 4)		
Wetted Diaphragm			10c. Hastelloy C 10e. Inconel X-750
Shock & Vibration	44a. Shock and vibration resistance		

Supplied as standard

Range Codes	Range	Range Code	Range	Range Code
	100 psi	BR	1,500 psi	DJ
	150 psi	CJ	2,000 psi	DL
	200 psi	CL	3,000 psi	DN
	300 psi	CP	5,000 psi	DR
	500 psi	CR	7,500 psi	DT
	750 psi	CT	10,000 psi	DV
	1,000 psi	CV		

Special Customer Requirements (Consult Factory)

Different electrical connectors
Different materials
Different threads
O₂ Clean
Extended temperature ranges
Radiation proof
Special temperature compensation
Temperature and pressure calibration

Notes

- Not available with option 1e, 1f, 1g, 1h or 1i.
- Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
- For ranges less than 100 psi, consult factory for specifications.
- Not available for all ranges.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP312** **BJ** **1b**
Order Code Range Code Options Code

1-888-282-9891

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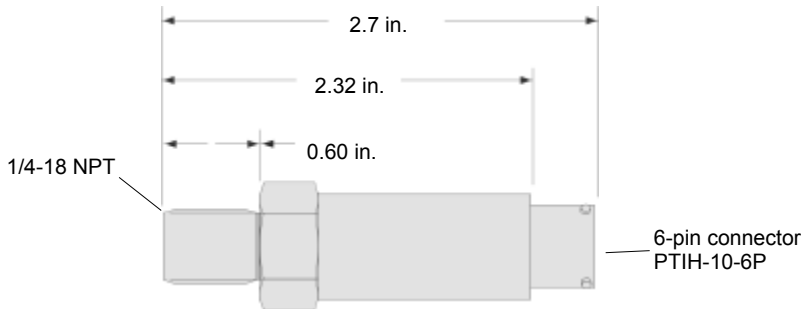
Model A-205a Flush Diaphragm, High Level Output Pressure Transducer

Order Code (see below)

- Flush Diaphragm
- Fully Welded Construction
- Metric or English Threads



Dimensions



Order Codes

Output		
4-20 mA	1-5 VDC	1-10 VDC
BP314	BP315	BP316

Performance

Pressure Ranges.....300; 500; 750; 1000; 1500; 2000; 3000; 5000;
.....7500; 10,000 psi
Accuracy.....+/-0.5% F.S.
Output.....4-20 mA @ 9-28 VDC
.....1-5 or 1-10 VDC @ 16-28 VDC
Resolution.....Infinite

Environmental

Temperature, Operating.....-20° to 180°F
Temperature, Compensated.....30° to 160°F
Temperature, Effect
Zero.....0.015% Full scale/ °F
Span.....0.02% Reading/ °F

Electrical

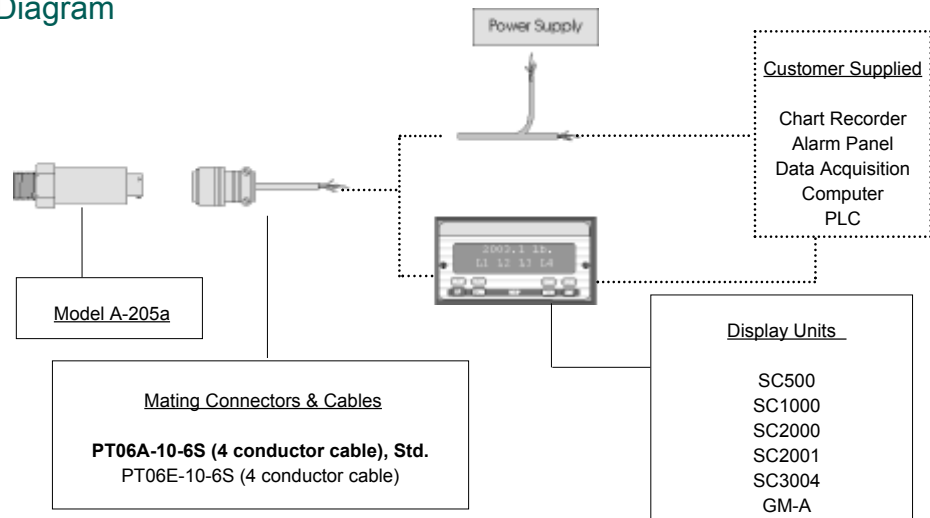
Electrical Termination (std).....PTIH-10-6P or equivalent
Mating Connector (not incl.).....AA111 (PT06A-10-6S)

Mechanical

Media.....Gases, Liquids compatible with wetted material
Overload-Safe.....200% over capacity
Overload-Burst.....500% over capacity to a max of 20,000 psi
Pressure Port.....1/4-18 NPT
Wetted Parts Material.....17-4 PH Welded Stainless Steel
Dead Volume.....Flush Diaphragm (consult factory for charged volume)

Model A-205a

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Vehicle Voltage Output 2c	Vehicle Voltage Output 2t	Current 2 Wire Option 2k
Output Signal	1-5V @ 10mA	1-10V @ 10mA	4-20 mA
Input Power (Voltage)	16-28 VDC	16-28 VDC	9-28 VDC
Input Power (Current)	40 mA	40 mA	4-28 mA
Frequency Response	200 Hz	200 Hz	300 Hz
Power Supply Rejection	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	0° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Yes
Wiring Code: Connector	A (+) Supply B**Output Common/ C**Supply Return D (+) Output E No Connection F No Connection	A (+) Supply B**Output Common/ C**Supply Return D (+) Output E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

**Pins B & C are internally connected.

Range Codes

Range	Range Code
300 psi	CP
500 psi	CR
750 psi	CT
1000 psi	CV
1500 psi	DJ
2000 psi	DL
3000 psi	DN
5000 psi	DR
7500 psi	DT
10,000 psi	DV

Options

	Build to Order	Build From Scratch
Pressure Ranges	500; 1000; 2000; 3000; 5000; 10,000 psi	300; 750; 1500; 7500 psi
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1j. 0° to 50° C 1k. -20° to 85° C	
Internal Amplifiers	2k. 4-20mA (2-wire) output 2c. 1-5VDC 2t. 1-10 VDC output	
Pressure Ports	5b. 1/4-18 NPT	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 120° C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6h. Integral cable: Silicon (-54° to 150° C) 6i. Integral underwater cable (max 80° C) 6v. Phoenix connector on end of cable	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	

Supplied as standard

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BP315** **DN** **2t**
Model Code Range Code Options Code

1-888-282-9891

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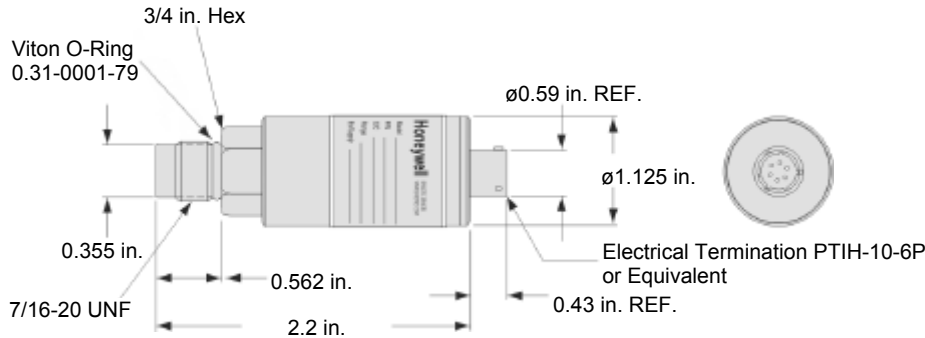
Model 355 Flush Diaphragm Pressure Transducers

Order Code BP313

- 0-500 to 0-5000 psi
- Flush Diaphragm
- High Level Output
- +/-0.25% Accuracy



Dimensions



Performance

Pressure Ranges.....	0-500 psi to 0-5000 psi
Accuracy.....	+/- 0.25% (note 7)
Non-Linearity.....	0.5%
Non-Repeatability.....	0.1%
Output.....	4-20 mA (std.)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-20° to 185°F
Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	0.01% Full scale/ °F
Span.....	0.02% Reading/ °F

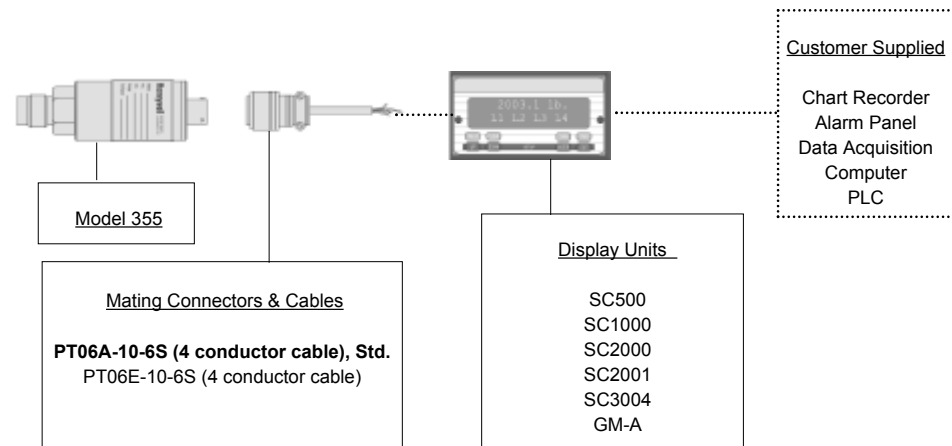
Electrical

Excitation (calibration)	
4-20 mA, 2 wire (std.).....	9-32 VDC
0-5 VDC, 3 wire (option 2c).....	9-28 VDC
Insulation Resistance.....	50 Megohms @ 50 V
Electrical Termination (std.).....	PTIH-10-6P
Mating Connector (not incl.).....	PT06A-10-6S

Mechanical

Media.....	Gas, Liquid compatible with 17-4 PH SS
Overload-Safe.....	300% over capacity
Overload-Burst.....	500% over capacity or 20,000 psi, whichever is less
Pressure Port.....	7/16-20 UNF
Wetted Parts Material.....	17-4 PH Stainless Steel
Case Material.....	Stainless Steel

Typical System Diagram

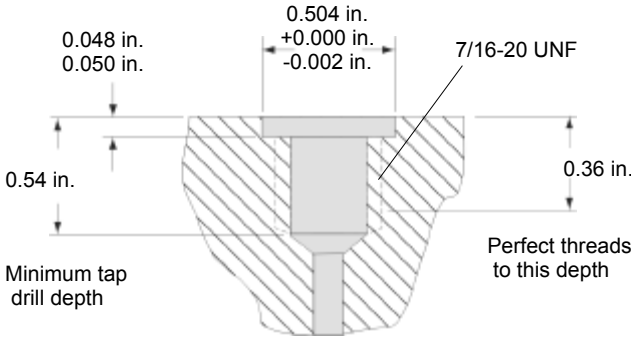


Internal Amplifiers

Amplifier Specifications	Vehicle Voltage Output Option 2c	Current 2 Wire Option 2k	Intrinsically Safe Amp Option 2N (2n)***
Output Signal	0-5VDC@ 45mA	4-20 mA	4-20 mA
Input Power (Voltage)	11-28 VDC	9-28 VDC (note 3)	9-28 VDC (note 3)
Input Power (Current)	40 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes
Short Circuit Protection	Momentary	Yes	Yes
Wiring Code: Connector (Std.) (note 3)	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 3) (note 5) (note 6)	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B No Connection Br No Connection	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.
** Pins B and C are internally connected.
*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Installation



MOUNTING: The Model 355 has straight threads and uses a #12 O-ring for pressure sealing. To get the best seal with the O-ring on the transducer, the tapped hole should have the dimensions shown here. For normal operating temperatures (-65° to +250°F) use the BUNA-N (black) O-rings. For high temperatures (250° to 425°F) use silicone rubber (red). Maximum torque is 50 in.-lb., 17-4 PH Stainless Steel only.

Options

	Build to Order
Pressure Ranges	500; 1000; 2000; 3000; 5000 psi
Temperature Compensation	1a. 60° to 160° F
	1b. 30° to 130° F
	1c. 0° to 185° F
	1d. -20° to 130° F
	1j. 0° to 50° C
	1k. -20° to 85° C
Internal Amplifiers	2k. 4-20ma (2 wire) output
	2c. 0-5VDC
	2n(2N). 4-20ma (2 wire) output intrinsically safe
Pressure Ports	5p. M12 x 15 Male
	5d. 7/16" - 20 UNF Male (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)
	6e. Integral cable: Teflon (-54° to 245° C)
	6f. Integral cable: PVC (-30° to 70° C)
	6h. Integral cable: Silicone (-54 to 150° C)
	6i. Integral underwater cable (8m) (max 80° C)
	6n. DIN 40050
	6q. Molded Integral Cable: Polyurethane
	6v. Phoenix connector on end of cable
Special Calibration	9e. CE mark
	9a. 10 point (5 up/5 down) 20% increments @ 20° C
	9b. 20 point (10 up/10 down) 10% increments @ 20° C
Interfaces	53e. Signature Calibration
	53t. T.E.D.S. IEEE 1451.4 Module (note 8)

Supplied as standard

Range Codes

Range	Range Code
500 psi	CR
750 psi	CT
1,000 psi	CV
1,500 psi	DJ
2,000 psi	DL
2,500 psi	DM
3,000 psi	DN
5,000 psi	DR

Notes

- Gage pressure units greater than 500 psi are sealed at atmospheric pressure
- Input power (voltage) for internal amplifier options 2j, 2k, 2n,N depends on load resistance.
- Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
- Not available with temperatures below -20°F or above 185°F.
- G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
- No mating connector necessary with cable option.
- Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Different cable lengths
 Different electrical connectors
 Different materials
 Fatigue rating
 O₂ Clean
 Special electrical output
 Special ports
 Special wiring codes
 Special pressure ranges
 Temperature & pressure calibration

How to Order

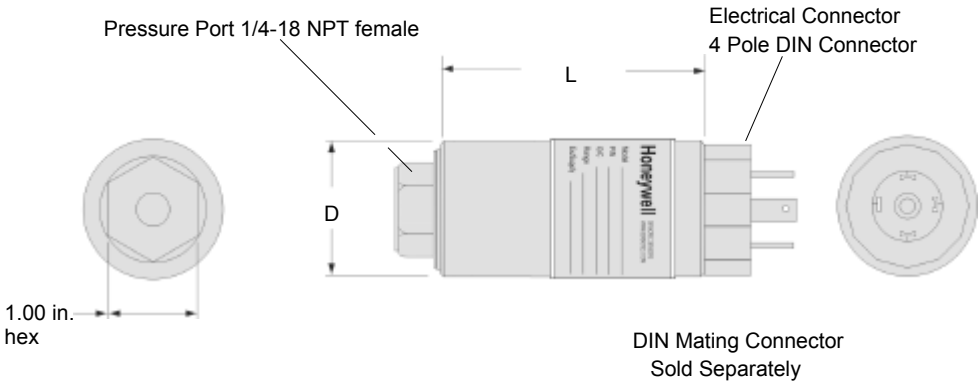
Combine the order code, the range code and the options code.

Sample Code: **BP313** **CS** **2c**
 Order Code Range Code Options Code

Model 440 Two Wire Gage/ Absolute Pressure Transmitters

Order Code AP415 (gage); AP416 (absolute)

- 5 to 10,000 psig/a Range
- 2 wire 4-20 mA Output
- 0.25% Accuracy



Wiring Code

Connector/ 2 Wire Current, 4-20 mA

1	(+) Supply
2	(+) Output
3	No Connection
GND	Case Ground

Dimensions

		Pressure Ranges (psi)																		
		5	10	15	25	50	75	100	150	200	300	500	750	1000	1500	2000	3000	5000	7500	10,000
Range Code		AT	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ	DL	DN	DR	DT	DV
D (in./ mm)		1.50/ 38																		
L (in./ mm)		2.6/ 66									3.3/ 84			3.0/ 76						
Over Pressure (test) (psi)		150% Full Scale																		
Over Pressure (burst) (psi)		20	40	60	100	200	300	400	600	800	2000	3000	3500	4000	8000	12,000	20,000	25,000	25,000	
Port Volume (in. ³ / cm ³)		0.12/ 3.1																		
Natural Frequency (Hz)		1k	1.3k	2.1k	2.5k	2.9k	3.5k	4.6k	6k	7k	9k	9.5k	12k	17k	20k	35k	40k	54k	60k	80k

Performance

Pressure Ranges.....	5; 10; 15; 25; 50; 75; 100; 150; 200; 300; 500; 750; 1,000; ..1,500; 2,000; 2,500; 3,000; 5,000; 7,500; 10,000 psig/a
Accuracy (note 3).....	+/-0.25% Full Scale
Non-Linearity and Hysteresis.....	+/-0.20% Best Fit Straight Line
Non-Repeatability.....	+/-0.20% Best Fit Straight Line
Output.....	4-20 mA
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-20° to 185°F
Temperature, Compensated.....	30° to 130°F
Temperature, Effect	
Zero.....	0.01% Full scale/ °F
Span.....	0.01% Reading/ °F

Electrical

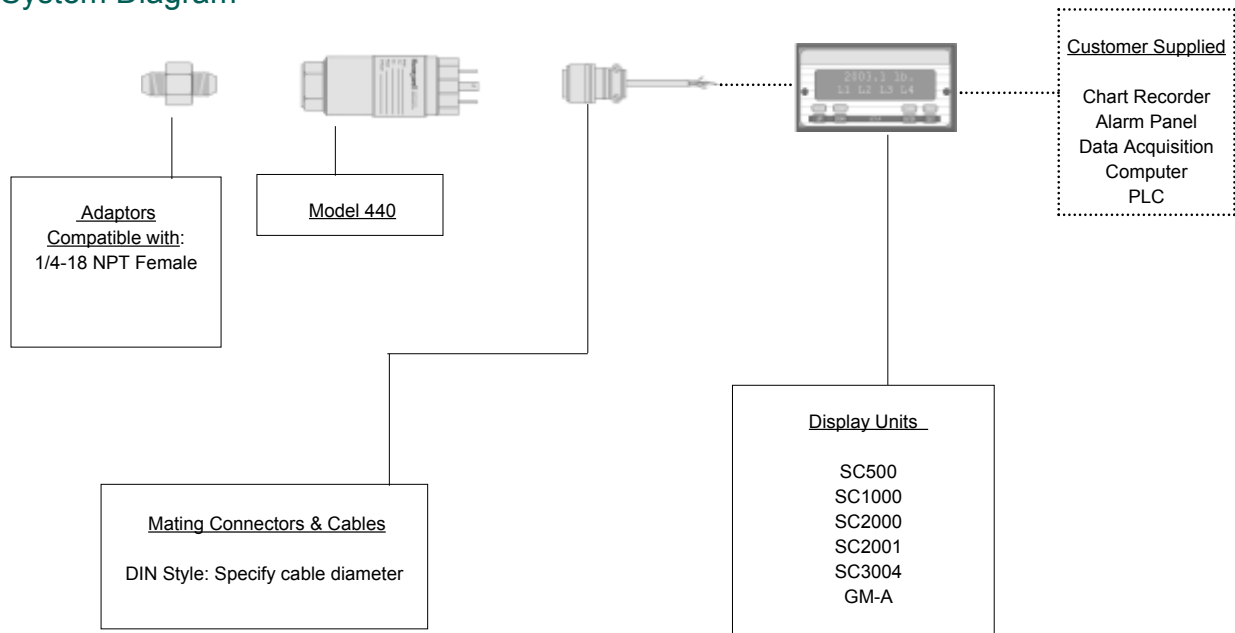
Excitation (calibration).....	24 VDC
Excitation (acceptable).....	9 to 32 VDC
Insulation Resistance.....	5000 Megohms @ 50VDC
Electrical Termination (std).....	DIN 43650 Water Resistant
Mating Connector (not incl.).....	DIN mating connector with solderless terminal (note 1)
Zero and Span Adjustments.....	Located under top cover
Frequency Response.....	2000Hz

Model 440

Mechanical

Media.....	Gas, Liquid
Overload-Safe.....	50% over capacity
Overload-Burst.....	200% over capacity
Pressure Port.....	1/4-18 NPT female
Wetted Parts Material	
<300 psig/a.....	HA C276/ 316 Stainless Steel
300-1500 psig/a.....	17-4 PH Stainless Steel
>1500 psig/a.....	15-5 PH Stainless Steel
Weight.....	13 oz.
Case Material.....	Stainless Steel

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Current 2-wire Option 2k (note 4)	Intrinsically Safe Amp Option 2N (2n)*
Output Signal	4-20 mA	4-20 mA
Input Power (Voltage)	9-32 VDC	9-28 VDC
Input Power (Current)	4-24 mA	4-24 mA
Frequency Response	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes
Short Circuit Protection	Yes	Yes
Wiring Code: Connector (Std.)	1 (+) Supply 2 (+) Output 3 No Connection GND Case Ground	1 (+) Supply 2 (+) Output 3 No Connection GND Case Ground

* See Sensotec website for most up-to-date information regarding Intrinsically safe approvals reference #008-0547-00.

Model 440

Options

	Same Day Ship	Fast Track Manufacture	Built from scratch
Pressure Ranges	5; 15; 50; 100; 200; 500; 1000; 3000; 5000; 10,000 psig	25; 75; 150; 300; 750; 1500; 2000; 7500; psig/a 5; 15; 50; 100; 200; 500; 1000; 3000; 5000; 10,000 psia	10 psig/a
Temperature Compensation	1a. 60° to 160° F		
Internal Amplifiers	2k. 4-20mA (2-wire) output 2n (2N). 4-20 mA (2-wire) Intrinsically safe		
Pressure Ports	5a. 1/4-18 NPT Female		
Electrical Termination	6m. DIN 43650		
Special Calibration (note 2)		9a. 10 point (5 up/ 5 down) 20% increments @ 70°F 9b. 20 point (10 up/ 10 down) 10% increments @ 70°F	

 Supplied as standard

Range Codes

Range	Range Code
5 psig/a	AT
10 psig/a	AV
15 psig/a	BJ
25 psig/a	BL
50 psig/a	BN
75 psig/a	BP
100 psig/a	BR
150 psig/a	CJ
200 psig/a	CL
300 psig/a	CP
500 psig/a	CR
750 psig/a	CT
1,000 psig/a	CV
1,500 psig/a	DJ
2,000 psig/a	DL
3,000 psig/a	DN
5,000 psig/a	DR
7,500 psig/a	DT
10,000 psig/a	DV

Notes

1. Specify cable diameter: can handle dia. of 4.5mm to 14 mm or 1/2" NPT conduit fitting
2. Availability varies with range.
3. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
4. Max. load resistance is 500 Ohms @ 23 VDC

Special Customer Requirements (Consult Factory)

Special wiring codes
Special Temperature compensation
Special calibration

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model 415 Two Wire Gage/ Absolute Pressure Transmitters

Order Code AP411 (gage) AP412 (absolute)

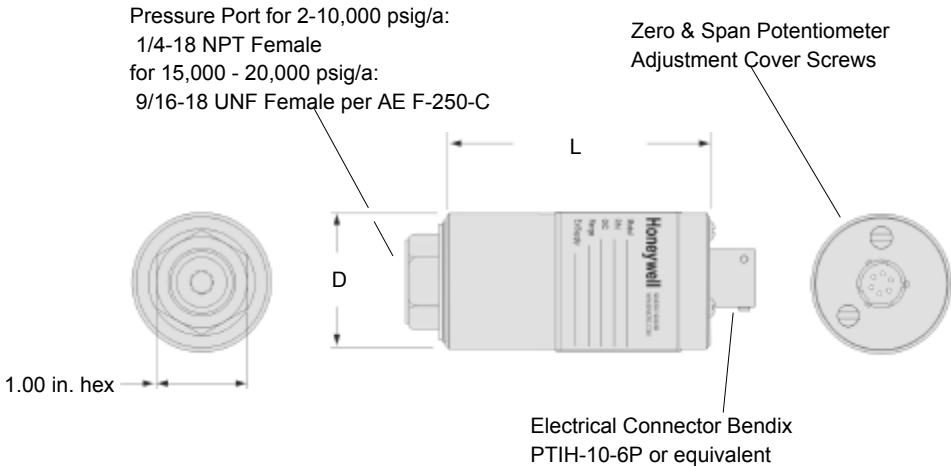
- 2 to 20,000 psi Range
- 4-20 mA Output
- 0.1% Accuracy



Wiring Code

Connector/ 2 Wire Current, 4-20 mA

A	(+) Supply
B	No Connection
C	No Connection
D	(+) Output 4-20 mA
E	Case Ground
F	No Connection



Dimensions

		2	5	10	15	25	50	75	100	150	200	300	500	750	1000	1500	2000	3000	5000	7500	10,000	15,000	20,000								
Range Code		AR	AT	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ	DL	DN	DR	DT	DV	EJ	EL								
D (in./ mm)		2.25/ 57			1.50/ 38																										
L (in./ mm) for psia		3.57/ 91			3.36/ 85									3.74/ 95			3.0/ 76				3.06/ 78										
L (in./ mm) for psig		3.10/ 79			3.36/ 85									3.74/ 95			3.0/ 76				3.06/ 78										
Over Pressure (test) (psi)		150% Full Scale																													
Over Pressure (burst) (psi)		50		100		200		400		800		2k		3k		3.5k		4k		8k		12k		20k		25k		40k		45k	
Port Volume (in. ³ / cm ³)		0.32/ 5.2		0.25/ 4.1			0.17/ 2.8										0.12/ 3.1					0.06/ 1.5									
Natural Frequency (Hz)		550	1k	1.3k	2.1k	2.5k	2.9k	3.5k	4.6k	6k	7k	9k	9.5k	12k	17k	20k	35k	40k	54k	60k	80k	100k	>100k								

Performance

Accuracy (note 4).....	+/-0.1% Full Scale
Non-Linearity and Hysteresis.....	+/-0.10% Best Fit Straight Line
Non-Repeatability.....	0.10% Best Fit Straight Line
Output.....	4-20 mA
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-20° to 185°F
Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	0.005% Full scale/ °F
Span.....	0.007% Reading/ °F

Electrical

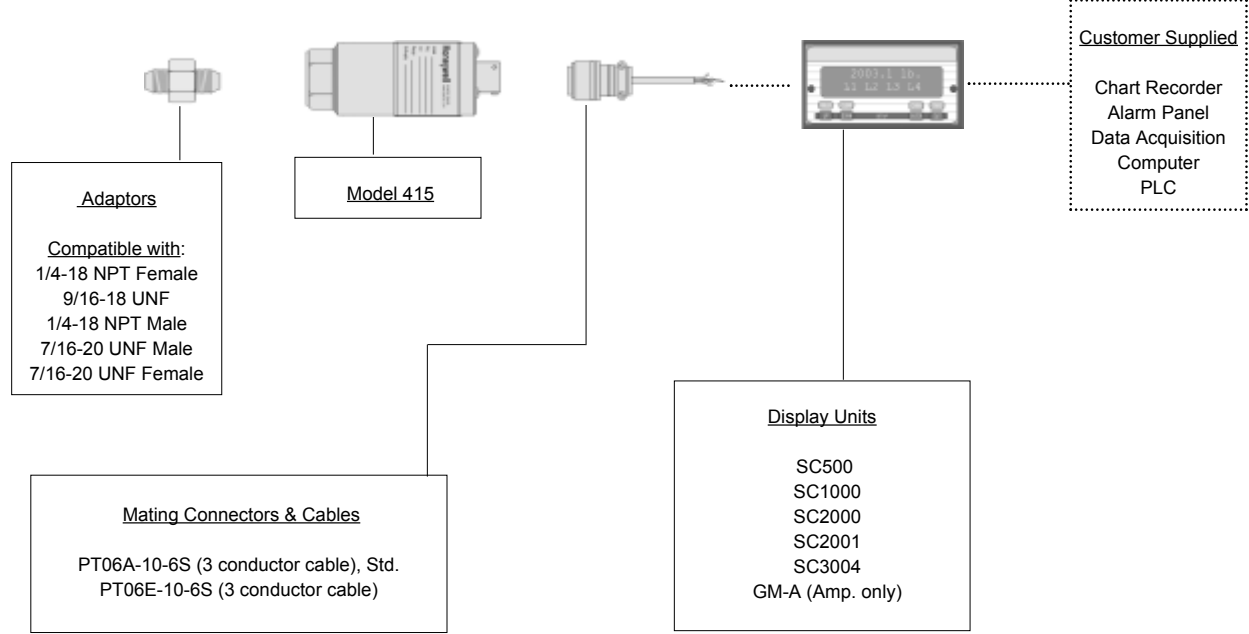
Excitation (acceptable).....	9 to 32 VDC
Insulation Resistance.....	5,000 Megohm @ 50 VDC
Electrical Termination (std).....	PTIH-10-6P or equiv. (Hermetic Stainless)
Mating Connector (not incl.).....	PT06A-10-6S or equiv.
Frequency Response.....	300 Hz

Model 415

Mechanical

Media.....	Gases, Liquids compatible with wetted material
Overload-Safe.....	50% over capacity
Pressure Port	
2 to 10,000 psig/a.....	1/4-18 NPT female
15,000 to 20,000 psig/a.....	9/16-18 UNF per Autoclave AE F250-C
Proof Pressure.....	400%
Dead Volume.....	See Table
Wetted Parts Material	
2 to 1500 psig/a.....	17-4 PH Stainless Steel
>1500 psig/a.....	15-5 PH Stainless Steel
Weight.....	13 oz.
Case Material.....	Stainless Steel

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Current 2-wire Option 2k		Intrinsically Safe Amp Option 2N (2n)*	
Output Signal	4-20 mA		4-20 mA	
Input Power (Voltage)	9-32 VDC		9-28 VDC	
Input Power (Current)	4-24 mA		4-24 mA	
Frequency Response	300 Hz		2000 Hz	
Power Supply Rejection	60 db		60 db	
Operating Temperature	-20° to 185° F		-20° to 185° F	
Reverse Voltage Protection	Yes		Yes	
Short Circuit Protection	Yes		Yes	
Wiring Code: Connector (Std.)	A	(+) Supply	A	(+) Supply
	B	No Connection	B	No Connection
	C	No Connection	C	No Connection
	D	(+) Output	D	(+) Output
	E	Case Ground	E	Case Ground
	F	No Connection	F	No Connection
Wiring Code: Cable (note 2)	R	(+) Supply	R	(+) Supply
	BI	(+) Output	BI	(+) Output
	W	Case Ground	W	Case Ground

* See Sensotec website for most up-to-date information regarding Intrinsically safe approvals reference #008-0547-00.

Model 415

Options

	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 75; 100; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500; 10,000 psig/a		2; 5; 10; 15,000; 20,000 psig/a
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130°F 1c. 0° to 185°F 1d. -20° to 130°F		
Internal Amplifiers	2k. 4-20mA (2-wire) output 2n (2N). Intrinsically safe amp		
Pressure Ports (note 3)	5a. 1/4-18 NPT Female (2 - 10,000 psi) 5s. 9/16-18 UNF per AE F-250-C (15,000 - 20,000 psi) 5b. 1/4-18 NPT Male 5d. 7/16-20 UNF Male	5c. 7/16-20 UNF Female	
Electrical Termination (note 2)	6a. Bendix PTIH-10-6P-(or equiv.) 6 pin (max. 400°F) 6e. Integral cable: Teflon (-65° to 475°F) 6f. Integral cable: PVC (-20° to 160°F) 6g. Integral cable: Neoprene (0° to 180°F) (note 1) 6h. Integral cable: Silicone (-65° to 300°F)	6i. Integral underwater cable (max. 180°F) 6j. 1/2-14 conduit fitting with 5' of 4 conductor PVC cable (may be used with 6e-i)	
Shunt Calibration		3d. Remote Buffered Shunt Cal	
Special Calibration (note 3)	9a. 10 point (5 up/ 5 down) 20% increments @ 70°F		
Wetted Diaphragm (note 3)			10a. 316 Stainless Steel 10b. Crucible A-286 10c. Hastelloy C
Potentiometers	14a. No Access to Pots 14b. Top Access to Pots		
Shock & Vibration		44a. Shock/ Vibration Resistance	

■ Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
2 psig/a	AR	500 psig/a	CR
5 psig/a	AT	750 psig/a	CT
10 psig/a	AV	1,000 psig/a	CV
15 psig/a	BJ	1,500 psig/a	DJ
25 psig/a	BL	2,000 psig/a	DL
50 psig/a	BN	3,000 psig/a	DN
75 psig/a	BP	5,000 psig/a	DR
100 psig/a	BR	7,500 psig/a	DT
200 psig/a	CL	10,000 psig/a	DV
300 psig/a	CP	20,000 psig/a	EL

Notes

- Specify cable diameter: can handle dia. of 4.5mm to 14 mm or 1/2" NPT conduit fitting
- G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange;
Color specifying cable and number or letter specifying connector.
- Availability varies with range.
- Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.

Special Customer Requirements (Consult Factory)

Special wetted material
Special ports
Special wiring codes

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AP411** **AT** **5a**
Order Code Range Code Options Code

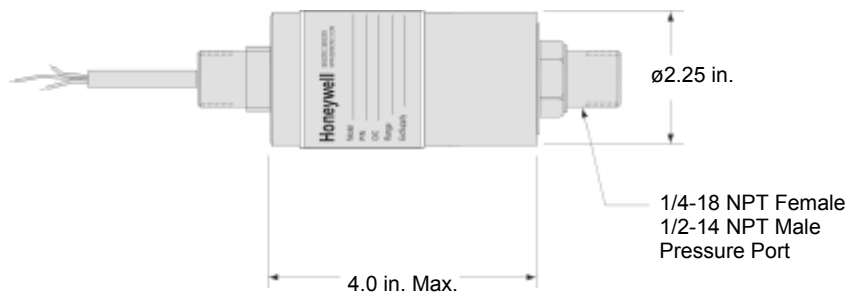
Model 811FM 2-Wire Gage/ Absolute Pressure Transmitters

Order Code BP421 (gage); BP422 (absolute)

- 2 to 10,000 psig/a Range
- Bulkhead Mounting
- True Gage Design Hermetic
- Explosion Resistant
- 0.25% Accuracy



Dimensions



Wiring Code

Cable, 2-wire current, 4-20 mA

Red	(+) Supply
Black	(+) Output (4-20 mA)
White	Case Ground

Performance

Pressure Ranges	2; 5; 10; 15; 25; 50; 75; 100; 150; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500; 10,000 psig/a
Accuracy (note 2)	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale
Hysteresis	+/- 0.10% Full Scale
Non-Repeatability	+/- 0.05% Full Scale
Output	4-20 mA
Resolution	Infinite

Environmental

Temperature, Operating	0° to 180°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 0.01% Full Scale/ °F
Span	+/- 0.01% Reading/ °F

Electrical

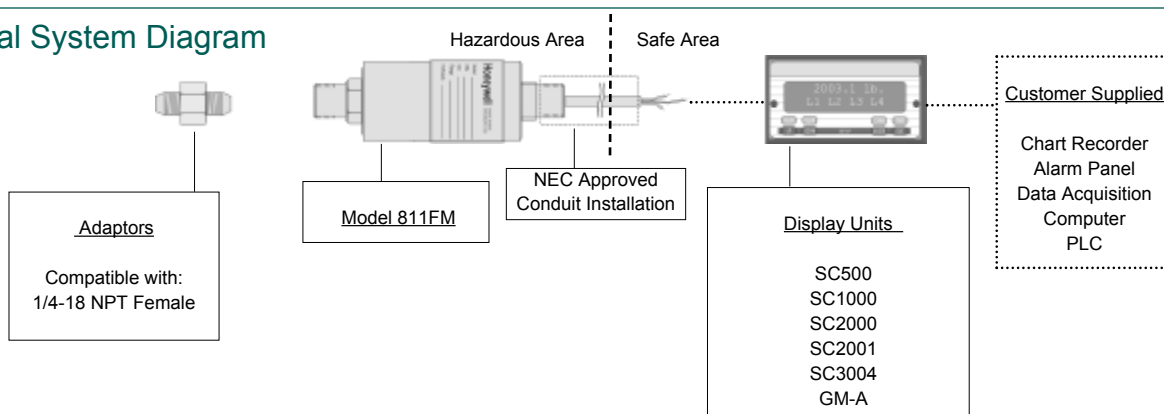
Strain Gage Type	Bonded Foil
Excitation (calibration)	15 to 32 VDC
Insulation Resistance	5000 Megohms @ 50 VDC
Electrical Termination (std)	1/2-14 NPT male with 7/8" wrench flat. 20 GA 2 ft. cable with case ground

Mechanical

Media	Gases, Liquids compatible with wetted material
Overload-Safe	50% over capacity
Pressure Port	1/4-18 NPT Female; 1/2-14 NPT male
Wetted Parts Material	17-4 PH Stainless Steel
Case Material	Stainless Steel

Model 811FM

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Current 2-wire Option 2k (Std.)
Output Signal	4-20 mA
Input Power (Voltage)	9-32 VDC
Input Power (Current)	4-24 mA
Frequency Response	300 Hz
Power Supply Rejection	60 db
Operating Temperature	-20° to 185° F
Reverse Voltage Protection	Yes
Short Circuit Protection	Yes
Wiring Code: Cable	R (+) Supply BI (+) Output W Case Ground

Options

	Built to Order	Built from Scratch
Pressure Ranges	15; 25; 50; 75; 100; 150; 200; 300; 500; 750; 1,000; 1,500; 2,000; 3,000; 5,000; 7,500; 10,000 psig/a	2; 5; 10 psig/a
Temperature Compensation	1a. 60° to 160° F	
Internal Amplifiers	2k. 4-20mA 2-wire	
Pressure Ports	5a. 1/4-18 NPT Female 1/2-14 NPT Male w/ 1" Hex	
Electrical Termination	2 ft. of 20GA cable	
Wetted Diaphragm		10a. 316 Stainless Steel (note 1)

Supplied as standard

Range Codes

Range	Range Code
2 psig/a	AR
5 psig/a	AT
10 psig/a	AV
15 psig/a	BJ
25 psig/a	BL
50 psig/a	BN
75 psig/a	BP
100 psig/a	BR
150 psig/a	CJ
200 psig/a	CL
300 psig/a	CP
500 psig/a	CR
750 psig/a	CT
1,000 psig/a	CV
1,500 psig/a	DJ
2,000 psig/a	DL
3,000 psig/a	DN
5,000 psig/a	DR
7,500 psig/a	DT
10,000 psig/a	DV

Notes

- Only available for ranges 25 to 500 psig/a
- Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis, & non-repeatability thru zero.

Special Customer Requirements (Consult Factory)

Custom Cable Lengths



How to Order

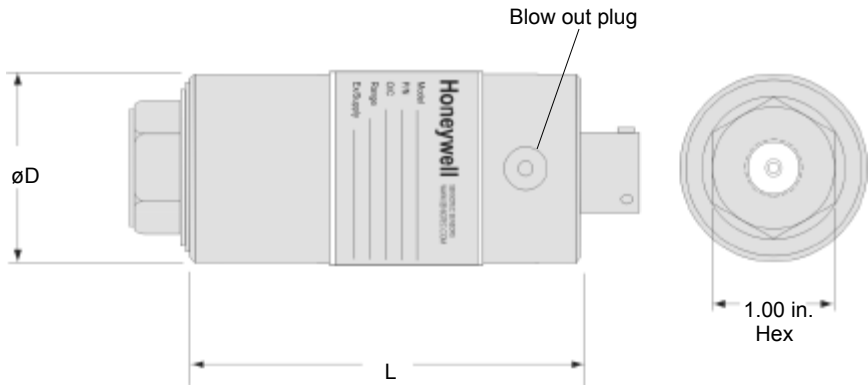
Combine the order code, the range code and the options code.

Sample Code: **BP421** **BR** **10a**
Order Code Range Code Options Code

Model HP High Pressure Transducers

Order Code BP521

- 50,000 to 100,000 psi
- AE F250-C Port
- High Pressure Capacity
- 0.5% Accuracy



Wiring Code

Connector/Unamplified

A&B	(+) Excitation
C&D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

	Pressure Range		
	50,000	75,000	100,000 (note 1)
Range Code	EP	ER	ET
D (in.)	1.50		
L (in.)	2.92		
L* (in.)	4.35		
Over Pressure (test) (psi)	75,000	100,000	100,000
Over Pressure (burst) (psi)	100,000	125,000	140,000
Port Volume (in. ³)	0.015		
Natural Frequency (Hz)	Greater than 100 kHz		
Installation Torque (ft.-lb./N-m)	25/ 34	30/ 41	35/ 47

Performance

- Accuracy (note 2).....+/- 0.5% Full Scale
Resolution.....Infinite
Calibration.....5 point calibration: 0%, 50% and 100% of Full Scale

Environmental

- Temperature, Compensated.....60° to 160° F
Zero.....0.005% Full Scale/° F
Span.....0.005% Reading/° F
Sealing.....Hermetically sealed IP68/ NEMA 6P

Electrical

- Strain Gage Type.....Bonded Foil
Insulation Resistance.....5,000 Megohms @ 50 VDC
Bridge Resistance.....350 Ohms
Shunt Calibration Data.....Included
Electrical Termination (std).....PTIH-10-6P or equivalent (Hermetic Stainless)
Mating Connector (not incl.).....PT06A-10-6S

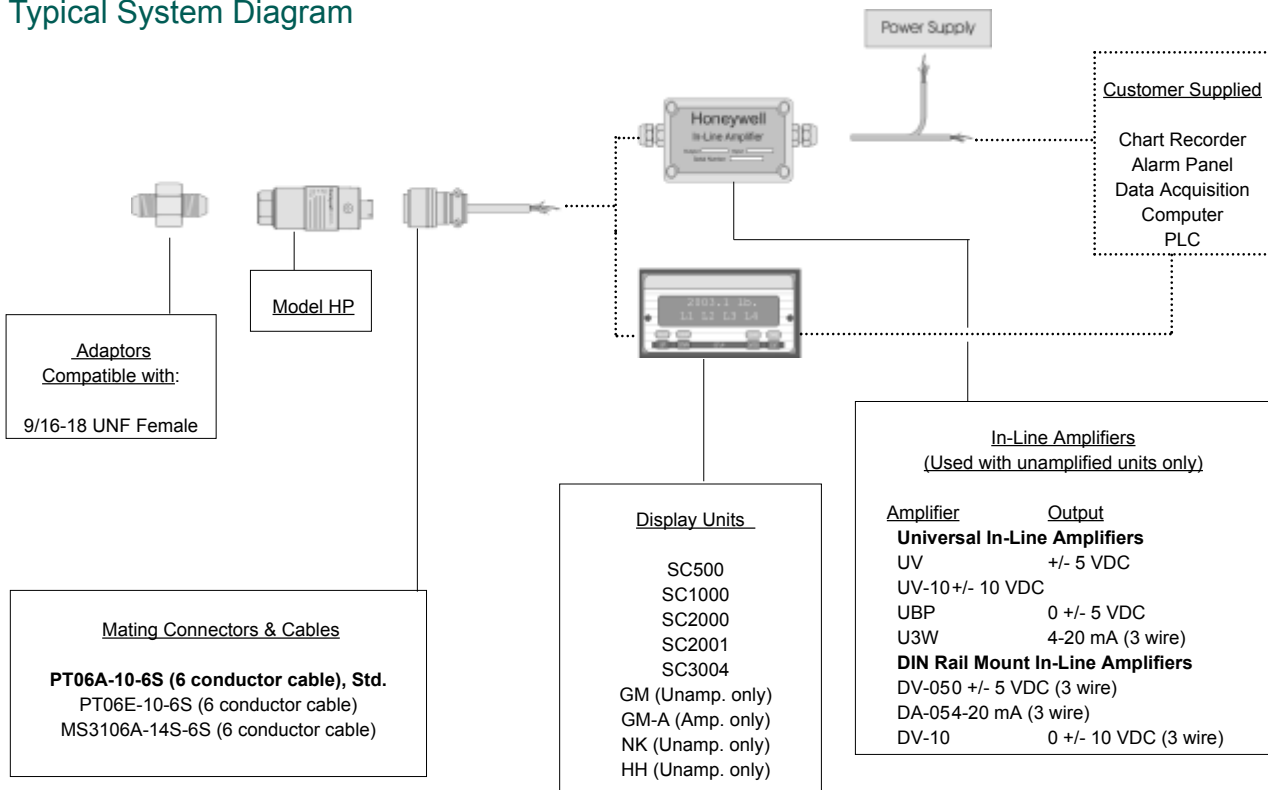
Mechanical

- Media.....All gases/ liquids compatible with wetted parts
Wetted Parts Material.....15-5 PH Stainless Steel
Weight.....12 oz.
Case Material.....304 Stainless Steel
Marking.....Permanent metal nameplate MIL-STD130F 4.3;
Individual sequential serial number per sensor;
Country of origin and date of manufacture

* Length of pressure transducer with amplified option (see options on third page)

Model HP

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	mV/V Output Standard	Vehicle Voltage Output Option 2a (note 6)	Vehicle Voltage Output Option 2c (note 6)	Vehicle Voltage Output Option 2t (note 6)	Current 3 Wire Option 2j (note 6)	Current 2 Wire Option 2k (note 6)	Intrinsically Safe Amp Option 2N (2n)
Output Signal	1 mV/V	0-5VDC	0-5VDC or +/- 5VDC @ 5mA	0-10VDC or +/- 10VDC @ 5mA	4-20 mA	4-20 mA	20 mA
Input Power (Voltage)	10 VDC Regulated	+/-15VDC or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC (note 3)	9-32 VDC (note 3)	9-28 VDC (note 3)
Input Power (Current)	28.5 mA @ 10 VDC	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	Natural Frequency	2000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	--	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-100° to 250° F	-20° to 185° F	-40° to 185° F	-40° to 185° F	-40° to 185° F	-40° to 185° F	-20° to 185° F
Reverse Voltage Protection	Not Applicable	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Not Applicable	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (-) Output F (+) Output	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground
For Current Information		Reference application sheet #008-0356-00 for current information.	Reference application sheet #008-0357-00 for current information.	Reference application sheet #008-0360-00 for current information.	Reference application sheet #008-0361-00 for current information.	Reference application sheet #008-0361-60 for current information.	See Sensotec website for most up-to-date information regarding Intrinsically safe approvals reference #008-0547-00.

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Options

	Built to Order
Pressure Ranges	50,000; 75,000; 100,000 psi
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V Output 2a. 0-5 VDC (4-wire) output 2c. 0-5 VDC 2j. 4-20 mA (3-wire) output 2k. 4-20 mA (2-wire) output 2N (2n). 4-20 mA (2-wire) Intrinsically safe 2t. 0-10 VDC
Internal Amp Enhancements	3a. Input/output isolation 3d. Remote Buffered Shunt Calibration
Pressure Ports	5u. 9/16-18 Autoclave F-250-C
Electrical Termination (note 7)	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250° F) 6e. Integral cable: Teflon (-65° to 475° F) 6f. Integral cable: PVC (-20° to 160° F) 6g. Integral cable: Neoprene (0° to 185° F) 6h. Integral cable: Silicone (-65° to 300° F) 6i. Integral underwater cable (max. 180° F)
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Special Calibration	9a. 10 point (5 up/5 down) 20% increments@ 60° F
Bridge Type	11a. Square Bridge 11b. Symmetrical Bridge 11c. Square and symmetrical bridge
Bridge Resistance	12b. 5000 Ohm (foil) (max. 250° F)
Potentiometers	14a. No access to pots 14b. Top access to pots
Shock and Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration (note 8) 53t. T.E.D.S. IEEE 1451.4 Module (note 9)

Supplied as standard

Notes

- For pressure ranges 75,000 psi or above, consult factory for pressure port information.
- Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
- Input power (voltage) for internal amplifier options 2j, 2k, 2n,N depends on load resistance.
- CE mark requires options 6a & 3d.
- Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration.
- G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
- No mating connector necessary with cable option.
- Cannot be used with amplified option.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements
(Consult Factory)

Different electrical connectors
Different materials
Different threads
O ring material
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP521** **ER** **1c**
Order Code Range Code Options Code

Model LM Gage Pressure Transducer

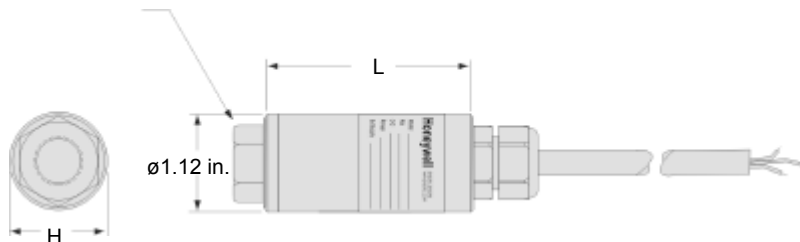
Order Code BP211

- 1 to 10,000 psig Range
- Potential OEM Application
- mV/V Output
- 0.5% Accuracy



Dimensions

Pressure Port 1/4-18 NPT Female



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Pressure (psig)	1	2.5	5	15	30	50	75	100	150	200	300	500	750	1k	1.5k	2k	3k	5k	7.5k	10k
Range Code	AP	AS	AT	BJ	BM	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ	DL	DN	DR	DT	DV
L (in./mm)	2.26/ 57			2.23/ 57					2.00/ 51					1.78/ 45						
Hex (in./mm)	1/ 25.4			1/ 25.4					0.875/ 22.2					0.750/ 19.0						
Test Over Pressure (psi)	4	10	20	50	100	150	150	150	150% of Full Scale											
Burst Over Pressure (psi)	Consult Factory								600	800	1.2k	2k	2k	4k	6k	8k	12k	15k	20k	20k
Natural Frequency (Hz)	Consult Factory								9.8k	11k	14k	18k	22k	30k	48k	54k	66k	85k	>100k	
Port Volume (in. ³ /mm ³)	0.15/ 2.5								0.17/ 2.8					0.12/ 3.1						
Output (mV/V)	5			10					2											
Wetted Parts	316 Stainless Steel								17-4 PH Stainless Steel											
Bridge Resistance	5,000 Ohm								350 Ohm											
Strain Gage Type	Silicon								Foil											

Accuracy (note 1).....+/- 0.5% Full Scale

Environmental

Temperature, Operating.....	-65° to 250°F
Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	0.01% Full scale/ °F
Span.....	0.02% Reading/ °F

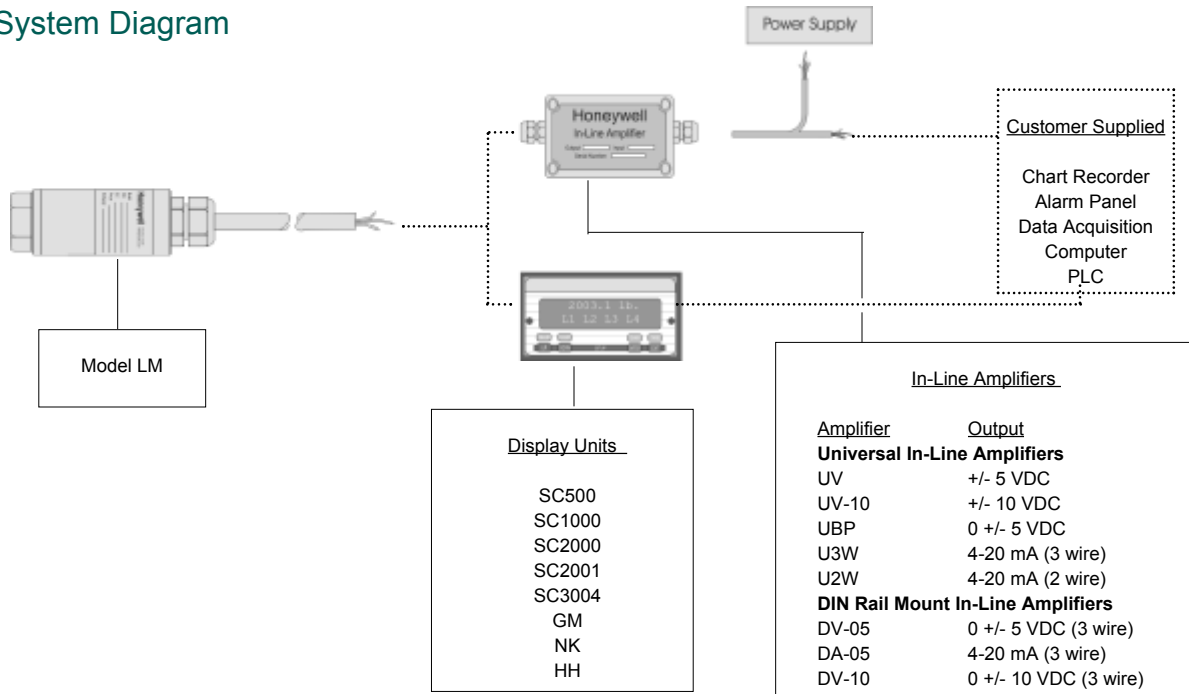
Electrical

Excitation (calibration).....	10 VDC
Excitation (acceptable).....	10 VDC
Insulation Resistance.....	5,000 Ohms @ 50 VDC
Electrical Termination (std).....	Cable 3 ft.

Mechanical

Media.....	All Gases/ Liquids Compatible with Wetted Parts
Weight.....	6 oz./ 170 grams

Typical System Diagram



Options

	Same Day Ship	Fast Track Manufacture	Built to Order	Built from Scratch
Pressure Ranges	100; 200; 300; 500; 1k; 2k; 3k; 5k; 10k psig	15; 25; 50; 75 psig	1; 2.5; 5; 150; 750; 1.5k; 7.5k psig	
Temperature Compensation	1a. 60° to 160° F			
Internal Amplifiers	2u. Unamplified, mV/V output			
Pressure Ports	5a. 1/4-18 NPT Female			OEM Port Consult Factory
Electrical Termination	Cable (3 ft.)			OEM Termination Consult Factory
Special Calibration			9a. 10 point (5 up/ 5 down)	
Wetted Diaphragm				OEM Materials Consult Factory

■ Supplied as standard

Special Customer Requirements (Consult Factory)

Different electrical connectors
Different materials
Different threads
O ring material
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP211** **CV** **9a**
Order Code Range Code Options Code

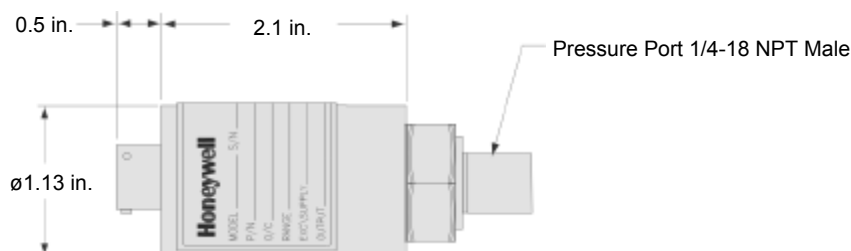
Model BDR Universal Pressure Transducer/ Transmitter

Order Code BP217

- 0-150 to 0-15,000 psig Range
- Welded Stainless Steel
- Configurable Electrical Connection
- Optional Unit Measurement of Inches of Hg Gage



Dimensions



Performance

Pressure Ranges.....	0-150 to 0-15,000 psig
Accuracy (note 4)	
150 psig Range.....	+/- 0.75% Best Fit Straight Line
Ranges 300 psig and above.....	+/- 0.5% Best Fit Straight Line
Output.....	+/- 5 VDC (option 2d) or 4-20 mA (option 2p)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-20° to 185°F
Temperature, Compensated.....	60° to 160°F
Temperature, Effect	
Zero.....	+/- 0.01% Full Scale/ °F
Span.....	+/- 0.01% Full Scale/ °F

Electrical

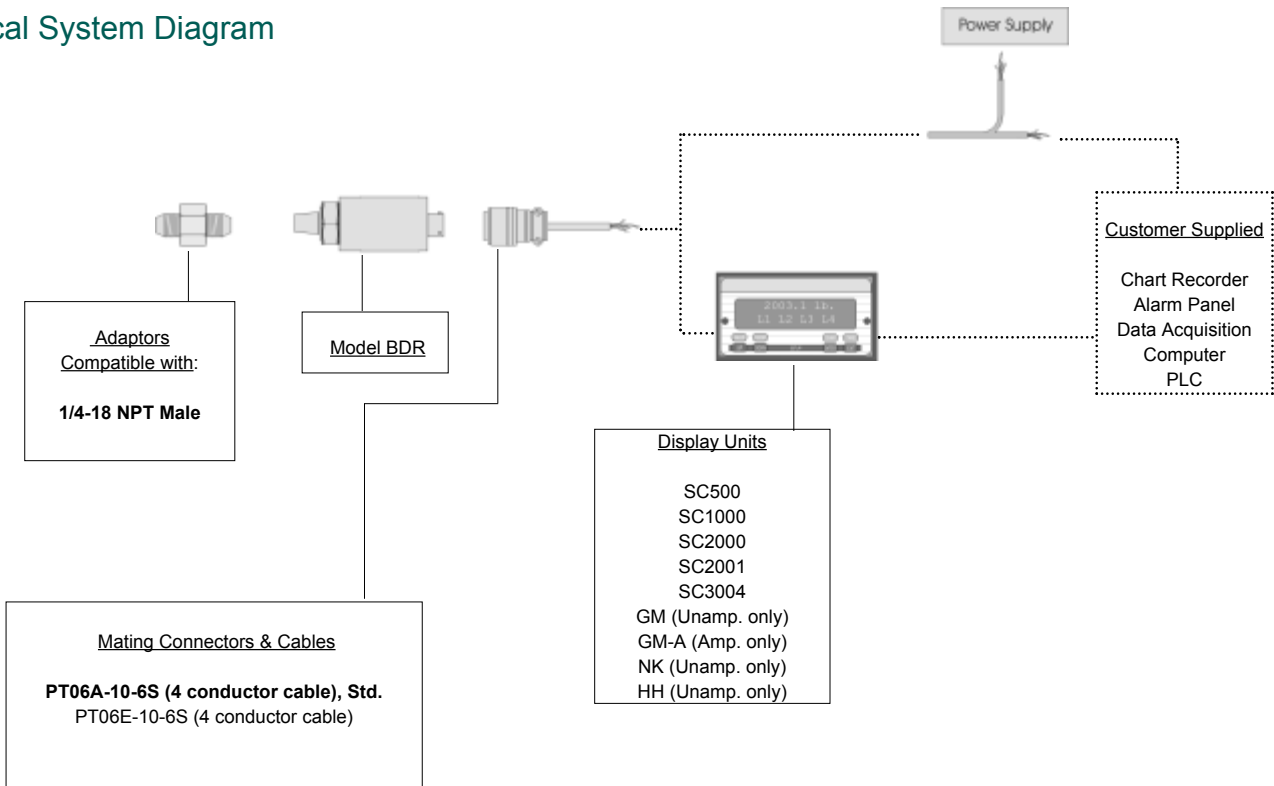
Excitation (acceptable)	
+/- 5 VDC.....	9-28 VDC @ 40 mA
4-20 mA.....	9-28 VDC
Electrical Termination.....	PTIH-10-6P or equiv.

Model BDR

Mechanical

Media.....	Gas, Liquid compatible with Stainless Steel
Overload-Safe.....	50% over capacity
Overload-Burst.....	250% over capacity or 24,000 psig whichever is less
Pressure Port.....	1/4-18 NPT Male
Wetted Parts Material.....	17-4 Stainless Steel all-welded construction
Weight.....	10 oz.

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Vehicle Voltage Output Option 2d	Current 2 Wire Output 2p
Output Signal	5VDC	4-20 mA
Input Power (Voltage)	9-28 VDC	9-28 VDC
Input Power (Current)	40 mA	4-28 mA
Frequency Response	300 Hz	300 Hz
Power Supply Rejection	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes
Short Circuit Protection	Momentary	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (note 1) (note 2) (note 5)	R (+) Supply BI* Output Common/ G* Supply Return W (+) Output B No Connection Br No Connection	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Model BDR

Options

	Fast Track Manufacture	Built from Scratch
Pressure Ranges	150; 200; 300; 500; 750; 1000; 1500; 2000; 2500; 3000; 5000; 7500; 10,000 psig	15,000 psig
Temperature Compensation	1a. 60° to 160° F	
	1j. 0° to 50° C	
	1k. -20° to 85° C	
	1m. -25° to 100° C	
Internal Amplifiers	2d. +/- 5 VDC 2p. 4-20 mA	
Pressure Ports	5b. 1/4-18 NPT Male	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250° F)	
	6m. DIN 43650	
	6n. DIN 40050	
	6q. Molded integral cable: Polyurethane	

 Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
150 psig	CJ	2,000 psig	DL
200 psig	CL	2,500 psig	DM
250 psig	CN	3,000 psig	DN
300 psig	CP	5,000 psig	DR
500 psig	CR	6,000 psig	DS
750 psig	CT	7,500 psig	DT
1,000 psig	CV	10,000 psig	DV
1,500 psig	DJ	15,000 psig	EJ

Notes

1. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
2. No mating connector necessary with cable option.
3. Pins B and C are internally connected.
4. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero. For 0.25% Accuracy consult factory.
5. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3-wire only), 80% (voltage amp) of full scale output for quick calibration.
6. Output varies with range.

Special Customer Requirements (Consult Factory)

Different electrical connectors
Different materials
Different threads
O ring material
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration

How to Order

Combine the order code, the range code and the options code.

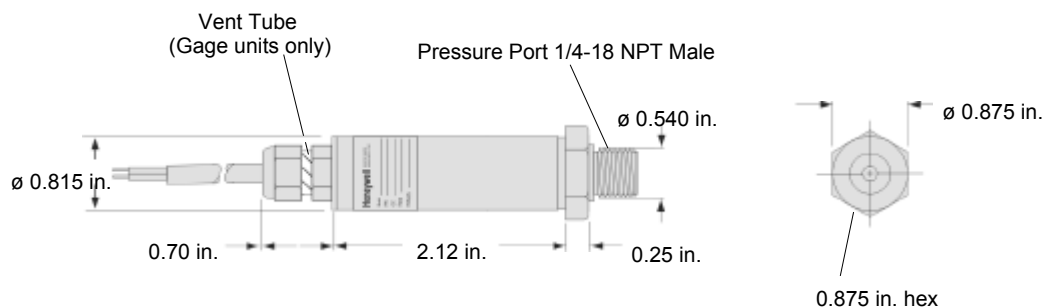
Sample Code: **BP217** **CV** **1k**
Order Code Range Code Options Code

Model LCP Pressure Transducer

Order Code BP223 (absolute), BP224 (gage)

- 4-20 mA 2 wire output
- 5 to 5,000 psig/ psia Range
- 1% Accuracy

Dimensions



Wiring Code

Red (+) input
Black (+) output

Performance

Pressure Ranges

Gage.....5; 10; 15; 30; 50; 100; 200; 300; 500 psig
Absolute.....15; 30; 50; 100; 200; 300; 500; 1000; 2500; 5000 psia
Linearity.....+/- 0.5% Full Scale
Hysteresis.....+/- 0.03% Full Scale
Non-Repeatability.....+/- 0.03% Full Scale
Output (std.).....4-20 mA
Resolution.....Infinite
Response Time.....5ms

Environmental

Temperature, Operating.....-40° to 185°F
Temperature, Compensated.....15° to 185°F
Storage Temperature.....-40° to 185°F
Temperature, Effect
Zero.....+/- 1.5 Full Scale (note 1)
Span.....+/- 1.5 Full Scale (note 1)

Electrical

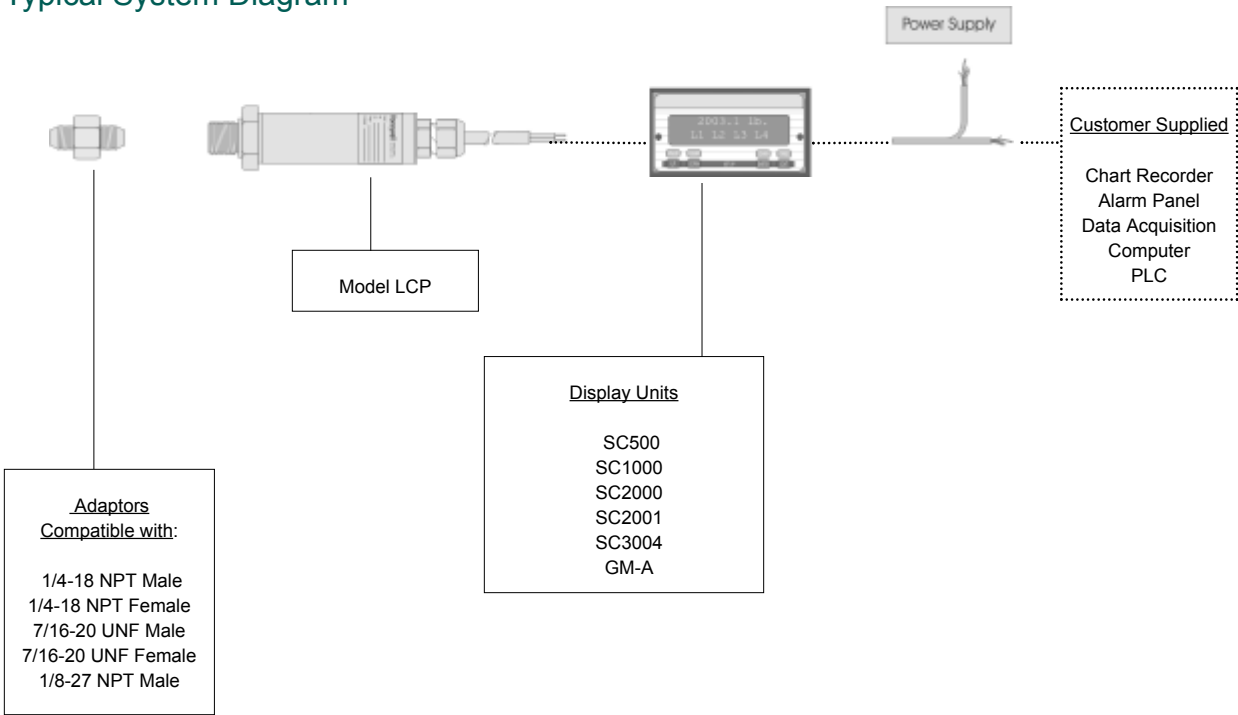
Strain Gage Type.....Semi-conductor
Supply Voltage.....10-24 VDC
Insulation Resistance.....100 Megohms @ 50 VDC
Electrical Termination (std).....Cable Version (2 ft. Standard Cable Length)
Shock.....100g for 11ms
Life.....1 million cycles

Mechanical

Media.....Gases, Liquids compatible with wetted material
Overload-Safe.....200% over capacity
Overload-Burst.....>200% over capacity
Pressure Port.....1/4-18 NPT male
Wetted Parts Material.....316 Stainless Steel
Case Material.....304 Stainless Steel

Model LCP

Typical System Diagram



Range Codes

Range	Range Code
5 psig	AT
10 psig	AV
15 psig/a	BJ
30 psig/a	BM
50 psig/a	BN
100 psig/a	BR
200 psig/a	CL
300 psig/a	CP
500 psig/a	CR
1,000 psia	CV
2,500 psia	DM
5,000 psia	DR

Notes

1. +/- 2.5% Full Scale for 5 psi range

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **SZ75** **AT**
Model Code Range Code

Model DS Digital/Analog Output Pressure Sensor

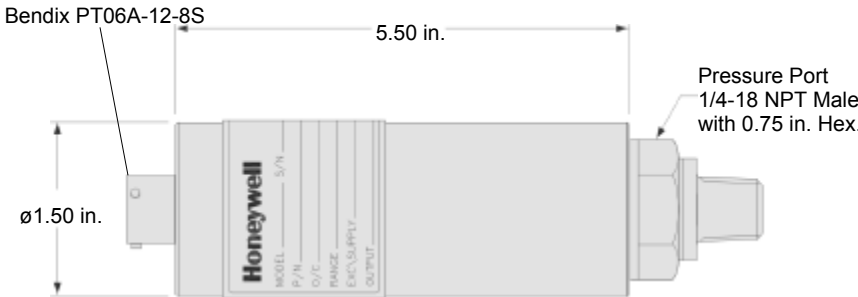
Order Code (see table below)

- 0.1% Accuracy Including Temperature
- 1200 Hz Analog Response
- 380 Readings/ second Digital Output

Order Code:	Gage	Absolute
Outputs: 0-5 VDC and RS-232	AP611	AP612
Outputs: 0-5 VDC and RS-485	AP613	AP614



Dimensions



Wiring Code

Pin	Function
A	RS-485A (+)/ RS-232 Tx/D
B	0-5 VDC Analog output
C	Analog Output Return
D	No Connection
E	Supply Return
F	(+) Supply 15-28 VDC
G	RS-485 B (-)/ RS-232 Rx/D
H	RS-485 Ground/ RS-232 Ground

Performance

Pressure Ranges.....	5; 15; 30; 50; 100; 150; 250; 500; 750; 1000; 2000; 2500 psig/a
Accuracy (note 3).....	0.1% Typical Accuracy over the Compensated Temperature range
Digital (and/or) Analog (note 4)	
Outputs.....	RS 485 or RS232, plus 0-5 VDC (non isolated)
Baud Rate.....	1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200
Data Framing.....	1 start bit, 8 data bits, 1 stop bit
Output Response	
Digital.....	>300 readings/ second at 115k baud
Analog.....	Max. 2500 updates. second with < 1 millisecond step response
Output Resolution.....	1.22 mV/bit (12 bits on 0-5 VDC)

Environmental

Temperature, Operating.....	-40° to 180°F
Temperature, Compensated.....	40° to 140°F

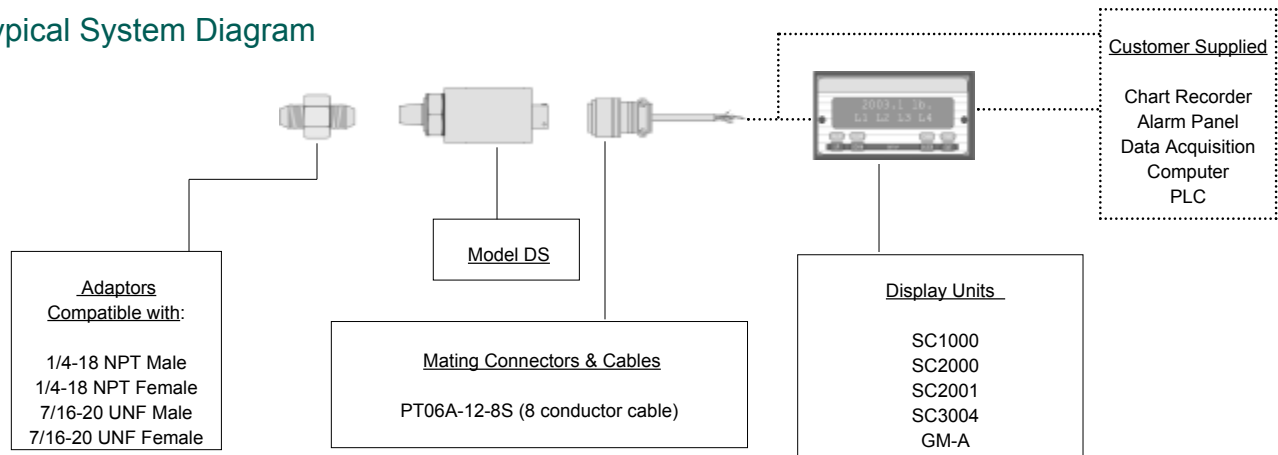
Electrical

Electrical Termination (std).....	Bendix PT02-12-8P or equiv. mates with PT06A-12-8S

Mechanical

Media.....	Gas & Liquid compatible with 316L SS & Hastelloy C-276
Overload Burst	
Ranges less than 1000 psig/a.....	400% over capacity or 3000 psi, whichever is less
Ranges greater than 1000 psig/a.....	400% over capacity or 15,000 psi, whichever is less
Pressure Port.....	1/4-18 NPT
Wetted Parts Material.....	all welded Stainless Steel

Typical System Diagram



Range Codes

Range	Range Code
5 psig/a	AT
15 psig/a	BJ
30 psig/a	BM
50 psig/a	BN
100 psig/a	BR
150 psig/a	CJ
250 psig/a	CN
500 psig/a	CR
750 psig/a	CT
1,000 psig/a	CV
2,500 psig/a	DM

Special Customer Requirements (Consult Factory)

Different electrical connectors
Different materials
Different threads
O ring material
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration

Options

	Built to Order	Built from Scratch
Pressure Ranges	15; 30; 50; 100; 150; 250; 500; 750; 1000; 2500 psig/a	5 psig/a
Temperature Compensation	40° to 140° F 1c. 0° to 185° F 1k. -20° to 85° C	
Internal Amplifiers	RS485 or RS232, 0-5 VDC (non isolated)	
Pressure Ports	5b. 1/4-18 NPT Male 5a. 1/4-18 NPT Female 5c. 7/16-20 UNF Female (per MS33649-4) 5d. 7/16-20 UNF Male (per MS33656E4)	
Electrical Termination	Bendix PTIH-12-8P—(or equiv.) 8 pin (max.250°F)	

Supplied as standard

Notes

1. The dual output of both the digital and analog signals allow flexibility in potential applications where the conventional 0-5 VDC output is desired. The digital output replaces the computer interface A-D card with direct connection into your PC RS-232 or RS-232 port.

How to Order

Combine the order code, the range code and the options code.

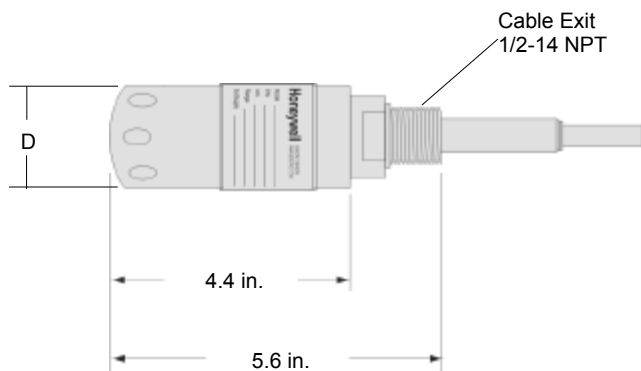
Sample Code: **AP611** **CV** **1c, 5a**
Order Code Range Code Options Code

Model LL-V Vertical Entry Liquid Level Sensor

Order Code BP712

- True Gage Design
- Conduit Connection
- 0.1% Accuracy

Dimensions



*Model LL-V shown with non-standard diaphragm

Ranges (psig)	D (in.)
0 - 2	2.25
5 - 50	1.50

Performance

Pressure Ranges.....0-20; 0-30; 0-50; 0-100; 0-120; 0-150; 0-200; 0-300;
0-500 inches of water column
1; 2; 5; 10; 15; 25; 50 psig
Accuracy (note 3).....+/-0.1% Full Scale (Static Error Band)
Output.....0-5 VDC or 4-20 mA
Resolution.....Infinite

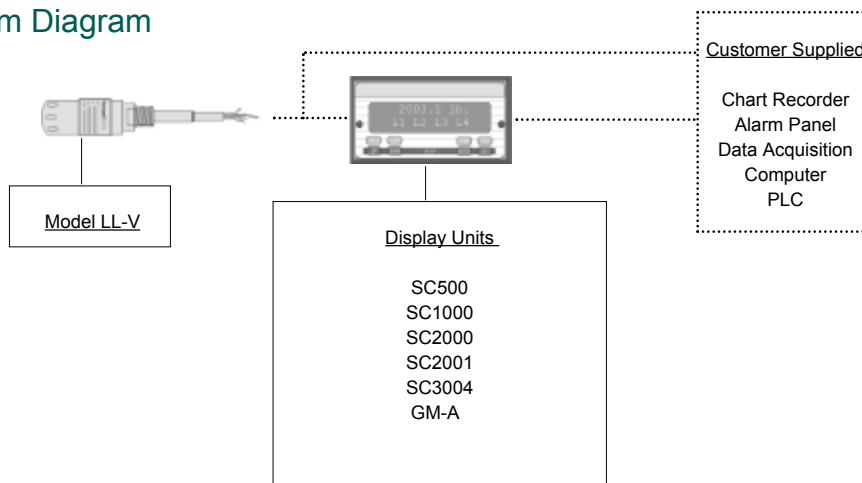
Environmental

Temperature, Operating.....0° to 180°F
Temperature, Compensated.....60° to 160°F
Temperature, Effect
Zero.....+/-0.0025% Full Scale/°F
Span.....+/-0.0025% Reading/°F

Mechanical

Media.....Liquids compatible with Stainless Steel
Overload-Safe.....150%
Overload-Burst.....400%
Pressure Port.....Screened Flush Diaphragm
Dead Volume.....Not Applicable
Wetted Parts Material.....Stainless Steel
Weight.....14 oz.
Case Material.....all welded Stainless Steel

Typical System Diagram



1-888-282-9891

www.honeywell.com/sensotec

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2c	Current 3 Wire Option 2j	Current 2 Wire Option 2k
Output Signal	0-5VDC @ 45mA	4-20 mA	4-20 mA
Input Power (Voltage)	11-28 VDC	22-32 VDC(note 6)	9-28 VDC
Input Power (Current)	40 mA	65 mA	4-28 mA
Frequency Response	3000 Hz	2500 Hz	300 Hz
Power Supply Rejection	60 db	60 db	60 db
Operating Temperature	0° to 180° F	0° to 180° F	0° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes
Short Circuit Protection	Momentary	Yes	Yes
Wiring Code: Cable (note 2) (note 4) (note 5)	R (+) Supply BI* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

Options

	Built to Order
Pressure Ranges	0-20; 0-30; 0-50; 0-100; 0-120; 0-150; 0-200; 0-300; 0-500 in. of water column 1; 2; 5; 10; 15; 25; 50 psig
Temperature Compensation	1a. 60° to 160° F
Internal Amplifiers	2c. 0-5 VDC output 2j. 4-20 mA (3-wire) output 2k. 4-20 mA (2-wire) output
Internal Amplifier Enhancements	3d. Remote Buffered Shunt Cal.
Pressure Ports	Flush

Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
20" H ₂ O	WC	500" H ₂ O	WS
30" H ₂ O	WE	1 psig	AP
50" H ₂ O	WG	2 psig	AR
100" H ₂ O	WI	5 psig	AT
120" H ₂ O	WK	10 psig	AV
150" H ₂ O	WM	15 psig	BJ
200" H ₂ O	WP	25 psig	BL
300" H ₂ O	WR	50 psig	BN

Notes

- Cables brown and orange are internally connected.
- Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20 mA 3 wire units), or 80% (voltage amp. units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2c, 2j.
- Static Error Band is the recommended performance specification. The static error band is calculated as the best fit straight line through zero, including the effects of non-linearity, hysteresis and non-repeatability.
- G=Green; B=Blue; W=White; BI=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
- No mating connector necessary with cable option.
- Input power (voltage) for internal amplifier options 2j depends on load resistance.

Special Customer Requirements
(Consult Factory)

Different materials
Different threads
O₂ Clean
Radiation proof
Special temperature compensation
Temperature and pressure calibration

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP712** **BJ** **3d**
Order Code Range Code Options Code

1-888-282-9891

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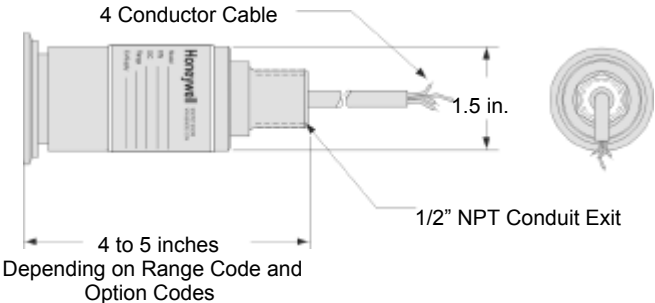
Model CIP-Ultra Sanitary Process Transmitters

Order Code (see table below)

- 0 to 600 psi Range
- Track Temperature Changes - 200°F/ minute
- 4-20 mA Output
- 500 s Pressure Response Time
- Secondary Containment Exceeds 1500 psi
- Accuracy to 0.1%



Dimensions



Wiring Code

Cable/ 2 wire current, 4-20 mA

Red (+) Supply
Black (+) Output (4-20 mA)
White Case Ground

Flanges

Flange	Size	Code
Cherry-Burrell	1 1/2"	16f
Cherry-Burrell	2"	16g
Cherry-Burrell	2 1/2"	16h
Cherry-Burrell	3"	16i

Flange	Size	Code
Tri-Clover	1 1/2"	16b
Tri-Clover	2"	16c
Tri-Clover	2 1/2"	16d
Tri-Clover	3"	16e

Performance

Accuracy (note 1).....See table

Accuracy	Order Code	Ranges
0.1%	CP100 (Gage) CP101 (Absolute)	1; 2.5; 5; 10; 15; 25; 50; 100; 200; 250; 400; 500; 600 psi
0.25%	CP200 (gage) CP201 (Absolute)	1; 2.5; 5; 10; 15; 25; 50; 100; 200; 250; 400; 500; 600 psi
0.5%	CP300 (Gage) CP301 (Absolute)	1; 2.5; 5; 10; 15; 25; 50; 100; 200; 250; 400; 500; 600 psi

Pressure Ranges

1 1/2" Flange.....0-5 to 0-600 psi

2" Flange.....0-1 to 0-500 psi

2 1/2" Flange.....0-1 to 0-400 psi

3" Flange.....0-1 to 0-250 psi

Max. Flange Pressure.....600 psi with 13MHHS clamp at 72° F, 1.5" size

Response Time (comb. mech. & elect.).....500 microseconds

Resolution.....Infinite

Orientation Sensitivity.....0.03 psi/G

Environmental

Process Temperature (note 2 & 3).....-20° to 260° F

Sensor Temperature (note 4).....30° to 180° F

Temperature, Effect (note 5)

Zero.....1% Full Scale/ 100° F (2% Full Scale/ 100° F for 1 psi)

Span.....1% Full Scale/ 100° F (2% Full Scale/ 100° F for 1 psi)

Electrical

Supply Voltage.....9 to 28 VDC

Electrical Connection (Std.).....1/2-14 NPT Conduit Exit with 5ft. Cable

Load Impedance (Max.).....950 Ohms @ 28 VDC

Zero Balance.....4 mA +/- 0.16 mA

Output (Std.).....4-20 mA, 2-wire

1-888-282-9891

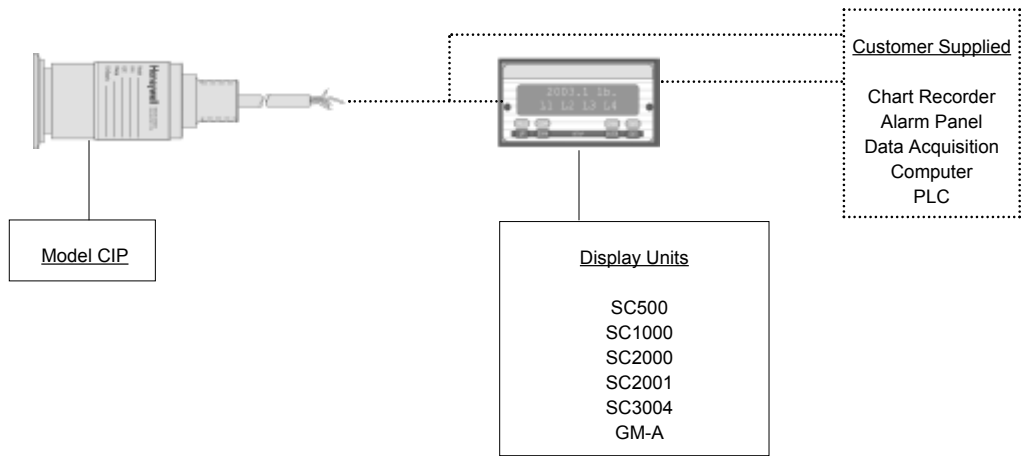
www.honeywell.com/sensotec

Model CIP Ultra

Mechanical

Media.....	Steam, Ethylene Oxide, Liquid, Gas
Wetted Parts Material.....	316-L Stainless, Hastelloy C-276
Fill Material.....	NEOBEE M-20
Weight (nominal).....	16 oz.
Case Material.....	316-L Stainless
Sanitary Std.....	3-A, #37-01
Over Pressure.....	4 x To max flange pressure

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Intrinsically Safe Amp Option 2N (2n)***
Output Signal	4-20 mA
Input Power (Voltage)	9-28 VDC (note 3)
Input Power (Current)	4-20 mA
Frequency Response	2000 Hz
Power Supply Rejection	60 db
Operating Temperature	-20° to 185° F
Reverse Voltage Protection	Yes
Short Circuit Protection	Yes
Wiring Code: Connector	A (+) Supply B No Connection C No Connection D (+) Output E Case Ground F No Connection
Wiring Code: Cable (std.) (note 6) (note 7)	R (+) Supply BI (+) Output W Case Ground

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Model CIP Ultra

Options

	Built to Order	Built from Scratch
Pressure Ranges	1; 2.5; 5; 10; 15; 25; 50; 75; 100; 200; 250; 400; 500; 600 psi	
Temperature Compensation	30° to 180° F	1i. -65° to 250° F
Internal Amplifiers	2N(2n). Intrinsically safe amp 4-20 mA, 2 wire current	
Internal Amplifier Enhancements	Side points	Special Filtering
Pressure Ports	Tri-clover Cherry Burrell	
Electrical Termination	6j. 1/2-14 NPT Conduit fitting with 5' of 4 conductor PVC cable	
	6a. Bendix PTIH-10-6P or equivalent 6 pin	
	6m. DIN43650 (note 8)	
	6n. DIN 40050	
Shunt Calibration	3d. Remote Buffered Shunt Cal	
Special Calibration	Compound, Vacuum, Barometric	Bar
Wetted Diaphragm	10c. Hastelloy-C 276	
Bridge Resistance	12b. 5,000 Ohm (foil) (max. 250° F)	
Potentiometers	14b. Top access to pots	

Supplied as standard

Range Codes

Range	Range Code	Range	Range Code
1 psi	AP	100 psi	BR
2.5 psi	AS	200 psi	CL
5 psi	AT	250 psi	CN
10 psi	AV	400 psi	CQ
15 psi	BJ	500 psi	CR
25 psi	BL	600 psi	CS
50 psi	BN		

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability.
2. Higher ranges may be available for special applications. Consult factory.
3. Specifications may vary with flange size and pressure range. Consult factory.
4. 30° to 130°F for 1 psi range (only applicable for CP100, CP101, CP200 & CP201).
5. Temperature profile for heated vessels:

Process temp.	Sensor temp.
260°F	180°F
200°F	145°F
150°F	120°F
100°F	90°F
75°F	75°F
50°F	65°F
0°F	40°F
-20°F	30°F

6. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector
7. No mating connector necessary with cable option.
8. For potentiometer access for zero and span adjustment by instrumentation tech. Electrical termination is DIN 43650 Hirschmann plug; environmental class IP65 (NEMA 4). Conduit attachment by PG 9 thread on plug.

Special Customer Requirements (Consult Factory)

Different electrical connectors
O₂ Clean
Single pole 3 Hz. filter for electrical damping
(helps remove vibration induced noises from pumps, stirrers, etc.)
Special temperature compensation
Temperature and pressure calibration
3/4" CIP or ranges above 50 psi

A
3
Standards

How to Order

Combine the order code, the range code and the options code.

Sample Code: **CP100** **AT** **16g**
Order Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

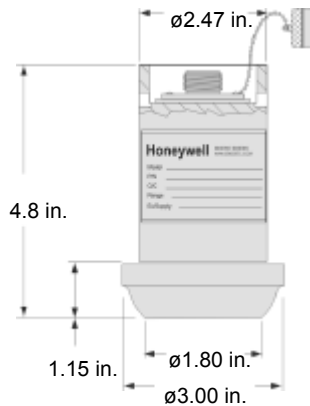
Model 424 Wing Union Pressure Transmitter

Order Code BP424

- Long Life X-750 Material
- Rugged, Robust Design
- 2202 2" Wing Union Size
- RFI/ EMI Protected
- Intrinsically Safe
- Quick Delivery Service
- 0.2% Accuracy
- Optional On-Board Temperature Sensor



Dimensions



Wiring Codes

AMP (NS), 3-COND, 4 Pin, GND

A	N/C
B	(+) Output
C	(+) Supply
D	Case Ground

Performance

Pressure Ranges	0-5000 psi; 0-6000 psi; 0-10,000 psi; 0-15,000 psi; 0-20,000psi
Accuracy (note 1)	+/- 0.2% Best Fit Straight Line
Calibration	5 point calibration; 0%, 50% and 100% of Full Scale
Output	4-20 mA, 2-wire Full Scale
Resolution	Infinite

Environmental

Temperature, Operating	-45° to 200° F (-43° to 93° C)
Temperature, Compensated	-30° to 180° F (-35° to 80° C)
Temperature, Effect	
Zero	0.01% Full Scale/° F (0.018% Full Scale/°C)
Span	0.01% Reading/° F (0.018% Reading/°C)
Sealing	Hermetically sealed IP68/ Nema 6P

Electrical

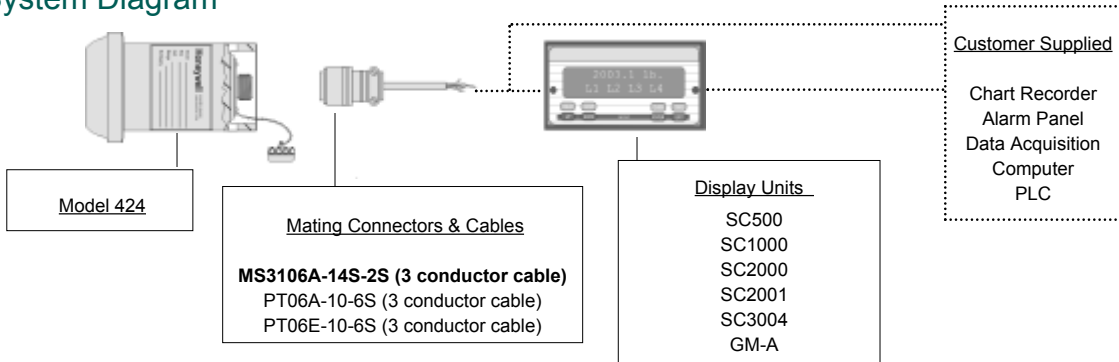
Supply Voltage	9-28 VDC
Output (standard)	4-20 mA (2-wire) Full Scale
Insulation Resistance	Greater than or equal to 100 Megohms @ 50 VDC
Maximum Loop Resistance	950 Ohms @ 28 Volts decreasing linearly to 0 Ohms @ 9 Volts
Circuit Protection	Reverse Polarity Protection of Supply Leads
RFI/ EMI Protection	Noise Immunity from 5,000 Hz to 1.0 GHz
Frequency Response	Customer specified and factory installed filter for frequency response of min. 10 Hz to max. of 2,000 Hz (1.4×10^{-4} sec.)
Shunt Calibration Data	Included
Electrical Termination (std)	MS-3102E-14S-2P, 4 Pin Stainless Steel Hermetic Equal

Mechanical

Media	Corrosive & abrasive service
Overload-Safe	150% Rated Full Scale Pressure or limit of WECO 2202 fitting
Overload-Burst	250% Rated Pressure or limit of WECO 2202 fitting
Pressure Port	WECO 2202 Wing Union, 2" pipe, Male Sub End
Wetted Parts Material	Inconel X-750
Weight	6 lb.
Case Material	Inconel X-750
	(labels are welded stainless steel with embossed characters)

Model 424

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Intrinsically Safe Amp Option 2N (2n)
Output Signal	4-20 mA
Input Power (Voltage)	9-28 VDC
Input Power (Current)	4-24 mA
Frequency Response (amp)	2000 Hz
Power Supply Rejection	60 db
Operating Temperature	-20° to 185° F
Reverse Voltage Protection	Yes
Short Circuit Protection	Yes
Wiring Code: Connector (Std.)	A No Connection B (+) Output C (+) Supply D Case Ground
	See Sensotec web site for most up-to- date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code
0-5,000 psi	DR
0-6,000 psi	DS
0-10,000 psi	DV
0-15,000 psi	DJ
0-20,000 psi	EL

Options

	Built to Order
Pressure Ranges (note 3)	0-5,000; 0-6,000; 0-10,000; 0-15,000; 0-20,000 psi
Temperature Compensation	-30° F to 180° F
Internal Amplifiers	2n(2N). 4-20 mA (2-wire) output; Intrinsically safe
Electrical Termination	MS-3102E-14S-2P, 4 pin stainless steel hermetic
Shunt Calibration	6a. Bendix PTIH-10-6P- (or equivalent) 6 pin (max. 250° F)
Special Calibration (note 2)	9a. 10 point (5 up/ 5 down) 20% increments @70°F 9b. 20 point (10 up/ 10 down) 10% increments @ 70° F
Wetted Diaphragm	10e. Inconel X-750
Potentiometers	14b. Top access to pots
Temperature Sensing Options	45c. RTD output direct to connector. Gives temperature as a resistance reading. Intrinsically Safe 45d. RTD with temperature as a 4-20 mA output. Not Intrinsically Safe

Supplied as standard

Special Customer Requirements (Consult Factory)

Different wiring codes
Different electrical connectors
Different materials
Different amplifier options
DNV Approval available
Electro-static discharge immunity
Lightning protection
O₂ Clean
OEM labels
Temperature & Pressure calibration
Carrying handles/ Connector guards

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
2. Availability varies with range.
3. Working pressure and approval limited to 15,000 psi. Amplifier will allow overpressure readings to 20,000 psi.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP424** **DV** **45c**
Order Code Range Code Options Code

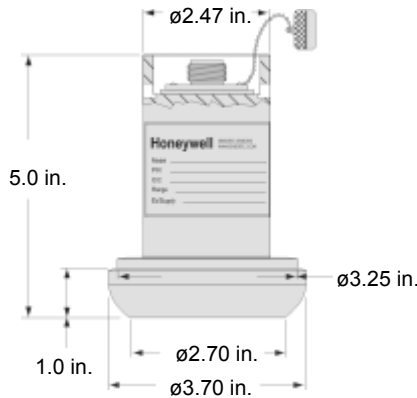
Model 425 Wing Union Pressure Transmitter

Order Code BP425

- Long Life X-750 Material
- Rugged, Robust Design
- 1502 2" Wing Union Size
- RFI/ EMI Protected
- Intrinsically Safe
- Quick Delivery Service
- 0.2% Accuracy
- Optional On-Board Temperature Sensor



Dimensions



Wiring Codes

AMP (NS), 3-COND, 4 Pin, GND

A	N/C
B	(+) Output
C	(+) Supply
D	Case Ground

Performance

Pressure Ranges.....	0-5000; 0-6000; 0-10,000; 0-15,000; 0-20,000 psi (note 3)
Accuracy (note 1).....	+/- 0.2% Best Fit Straight Line
Output.....	4-20 mA (2-wire)
Resolution.....	Infinite
Calibration.....	5 point calibration: 0%, 50% and 100% of Full Scale

Environmental

Temperature, Operating.....	-45° to 200° F (-43° to 93° C)
Temperature, Compensated.....	-30° to 180° F (-35° to 80°C)
Temperature, Effect	
Zero.....	0.01% Full Scale/° F (0.018% Full Scale/° C)
Span.....	0.01% Reading/° F (0.018% Reading/° C)
Sealing.....	Hermetically Sealed IP68/ NEMA 6P

Electrical

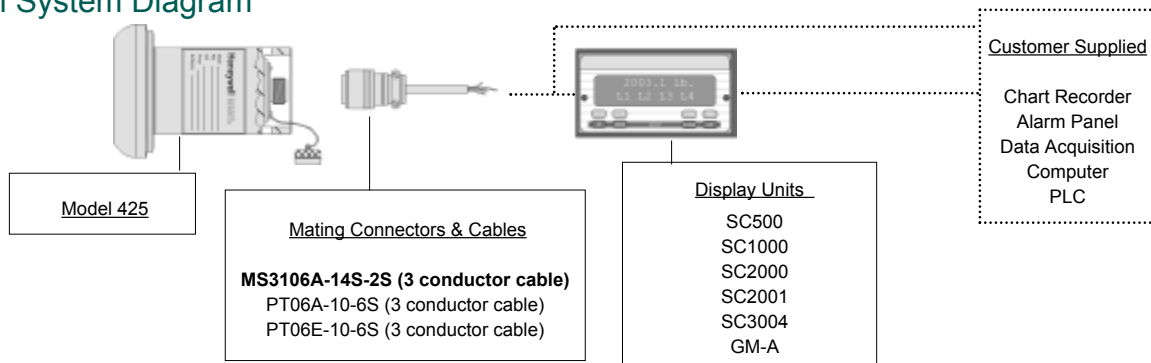
Supply Voltage.....	9-28 VDC
Insulation Resistance.....	Greater than or equal to 100 Megohms @ 50 VDC
Max Loop Resistance.....	950 Ohms at 28 Volts decreasing linearly to 0 Ohms at 9 Volts
Circuit Protection.....	Reverse polarity protection of supply leads
RFI/ EMI Protection.....	Noise immunity from 5,000 Hz to 1.0 GHz
Frequency Response.....	Customer specified and factory installed filter for frequency response of min. 10Hz to max. of 2,500 Hz
Zero and Span Adjustment.....	Field adjustable by removing connector
Shunt Calibration Data.....	Included
Electrical Termination (std).....	MS-3102E-14S-2P, 4 Pin Stainless Steel Hermetic Equal

Mechanical

Media.....	Corrosive and abrasive service, Inconel X-750
Overload-Safe.....	150% Rated Full Scale Pressure or limit of Wing Union 1502 fitting
Overload-Burst.....	250% Rated Pressure or limit of Wing Union 1502 fitting
Pressure Port.....	1502 Wing Union, 2" pipe, Male Sub End
Wetted Parts Material.....	Inconel X-750
Weight.....	6 lb.
Case Material.....	Inconel X-750 (labels are welded stainless steel with embossed characters)

Model 425

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Intrinsically Safe Amp Option 2N (2n)
Output Signal	4-20 mA
Input Power (Voltage)	9-28 VDC
Input Power (Current)	4-24 mA
Frequency Response (amp)	2000 Hz
Power Supply Rejection	60 db
Operating Temperature	-20° to 185° F
Reverse Voltage Protection	Yes
Short Circuit Protection	Yes
Wiring Code: Connector (Std.)	A No Connection B (+) Output C (+) Supply D Case Ground
	See Sensotec web site for most up-to- date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code
0-5,000 psi	DR
0-6,000 psi	DS
0-10,000 psi	DV
0-15,000 psi	DJ
0-20,000 psi	EL

Options

	Built to Order
Pressure Ranges (note 3)	0-5,000; 0-6,000; 0-10,000; 0-15,000; 0-20,000 psi
Temperature Compensation	-30° F to 180° F
Internal Amplifiers	2n(2N). 4-20 mA (2-wire) output; Intrinsically safe
Electrical Termination	MS-3102E-14S-2P, 4 pin stainless steel hermetic
Shunt Calibration	6a. Bendix PTIH-10-6P- (or equivalent) 6 pin (max. 250° F)
Special Calibration (note 2)	9a. 10 point (5 up/ 5 down) 20% increments @70°F 9b. 20 point (10 up/ 10 down) 10% increments @ 70° F
Wetted Diaphragm	10e. Inconel X-750
Potentiometers	14b. Top access to pots
Temperature Sensing Options	45c. RTD output direct to connector. Gives temperature as a resistance reading. Intrinsically Safe 45d. RTD with temperature as a 4-20 mA output. Not Intrinsically Safe

Supplied as standard

Special Customer Requirements (Consult Factory)

Different wiring codes
Different electrical connectors
Different materials
Different amplifier options
DNV Approval available
Electro-static discharge immunity
Lightning protection
O₂ Clean
OEM labels
Temperature & Pressure calibration
Carrying handles/ Connector guards

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis & non-repeatability thru zero.
2. Availability varies with range.
3. Working pressure and approval limited to 15,000 psi. Amplifier will allow overpressure readings to 20,000 psi.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BP425** **DV** **45c**
Order Code Range Code Options Code

1-888-282-9891

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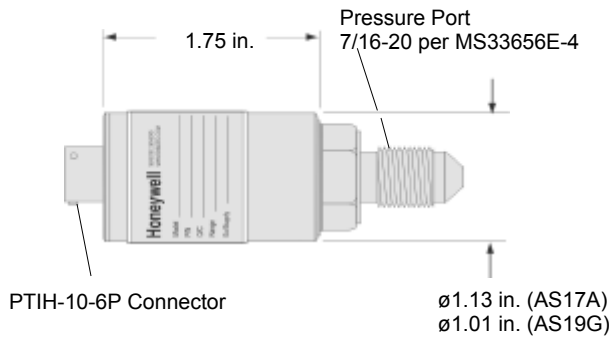
Model AS17A/ AS19G Aerospace Pressure Transducers

Order Code AP161 (absolute); AP162 (gage)

- Non-Linearity 0.15% BFSL
- Lightweight



Dimensions



Wiring Code

Connector/Unamplified

A&B	(+) Excitation
C&D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	
Model AS17A (Absolute)	10 to 10,000 psia
Model AS19G (Gage)	25 to 10,000 psig
Linearity	+/- 0.15% Full Scale
Hysteresis	+/- 0.10% Full Scale
Output	3 mV/V Nominal
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 300° F
Temperature, Compensated	-65° to 250° F
Temperature, Effect	
Zero	0.005% Full Scale/° F
Span	0.005% Reading/° F

Electrical

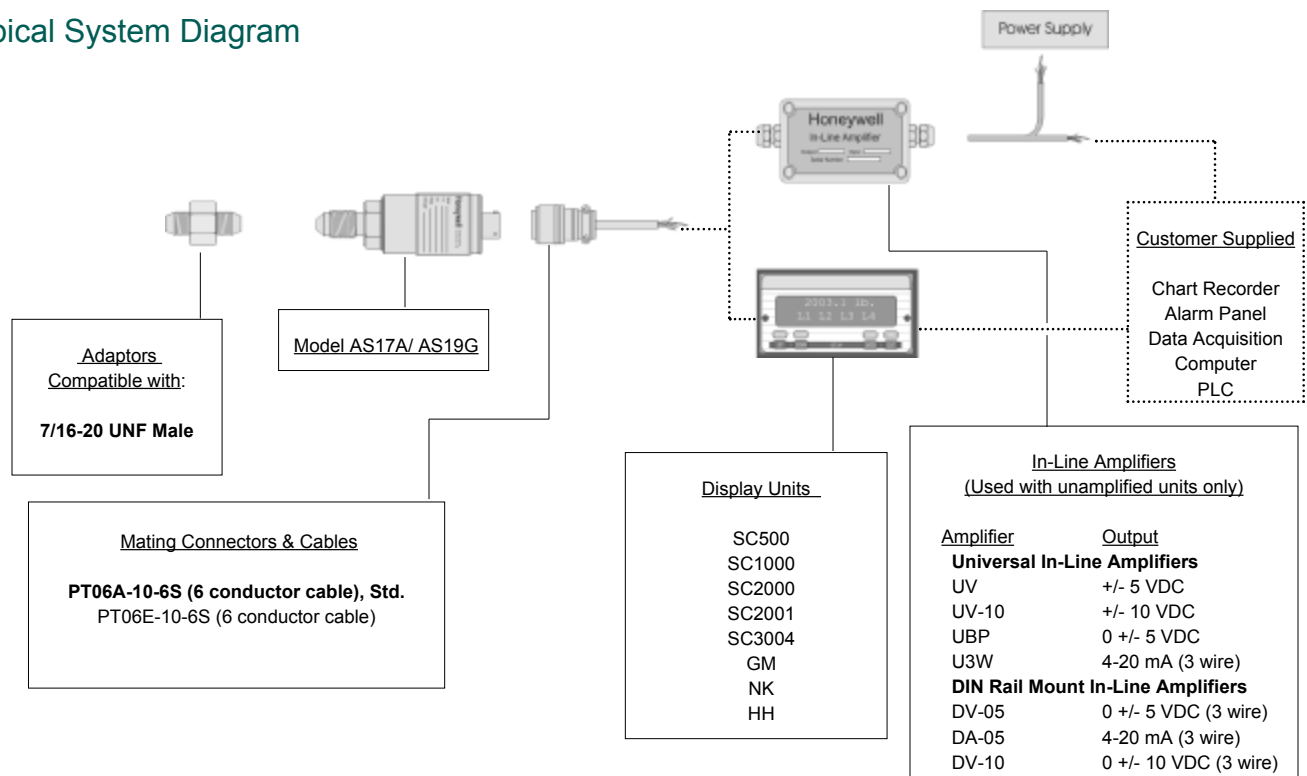
Excitation (calibration)	10 VDC
Bridge Resistance	350 Ohms
Electrical Termination (std)	Bendix PTIH-10-6P or equivalent

Mechanical

Media	Fluids compatible with 17-4 PH Stainless Steel
Pressure Port	7/16-20 per MS33656E-4
Wetted Parts Material	17-4 PH Stainless Steel
Weight	5 oz.
Case Material	Stainless Steel

Model AS17A/ AS19G

Typical System Diagram



Range Codes

Range	Range Code
10 psig/a	AV
15 psig/a	BJ
25 psig/a	BL
50 psig/a	BN
75 psig/a	BP
100 psig/a	BR
150 psig/a	CJ
200 psig/a	CL
300 psig/a	CP
500 psig/a	CR
750 psig/a	CT
1,000 psig/a	CV
1,500 psig/a	DJ
2,000 psig/a	DL
3,000 psig/a	DN
5,000 psig/a	DR
7,500 psig/a	DT
10,000 psig/a	DV

How to Order

Combine the order code and the range code.

Sample Code: **AP161** **BJ**
Order Code Range Code

Accu-Gage Digital Pressure Gages and Digital Pressure Indicators

Model AG400/AG401

- Transducer with Readout
- Highly Stable Reading
- 0.05% or 0.10% F.S. Accuracy
- N.I.S.T Traceable Instrument and Transducer



This combination pressure transducer and digital readout is designed for use in both industrial and laboratory applications. ACCU-GAGE offers portability, enhanced accuracy, industrial grade durability, and very competitive prices.

ACCU-GAGE units are also often suitable for panel mounting to provide a clear readout of pressure or vacuum to machine operators on the process line or as on-line quality control monitors. They are also often additions to statistical process control systems, using the RS232 interface.

ACCU-GAGE often handles even the harshest industrial environments with a metal case and handle to avoid failures caused by shock or vibration often associated with the use of plastics.

These instruments are often replacements for:

- Precision Dial Gages
- Mercury Columns
- Quartz Tube Barometers

ULTRA HIGH PRECISION

The ACCU-GAGE Model AG-400 was designed to provide the highest accuracy (0.05% F.S.) and overall stability available in digital pressure indicators. To achieve the high level of stability demanded by Metrology and Calibration/Standards laboratories, SENSOTEC has chosen to fit all AG-400 instruments with our dependable, enhanced-accuracy pressure transducer. During manufacture these transducers undergo an extensive burn-in program. In addition, all ACCU-GAGE Instruments undergo individual burn-in prior to shipment, thus the AG benefits from a double burn-in at both transducer and instrument level. This truly enhances the long-term stability of the instrument enabling the AG to perform as a high integrity pressure transfer standard. Full traceability is assured to National Standards.

Performance

Pressure Ranges

AG400.....15; 25; 50; 75; 100; 200; 300; 500; 750; 1000; 1500; 2000;
.....3000; 5000; 7500; 10,000; 15,000; psig/a/v

AG401.....15; 25; 50; 75; 100; 200; 300; 500; 750; 1000; 1500; 2000;
.....3000; 5000; 7500; 10,000; 15,000; 60,000 psig/a/v

Accuracy

AG400.....+/-0.05%

AG401.....+/-0.10%

General

Number of Channels.....1
Case Material.....Aluminum
Case Size.....3/8 DIN

Environmental

Temperature, Operating.....60° to 105°F
Temperature, Effect.....0.004%/ °F over operating range
Temperature, Storage.....-20° to 200°F

Amplifier Characteristics

Frequency Response.....2 Hz
Step Response.....40 ms

Digital Display Characteristics

Number of Characters.....6
Scaling.....Automatic or manual setup
Max. Display Count.....9,999,999
Field Selectable Units.....psi, bar, mbar, torr, in.H₂O, ft.H₂O, in.Hg, mmHg, MPa
Resolution.....1/50,000

Physical Characteristics

Power Requirements.....120 to 230 VAC, 47 to 63 Hz
Limits Output.....Open-collector
Pressure Port
15 to 1000 psi.....1/4-18 NPT male
1500 to 10,000 psi.....1/4-18 NPT female
15,000 to 60,000 psi.....Autoclave AE F250-C

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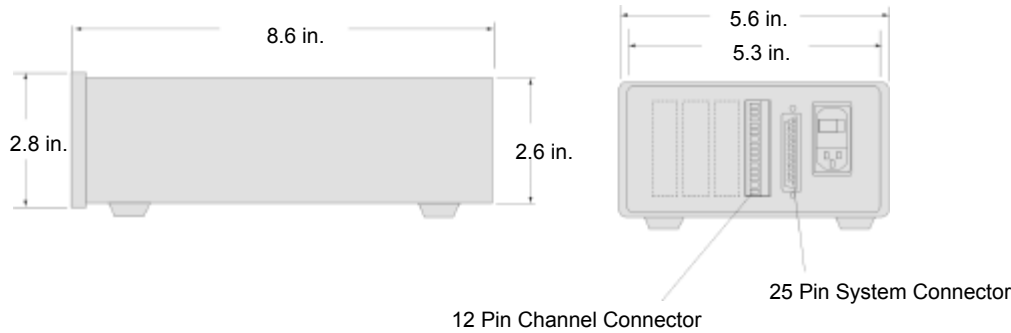
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Model Accugage

Special Features

0-560° to 105°F or 0-10V Output (Field Selectable)
Field Selectable Engineering Units
Auto-Zero
Tare
Hi/Lo Quad Limits
Peak/ Valley Hold on Input Channels

Dimensions



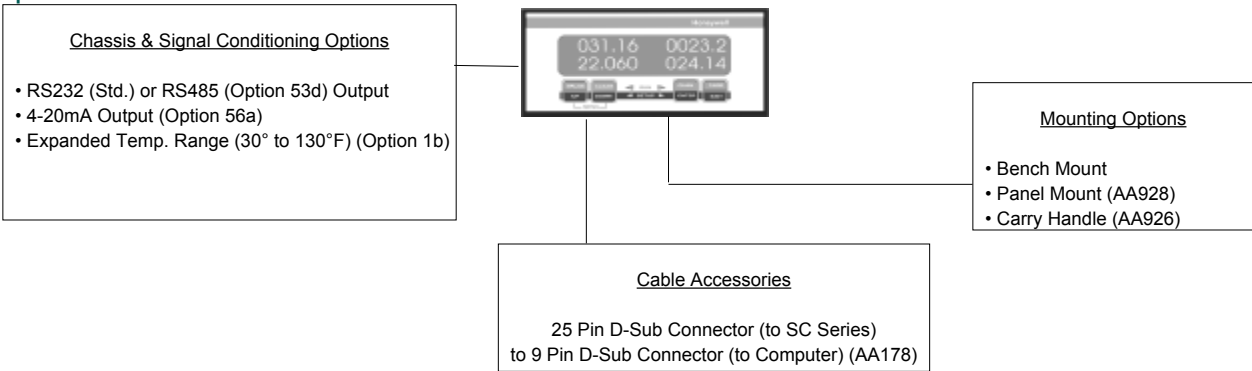
Ordering Information

Model	AG400	AG401
Order Codes	AE435 (gage) AE436 (absolute) AE437 (vacuum)	AE441 (gage) AE442 (absolute) AE443 (vacuum)
Accuracy	0.05%	0.10%
Pressure Ranges	15 - 15,000 psi	15 - 60,000 psi

Range Codes

Range	Range Code	Range	Range Code
15 psig/a/v	BJ	1,000 psig/a/v	CV
25 psig/a/v	BL	1,500 psig/a/v	DJ
50 psig/a/v	BN	2,000 psig/a/v	DL
75 psig/a/v	BP	3,000 psig/a/v	DN
100 psig/a/v	BR	5,000 psig/a/v	DR
200 psig/a/v	CL	7,500 psig/a/v	DT
300 psig/a/v	CP	10,000 psig/a/v	DV
500 psig/a/v	CR	15,000 psig/a/v	EJ
750 psig/a/v	CT	60,000 psig/a/v	ES

Options



How to Order

Combine the order code, the range code and the options code.

Sample Code: **AE435** **CV** **1b**

Order Code Range Code Options Code

Intrinsically Safe Rated Pressure Transmitters and Load Cells

- FM, CSA, EX, CE
- Accuracy to 0.10%
- Load Ranges from 5 to 400,000 lbs.
- Pressure Ranges from 0.5 to 30,000 psi
- True Gage, Absolute, Differential



Intrinsically safe equipment is often not capable of releasing sufficient electrical or thermal energy to ignite a hazardous atmosphere of gas or dust.

- Automotive, Engine test
- Grain Storage
- Utilities
- Brewing, Distilling
- Munitions
- Waste Water
- Chemical
- Mining
- Oil field
- Cosmetics
- Pharmaceuticals
- Explosive
- Fuels Testing
- Petrochemical
- Pellet Compaction
- Fuel Pump Testing
- Paint & Ink

Intrinsically Safe transmitter, Option 2n (2N)(note 2), is often a standard add-on to the following models and features a welded stainless steel electrical connection. (Options may increase length, consult factory).

NOTE: Some combination of options may not be available intrinsically safe, consult factory.



Pressure

Pressure and Differential Pressure Transducers

Model	Accuracy (note 1)	Ranges Available
FP2000	+/- 0.25% or 0.10%	0.5 to 5000 psi
TJE	+/- 0.10%	0.5 to 60,000 psi
Z	+/- 0.25%	0.5 to 60,000 psi
A-5	+/- 0.50%	0.5 to 60,000 psi
424/425	+/- 0.25%	0 to 15,000 psi
HL-Z	+/- 0.25%	50 to 5000 psid
HL-A-5	+/- 0.50%	50 to 5000 psid

Load/Force

Load Cells

Model	Accuracy (note 1)	Ranges Available	
45	+/- 0.05%	200 to 100,000 lbs.	Ultra Precision Fatigue Rated
73,75	+/- 0.10%	50 to 200,000 lbs.	Fatigue Rated
41,43	+/- 0.10%	5 to 400,000 lbs.	Precision

Notes

1. Accuracy is defined as BFSI at full scale.
2. See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

DIFFERENTIAL PRESSURE TRANSDUCERS

Potential Application	Model	Order Code	Accuracy	Page	
Quick Ship General Purpose	FP2000	FPA,FPB,FPG, FPV,FDD,FDW	0.10% - 0.25%	92	
Low Range Differential Pressure	A-5 (L)	AD112	0.5%	97	
	KZ	AD115	0.25%	100	
	Z (L)	AD111	0.25%	103	
	TJE (L)	AD114,AD116	0.1%	106	
Medium Range Differential Pressure	A-5 (M)	AD123	0.5%	112	
	Z (M)	AD122	0.25%	115	
High Range Differential Pressure	A-5 (H)	BD142	0.5%	118	
	Z (H)	BD141	0.25%	121	
Ultra Precision	TJE	BD121	0.1%	124	
High Line Differential Pressure Intrinsically Safe Option	HL-A-5	BD512	0.5%	127	
	HL-Z	BD511	0.25%	130	
Explosion Resistant	911FMD (L)	BD421	0.25%	133	
	911FMD (M)	BD422	0.25%	135	
	911FMD (H)	BD423	0.25%	137	
Transmitters Intrinsically Safe Option	420DP (L)	AD411	0.5%	139	
	420DP (M)	AD412	0.5%	141	
	420DP (H)	AD413	0.5%	143	
Special Applications	P-30-P	BD311,BD312	0.3%	145	
	AS25D	BD313	0.3%	147	

Model FP2000 Configurable Pressure Transducers

Order Code (see below)

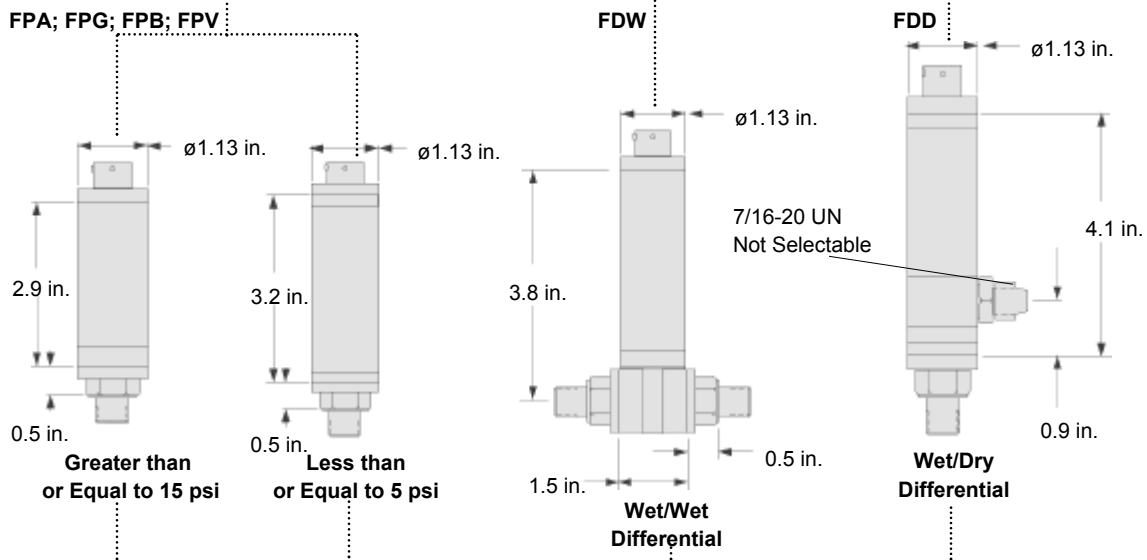
- 2-Week Delivery
- mV/V, 0-5, 0-10 VDC, or 4-20 mA
- Gage, Absolute, Barometric, Vacuum
- Differential (Wet/ Wet, Wet/ Dry)



Dimensions

Electrical Termination

Code 6a 6-Pin, Vented, Bendix Style 	Code 6m 4-Pin, Vented, Standard DIN (43650) 	Code 6n 4-Pin, Vented, Mini DIN 	Code 6q 4-Conductor, Vented, Integral Cable, 5 ft. 	Code 6r 4-Conductor, Vented, Integral Cable, Conduit Fitting 5 ft.



Pressure Ports

	Code 5a 1/4-18 NPT Female	Code 5b 1/4-18 NPT Male	Code 5c 7/16-20 UNF Female	Code 5d 7/16-20 UNF Male	Code 5f G 1/4 B Female	Code 5g G 1/4 B Male
Less than 1000 psi	0.5"	1.1"	0.6"	1.0"	0.7"	1.2"
Greater than 1500 psi	1.0"	1.3"	1.0"	1.3"	1.0"	1.2"
	Code 5h 1/8-27 NPT Female	Code 5i 1/8-27 NPT Male	Code 5p M12-1.5 Male	Code 5q M12-1.5 Female	Code 5r 9/16-18 SAE Male	Code 5s 9/16-18 SAE Female
Less than 1000 psi	0.525"	0.905"	1.025"	0.500"	1.075"	0.625"
Greater than 1500 psi	1.05"	1.12"	1.32"	1.05"	1.353"	1.05"

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Model FP2000

Performance

Pressure Ranges & Range codes

	psi	Range Code	torr	Range Code	mBar	Range Code	kPa	Range Code	Bar	Range Code	in Hg	Range Code	mm Hg	Range Code	in H ₂ O	Range Code
Gage, Absolute (Order Codes FPG, FPA)	0.5*	AN	15	HA	35	JA	2	KA	0.035	MA	1	UB	15	VA	5	WB
	1*	AP	50	HB	70	JB	7	KB	0.1	MB	2	UD	50	VB	10	WA
	2*	AR	135	HC	175	JC	15	KC	0.2	MC	5	UF	135	VC	20	WC
	2.5*	AS	250	HD	350	JD	35	KD	0.5	MD	10	UA	250	VD	30	WE
	5	AT	750	HE	700	JE	70	KE	1	ME	15	UC	750	VE	50	WG
	10	AV	1500	HF	750	JF	100	KF	2	MF	20	UE	1500	VF	100	WI
	15	BJ			1000	JG	200	KG	3.5	NA	30	UG			120	WK
	25	BL			3500	JH	300	KH	5	MG	50	UI			150	WM
	30	BM			7000	JI	700	KJ	7	NB	60	UK			200	WP
	50	BN			10000	JK	1000	KL	10	MH	80	UM			300	WR
	75	BP					1500	KM	20	MI	100	UP			500	WS
	100	BR					1700	KN	30	MJ	200	UH				
	150	CJ					2000	KP	35	NC	300	UJ				
	200	CL					3000	KQ	50	MK	500	UL				
	150	CN					5000	KR	70	ND	1000	UN				
	300	CP					7000	KS	100	ML	0-32	US				
	400	CQ					10000	KT	135	NE	16-32	UQ				
	500	CR					15000	KU	350	NG	26-32	UR				
	600	CS					20000	KV	500	MM						
	750	CT					35000	KW	700	NH						
	1000	CV					50000	KY								
	1500	DJ					70000	KZ								
	2000	DL														
	2500	DM														
	3000	DN														
	5000	DR														
	6000	DS														
	7500	DT														
	10000	DV														
Barometric (Order Code FPB)											0-30	UG				
											16-32	UQ				
											26-32	UR				
Vacuum (Order Code FPV)	1	AP	50	HB	35	JA	7	KB	0.035	MA	10	UA	15	VA	10	WA
	5	AT	135	HC	70	JB	15	KC	0.1	MB	20	UE	50	VB	20	WC
	10	AV	250	HD	175	JC	35	KD	0.2	MC	30	UG	135	VC	30	WE
	15	BJ	750	HE	350	JD	100	KF	0.5	MD			250	VD	50	WG
					700	JE			1	ME			750	VE	100	WI
					750	JF										
					1000	JG										
Differential (Order Codes FDD, FDW)	0.5	AN	15	HA	35	JA	2	KA	0.035	MA	1	UB	15	VA	5	WB
	1	AP	50	HB	70	JB	7	KB	0.1	MB	2	UD	50	VB	10	WA
	2	AR	135	HC	175	JC	15	KC	0.2	MC	5	UF	135	VC	20	WC
	2.5	AS	250	HD	350	JD	35	KD	0.5	MD	10	UA	250	VD	30	WE
	5	AT	750	HE	700	JE	70	KE	1	ME	15	UC	750	VE	50	WG
	10	AV	1500	HF	750	JF	100	KF	2	MF	20	UE	1500	VF	100	WI
	15	BJ			1000	JG	200	KG	3.5	NA	30	UG			120	WK
	25	BL			3500	JH	300	KH	5	MG	50	UI			150	WM
	30	BM			7000	JI	700	KJ	7	NB	60	UK			200	WP
	50	BN			10000	JK	1000	KL	10	MH	80	UM			300	WR
	75	BP					1500	KM	20	MI	100	UP			500	WS
	100	BR					1700	KN	30	MJ	200	UH				
	150	CJ					2000	KP	35	NC	300	UJ				
	200	CL					3000	KQ	50	MK	500	UL				
	150	CN					5000	KR	70	ND	1000	UN				
	300	CP					7000	KS	100	ML	0-32	US				
	400	CQ					10000	KT	135	NE	16-32	UQ				
	500	CR					15000	KU	350	NG	26-32	UR				
	600	CS					20000	KV	500	MM						
	750	CT					35000	KW								
	1000	CV					50000	KY								

*0.5 to 2.5 psi ranges not available for absolute pressure

Model FP2000

Performance (Continued)

Accuracy (note 1).....See table below
Output (selectable).....mV/V (See table below), 0-5 VDC, 0-10 VDC, or 4-20 mA (2 wire)
Resolution.....Infinite

Non-amplified output

@ 10 VDC excitation	Gage & Absolute	Vacuum	Barometric	Differential
0.10% accuracy	50 mV (note 4)	25 mV	40 mV	50 mV (note 4)
0.25% accuracy	100 mV	50 mV	80 mV	100 mV

Environmental

Temperature, Operating.....-40° to 240°F
Temperature, Compensated.....40° to 140°F (note 2)
Temperature, Error Band (note 2)
0.10% accuracy.....+/- 0.5% F.S.
0.25% accuracy.....+/- 1.0% F.S.

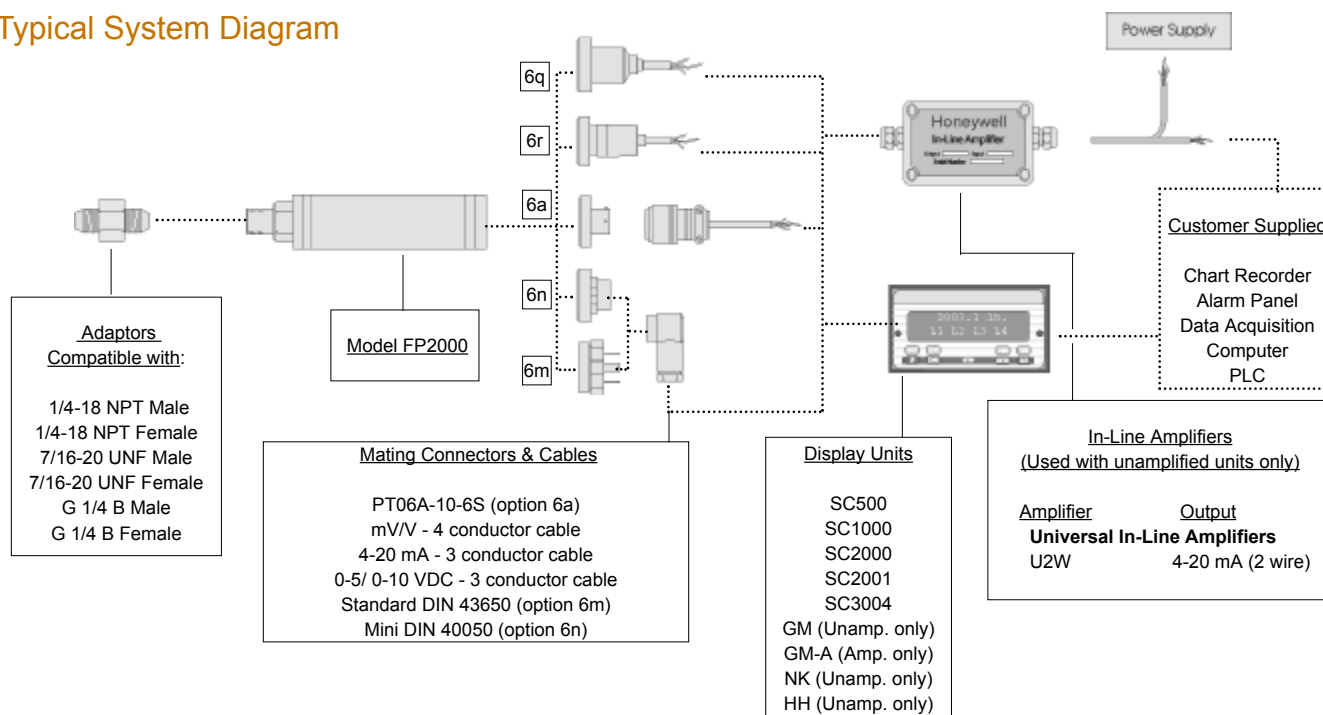
Electrical

Excitation (calibration)
Amplified (4-20 mA, 0-5 VDC).....9-28 VDC
Amplified (0-10 VDC).....15-28 VDC
Unamplified (mV/V).....10 VDC

Mechanical

Media (note 3).....Gas, Liquid
Overload-Safe
1000 psi and below.....4x Full Scale or 3,000 psi, whichever is less
1500 psi and above.....4x Full Scale or 15,000 psi, whichever is less
Negative Direction (for Differential).....4x Full Scale or 250 psi, whichever is less
Overload-Burst.....300% over capacity
Pressure Port.....200% over capacity
Wetted Parts Material.....Ha C276 & 316L Stainless Steel

Typical System Diagram



Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors, including linearity, hysteresis & non-repeatability thru zero.
2. For low pressure ranges, temperature effects may vary.
3. The Wet/Wet differential pressure transducer has two separate, welded Hastelloy diaphragms. In the Wet/Dry unit, the wet port (high port) has all-welded stainless and Hastelloy construction. The dry port (low port) has no isolation diaphragm.
4. For low gage and differential pressure ranges at 0.10% accuracy, non-amplified output @ 10 VDC excitation = 100mV.

Model FP2000

Internal Amplifiers

Amplifier Specifications	Unamplified Output Option 2u	Voltage Output Option 2d	Voltage Output Option 2g	Current 2 Wire Option 2p	Intrinsically Safe Amp 2n (2N)***
Output Signal	see table on previous page	0-5 VDC	0-10 VDC	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC	9-28 VDC	15-28VDC	9-32 VDC	9-28 VDC
Input Power (Current)	2mA @ 10 VDC	10mA	15mA	4-24 mA	4-24 mA
Frequency Response	Natural Frequency	300Hz	300Hz	300 Hz	2000 Hz
Power Supply Rejection	N/A	60db	60db	60 db	60 db
Operating Temperature	-100° to 250°F	-20° to 185°F	-20° to 185°F	-20° to 185° F	-20° to 185° F
Reverse Voltage Protection	N/A	Yes	Yes	Yes	Yes
Short Circuit Protection	N/A	Momentary	Momentary	Yes	Yes
Amplifier Specifications	Unamplified Output Option 2u	Voltage Output Option 2e	Voltage Output Option 2f	Current 2 Wire Option 2y	Intrinsically Safe Amp 2n (2N)***
Output Signal	see table on previous page	0-5 VDC	0-10 VDC	4-20 mA	4-20 mA
Input Power (Voltage)	10 VDC	9-28 VDC	15-28VDC	9-32 VDC	9-28 VDC
Input Power (Current)	2mA @ 10 VDC	10mA	15mA	4-24 mA	4-24 mA
Frequency Response	Natural Frequency	2000Hz	2000Hz	2000 Hz	2000 Hz
Power Supply Rejection	N/A	60db	60db	60 db	60 db
Operating Temperature	-100° to 250°F	-20° to 185°F	-20° to 185°F	-20° to 185° F	-20° to 185° F
Reverse Voltage Protection	N/A	Yes	Yes	Yes	Yes
Short Circuit Protection	N/A	Momentary	Momentary	Yes	Yes

Wiring Codes

	Unamplified Output Option 2u	Voltage Output Option 2d/ 2e	Voltage Output Option 2g/ 2f	Current 2 Wire Option 2p/ 2y	Intrinsically Safe Amp Option 2n (2N)***
Bendix PTIH-10-6P (Opt. 6a)					
No Shunt Cal	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (+) Output F (-) Output	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-5VDC E No Connection F No Connection	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-10VDC E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E No Connection F No Connection	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E Case Ground F No Connection
With Shunt Cal (Opt. 3d)	A (+) Excitation B (-) Excitation C (+) Output D (-) Output E No Connection F Shunt Cal	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-5VDC E No Connection F Shunt Cal	A (+) Supply B (-) Supply Return C (+) Output D (-) Output 0-10VDC E No Connection F Shunt Cal	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E No Connection F Shunt Cal	A (+) Supply B No Connection C No Connection D (+) Output 4-20 mA E No Connection F Shunt Cal
Std. DIN 43650 (Opt. 6m)					
No Shunt Cal	1 (+) Excitation 2 (+) Output 3 (-) Output 4 (-) Excitation	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDNo Connect. to case	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDNo Connect. to case	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GNDNo Connection	1 (+) Supply 2 (+) Output 3 Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDShunt Cal	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDShunt Cal	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GNDShunt Cal	1 (+) Supply 2 (+) Output 3 Case Ground GNDShunt Cal
Mini DIN 40050 (Opt. 6n)					
No Shunt Cal	1 (+) Excitation 2 (+) Output 3 (-) Output 4 (-) Excitation	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDNo Connect. to case	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDNo Connect. to case	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GNDNo Connection	1 (+) Supply 2 (+) Output 3 Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDShunt Cal	1 (+) Supply 2 (+) Output 3 Supply/ Output com. GNDShunt Cal	1 (+) Supply 2 (+) Output 4-20 mA 3 No Connection GNDShunt Cal	1 (+) Supply 2 (+) Output 3 Case Ground GNDShunt Cal
5' Integral Cable (Opt. 6q)					
No Shunt Cal	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA	R (+) Supply Bl (+) Output 4-20 mA W Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA G Shunt Cal	R (+) Supply Bl (+) Output 4-20 mA W Case Ground G Shunt Cal
Conduit Fitting (Opt. 6r)					
No Shunt Cal	R (+) Excitation Bl (-) Excitation G (-) Output W (+) Output	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G (-) Output W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA	R (+) Supply Bl (+) Output 4-20 mA W Case Ground
With Shunt Cal (Opt. 3d)	Not Applicable	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-5VDC	R (+) Supply Bl (-) Supply Return G Shunt Cal W (+) Output 0-10VDC	R (+) Supply Bl (+) Output 4-20 mA G Shunt Cal	R (+) Supply Bl (+) Output 4-20 mA W Case Ground G Shunt Cal

Note: For Wiring Codes, R=Red; Bl = Black; W = White; G = Green.
Color specifies cable and letter or number specifies connection

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

1-888-282-9891

www.honeywell.com/sensotec

How To Order

The **FP2000 Order Code** is an easy way for you to order exactly what you want the factory to build. Simply make one selection in each of the six required categories. Choose adders and accessories only if you require them. By visiting our website at www.honeywell.com/sensotec you can view complete technical specifications for the FP2000, or click to our on-line shopping site and actually place your order.

Step 1

TRANSDUCER TYPE

	Type Code
O Pressure - Gage	FPG
O Pressure - Absolute	FPA
O Diff - wet/wet	FDW
O Pressure - barometric	FPB
O Diff - wet/dry	FDD
O Pressure - vacuum	FPV

UNIT

O psi	O bar
O torr	O in Hg
O mBar	O mm Hg
O kPa	O in H2O

Step 2

PRESSURE RANGE

Gage, Absolute and Differential

Range Code	Range Code
O 0.5 psi AN	O 250 psi CN
O 1 psi AP	O 300 psi CP
O 2 psi AR	O 400 psi CQ
O 2.5 psi AS	O 500 psi CR
O 5 psi AT	O 600 psi CS
O 10 psi AV	O 750 psi CT
O 15 psi BJ	O 1,000 psi CV
O 25 psi BL	O 1,500 psi DJ
O 30 psi BM	O 2,000 psi DL
O 50 psi BN	O 2,500 psi DM
O 75 psi BP	O 3,000 psi DN
O 100 psi BR	O 5,000 psi DR
O 150 psi CJ	O 6,000 psi DS
O 200 psi CL	O 7,500 psi DT
	O 10,000 psi DV

Barometric

O 16-32"Hga UQ	O 1 psi AP
O 26-32"Hga UR	O 5 psi AT
O 0-30"Hga UG	O 10 psi AV
	O 15 psi BJ

ACCURACY

Accuracy Code
O 0.10% 1
O 0.25% 2

Step 3

OUTPUT

Basic Output	If Adding 9d or 9f Code (<5,000 psi)	If Adding 1y, 3d, 9e or 14c
O mV/V 2u	N.A.	2u
O 5 VDC 2d	N.A.	2e
O 10 VDC 2g	N.A.	2f
O 4-20 mA 2p	2n(2N)	2y

Note: If any ADDERS are required, the output code must be revised. See Screen 4.

PRESSURE PORT

Port Code
O 1/4-18 NPT Female 5a
O 1/4-18 NPT Male 5b
O 7/16-20 UNF Female 5c
O 7/16-20 UNF Male 5d
O G 1/4 B Female 5f
O G 1/4 B Male 5g
O 1/8-27 NPT Female 5h
O 1/8-27 NPT Male 5i
O M12 x 1.5 Male 5p
O M12 x 1.5 Female 5q
O 9/16-18 UNF SAE Male 5r
O 9/16-18 UNF SAE Female 5s

ELECTRICAL CONNECTOR

Connector Code
O Bendix PTIH-10-6P 6a
O DIN 43650 6m
O Mini DIN (40050) 6n
O Integral Polyurethane 5' Cable 6q
O 1/2 x 14 NPT Conduit 5' Cable Exit 6r

Step 4

ADDERS

Adder Code
O Enhanced Thermals 1y
O Shunt Cal 3d
O IS Rating 9d
O CE Rating 9e
O IS & CE Rating 9f
O Potentiometers 14c

Note: If you choose any Adder Output from Screen 4, you must revise your output code selection using this output code chart. I.S. Outputs available only on ranges up to 5,000 psi.

Adder Output Code

O mV/V 2u
O 5 VDC 2e
O 10VDC 2f
O 4-20mA 2y
(CE only)
O 4-20 mA 2n(2N)
(I.S. only)
O 4-20mA 2n(2N)
(I.S. & CE)

ACCESSORIES

Mating Connectors Only		Acc.Code
O Mini Din		AA161
O Bendix		AA111
Mating Connectors with 15' Cable for Bendix Connector (6A)	Without Shunt	With Shunt (3d)
O mV/V	AA113	AA513
O 4-20mA	AA116	AA516
O 0-5/0-10VDC	AA117	AA517

Step 5

DESCRIPTION	BASIC CODE						ADDER CODE See Screen 4				QTY
Order Code	TYPE	ACCU- RACY	RANGE	OUT- PUT	PRES- SURE	ELECT. CONN.	EX- TENDED	SHUNT CAL	I.S./CE RATED	POTS	
Accessory Code											

EXAMPLE ORDER CODE:

Selection	Description	Code
Transducer Type	Differential wet/wet	FDW
Accuracy	0.10%	1
Pressure Range	250 psi	CN
Output	4-20mA	2y
Pressure Port	1/4 - 18 NPT Male	5b
Electrical Output Connections	Bendix PTIH-10-6P	6a
Adders	Enhanced Temp. Range	1y
Accessories	Mating Connector w/Cable	AA116

There must be a code in each of the 6 Basic Code Boxes.

If there are no Adders or Accessories chosen, leave their boxes blank.

COMMENTS: Potentiometers are located on the side. See drawing for details. No potentiometers are available on mV/V output option.



Approved



Approved



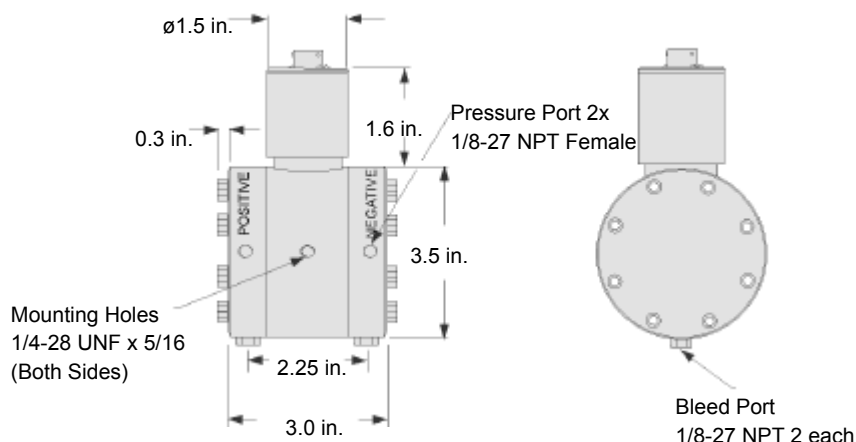
Approved
Intrinsically Safe Amp

Model A-5 Low Range Wet/ Wet Differential Pressure Transducer

Order Code AD112

- 0.5 to 30 psid
- All -Welded Design
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges 0 +/- 0.5; 1; 2; 5; 10; 15; 25; 30 psid
Accuracy+/- 0.5% Full Scale
Linearity+/- 0.25% Full Scale (typical)
Hysteresis+/- 0.13% Full Scale (typical)
Non-Repeatability+/- 0.07% Full Scale (typical)
Output (standard)
0.5 psid 1.0 mV/V nominal
1 to 4 psid 1.5 mV/V nominal
5 to 30 psid 2.0 mV/V nominal
Line Pressure 1500 psi
Resolution Infinite

Environmental

Temperature, Operating 30° to 190°F
Temperature, Compensated 30° to 130°F
Temperature, Effect
Zero+/- 0.75% Full scale/ 100 °F
Span+/- 1% Reading/ 100 °F

Electrical

Strain Gage Type Bonded Foil
Excitation (calibration) 10 VDC
Excitation (acceptable) Up to 10 VDC or AC
Insulation Resistance 5000 Megohms @ 50 VDC max.
Bridge Resistance 350 Ohms (nominal)
Shunt Calibration Data Included
Electrical Termination (std) Bendix PTIH-10-6P or equivalent
Mating Connector (not incl.) Bendix PT06A-10-6S or equivalent

Mechanical

Media All fluid and gases compatible with 316 stainless steel
Overload-Safe 1500 psi
Pressure Port 1/8-27 NPT Female (2)
Dead Volume 0.4 cu. in.
Wetted Parts Material 316 Stainless Steel
Weight 8 lb.
Case Material Stainless Steel

Model A-5

Internal Amplifiers

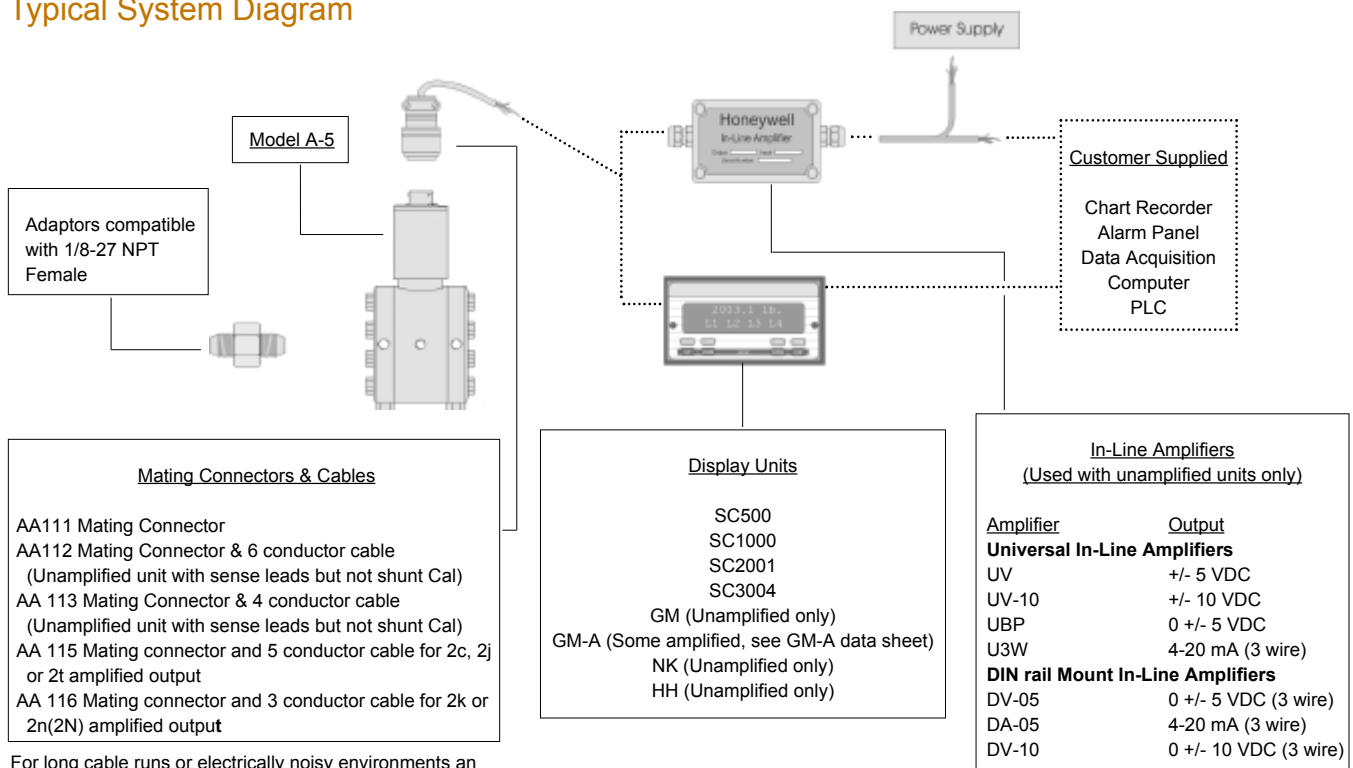
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
0.5 psid	AN
1 psid	AP
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL
30 psid	BM

Model A-5

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	0.5, 1, 2, 5, 10, 15, 25, 30	
Temperature Compensation	1b. 30° to 130° F 1a. 60° to 160° F 1d. -20° to 130° F 1c. 0° to 185° F 1j. 0° to 50° C	
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 8) 3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female (2) 5a. 1/4" - 18 NPT Female 5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equiv.) 6 pin (max. 120°C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater Cable(8m) (max. 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C) 6m. DIN 43650 6q. Molded Integral Cable: Polyurethane (note 1) 6t. Integral Cable with Heyco Spring Strain relief (1.6m)
Shunt Calibration	8a. Precision Internal Resistor (note 6)	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Wetted Diaphragm	10a. 316 Stainless Steel	
Bridge Type	11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge	
Potentiometers	14b. Top access to pots (note 7) 14a. No access to pots	
Increased Line Pressure		25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure (note 1)
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD111** **AP** **6h**
Order Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

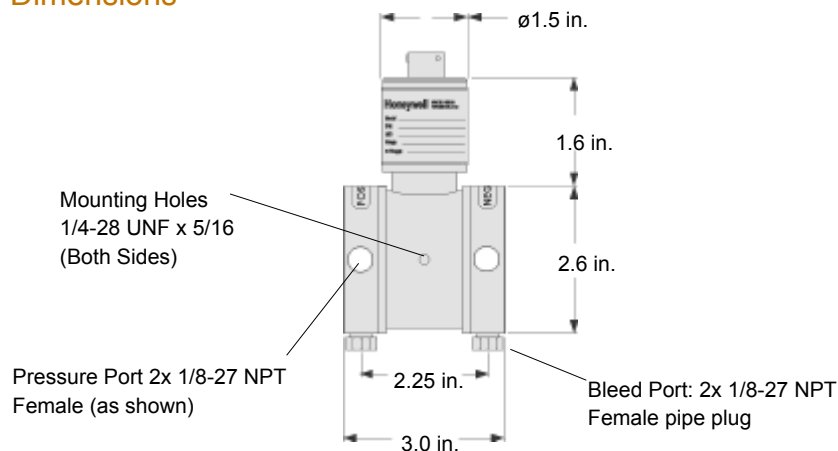
Model KZ Low Range Wet/ Wet Differential Pressure Transducer

Order Code AD115

- 0.5 to 30 psid
- All -Welded Design
- Amplified Output Available



Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	+/- 0.5; 1; 2; 5; 10; 15; 25; 30 psid**
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	
0.5 psid	1.0 mV/V nominal
1 to 4 psid	1.5 mV/V nominal
5 to 30 psid	2.0 mV/V nominal
Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	30° to 190°F
Temperature, Compensated	30° to 130°F
Temperature, Effect	
Zero	+/- 0.5% Full scale/ 100 °F
Span	+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Excitation (acceptable)	Up to 10 VDC or AC
Insulation Resistance	5000 Megohms @ 50 VDC max.
Bridge Resistance	350 Ohms (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	Bendix PTIH-10-6P or equivalent
Mating Connector (not incl.)	Bendix PT06A-10-6S or equivalent

Mechanical

Media	All fluid and gases compatible with 316 stainless steel
Overload-Safe	1500 psi
Pressure Port	1/8-27 NPT Female (2)
Dead Volume	0.4 cu. in.
Wetted Parts Material	316 Stainless Steel
Weight	4.2 lb.
Case Material	Stainless Steel

**Option: specify Inches of Water Column, Inches of Hg Column, mBar or kPa for the pressure ranges

1-888-282-9891

www.honeywell.com/sensotec

Model KZ

Internal Amplifiers

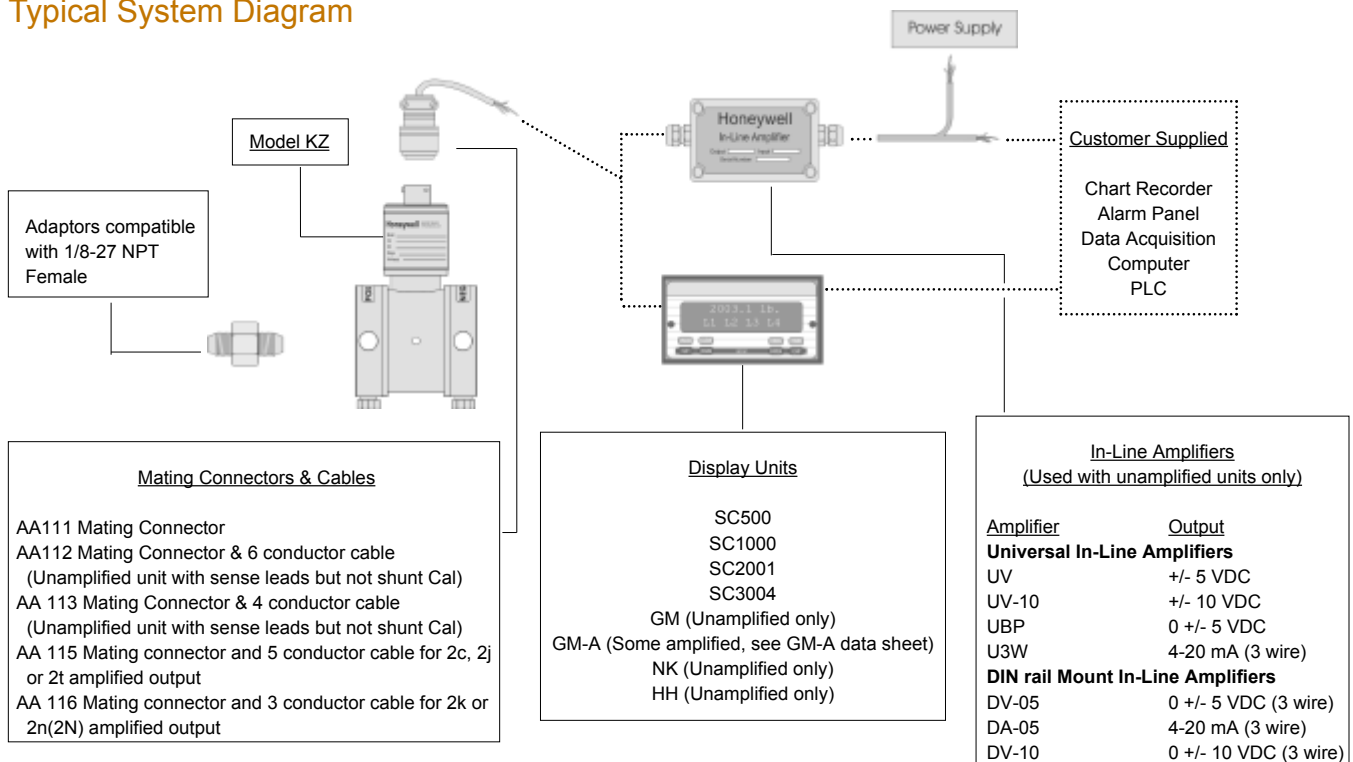
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
0.5 psid	AN
1 psid	AP
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL
30 psid	BM

Model KZ

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	0.5, 1, 2, 5, 10, 15, 25, 30	
Temperature Compensation	1b. 30° to 130° F 1a. 60° to 160° F 1d. -20° to 130° F 1c. 0° to 185° F 1j. 0° to 50° C	
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2i. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 8) 3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female (2) 5a. 1/4" - 18 NPT Female 5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equiv.) 6 pin (max. 120°C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater Cable(8m) (max. 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C) 6m. DIN 43650 6q. Molded Integral Cable: Polyurethane (note 1) 6t. Integral Cable with Heyco Spring Strain relief (1.6m)
Shunt Calibration	8a. Precision Internal Resistor (note 6)	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Wetted Diaphragm	10a. 316 Stainless Steel	
Bridge Type	11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge	
Potentiometers	14b. Top access to pots (note 7) 14a. No access to pots	
Increased Line Pressure		25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure (note 1)
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables

How to Order

Combine the order code, the range code and the options code.

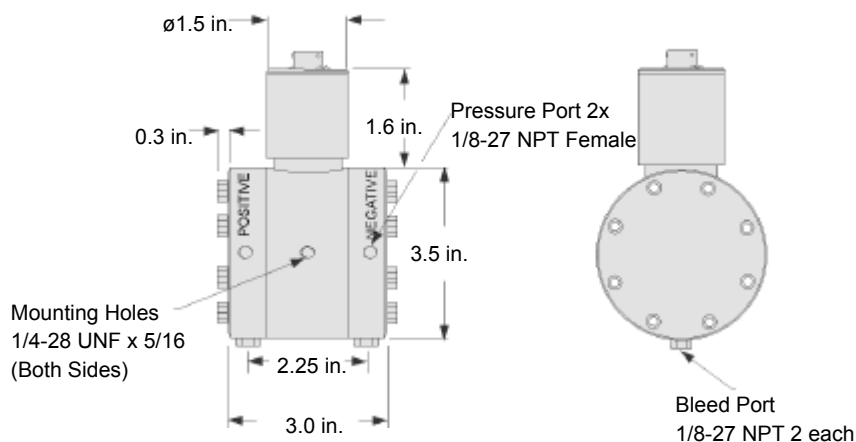
Sample Code: **AD115** **AP** **6h**
Order Code Range Code Options Code

Model Z Low Range Wet/ Wet Differential Pressure Transducer

Order Code AD111

- 0.5 to 30 psid
- All -Welded Design
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	0 +/- 0.5; 1; 2; 5; 10; 15; 25; 30 psid
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	
0.5 psid	1.0 mV/V nominal
1 to 4 psid	1.5 mV/V nominal
5 to 30 psid	2.0 mV/V nominal
Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	30° to 190°F
Temperature, Compensated	30° to 130°F
Temperature, Effect	
Zero	+/- 0.5% Full scale/ 100 °F
Span	+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Excitation (acceptable)	Up to 10 VDC or AC
Insulation Resistance	5000 Megohms @ 50 VDC max.
Bridge Resistance	350 Ohms (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	Bendix PTIH-10-6P or equivalent
Mating Connector (not incl.)	Bendix PT06A-10-6S or equivalent

Mechanical

Media	All fluid and gases compatible with 316 stainless steel
Overload-Safe	1500 psi
Pressure Port	1/8-27 NPT Female (2)
Dead Volume	0.4 cu. in.
Wetted Parts Material	316 Stainless Steel
Weight	8 lb.
Case Material	Stainless Steel

Model Z

Internal Amplifiers

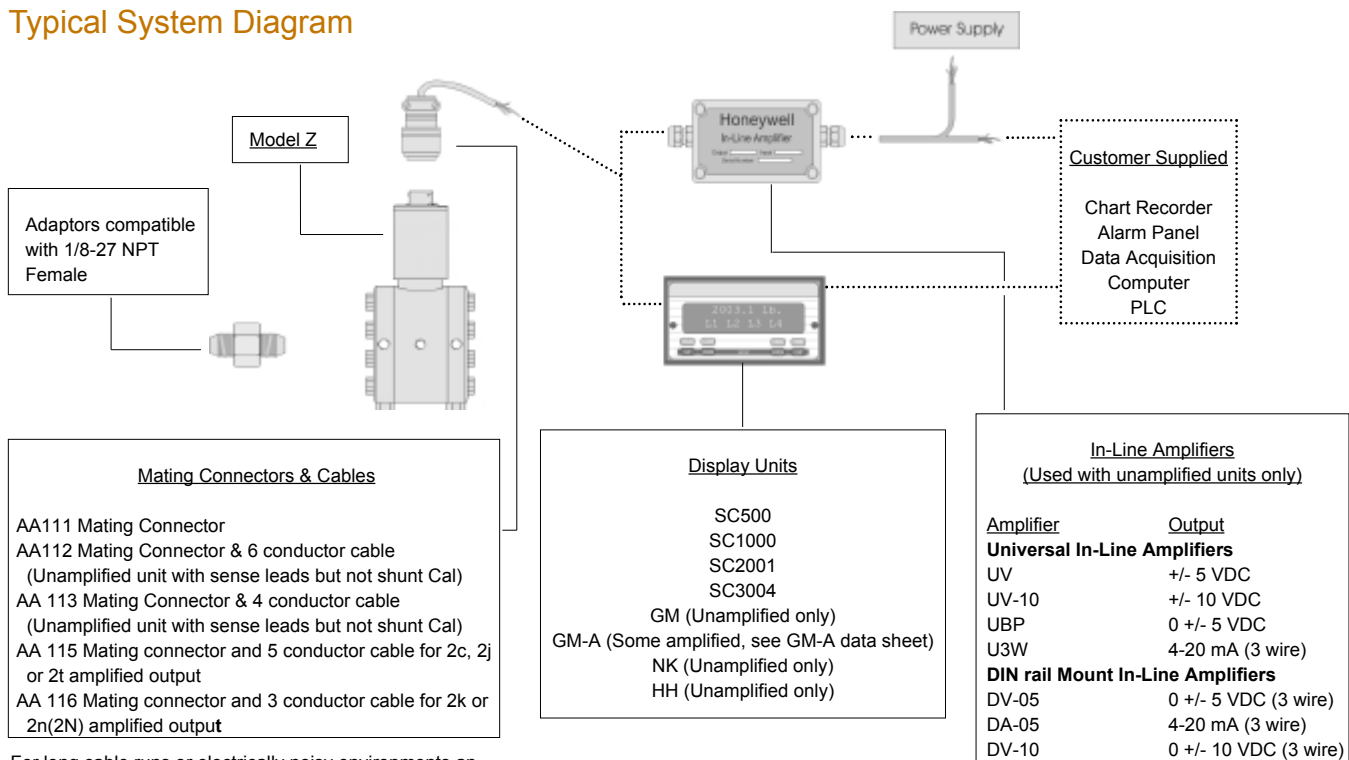
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
0.5 psid	AN
1 psid	AP
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL
30 psid	BM

Model Z

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	0.5, 1, 2, 5, 10, 15, 25, 30	
Temperature Compensation	1b. 30° to 130° F 1a. 60° to 160° F 1d. -20° to 130° F 1c. 0° to 185° F 1j. 0° to 50° C	
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2i. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 8) 3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female (2) 5a. 1/4" - 18 NPT Female 5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equiv.) 6 pin (max. 120°C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater Cable(8m) (max. 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C) 6m. DIN 43650 6q. Molded Integral Cable: Polyurethane (note 1) 6t. Integral Cable with Heyco Spring Strain relief (1.6m)
Shunt Calibration	8a. Precision Internal Resistor (note 6)	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Wetted Diaphragm	10a. 316 Stainless Steel	
Bridge Type	11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge	
Potentiometers	14b. Top access to pots (note 7) 14a. No access to pots	
Increased Line Pressure		25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure (note 1)
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)
Pressure Port adaptors
Mating connectors and cables

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD111** **AP** **6h**
Order Code Range Code Options Code

1-888-282-9891

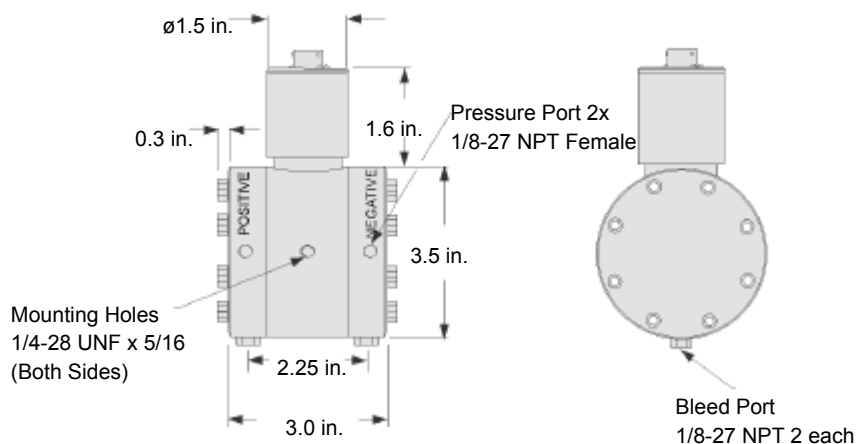
www.honeywell.com/sensotec

Model TJE Low Range Wet/ Wet Differential Pressure Transducer

Order Code AD114

- 0.5 to 30 psid
- All -Welded Design
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	0 +/- 0.5; 1; 2; 5; 10; 15; 25; 30 psid
Accuracy	+/- 0.1 % Full Scale
Output (standard)	
0.5 psid	1.0 mV/V nominal
1 to 4 psid	1.5 mV/V nominal
5 to 30 psid	2.0 mV/V nominal
Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	30° to 190°F
Temperature, Compensated	30° to 130°F
Temperature, Effect	
Zero	+/- 0.5% Full scale/ 100 °F
Span	+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Excitation (acceptable)	Up to 10 VDC or AC
Insulation Resistance	5000 Megohms @ 50 VDC max.
Bridge Resistance	350 Ohms (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	Bendix PTIH-10-6P or equivalent
Mating Connector (not incl.)	Bendix PT06A-10-6S or equivalent

Mechanical

Media	All fluid and gases compatible with 316 stainless steel
Overload-Safe	1500 psi
Pressure Port	1/8-27 NPT Female (2)
Dead Volume	0.4 cu. in.
Wetted Parts Material	316 Stainless Steel
Weight	8 lb.
Case Material	Stainless Steel

Model TJE

Internal Amplifiers

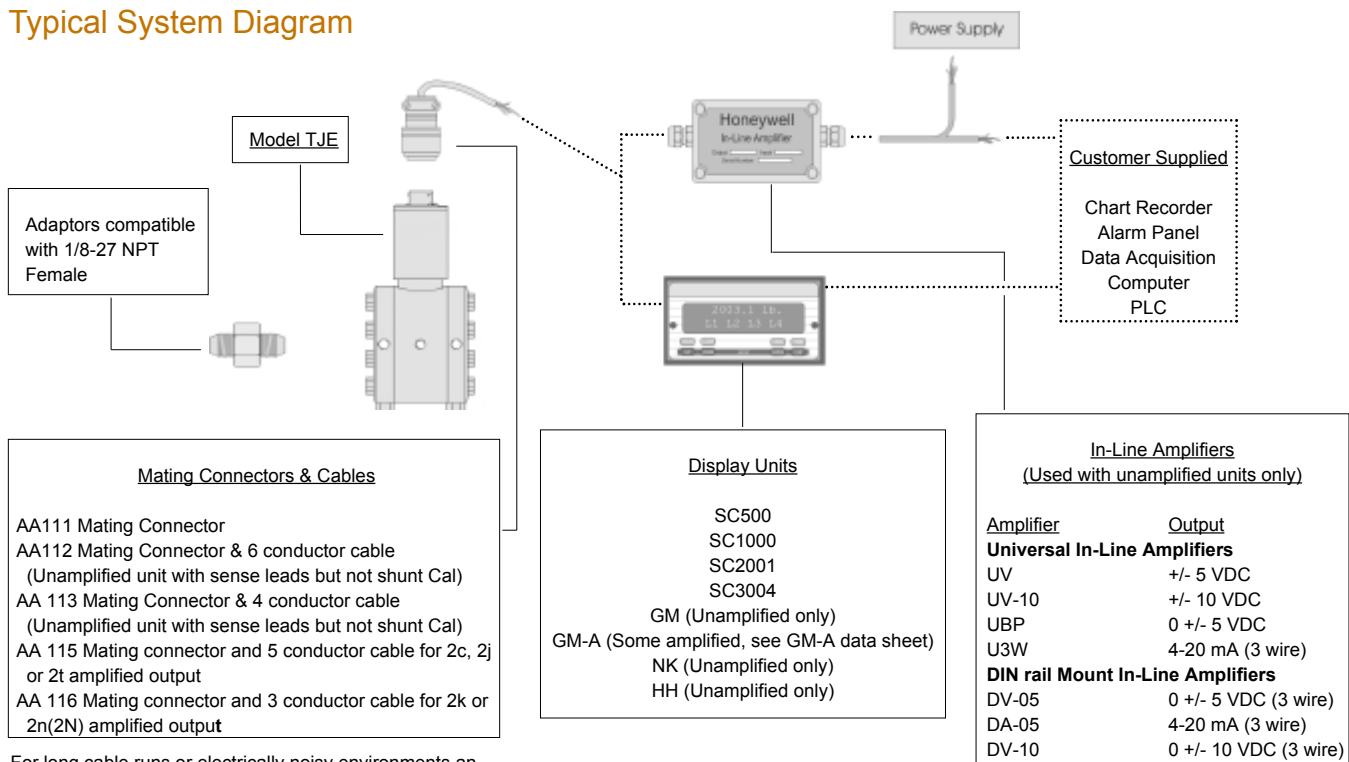
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
0.5 psid	AN
1 psid	AP
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL
30 psid	BM

Model TJE

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	0.5, 1, 2, 5, 10, 15, 25, 30	
Temperature Compensation	1b. 30° to 130° F 1a. 60° to 160° F 1d. -20° to 130° F 1c. 0° to 185° F 1j. 0° to 50° C	
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 8) 3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female (2) 5a. 1/4" - 18 NPT Female 5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equiv.) 6 pin (max. 120°C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater Cable(8m) (max. 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C) 6m. DIN 43650 6q. Molded Integral Cable: Polyurethane (note 1) 6t. Integral Cable with Heyco Spring Strain relief (1.6m)
Shunt Calibration	8a. Precision Internal Resistor (note 6)	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Wetted Diaphragm	10a. 316 Stainless Steel	
Bridge Type	11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge	
Potentiometers	14b. Top access to pots (note 7) 14a. No access to pots	
Increased Line Pressure		25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure (note 1)
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD114** **AP** **6h**
 Order Code Range Code Options Code

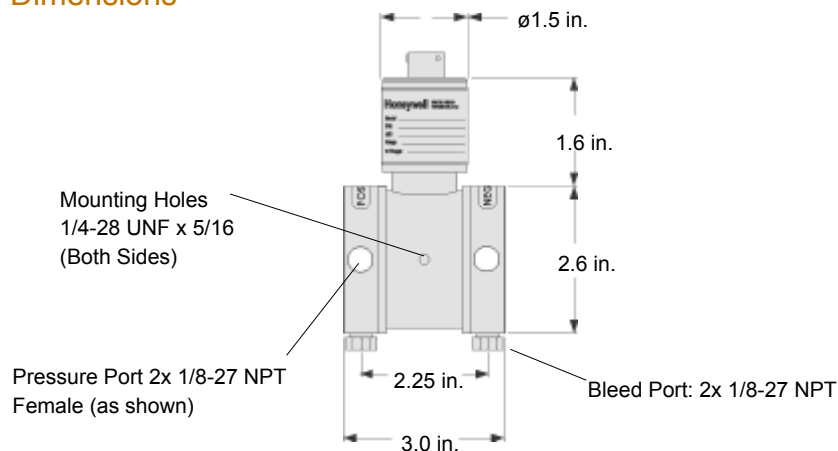
Model TJE Low Range Wet/ Wet Differential Pressure Transducer

Order Code AD116

- 0.5 to 30 psid
- All -Welded Design
- Amplified Output Available



Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	0 +/- 0.5; 1; 2; 5; 10; 15; 25; 30 psid
Accuracy	+/- 0.1 % Full Scale
Output (standard)	
0.5 psid	1.0 mV/V nominal
1 to 4 psid	1.5 mV/V nominal
5 to 30 psid	2.0 mV/V nominal
Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	30° to 190°F
Temperature, Compensated	30° to 130°F
Temperature, Effect	
Zero	+/- 0.5% Full scale/ 100 °F
Span	+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Excitation (acceptable)	Up to 10 VDC or AC
Insulation Resistance	5000 Megohms @ 50 VDC max.
Bridge Resistance	350 Ohms (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	Bendix PTIH-10-6P or equivalent
Mating Connector (not incl.)	Bendix PT06A-10-6S or equivalent

Mechanical

Media	All fluid and gases compatible with 316 stainless steel
Overload-Safe	1500 psi
Pressure Port	1/8-27 NPT Female (2)
Dead Volume	0.4 cu. in.
Wetted Parts Material	316 Stainless Steel
Weight	4.2 lb.
Case Material	Stainless Steel

Model TJE

Internal Amplifiers

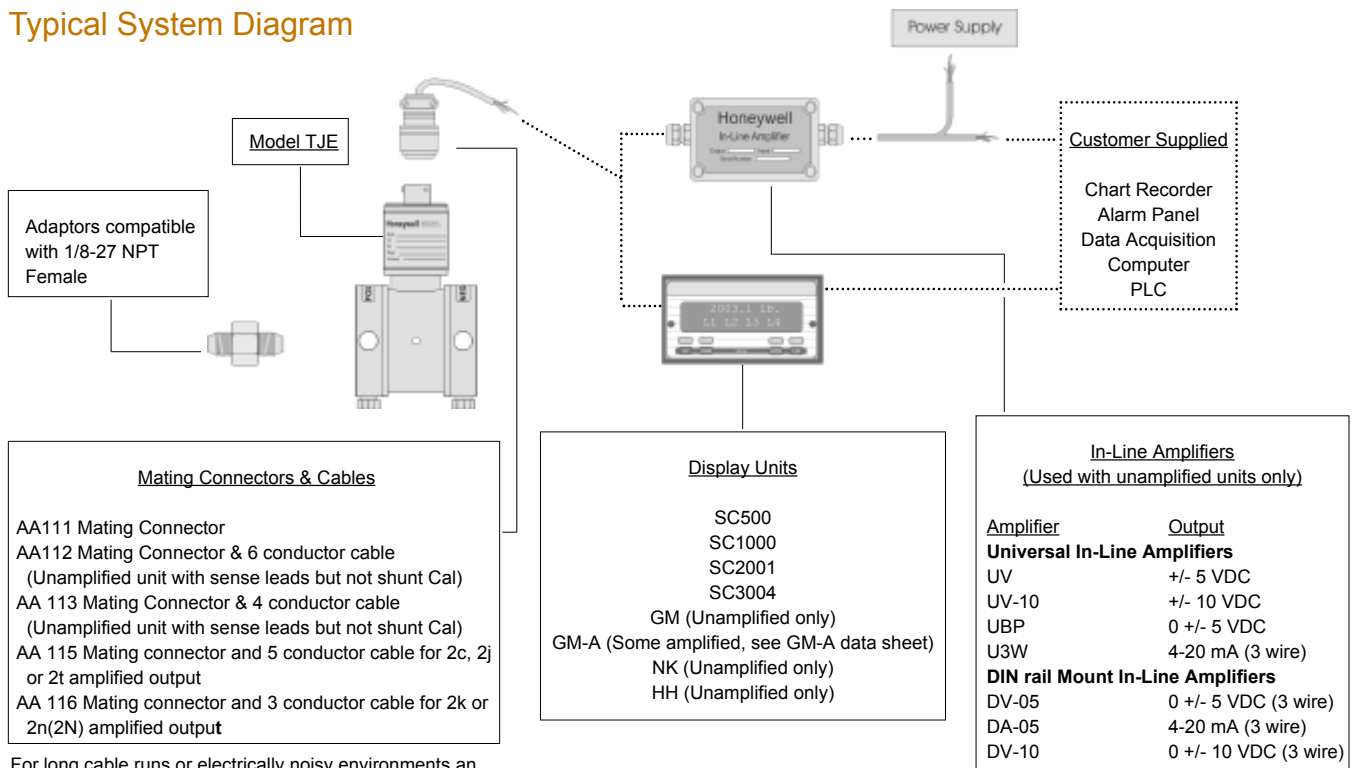
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
0.5 psid	AN
1 psid	AP
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL
30 psid	BM

Model TJE

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	0.5, 1, 2, 5, 10, 15, 25, 30	
Temperature Compensation	1b. 30° to 130° F 1a. 60° to 160° F 1d. -20° to 130° F 1c. 0° to 185° F 1j. 0° to 50° C	
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 8) 3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female (2) 5a. 1/4" - 18 NPT Female 5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equiv.) 6 pin (max. 120°C) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater Cable(8m) (max. 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C) 6m. DIN 43650 6q. Molded Integral Cable: Polyurethane (note 1) 6t. Integral Cable with Heyco Spring Strain relief (1.6m)
Shunt Calibration	8a. Precision Internal Resistor (note 6)	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Wetted Diaphragm	10a. 316 Stainless Steel	
Bridge Type	11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge	
Potentiometers	14b. Top access to pots (note 7) 14a. No access to pots	
Increased Line Pressure		25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure (note 1)
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD116** **AP** **6h**
Order Code Range Code Options Code

1-888-282-9891

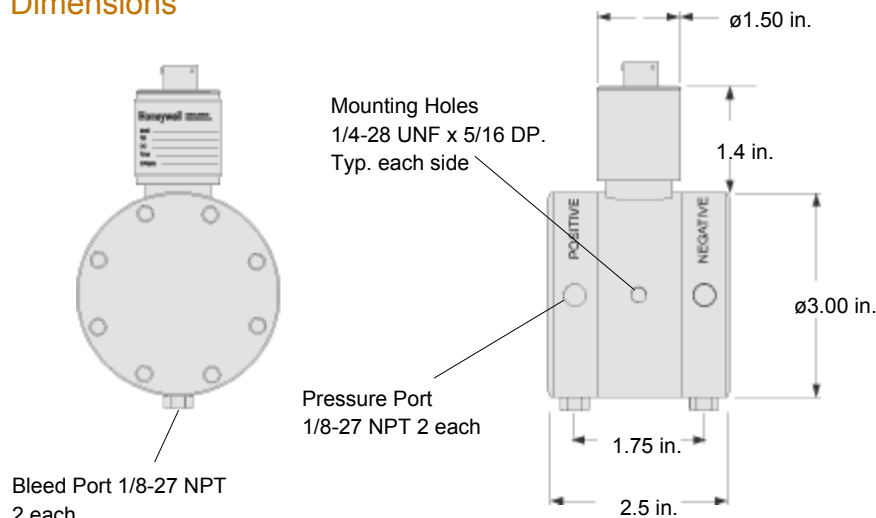
www.honeywell.com/sensotec

Model A-5 Mid Range Wet/ Wet Differential Pressure Transducer

Order Code AD123

- 50 to 750 psid
- 0.5% Accuracy
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	50; 75; 100; 150; 200; 300; 500; 750 psid
Accuracy	+/- 0.5% Full Scale
Linearity	+/- 0.25% Full Scale (typical)
Hysteresis	+/- 0.13% Full Scale (typical)
Non-Repeatability	+/- 0.07% Full Scale (typical)
Output (standard)	2 mV/V (nominal)
Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 250°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 0.75% Full scale/ 100 °F
Span	+/- 1.0% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Excitation (acceptable)	Up to 10 VDC or AC
Insulation Resistance	5000 Megohms @ 50 VDC
Bridge Resistance	350 Ohms
Shunt Calibration Data	Included
Electrical Termination (std)	PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.)	PT06A-10-6S or equivalent

Mechanical

Media	Gas, Liquid
Overload-Safe	1500 psi
Pressure Port	1/8-27 NPT Female (2)
Dead Volume	0.25 cu. in.
Wetted Parts Material	17-4 PH Stainless Steel
Weight	5.0 lb.
Case Material	Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to housing.

1-888-282-9891

www.honeywell.com/sensotec

Model A-5

Internal Amplifiers

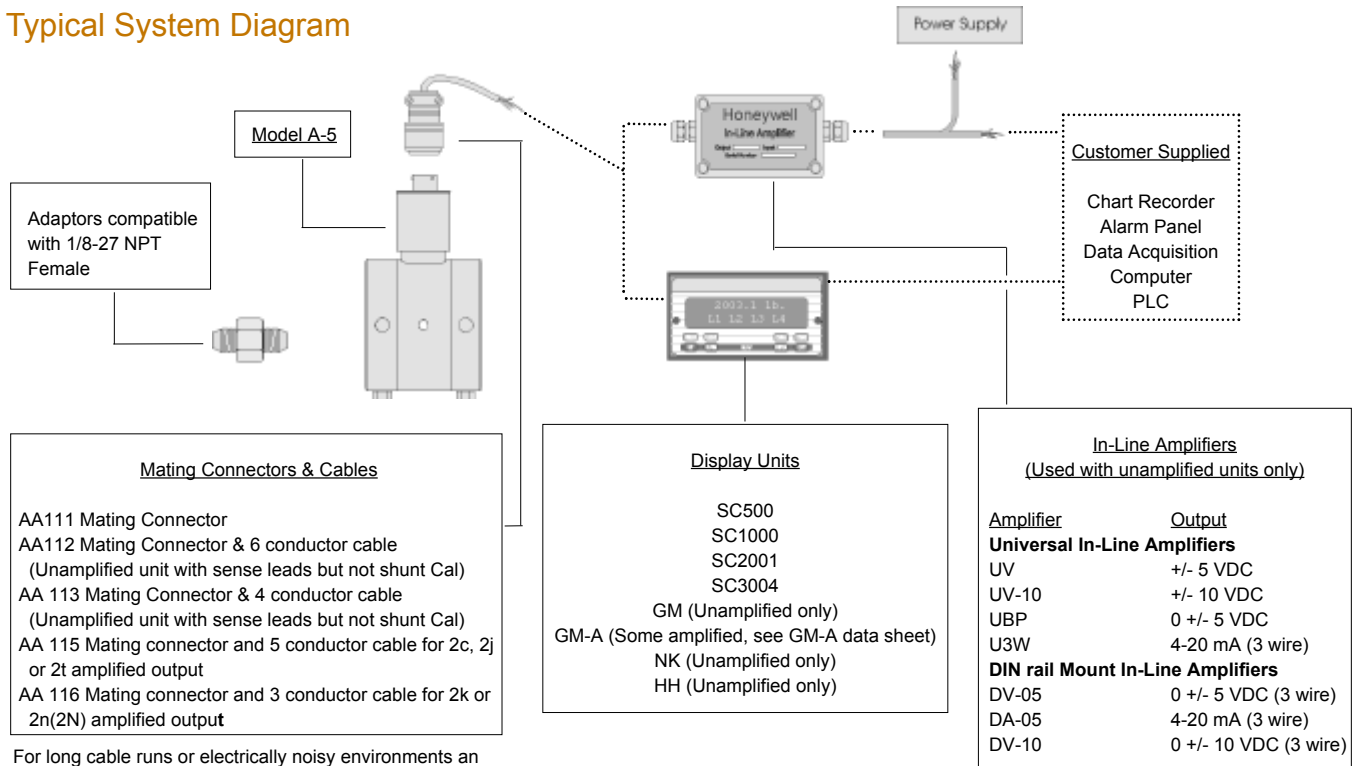
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT

Model A-5

Options

	Same Day Ship	Fast track manufacture	Build to Order	Build from scratch
Pressure Ranges (psid)	50, 100, 200, 500			75, 150, 300, 750
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1f. 70° to 250° F 1j. 0° to 50° C	1d. -20° to 130° F 1e. -20° to 200° F 1i. -65° to 250° F 1m. -25° to 110° C	1g. 70° to 325° F 1h. 70° to 400° F
Internal Amplifiers	2u. Unamplified, mV/V output	2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe	
Internal Amp Enhancements		3d. Remote Buffered Shunt Calibration	3a. Input/ Output Isolation (note 8)	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female		5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)	6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater cable (8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	6b. MS type connector (note 1) 6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)	
Shunt Calibration		8a. Precision Internal Resistor (note 7)		
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C		
Wetted Diaphragm	17-4 PH Stainless Steel		10a. 316 Stainless Steel	
Bridge Type		11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge		
Potentiometers		14a. No access to pots 14b. Top access to pots (note 6)		
O Ring Seals				26a. Metal 26b. Vi-Ton 26c. Teflon
Interfaces		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)		

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables
Special Wetted Material



Approved
Intrinsically Safe Amp

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD123** **CT** **6h**
Order Code Range Code Options Code

1-888-282-9891

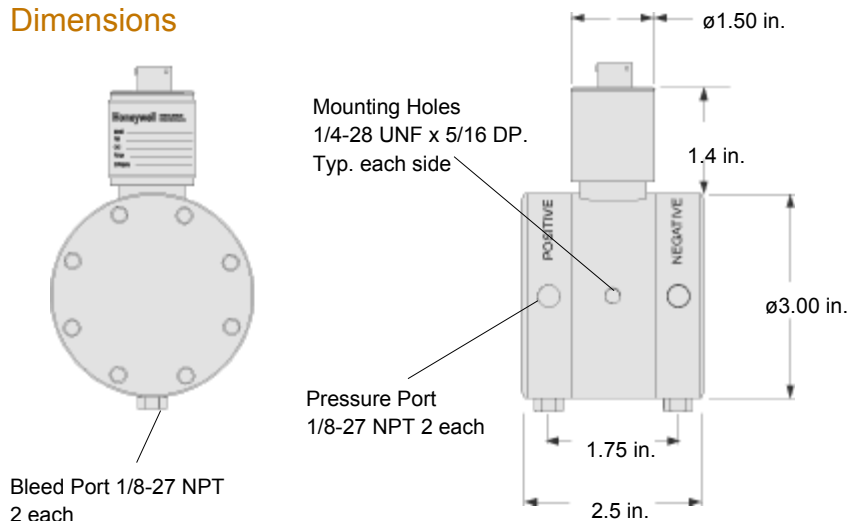
www.honeywell.com/sensotec

Model Z Mid Range Wet/ Wet Differential Pressure Transducer

Order Code AD122

- 50 to 750 psid
- 0.25% Accuracy
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges 50; 75; 100; 150; 200; 300; 500; 750 psid
Accuracy+/- 0.25% Full Scale
Linearity+/- 0.15% Full Scale (typical)
Hysteresis+/- 0.10% Full Scale (typical)
Non-Repeatability+/- 0.05% Full Scale (typical)
Output (standard) 2 mV/V (nominal)
Line Pressure 1500 psi
Resolution Infinite

Environmental

Temperature, Operating-65° to 250°F
Temperature, Compensated 60° to 160°F
Temperature, Effect
Zero+/- 0.5% Full scale/ 100 °F
Span+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type Bonded Foil
Excitation (calibration) 10 VDC
Excitation (acceptable) UP to 10 VDC or AC
Insulation Resistance 5000 Megohms @ 50 VDC
Bridge Resistance 350 Ohms
Shunt Calibration Data Included
Electrical Termination (std) PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.) PT06A-10-6S or equivalent

Mechanical

Media Gas, Liquid
Overload-Safe 1500 psi
Pressure Port 1/8-27 NPT Female (2)
Dead Volume 0.25 cu. in.
Wetted Parts Material 17-4 PH Stainless Steel
Weight 5.0 lb.
Case Material Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to housing.

1-888-282-9891

www.honeywell.com/sensotec

Model Z

Internal Amplifiers

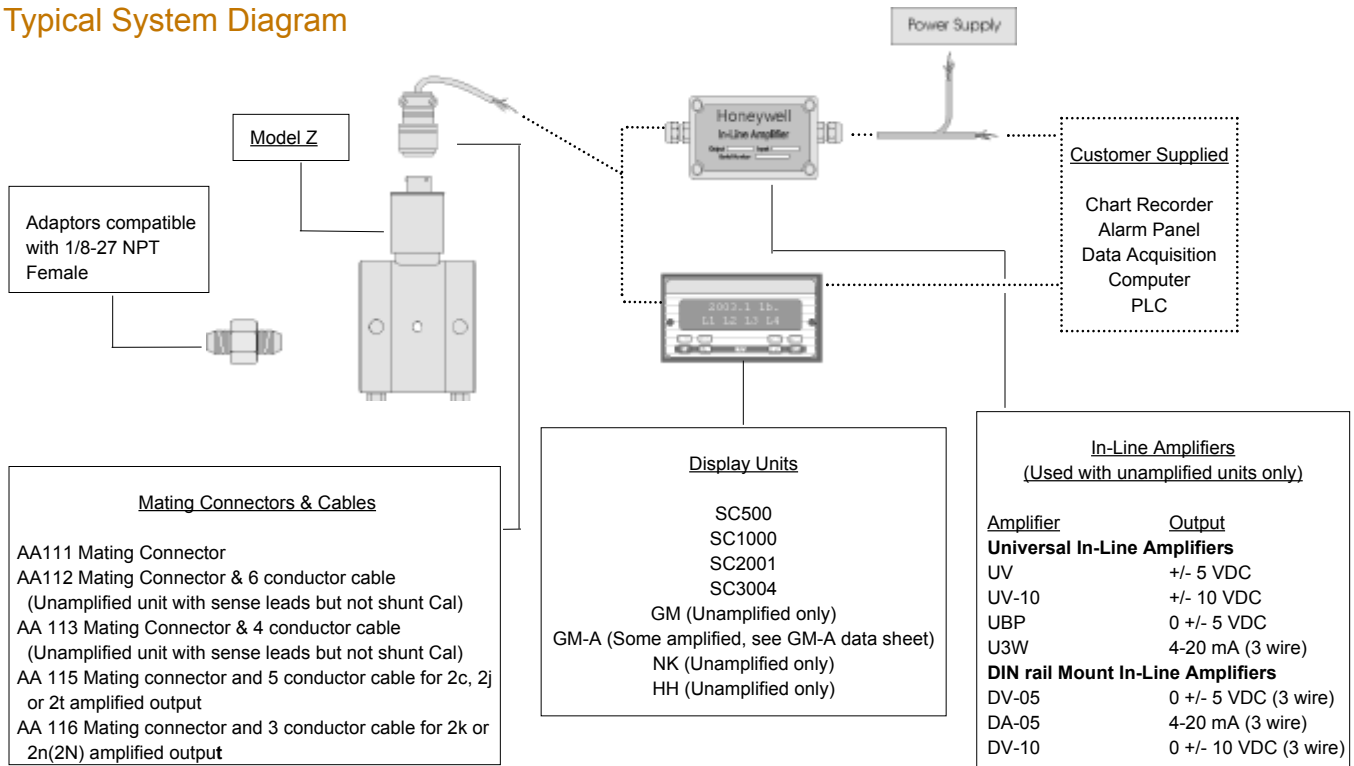
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT

Model Z

Options

	Same Day Ship	Fast track manufacture	Build to Order	Build from Scratch
Pressure Ranges (psid)	50, 100, 200, 500			75, 150, 300, 750
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1f. 70° to 250° F 1j. 0° to 50° C	1d. -20° to 130° F 1e. -20° to 200° F 1i. -65° to 250° F 1m. -25° to 110° C	1g. 70° to 325° F 1h. 70° to 400° F
Internal Amplifiers	2u. Unamplified, mV/V output	2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe	
Internal Amp Enhancements		3d. Remote Buffered Shunt Calibration	3a. Input/ Output Isolation (note 8)	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female		5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)	6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater cable (8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	6b. MS type connector (note 1) 6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)	
Shunt Calibration		8a. Precision Internal Resistor (note 7)		
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C		
Wetted Diaphragm	17-4 PH Stainless Steel		10a. 316 Stainless Steel	
Bridge Type		11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge		
Potentiometers		14a. No access to pots 14b. Top access to pots (note 6)		
O Ring Seals				26a. Metal 26b. Vi-Ton 26c. Teflon
Interfaces		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)		

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables
Special Wetted Material



Approved



Approved



Approved
Intrinsically Safe Amp

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD122** **CT** **6h**
Order Code Range Code Options Code

1-888-282-9891

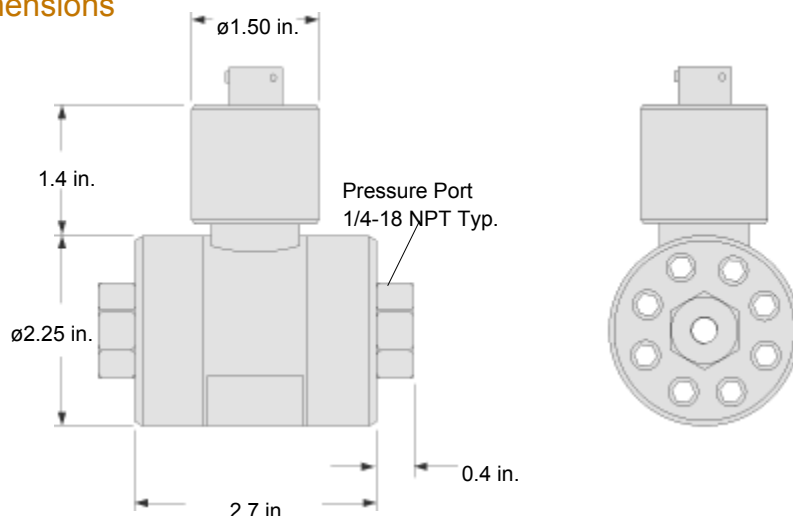
www.honeywell.com/sensotec

Model A-5 High Range Wet/ Wet Differential Pressure Transducer

Order Code BD142

- 2000 to 10,000 psid
- 0.5% Accuracy
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	2000; 3000; 5000; 7500; 10,000 psid
Accuracy	+/- 0.5% Full Scale
Linearity	+/- 0.25% Full Scale (typical)
Hysteresis	+/- 0.13% Full Scale (typical)
Non-Repeatability	+/- 0.07% Full Scale (typical)
Output (standard)	2 mV/V (nominal)
Line Pressure	2000 psi
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 250°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 0.75% Full scale/ 100 °F
Span	+/- 1.0% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Bridge Resistance	350 Ohms (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.)	PT06A-10-6S or equivalent

Mechanical

Media	Gas, Liquid
Overload-Safe	
2000 to 3000 psid	100% over capacity
5000 to 10,000 psid	50% over capacity
Pressure Port	1/4-18 NPT female (2)
Wetted Parts Material	17-4 PH Stainless Steel
Case Material	Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

Model A-5

Internal Amplifiers

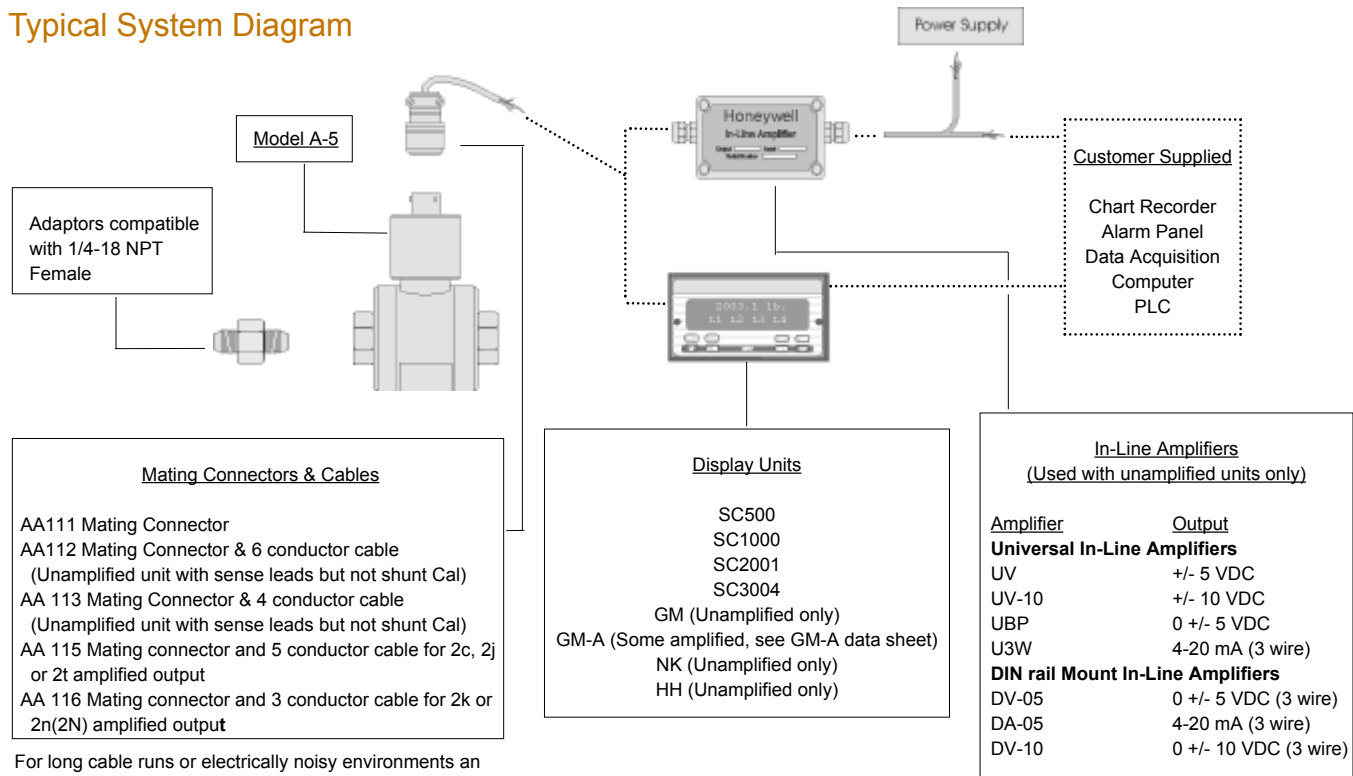
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
2000 psid	DL
3000 psid	DN
5000 psid	DR
7500 psid	DT
10,000 psid	DV

Model A-5

Options

	Build to Order	Build from scratch
Pressure Ranges (psid)	2000, 3000, 5000, 7500, 10000	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1i. -65° to 250° F 1j. 0° to 50° C 1m. -25° to 110° C	1g. 70° to 325° F 1h. 70° to 400° F
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3d. Remote Buffered Shunt Calibration	3a. Input/ Output Isolation (note 6)
Pressure Ports (note 5)	5a. 1/4-18 NPT Female	5c. 7/16" - 20 UNF Female (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater cable(8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	6b. MS type connector (note 1) 6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)
Shunt Calibration	8a. Precision Internal Resistor (note 7)	
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel	
Bridge Type	11a. Square bridge	11c. Square & symmetrical bridge 11b. Symmetrical bridge
Potentiometers	14b. Top access to pots (note 8) 14a. No access to pots	
O Ring Seals	26a. Metal	
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables
Enhanced Line Pressure



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD142** **DV** **6h**
Order Code Range Code Options Code

1-888-282-9891

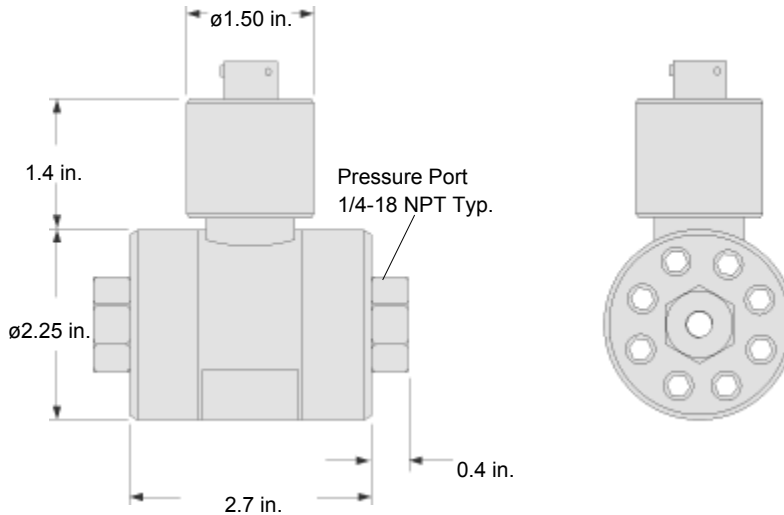
www.honeywell.com/sensotec

Model Z High Range Wet/ Wet Differential Pressure Transducer

Order Code BD141

- 2000 to 10,000 psid
- 0.25% Accuracy
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	2000; 3000; 5000; 7500; 10,000 psid
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	2 mV/V (nominal)
Line Pressure	2000 psi
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 250°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 0.5% Full scale/ 100 °F
Span	+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Bridge Resistance	350 Ohms (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.)	PT06A-10-6S or equivalent

Mechanical

Media	Gas, Liquid
Overload-Safe	
2000 to 3000 psid	100% over capacity
5000 to 10,000 psid	50% over capacity
Pressure Port	1/4-18 NPT female (2)
Wetted Parts Material	17-4 PH Stainless Steel
Case Material	Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

1-888-282-9891

www.honeywell.com/sensotec

Model Z

Internal Amplifiers

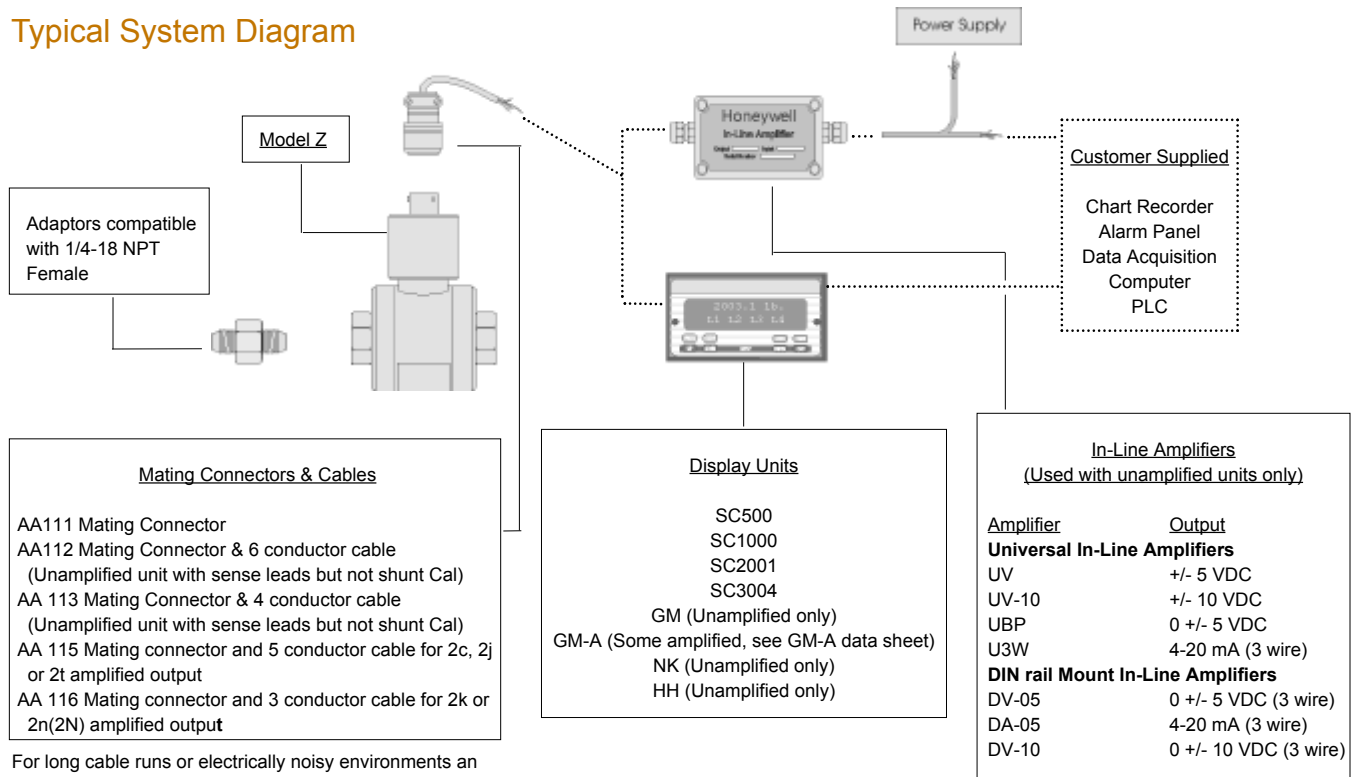
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
2000 psid	DL
3000 psid	DN
5000 psid	DR
7500 psid	DT
10,000 psid	DV

Model Z

Options

	Build to Order	Build from scratch
Pressure Ranges (psid)	2000, 3000, 5000, 7500, 10000	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1i. -65° to 250° F 1j. 0° to 50° C 1m. -25° to 110° C	1g. 70° to 325° F 1h. 70° to 400° F
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3d. Remote Buffered Shunt Calibration	3a. Input/ Output Isolation (note 6)
Pressure Ports (note 5)	5a. 1/4-18 NPT Female	5c. 7/16" - 20 UNF Female (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250° F) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater cable(8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	6b. MS type connector (note 1) 6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)
Shunt Calibration	8a. Precision Internal Resistor (note 8)	
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel	
Bridge Type	11a. Square bridge	11c. Square & symmetrical bridge 11b. Symmetrical bridge
Potentiometers	14b. Top access to pots (note 7) 14a. No access to pots	
O Ring Seals	26a. Metal	
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE1451.4 Module (note 9)	

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables
Enhanced Line Pressure



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD141** **DV** **6h**
Order Code Range Code Options Code

1-888-282-9891

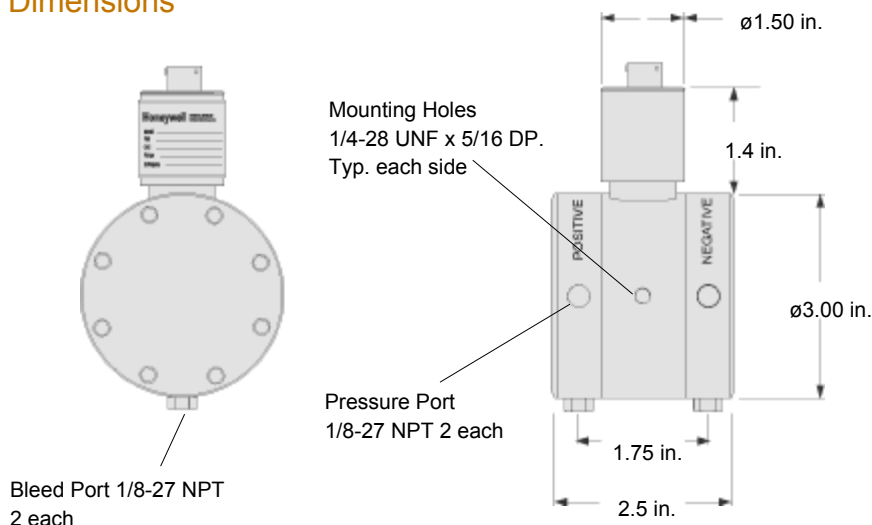
www.honeywell.com/sensotec

Model TJE Ultra Precision Wet/ Wet Differential Pressure Transducer

Order Code BD121

- 0.1% Accuracy
- Bi-Directional
- Amplified Output Available

Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges 50; 75; 100; 150; 200; 300; 500; 750 psid
Accuracy+/- 0.1% Full Scale
Output (standard) 2 mV/V (nominal)
Line Pressure 1500 psi
Resolution Infinite

Environmental

Temperature, Operating-65° to 250°F
Temperature, Compensated 60° to 160°F
Temperature, Effect
Zero+/- 0.25% Full scale/ 100 °F
Span+/- 0.25% Reading/ 100 °F

Electrical

Strain Gage Type Bonded Foil
Excitation (calibration) 10 VDC
Excitation (acceptable) UP to 10 VDC or AC
Insulation Resistance 10,000 Megohms @ 50 VDC
Bridge Resistance 350 Ohms
Shunt Calibration Data Included
Electrical Termination (std) PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.) PT06A-10-6S or equivalent

Mechanical

Media Gas, Liquid
Overload-Safe 1500 psi
Pressure Port 1/8-27 NPT Female (2)
Dead Volume 0.25 cu. in.
Wetted Parts Material 17-4 PH Stainless Steel
Weight 5.0 lb.
Case Material Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to housing.

1-888-282-9891

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Model TJE

Internal Amplifiers

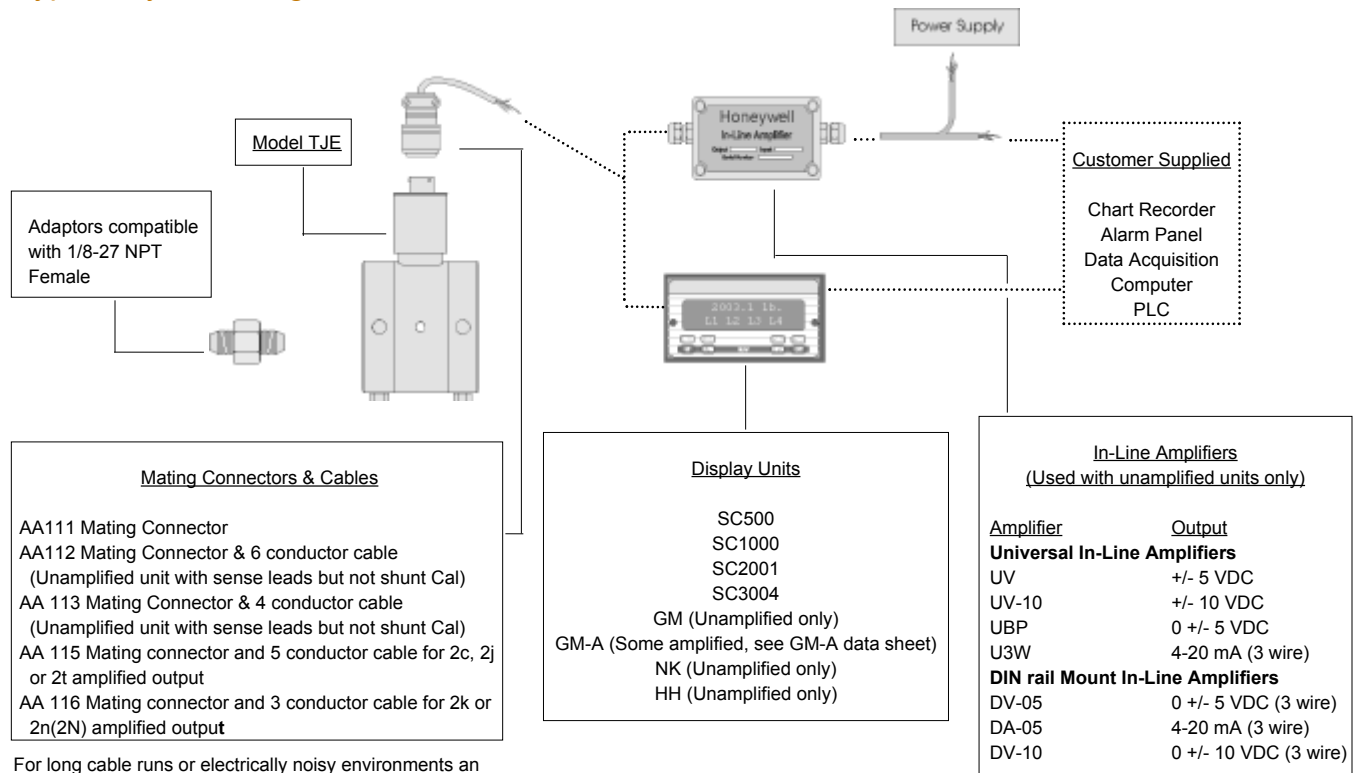
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT

1-888-282-9891

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Model TJE

Options

	Same Day Ship	Fast track manufacture	Build to Order	Build from scratch
Pressure Ranges (psid)	50, 100, 200, 500			75, 150, 300, 750
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1f. 70° to 250° F 1j. 0° to 50° C	1d. -20° to 130° F 1e. -20° to 200° F 1i. -65° to 250° F 1m. -25° to 110° C	1g. 70° to 325° F 1h. 70° to 400° F
Internal Amplifiers	2u. Unamplified, mV/V output	2b. 4 wire +/-5VDC 2c. 0-5VDC 2t. 0-10VDC 2j. 4-20mA (3 wire) output	2k. 4-20mA(2-wire) output 2n(2N). 4-20mA (2-wire) intrinsically safe	
Internal Amp Enhancements		3d. Remote Buffered Shunt Calibration	3a. Input/ Output Isolation (note 8)	
Pressure Ports (note 5)	5h. 1/8-27 NPT Female		5c. 7/16" - 20 UNF Female (per MS33656E4)	
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)	6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater cable (8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	6b. MS type connector (note 1) 6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)	
Shunt Calibration		8a. Precision Internal Resistor (note 7)		
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C		
Wetted Diaphragm	17-4 PH Stainless Steel		10a. 316 Stainless Steel	
Bridge Type		11a. Square bridge 11b. Symmetrical bridge 11c. Square & symmetrical bridge		
Potentiometers		14a. No access to pots 14b. Top access to pots (note 6)		
O Ring Seals				26a. Metal 26b. Vi-Ton 26c. Teflon
Interfaces		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 9)		

Supplied as standard

Notes

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with VDC output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD121** **CR** **6h**
Order Code Range Code Options Code

1-888-282-9891

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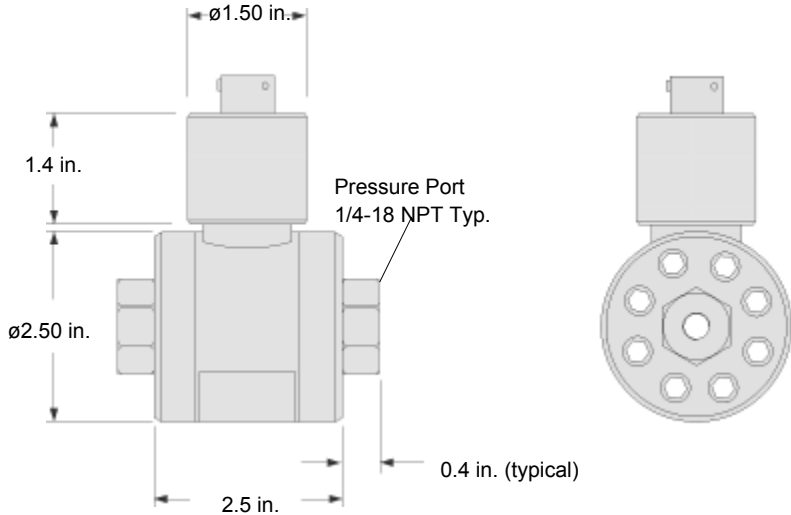
Model HL-A-5 High Line Wet/ Wet Differential Pressure Transducer

Order Code BD512

- Line Pressure to 5000 psi
- 0.5% Accuracy



Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges 50; 75; 100; 150; 200; 300; 500; 750; 1000; 1500; 2000;
3000; 5000; 7500* psid
Accuracy+/- 0.5% Full Scale
Linearity+/- 0.25% Full Scale (typical)
Hysteresis+/- 0.13% Full Scale (typical)
Non-Repeatability+/- 0.07% Full Scale (typical)
Output (standard) 2 mV/V (nominal)
Line Pressure 2500 psi**
Resolution Infinite

Environmental

Temperature, Operating-65° to 250°F
Temperature, Compensated 60° to 160°F
Temperature, Effect
Zero+/- 0.75% Full scale/ 100 °F
Span+/- 1% Reading/ 100 °F

Electrical

Strain Gage Type Bonded Foil
Excitation (calibration) 10 VDC
Bridge Resistance 350 Ohms
Shunt Calibration Data Included
Electrical Termination (std) PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.) PT06A-10-6S or equivalent

Mechanical

Media Gas, Liquid
Overload-Safe
50 to 1500 psid 2000 psi
2000 to 7500 psid Full Scale capacity + 2000 psi
Pressure Port 1/4-18 NPT female
Wetted Parts Material 17-4 PH Stainless Steel
Case Material Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

* Not available with FM approval

** On units ≥ 200 psid the sum of full scale pressure and line pressure must be ≤ 9500 psi; on units < 200 psid consult factory

1-888-282-9891

www.honeywell.com/sensotec

Model HL-A-5

Internal Amplifiers

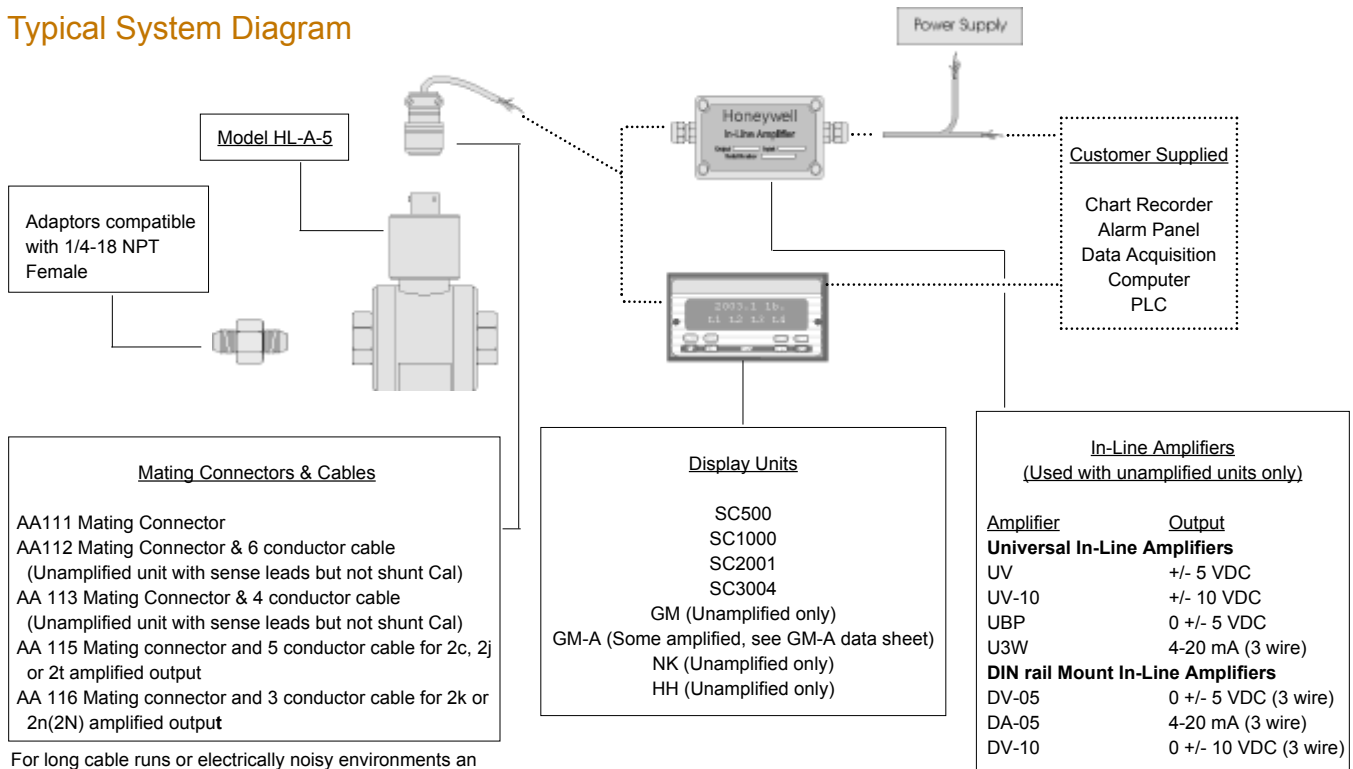
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



Range Codes

Range	Range Code	Range	Range Code
50 psid	BN	750 psid	CT
75 psid	BP	1000 psid	CV
100 psid	BR	1500 psid	DJ
150 psid	CJ	2000 psid	DL
200 psid	CL	3000 psid	DN
300 psid	CP	5000 psid	DR
500 psid	CR	7500 psid	DT

Model HL-A-5

Options

	Build from Scratch
Pressure Ranges (psid)	50, 75, 100, 150, 200, 300, 500, 750, 1000, 1500, 3000, 5000, 7500
Temperature Compensation	1a. 60° to 160° F
	1b. 30° to 130° F
	1c. 0° to 185° F
	1d. -20° to 130° F
	1e. -20° to 200° F
	1f. 70° to 250° F
	1i. -65° to 250° F
	1j. 0° to 50° C
	1m. -25° to 110° C
	2u. Unamplified, mV/V output
Internal Amplifiers	2b. 4 wire +/-5VDC
	2c. 0-5VDC
	2t. 0-10VDC
	2j. 4-20mA (3 wire) output
	2k. 4-20mA(2-wire) output
	2n(2N). 4-20mA (2-wire) intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7)
	3d. Remote Buffered Shunt Calibration
Pressure Ports (note 5)	5a. 1/4-18 NPT Female
	5c. 7/16" - 20 UNF Female (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)
	6b. MS type connector (note 1)
	6e. Integral cable: Teflon (-54° to 245° C)
	6f. Integral cable: PVC (-30° to 70° C)
	6g. Integral cable: Neoprene (-20 to 80° C) (note 1)
	6h. Integral cable: Silicone (-54 to 150° C)
	6i. Integral underwater cable(8m) (max 80° C) (note 1)
	6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable
Shunt Calibration	8a. Precision Internal Resistor (note 6)
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C
	9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel
Bridge Type	11a. Square bridge
	11b. Symmetrical bridge
	11c. Square & symmetrical bridge
Potentiometers	14b. Top access to pots (note 8)
	14a. No access to pots
Increased Line Pressure	25b. 3000 psi line pressure
	25c. 5000 psi line pressure
Interfaces	53e. Signature Calibration
	53t. T.E.D.S. IEEE 1451.4 Module (note 9)

Supplied as standard

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables
Wetted material

Notes

- Availability varies according to range
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with VDC output options 2b, 2c.
- Only available on amplified units.
- Consult factory for TEDS availability with amplified models.



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD512** **CV** **6h**
Order Code Range Code Options Code

1-888-282-9891

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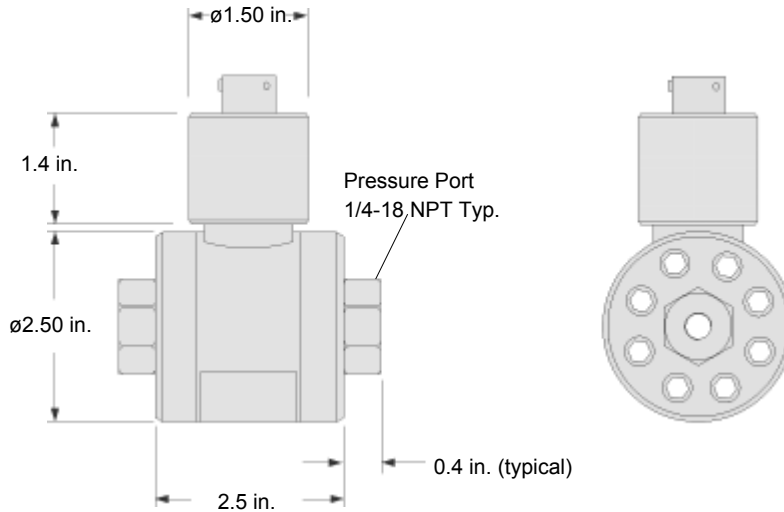
Model HL-Z High Line Wet/ Wet Differential Pressure Transducer

Order Code BD511

- Line Pressure to 5000 psi
- 0.25% Accuracy



Dimensions



Wiring Code

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Performance

Pressure Ranges	50; 75; 100; 150; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000; 7500* psid
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	2 mV/V (nominal)
Line Pressure	2500 psi**
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 250°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 0.5% Full scale/ 100 °F
Span	+/- 0.5% Reading/ 100 °F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Bridge Resistance	350 Ohms
Shunt Calibration Data	Included
Electrical Termination (std)	PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.)	PT06A-10-6S or equivalent

Mechanical

Media	Gas, Liquid
Overload-Safe	
50 to 1500 psid	2000 psi
2000 to 7500 psid	Full Scale capacity + 2000 psi
Pressure Port	1/4-18 NPT female (2)
Wetted Parts Material	17-4 PH Stainless Steel
Case Material	Stainless Steel

Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

* Not available with FM approval

** On units ≥ 200 psid the sum of full scale pressure and line pressure must be ≤ 9500 psi; on units < 200 psid consult factory

1-888-282-9891

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Model HL-Z

Internal Amplifiers

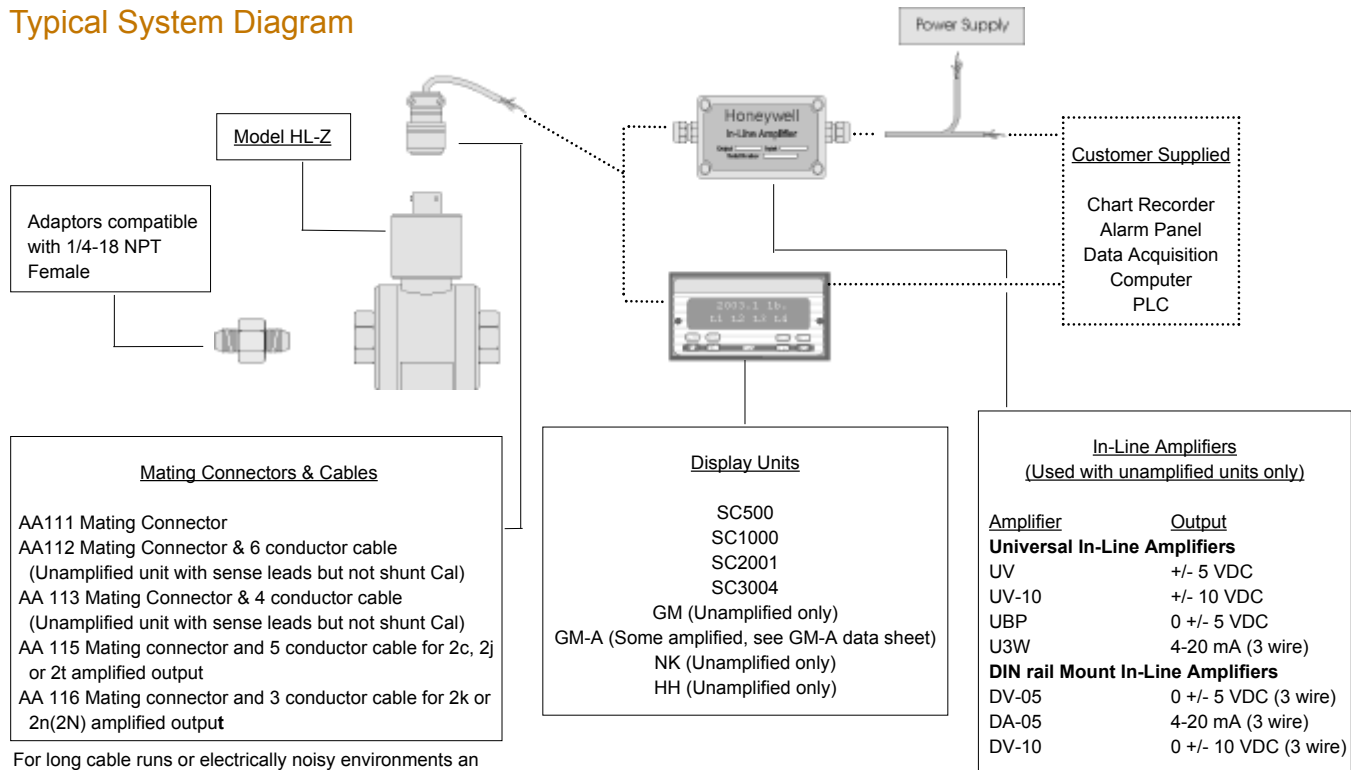
Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 5mA	0-10V or +/- 10V @ 5mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32 VDC	11-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 2)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 2) (note 3) (note 4)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Typical System Diagram



For long cable runs or electrically noisy environments an amplified sensor or locally mounted amplifier is often preferred.

Range Codes

Range	Range Code	Range	Range Code
50 psid	BN	750 psid	CT
75 psid	BP	1000 psid	CV
100 psid	BR	1500 psid	DJ
150 psid	CJ	2000 psid	DL
200 psid	CL	3000 psid	DN
300 psid	CP	5000 psid	DR
500 psid	CR	7500 psid	DT

Model HL-Z

Options

	Build from Scratch
Pressure Ranges (psid)	50, 75, 100, 150, 200, 300, 500, 750, 1000, 1500, 3000, 5000, 7500
Temperature Compensation	1a. 60° to 160° F
	1b. 30° to 130° F
	1c. 0° to 185° F
	1d. -20° to 130° F
	1e. -20° to 200° F
	1f. 70° to 250° F
	1i. -65° to 250° F
	1j. 0° to 50° C
	1m. -25° to 110° C
	2u. Unamplified, mV/V output
Internal Amplifiers	2b. 4 wire +/-5VDC
	2c. 0-5VDC
	2t. 0-10VDC
	2j. 4-20mA (3 wire) output
	2k. 4-20mA(2-wire) output
Internal Amp Enhancements	2n(2N). 4-20mA (2-wire) intrinsically safe
	3a. Input/ Output Isolation (note 7)
	3d. Remote Buffered Shunt Calibration
Pressure Ports (note 5)	5a. 1/4-18 NPT Female
	5c. 7/16" - 20 UNF Female (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)
	6b. MS type connector (note 1)
	6e. Integral cable: Teflon (-54° to 245° C)
	6f. Integral cable: PVC (-30° to 70° C)
	6g. Integral cable: Neoprene (-20 to 80° C) (note 1)
	6h. Integral cable: Silicone (-54 to 150° C)
	6i. Integral underwater cable(8m) (max 80° C) (note 1)
Shunt Calibration	6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable
	8a. Precision Internal Resistor (note 6)
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C
	9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel
Bridge Type	11a. Square bridge
	11b. Symmetrical bridge
	11c. Square & symmetrical bridge
Potentiometers	14b. Top access to pots (note 8)
	14a. No access to pots
Increased Line Pressure	25b. 3000 psi line pressure
	25c. 5000 psi line pressure
Interfaces	53e. Signature Calibration
	53t. T.E.D.S. IEEE 1451.4 Module (note 9)

Supplied as standard

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Mating connectors and cables
Wetted material

Notes

- Availability varies according to range
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with VDC output options 2b, 2c.
- Only available on amplified units.
- Consult factory for TEDS availability with amplified models.



Approved



Approved



Approved
Intrinsically Safe Amp

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD511** **CV** **6h**
Order Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

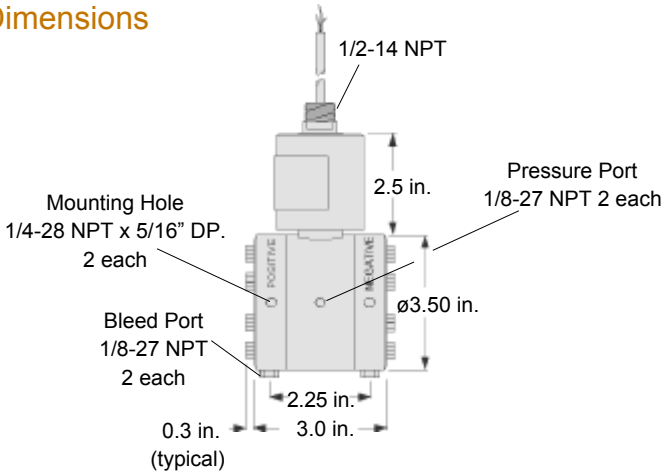
Model 911FMD FM Approved Low Range Wet/ Wet Differential Pressure Transducer

Order Code BD421

- Factory Mutual Approved
- 4-20 mA 2 Wire



Dimensions



Wiring Code

Cable/ 2 Wire Current/ 4-20 mA

Red	(+) Supply
Black	(+) Output (4-20 mA)
White	Case Ground

Performance

Pressure Ranges	2; 5; 10; 15; 25 psid
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	4-20 mA
Maximum Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	0° to 180°F
Temperature, Compensated	30° to 130°F
Temperature, Effect	
Zero	+/- 1.2% Full scale/ 100 °F
Span	+/- 1.2% Reading/ 100 °F

Electrical

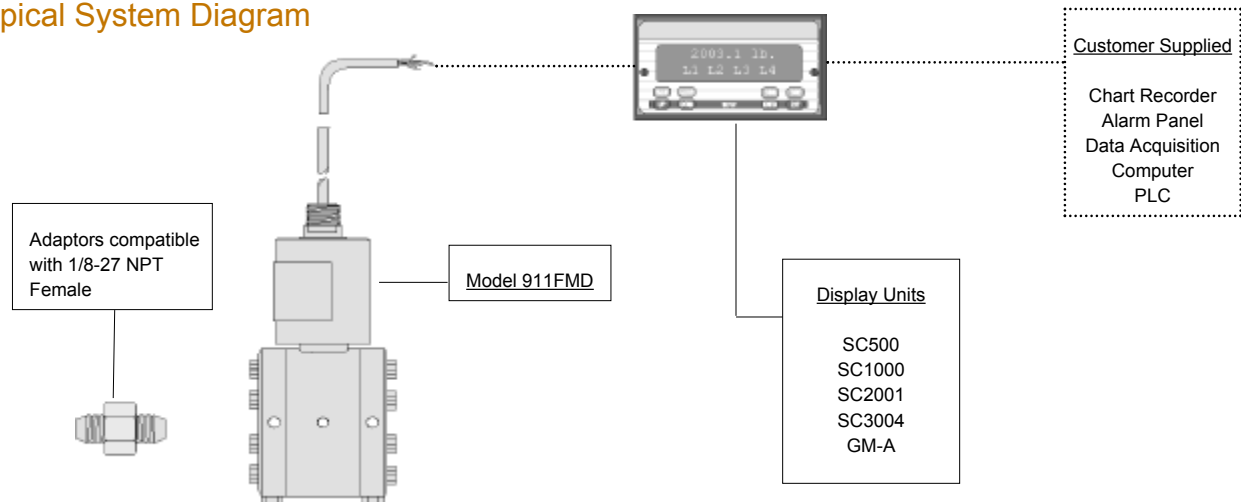
Strain Gage Type	Bonded Foil
Excitation (calibration)	15-50 VDC
Shunt Calibration Data	Included
Electrical Termination (std)	22 GA cable with case ground (2 ft.), 1/2-14 NPT

Mechanical

Media	Gas, Liquid
Overload-Safe (either side)	1500 psi
Pressure Port	1/8-27 NPT female
Wetted Parts Material	316 Stainless Steel
Case Material	Stainless Steel

Model 911FMD

Typical System Diagram



Range Codes

Range	Range Code
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL

Options

	Build to Order
Pressure Ranges (psid)	2, 5, 10, 15, 25
Temperature Compensation	1b. 30° to 130° F
Internal Amplifiers	2k. 4-20mA (2 wire)
Pressure Ports	5h. 1/8-27NPT Female
Electrical Termination	6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	10a. 316 Stainless Steel

Supplied as standard



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD421** **AV** **9a**
Order Code Range Code Options Code

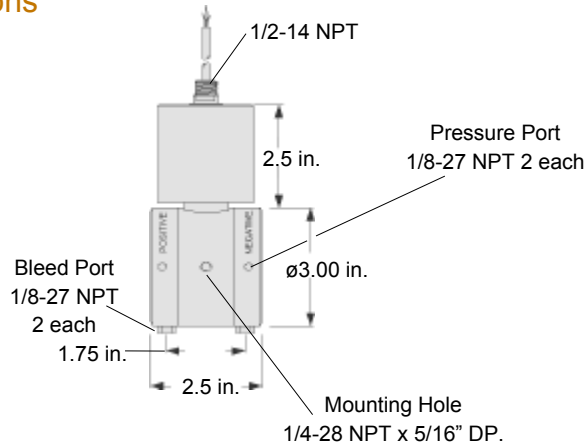
Model 911FMD FM Approved Mid Range Wet/ Wet Differential Pressure Transducer

Order Code BD422

- Factory Mutual Approved
- 4-20 mA 2 Wire



Dimensions



Wiring Code

Cable/ 2 Wire Current/ 4-20 mA

Red	(+) Supply
Black	(+) Output (4-20 mA)
White	Case Ground

Performance

Pressure Ranges	50; 75; 100; 150; 200; 300; 500; 750 psid
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	4-20 mA
Line Pressure	1500 psi
Resolution	Infinite

Environmental

Temperature, Operating	0° to 180°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 1.2% Full scale/ 100 °F
Span	+/- 1.2% Reading/ 100 °F

Electrical

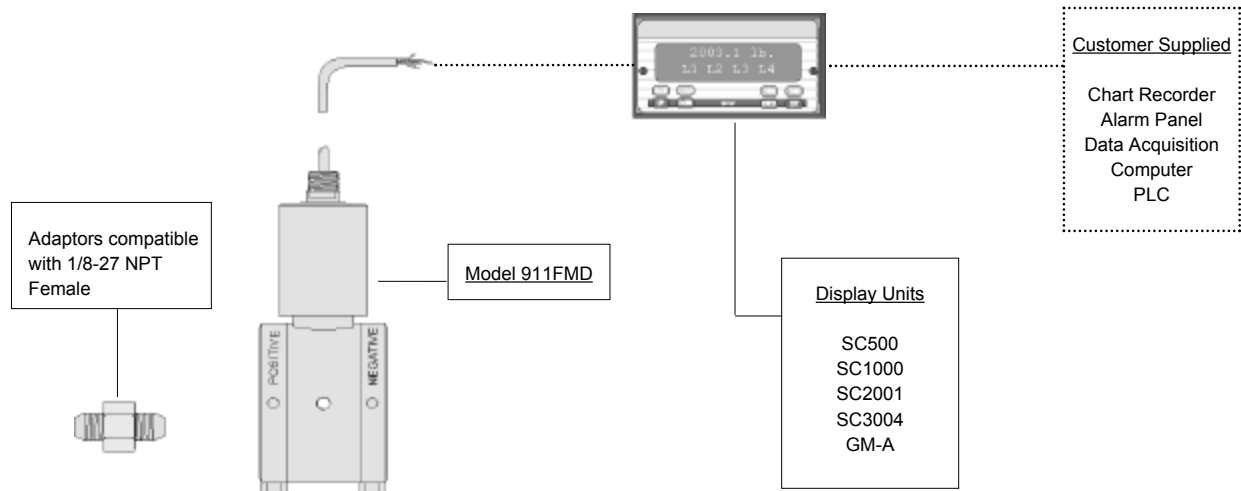
Strain Gage Type	Bonded Foil
Excitation (calibration)	15-50 VDC
Shunt Calibration Data	Included
Electrical Termination (std)	22 GA cable with case ground (2 ft.), 1/2-14 NPT

Mechanical

Media	Gas, Liquid
Overload-Safe (either side)	1500 psi
Pressure Port	1/8-27 NPT female
Wetted Parts Material	17-4 PH Stainless Steel
Case Material	Stainless Steel

Model 911FMD

Typical System Diagram



Range Codes

Range	Range Code
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT

Options

	Build to Order
Pressure Ranges (psid)	50, 75, 100, 150, 200, 300, 500, 750
Temperature Compensation	1b. 30° to 130° F
Internal Amplifiers	2k. 4-20mA (2 wire)
Pressure Ports	5h. 1/8-27NPT Female (2)
Electrical Termination	6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel

Supplied as standard



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD422** **CT** **9a**
Order Code Range Code Options Code

1-888-282-9891

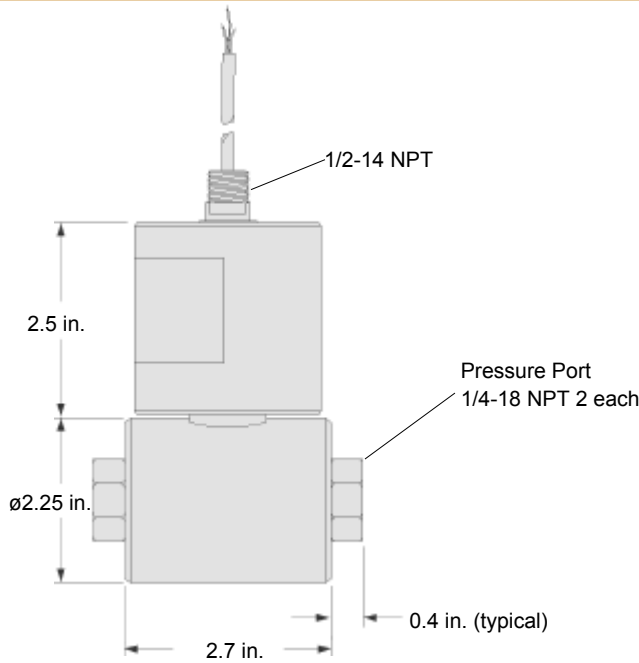
www.honeywell.com/sensotec

Model 911FMD FM Approved High Range Wet/ Wet Differential Pressure Transducer

Order Code BD423

- Factory Mutual Approved
- 4-20 mA 2 Wire

Dimensions



Wiring Code

Cable/ 2 Wire Current/ 4-20 mA

Red	(+) Supply
Black	(+) Output (4-20 mA)
White	Case Ground

Performance

Pressure Ranges	1000; 2000; 3000; 5000; 7500; 10,000 psid
Accuracy	+/- 0.25% Full Scale
Linearity	+/- 0.15% Full Scale (typical)
Hysteresis	+/- 0.10% Full Scale (typical)
Non-Repeatability	+/- 0.05% Full Scale (typical)
Output (standard)	4-20 mA
Maximum Line Pressure	Full Scale Capacity + 2000 psi
Resolution	Infinite

Environmental

Temperature, Operating	0° to 180°F
Temperature, Compensated	60° to 160°F
Temperature, Effect	
Zero	+/- 1.2% Full scale/ 100 °F
Span	+/- 1.2% Reading/ 100 °F

Electrical

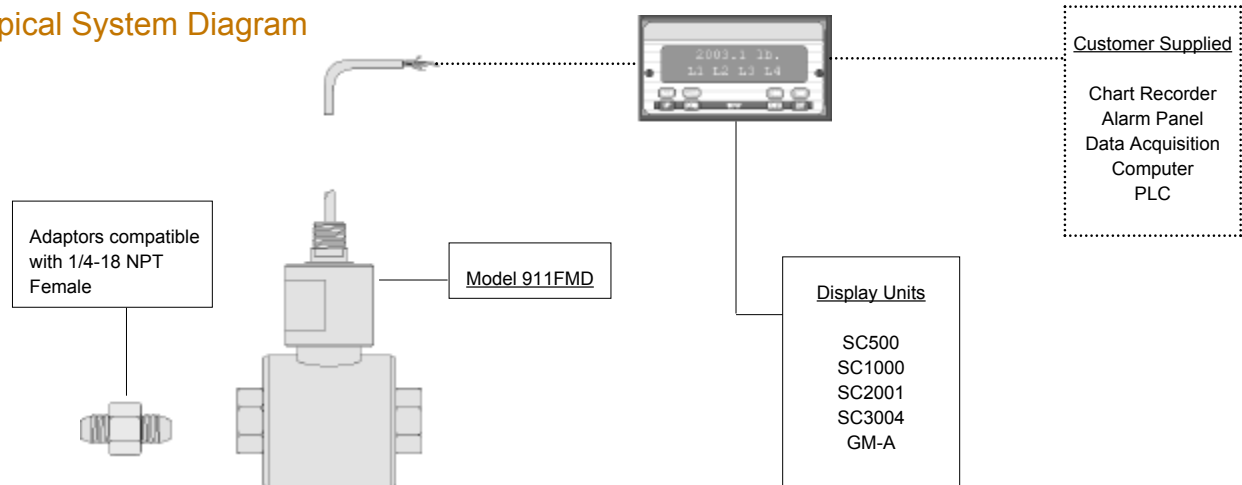
Strain Gage Type	Bonded Foil
Excitation (calibration)	15-50 VDC
Shunt Calibration Data	Included
Electrical Termination (std)	22 GA cable with case ground (2 ft.), 1/2-14 NPT

Mechanical

Media	Liquid
Overload-Safe (either side)	
1000 to 3000 psid	100% over capacity
5000 to 10,000 psid	50% over capacity
Pressure Port	1/4-18 NPT Female (2)
Wetted Parts Material	17-4 PH Stainless Steel
Case Material	Stainless Steel

Model 911FMD

Typical System Diagram



Range Codes

Range	Range Code
1000 psid	CV
2000 psid	DL
3000 psid	DN
5000 psid	DR
7500 psid	DT
10,000 psid	DV

Options

	Build from Scratch
Pressure Ranges (psid)	1000, 2000, 3000, 5000, 7500, 10000
Temperature Compensation	1b. 30° to 130° F
Internal Amplifiers	2k. 4-20mA (2 wire)
Pressure Ports	5b. 1/4-18 NPT Female(2)
Electrical Termination	6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel

Supplied as standard



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD423** **CV** **9a**
Order Code Range Code Options Code

1-888-282-9891

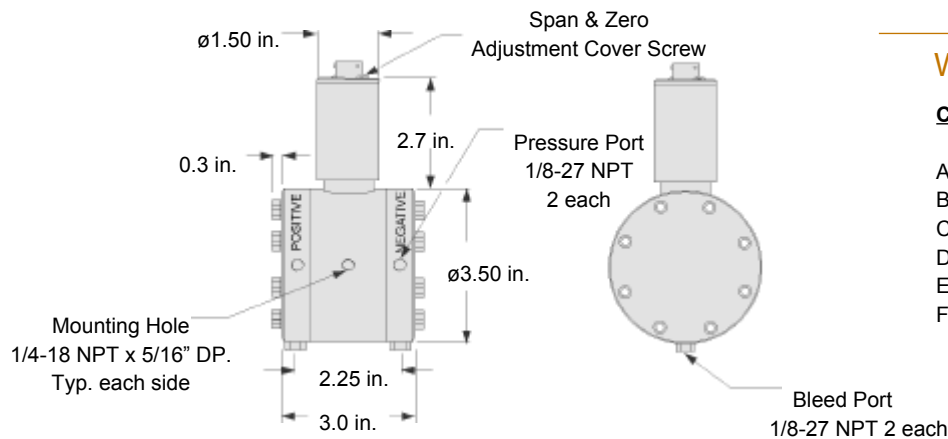
www.honeywell.com/sensotec

Model 420 DP Low Range Two Wire Wet/ Wet Differential Pressure Transducer

Order Code AD411

- 2 to 25 psid Range
- OEM Applications
- Stainless Steel
- 0.5% Accuracy

Dimensions



Wiring Code

Connector/ 2 Wire Current/ 4-20 mA

A	(+) Supply
B	No Connection
C	No Connection
D	(-) Output (4-20 mA)
E	Case Ground
F	No Connection

Performance

Pressure Ranges.....5; 10; 15; 25 psid
Accuracy.....+/- 0.5% Full Scale
Linearity.....+/- 0.25% Full Scale (typical)
Hysteresis.....+/- 0.13% Full Scale (typical)
Non-Repeatability.....+/- 0.07% Full Scale (typical)
Output (standard).....4-20 mA
Line Pressure.....1500 psi
Resolution.....Infinite

Environmental

Temperature, Operating.....0° to 180°F
Temperature, Compensated.....30° to 130°F
Temperature, Effect
Zero.....+/- 1.0% Full scale/ 100 °F
Span.....+/- 1.0% Reading/ 100 °F

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....15-40 VDC
Maximum Load Resistance.....500 Ohms
Shunt Calibration Data.....Included
Electrical Termination (std).....PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.).....PT06A-10-6S or equivalent

Mechanical

Media.....Gas, Liquid
Overload-Safe.....1500 psi either side
Pressure Port.....1/8-27 NPT female
Wetted Parts Material.....316 Stainless Steel
Case Material.....Stainless Steel

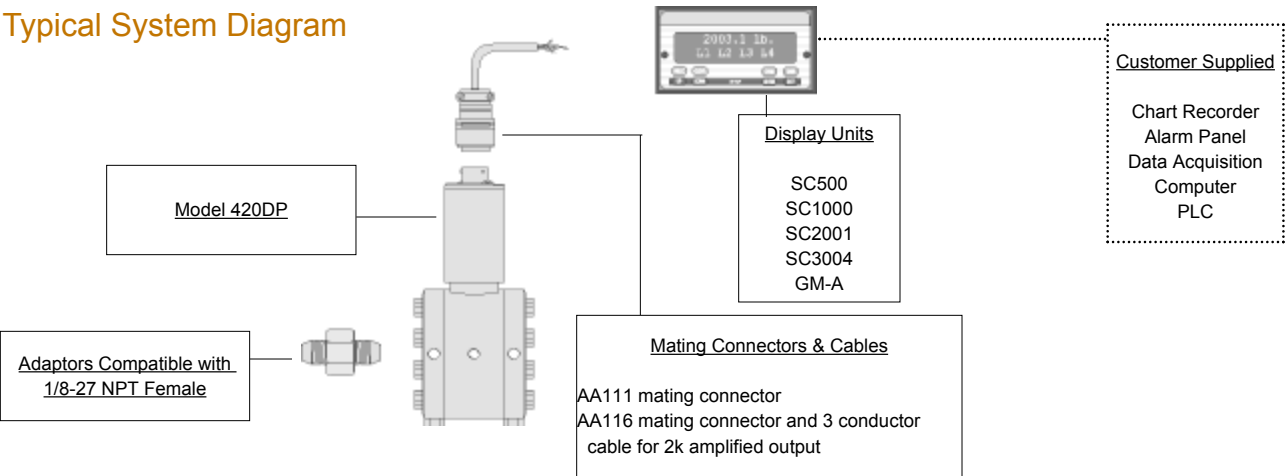
Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

1-888-282-9891

www.honeywell.com/sensotec

Model 420DP

Typical System Diagram



Range Codes

Range	Range Code
2 psid	AR
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	5, 10, 15, 25	2
Temperature Compensation	1b. 30° to 130° F 1a. 60° to 160° F	1c. 0° to 185° F
Internal Amplifiers	2k. 4-20mA (2 wire)	
Internal Amp Enhancements	3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 2)	5h. 1/8-27 NPT Female	5c. 7/16- 20 UNF Female
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6i. Integral underwater cable (8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	10a. 316 Stainless Steel	
Increased Line Pressure		25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure
O Ring Seals		26c. Teflon
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 3)	

Supplied as standard

Special Customer Requirements (Consult Factory)

Pressure Port adaptors

Notes

1. Availability varies according to range.
2. Some pressure port options may require axial orientation.
3. Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD411** **AV** **6h**
Order Code Range Code Options Code

1-888-282-9891

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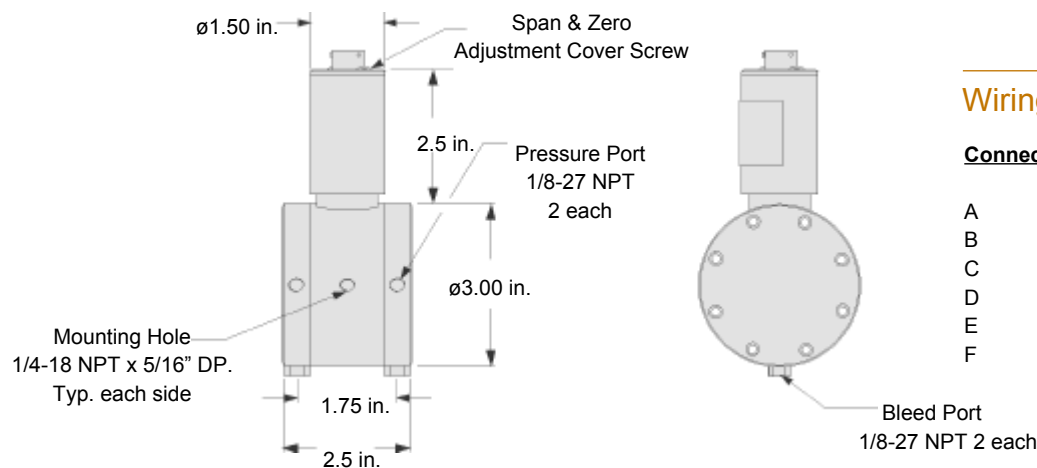
Model 420 DP Mid Range Two Wire Wet/ Wet Differential Pressure Transducer

Order Code AD412

- 50 to 750 psid Range
- OEM Applications
- Stainless Steel
- 0.5% Accuracy



Dimensions



Wiring Code

Connector/ 2 Wire Current/ 4-20 mA

A	(+) Supply
B	No Connection
C	No Connection
D	(-) Output (4-20 mA)
E	Case Ground
F	No Connection

Performance

Pressure Ranges.....50; 75; 100; 150; 200; 300; 500; 750 psid
Accuracy.....+/- 0.5% Full Scale
Linearity.....+/- 0.25% Full Scale (typical)
Hysteresis.....+/- 0.13% Full Scale (typical)
Non-Repeatability.....+/- 0.07% Full Scale (typical)
Output (standard).....4-20 mA
Line Pressure.....1500 psi
Resolution.....Infinite

Environmental

Temperature, Operating.....0° to 180°F
Temperature, Compensated.....60° to 160°F
Temperature, Effect
Zero.....+/- 1.0% Full scale/ 100 °F
Span.....+/- 1.0% Reading/ 100 °F

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....15-40 VDC
Maximum Load Resistance.....500 Ohms
Shunt Calibration Data.....Included
Electrical Termination (std).....PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.).....PT06A-10-6S or equivalent

Mechanical

Media.....Gas, Liquid
Overload-Safe.....1500 psi either side
Pressure Port.....1/8-27 NPT female (2)
Wetted Parts Material.....17-4 PH Stainless Steel
Case Material.....Stainless Steel

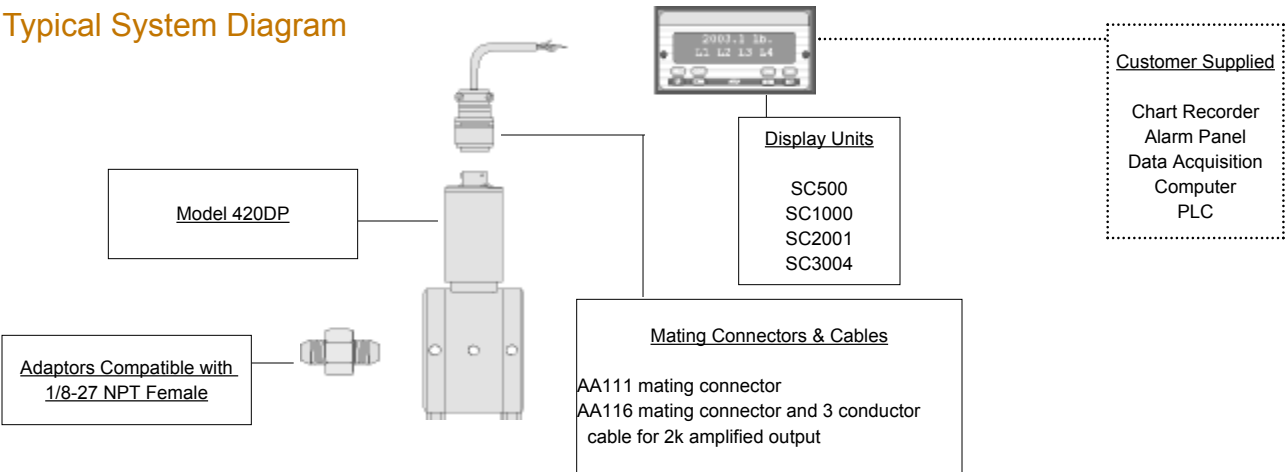
Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

1-888-282-9891

www.honeywell.com/sensotec

Model 420DP

Typical System Diagram



Range Codes

Range	Range Code
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT

Options

	Build to Order	Build from Scratch
Pressure Ranges (psid)	50, 100, 200, 500	75, 150, 300, 750
Temperature Compensation	1a. 60° to 160° F	1c. 0° to 185° F
	1b. 30° to 130° F	
Internal Amplifiers	2k. 4-20mA (2 wire)	
Internal Amp Enhancements	3d. Remote Buffered Shunt Calibration	
Pressure Ports (note 2)	5h. 1/8-27 NPT Female(2)	5c. 7/16" - 20 UNF Female (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F)	6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C)
	6e. Integral cable: Teflon (-54° to 245° C)	
	6f. Integral cable: PVC (-30° to 70° C)	
	6i. Integral underwater cable(8m) (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable	
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 Stainless Steel	
O Ring Seals		26a. Metal 26c. Teflon
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 3)	

Supplied as standard

Special Customer Requirements (Consult Factory)

Pressure Port adaptors

Notes

1. Availability varies according to range
2. Some pressure port options may require axial orientation.
3. Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD412** **CT** **6h**
Order Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

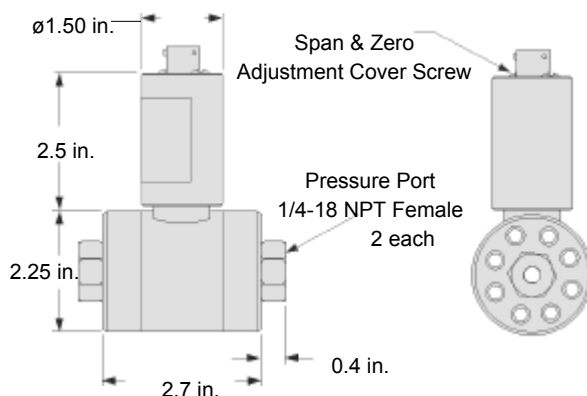
Model 420 DP High Range Two Wire Wet/ Wet Differential Pressure Transducer

Order Code AD413

- OEM Applications
- Fluid in Both Ports
- 0.5% Accuracy



Dimensions



Wiring Code

Connector/ 2 Wire Current/ 4-20 mA

A	(+) Supply
B	No Connection
C	No Connection
D	(-) Output (4-20 mA)
E	Case Ground
F	No Connection

Performance

Pressure Ranges.....2000; 3000; 5000; 7500; 10,000 psid
Accuracy.....+/- 0.5% Full Scale
Linearity.....+/- 0.25% Full Scale (typical)
Hysteresis.....+/- 0.13% Full Scale (typical)
Non-Repeatability.....+/- 0.07% Full Scale (typical)
Output (standard).....4-20 mA
Line Pressure.....1500 psi
Resolution.....Infinite

Environmental

Temperature, Operating.....0° to 180°F
Temperature, Compensated.....60° to 160°F
Temperature, Effect
Zero.....+/- 1.0% Full scale/ 100 °F
Span.....+/- 1.0% Reading/ 100 °F

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....15-40 VDC
Maximum Load Resistance.....500 Ohms
Shunt Calibration Data.....Included
Electrical Termination (std).....PTIH-10-6P or equivalent (Hermetic stainless)
Mating Connector (not incl.).....PT06A-10-6S or equivalent

Mechanical

Media.....Gas, Liquid
Overload-Safe.....50% over capacity
Pressure Port.....1/4-18 NPT female (2)
Wetted Parts Material.....17-4 PH Stainless Steel
Case Material.....Stainless Steel

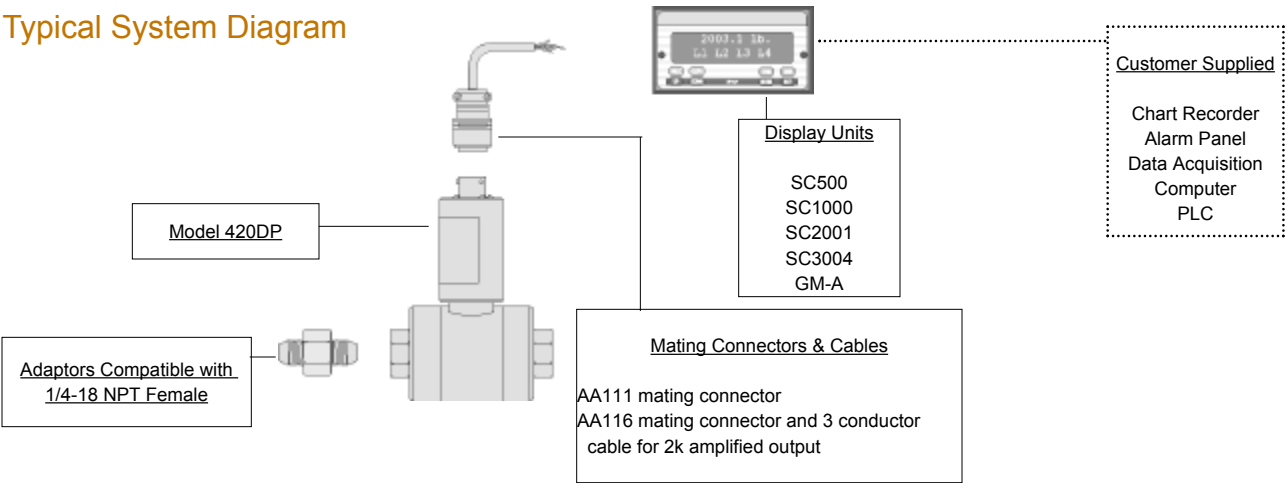
Note: Unless otherwise specified on order, amplified units with 4-20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in. to amplifier housing.

1-888-282-9891

www.honeywell.com/sensotec

Model 420DP

Typical System Diagram



Range Codes

Range	Range Code
2000 psid	DL
3000 psid	DN
5000 psid	DR
7500 psid	DT
10,000 psid	DV

Options

	Built from Scratch
Pressure Ranges (psid)	2000, 3000, 5000, 7500, 10,000
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F
Internal Amplifiers	2k. 4-20mA (2 wire)
Internal Amp Enhancements	3d. Remote Buffered Shunt Calibration
Pressure Ports (note 2)	5h. 1/4-18 NPT Female 5c. 7/16" - 20 UNF Female (per MS33656E4)
Electrical Termination	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250°F) 6e. Integral cable: Teflon (-54° to 245° C) 6f. Integral cable: PVC (-30° to 70° C) 6g. Integral cable: Neoprene (-20 to 80° C) (note 1) 6h. Integral cable: Silicone (-54 to 150° C) 6i. Integral underwater cable (max 80° C) (note 1) 6j. 1/2-14 conduit fitting with 5 ft. 4 conductor PVC cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C
Wetted Diaphragm	17-4 PH Stainless Steel
O Ring Seals	26a. Metal
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 3)

Supplied as standard

Special Customer Requirements (Consult Factory)

Pressure Port adaptors

Notes

1. Availability varies according to range.
2. Some pressure port options may require axial orientation.
3. Consult factory for TEDS availability with amplified models.

CE
Approved

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AD413** **DV** **6h**
Order Code Range Code Options Code

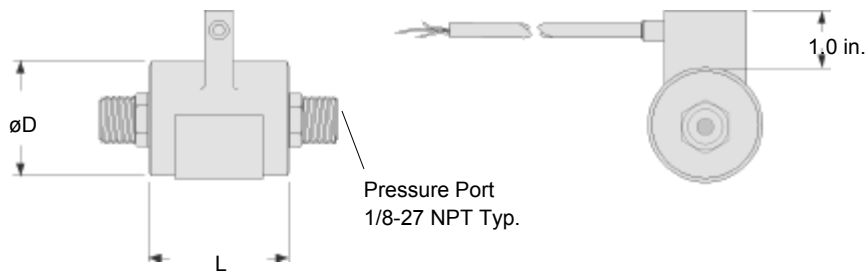
1-888-282-9891

www.honeywell.com/sensotec

Model P-30-P Subminiature Wet/ Wet Differential Pressure Transducer

Order Code BD311 (5 to 25 psid); BD312 (50 to 2000 psid)

- High Frequency
- Light Weight
- Compact Design



Wiring Code

Connector/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Range (psid)	Order Code	D(in.)	L(in.)
5 to 25	BD311	1.13	1.4
50 to 500	BD312	1.13	1.4
750 to 2000	BD312	1.38	1.5

Performance

Pressure Ranges 5; 10; 15; 25; 50; 75; 100; 150; 200; 300; 500; 750; 1000; 2000 psid
Accuracy+/- 0.3 % Full Scale
Linearity+/- 0.2% Full Scale (typical)
Hysteresis+/- 0.1% Full Scale (typical)
Non-Repeatability+/- 0.1% Full Scale (typical)
Output (standard)
5 to 25 psid 100 mV/V (nominal)
50 to 2000 psid 2 mV/V (nominal)
Line Pressure
5 to 25 psid 250 psi
50 to 2000 psid 500 psi or 2X Full Scale (whichever is higher)
Resolution Infinite

Environmental

Temperature, Operating-65° to 250°F
Temperature, Compensated 60° to 160°F
Temperature, Effect
Zero
5 to 25 psid+/- 1.5% Full scale/ 100 °F
50 to 2000 psid+/- 1.0% Reading/ 100 °F
Span
5 to 25 psid+/- 1.5% Full scale/ 100 °F
50 to 2000 psid+/- 1.0% Reading/ 100 °F

Electrical

Strain Gage Type
5 to 25 psid Bonded Semiconductor
50 to 2000 psid Bonded Foil
Excitation (calibration) 10 VDC
Bridge Resistance
5 to 25 psid 500 Ohms
50 to 2000 psid 350 Ohms
Shunt Calibration Data Included
Electrical Termination (std) Teflon Cable 5 ft.

Mechanical

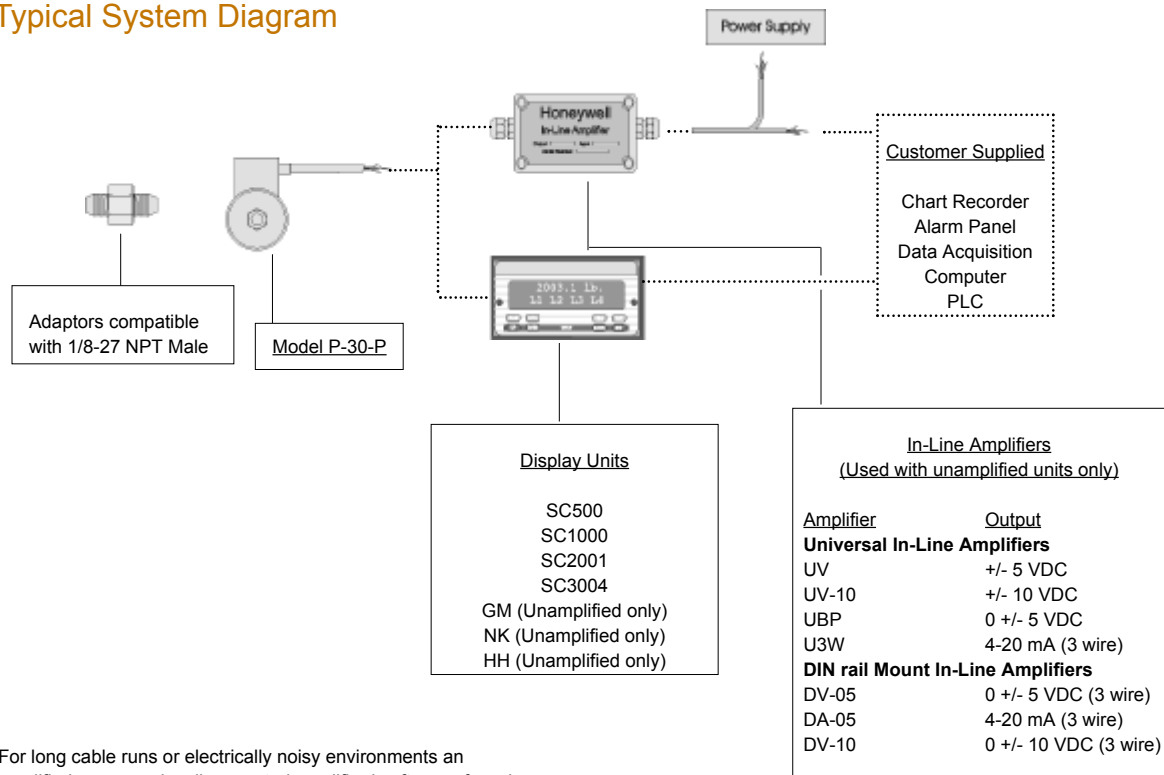
Media Gas, Liquid
Overload-Safe Maximum line pressure either side
Pressure Port 1/8-27 NPT male: 7/16" Hex
Wetted Parts Material 17-4 PH Stainless Steel
Case Material Stainless Steel

1-888-282-9891

www.honeywell.com/sensotec

Model P-30-P

Typical System Diagram



Options

	Build from scratch
Pressure Ranges (psid)	5, 10, 15, 25, 50, 75, 100, 150, 200, 300, 500, 750, 1000, 2000
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1j. 0° to 50° C
Internal Amplifiers	2u. Unamplified, mV/V output
Pressure Ports	5i. 1/8" - 27 NPT Male 5d. 7/16" - 20 UNF Male (per MS33656E4)
Electrical Termination	6e. Integral cable: Teflon (-54 to 245° C) 6i. Integral underwater cable(8m) (max 80° C) (note 1)

Supplied as standard

Range Codes

Range	Range Code
5 psid	AT
10 psid	AV
15 psid	BJ
25 psid	BL
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT
1000 psid	CV
2000 psid	DL

Special Customer Requirements (Consult Factory)

Pressure Port adaptors
Amplifiers
Custom Connectors

Notes

1. Availability varies according to range



Approved

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BD312** **CV** **6i**
Order Code Range Code Options Code

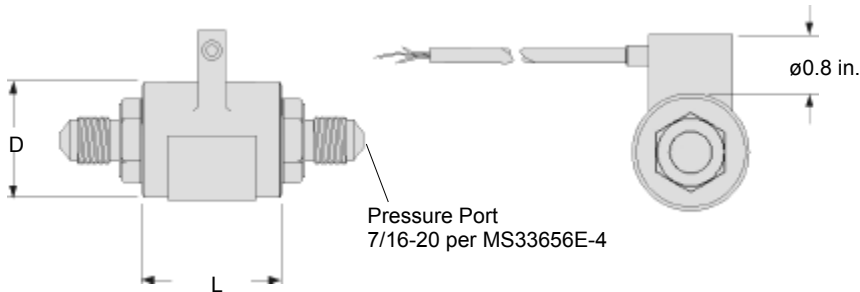
1-888-282-9891

www.honeywell.com/sensotec

Model AS25D Aerospace Pressure Transducers

Order Code BD313

- Non-Linearity 0.2% BFSL
- Lightweight



Wiring Code

Cable/Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Range (psid)	øD (in.)	L (in.)
15; 25	1.13	1.4
50; 75; 100; 150; 200; 300; 500	1.13	1.4
750; 1000; 1500; 2000	1.38	1.5

Performance

Pressure Ranges	15 to 2,000 psid
Accuracy	+/- 0.3%
Non- Linearity	+/- 0.2% Full Scale (typical)
Hysteresis	+/- 0.1% Full Scale (typical)
Output	2 mV/V Nominal
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 300° F
Temperature, Compensated	-65° to 250° F
Temperature, Effect	
Zero	0.01% Full Scale/° F
Span	0.01% Reading/° F

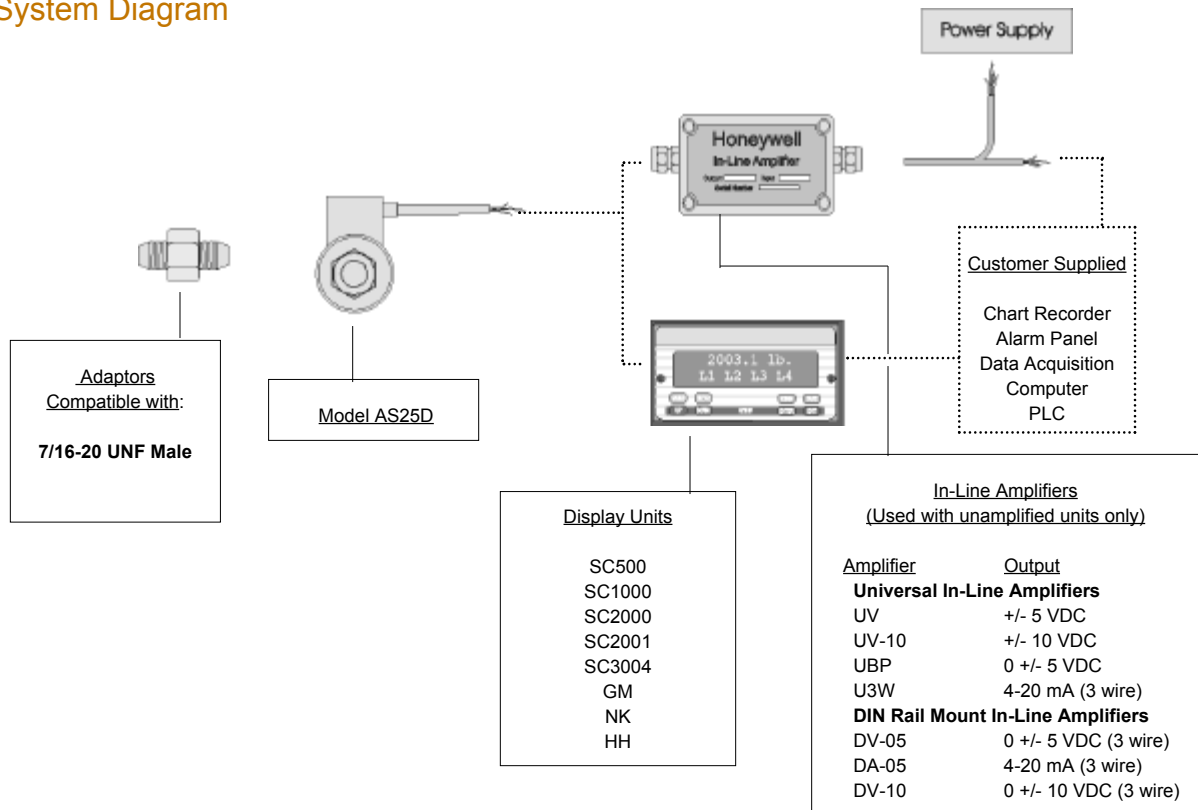
Electrical

Excitation (calibration)	10 VDC
Bridge Resistance	350 Ohms
Electrical Termination (std)	Shielded Cable

Mechanical

Media	Fluids compatible with 17-4 PH Stainless Steel
Pressure Port	7/16-20 per MS33656E-4
Wetted Parts Material	17-4 PH Stainless Steel
Weight	consult factory
Case Material	Stainless Steel

Typical System Diagram



Range Codes

Range	Range Code
15 psid	BJ
25 psid	BL
50 psid	BN
75 psid	BP
100 psid	BR
150 psid	CJ
200 psid	CL
300 psid	CP
500 psid	CR
750 psid	CT
1,000 psid	CV
1,500 psid	DJ
2,000 psid	DL

How to Order

Combine the order code and the range code.

Sample Code: **BP313** **BJ**
Order Code Range Code

Notes

LOAD CELLS

Potential Application		Model	Order Code	Accuracy	Page	
Low Profile	Stainless Steel	41 43	AL111, 41E AL112	0.1% 0.1%	152 159	
	Stainless Steel Fatigue Rated	75 73 45 47	BL114 BL113 AL116 AL117	0.1% 0.1% 0.05% 0.03%	163 167 171 175	
Miniature		53 31 34	AL131, 53E AL311, 31E AL312	0.5% 0.1% 0.1%	179 184 198	
Sub Miniature		LFH-7I 13 11	BL351 AL322, 13E BL321	0.7% 0.5% 0.5%	202 205 211	
Canister Style	Tension and Compression	UG	BL122	0.03%	214	
	Compression	WG MPB	BL125 BL515	0.03% 0.25%	216 218	
Donut Style	Compression	D TH	BL912-BL915 BL911	0.5% 0.25%	221 224	

LOAD CELLS

Potential Application		Model	Order Code	Accuracy	Page	
In-Line	Stainless Steel Tension Only	RM RH RF	see datasheet see datasheet see datasheet	0.2% 0.2% 0.2%	227 231 235	
	Stainless Steel	RGM RGH RGF	AL426/AL626 AL427/AL627 AL428/AL628	0.25% 0.25% 0.25%	239 243 246	
S Beam		81 82 102	BL433 BL434 BL804	0.05% 0.05% 0.02%	249 251 253	
Z Beam		123 127 125 129	BL810 BL807 BL811 BL808	0.03% 0.03% 0.02% 0.02%	255 257 259 261	
Load Pins		MBL MBH LP	BL341 BL342 AL441	0.1% 0.1% 0.5%	263 265 267	
Calibration Class		IC48	AL121	0.02%	270	
Special Applications		AL-SC AL-JP 101 103	TL131 TL121 BL803 BL805	1.25% 0.15% 0.02% 0.02%	273 275 277 279	

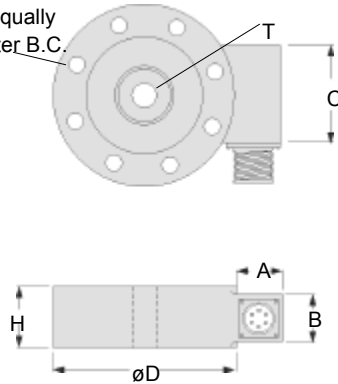
Model 41 Precision Low Profile Load Cell

Order Code AL111

- 5 to 500,000 lb.
- mV/V Output
- Double Diaphragm Design



F Clearance Holes Equally Spaced on G Diameter B.C.
K Diameter thru



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Dimensions

Ranges (lb.)	D (in.)	H (in.)	F#	øG (in.) øK (in.)		T	A (in.)	A* (in.)	B (in.)	B* (in.)	C (in.)
				B.C.	thru						
5; 10; 25	2.50	0.80	6	2.000	0.19	1/4-28 UNF	0.82	2.5	0.75	0.9	1.25
50; 100; 250; 500; 1000	3.00	1.00	6	2.250	0.28	3/8-24 UNF	0.82	2.5	0.75	0.9	1.25
2000; 3000; 4000; 5000	3.50	1.00	6	2.625	0.34	1/2-20 UNF	0.82	2.5	0.75	0.9	1.25
7500; 10,000; 15,000	5.50	1.80	8	4.500	0.40	1-14 UNS	1.25	2.3	1.50	1.5	2.00
20,000; 30,000; 50,000	6.00	1.80	8	4.875	0.53	1 1/2-12 UNF	1.25	2.3	1.50	1.5	2.00
75,000; 100,000	9.00	2.50	12	7.750	0.66	2-12 UN	1.25	2.3	1.50	1.5	2.00
150,000; 200,000	11.00	2.50	12	9.500	0.78	2 1/2-12 UN	1.25	2.3	1.50	1.5	2.00
300,000; 400,000; 500,000	14.00	4.25	12	11.750	1.03	3 1/2-12 UN	1.25	2.3	1.50	1.5	**

* Length of load cell with amplified option (see options chart)

**C" dimension varies on high ranges. Consult Factory

Performance

Load Ranges.....	5 to 500,000 lb.
Non-linearity	
5 to 25 lb.....	+/- 0.2% Full Scale
50 to 500,000 lb.....	+/- 0.1% Full Scale
Hysteresis	
5 to 25 lb.....	+/- 0.1% Full Scale
50 to 500,000 lb.....	+/- 0.08% Full Scale
Non-Repeatability	
5 to 25 lb.....	+/- 0.1% Full Scale
50 to 500,000 lb.....	+/- 0.03% Full Scale
Output (tolerance)	
5 to 25 lb.....	2 mV/V +/- 0.5% Full Scale
50 to 500,000 lb.....	3 mV/V +/- 0.5% Full Scale
Operation.....	Compression/ Tension (note 13)
Resolution.....	Infinite
Standard Calibration.....	5 point calibration: 0%, 50% and 100% of Full Scale in tension only

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.002% Full Scale/ °F
Span.....	0.002% Full Scale/ °F

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms (nominal)
Zero Balance (tolerance).....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std)	
5 to 5,000 lb.....	PTIH-10-6P
7,500 to 500,000 lb.....	MS3102A-14S-6P

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Model 41

Electrical (continued)

Mating Connector (not included)	
5 to 5,000 lb.....	PT06A-10-6S
7,500 to 500,000 lb.....	MS3106A-14S-6S

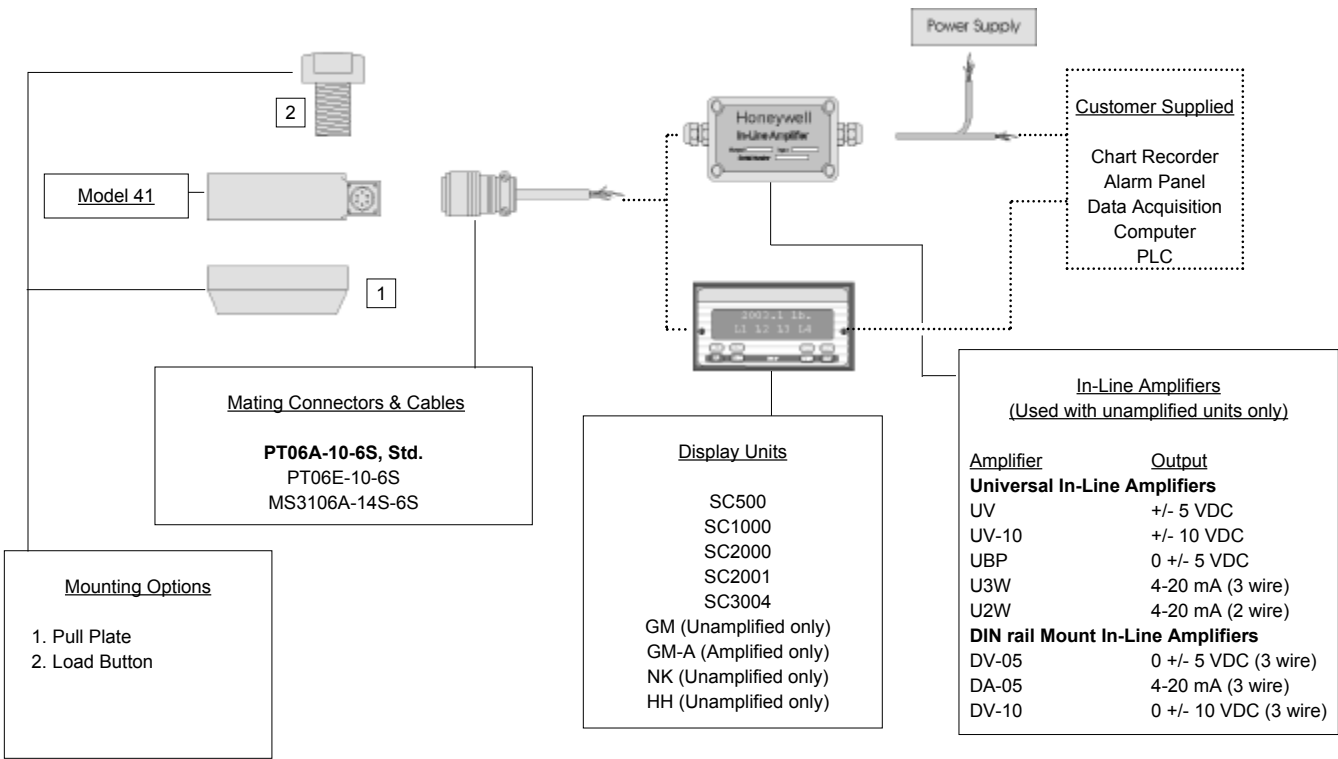
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material	
Less than 200,000 lb.....	17-4PH Stainless Steel
Greater than or equal to 300,000 lb.....	Carbon Steel
Deflection.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Natural Ringing Frequency (Hz)	Weight (lbs.)
5 to 25	0.001	2,000	0.8
50 to 1,000	0.002	4,600	1.5
2,000 to 5,000	0.002	10,000	2.0
7,500 to 15,000	0.003	6,000	8.8
20,000 to 50,000	0.004	8,000	11.0
75,000 to 100,000	0.006	5,500	30.9
150,000 to 200,000	0.010	4,500	46.3
300,000 to 500,000	0.010	4,100	130.1

Typical System Diagram



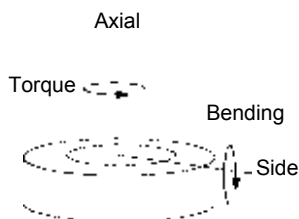
Model 41

Range Codes

Range	Range Code	Range	Range Code
5 lb.	AT	10,000 lb.	DV
10 lb.	AV	15,000 lb.	EJ
25 lb.	BL	20,000 lb.	EL
50 lb.	BN	30,000 lb.	EN
100 lb.	BR	50,000 lb.	EP
250 lb.	CN	75,000 lb.	ER
500 lb.	CR	100,000 lb.	ET
1000 lb.	CV	150,000 lb.	FJ
2000 lb.	DL	200,000 lb.	FL
3000 lb.	DN	300,000 lb.	FN
4000 lb.	DP	400,000 lb.	FP
5000 lb.	DR	500,000 lb.	FR
7500 lb.	DT		

Allowable Maximum Loads

(note 2)



Capacity (lb.)	Side Load (lb.)	Bending (lb.-in.)	Torque (lb.-ft.)
5 to 25	50%	40%	25%
50 to 1,000	45%	35%	25%
2,000 to 5,000	30%	25%	25%
7,500 to 30,000	20%	20%	15%
50,000 to 100,000	20%	20%	15%
150,000 to 200,000	20%	20%	15%
300,000	20%	20%	10%
400,000	20%	20%	10%
500,000	20%	20%	10%

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Model 41

Options

	Same Day Ship	Fast track manufacture	Build to order	Build from scratch
Load Range	50, 100, 500, 1000, 2000, 5000, 10,000, 20,000, 50,000 lb		5, 10, 25, 250, 3000, 4000, 7500, 15,000, 30,000 lb	75,000, 100,000, 150,000, 200,000, 300,000, 400,000, 500,000 lb
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	1g. 70° to 325° F 1h. 70° to 400° F	
Internal Amplifiers	2u. Unamplified, mV/V output	2c. 0-5 VDC 2j. 4-20 mA (3-wire) 2t. 0-10 VDC	2b. 4 wire +/- 5 VDC 2k. 4-20 mA (2-wire) 2n(2N). 4-20 mA (2-wire) Intrinsically Safe	
Internal Amp Enhancements			3a. Input/output isolation 3d. Remote Buffered Shunt Calibration (note 8)	
Overload Stops			4a. Overload stops	
Electrical Termination	6a. Bendix PTIH-10-6P-6 pin connector (ranges to 5000 lbs.) 6b. MS3102A-14S-6P connector (ranges 7500 lbs. and up) (note 9)	6e. Integral cable: Teflon 6q. Molded Integral Cable: Polyurethane (note 9) 6f. Integral cable: PVC	6g. Integral cable: Neoprene (note 9) 6h. Integral cable: Silicone 6i. Integral underwater cable (note 9) 6j. 1/2-14 conduit fitting with 5' of 4 conductor PVC cable 6v. Phoenix connector on end of cable	
Shunt Calibration			8a. Precision Internal Resistor (note 14)	
Special Calibration			9a. 10 point (5 up/5 down) 20% increments @ 68° F 9b. 20 point (10 up/10 down) 10% increments @ 68° F 9c. A.S.T.M. E-74 calibration	
Bridge Resistance			12b. 5,000 ohm (foil)	
Potentiometers			14a. No access to pots 14b. Top access to pots	
Electrical Connector Orientation			15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable	
Special Calibration			30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression 30d. Tension and Compression calibration, Positive in compression	
Bridge Type			31a. Dual bridge	
Shock & Vibration			44a. Shock and vibration resistance	
Interfaces			53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 15)	

Supplied as standard



Approved Intrinsically Safe Amp

Special Customer Requirements (Consult Factory)

Operating temperature -60° to 400°F
Lightning protection
OEM labels
Case pressure
Radiation resistant
Cable orientation
Fatigue rating
Different cable lengths
Venting
Different materials
Electro-static discharge immunity
Different threads
Special wiring codes

Notes

- Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector
- No mating connector necessary for cable option.
- Adding any internal amplifiers on 5 to 25 lb. ranges will increase delivery time.
- Option 2n (2N) on 5 to 5,000 lb. ranges will typically take 12 weeks for delivery.
- Option 3d is not available with option 2n (2N) or 2k.
- Not available with options 1c, 1e, 1f, 1g, 1h or 1i.
- Consult factory.
- Availability varies with range, consult factory.
- Option only pertinent when option 2n (2N) selected.
- Standard calibration for tension/compression load cells is in tension only.
- Not available with amplified output.
- Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL111** **CV** **6h**
Order Code Range Code Options Code

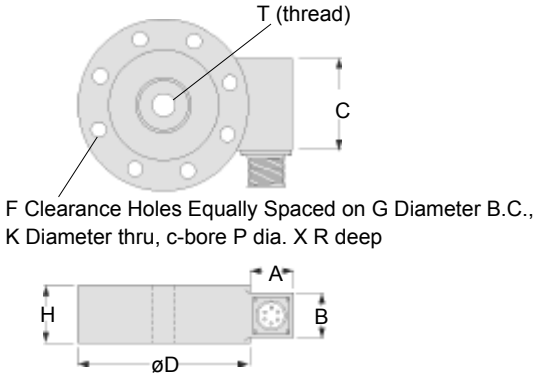
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Model 41E Precision Low Profile Load Cell

Order Code 41E

- 20N to 200kN Range
- mV/V Output
- Enhanced Thermal Stability
- Double Diaphragm Design



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Dimensions

Range		Range												
Range	Code	D(mm)	H(mm)	F#	G(mm)	K(mm)	T	A(mm)	A*(mm)	B(mm)	B*(mm)	C(mm)	P(mm)	R(mm)
20 N	020N0	64	20	6	51	5	M6x1.0-6H	21	64	19	23	32	8	5
50 N	050N0	64	20	6	51	5	M6x1.0-6H	21	64	19	23	32	8	5
100 N	100N0	64	20	6	51	5	M6x1.0-6H	21	64	19	23	32	8	5
200 N	200N0	76	25	6	60	7	M10x1.0-6H	21	64	19	23	32	11	7
500 N	500N0	76	25	6	60	7	M10x1.0-6H	21	64	19	23	32	11	7
1 kN	01KN0	76	25	6	60	7	M10x1.0-6H	21	64	19	23	32	11	7
2 kN	02KN0	76	25	6	60	7	M10x1.0-6H	21	64	19	23	32	11	7
5 kN	05KN0	76	25	6	60	7	M10x1.0-6H	21	64	19	23	32	11	7
10 kN	10KN0	89	25	6	70	9	M12x1.5-6H	21	64	19	23	32	14	8
20 kN	20KN0	89	25	6	70	9	M12x1.5-6H	21	64	19	23	32	14	8
50 kN	50KN0	140	46	8	114	10	M24x1.5-6H	32	58	38	38	51	17	11
100 kN	100KN0	152	46	8	124	14	M36x3.0-6H	32	58	38	38	51	N/A	N/A
200 kN	200KN0	152	46	8	124	14	M36x3.0-6H	32	58	38	38	51	N/A	N/A

* Length of load cell with amplified option (see options chart)

Performance

Load Ranges.....20N to 200kN
Linearity
20N to 200N.....+/- 0.2% Full Scale
500N to 200kN.....+/- 0.1% Full Scale
Hysteresis
20N to 200N.....+/- 0.1% Full Scale
500N to 200kN.....+/- 0.08% Full Scale
Non-Repeatability
20N to 200N.....+/- 0.05% Full Scale
500N to 200kN.....+/- 0.03% Full Scale
Output
20N to 100N.....2 mV/V (nominal)
200N to 200kN.....3 mV/V (nominal)
Operation.....Compression/ Tension
Resolution.....Infinite
Standard Calibration.....Standard calibration for tension/ compression load cells is in tension only

Environmental

Temperature, Operating.....-55° to 120° C
Temperature, Compensated.....15° to 70° C
Temperature, Effect
Zero.....0.004% of Full Scale/ °C
Span.....0.004% Reading/ °C
Protection Rating.....IP65 (note 9)

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Model 41E

Mechanical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....10 VDC
Insulation Resistance.....5,000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....350 Ohms (nominal)
Shunt Calibration Data.....Included
Electrical Termination (std)
20N to 20kN.....PTIH-10-6P Bayonet plug (MIL-C-26482)
50kN to 200kN.....MS3102E-14S-6P

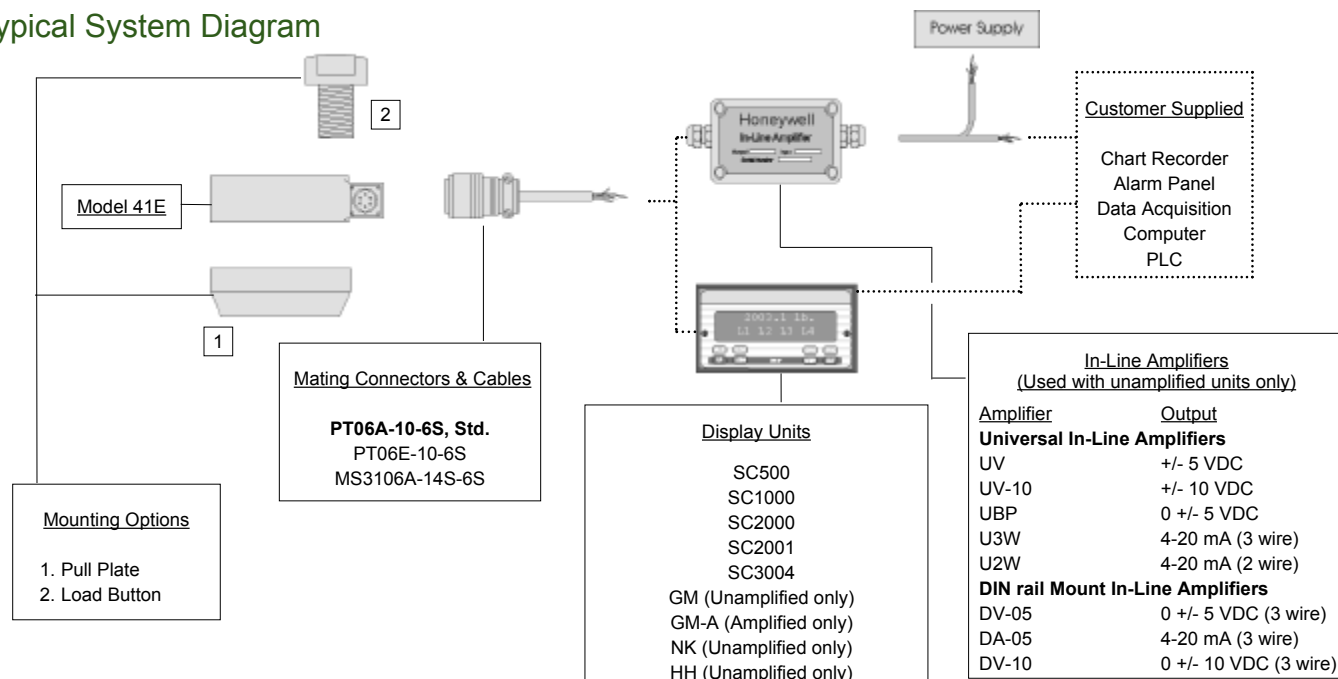
Electrical

Maximum Allowable Load.....150% F.S. (note 1)
Weight.....See table
Material
20N to 1.3kN.....17-4PH Stainless Steel
1.5kN to 200kN.....4340 painted
Deflection.....6 micrometers
Natural Frequency.....See table

Deflections and Ringing Frequencies

Capacity	Natural Ringing Frequency (Hz)	Weight (lb)
20 N	1,000	0.8
50 N	1,200	0.8
100 N	2,000	0.8
200 N	2,300	1.5
500 N	3,500	1.5
1 kN	4,300	1.5
2 kN	5,100	1.5
5 kN	7,000	1.5
10 kN	10,000	2.0
20 kN	14,000	2.0
50 kN	4,200	8.8
100 kN	6,400	11.0
200 kN	12,000	11.0

Typical System Diagram



Range Codes

Range	Range Code	Range	Range Code
20 N	020N0	5 kN	05KN0
50 N	050N0	10 kN	10KN0
100 N	100N0	20 kN	20KN0
200 N	200N0	50 kN	50KN0
500 N	500N0	100 kN	100KN0
1 kN	01KN0	200 kN	200KN0
2 kN	02KN0		

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Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes
Wiring Code: Connector (Std.) (note 3)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 3) (note 4) (note 5)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Options

	Build from Scratch
Load Range	20N to 2000kN
Temperature Compensation	15° to 70° C 1j. -65° to 50° C 1k. -20° to 85° C
Internal Amplifiers (note 6)	2u. Unamplified, mV/V output 2b. +/- 5 VDC 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output
Internal Amp Enhancements	3a. Input/ Output Isolation (note 9) 3d. Remote Buffered Shunt Calibration (note 8)
Electrical Termination	6-pin Bayonet plug (MIL-C-26482) (20N to 20kN) MS3102E-14S-9P or equivalent (50kN to 200kN) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene (note 9) 6h. Integral cable: Silicone (note 9) 6i. Integral underwater cable (note 9) 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded integral cable: Polyurethane (note 9)
Shunt Calibration	8a. Precision Internal Resistor (note 7)
Bridge Resistance (note 9)	12a. 1,000 Ohms (foil) (max. 200° C) 12b. 5,000 Ohms (foil) (max. 120° C)
Bridge Type	31a. Dual bridge.
Potentiometers	14a. No access to pots. 14c. Side access to pots
Electrical Connector Orientation	15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Load Direction	30a. Positive in compression, compression testing only 30b. Positive in tension, tension & compression testing only 30c. Negative in compression, compression testing only 30d. Positive in compression, tension & compression testing only
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 10)

Supplied as standard

Special Customer Requirements (Consult Factory)

Operating temperature -50° to 200° c
Lightning protection
OEM labels
Case pressure
Radiation resistant
Cable orientation
Fatigue rating
Different cable lengths
Venting
Different materials
Electro-static discharge immunity
Different threads
Special wiring codes

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
4. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
5. No mating connector necessary for cable option.
6. Adding any internal amplifiers on 20N to 100N ranges will take typically 6 weeks for delivery.
7. Not available with amplified options.
8. Option 3d is not available with option 2k.
9. Availability varies with range, consult factory.
10. Consult factory for TEDS availability with amplified models.



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Intrinsically Safe Amp

How to Order

Combine the order code, the range code and the options code.

Sample Code: **41E** **500N0** **6i**
Order Code Range Code Options Code

1-888-282-9891

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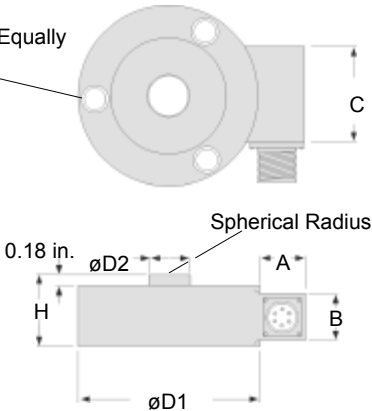
Model 43 Precision Low Profile Load Cell

Order Code AL112

- 5 to 500,000 lb.
- mV/V Output
- Stainless Steel
- Double Diaphragm Design
- 0.10% Accuracy



3 Clearance Holes for F
Socket HD Cap Screws, Equally
Spaced as Shown on G
Diameter B.C.



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Dimensions

Ranges (lb.)	D1 (in.)	D2 (in.)	H (in.)	F Typ.Dia.	øG (in.) B.C.	A (in.)	A* (in.)	B (in.)	B* (in.)	C (in.)
5; 10; 25	2.50	0.37	0.98	#8	2.000	0.82	2.5	0.75	0.90	1.25
50; 100; 250; 500; 1000	3.00 (note 1)	0.56	1.18	1/4	2.250	0.82	2.5	0.75	0.90	1.25
2000; 3000; 4000; 5000	3.50	0.69	1.18	5/16	2.625	0.82	2.5	0.75	0.90	1.25
7500; 10,000; 15,000; 20,000; 30,000	4.50	1.50	2.00	3/8	3.790	1.25	2.3	1.50	1.50	2.00
50,000; 75,000; 100,000	4.50	1.50	2.00	3/8	3.790	1.25	2.3	1.50	1.50	2.00
150,000; 200,000	5.50	2.00	2.18	3/8	4.812	1.25	2.3	1.50	1.50	2.00
300,000	7.00	2.50	2.68	3/8	6.000	1.25	2.3	1.50	1.50	2.00
400,000	7.50	2.50	2.68	3/8	6.750	1.25	2.3	1.50	1.50	2.00
500,000	11.00	4.75	4.50	3/4	9.500	1.25	2.3	1.50	1.50	2.00

* Length of load cell with amplified option (see options chart)

Performance

Load Ranges.....	5 to 500,000 lb.
Non-Linearity	
5 to 25 lb.....	+/- 0.2% Full Scale
50 to 500,000 lb.....	+/- 0.1% Full Scale
Hysteresis	
5 to 25 lb.....	+/- 0.1% Full Scale
50 to 500,000 lb.....	+/- 0.08% Full Scale
Non-Repeatability	
5 to 25 lb.....	+/- 0.1% Full Scale
50 to 500,000 lb.....	+/- 0.03% Full Scale
Output (tolerance)	
5 to 25 lb.....	2 mV/V +/- 0.5% Full Scale
50 to 500,000 lb.....	3 mV/V +/- 0.5% Full Scale
Operation.....	Compression
Resolution.....	Infinite
Standard Calibration.....	5 point calibration, compression only

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.002% Full Scale/ °F
Span.....	0.002% Full Scale/ °F

1-888-282-9891

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Model 43

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	Up to 15 VDC or AC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms
Zero Balance (tolerance).....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std)	
5 to 5,000 lb.....	PTIH-10-6P
7,500 to 500,000 lb.....	MS3106A-14S-6S
Mating Connector (not incl.)	
5 to 5,000 lb.....	PT06A-10-6S
7,500 to 500,000 lb.....	MS3106A-14S-6S

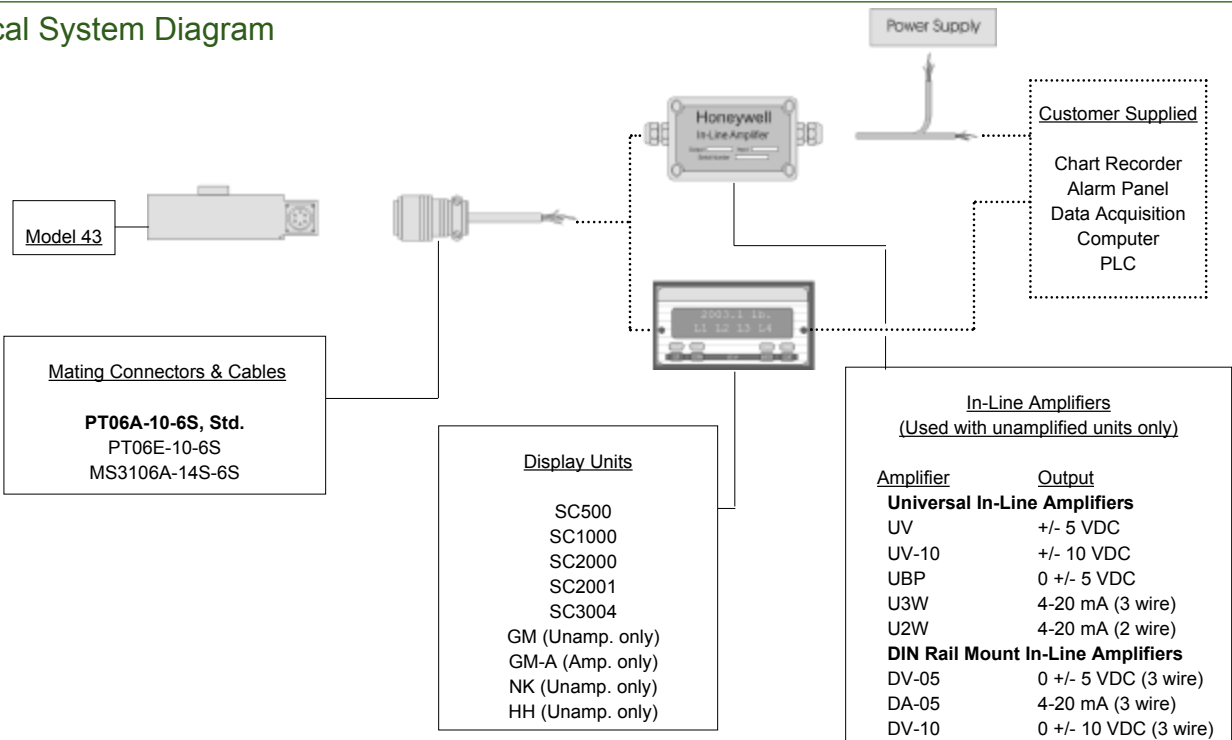
Mechanical

Maximum Allowable Load.....	150% F.S. (note 2)
Weight.....	See table
Material.....	17-4PH Stainless Steel
Life Cycles (approx.).....	> 10 million cycles
Deflection.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringing Frequency (Hz)	Weight (lb)
5 to 25	0.001	2,000	0.8
50 to 1,000	0.002	4,500	1.5
2,000 to 5,000	0.002	11,000	1.6
7,500 to 30,000	0.003	9,000	6.4
50,000 to 100,000	0.004	13,000	6.6
150,000 to 200,000	0.004	11,000	11.7
300,000	0.005	10,000	23.8
400,000	0.007	8,400	26.5
500,000	0.007	4,800	90.4

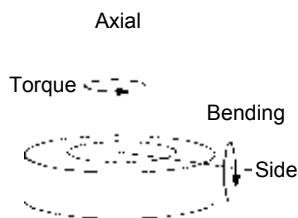
Typical System Diagram



Model 43

Allowable Maximum Loads

(note 2)



Capacity (lb.)	Side Load (lb.)	Bending (lb.-in.)	Torque (lb.-ft.)
5 to 25	50%	40%	25%
50 to 1,000	45%	35%	25%
2,000 to 5,000	30%	25%	25%
7,500 to 30,000	20%	20%	15%
50,000 to 100,000	20%	20%	15%
150,000 to 200,000	20%	20%	15%
300,000	20%	20%	10%
400,000	20%	20%	10%
500,000	20%	20%	10%

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2a	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	0-5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code	Range	Range Code
5 lb.	AT	7500 lb.	DT
10 lb.	AV	10,000 lb.	DV
25 lb.	BL	15,000 lb.	EJ
50 lb.	BN	20,000 lb.	EL
100 lb.	BR	30,000 lb.	EN
250 lb.	CN	50,000 lb.	EP
500 lb.	CR	75,000 lb.	ER
1000 lb.	CV	100,000 lb.	ET
2000 lb.	DL	150,000 lb.	FJ
3000 lb.	DN	200,000 lb.	FL
4000 lb.	DP	300,000 lb.	FN
5000 lb.	DR	400,000 lb.	FP
		500,000 lb.	FR

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Model 43

Options

	Built to Order	Built from Scratch
Load Range	5 to 500,000 lb.	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F	1g. 70° to 325° F 1i. -65° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output 2a. 4 wire 0-5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n(2N). 4-20mA (2-wire) Intrinsically safe	
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration	
Electrical Termination	6a. Bendix PTIH-10-6P – (or equivalent) 6 pin (max. 250°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	
Shunt Calibration	8a. Precision Internal Resistor	
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 70° F 9b. 20 point (10 up/10 down) 10% increments @ 70°F	
Bridge Resistance	12. 5,000 Ohms (foil) (max. 250°F)	
Bridge Type	31a. Dual bridge.	
Potentiometers	14a. No access to pots. 14b. Top access to pots	
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable	
Special Calibration	30a. Compression only (+) Output	
Shock & Vibration	44a. Shock and vibration resistance	
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 8)	

Supplied as standard

Special Customer Requirements (Consult Factory)

Operation temperature -60° to 400°F
Lightning protection
Barometric compensation
OEM labels
Case pressure
Radiation proof
Cable orientation
Fatigue rating
Different cable lengths
Venting
Different materials
Electro-static discharge immunity
Different threads
Special wiring codes

Notes

- 3.00 in. diameter has six mounting holes.
- Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector
- No mating connector necessary for cable option.
- Only available with options 2a or 2c.
- Consult factory for TEDS availability with amplified models.



How to Order

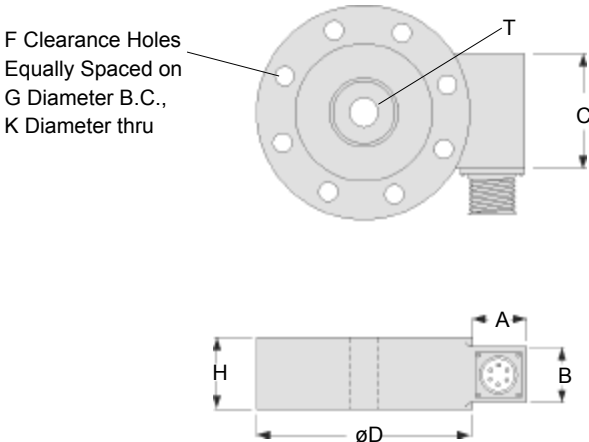
Combine the order code, the range code and the options code.

Sample Code: **AL112** **CV** **6h**
Order Code Range Code Options Code

Model 75 Precision Low Profile Load Cell

Order Code BL114

- 50 to 200,000 lb.
- mV/V Output
- Stainless Steel
- Dual Diaphragm Design
- 0.10% Accuracy
- Enhanced Overload Capacity



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Dimensions

Ranges (lb.)	D (in.)	H (in.)	F#	øG (in.) B.C.	øK (in.) thru	T	A (in.)	A* (in.)	B (in.)	B* (in.)	C (in.)
50 to 500	3.00	1.00	6	2.250	0.28	3/8-24 UNF	0.82	2.5	0.75	0.9	1.25
1000 to 2000	3.50	1.00	6	2.625	0.34	1/2-20 UNF	0.82	2.5	0.75	0.9	1.25
3000 to 7500	5.50	1.80	8	4.500	0.40	1-14 UNS	1.25	2.3	1.50	1.5	2.00
10,000 to 20,000	6.00	1.80	8	4.875	0.53	1 1/2-12 UN	1.25	2.3	1.50	1.5	2.00
30,000 to 50,000	9.00	2.00	8	6.000	0.78	2-12 UN	1.25	2.3	1.50	1.5	2.00
75,000 to 100,000	11.00	2.50	12	7.500	0.66	2 1/2-12 UN	1.25	2.3	1.50	1.5	2.00
150,000 to 200,000	14.00	4.25	12	11.750	1.03	3 1/2-12 UN	1.25	2.3	1.50	1.5	(note 1)

* Length of load cell with amplified option (see options chart)

Performance

Load Ranges.....	50 to 200,000 lb.
Linearity.....	+/- 0.1% Full Scale
Hysteresis.....	+/- 0.1% Full Scale
Non-Repeatability.....	+/- 0.03% Full Scale
Output (tolerance).....	2 mV/V +/- 0.5% Full Scale
Operation.....	Compression/ Tension
Resolution.....	Infinite
Standard Calibration.....	5 point calibration: 0%, 50% and 100% of Full Scale in tension only

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.002% Full Scale/ °F
Span.....	0.002% Full Scale/ °F

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Model 75

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5,000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms
Zero Balance (tolerance).....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std)	
50 to 2,000 lb.....	PTIH-10-6P
3,000 to 200,000 lb.....	MS3102E-14S-6P
Mating Connector (not incl.)	
50 to 2,000 lb.....	PT06A-10-6S
3,000 to 200,000 lb.....	MS3106A-14S-6S

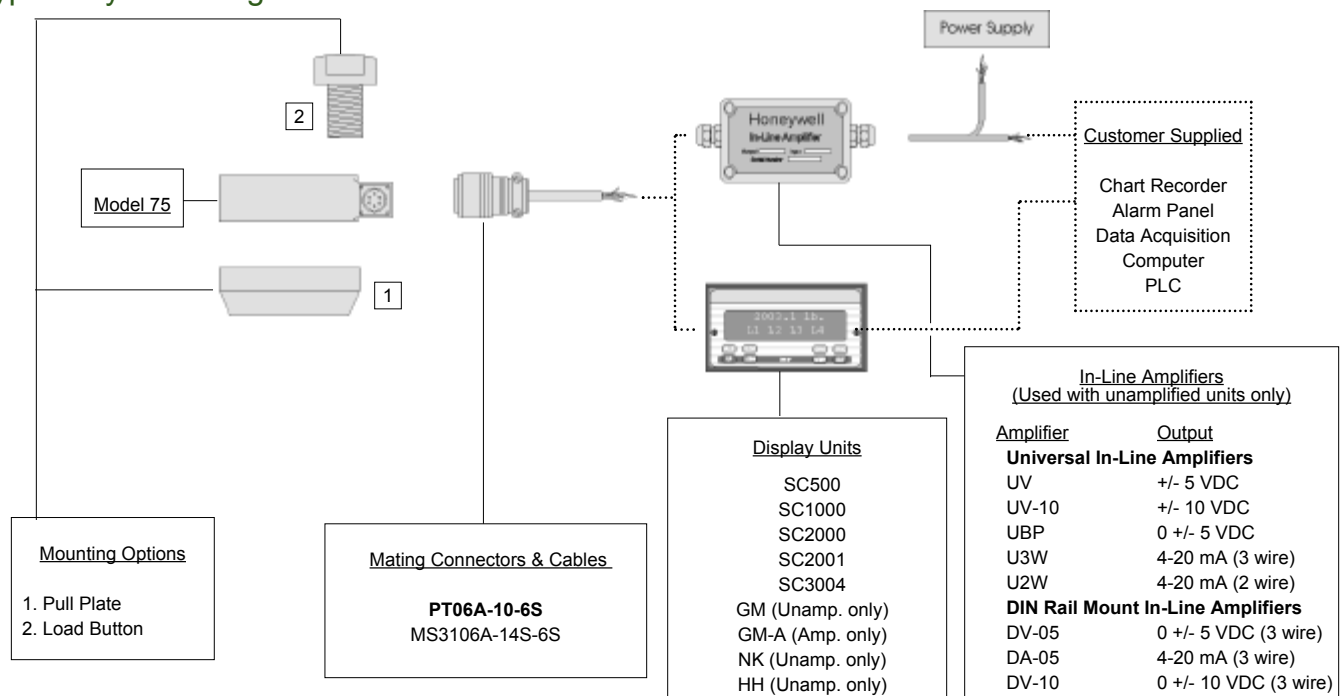
Mechanical

Maximum Allowable Load.....	200% F.S. (note 2)
Weight.....	See table
Material	
Less than or equal to 100,000 lb.....	17-4PH Stainless Steel
Greater than or equal to 125,000 lb.....	Carbon Steel
Life Cycles (approx.).....	>10 ⁸ Cycles Fully Reversed
Deflection.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringling Frequency (kHz)	Weight (grams)
50 to 500	0.001	2.5	730
1000 to 2000	0.002	10	900
3000 to 7500	0.002	8	4,000
10,000 to 20,000	0.003	10	5,000
30,000 to 50,000	0.003	8.2	8,600
75,000 to 100,000	0.004	7.5	15,000
150,000 to 200,000	0.006	4.5	21,000

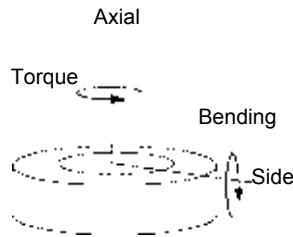
Typical System Diagram



Model 75

Allowable Maximum Loads

(note 2)



Capacity (lb.)	Side Load (lb.)	Bending (lb.-in.)	Torque (lb.-ft.)
50 to 500	75%	60%	35%
1000 to 2000	45%	35%	35%
3000 to 7500	30%	30%	25%
10,000 to 20,000	30%	30%	25%
30,000 to 50,000	30%	30%	15%
75,000 to 100,000	30%	30%	15%
150,000 to 200,000	30%	30%	15%

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code	Range	Range Code
50 lb.	BN	10,000 lb.	DV
100 lb.	BR	15,000 lb.	EJ
250 lb.	CN	20,000 lb.	EL
500 lb.	CR	30,000 lb.	EN
1000 lb.	CV	50,000 lb.	EP
2000 lb.	DL	75,000 lb.	ER
3000 lb.	DN	100,000 lb.	ET
4000 lb.	DP	150,000 lb.	FJ
5000 lb.	DR	200,000 lb.	FL
7500 lb.	DT		

Model 75

Options

	Built to Order	Built from Scratch
Load Range	50 to 200,000 lb.	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F	1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe	
Internal Amp Enhancements	3a. Input/ Output Isolation 3d. Remote Buffered Shunt Calibration	
Electrical Termination	6a. Bendix PTIH-10-6P – (or equivalent) 6 pin (max. 250°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	
Shunt Calibration	8a. Precision Internal Resistor	
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)	
Bridge Type	31a. Dual bridge.	
Potentiometers	14a. No access to pots. 14b. Top access to pots	
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable.	
Special Calibration	30a. Compression only (+) Output 30b. Tension and Compression (+,-) output	
Shock & Vibration	44a. Shock and vibration resistance	
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 7)	

 Supplied as standard

Special Customer Requirements (Consult Factory)

Enhanced Operating Temperature
Lightning protection
Barometric compensation
OEM labels
Case pressure
Radiation proof
Cable orientation
Fatigue rating
Different cable lengths
Venting
Different materials
Electro-static discharge immunity
Different threads
Special wiring codes

Notes

1. C" dimension varies on high ranges. Consult Factory
2. Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
3. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
4. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
5. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector
6. No mating connector necessary for cable option.
7. Consult factory for TEDS availability with amplified models.



Approved



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Intrinsically Safe Amp

How to Order

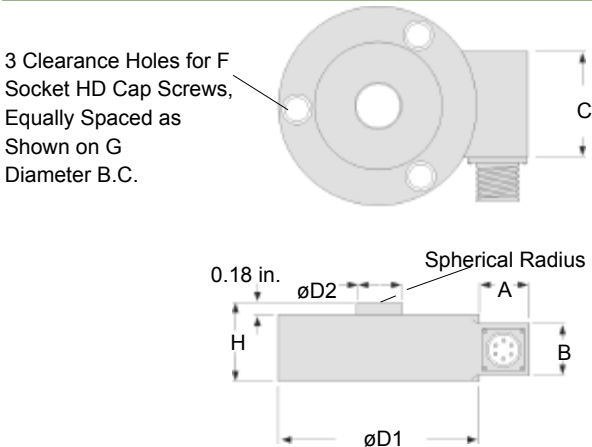
Combine the order code, the range code and the options code.

Sample Code: **BL114** **CV** **6h**
Order Code Range Code Options Code

Model 73 Precision Fatigue Rated Low Profile Load Cell

Order Code BL113

- 50 to 200,000 lb.
- mV/V Output
- Stainless Steel
- Double Diaphragm Design
- 0.10% Accuracy
- Enhanced Overload Capacity



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Dimensions

Ranges (lb.)	D1 (in.)	D2 (in.)	H (in.)	Fø Typ. Dia.	G (in.) B.C.	A (in.)	A* (in.)	B (in.)	B* (in.)	C (in.)
50 to 500	3.00	0.56	1.18	1/4	2.250	0.82	2.5	0.75	0.9	1.25
1000 to 2000	3.50	0.69	1.18	5/16	2.625	0.82	2.5	0.75	0.9	1.25
3000 to 10,000	4.50	1.50	2.00	3/8	3.790	1.25	2.3	1.50	1.5	2.00
15,000 to 50,000	4.50	1.50	2.00	3/8	3.790	1.25	2.3	1.50	1.5	2.00
75,000 to 100,000	5.50	2.00	2.18	3/8	4.812	1.25	2.3	1.50	1.5	2.00
150,000 to 200,000	7.50	2.50	2.68	3/8	6.750	1.25	2.3	1.50	1.5	2.00

* Length of load cell with amplified option (see options chart)

Performance

Load Ranges.....	50 to 200,000 lb.
Linearity.....	+/- 0.1% Full Scale
Hysteresis.....	+/- 0.1% Full Scale
Non-Repeatability.....	+/- 0.03% Full Scale
Output (tolerance).....	2 mV/V +/- 0.5% Full Scale
Operation.....	Compression
Resolution.....	Infinite
Standard Calibration.....	5 point calibration: 0%, 50% and 100% F.S. in compression only

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.002% Full Scale/ °F
Span.....	0.002% Full Scale/ °F

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Model 73

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5,000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms
Zero Balance (tolerance).....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std)	
50 to 2,000 lb.....	PTIH-10-6P
3,000 to 200,000 lb.....	MS3102E-14S-6P
Mating Connector (not incl.)	
50 to 2,000 lb.....	PT06A-10-6S
3,000 to 200,000 lb.....	MS3106A-14S-6S

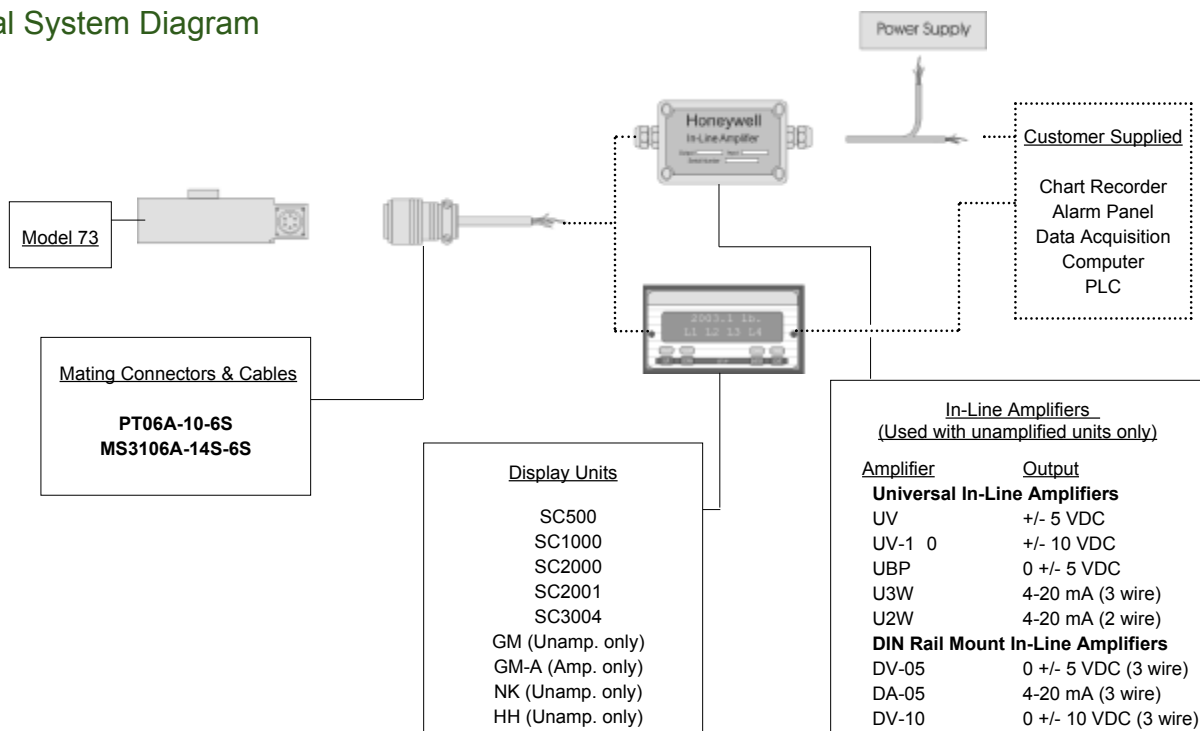
Mechanical

Maximum Allowable Load.....	200% F.S. (note 1)
Weight.....	See table
Material.....	17-4PH Stainless Steel
Life Cycles (approx.).....	>10 ⁸ Cycles Fully Reversed
Deflection.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringling Frequency (Hz)	Weight (grams)
50 to 500	0.001	4,500	1.6
1000 to 2000	0.002	8,000	2.1
3000 to 10,000	0.002	9,000	6.5
15,000 to 50,000	0.003	10,000	6.6
75,000 to 100,000	0.004	13,000	12.0
150,000 to 200,000	0.006	11,000	26.5

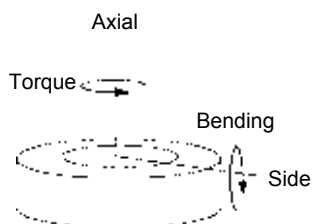
Typical System Diagram



Model 73

Allowable Maximum Loads

(note 1)



Capacity (lb.)	Side (%F. S.)	Bending (lb.-in.)	Torque (lb.-ft.)
50 to 500	75%	60%	35%
1,000 to 2,000	45%	35%	35%
3,000 to 10,000	30%	30%	35%
15,000 to 50,000	30%	30%	25%
75,000 to 100,000	30%	30%	15%
150,000 to 200,000	30%	30%	15%

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2a	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	0-5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code	Range	Range Code
50 lb.	BN	10,000 lb.	DV
100 lb.	BR	15,000 lb.	EJ
250 lb.	CN	20,000 lb.	EL
500 lb.	CR	30,000 lb.	EN
1000 lb.	CV	50,000 lb.	EP
2000 lb.	DL	75,000 lb.	ER
3000 lb.	DN	100,000 lb.	ET
4000 lb.	DP	150,000 lb.	FJ
5000 lb.	DR	200,000 lb.	FL
7500 lb.	DT		

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Options

	Built to Order	Built from Scratch
Load Range	50 to 200,000 lb.	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F	1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output 2a. 4 wire 0-5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe	
Internal Amp Enhancements	3a. Input/ Output Isolation 3d. Remote Buffered Shunt Calibration	
Electrical Termination	6a. Bendix PTIH-10-6P – (or equivalent) 6 pin (max. 250°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable	
Shunt Calibration	8a. Precision Internal Resistor	
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)	
Bridge Type	31a. Dual bridge.	
Potentiometers	14a. No access to pots. 14b. Top access to pots	
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable.	
Special Calibration	30a. Compression only (+) Output	
Shock & Vibration	44a. Shock and vibration resistance	
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 6)	

 Supplied as standard

Special Customer Requirements (Consult Factory)

Enhanced Operating Temperature
 Lightning protection
 Barometric compensation
 OEM labels
 Case pressure
 Radiation proof
 Cable orientation
 Different cable lengths
 Venting
 Different materials
 Electro-static discharge immunity
 Different threads
 Special wiring codes

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
4. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector
5. No mating connector necessary for cable option.
6. Consult factory for TEDS availability with amplified models.



How to Order

Combine the order code, the range code and the options code.

Sample Code: **BL113** **CV** **6h**
 Order Code Range Code Options Code

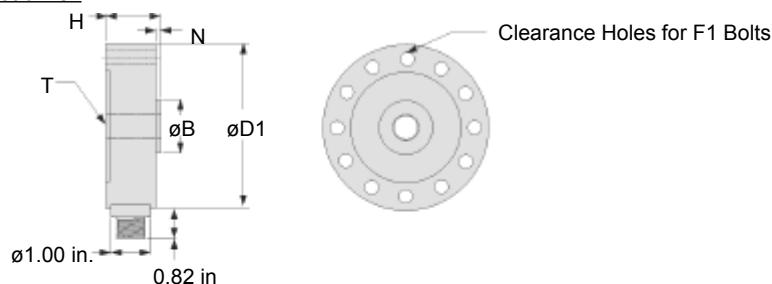
Model 45 Fatigue Rated Universal Load Cell

Order Code AL116

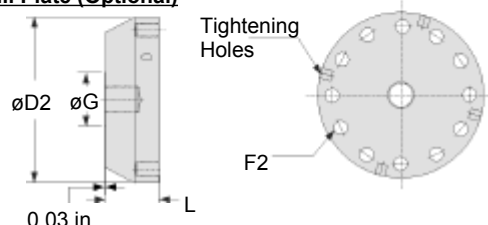
- 250 to 100,000 lb. Range
- Long Fatigue Life
- Accuracy up to 0.04%



Load Cell



Pull Plate (Optional)



Wiring Code

Connector/ Unamplified (Std.)

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

Load Cell

Range (lb.)	øD1(in.)	H (in.)	T	øB (in.)	N (in.)	F1
250; 500; 1000; 2500; 5000	4.12	1.37	5/8-18 UNF-3B	1.34	0.12	9/32" Dia., 8 Holes Eq. Sp., 3.50 B.C.
12,500; 25,000	6.06	1.75	1 1/4-12 UNF-3B	2.65	0.12	13/32" Dia., 12 Holes Eq. Sp., 5.125 B.C.
50,000	8.00	2.50	1 3/4-12 UNF-3B	3.76	0.25	17/32" Dia., 16 Holes Eq. Sp., 6.50 B.C.
100,000	11.00	3.50	2 3/4-8 UNF-3B	4.81	0.50	11/16" Dia., 16 Holes Eq. Sp., 9.00 B.C.

Pull Plate

Range (lb.)	Order Code	øD2(in.)	L (in.)	T	øG (in.)	F2
250; 500; 1000; 2500; 5000	AA229	4.12	1.12	5/8-18 UNF-3B	1.25	1/4-28, 8 Holes Eq. Sp., 3.50 B.C.
12,500; 25,000	AA230	6.06	1.75	1 1/4-12 UNF-3B	2.25	3/8-24, 12 Holes Eq. Sp., 5.125 B.C.
50,000	AA231	8.00	2.00	1 3/4-12 UNF-3B	3.00	1/2-20, 16 Holes Eq. Sp., 6.50 B.C.
100,000	AA232	11.00	3.00	2 3/4-8 UNF-3B	4.50	5/8-18, 16 Holes Eq. Sp., 9.00 B.C.

Performance

Load Ranges.....250 to 100,000 lb.

	Accuracy (Static Error Band) (notes 1 & 2)	Linearity	Hysteresis
250 to 1,000 lb.	+/- 0.04% Full Scale	+/- 0.04% Full Scale	+/- 0.03% Full Scale
2,500 to 50,000 lb.	+/- 0.05% Full Scale	+/- 0.05% Full Scale	+/- 0.05% Full Scale
100,000 lb.	+/- 0.06% Full Scale	+/- 0.05% Full Scale	+/- 0.05% Full Scale

Non-Repeatability.....+/- 0.02% Full Scale

Output.....2.0 mV/V

Tolerance on Output.....+/- 1% Full Scale

Creep in 20 min. (max.).....0.01%

Environmental

Temperature, Operating.....-65° to 200° F

Temperature, Compensated.....30° to 130° F

Temperature, Effect

Zero.....0.0008% Full Scale/ °F

Span.....0.0008% Reading/ °F

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Model 45

Electrical

Strain Gage Type.....	Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	20 VDC
Insulation Resistance.....	5,000 Megohms @ 50 V
Bridge Resistance.....	350 Ohms (nominal) (note 8)
Zero Balance.....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std).....	PC02A-10-6P
Mating Connector (not incl.).....	PC06A-10-6S

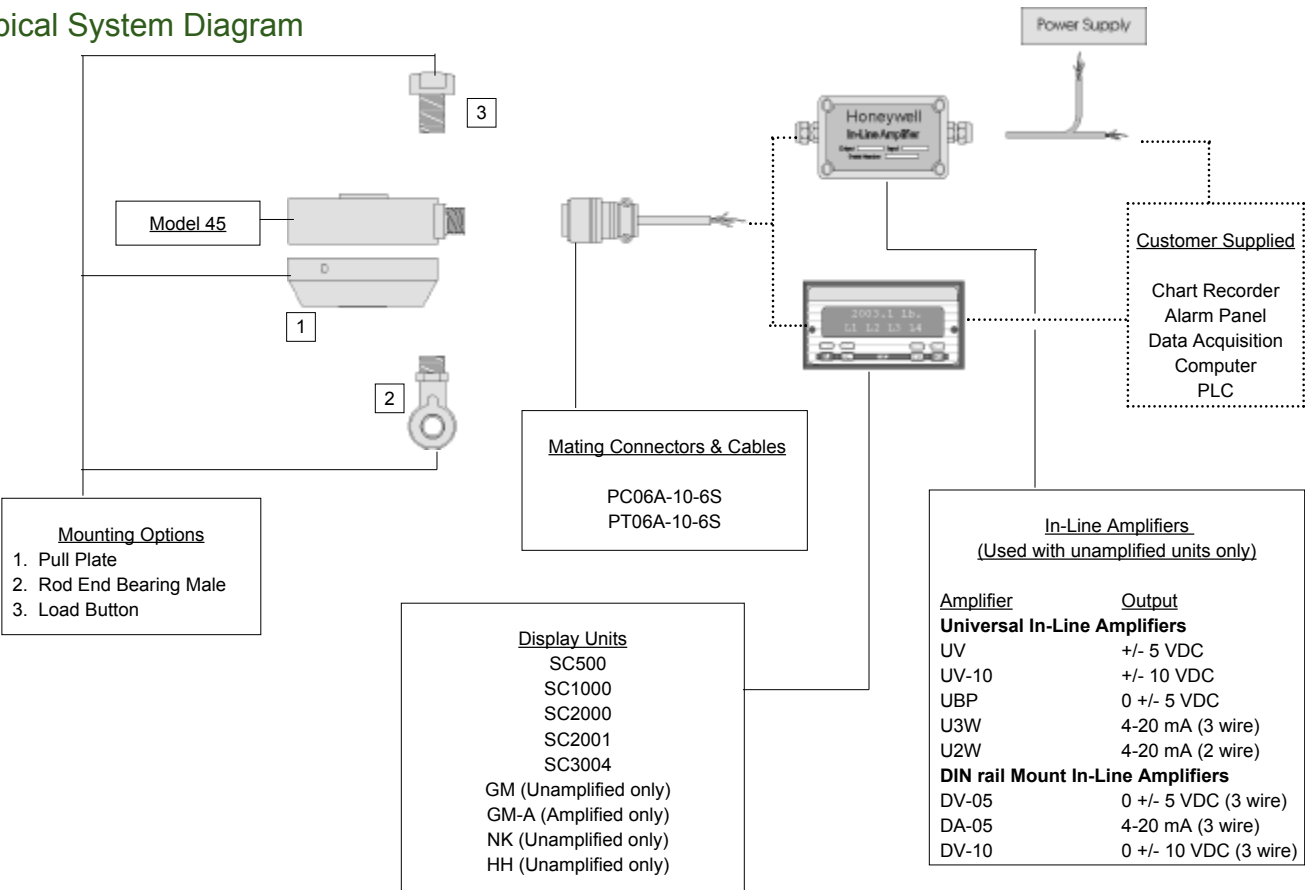
Mechanical

Maximum Allowable Load.....	200% F.S. (note 3 & 9)
Weight.....	See table below
Case Material.....	Stainless Steel
Life Cycles (approx.).....	>10 ⁸ fully reversed
Deflection.....	See table below
Natural Frequency.....	See table below

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (10 ⁻³ in.)	Ringing Frequency (Hz)	Weight (lb)
250	1.5	2,400	3.1
500	1.5	2,400	3.1
1,000	1.5	3,400	3.1
2,500	1	6,800	3.2
5,000	1	9,100	3.2
12,500	2	5,700	8.8
25,000	2	7,000	8.8
50,000	2	6,300	22
100,000	2.5	4,500	55

Typical System Diagram



Range Codes

Range	Range Code
250 lb.	CN
500 lb.	CR
1000 lb.	CV
2500 lb.	DM
5000 lb.	DR
12,500 lb.	DW
25,000 lb.	EM
50,000 lb.	EP
100,000 lb.	ET

Internal Amplifiers (note 10)

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Model 45

Options

	Build from Scratch
Load Range	250 to 100,000 lb.
Temperature Compensation	1b. 30° to 130° F
Internal Amplifiers	2u. Unamplified, mV/V Output
	2b. +/- 5 VDC
	2c. 0-5VDC
	2j. 4-20mA (3-wire) output
	2k. 4-20mA (2-wire)
	2t. 0-10 VDC output
Internal Amp Enhancements	2n (2N).4-20mA (2-wire) Intrinsically safe
	3d. Remote Buffered Shunt Calibration
Electrical Termination	PC02A-10-6P
	6a. Bendix PTIH-10-6P – 6 pin (max. 250°F)
Shunt Calibration	8a. Precision Internal Resistor
Special Calibration	9c. A.S.T.M. E-74 calibration
Bridge Type	31a. Dual Bridge
	11c. Square & symmetrical bridge
Electrical Connector Orientation	15a. Horizontal electrical exit port orientation
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration
	53t. T.E.D.S. IEEE 1451.4 Module (note 11)

Supplied as standard

Special Customer Requirements (Consult Factory)

Pull plates
Custom calibration

Base Plate Order Information

Range (lb.)	Base Plate Order Code	Base Plate Weight (lb.)	Load Button Order Code
250 to 1,000	AA229	3.5	AA290
2,500 to 5,000	AA229	3.5	AA290
12,500 to 25,000	AA230	11	AA291
50,000	AA231	20	AA292
100,000	AA232	61	AA293

Notes

- Static Error Band is the recommended performance specification. The static error band is calculated as the best fit straight line through zero, including the effects of non-linearity, hysteresis and non-repeatability.
- Values noted are typical values but fall within the static error.
- Allowable Maximum Loads- Maximum load to be applied without damage (note 4).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- 250 lb. range has 700 Ohm bridge resistance.
- Off axis loading maximum allowable 50% F.S.
- Internal amplifier for ranges less than 12,500 lb. may increase in height.
- Consult factory for TEDS availability with amplified models.

How to Order

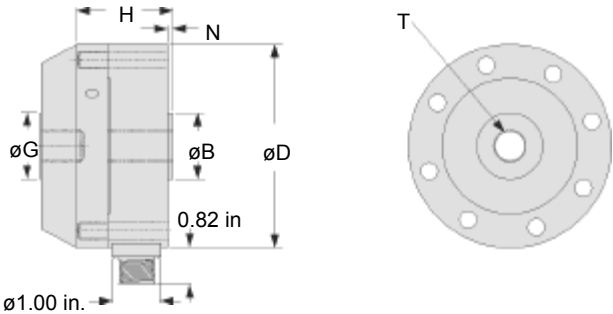
Combine the order code, the range code and the options code.

Sample Code: **AL116** **CV** **6h**
Order Code Range Code Options Code

Model 47 Fatigue Rated Ultra Precision Universal Load Cell

Order Code AL117

- 250 to 100,000 lb. Range
- Long Fatigue Life
- Accuracy up to 0.02%



Wiring Code

Connector/ Unamplified (Std.)

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

Range (lb.)	ØD (in.)	H (in.)	T	ØB (in.)	N (in.)	ØG (in.)
250; 500; 1000; 2500; 5000	4.12	1.37	5/8-18 UNF-3B	1.34	0.12	1.25
12,500; 25,000	6.06	1.75	1 1/4-12 UNF-3B	2.65	0.12	2.25
50,000	8.00	2.50	1 3/4-12 UNF-3B	3.76	0.25	3.00
100,000	11.00	3.50	2 3/4-8 UNF-3B	4.81	0.50	4.50

Performance

Load Ranges.....250 to 100,000 lb.

	Accuracy (Static Error Band) (notes 1 & 2)	Linearity	Hysteresis
250 to 1,000 lb.	+/- 0.02% Full Scale	+/- 0.02% Full Scale	+/- 0.02% Full Scale
2500 to 5000 lb.	+/- 0.03% Full Scale	+/- 0.03% Full Scale	+/- 0.04% Full Scale
12,500 to 50,000 lb.	+/- 0.04% Full Scale	+/- 0.04% Full Scale	+/- 0.05% Full Scale
100,000 lb.	+/- 0.05% Full Scale	+/- 0.05% Full Scale	+/- 0.05% Full Scale

Non-Repeatability.....+/- 0.01% Full Scale
Output.....2.0 mV/V
Tolerance on Output.....+/- 1% Full Scale
Creep in 20 min. (max.).....0.01%

Environmental

Temperature, Operating.....-65° to 200° F
Temperature, Compensated.....30° to 130° F
Temperature, Effect
Zero.....0.0008% Full Scale/ °F
Span.....0.0008% Reading/ °F

Model 47

Electrical

Strain Gage Type.....	Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	20 VDC
Insulation Resistance.....	5,000 Megohms @ 50 V
Bridge Resistance.....	350 Ohms (nominal) (note 8)
Zero Balance.....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std).....	PC02A-10-6P
Mating Connector (not incl.).....	PC06A-10-6S

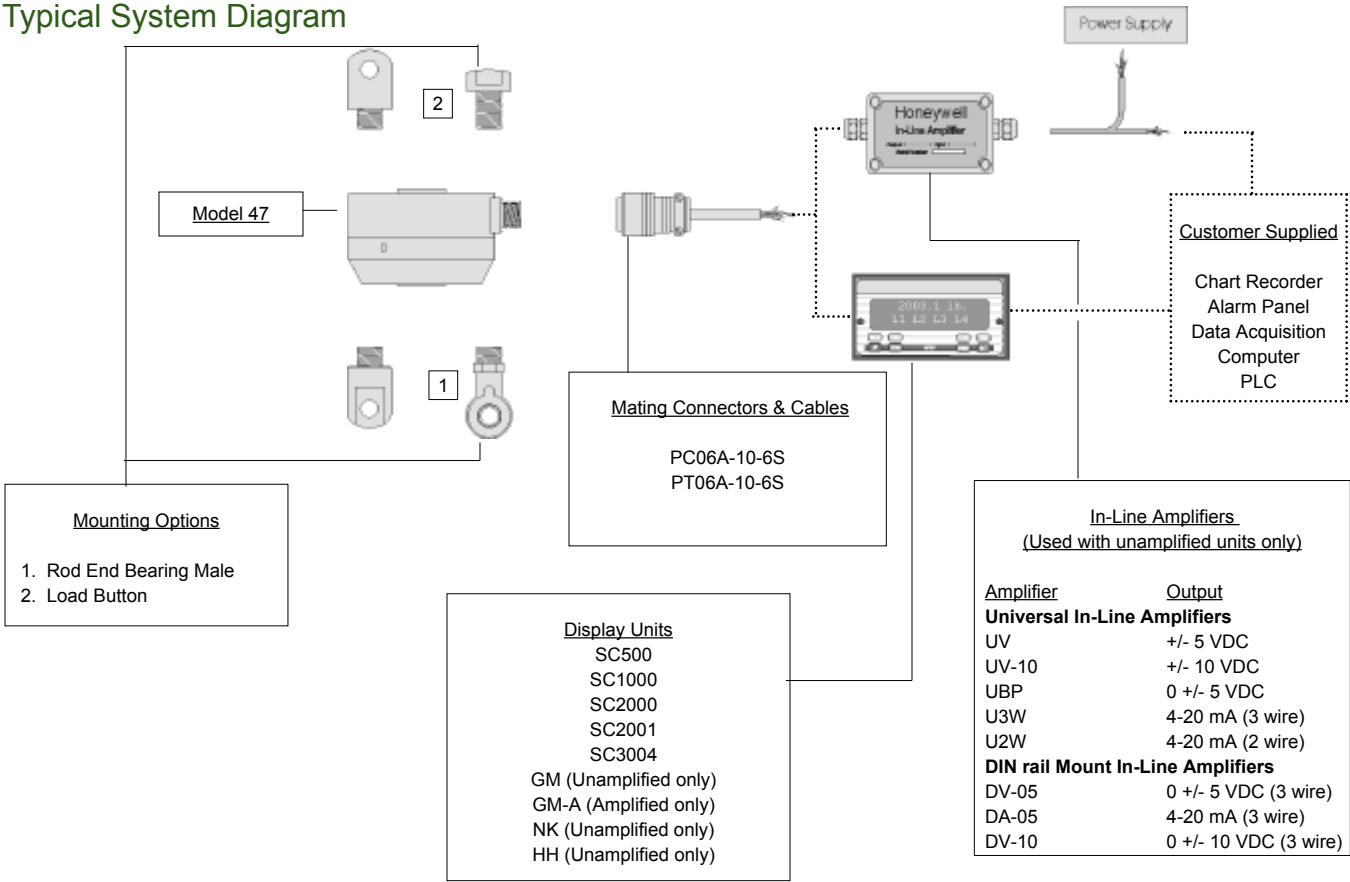
Mechanical

Maximum Allowable Load.....	200% F.S. (note 3 & 9)
Weight.....	See table below
Case Material.....	Stainless Steel
Life Cycles (approx.).....	>10 ⁸ fully reversed
Deflection.....	See table below
Natural Frequency.....	See table below

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (10 ⁻³ in.)	Ringling Frequency (Hz)	Weight (lb)
250	1.5	2,400	6.6
500	1.5	2,400	6.6
1,000	1.5	3,400	6.6
2,500	1	6,800	6.7
5,000	1	9,100	6.7
12,500	2	5,700	19.8
25,000	2	7,000	19.8
50,000	2	6,300	42.0
100,000	2.5	4,500	116

Typical System Diagram



Range Codes

Range	Range Code
250 lb.	CN
500 lb.	CR
1000 lb.	CV
2500 lb.	DM
5000 lb.	DR
12,500 lb.	DW
25,000 lb.	EM
50,000 lb.	EP
100,000 lb.	ET

Internal Amplifiers (note 10)

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Options

	Build from Scratch
Load Range	250; 500; 1000; 2500; 5000; 12,500; 25,000; 50,000; 100,000 lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° F 1m. -25° to 110° F
Internal Amplifiers	2u. Unamplified, mV/V Output 2b. +/-5 VDC 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Electrical Termination	6e. Integral Cable: Teflon 6a. Bendix PTIH-10-6P – (or equivalent) 6 pin (max. 250°F) 6b. MS Type connector mates with MS3106-14S 6 pin (max. 160° F) (note 5) 6c. Cannon WK6-325 series connector 6 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (note 6) 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral Cable: Polyurethane 6v. Phoenix connector on end of cable 15d. Connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 70°F 9b. 20 point (10 up/10 down) 10% increments @ 70°F 9c. A.S.T.M. E-74 calibration 9e. CE mark 30a. Positive output in compression, compression testing only 30b. Positive output in tension, tension and compression testing 30c. Negative output in compression, compression testing only
Bridge Type	11a. Square Bridge 11c. Square and symmetrical bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation
Bridge Type	31a. Dual bridge
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 11)

 Supplied as standard

Special Customer Requirements
(Consult Factory)

Cable Orientation
 Calibration Adaptor
 Different Cable Lengths
 Different Electrical Connectors
 Different Materials
 Different Threads
 Dual Bridge
 ESD
 High Resistance Bridges
 Lightning Protection
 Load Button
 OEM Labels
 Operational Temp -200 to 400°F
 Radiation Resistant
 Special Electrical O/P
 Special TC

Notes

1. Static Error Band is the recommended performance specification. The static error band is calculated as the best fit straight line through zero, including the effects of non-linearity, hysteresis and non-repeatability.
2. Values noted are typical values but fall within the static error.
3. Allowable Maximum Loads- Maximum load to be applied without damage (note 4).
4. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
5. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2c, 2t and 2j.
6. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
7. No mating connector necessary for cable option.
8. 250 lb. range has 700 Ohm bridge resistance.
9. Off axis loading maximum allowable 50% F.S.
10. Internal amplifier for ranges less than 12,500 lb. may increase in height.
11. Consult factory for TEDS availability with amplified models.

How to Order

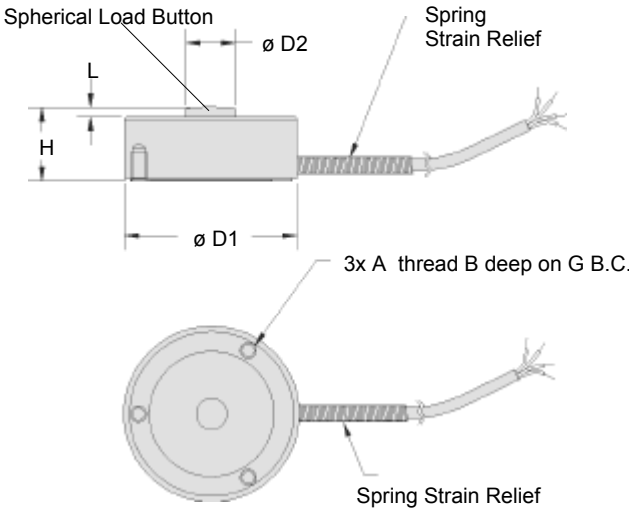
Combine the order code, the range code and the options code.

Sample Code: **AL117** **CV** **6h**
 Order Code Range Code Options Code

Model 53 Low Cost Load Cell

Order Code AL131

- 5 to 50,000 lb.
- Stainless Steel
- Mini Footprint
- Button Style Design
- mV/V Output



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Range (lb.)	D1 (in.)	D2 (in.)	H (in.)	L (in.)	A (in.)	B (in.)	G (in.)
5; 10; 25; 50; 100	1.00	0.21	0.62	0.05	#4-40 UNC	0.22	0.750
250; 500; 1000; 2000	1.25	0.32	0.39	0.07	#6-32 UNC	0.25	1.000
3000; 4000; 5000; 7500; 10,000	1.50	0.40	0.63	0.08	#6-32 UNC	0.25	1.250
15,000; 20,000; 30,000	2.00	0.60	1.00	0.12	#6-32 UNC	0.25	1.625
50,000	3.00	0.78	1.50	0.18	#6-32 UNC	0.25	2.375

Performance

Load Ranges.....	5 to 50,000 lbs.
Linearity (max.).....	+/- 0.5% Full Scale
Hysteresis (max.).....	+/- 0.3% Full Scale
Non-Repeatability (max.).....	+/- 0.1% Full Scale
Output (tolerance).....	2 mV/V (nominal)
Operation.....	Compression
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.01% Full Scale/° F

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration)	
5 to 100 lb.....	5VDC
250 to 50,000 lb.....	10 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms (nominal)
Zero Balance (tolerance).....	+/- 1% of Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std).....	Teflon cable (5 ft.)

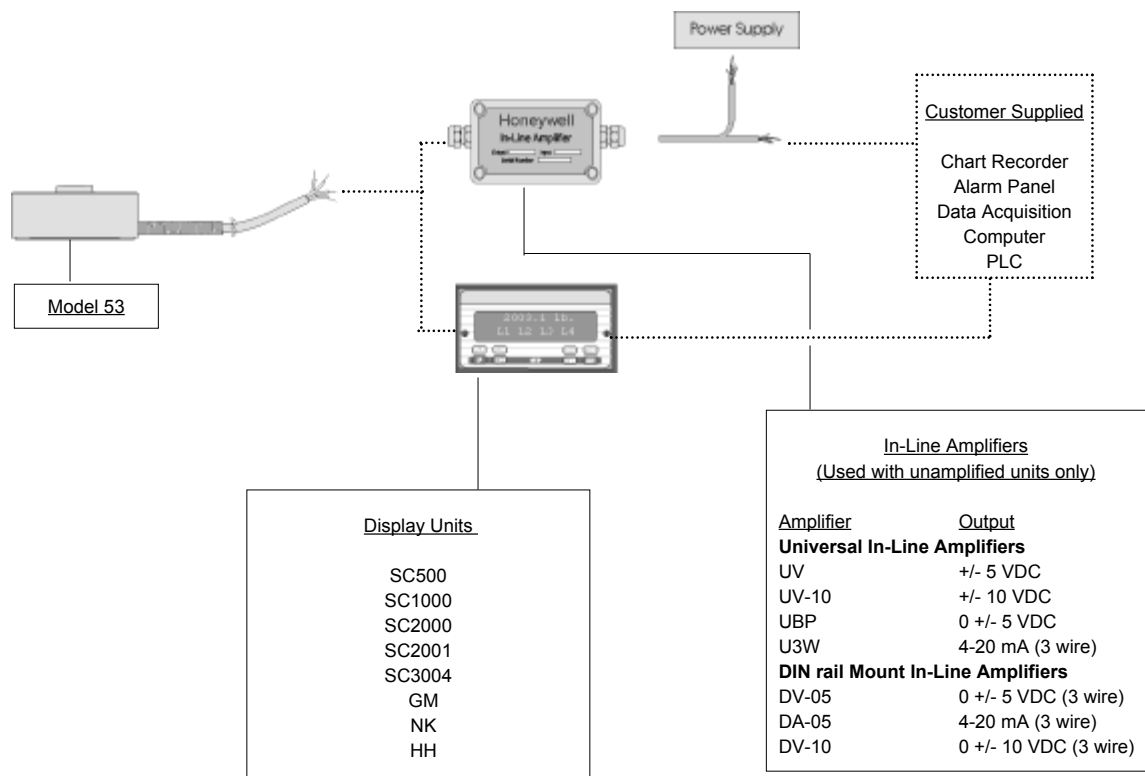
Mechanical

Weight.....	See table
Material.....	17-4 PH Stainless Steel
Maximum Allowable Load.....	150% F.S. (note 1)
Deflection Full Scale.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringing Frequency (Hz)	Weight with Cable (g)
5	.001	2,000	59
10	.001	3,000	59
25	.001	16,000	62
50	.001	21,000	63
100	.001	28,000	64
250	.001	25,000	72
500	.001	32,000	72
1,000	.001	42,000	75
2,000	.001	53,000	77
3,000	.001	27,000	137
4,000	.001	31,000	138
5,000	.001	34,000	140
7,500	.001	41,000	142
10,000	.001	47,000	145
15,000	.002	24,000	368
20,000	.002	28,000	372
30,000	.002	33,000	377
50,000	.003	24,000	1,270

Typical System Diagram



Model 53

Range Codes

Range	Range Code
5 lb.	AT
10 lb.	AV
25 lb.	BL
50 lb.	BN
100 lb.	BR
250 lb.	CN
500 lb.	CR
1,000 lb.	CV
2,000 lb.	DL
3,000 lb.	DN
4,000 lb.	DP
5,000 lb.	DR
7,500 lb.	DT
10,000 lb.	DV
15,000 lb.	EJ
20,000 lb.	EL
30,000 lb.	EN
50,000 lb.	EP

Special Customer Requirements (Consult Factory)

OEM labels
Radiation rated
Different cable lengths
Increased fatigue life
Custom cable exit
Alternate cable material
Thru mounting holes
Integral connector

Options

	Same Day Ship	Fast track manufacture	Build to order	Build from scratch
Load Range	500, 1000, 2000, 5000, 10,000, 20,000, 50,000 lb			5, 10, 25, 50, 100, 250, 3000, 4000, 7500, 15,000, 30,000 lb
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F	
Internal Amplifiers	2u. Unamplified, mV/V output			
Electrical Termination	6e. Integral cable: Teflon	6d. Microtec DR-4S-4H 4 pin 6v. Phoenix connector on end of cable	6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable (note 3)	
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 68° F 9b. 20 point (10 up/10 down) 10% increments @ 68° F		
Shock & Vibration		44a. Shock and vibration resistance		
Interfaces (note 4)		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module		

 Supplied as standard

Notes

- Allowable Maximum Loads - Maximum load to be applied without damage (note 2).
- Without Damage - loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Dimension "H" may increase with option 6i. Consult factory. Maximum temperature is 180° F.
- TEDS available with integral cable units only.

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

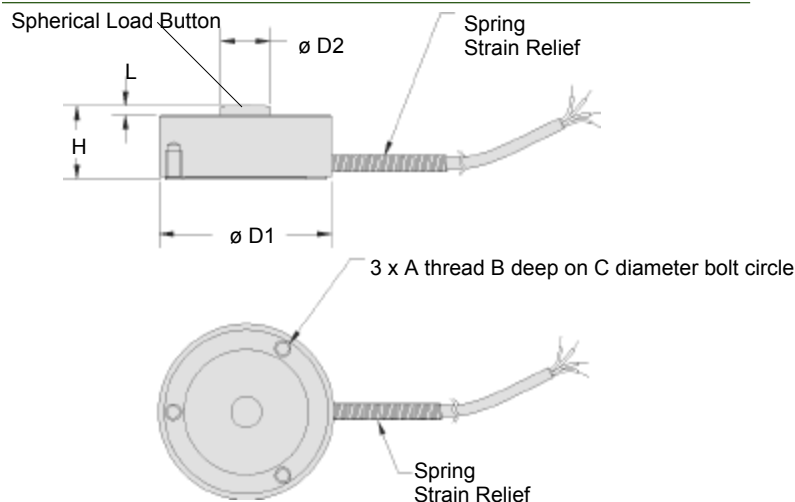
1-888-282-9891

www.honeywell.com/sensotec

Model 53E Low Cost/ O.E.M. Compression Load Cell

Order Code (53E)

- 20N to 200kN Range
- Stainless Steel Construction
- Often Ideal for O.E.M. Applications
- IP68 Version Available
- mV/V Output



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Range	Range Code	D1 (mm)	D2 (mm)	H (mm)	L (mm)	A	B (mm)	C (mm)
20 N	020N0	25	5	16	1	M3x0.5	6	19
50 N	050N0	25	5	16	1	M3x0.5	6	19
100 N	100N0	25	5	16	1	M3x0.5	6	19
200 N	200N0	25	5	16	1	M3x0.5	6	19
500 N	500N0	25	5	16	1	M3x0.5	6	19
1 kN	01KN0	32	8	10	2	M4x0.7	5	25
2 kN	02KN0	32	8	10	2	M4x0.7	5	25
5 kN	05KN0	32	8	10	2	M4x0.7	5	25
10 kN	10KN0	32	8	10	2	M4x0.7	5	25
20 kN	20KN0	38	11	16	2	M4x0.7	6	32
50 kN	50KN0	38	11	16	2	M4x0.7	6	32
200 kN	200KN0	76	20	38	5	M4x0.7	6	60

Performance

Load Ranges 20N to 200kN
Linearity (max.)+/- 0.5% Full Scale
Hysteresis (max.)+/- 0.3% Full Scale
Non-Repeatability (max.)+/- 0.1% Full Scale
Output (tolerance) 2 mV/V (nominal)
Operation Compression
Resolution Infinite

Environmental

Temperature, Operating-55° to 120° C
Temperature, Compensated 15° to 70° C
Temperature, Effect
Zero 0.01% Full Scale/° C
Span 0.02% Reading/° C

Electrical

Strain Gage Type Bonded Foil
Excitation (calibration)
20 to 500 N 5 VDC
1 to 200 kN 10 VDC
Insulation Resistance 5000 Megohms @ 50 VDC
Bridge Resistance (tolerance) 350 Ohms (nominal)
Zero Balance (tolerance)+/- 1% of Full Scale
Electrical Termination (std) 1.5m, 4-core (shielded) p.t.f.e. cable incorporating a spring strain relief

1-888-282-9891

www.honeywell.com/sensotec

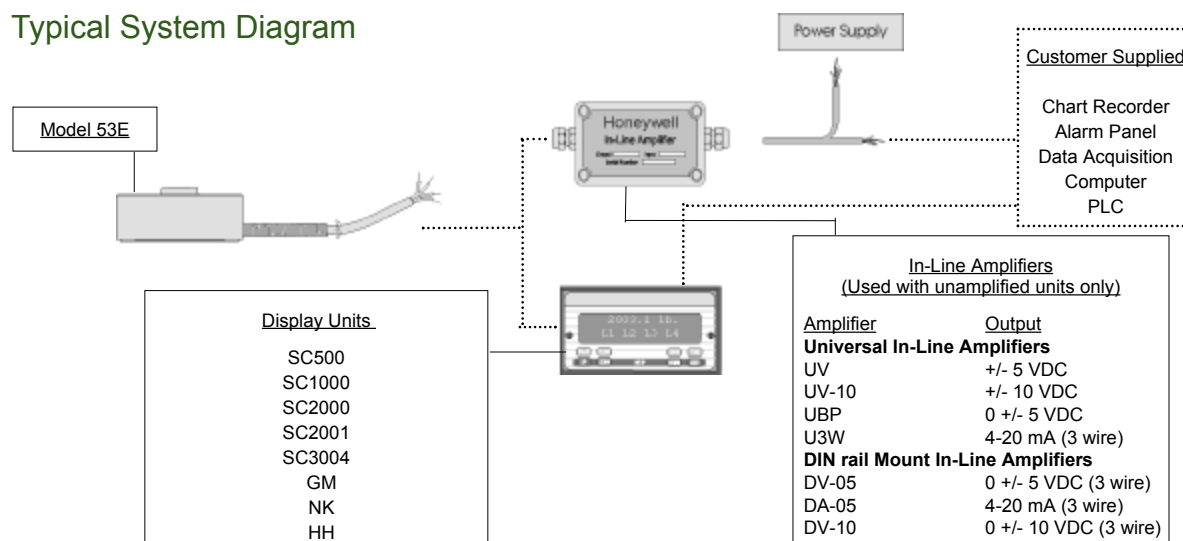
Mechanical

Maximum Allowable Load 150% F.S. (note 1)
 Weight See table
 Material 17-4 PH Stainless Steel
 Deflection Full Scale 0.07 mm
 Natural Frequency See table

Deflections and Ringing Frequencies

Capacity	Ringing Frequency (Hz)	Weight (g)
20 N	2,000	59
50 N	3,000	59
100 N	16,000	62
200 N	21,000	63
500 N	28,000	64
1 kN	28,000	72
2 kN	32,000	72
5 kN	42,000	75
10 kN	50,000	77
20 kN	35,000	140
50 kN	45,000	145
200 kN	25,000	1270

Typical System Diagram



Options

	Built to Order
Load Range	20 N to 200 kN
Temperature	15° to 70° C
Compensation	1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	1.5m, 4-core(shielded) p.t.f.e. cable 6d. Microtec DR-4S-4H 4 pin (max. 120°C) (note 4) 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable (note 3) 6v. Phoenix connector on end of cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 68° F 9b. 20 point (10 up/10 down) 10% increments @ 68° F
Shock & Vibration	44a. Shock and vibration resistance 53e. Signature Calibration
Interfaces (note 5)	53t. T.E.D.S. IEEE 1451.4 Module

Supplied as standard

Range Codes

Range	Range Code
20 N	020N0
50 N	050N0
100 N	100N0
200 N	200N0
500 N	500N0
1 kN	01kN0
2 kN	02kN0
5 kN	05kN0
10 kN	10kN0
20 kN	20kN0
50 kN	50kN0
200 kN	200kN0

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Dimension "H" will increase with option 6i.
4. Varies by capacity, consult factory.
5. TEDS available with integral cable units only.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **53E** **100N0** **1j**
 Order Code Range Code Options Code

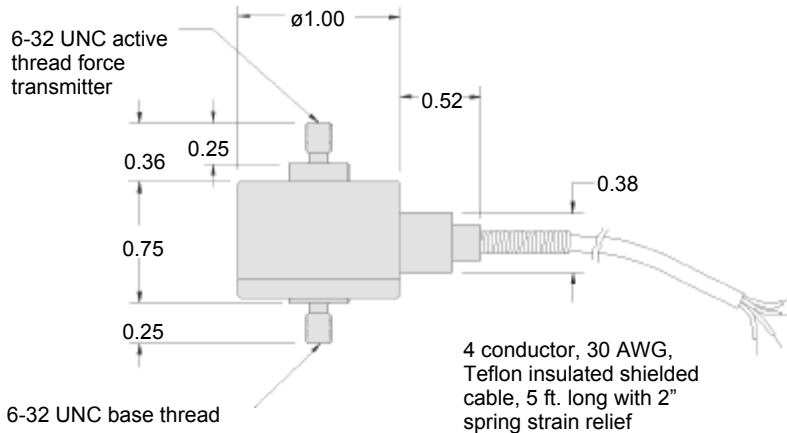
Model 31 Low Range Precision Miniature Load Cell

Order Code AL311

- 50 g to 500 g
- mV/V Output
- Stainless Steel
- Miniature Design
- Double Diaphragm Construction



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Load Ranges.....	50; 150; 250; 500 g
Linearity.....	+/- 0.15% Full Scale
Hysteresis.....	+/- 0.15% Full Scale
Non-Repeatability.....	+/- 0.1% Full Scale
Tolerance on Output	
50 to 150 g.....	0.1 mV/V/g max.
250 to 500 g.....	20 mV/V
Operation.....	Tension/ Compression (note 3)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Storage Temperature.....	-100° to 300° F
Temperature, Effect	
Zero.....	0.015% Full Scale/° F
Span.....	0.015% Full Scale/° F

Electrical

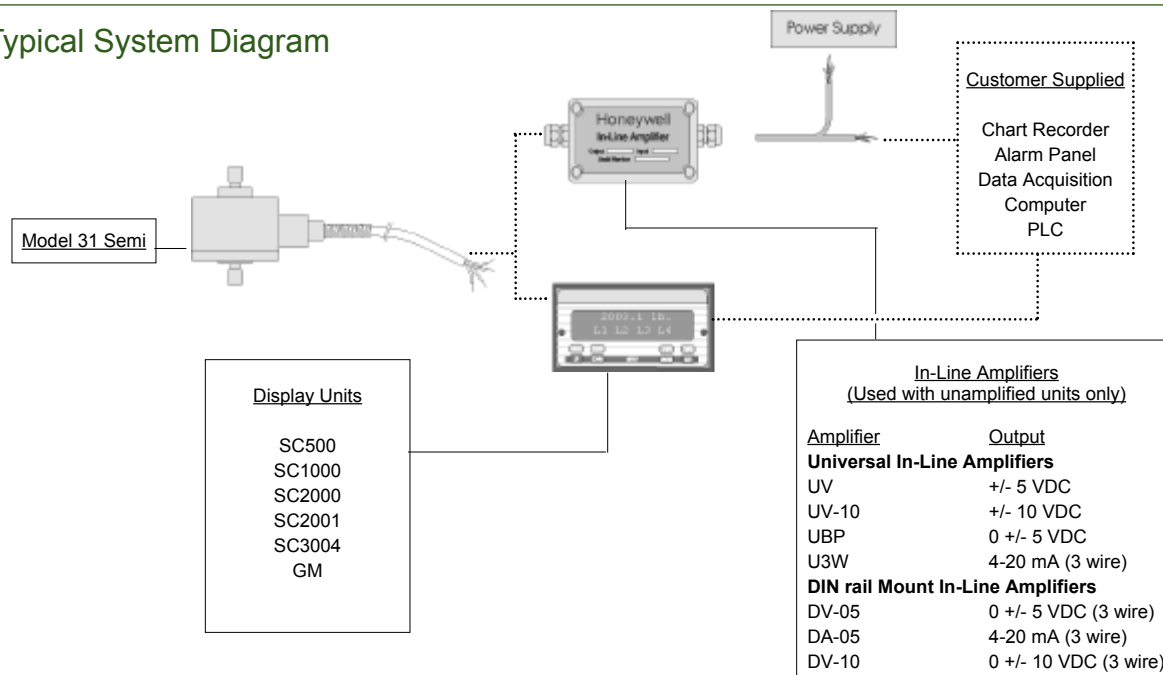
Strain Gage Type.....	Semiconductor
Excitation (calibration).....	5 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	500 Ohms
Zero Balance.....	1% max.
Electrical Termination (std).....	Teflon Cable (5 ft.)

Mechanical

Allowable Maximum Load.....	5 lb. (note 1)
Weight.....	90 grams
Material.....	17-4 PH Stainless Steel
Deflection Full Scale.....	11 kg/ mm
Natural Frequency.....	740 Hz

Model 31

Typical System Diagram



Options

	Same Day Ship	Fast track manufacture	Build to Order
Load Range	250 grams		50,150,500 grams
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	
Internal Amplifiers	2u. Unamplified, mV/V output		
		3d. Remote Buffered Shunt Cal.	
Electrical Termination	6e. Integral cable: Teflon	6d. Microtec DR-4S-4H 4 pin 6v. Phoenix connector on end of cable	6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 180° F) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 180° F) 15d. Connector on end of cable
Special Calibration		30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression	
Shock & Vibration			44a. Shock and vibration resistance
Interfaces (note 4)		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

Supplied as standard

Range Codes

Range	Range Code
50 g	AJ
150 g	AL
250 g	AN
500 g	AP

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/compression load cells is in tension only
4. TEDS available with integral cable units only.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL311** **AJ** **1b, 30a**
Model Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

Model 31 Mid-Range Precision Miniature Load Cell

Order Code AL311

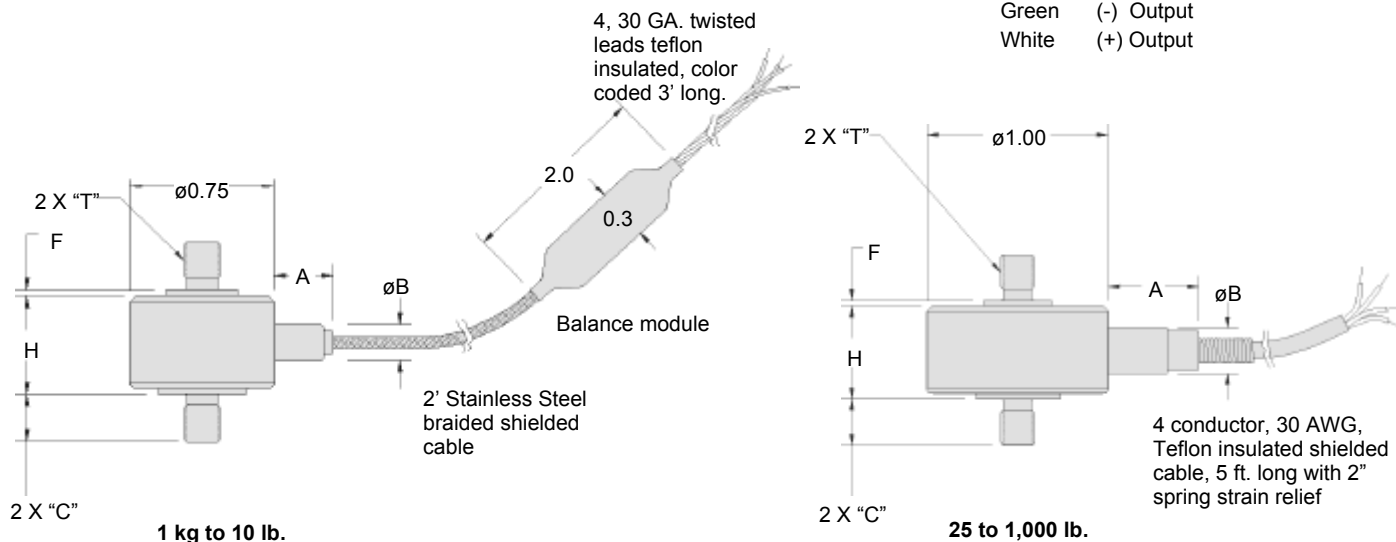
- 1000 g to 1,000 lb.
- mV/V Output
- Stainless Steel
- Miniature Design



Wiring Code

Cable/ Unamplified

Red (+) Excitation
 Black (-) Excitation
 Green (-) Output
 White (+) Output



Dimensions

Ranges (lb.)	T	H (in.)	C (in.)	F (in.)	A (in.)	B (in.)
1000 g; 5; 10 lb.	#6-32 UNC	0.45	0.25	0.05	0.31	0.19
25; 50; 100 lb.	#10-32 UNF	0.52	0.25	0.03	0.50	0.25
250; 500; 1000 lb.	1/4-28 UNF	0.52	0.38	0.03	0.50	0.25

Performance

Load Ranges.....1000 g; 5; 10; 25; 50; 100; 250; 500; 1000 lb.
 Linearity
 1000 g to 250 lb.....+/- 0.15% Full Scale
 500 to 1,000 lb.....+/- 0.2% Full Scale
 Hysteresis
 1000 g to 250 lb.....+/- 0.15% Full Scale
 500 to 1,000 lb.....+/- 0.2% Full Scale
 Non-Repeatability
 1000 g.....+/- 0.1% Full Scale
 5 to 1,000 lb.....+/- 0.05% Full Scale
 Tolerance on Output
 1000 g.....1.5 mV/V (nominal)
 5 to 1,000 lb.....2 mV/V
 Operation.....Tension/ Compression (note 3)
 Resolution.....Infinite

Options

	Same Day Ship	Fast track manufacture	Build to Order
Load Range	1000 grams 5, 10, 25, 50, 100, 250, 500, 1000 lbs		
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output		
Electrical Termination	6e. Integral cable: Teflon	6v. Phoenix connector on end of cable	6a. Bendix PTIH-10-6P - 6 pin (max. 250° F) (note 5) 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 180° F) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 180° F) 15d. Connector on end of cable
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Special Calibration		30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression	
Shock & Vibration		44a. Shock and vibration resistance	
Interfaces (note 4)		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

 Supplied as standard

Notes

- Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Standard calibration for tension/ compression load cells is in tension only.
- TEDS available with integral cable units only.
- Availability varies with range.

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths

How to Order

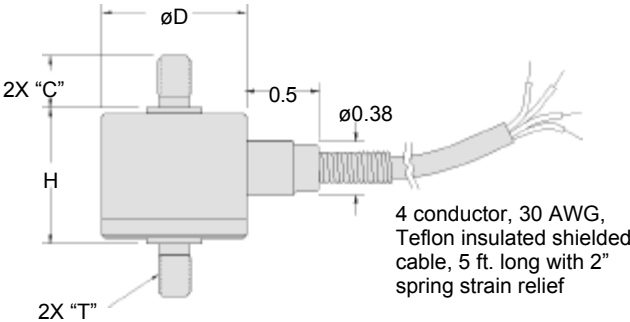
Combine the order code, the range code and the options code.

Sample Code:   
Model Code Range Code Options Code

Model 31 High Range Precision Miniature Load Cell

Order Code AL311

- 2000 to 10,000 lb.
- mV/V Output
- Stainless Steel
- Miniature Design
- Stabilized Column Construction



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Ranges (lb.)	T	øD (in.)	H (in.)	C (in.)
2000; 3000	3/8-24 UNF	1.00	0.72	0.50
4000; 5000	1/2-20 UNF	1.25	0.94	0.63
7500; 10,000	3/4-16 UNF	1.38	1.10	0.88

Performance

Load Ranges	2000 to 10,000 lb.
Linearity	+/- 0.2% Full Scale
Hysteresis	+/- 0.2% Full Scale
Non-Repeatability	+/- 0.05% Full Scale
Tolerance on Output	2 mV/V
Operation	Tension/ Compression (note 3)
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 250° F
Temperature, Compensated	60° to 160° F
Storage Temperature	-100° to 300° F
Temperature, Effect	
Zero	0.005% Full Scale/° F
Span	0.005% Full Scale/° F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	5 VDC
Insulation Resistance	5000 Megohms @ 50 VDC
Bridge Resistance	350 Ohms
Zero Balance	1% max.
Electrical Termination (std)	Teflon Cable (5 ft.)

Mechanical

Maximum Allowable Load	150% F.S. (note 1)
Weight	See table
Material	17-4 PH Stainless Steel
Deflection Full Scale	See table
Natural Frequency	See table

Model 31 Column

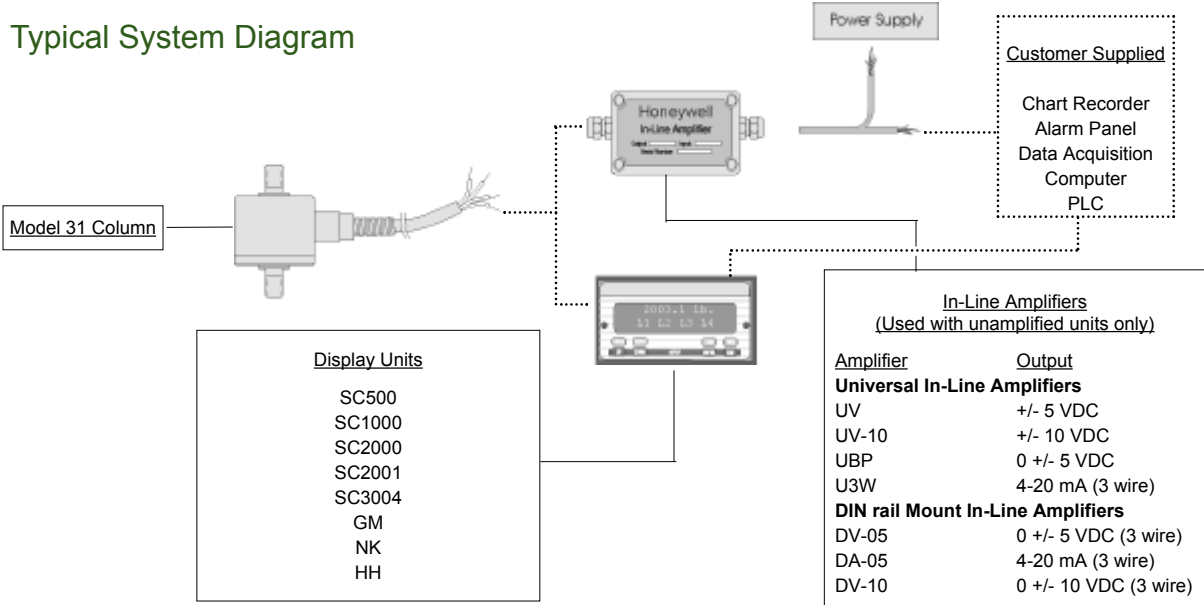
Deflections and Ringing Frequencies

Capacity (lb.)	Deflection at Full Scale (in.)	Ringing Frequency (Hz)	Weight (grams)
2000; 3000	0.001	26,000	60
4000; 5000	0.0015	21,000	125
7500; 10,000	0.0015	17,000	250

Range Codes

Range	Range Code	Range	Range Code
2000 lb.	DL	5000 lb.	DR
3000 lb.	DN	7500 lb.	DT
4000 lb.	DP	10,000 lb.	DV

Typical System Diagram



Options

	Build to Order
Load Range	2000, 3000, 4000, 5000, 7500, 10,000 lbs
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max 180° F) 6h. Integral cable: Silicone 6i. Integral underwater cable (max 180° F) 6v. Phoenix connector on end of cable
Bridge Resistance	12a. 1000 ohm (foil) 12b. 5000 ohm (foil)
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Special Calibration	30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression 30d. Tension and Compression calibration, Positive in compression
Shock & Vibration	44a. Shock and vibration resistance
Interfaces (note 4)	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module

Supplied as standard

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/ compression load cells is in tension only
4. TEDS available with integral cable units only.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL311** **DV** **1b, 30a**
Model Code Range Code Options Code

1-888-282-9891

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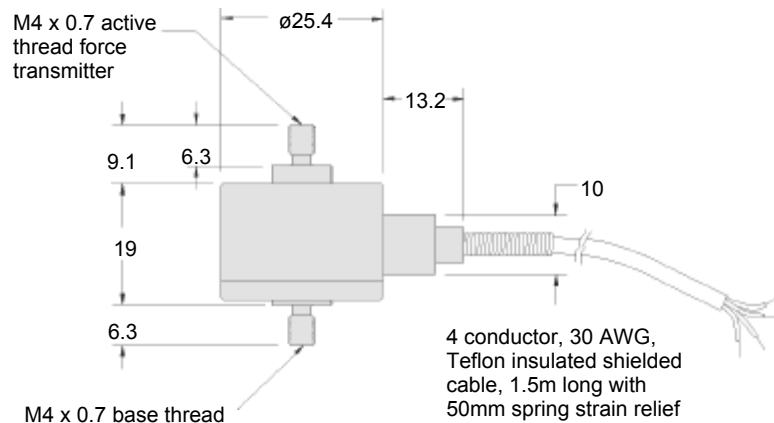
Model 31E Low Range Precision Miniature Load Cell

Order Code 31E

- 0.5N to 5N
- mV/V Output
- Stainless Steel
- Miniature Design
- Double Diaphragm Construction



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Load Ranges.....	0.5; 1.5; 2.5; 5N
Linearity.....	+/- 0.15% Full Scale
Hysteresis.....	+/- 0.15% Full Scale
Non-Repeatability.....	+/- 0.1% Full Scale
Tolerance on Output	
0.5 to 1.5N.....	0.1 mV/V/N max.
2.5 to 5N.....	20 mV/V
Operation.....	Tension/ Compression (note 3)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-55° to 120° C
Temperature, Compensated.....	15° to 70° C
Storage Temperature.....	-70° to 150° C
Temperature, Effect	
Zero.....	0.03% Full Scale/° C
Span.....	0.03% Full Scale/° C

Electrical

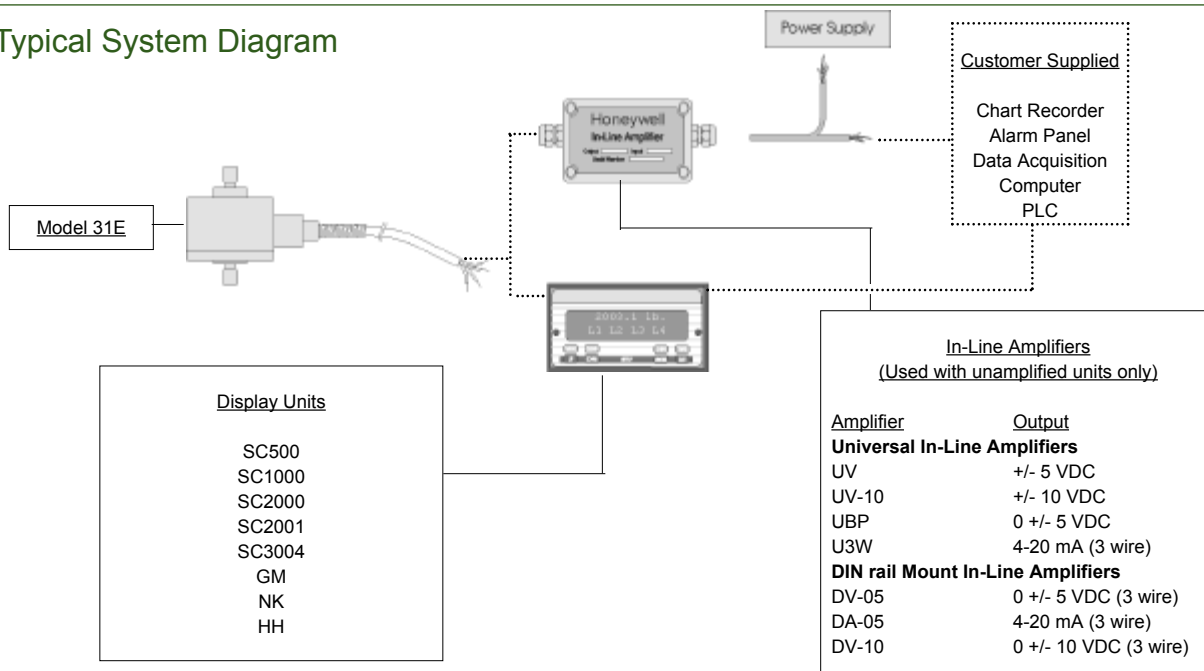
Strain Gage Type.....	Semiconductor
Excitation (calibration).....	5 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	500 Ohms
Zero Balance.....	1% max.
Electrical Termination (std).....	Teflon Cable (1.5 m)

Mechanical

Maximum Allowable Load.....	20N (note 1)
Weight.....	90 grams
Material.....	17-4 PH Stainless Steel
Deflection Full Scale.....	11 kg/ mm
Natural Frequency.....	740 Hz

Model 31E

Typical System Diagram



Options

	Same Day Ship	Fast track manufacture	Build to Order
Load Range	2.5N		0.5N, 1.5N, 5N
Temperature Compensation	1a. 15° to 70° C	1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	
Internal Amplifiers	2u. Unamplified, mV/V output		
Electrical Termination	6e. Integral cable: Teflon	6d. Microtec DR-4S-4H 4 pin 6v. Phoenix connector on end of cable	6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 80° C) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 80° C) 15d. Connector on end of cable
Special Calibration		30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression 30d. Tension and Compression calibration, Positive in compression	
Shock & Vibration			44a. Shock and vibration resistance
Interfaces (note 4)		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

■ Supplied as standard

Range Codes

Range	Range Code
0.5N	000N5
1.5N	001N5
2.5N	002N5
5N	005N0

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths
Enhanced temperature ranges

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/compression load cells is in tension only.
4. TEDS available with integral cable units only.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **31E** **001N0** **1J, 30a**
Model Code Range Code Options Code

1-888-282-9891

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Model 31E Mid-Range Precision Miniature Load Cell

Order Code 31E

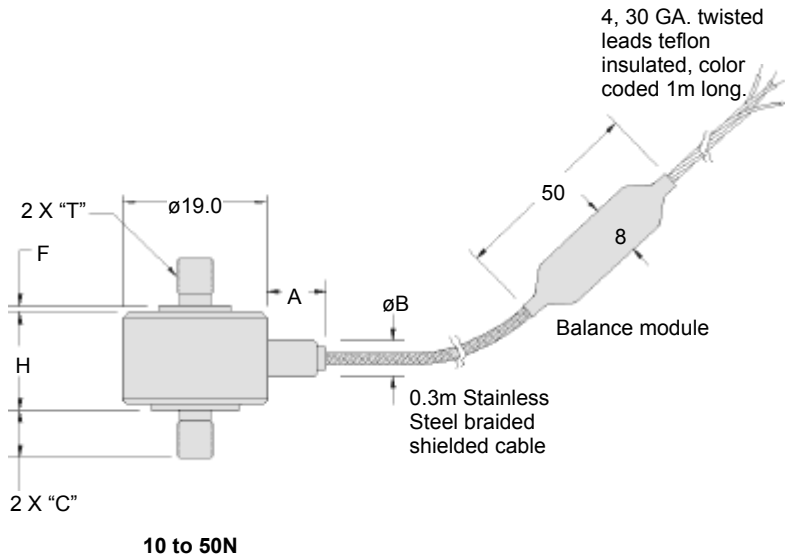
- 10N to 5kN
- mV/V Output
- Stainless Steel
- Miniature Design



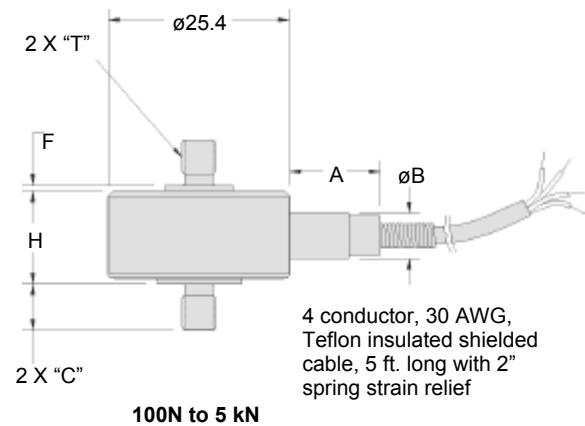
Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output



10 to 50N



100N to 5 kN

Dimensions

Ranges	T	H (mm)	C (mm)	F (mm)	A (mm)	B (mm)
10; 20; 50N	M4 x 0.7	11.4	6.3	1.27	7.9	4.8
100; 200; 500N	M5 x 0.8	13.2	6.3	0.76	12.7	6.3
1; 2; 5kN	M6 x 1	13.2	9.6	0.76	12.7	6.3

Performance

Load Ranges.....	10N to 5kN
Linearity	
10N to 1kN.....	+/- 0.15% Full Scale
2kN to 5kN.....	+/- 0.2% Full Scale
Hysteresis	
10N to 1kN.....	+/- 0.15% Full Scale
2kN to 5kN.....	+/- 0.2% Full Scale
Non-Repeatability	
10N.....	+/- 0.1% Full Scale
20N to 5kN.....	+/- 0.05% Full Scale
Tolerance on Output	
10N.....	1.5 mV/V (nominal)
20N to 5kN.....	2 mV/V
Operation.....	Tension/ Compression (note 3)
Resolution.....	Infinite

Model 31E

Environmental

Temperature, Operating.....	-55° to 120° C
Temperature, Compensated.....	15° to 70° C
Storage Temperature.....	-70° to 150° C
Temperature, Effect	
Zero.....	0.01% Full Scale/° C
Span.....	0.01% Full Scale/° C

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration)	
10 to 20 N.....	5 VDC
50 N to 5 kN.....	10VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Zero Balance.....	1% max.
Electrical Termination (std).....	Teflon Cable (1.5m)

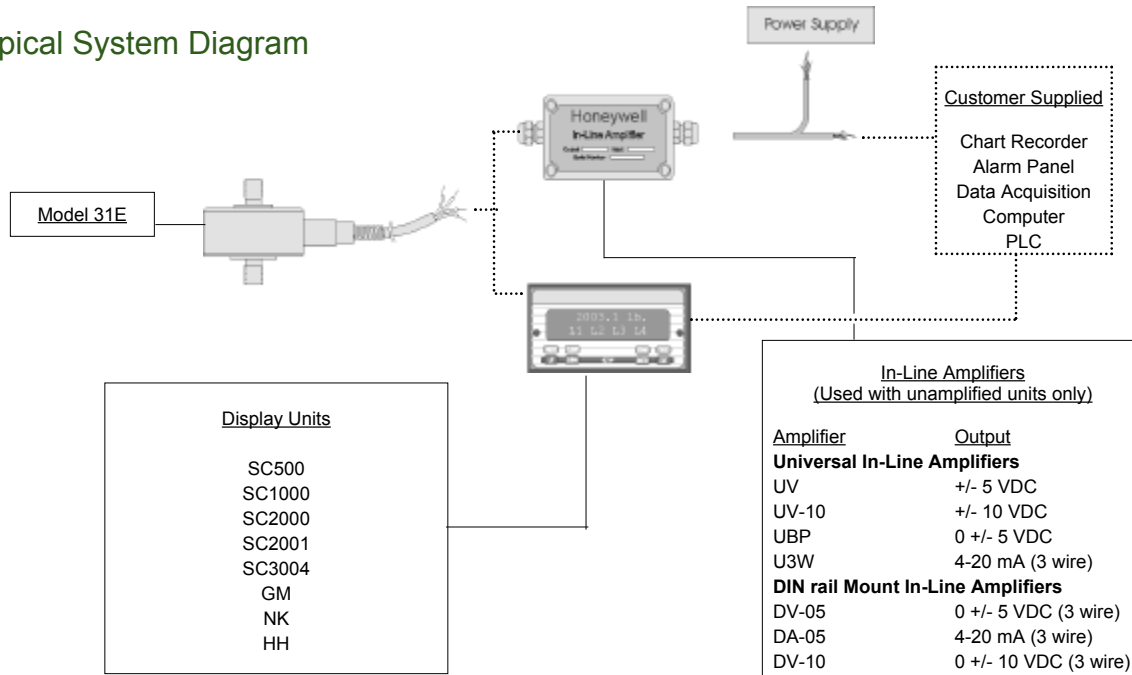
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material.....	17-4 PH Stainless Steel
Deflection Full Scale.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity	Deflection at Full Scale (mm)	Ringing Frequency (Hz)	Weight (grams)
10 to 50N	0.02	3,000	21
100N to 500N	0.02	10,000	63
1kN to 5kN	0.03	12,000	80

Typical System Diagram



Range Codes

Range	Range Code
10N	010N0
20N	020N0
50N	050N0
100N	100N0
200N	200N0
500N	500N0
1kN	01KN0
2kN	02KN0
5kN	05KN0

Options

	Same Day Ship	Fast track manufacture	Build to Order
Load Range	10, 20, 50, 100, 200, 500N; 1, 2, 5kN		
Temperature Compensation	1a. 15° to 70° C	1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	
Internal Amplifiers	2u. Unamplified, mV/V output		
Electrical Termination	6e. Integral cable: Teflon	6v. Phoenix connector on end of cable	6a. Bendix PTIH-10-6P - 6 pin (max. 120° C) (note 5) 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 80° C) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 80° C)
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Special Calibration		30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression	
Shock & Vibration		44a. Shock and vibration resistance	
Interfaces (note 4)		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

 Supplied as standard

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/ compression load cells is in tension only.
4. TEDS available with integral cable units only.
5. Availability varies with range.

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths
Enhanced temperature ranges

How to Order

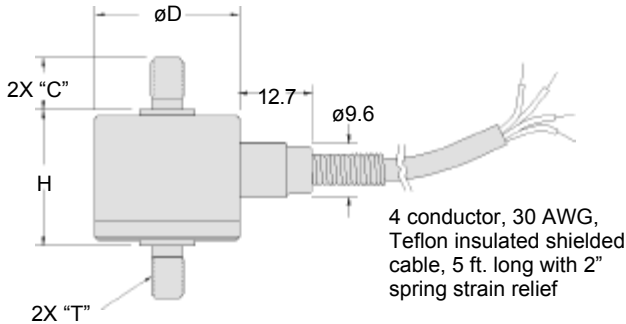
Combine the order code, the range code and the options code.

Sample Code:   
Model Code Range Code Options Code

Model 31E High Range Precision Miniature Load Cell

Order Code 31E

- 10 to 50kN
- mV/V Output
- Stainless Steel
- Miniature Design
- Stabilized Column Construction



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Ranges (kN)	T	ϕD (mm.)	H (mm)	C (mm)
10	M10 x 1.5	25.4	18.3	12.7
20	M12 x 1.5	31.8	23.9	16.0
50	M20 x 1.5	35.1	27.9	22.3

Performance

Load Ranges	10; 20; 50kN
Linearity	+/- 0.2% Full Scale
Hysteresis	+/- 0.2% Full Scale
Non-Repeatability	+/- 0.05% Full Scale
Tolerance on Output	2 mV/V
Operation	Tension/ Compression (note 3)
Resolution	Infinite

Environmental

Temperature, Operating	-55° to 120° C
Temperature, Compensated	15° to 70° C
Storage Temperature	-70° to 150° C
Temperature, Effect	
Zero	0.01% Full Scale/° C
Span	0.01% Full Scale/° C

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	5 VDC
Insulation Resistance	5000 Megohms @ 50 VDC
Bridge Resistance	350 Ohms
Zero Balance	1% max.
Electrical Termination (std)	Teflon Cable (1.5m)

Mechanical

Maximum Allowable Load	150% F.S. (note 1)
Weight	See table
Material	17-4 PH Stainless Steel
Deflection Full Scale	See table
Natural Frequency	See table

Model 31E

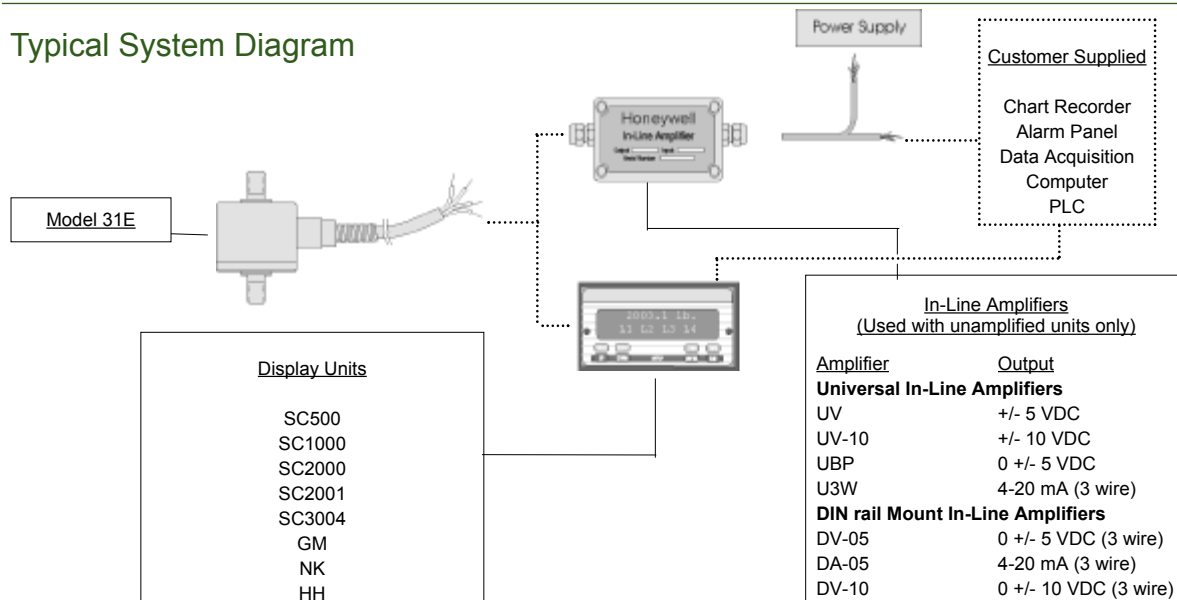
Deflections and Ringing Frequencies

Capacity (kN)	Deflection at Full Scale (mm)	Ringing Frequency (Hz)	Weight (grams)
10	0.02	26,000	60
20	0.03	21,000	125
50	0.03	17,000	250

Range Codes

Range	Range Code
10kN	10KN0
20kN	20KN0
50kN	50KN0

Typical System Diagram



Options

	Build to Order
Load Range	10, 20, 50kN
Temperature Compensation	1a. 15° to 70° C 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. temp 80° C) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. temp 80° C) 6v. Phoenix connector on end of cable
Bridge Resistance	12a. 1000 ohm (foil) 12b. 5000 ohm (foil)
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Special Calibration	30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression 30d. Tension and Compression calibration, Positive in compression
Shock & Vibration	44a. Shock and vibration resistance
Interfaces (note 4)	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module

■ Supplied as standard

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths
Enhanced Temperature Ranges

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/ compression load cells is in tension only
4. TEDS available with integral cable units only.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **31E** **10KN0** **1j, 30a**
Model Code Range Code Options Code

1-888-282-9891

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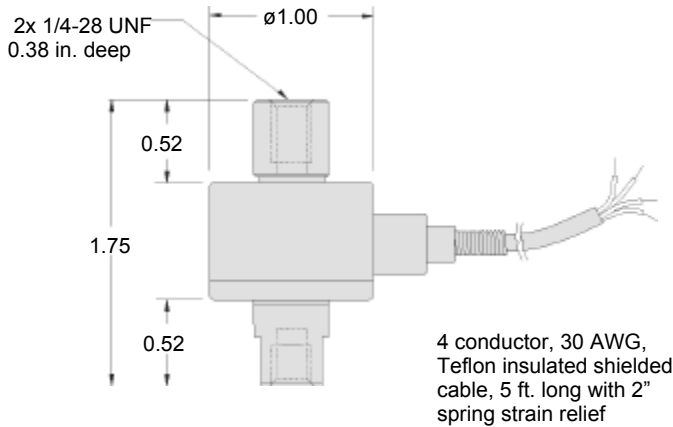
Model 34 Semi Precision Miniature Load Cell

Order Code AL312

- 50 g to 500 g
- mV/V Output
- Stainless Steel
- Miniature Design
- Double Diaphragm Construction



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Load Ranges.....	50; 150; 250; 500 g
Linearity.....	+/- 0.15% Full Scale
Hysteresis.....	+/- 0.15% Full Scale
Non-Repeatability.....	+/- 0.1% Full Scale
Tolerance on Output	
50 to 150 g.....	0.1 mV/V/g max.
250 to 500 g.....	20 mV/V
Operation.....	Tension/ Compression (note 3)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Storage Temperature.....	-100° to 300° F
Temperature, Effect	
Zero.....	0.015% Full Scale/° F
Span.....	0.015% Full Scale/° F

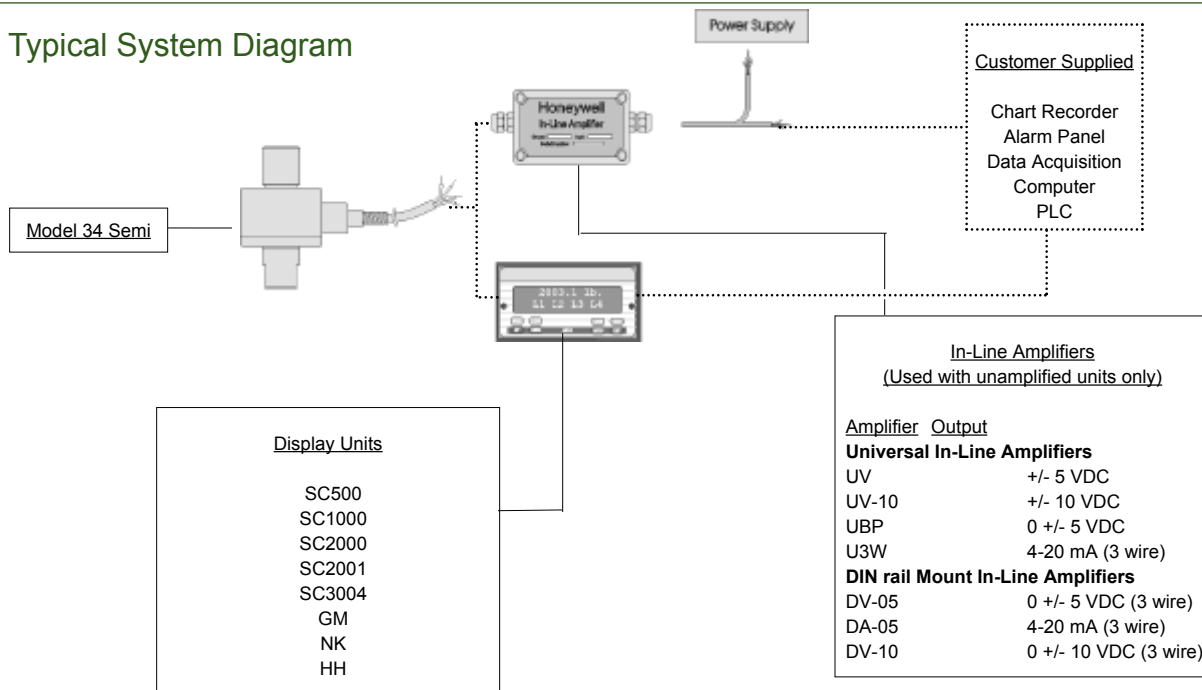
Electrical

Strain Gage Type.....	Semiconductor
Excitation (calibration).....	5 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	500 Ohms
Zero Balance.....	1% max.
Electrical Termination (std).....	Teflon Cable (5 ft.)

Mechanical

Maximum Allowable Load.....	5 lb. (note 1)
Weight.....	110 grams
Material.....	17-4 PH Stainless Steel
Deflection Full Scale.....	11 kg/ mm
Natural Frequency.....	400 Hz

Typical System Diagram



Options

	Built to Order	Built from Scratch
Load Range	50; 150; 250 grams	500 grams
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	
Internal Amplifiers	2u. Unamplified, mV/V output	
Electrical Termination	6e. Integral cable: Teflon 6d. Microtec DR-4S-4H 4 pin Phoenix connector on end of cable	6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 180° F) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 180° F) 15d. Connector on end of cable
Special Calibration	30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression	
Shock & Vibration	44a. Shock and vibration resistance	
Interfaces (note 4)	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

Supplied as standard

Range Codes

Range	Range Code
50 g	AJ
150 g	AL
250 g	AN
500 g	AP

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/ compression load cells is in tension only
4. TEDS available with integral cable units only.

How to Order

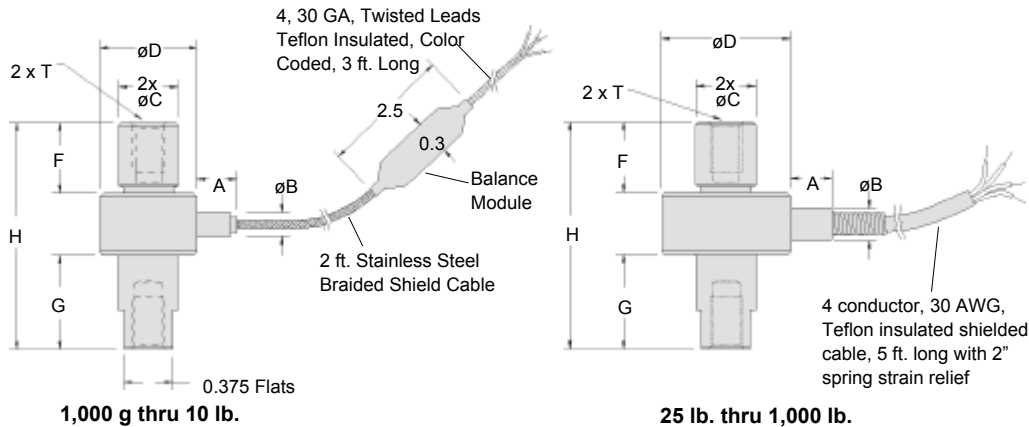
Combine the order code, the range code and the options code.

Sample Code: **AL312** **AJ** **1b. 30a**
Model Code Range Code Options Code

Model 34 Precision Miniature Load Cell

Order Code AL312

- 1000 g to 1000 lb. Range
- Welded Stainless Steel
- Rugged, Small Size
- Tension/ Compression
- 0.15% Accuracy



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Ranges (lb.)	D (in.)	H (in.)	A (in.)	B (in.)	C (in.)	F (in.)	G (in.)	T
1000 g; 5; 10 lb.	0.75	1.75	0.31	0.19	0.46	0.60	0.72	1/4-28 UNF
25; 50; 100 lb.	1.00	1.75	0.50	0.25	0.46	0.52	0.72	1/4-28 UNF
250; 500; 1000 lb.	1.00	2.00	0.50	0.25	0.46	0.75	0.75	1/4-28 UNF

Performance

Load Ranges.....	1000 g to 1000 lb.
Linearity	
1000 g to 250 lb.....	+/- 0.15% Full Scale
500 to 1000 lb.....	+/- 0.2% Full Scale
Hysteresis	
1000 g to 250 lb.....	+/- 0.15% Full Scale
500 to 1000 lb.....	+/- 0.2% Full Scale
Non-Repeatability	
1000 g.....	+/- 0.1% Full Scale
5 to 1000 lb.....	+/- 0.05% Full Scale
Tolerance on Output	
1000 g.....	1.5 mV/V (nominal)
5 to 1000 lb.....	2 mV/V
Operation.....	Tension/ Compression (note 3)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Storage Temperature.....	-100° to 300° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration)	
1000 g to 10 lb.....	5 VDC
25 to 1,000 lb.....	10 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Electrical Termination (std)	
1000 g to 10 lb.....	Teflon Cable (5 ft.) with external balance board
25 to 1,000 lb.....	Teflon Cable (5 ft.)

Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material.....	17-4 PH Stainless Steel
Deflection Full Scale.....	See table
Natural Frequency.....	See table

1-888-282-9891

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Model 34 standard

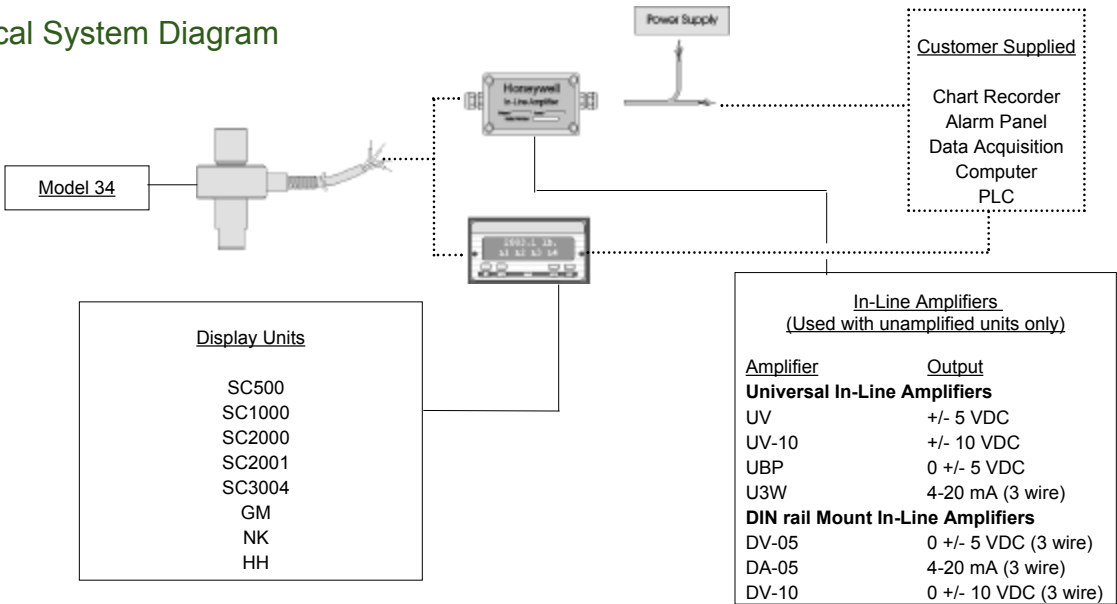
Deflections and Ringing Frequencies

Capacity (lb.)	Deflection at Full Scale (in.)	Ringing Frequency (Hz)	Weight (grams)
1000 g to 10 lb.	0.001	1,000	40
25 to 100	0.001	3,000	80
250 to 1000	0.0015	5,000	100

Range Codes

Range	Range Code	Range	Range Code
1000 g	AR	100 lb.	BR
5 lb.	AT	250 lb.	CN
10 lb.	AV	500 lb.	CR
25 lb.	BL	1000 lb.	CV
50 lb.	BN		

Typical System Diagram



Options

	Fast track manufacture	Build to Order
Load Range	1000 grams 5, 10, 25, 50, 100, 250, 500, 1000 lbs	
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F
Internal Amplifiers	2a. Unamplified, mV/V output	
Electrical Termination	6e. Integral cable: Teflon 6v. Phoenix connector on end of cable	6a. Bendix PTIH-10-6P - 6 pin (max. 250° F) (note 5) 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max 180° F) 6h. Integral cable: Silicone 6i. Integral underwater cable (max 180° F) 15d. Connector on end of cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 20° C 9b. 20 point (10 up/10 down) 10% increments @ 20° C	
Special Calibration	30a. Compression only calibration, Positive in compression 30b. Tension and Compression calibration, Positive in tension 30c. Compression only calibration, Negative in compression	
Shock & Vibration	44a. Shock and vibration resistance	
Interfaces (note 4)	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

Supplied as standard

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/ compression load cells is in tension only.
4. Options 53e and 53t are external in-line interfaces.
5. Availability varies with range.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL312** **CV** **1b, 30a**
Model Code Range Code Options Code

1-888-282-9891

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Model LFH-7I (Top Hat) Subminiature Load Cell

Order Code BL351

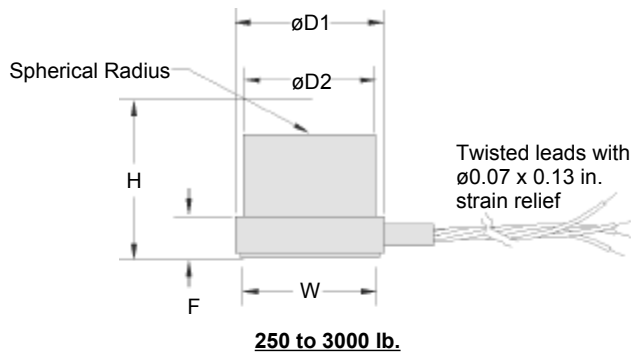
- 250 to 10,000 lb. Range
- Stainless Steel
- Column Construction
- mV/V Output
- 1% Accuracy



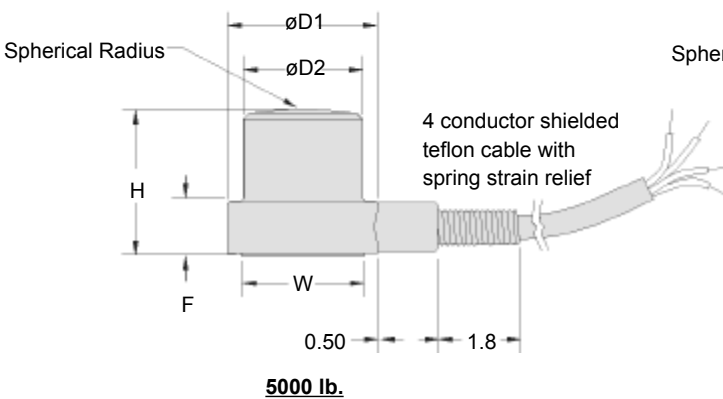
Wiring Code

Connector/ Unamplified

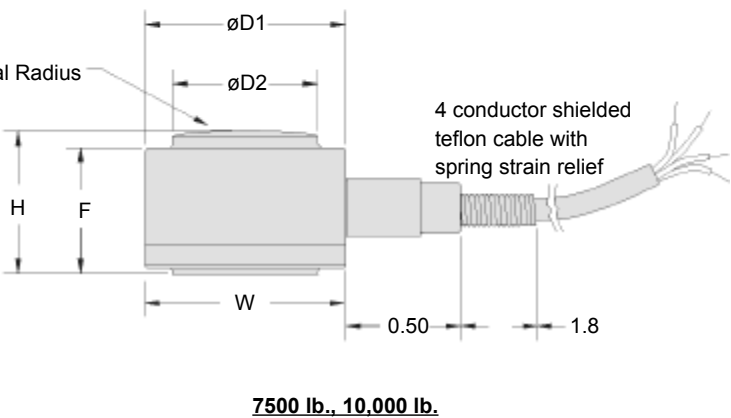
Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output



250 to 3000 lb.



5000 lb.



7500 lb., 10,000 lb.

Dimensions

Ranges (lb.)	$\phi D1$ (in.)	$\phi D2$ (in.)	H (in.)	F (in.)	W (in.)
250	0.50	0.27	0.38	0.13	0.43
500	0.50	0.28	0.38	0.13	0.43
1000	0.50	0.31	0.38	0.13	0.43
2000	0.50	0.41	0.38	0.13	0.43
3000	0.50	0.45	0.38	0.13	0.46
5000	0.63	0.53	0.60	0.23	0.51
7500	0.88	0.63	0.63	0.54	0.63
10,000	0.88	0.63	0.63	0.54	0.63

Performance

Load Ranges.....250 to 10,000 lb.
Accuracy.....+/- 1% Full Scale (note 1)
Tolerance on Output.....1.5 mV/V to 2.5 mV/V
Operation.....Compression only

Model LFH-7I

Environmental

Temperature, Operating.....-65° to 250° F
Temperature, Compensated.....60° to 160° F
Storage Temperature.....-100° to 300° F
Temperature, Effect
Zero.....0.01% Full Scale/ °F
Span.....0.01% Full Scale/ °F (nominal)

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....5 VDC
Insulation Resistance.....5000 Megohms @ 50 VDC
Bridge Resistance.....350 Ohms
Zero Balance.....5% max.
Electrical Termination (std).....Cable (5ft.)

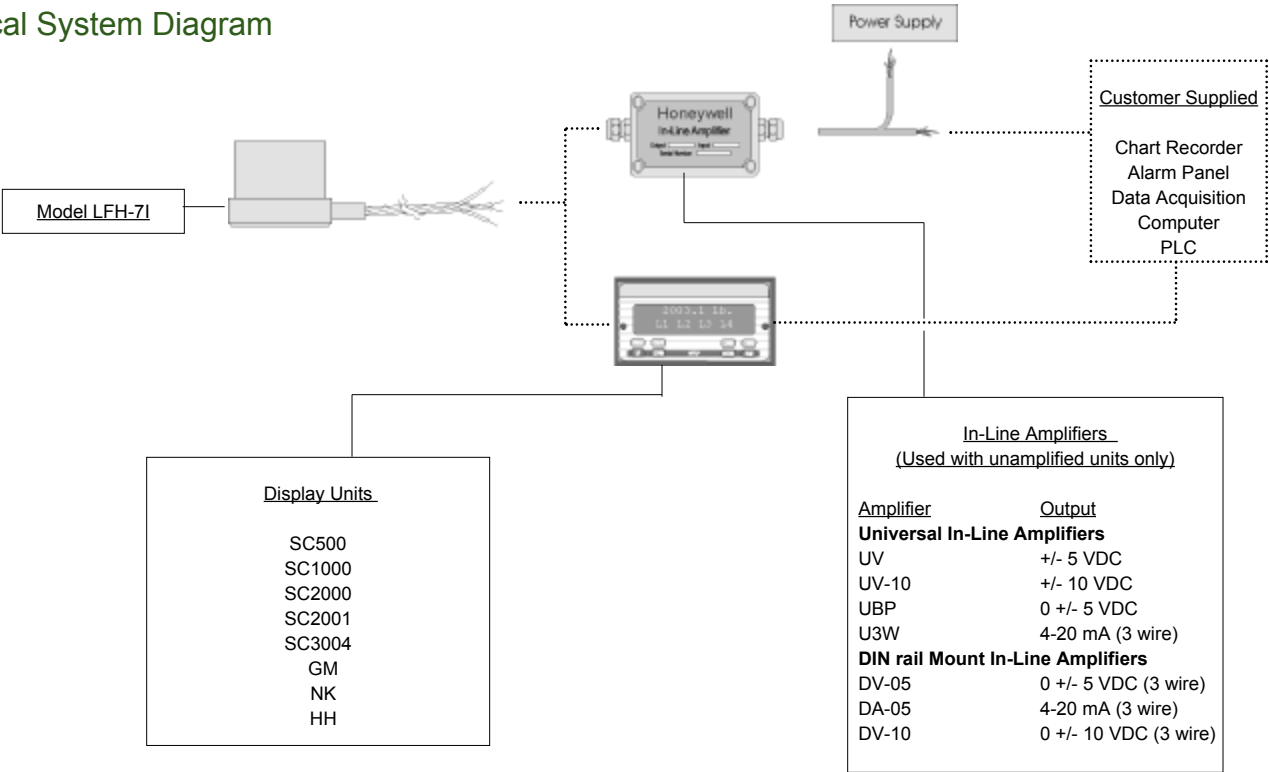
Mechanical

Maximum Allowable Load.....150% F.S. (note 2)
Weight.....See table
Material.....17-4PH Stainless Steel
Deflection Full Scale.....See table
Natural Frequency.....See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection at Full Scale (in.)	Ringing Frequency (kHz)	Weight (grams)
250	0.0005	30	10
500	0.0005	34	10
1000	0.001	37	10
2000	0.001	44	10
3000	0.001	46	10
5000	0.001	47	30
7500	0.0015	44	30
10,000	0.002	40	30

Typical System Diagram



Range Codes

Range	Range Code
250 lb.	CN
500 lb.	CR
1000 lb.	CV
2000 lb.	DL
3000 lb.	DN
4000 lb.	DP
5000 lb.	DR
7500 lb.	DT
10,000 lb.	DV

Options

	Built to Order
Load Range	250; 500; 1000; 2000; 3000; 4000; 5000; 7500; 10,000 lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1f. 0° to 185° F 1b. -20° to 130° F 1f. -20° to 200° F 1b. 70° to 250° F 1f. 0° to 50° C 1b. -20° to 85° C 1f. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon 6h. Integral cable: Silicone 6v. Phoenix connector on end of cable 15d. Connector on end of cable
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 70° F 9b. 20 point (10 up/10 down) 10% increments @ 70° F
Shock & Vibration	44a. Shock and Vibration resistance

 Supplied as standard

Notes

1. Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis and repeatability through zero.
2. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
3. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

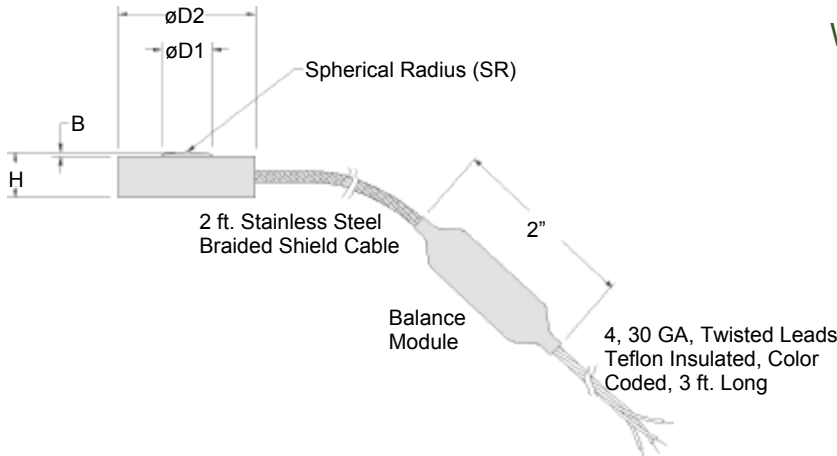
Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model 13 Subminiature Load Cell

Order Code AL322

- 150 g to 1,000 lb.
- mV/V Output
- Stainless Steel
- Single Diaphragm Construction



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Ranges	D1 (in.)	D2 (in.)	H (in.)	B (in.)	SR (in.)
150; 250; 500; 1000 g 5; 10; 25; 50 lb.	0.38	0.09	0.13	0.027	0.25
100; 250 lb.	0.50	0.12	0.15	0.020	0.50
500; 1000 lb.	0.75	0.25	0.25	0.025	0.50

Performance

Load Ranges	150; 250; 500; 1000 g; 5; 10; 25; 50; 100; 250; 500; 1000 lb.
Linearity	+/- 0.5% Full Scale
Hysteresis	+/- 0.5% Full Scale
Non-Repeatability	+/- 0.1% Full Scale
Output (tolerance)	
150 g to 500 g	15 mV/V (nominal)
1000 g	1.5 mV/V (nominal)
5 lb. to 1000 lb.	2 mV/V (nominal)
Operation	Compression Only
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 250° F
Temperature, Compensated	60° to 160° F
Temperature, Effect	
Zero	0.01% Full Scale/ °F
Span	0.02% Reading/ °F

Electrical

Strain Gage Type	
150 g to 500 g	Semiconductor
1000 g to 1000 lb.	Bonded Foil
Excitation (calibration)	5 VDC
Insulation Resistance	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance)	
150 g to 500 g	500 Ohms (nominal)
1000 g to 1000 lb.	350 Ohms (nominal)
Zero Balance (tolerance)	+/- 3% of Full Scale (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	5' Integral cable with balance board (note 3)

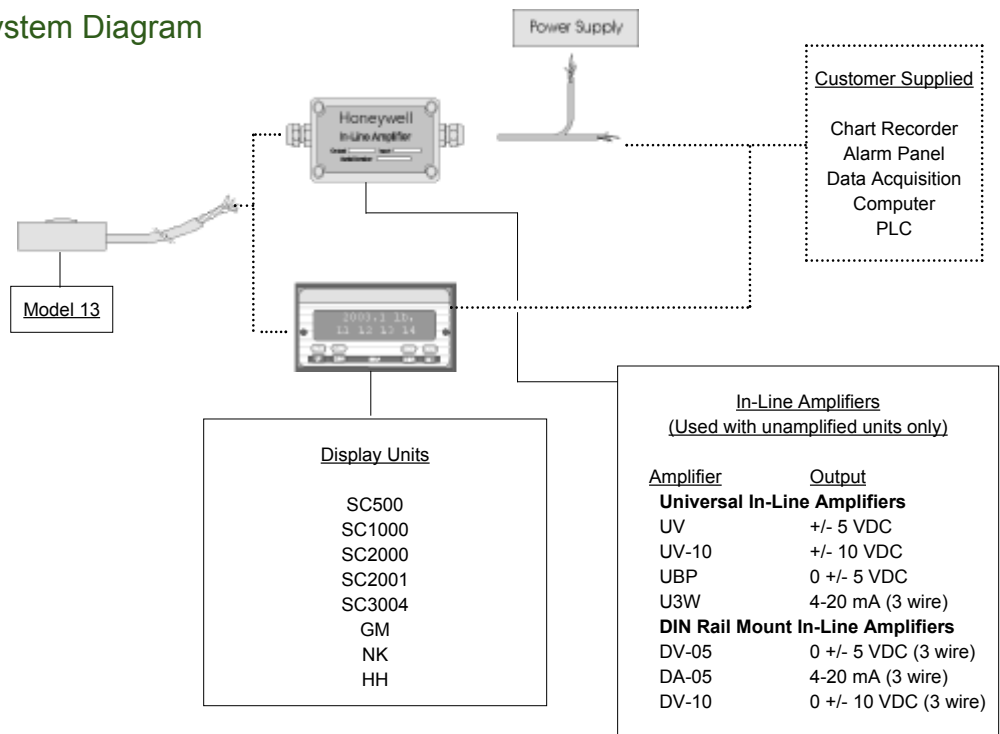
Mechanical

Maximum Allowable Load	See table
Weight	See table
Material	Stainless Steel
Deflection @ Full Scale	See table

Deflections and Weight

Capacity	Deflection at Full Scale (10 ⁻³ in.)	Weight (g)	Weight with Cable (g)	Maximum Allowable Load (note 1) (%F.S.)
150 g	0.06	1	9	500
250 g	0.06	1	9	500
500 g	0.08	1	9	500
1000 g	0.05	1	9	150
5 lb.	0.5	1	9	150
10 lb.	0.4	1	9	150
25 lb.	0.4	1	9	150
50 lb.	0.4	1	9	150
100 lb.	0.4	3	11	150
250 lb.	0.5	3	11	150
500 lb.	0.5	10	18	150
1000 lb.	0.6	10	18	150

Typical System Diagram



Range Codes

Range	Range Code	Range	Range Code
150 g	AL	5 lb.	AT
250 g	AN	10 lb.	AV
500 g	AP	25 lb.	BL
1000 g	AR	50 lb.	BN
		100 lb.	BR
		250 lb.	CN
		500 lb.	CR
		1000 lb.	CV

Model 13

Options

	Same Day Ship	Fast track manufacture	Build to order	Build from scratch
Load Range	1000 grams 10, 25, 50, 100, 250, 500, 1000 lbs			150, 250, 500 grams 5 lbs
Temperature Compensation	1a. 60° to 160° F	1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C		
Internal Amplifiers	2u. Unamplified, mV/V output			
Overload Stops			4a. Overload Stops	
Electrical Termination	Twisted cable	6v. Phoenix connector on end of cable 15d. Connector on end of cable		
Special Calibration		9a. 10 point (5 up/5 down) 20% increments @ 68° F 9b. 20 point (10 up/10 down) 10% increments @ 68° F		
Shock & Vibration			44a. Shock and vibration resistance	

 Supplied as standard

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation rated
Different cable lengths
Non-magnetic
Increased fatigue life
Custom cable exit
No circuit board (note 5)
Alternate cable materials

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2). Loads described allow for 100% full scale axial loading with the bending loads specified. Torque loading maximum is without axial or other load. For any other combination consult factory.
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. A small 2 in. circuit board is included in the cable, 2 ft. from the load cell. Do not remove this board.
4. Only for ranges greater than or equal to 1000 g.
5. Specifications may vary with this option.

How to Order

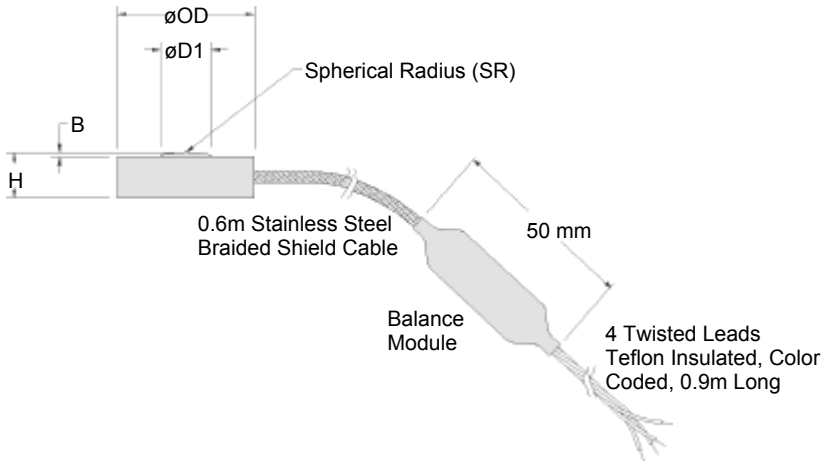
Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model 13E Subminiature Load Cell

Order Code 13E

- 0.5N to 5kN Range
- mV/V Output
- Stainless Steel
- Fast Dynamic Response



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Ranges	Range Code	OD (mm)	D1 (mm)	H (mm)	B (mm)	SR (mm)
0.5N	000N5	9.7	2.3	3.3	0.7	6
1.5N	001N5	9.7	2.3	3.3	0.7	6
2.5N	002N5	9.7	2.3	3.3	0.7	6
5N	005N0	9.7	2.3	3.3	0.7	6
10N	010N0	9.7	2.3	3.3	0.7	6
20N	020N0	9.7	2.3	3.3	0.7	6
50N	050N0	9.7	2.3	3.3	0.7	6
100N	100N0	9.7	2.3	3.3	0.7	6
200N	200N0	9.7	2.2	3.3	0.7	6
500N	500N0	12.7	3.0	3.8	0.5	13
1kN	01KN0	12.7	3.0	3.8	0.5	13
2kN	02KN0	19.1	6.4	6.4	0.6	13
5kN	05KN0	19.1	6.4	6.4	0.6	13

Performance

Load Ranges.....0.5N to 5kN
Linearity.....+/- 0.5% Full Scale
Hysteresis.....+/- 0.5% Full Scale
Non-Repeatability.....+/- 0.1% Full Scale
Output (tolerance)
0.5N to 5N.....15 mV/V (nominal)
10N.....1.5 mV/V (nominal)
20N to 5kN.....2 mV/V (nominal)
Operation.....Compression Only
Resolution.....Infinite

Environmental

Temperature, Operating.....-55° to 120° C
Temperature, Compensated.....15° to 70° C
Temperature, Effect
Zero.....0.02% Full Scale/ °C
Span.....0.04% Full Scale/ °C
Protection Rating.....IP65

Model 13E

Electrical

Strain Gage Type	
0.5N to 5N.....	Semiconductor
10N to 5kN.....	Bonded Foil
Excitation (calibration).....	5 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance)	
0.5N to 5N.....	500 Ohms (nominal)
10N to 5kN.....	350 Ohms (nominal)
Zero Balance (tolerance).....	+/- 3% of Full Scale (nominal)
Shunt Calibration Data.....	Included
Electrical Termination (std).....	1.5m Integral cable with balance board (note 3)

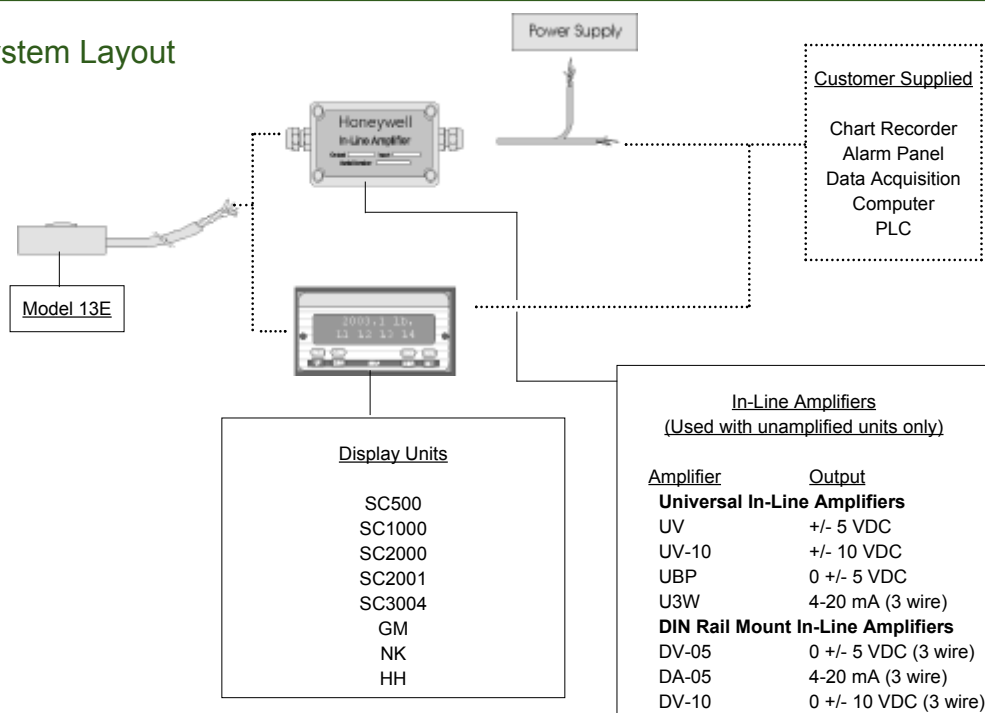
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material.....	Stainless Steel
Deflection @ Full Scale.....	See table

Deflections and Weight

Capacity	Deflection at Full Scale (mm)	Weight (g)	Weight with Cable (g)
0.5 N	0.0015	1	9
1.5 N	0.0015	1	9
2.5 N	0.0015	1	9
5 N	0.0020	1	9
10 N	0.0127	1	9
20 N	0.0127	1	9
50 N	0.0101	1	9
100 N	0.0101	1	9
200 N	0.0101	1	9
500 N	0.0101	3	11
1 kN	0.0127	3	11
2 kN	0.0127	10	18
5 kN	0.0152	10	18

Typical System Layout



Model 13E

Range Codes

Range	Range Code
0.5 N	000N5
1.5 N	001N5
2.5 N	002N5
5 N	005N0
10 N	010N0
20 N	020N0
50 N	050N0
100 N	100N0
200 N	200N0
500 N	500N0
1 kN	01KN0
2 kN	02KN0
5 kN	05KN0

Options

	Build to Order
Load Range	0.5N to 5kN
Temperature Compensation	1a. 15° to 70° C 1j. -65° to 50° C 1k. -20° to 85° C
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	1.5m. Integral cable with balance board (note 3) 6a. Bendix PTIH-10-6P - (or equivalent) 6 pin (max. 120°C) on end of cable 6e. Integral cable: Teflon 6v. Phoenix connector on end of cable
Electrical Connector Orientation	15d. Connector on end of cable
Load Direction	30c. Negative in compression, compression testing only
Shock & Vibration	44a. shock rated wiring

 Supplied as standard

Special Customer Requirements (Consult Factory)

- OEM Labels
- Radiation rated
- Different cable lengths
- Non-magnetic
- Increased fatigue life
- Custom cable exit
- No circuit board (note 5)
- Alternate cable materials

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. A small 50mm long x 2mm thick circuit board is located approximately 60cm from cell body. Do not remove this board.
4. Only for ranges greater than or equal to 10N
5. Specifications may vary with this option.

How to Order

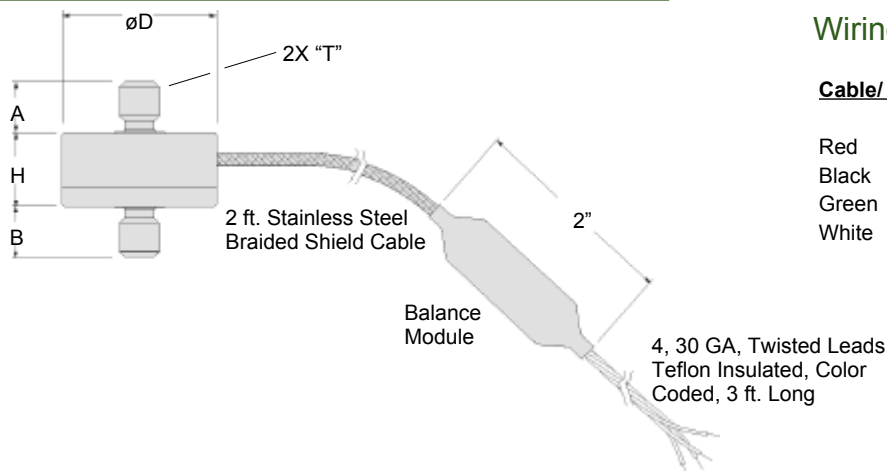
Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model 11 Subminiature Load Cell

Order Code BL321

- 150 g to 1000 lb. Range
- mV/V Output
- Subminiature Design
- Single Diaphragm Construction



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Range (lb.)	øD (in.)	T	H (in.)	A (in.)	B (in.)
150; 250; 500; 1000 g 5; 10; 25; 50; 100 lb.	0.50	#4-40 UNC	0.29	0.19	0.18
250; 500; 1000 lb.	0.75	1/4-28 UNF	0.38	0.31	0.31

Performance

Load Ranges	150 g to 1,000 lb.
Linearity	+/- 0.5% Full Scale
Hysteresis	+/- 0.5% Full Scale
Non-Repeatability	+/- 0.1% Full Scale
Output (tolerance)	
150 to 500 g	10 mV/V (nominal)
1000 g to 1000 lb.	2 mV/V (nominal)
Operation	Tension/ Compression (note 3)
Resolution	Infinite
Maximum Permissible Torque	
150 g to 100 lb.	4 in.-lb.
250 to 1000 lb.	20 in.-lb.

Environmental

Temperature, Operating	-65° to 250° F
Temperature, Compensated	60° to 160° F
Temperature, Effect	
Zero	0.01% of Full Scale/ °F
Span	0.02% of Reading/ °F

Electrical

Strain Gage Type	
150 to 500 g	Semiconductor
1000 g to 1000 lb.	Bonded Foil
Excitation (calibration)	5 VDC
Insulation Resistance	5,000 Megohms @ 50 VDC
Bridge Resistance (tolerance)	
150 to 500 g	500 Ohms (nominal)
1000 g to 1000 lb.	350 Ohms (nominal)
Zero Balance (tolerance)	+/- 3% of Full Scale (nominal)
Shunt Calibration Data	Included
Electrical Termination (std)	5' integral cable with balance board (note 4)

Mechanical

Maximum Allowable Load	See table (note 1)
Weight	See table
Material	Stainless Steel
Deflection @ Full Scale	See table
Natural Frequency	See table

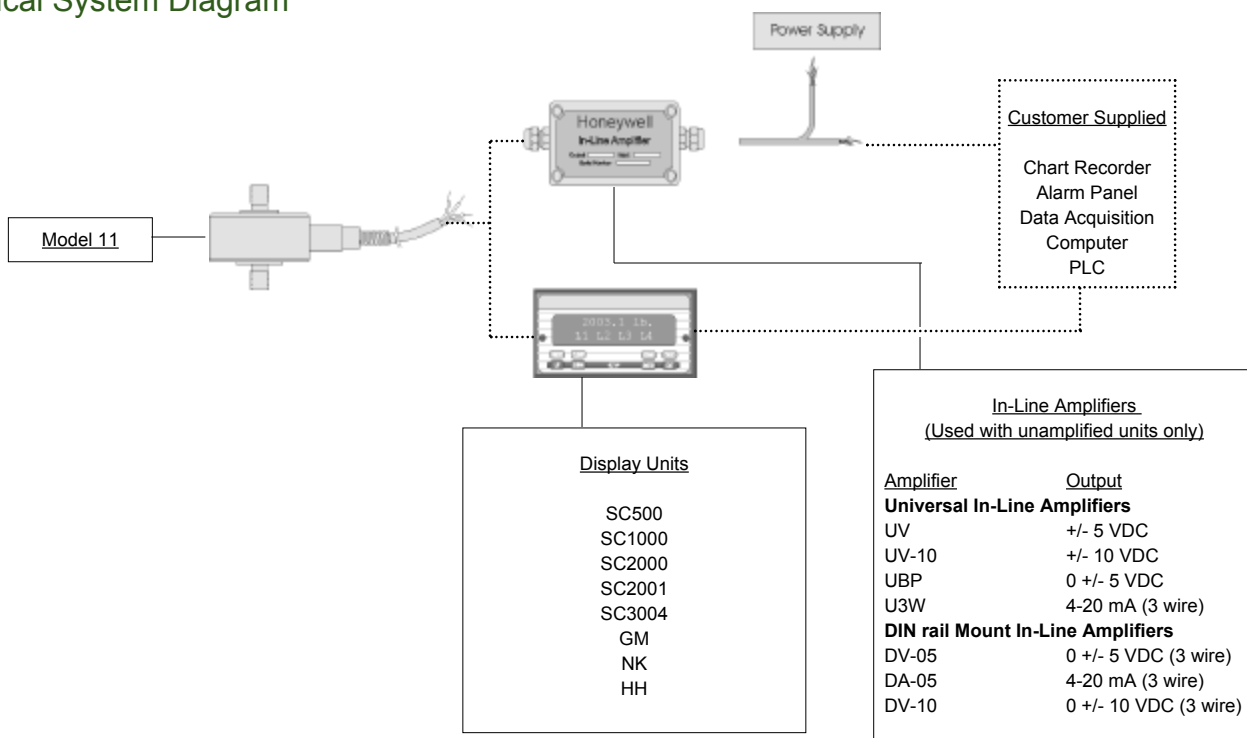
1-888-282-9891

www.honeywell.com/sensotec

Deflections and Ringing Frequencies

Capacity	Deflection at Full Scale (10 ⁻³ in.)	Ringing Frequency (kHz)	Weight (g)	Weight with Cable (g)	Maximum Allowable Load (note 1) (% F.S.)
150 g	0.05	10	5	13	500
250 g	0.04	14	5	13	500
500 g	0.03	22	5	13	500
1000 g	0.7	8	5	13	150
5 lb.	0.6	11	5	13	150
10 lb.	0.6	17	5	13	150
25 lb.	0.5	24	5	13	150
50 lb.	0.5	34	5	13	150
100 lb.	0.5	48	5	13	150
250 lb.	0.6	25	19	27	150
500 lb.	0.7	33	19	27	150
1000 lb.	1.0	40	19	27	150

Typical System Diagram



Range Codes

Range	Range Code
150 g	AL
250 g	AN
500 g	AP
1000 g	AR
5 lb.	AT
10 lb.	AV
25 lb.	BL
50 lb.	BN
100 lb.	BR
250 lb.	CN
500 lb.	CR
1000 lb.	CV

Model 11

Options

	Built from Scratch
Load Range	150 g to 1,000 lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1e. -20° to 200° F (note 5) 1f. 70° to 250° F (note 5)
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	5ft. Integral cable with balance board (note 4) 6a. Bendix PTIH-10-6P - (or equivalent) 6 pin (max. 250°F) on end of cable 6e. Integral cable: Teflon 6v. Phoenix connector on end of cable
Electrical Connector Orientation	15d. Connector on end of cable
Load Direction	30a. Positive in compression, compression testing only 30b. Positive in tension, tension & compression testing only 30c. Negative in compression, compression testing only
Shock & Vibration	44a. shock rated wiring

 Supplied as standard

Special Customer Requirements (Consult Factory)

- OEM Labels
- Radiation rated
- Different cable lengths
- Custom threads
- Non-magnetic
- Increased fatigue life
- Custom cable exit
- No circuit board (note 6)
- Alternate cable materials

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Standard calibration for tension/ compression load cells is in tension only.
4. A small 2 in. circuit board is included in the cable, 2 ft. from the load cell. Do not remove this board.
5. Only for ranges greater than or equal to 1,000 g.
6. Specifications may vary with this option.

How to Order

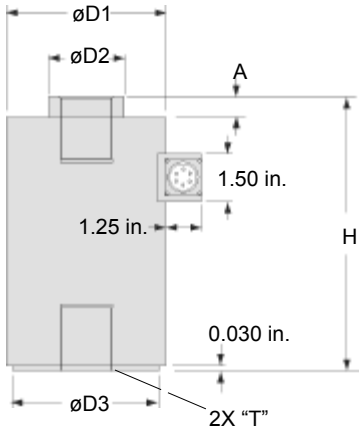
Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model UG Ultra Precision Universal Canister Load Cell

Order Code BL122

- 100 to 150,000 lb. Range
- Stainless Steel
- All-Welded Design
- 0.03% Linearity



Wiring Code

Connector/ Unamplified

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

Ranges (lb.)	H (in.)	$\phi D1$ (in.)	$\phi D2$ (in.)	$\phi D3$ (in.)	A (in.)	T Typical
100	2.75	2.00	0.63	1.9	0.09	3/8-24 UNF X 7/16"
250; 500	2.75	2.00	0.63	1.9	0.18	3/8-24 UNF X 7/16"
1,000; 2,000; 3,000; 4000	4.13	2.50	0.75	2.0	0.18	1/2-20 UNF X 5/8"
5,000; 7,500; 10,000	5.88	3.50	1.56	3.0	0.19	1-14 UNF X 1 1/8"
15,000; 20,000; 30,000	8.50	5.00	2.38	4.3	0.63	1 1/2-12 UNF X 2"
50,000; 75,000	12.00	6.00	3.63	5.5	0.69	2-12 UNF X 2 1/2"
100,000; 150,000	15.80	7.5	4.8	6.8	0.69	3-8 UNF X 4 1/2"

Performance

Load Ranges.....	100 to 150,000 lb.
Linearity.....	+/- 0.03% Full Scale (note 1)
Hysteresis.....	+/- 0.03% Full Scale (note 1)
Non-Repeatability.....	+/- 0.02% Full Scale
Output.....	3 mV/V +/- 1%
Load Direction.....	Tension/ Compression (note 4)
Resolution.....	Infinite
Creep (max.).....	0.02% (20 min.)

Environmental

Temperature, Operating.....	-30° to 185° F (note 5)
Temperature, Compensated.....	60° to 160° F (note 5)
Storage Temperature.....	-100° to 250° F
Temperature, Effect	
Zero.....	0.0015% Full Scale/ °F
Span.....	0.0008% Full Scale/ °F

Electrical

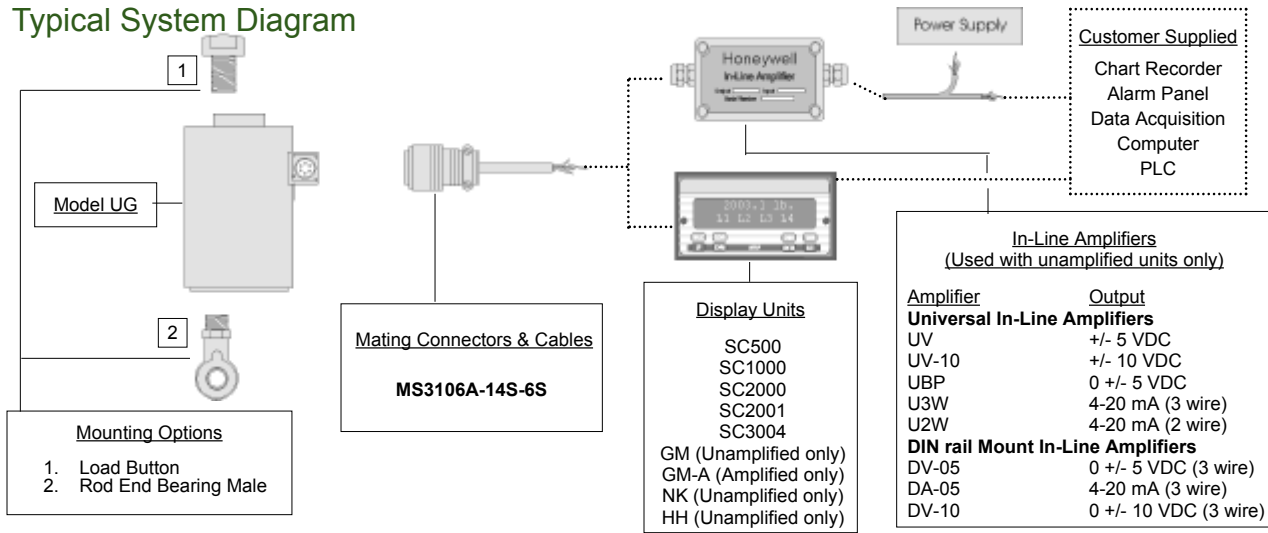
Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5,000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Zero Balance.....	1% of Full Scale
Electrical Termination (std).....	MS3102E-14S-6P
Mating Connector (not incl.).....	MS3106A-14S-6S

Mechanical

Maximum Allowable Load.....	150% F.S. (note 2)
Material.....	Stainless Steel

Model UG

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Options

	Build from Scratch
Load Range	100 to 150,000 lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F
Internal Amplifiers	2u. Unamplified mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2n (2N). 4-20mA (2-wire) Intrinsically Safe 2t. 0-10 VDC output
Electrical Termination	6b. MS Connector MS3102E-14S-6P 6e. Integral cable: Teflon 6g. Integral cable: Neoprene 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Integral Cable: Polyurethane
Shunt Calibration	8a. Precision Internal Resistor
Bridge Resistance	12b. 5,000 Ohms (foil)
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S IEEE 1451.4 Module (note 9)

Supplied as standard

Range Codes

Range	Range Code
100 lb.	BR
250 lb.	CN
500 lb.	CR
1000 lb.	CV
2000 lb.	DL
3000 lb.	DN
4000 lb.	DP
5000 lb.	DR
7500 lb.	DT
10,000 lb.	DV
15,000 lb.	EJ
20,000 lb.	EL
30,000 lb.	EN
50,000 lb.	EP
75,000 lb.	ER
100,000 lb.	ET
150,000 lb.	FJ

Notes

- +/- 0.05% Full Scale less than or equal to 250 lb. and greater than or equal to 75,000 lb.
- Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Standard calibration for tension/ compression load cells is in tension only.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; BI=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Consult factory for extended temperature ranges.
- Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BL122** **DL** **1b**
Order Code Range Code Options Code

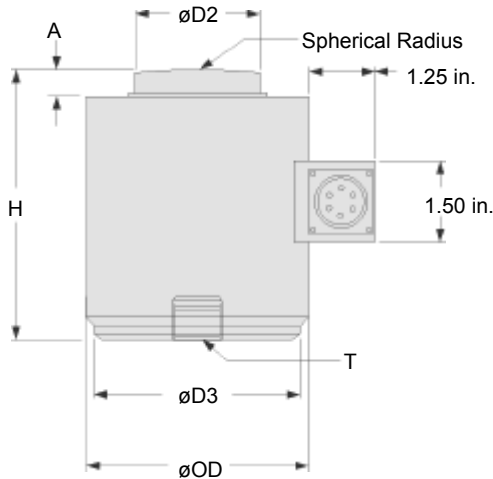
1-888-282-9891

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Model WG Ultra Precision Compression Canister Load Cell

Order Code BL125

- 10,000 to 500,000 lb. Range
- Stainless Steel
- Multiple Column Construction
- 0.03% Linearity & Hysteresis



Wiring Code

Connector/ Unamplified

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

Ranges (lb.)	ØOD (in.)	ØD2 (in.)	ØD3 (in.)	H (in.)	T	A (in.)
10,000; 15,000; 25,000; 50,000	2.88	1.25	2.12	3.25	1/2-20 UNF-2B	0.40
100,000	4.12	2.31	3.66	5.00	3/4-16 UNF-3B	0.51
200,000; 300,000	6.00	3.13	5.31	7.25	3/4-16 UNF-3B	1.03
500,000	6.50	3.69	5.81	9.00	3/4-16 UNF-3B	1.04

Performance

Load Ranges.....	10,000 to 500,000 lb.
Linearity.....	+/- 0.03% Full Scale (note 1)
Hysteresis.....	+/- 0.03% Full Scale (note 1)
Non-Repeatability.....	+/- 0.01% Full Scale
Output.....	2 mV/V
Load Direction.....	Compression only
Resolution.....	Infinite
Creep (max.).....	0.03% (20 min.)

Environmental

Temperature, Operating.....	-30° to 185° F
Temperature, Compensated.....	60° to 160° F
Storage Temperature.....	-100° to 250° F
Temperature, Effect	
Zero.....	0.0015% Full Scale/ °F
Span.....	0.0008% Full Scale/ °F

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5,000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Zero Balance.....	1% max.
Electrical Termination (std).....	MS3102E-14S-6P
Mating Connector (not incl.).....	MS3106A-14S-6S

Mechanical

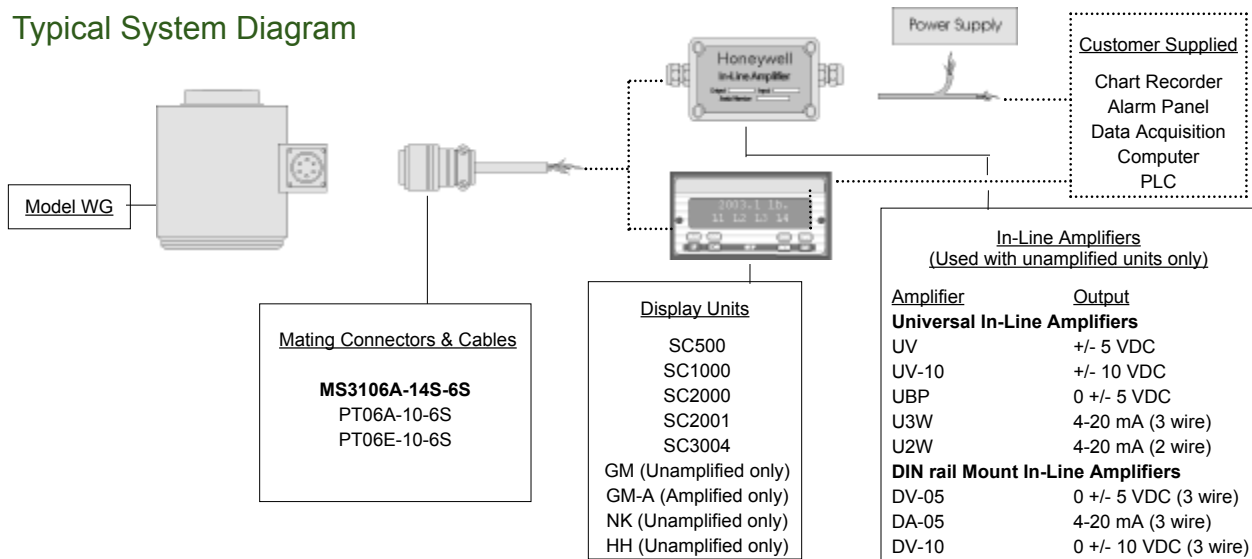
Maximum Allowable Load.....	150% F.S. (note 1)
Material.....	Stainless Steel
Deflection Full Scale.....	0.003 in.

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Model WG

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Supply Bl*Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

Options

	Build from Scratch
Load Range	10,000 to 500,000 lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F
Internal Amplifiers	2u. Unamplified mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output
Electrical Termination	6b. MS Connector MS3102E-14S-6P 6a. Bendix PTIH-10-6P 6e. Integral cable: Teflon 6g. Integral cable: Neoprene 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Integral Cable: Polyurethane
Shunt Calibration	8a. Precision Internal Resistor
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module (note 8)

Supplied as standard

Range Codes

Range	Range Code
10,000 lb.	DV
15,000 lb.	EJ
25,000 lb.	EM
50,000 lb.	EP
100,000 lb.	ET
200,000 lb.	FL
300,000 lb.	FN
500,000 lb.	FR

Notes

- Linearity & hysteresis are 0.05% at range greater than or equal to 75,000 lb.
- Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Consult factory for extended temperature ranges
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BL125** **FL** **1b**
 Order Code Range Code Options Code

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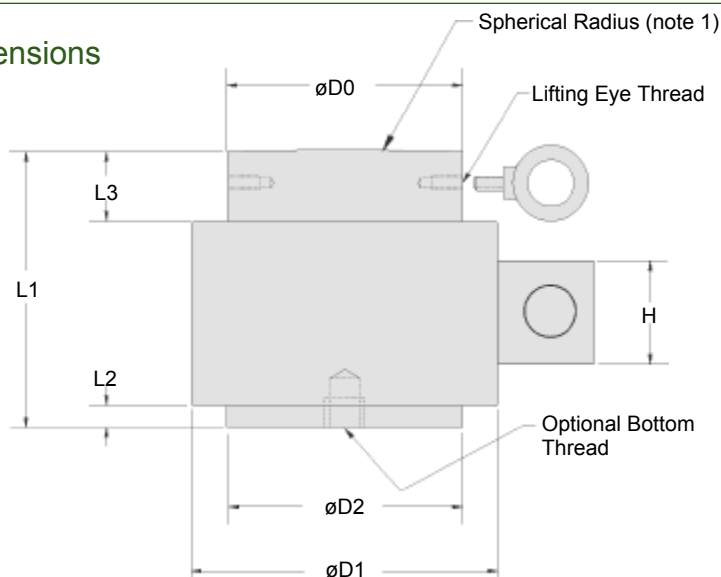
Model MPB High Capacity Compact Compression Load Cell

Order Code BL515

- 1 to 1,000 tons Range
- Stainless Steel
- mV/V Output
- 0.25% Accuracy



Dimensions



Wiring Code

Cable Exit/ 1-5 tons/ Unamplified

Red (+) Excitation
Black (-) Excitation
Green (-) Output
White (+) Output

Connector Exit/ 10-1,000 tons/ Unamplified

A (+) Excitation
B (+) Excitation
C (-) Excitation
D (-) Excitation
E (-) Output
F (+) Output

Capacity (US tons)	D0 (in.)	D1 (in.)	D2 (in.)	L1 (in.)	L2 (in.)	L3 (in.)	H (in.)	Thread Lifting Eye	Optional Bottom Thread
1	0.26	0.87	0.37	0.75	0.02	0.06	0.375	Not Applicable	8-32 UNC x 0.18 in. deep
2.5	0.26	0.87	0.37	0.75	0.02	0.06	0.375	Not Applicable	8-32 UNC x 0.18 in. deep
5	0.41	0.98	0.53	0.88	0.04	0.06	0.375	Not Applicable	8-32 UNC x 0.18 in. deep
10	0.75	1.49	0.75	1.12	0.06	0.16	0.375	Not Applicable	1/4-28 UNF x 0.25 in. deep
25	1.18	1.96	1.18	1.77	0.12	0.30	0.75	Not Applicable	1/4-28 UNF x 0.25 in. deep
50	1.59	2.44	1.59	2.4	0.18	0.19	1.5	Not Applicable	3/8-24 UNF x 0.38 in. deep
100	2.25	3.19	2.25	3.38	0.25	0.69	1.5	Not Applicable	3/8-24 UNF x 0.38 in. deep
250	3.57	4.44	3.57	5.35	0.25	1.7	1.5	1/4-28	3/4-16 UNF x 0.75 in. deep
500	5.05	6.44	5.05	7.57	0.25	2.6	1.5	1/4-28	3/4-16 UNF x 0.75 in. deep
1,000	7.14	8.44	7.14	10.41	0.25	4.0	1.5	3/8-16	1-12 UNF x 1 in. deep

Performance

Load Ranges.....1 to 1,000 tons
Accuracy.....+/- 0.25% Best Fit Straight Line (note 2)
Non-Repeatability.....+/- 0.02% Full Scale
Output (tolerance).....2 mV/V (nominal)
Operation.....Compression
Resolution.....Infinite

Environmental

Temperature, Operating.....-70° to 250° F
Temperature, Compensated.....70° to 160° F
Temperature, Storage.....-100° to 300° F
Temperature, Effect
Zero.....0.005% F.S./° F
Span.....0.005% F.S./° F

Electrical

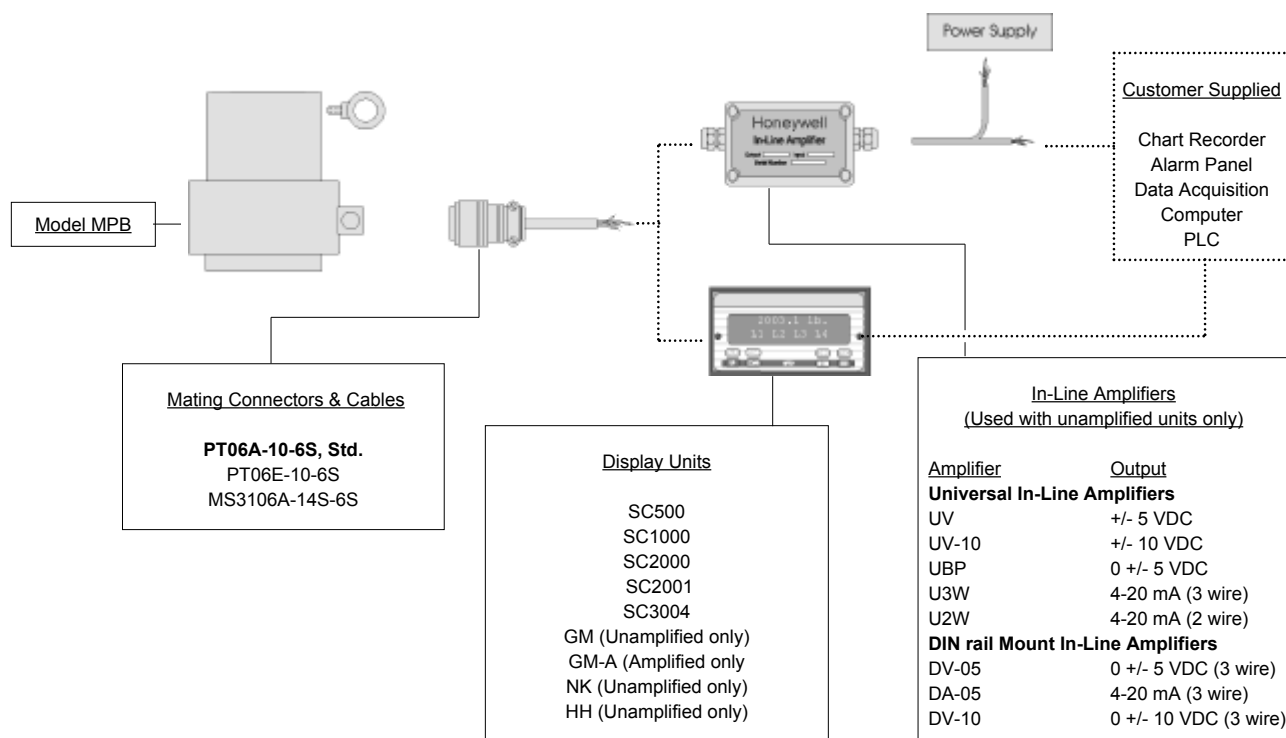
Strain Gage Type.....Bonded Foil
Excitation (calibration).....10 VDC
Insulation Resistance.....5,000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....350 Ohms (nominal)
Zero Balance (tolerance).....+/- 1% of Full Scale
Shunt Calibration Data.....Included
Electrical Termination (std)
1 to 5 tons.....Cable
10 to 1,000 tons.....Connector

Model MPB

Mechanical

Maximum Allowable Load.....150% F.S. (note 3)
 Material.....All Welded Stainless Steel
 Life Cycles (approx.).....1 million cycles

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2a	Voltage Output Option 2b	Vehicle Voltage Output 2c	Vehicle Voltage Output 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Amp Option 2n (2N)***
Output Signal	0-5V	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	+/-15V or 26-32VDC	18-28 VDC	15-28 VDC	22-32 VDC	9-32 VDC	9-28 VDC
Input Power (Current)	45 mA	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B (-) Output/ Supply C (-) Supply D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B (-) Output/ Supply C (-) Supply D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B (-) Output C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Br (-) Supply O (-) Output/ Supply G (+) Output B Shunt Cal 1 Y Shunt Cal 2	R (+) Supply Br (-) Supply O (-) Output/ Supply G (+) Output B Shunt Cal 1 Y Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl Supply Return G (+) Output W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

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Model MPB

Options

	Built from Scratch
Load Range	1; 2.5; 5; 10; 25; 50; 100; 250; 500; 1000 tons
Temperature Compensation	1a. 60° to 160° F
	1b. 30° to 130° F
	1c. 0° to 185° F
	1d. -20° to 130° F
	1e. -20° to 200° F
	1f. 70° to 250° F
	1g. 70° to 325° F
	1h. 70° to 400° F
	1i. -65° to 250° F
	1j. 0° to 50° F
	1k. -20° to 85° C
	1m. -25° to 110° C
Internal Amplifiers (note 7)	2u. Unamplified, mV/V output
	2a. 4 wire 0-5VDC output
	2b. 4 wire +/- 5VDC output
	2c. 0-5VDC
	2j. 4-20mA (3-wire) output
	2k. 4-20mA (2-wire)
	2t. 0-10 VDC output
	2n(2N). 4-20mA (2-wire) Intrinsically safe
Electrical Termination	6e. Integral cable: Teflon (1 to 5 ton range)
	6b. MS3102E-14S-6P connector (10 -1000 ton range) (note 5)
	6a. Bendix PTIH-10-6P (or equivalent) 6 pin (max. 250° F)
	6f. Integral cable: PVC (-20° to 160°F)
	6g. Integral cable: Neoprene (0° to 180°F) (note 6)
	6i. Integral underwater cable (max. 180°F) (note 6)
	6j. 1/2-14 conduit fitting
	6q. Integral cable: Polyurethane
	6v. Phoenix connector on end of cable
	15d. Connector on end of cable
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation
Shunt Calibration	8a. Precision Internal Resistor (max. 250°F)
Bridge Type	11a. Square bridge 11c. Square & symmetrical bridge 31a. Dual Bridge
Bridge Resistance	12b. 5,000 Ohm (foil) (max. 250°F)
Special Calibration	30a. Positive in compression, compression testing only
	9a. 10 point (5 up/5 down) 20% increments @ 70°F
	9b. 20 point (10 up/10 down) 10% increments @ 70°F
	9c. A.S.T.M. E-74 Calibration
	9e. CE mark
	30c. Negative in compression, compression testing only
Shock & Vibration	44a. Shock & vibration resistance
Interfaces	53e. Signature calibration (note 5) 53t. T.E.D.S. IEEE 1451.4 Module (note 8)

Supplied as standard

Range Codes

Range	Range Code
1 ton	DL
2.5 tons	DR
5 tons	DV
10 tons	EL
25 tons	EP
50 tons	ET
100 tons	FL
250 tons	FR
500 tons	FT
1,000 tons	FV

Special Customer Requirements (Consult Factory)

Amplified Output
 Cable Orientation
 Different Cable Lengths
 Different Electrical Connectors
 Different Materials
 Different Threads
 Dual Bridge
 ESD
 Fatigue Rating
 High Resistance Bridges
 Lightning Protection
 OEM Labels
 Operational Temp -200° F to 400° F
 Radiation Resistant
 Special Electrical O/P
 Special TC

Notes

- For standard configuration with spherical radius, a hardened surface is recommended to maintain the best loading conditions. RC42 is recommended minimum hardness. Bearing lubricant at loading interface recommended for maximum life.
- Accuracies stated are expected for Best Fit Straight Line for all errors including linearity, hysteresis and non-repeatability thru zero.
- Allowable Maximum Loads- Maximum load to be applied without damage (note 4).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Special Wiring Code.
- Not available with option 1e, 1f, 1g, or 1i.
- Amplifier options not available with low ranges. Consult factory.
- Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BL515** **ET** **1j**
 Order Code Range Code Options Code

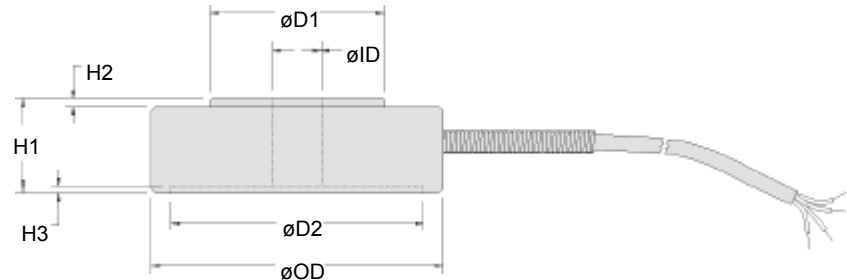
Model D Thru-Hole Load Cell

Order Code (see below)

- 150 g to 30,000 lb.
- Thru-Hole Design
- Flexible Design



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Range/ Frame	Order Code	øOD (in.)	øID (in.)	H1 (in.)	H2 (in.)	H3 (in.)	øD1 (in.)	øD2 (in.)
150; 250; 500; 1000 g	BL912	0.50	0.10	0.15	0.02	0.01	0.20	0.45
5; 10 lb.	BL912	1.00	0.20	0.28	0.03	0.02	0.26	0.85
25; 50; 100 lb.	BL912	1.00	0.20	0.28	0.03	0.02	0.36	0.85
Frame A (100 to 2000 lb.)	BL913	1.50	See below	0.50	0.05	0.03	0.50	1.21
Frame B (250 to 10,000 lb.)	BL914	2.00	See below	0.63	0.06	0.03	0.88	1.68
Frame C (2000 to 30,000 lb.)	BL915	3.00	See below	1.00	0.08	0.03	1.70	2.46

Listed above are four different order codes; BL912, BL913, BL914, BL915. The frame size selection guide below indicates that with a single shell size (outside diameter), different thru holes are available for order codes BL913, BL914 and BL915 (frames A, B, and C, respectively). To choose a product, first select the desired load capacity. Then, if applicable, choose the desired inner diameter and an appropriate frame size. For example, a 250 lb. load cell is available in the small frame size (A) with a nominal thru hole size of 1/8" (P), 3/16" (Q), 1/4" (R) or 3/8" (S) diameter, or in the medium frame size (B) with thru hole sizes up to 5/8" (V). We manufacture the actual hole dimensions to provide some clearance; for example the 1/8" (P) dimension, the actual dimension is 0.128".

Hole Letters	P	Q	R	S	T	V	W	Y	Z
øID (nominal)	1/8"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"
øID (actual)	0.128 in.	0.193 in.	0.266 in.	0.391 in.	0.532 in.	0.656 in.	0.781 in.	1.032 in.	1.281 in.
100 lb.	A	A	A	A	N/A	N/A	N/A	N/A	N/A
250 lb.	A or B	A or B	A or B	A or B	B	B	N/A	N/A	N/A
500 lb.	A or B	A or B	A or B	A or B	B	B	N/A	N/A	N/A
1000 lb.	A or B	A or B	A or B	B	B	B	N/A	N/A	N/A
2000 lb.	A, B, or C	A, B, or C	A, B, or C	B or C	B or C	B or C	C	C	C
3000 lb.	B or C	B or C	B or C	B or C	B or C	C	C	C	C
5000 lb.	B or C	B or C	B or C	B or C	B or C	C	C	C	C
7500 lb.	B or C	B or C	B or C	B or C	B or C	C	C	C	C
10,000 lb.	B or C	B or C	B or C	B or C	B or C	C	C	C	C
15,000 lb.	C	C	C	C	C	C	C	C	C
20,000 lb.	C	C	C	C	C	C	C	C	C
30,000 lb.	C	C	C	C	C	C	C	C	C

Performance

Load Ranges.....	150 g to 30,000 lb.
Linearity (max.).....	+/- 0.5% Full Scale
Hysteresis (max.).....	+/- 0.5% Full Scale
Non-Repeatability (max.).....	+/- 0.1% Full Scale
Output (tolerance)	
150 to 1,000 g.....	20 mV/V (nominal)
5 to 30,000 lb.....	2 mV/V (nominal)
Operation.....	Compression
Resolution.....	Infinite

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Model D

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero	
150 to 1000 g.....	0.01% F.S./° F
5 to 30,000 lb.....	0.005% F.S./° F
Span	
150 to 1000 g.....	0.02% F.S./° F
5 to 30,000 lb.....	0.010% F.S./° F

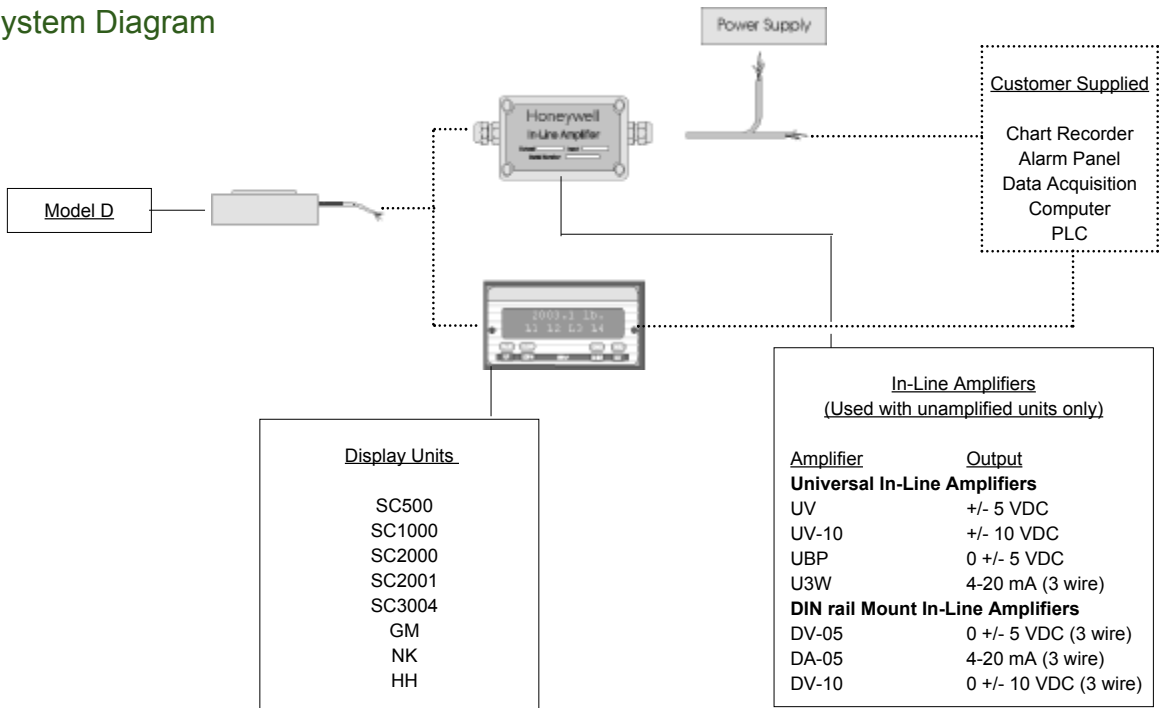
Electrical

Strain Gage Type	
150 to 1000 g.....	Semiconductor
5 to 30,000 lb.....	Bonded Foil
Excitation (calibration)	
150 to 1000 g.....	5 VDC
5 to 30,000 lb.....	10 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance)	
150 to 1000 g.....	500 Ohms (nominal)
5 to 30,000 lb.....	350 Ohms (nominal)
Zero Balance (tolerance).....	+/- 1% of Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std).....	Teflon Cable (5 ft.)

Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	(note 4)
Material.....	Stainless Steel
Life Cycles (approx.).....	>10 million cycles
Deflection Full Scale.....	(note 4)
Natural Frequency.....	(note 4)

Typical System Diagram



Range Codes

Range	Range Code	Range	Range Code
150 g	AL	500 lb.	CR
250 g	AN	1000 lb.	CV
500 g	AP	2000 lb.	DL
1000 g	AR	3000 lb.	DN
5 lb.	AT	5000 lb.	DR
10 lb.	AV	7500 lb.	DT
25 lb.	BL	10,000 lb.	DV
50 lb.	BN	15,000 lb.	EJ
100 lb.	BR	20,000 lb.	EL
250 lb.	CN	30,000 lb.	EN

Model D

Options

	Built to Order
Load Range	150 g to 30,000 lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1i. -65° to 250° F 1g. 70° to 325° F (note 3) 1h. 70° to 400° F (note 3)
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral Cable: Teflon (5 ft.) 6a. Bendix PTIH-10-6P -(or equivalent) 6 pin (max. 250°F) on end of cable 6v. Phoenix connector on end of cable 6i. Integral underwater cable (note 6)
Electrical Connector Orientation	15d. Connector on end of cable (note 5)
Load Direction	30a. Positive in compression, compression testing only 30c. Negative in compression, compression testing only
Shock & Vibration	44a. Shock rated wiring
Interfaces	53s. Signature Calibration (note 5) 53t. T.E.D.S. IEEE 1451.4 Module (note 7)

 Supplied as standard

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation rated
Different cable lengths
Custom threads
Increased fatigue life
Custom cable exit
Alternate cable materials
Custom interior/ outer diameter
Thru mounting holes
Flange mount
Integral Connector

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2). Loads described allow for 100% full scale axial loading with the bending loads specified. Torque loading maximum is without axial or other load. For any other combination consult factory.
2. Without Damage- loading to this level will not cause excessive zero shift of performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Only for ranges greater than or equal to 5 lb.
4. Varies by features selected, consult factory.
5. Be sure to specify electrical termination option 6a or 6v in options code. For custom connector, consult factory.
6. Dimension "H1" may increase with this option, consult factory. Not available with options 1c, 1e, 1f, 1g, 1h, or 1i.
7. Only available with integral cable units.

How to Order

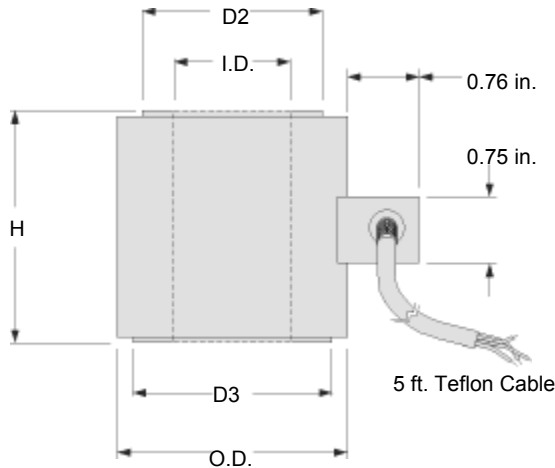
Combine the order code, the range code and the options code.

Sample Code: **BL913** **BR** **P** **1b**
Order Code Range Code Thru Hole dia. Options Code

Model TH Thru-Hole Load Cell

Order Code BL911

- 15,000 to 200,000 lb.
- Thru-Hole Design
- Compact Column Construction
- mV/V Output
- 0.25% Linearity



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Dimensions

Range (lb.)	H (in.)	O.D. (in.)	I.D. (in.)	D2 (in.)	D3 (in.)
15,000; 20,000	1.50	1.50	0.76	1.06	1.15
30,000; 50,000	2.00	2.00	1.01	1.50	1.50
75,000; 100,000	2.50	2.50	1.26	1.88	1.88
150,000	3.00	3.00	1.51	2.31	2.44
200,000	3.50	3.50	1.76	2.75	3.50

Performance

Load Ranges.....	15,000 to 200,000 lb.
Linearity (max.).....	+/- 0.25% Full Scale
Hysteresis (max.).....	+/- 0.25% Full Scale
Non-Repeatability (max.).....	+/- 0.1% Full Scale
Tolerance on Output.....	2 mV/V Nominal
Operation.....	Compression
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Storage Temperature.....	-100° to 300° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Zero Balance.....	+/- 1% Full Scale
Electrical Termination (std).....	Teflon cable (5 ft.)

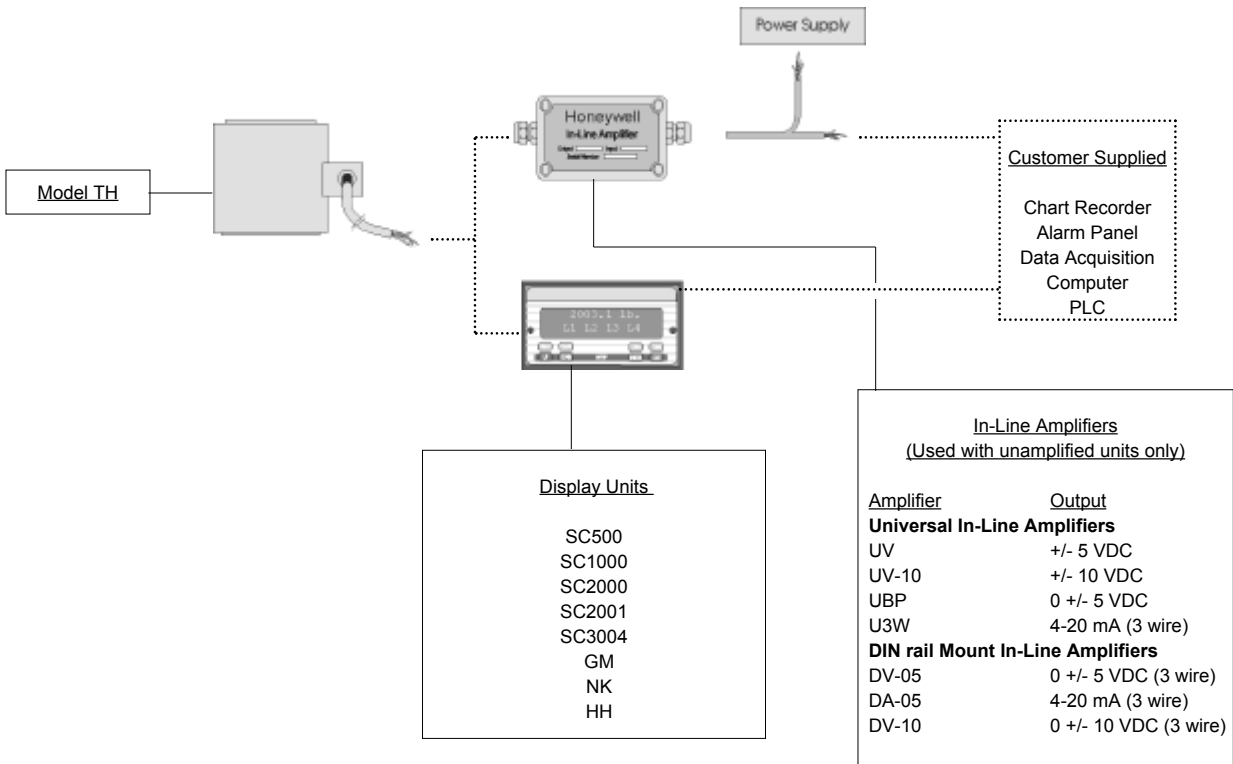
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Case Material.....	Stainless Steel
Deflection Full Scale.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection at Full Scale (in.)	Ring Frequency (kHz)	Weight (lbs.)
15,000	0.001	35	0.4
20,000	0.001	35	0.4
30,000	0.002	17	1.0
50,000	0.002	17	1.0
75,000	0.003	14	2.0
100,000	0.003	14	2.0
150,000	0.006	12	2.5
200,000	0.004	10	6

Typical System Diagram



Notes:

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

Range Codes

Range	Range Code
15,000 lb.	EJ
20,000 lb.	EL
30,000 lb.	EN
50,000 lb.	EP
75,000 lb.	ER
100,000 lb.	ET
150,000 lb.	FJ
200,000 lb.	FL

Options

	Build from Scratch
Load Range	15k, 20k, 30k, 50k, 75k, 100k, 150k, 200k
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral Cable: Teflon (5 ft.) 6a. Bendix PTIH-10-6P - 6 pin (max. 250°F) 6b. MS type connector 6f. Integral cable: PVC 6g. Integral cable: Neoprene (note 4) 6h. Integral cable: Silicone 6i. Integral underwater cable (note 4) 6j. 1/2-14 conduit fitting with 5' of 4 conductor PVC cable 6q. Integral cable: Polyurethane 6v. Phoenix connector on end of cable 15d. Connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 70°F 9b. 20 point (10 up/10 down) 10% increments @ 70°F 9c. A.S.T.M. E-74 calibration 30a. Positive in compression, compression testing only 30c. Negative in compression, compression testing only
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil)
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S IEEE 1451.4 Module

 Supplied as standard

Special Customer Requirements
(Consult Factory)

Amplified Output
Cable Orientation
Different Cable Lengths
Different Electrical Connectors
Different Materials
Different Threads
Dual Bridge
ESD
Fatigue Rating
High Resistance Bridges
Lightning Protection
OEM Labels
Enhanced Operational Temp
Radiation Resistant
Special Electrical O/P
Special TC

Notes

- 3. Option 6j may be used with options 6e thru 6i.
- 4. May not be used with options 1c, 1e, 1f, 1g, 1h or 1i.
- 5. Consult factory.

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model RM Rod End In-Line Tension Load Cell

Order Code (see table below)

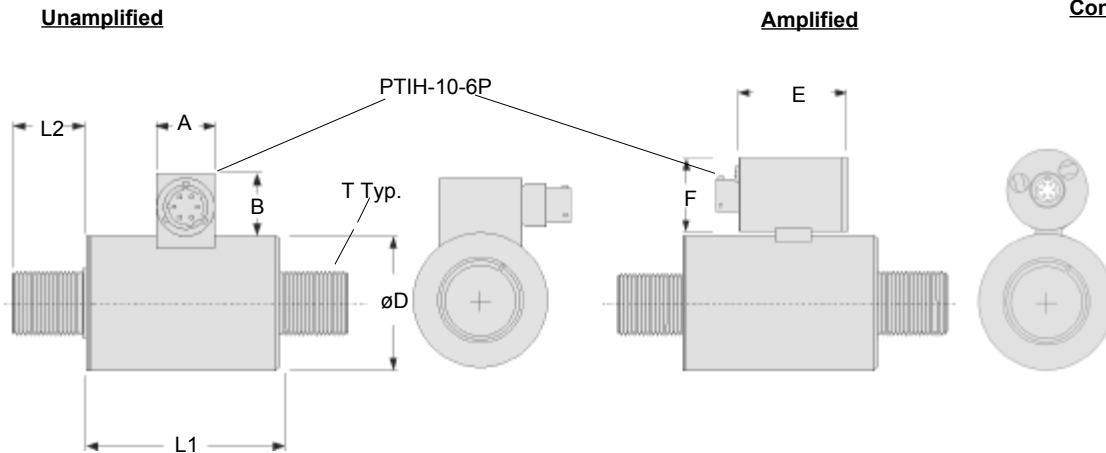
- 2000 to 200,000 lb.
- Hermetically Sealed
- 0-5 VDC or 4-20 mA Output Options
- 0.2% Linearity



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output



Dimensions

Order Code (Amplified/Unamp)	D (in.)	L1 (in.)	Unamplified only		L2 (in.)	Amplified only	
			A (in.)	B (in.)		E (in.)	F (in.)
AL413/AL613	1.50	2.60	0.75	0.82	see below	1.95	1.50
AL415/AL615	1.75	2.60	0.75	0.82	see below	1.95	1.50
AL417/AL617	2.50	3.05	0.75	0.82	see below	1.95	1.50

Range (lb.)

Thread Sizes and Option Codes

	13a	13b	13c	13d	13e
	1/2-20 UNF	3/4-16 UNF	7/8-14 UNF	1-14 UNF	1 1/2-12 UNF
2000 to 5000	AL413	AL413	AL413	AL415	AL417
7500 to 15,000		AL415	AL415	AL415	AL417
20,000			AL415	AL415	AL417
30,000 to 50,000					AL417
L2 (in.)	0.95	0.95	0.95	1.25	1.5

Non-standard Ranges Order Code AL411

Range (lb.)	Thread Type	D (in.)	L1 (in.)	L2 (in.)
75,000 to 100,000	2 1/2-12 UNF	3.50	4.00	3.00
150,000 to 200,000	3 1/2-8 UNF	4.50	5.00	4.00

Performance

Load Ranges.....	2000 to 200,000 lb. (note 1)
Linearity	
100 to 1000 lb.....	+/- 0.2% Full Scale
2000 to 50,000 lb.....	+/- 0.15% Full Scale
75,000 to 200,000 lb.....	+/- 0.2% Full Scale
Hysteresis	
100 to 1000 lb.....	+/- 0.2% Full Scale
2000 to 50,000 lb.....	+/- 0.15% Full Scale
75,000 to 200,000 lb.....	+/- 0.2% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Output.....	2mV/V
Operation.....	Tension
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

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Model RM

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	up to 15 VDC or AC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms
Zero Balance (tolerance).....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std)	
2000 to 50,000 lb.....	PTIH-10-6P or equivalent (Hermetic stainless)
75,000 to 200,000 lb.....	MS3102E-14S-6P
Mating Connector (not incl.)	
2000 to 50,000 lb.....	PT06A-10-6S or equivalent
75,000 to 200,000 lb.....	MS3106A-14S-6S or equivalent

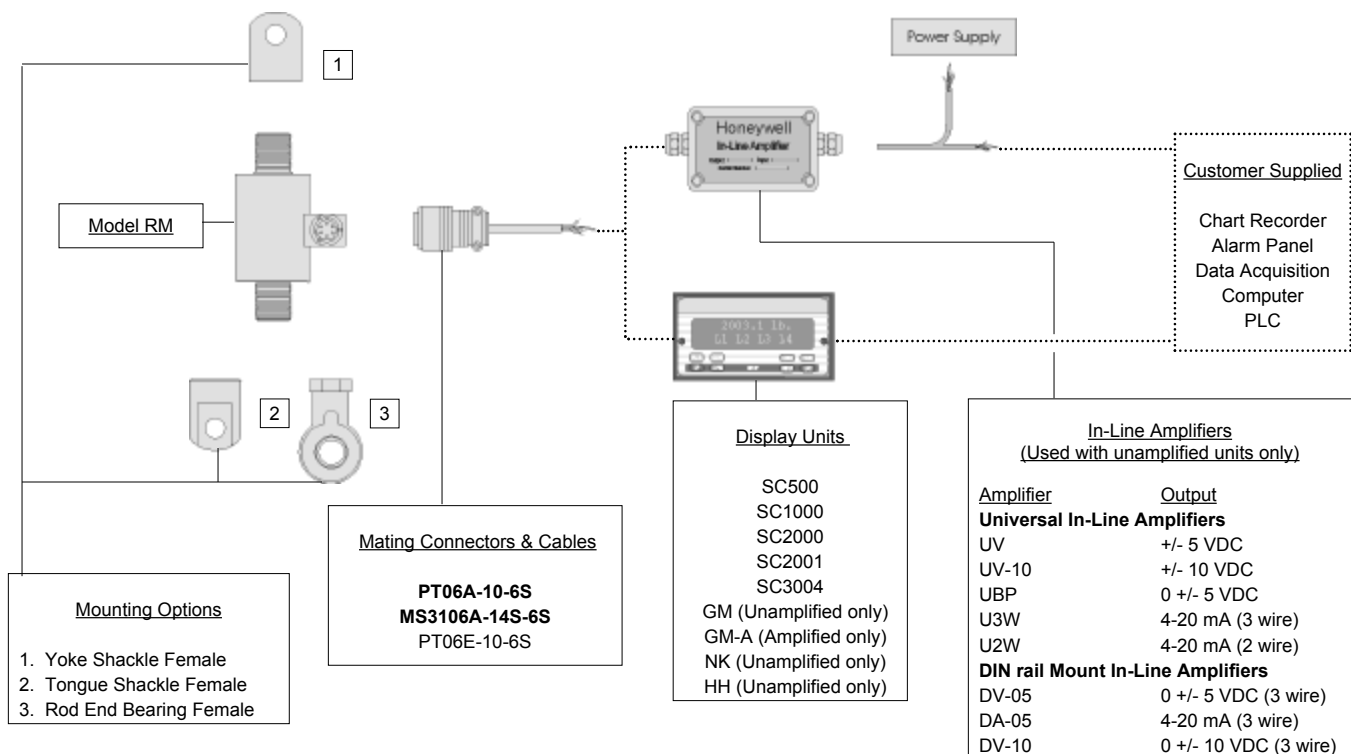
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material.....	Stainless Steel
Deflection.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringng Frequency (Hz)	Weight (lb)
2,000	0.003	5,000	1.0
3,000	0.003	5,000	1.0
4,000	0.003	5,100	1.0
5,000	0.003	5,200	1.0
7,500	0.004	7,500	1.5
10,000	0.004	7,600	1.5
15,000	0.005	8,000	1.5
20,000	0.005	9,800	1.5
30,000	0.005	8,000	4.2
50,000	0.005	8,200	4.2
75,000 to 100,000	0.006	5,000	16.5
150,000 to 200,000	0.007	4,200	35.3

Typical System Diagram



Model RM

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 5)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 5) (note 6) (note 7)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code
2,000 lb.	DJ
3,000 lb.	DN
4,000 lb.	DP
5,000 lb.	DR
7,500 lb.	DT
10,000 lb.	DV
15,000 lb.	EJ
20,000 lb.	EL
30,000 lb.	EN
50,000 lb.	EP
75,000 lb.	ER
100,000 lb.	ET
150,000 lb.	FJ
200,000 lb.	FL

Options

	Build from Scratch
Load Range	2k, 3k, 4k, 5k, 7.5k, 10k, 15k, 20k, 30k, 50k, 75k, 100k, 150k, 200k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6b. MS type connector mates with MS3106- 14S 6 pin (max. 160°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral cable: Polyurethane 6v. Phoenix connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 9)

 Supplied as standard

Special Customer Requirements (Consult Factory)

Cable Orientation
 Different Cable Lengths
 Different Electrical Connectors
 Different Materials
 Different Threads
 Dual Bridge
 ESD
 Fatigue Rating
 High Resistance Bridges
 Lightning Protection
 OEM Labels
 Enhanced Operational Temp
 Radiation Resistant
 Special Electrical O/P
 Special TC

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
4. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
5. No mating connector necessary for cable option.
6. Not available with options 1c, 1e or 1f.
7. Only available with options 2b or 2c.
8. Not available with amplified options.
9. Consult factory for TEDS availability with amplified models.

How to Order

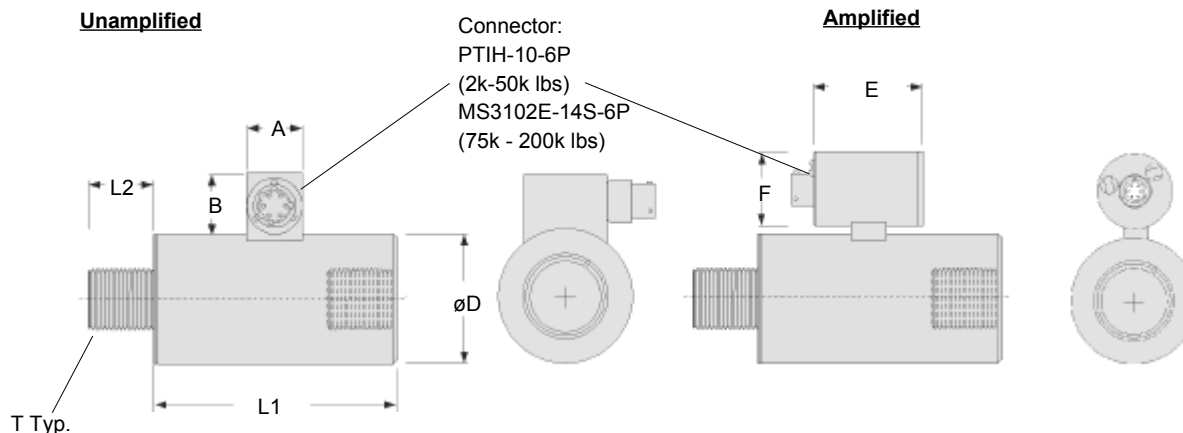
Combine the order code, the range code and the options code.

Sample Code: **AL413** **DJ** **6g**
 Order Code Range Code Options Code

Model RH Rod End In-Line Tension Load Cell

Order Code (see table below)

- 2,000 to 200,000 lb.
- Hermetically Sealed
- 0-5 VDC or 4-20 mA Output Options
- 0.2% Linearity



Dimensions

Order Code (Unamplified/Amplified)	D (in.)	L1 (in.)	Unamplified only A (in.) B (in.)		L2 (in.)	Amplified only E (in.) F (in.)	
AL419/AL619	1.50	4.25	0.75	0.82	see below	1.95	1.50
AL420/AL620	1.75	5.00	0.75	0.82	see below	1.95	1.50
AL424/AL624	2.50	7.00	0.75	0.82	see below	1.95	1.50

Range (lb.)

Thread Sizes and Option Codes

	13a	13b	13c	13d	13e
	1/2-20 UNF	3/4-16 UNF	7/8-14 UNF	1-14 UNF	1 1/2-12 UNF
2000 to 5000	AL419/AL619	AL419/AL619			
7500 to 15,000		AL420/AL620	AL420/AL620	AL420/AL620	AL424/AL624
20,000			AL420/AL620	AL420/AL620	AL424/AL624
30,000 to 50,000					AL424/AL624
L2 (in.)	0.75	0.95	0.95	1.0	1.5

Non-standard Ranges Order Code AL425 (unamplified only)

Range (lb.)	Thread Type	D (in.)	L1 (in.)	L2 (in.)
75,000 to 100,000	2 1/2-12 UNF	4.50	13.50	3.50
150,000 to 200,000	3 1/2-8 UNF	5.50	18.00	4.50

Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Performance

Load Ranges.....	2,000 to 200,000 lb.
Linearity	
100 to 1000 lb.....	+/- 0.2% Full Scale
2000 to 50,000 lb.....	+/- 0.15% Full Scale
75,000 to 200,000 lb.....	+/- 0.2% Full Scale
Hysteresis	
100 to 1000 lb.....	+/- 0.2% Full Scale
2000 to 50,000 lb.....	+/- 0.15% Full Scale
75,000 to 200,000 lb.....	+/- 0.2% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Output.....	2mV/V
Operation.....	Tension
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

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Model RH

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	up to 15 VDC or AC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms
Zero Balance (tolerance).....	+/- 1% of Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std)	
2000 to 50,000 lb.....	PTIH-10-6P or equivalent (Hermetic stainless)
75,000 to 200,000 lb.....	MS3102E-14S-6P
Mating Connector (not incl.)	
2000 to 50,000 lb.....	PT06A-10-6S or equivalent
75,000 to 200,000 lb.....	MS3106A-14S-6S or equivalent

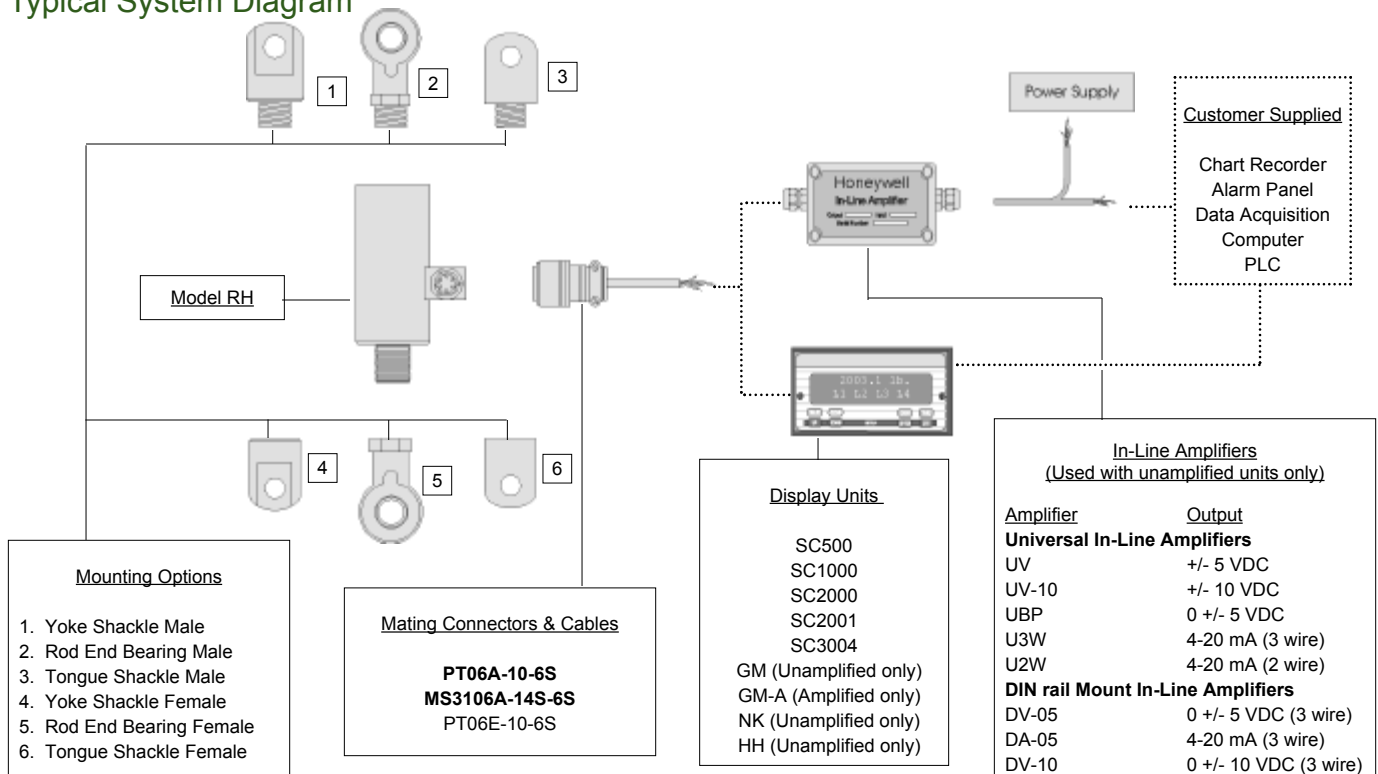
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material.....	Stainless Steel
Deflection Full Scale.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringling Frequency (Hz)	Weight (lb)
2,000	0.003	5,000	1.1
3,000	0.003	5,000	1.1
4,000	0.003	5,100	1.1
5,000	0.003	5,200	1.1
7,500	0.004	7,500	1.8
10,000	0.004	7,600	1.8
15,000	0.005	8,000	1.8
20,000	0.005	9,800	1.8
30,000	0.005	8,000	4.4
50,000	0.005	8,200	4.4
75,000 to 100,000	0.006	5,000	35.3
150,000 to 200,000	0.007	4,200	39.7

Typical System Diagram



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Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code
2,000 lb.	DJ
3,000 lb.	DN
4,000 lb.	DP
5,000 lb.	DR
7,500 lb.	DT
10,000 lb.	DV
15,000 lb.	EJ
20,000 lb.	EL
30,000 lb.	EN
50,000 lb.	EP
75,000 lb.	ER
100,000 lb.	ET
150,000 lb.	FJ
200,000 lb.	FL

Model RH

Options

	Build from Scratch
Load Range	2k, 3k, 4k, 5k, 7.5k, 10k, 15k, 20k, 30k, 50k, 75k, 100k, 150k, 200k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6b. MS type connector mates with MS3106- 14S 6 pin (max. 160°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral cable: Polyurethane 6v. Phoenix connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 9)

Supplied as standard

Special Customer Requirements (Consult Factory)

Cable Orientation
 Different Cable Lengths
 Different Electrical Connectors
 Different Materials
 Different Threads
 Dual Bridge
 ESD
 Fatigue Rating
 High Resistance Bridges
 Lightning Protection
 OEM Labels
 Enhanced Operational Temp
 Radiation Resistant
 Special Electrical O/P
 Special TC

Notes

- Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Not available with options 1c, 1e or 1f.
- Only available with options 2b or 2c.
- Not available with amplified options.
- Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL419** **DJ** **6g**
 Order Code Range Code Options Code

1-888-282-9891

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Model RF Rod End In-Line Tension Load Cell

Order Code (see table below)

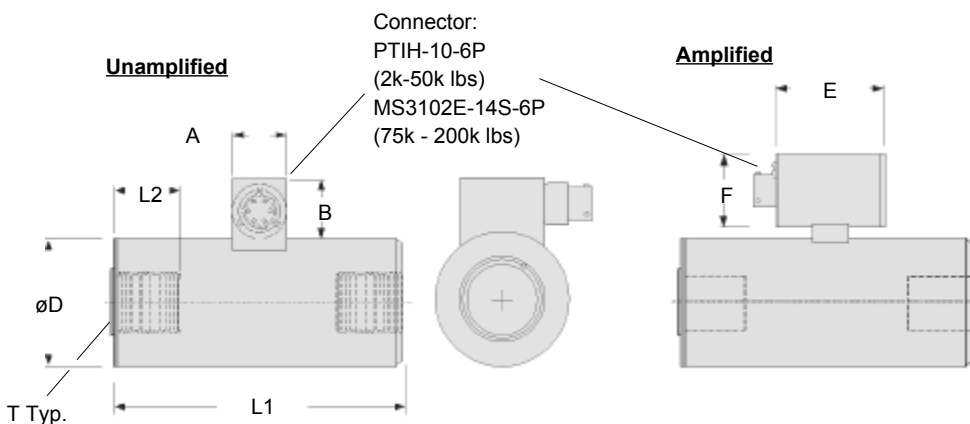
- 2000 to 200,000 lb.
- Hermetically Sealed
- 0-5 VDC or 4-20 mA Output Options
- 0.2% Linearity



Wiring Code

Connector/ Unamplified (Std.)

A	(+) Excitation
B	(+) Excitation
C	(-) Excitation
D	(-) Excitation
E	(-) Output
F	(+) Output



Dimensions

Order Code (Amplified/Unamp)	D (in.)	L1 (in.)	Unamplified only A (in.) B (in.)		L2 (in.)	Amplified only E (in.) F (in.)	
AL414/AL614	1.50	4.25	0.75	0.82	see below	1.95	1.50
AL416/AL616	1.75	5.00	0.75	0.82	see below	1.95	1.50
AL418/AL618	2.50	7.00	0.75	0.82	see below	1.95	1.50

Range (lb.)

Thread Sizes and Option Codes

	13a	13b	13c	13d	13e
	1/2-20 UNF	3/4-16 UNF	7/8-14 UNF	1-14 UNF	1 1/2-12 UNF
2000 to 5000	AL414	AL414			
7500 to 15,000		AL416	AL416	AL416	AL418
20,000			AL416	AL416	AL418
30,000 to 50,000					AL418
L2 (in.)	0.75	0.95	0.95	1.0	1.5

Non-standard Ranges Order Code AL412

Range (lb.)	Thread Type	D (in.)	L1 (in.)	L2 (in.)
75,000 to 100,000	2 1/2-12 UNF	4.50	13.50	3.50
150,000 to 200,000	3 1/2-8 UNF	5.50	18.00	4.50

Performance

Load Ranges.....	2,000 to 200,000 lb.
Linearity	
100 to 1000 lb.....	+/- 0.2% Full Scale
2000 to 50,000 lb.....	+/- 0.15% Full Scale
75,000 to 200,000 lb.....	+/- 0.2% Full Scale
Hysteresis	
100 to 1000 lb.....	+/- 0.2% Full Scale
2000 to 50,000 lb.....	+/- 0.15% Full Scale
75,000 to 200,000 lb.....	+/- 0.2% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Output.....	2mV/V
Operation.....	Tension
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

1-888-282-9891

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Model RF

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Excitation (acceptable)	up to 15 VDC or AC
Insulation Resistance	5000 Megohms @ 50 VDC
Bridge Resistance (tolerance)	350 Ohms
Zero Balance (tolerance)	+/- 1% of Full Scale
Shunt Calibration Data	Included
Electrical Termination (std)	
2000 to 50,000 lb.	PTIH-10-6P or equivalent (Hermetic stainless)
75,000 to 200,000 lb.	MS3102E-14S-6P
Mating Connector (not incl.)	
2000 to 50,000 lb.	PT06A-10-6S or equivalent
75,000 to 200,000 lb.	MS3106A-14S-6S or equivalent

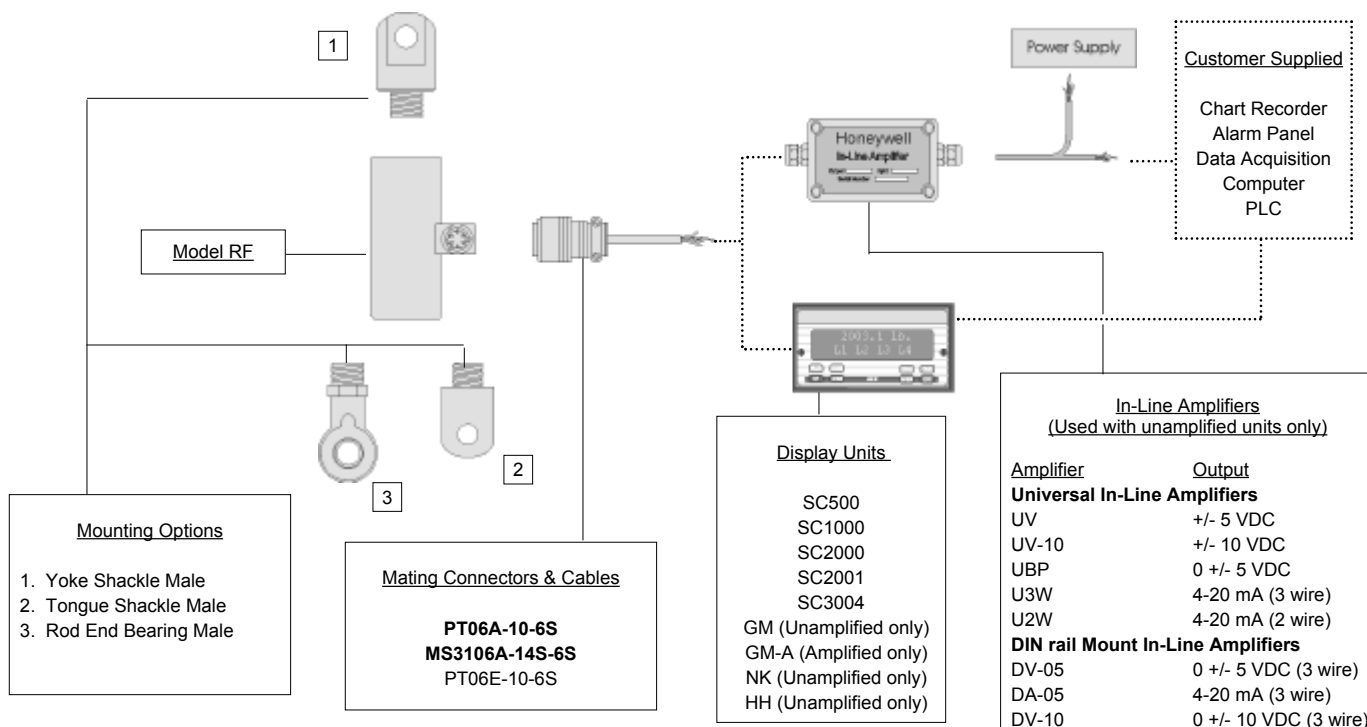
Mechanical

Maximum Allowable Load	150% F.S. (note 1)
Weight	See table
Material	Stainless Steel
Deflection Full Scale	See table
Natural Frequency	See table

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringling Frequency (Hz)	Weight (lb)
2,000	0.003	5,000	1.3
3,000	0.003	5,000	1.3
4,000	0.003	5,100	1.3
5,000	0.003	5,200	1.3
7,500	0.003	8,000	1.6
10,000	0.003	8,500	1.6
15,000	0.003	9,000	1.6
20,000	0.004	9,000	1.7
30,000	0.004	8,000	3.5
50,000	0.005	8,000	3.7
75,000 to 100,000	0.006	3,500	39.7
150,000 to 200,000	0.007	3,000	72.8

Typical System Diagram



1-888-282-9891

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Model RF

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code
2,000 lb.	DJ
3,000 lb.	DN
4,000 lb.	DP
5,000 lb.	DR
7,500 lb.	DT
10,000 lb.	DV
15,000 lb.	EJ
20,000 lb.	EL
30,000 lb.	EN
50,000 lb.	EP
75,000 lb.	ER
100,000 lb.	ET
150,000 lb.	FJ
200,000 lb.	FL

Options

	Build from Scratch
Load Range	2k, 3k, 4k, 5k, 7.5k, 10k, 15k, 20k, 30k, 50k, 75k, 100k, 150k, 200k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6b. MS type connector mates with MS3106- 14S 6 pin (max. 160°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral cable: Polyurethane 6v. Phoenix connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 9)

Supplied as standard

Special Customer Requirements (Consult Factory)

Cable Orientation
 Different Cable Lengths
 Different Electrical Connectors
 Different Materials
 Different Threads
 Dual Bridge
 ESD
 Fatigue Rating
 High Resistance Bridges
 Lightning Protection
 OEM Labels
 Enhanced Operational Temp
 Radiation Resistant
 Special Electrical O/P
 Special TC

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
4. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
5. No mating connector necessary for cable option.
6. Not available with options 1c, 1e or 1f.
7. Only available with options 2b or 2c.
8. Not available with amplified options.
9. Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL414** **DJ** **6g**
 Order Code Range Code Options Code

Model RGM Rod End In-Line Compression/ Tension Load Cell

Order Code AL426 (unamp); AL626 (amplified)

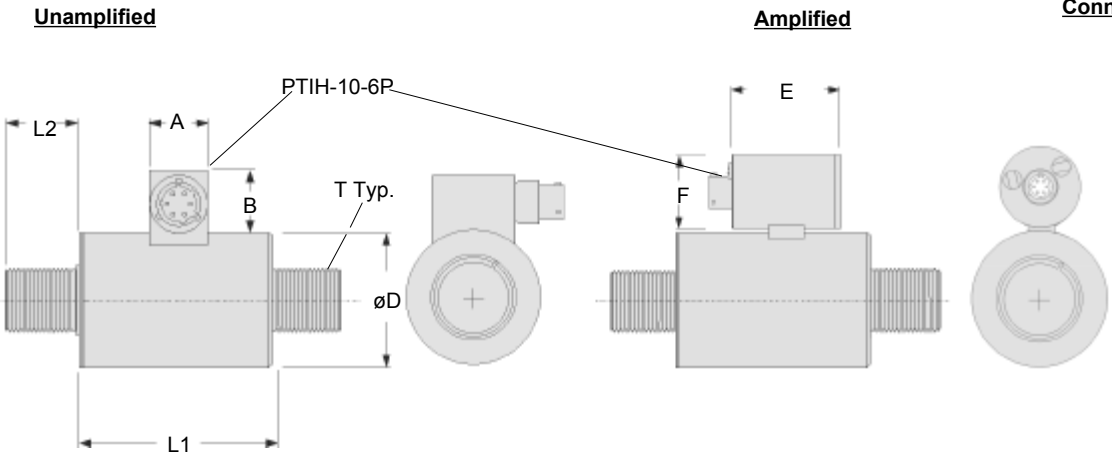
- 2000 to 50,000 lb.
- Hermetically Sealed
- 0-5 VDC or 4-20 mA Output Options
- Compression-Tension
- 0.25% Accuracy



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output



Dimensions

Range (lb.)	D (in.)	T	L2 (in.)	L1 (in.)	Unamplified only		Amplified only	
					A (in.)	B (in.)	E (in.)	F (in.)
2000 to 5000	1.75	3/4-16 UNF	0.95	2.63	0.75	0.82	1.95	1.50
10,000 to 15,000	2.50	1 1/2-12 UNF	1.75	3.50	0.75	0.82	1.95	1.50
25,000 to 50,000	3.50	2-12 UNF	2.25	3.50	0.75	0.82	1.95	1.50

Performance

Load Ranges.....2000; 3000; 4000; 5000; 10,000; 15,000; 25,000; 50,000 lb.
Accuracy.....+/- 0.25% Full Scale
Linearity.....+/- 0.25% Full Scale
Hysteresis.....+/- 0.25% Full Scale
Non-Repeatability.....+/- 0.05% Full Scale
Output (tolerance).....1mV/V (nominal)
Operation.....Tension/ Compression (note 10)
Resolution.....Infinite

Environmental

Temperature, Operating.....-65° to 250° F
Temperature, Compensated.....60° to 160° F
Temperature, Effect
Zero.....0.005% Full Scale/° F
Span.....0.005% Full Scale/° F

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....10 VDC
Excitation (acceptable).....up to 15 VDC or AC
Insulation Resistance.....5000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....700 Ohms
Zero Balance (tolerance).....+/- 3% Full Scale
Shunt Calibration Data.....Included
Electrical Termination (std).....PTIH-10-6P or equivalent (Hermetic stainless)

Mechanical

Maximum Allowable Load.....200% F.S. (note 1)
Weight.....See table (next page)
Material.....Stainless Steel
Life Cycles (approx.).....> 10 million cycles
Deflection Full Scale.....See table (next page)
Natural Frequency.....See table (next page)

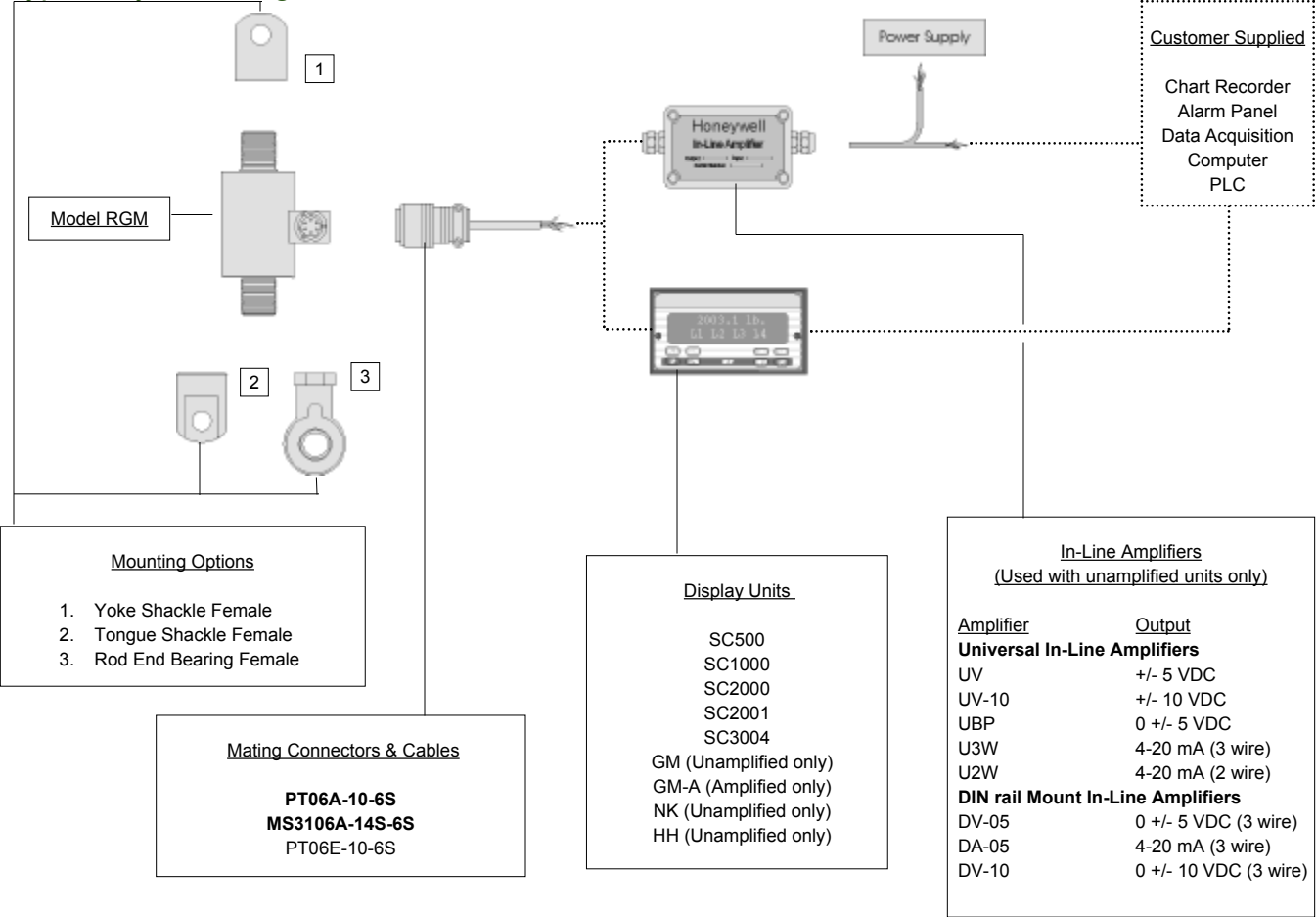
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Deflections and Ringing Frequencies

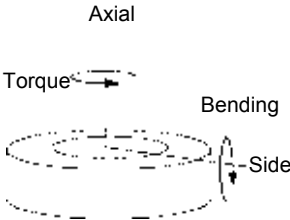
Capacity (lb.)	Deflection @ Full Scale (in.)	Ring Frequency (Hz)	Weight (grams)
2000	0.001	10,000	1.2
3000	0.001	12,000	1.2
5000	0.002	15,000	1.4
10,000	0.002	10,000	2.9
15,000	0.002	10,000	2.9
25,000	0.002	6,500	9.5
50,000	0.003	7,000	9.9

Typical System Diagram



Allowable Maximum Loads

(note 2)



Capacity (lb.)	Side Load (lb.) (% of Load Capacity)	Torque (lb.-in.) (% of Load Capacity)
2,000	20%	20%
3,000	20%	20%
5,000	20%	20%
10,000	20%	20%
15,000	20%	20%
25,000	20%	20%
50,000	20%	20%

Model RGM

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Range Codes

Range	Range Code
2,000 lb.	DJ
3,000 lb.	DN
4,000 lb.	DP
5,000 lb.	DR
10,000 lb.	DV
25,000 lb.	EM
50,000 lb.	EP

Model RGM

Options

	Build from Scratch
Load Range	2k, 3k, 4k, 5k, 10k, 15k, 25k, 50k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6b. MS type connector mates with MS3106- 14S 6 pin (max. 160°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral cable: Polyurethane 6v. Phoenix connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 9)

Supplied as standard

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
4. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
5. No mating connector necessary for cable option.
6. Not available with options 1c, 1e or 1f.
7. Only available with options 2b or 2c.
8. Not available with amplified options.
9. Consult factory for TEDS availability with amplified models.
10. Positive in compression; calibrated in compression only.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **AL426** **DJ** **6g**
Order Code Range Code Options Code

Special Customer Requirements (Consult Factory)

Cable Orientation
Different Cable Lengths
Different Electrical Connectors
Different Materials
Different Threads
Dual Bridge
ESD
Fatigue Rating
High Resistance Bridges
Lightning Protection
OEM Labels
Enhanced Operational Temp
Radiation Resistant
Special Electrical O/P
Special TC

Model RGH Rod End In-Line Compression-Tension Load Cell

Order Code AL427 (unamplified) AL627 (amplified)

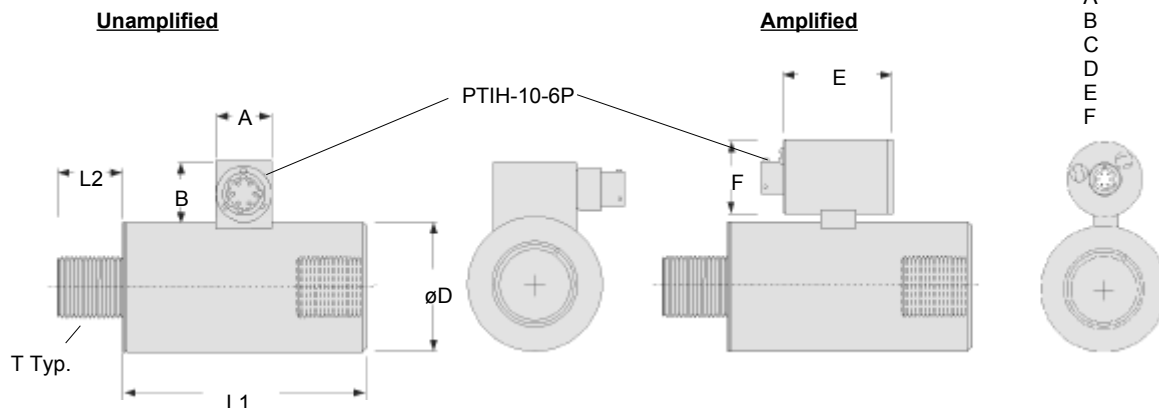
- 2000 to 50,000 lb.
- Hermetically Sealed
- 0-5 VDC or 4-20 mA Output Options
- Compression-Tension
- 0.25% Accuracy



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
B (+) Excitation
C (-) Excitation
D (-) Excitation
E (-) Output
F (+) Output



Dimensions

Range (lb.)	D (in.)	T	L2 (in.)	L1 (in.)	Unamplified only		Amplified only	
					A (in.)	B (in.)	E (in.)	F (in.)
2000 to 5000	1.75	3/4-16 UNF	0.95	2.63	0.75	0.82	1.95	1.50
10,000 to 15,000	2.50	1 1/2-12 UNF	1.75	4.50	0.75	0.82	1.95	1.50
25,000 to 50,000	3.50	2-12 UNF	2.25	5.75	0.75	0.82	1.95	1.50

Performance

Load Ranges.....	2000; 3000; 4000; 5000; 10,000; 15,000; 25,000; 50,000 lb.
Accuracy.....	0.25% Full Scale (note 1)
Linearity.....	+/- 0.25% Full Scale
Hysteresis.....	+/- 0.25% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Tolerance on Output.....	1mV/V nominal
Operation.....	Tension/ Compression
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

Electrical

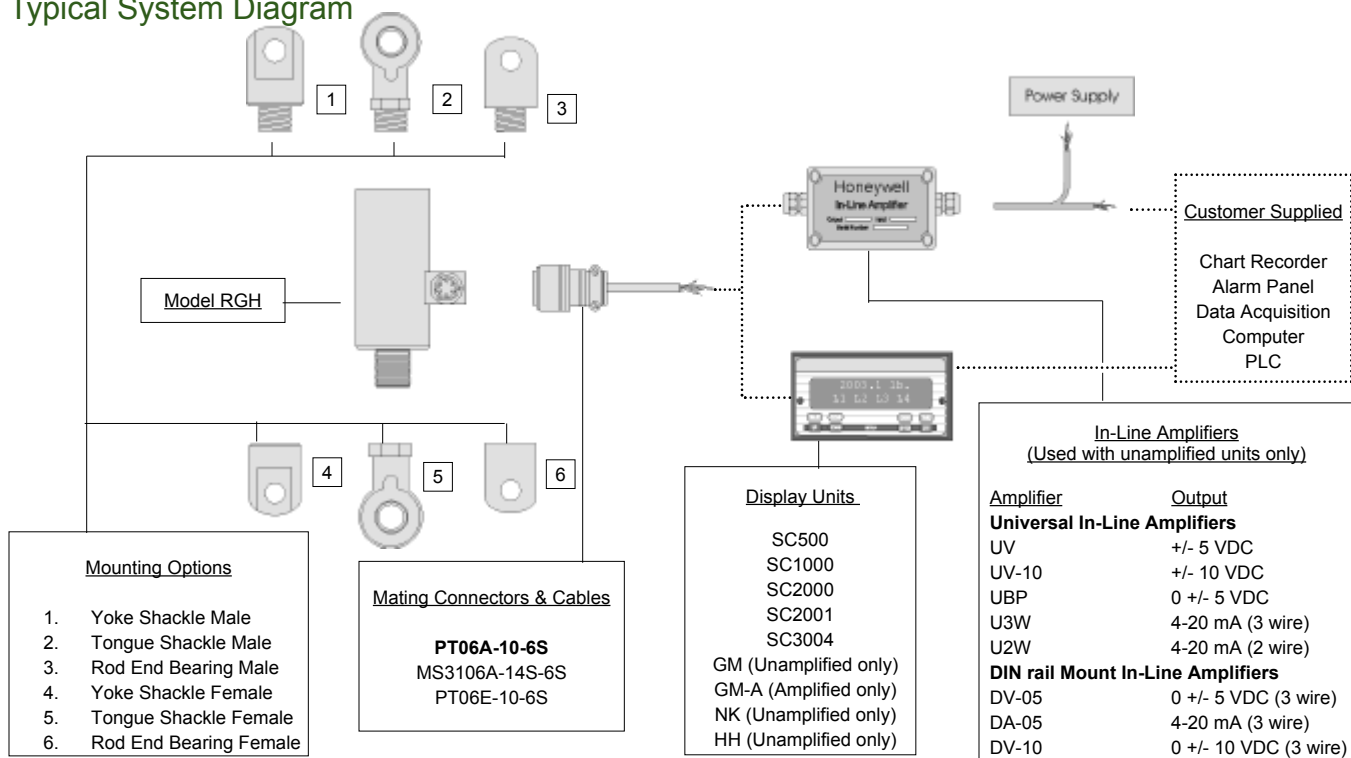
Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	up to 15 VDC or AC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	700 Ohms
Shunt Calibration Data.....	Included
Electrical Termination (std).....	PTIH-10-6P or equivalent (Hermetic stainless)

Mechanical

Maximum Allowable Load.....	200% F.S. (note 1)
Case Material.....	Stainless Steel
Deflection Full Scale.....	0.003 in.
Life Cycles (approx.).....	>10 Million Cycles

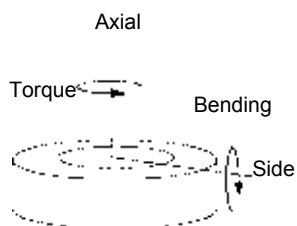
Model RGH

Typical System Diagram



Allowable Maximum Loads

(note 2)



Capacity (lb.)	Side Load (lb.) (% of Load Capacity)	Torque (lb.-in.) (% of Load Capacity)
2,000	20%	20%
3,000	20%	20%
5,000	20%	20%
10,000	20%	20%
15,000	20%	20%
25,000	20%	20%
50,000	20%	20%

Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Deflection @ Full Scale (in.)	Weight (lb)
2000	0.001	10,000	1.2
3000	0.001	12,000	1.2
5000	0.002	15,000	1.4
10,000	0.002	10,000	2.9
15,000	0.002	10,000	2.9
25,000	0.002	6,500	9.5
50,000	0.003	7,000	9.9

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Model RGH

Options

	Build from Scratch
Load Range	2k, 3k, 4k, 5k, 10k, 15k, 25k, 50k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6b. MS type connector mates with MS3106- 14S 6 pin (max. 160°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral cable: Polyurethane 6v. Phoenix connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 9)

 Supplied as standard

Range Codes

Range	Range Code
2,000 lb.	DJ
3,000 lb.	DN
4,000 lb.	DP
5,000 lb.	DR
10,000 lb.	DV
25,000 lb.	EM
50,000 lb.	EP

Special Customer Requirements (Consult Factory)

Cable Orientation
Different Cable Lengths
Different Electrical Connectors
Different Materials
Different Threads
Dual Bridge
ESD
Fatigue Rating
High Resistance Bridges
Lightning Protection
OEM Labels
Enhanced Operational Temp
Radiation Resistant
Special Electrical O/P
Special TC

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
4. O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
5. No mating connector necessary for cable option.
6. Not available with options 1c, 1e or 1f.
7. Only available with options 2b or 2c.
8. Not available with amplified options.
9. Consult factory for TEDS availability with amplified models.

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

Model RGF Rod End In-Line Compression-Tension Load Cell

Order Code AL428 (unamp); AL628 (amplified)

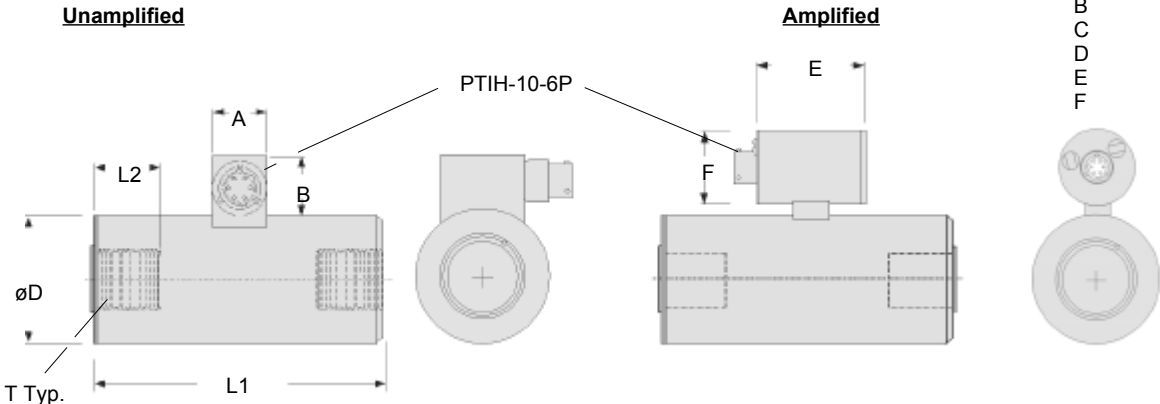
- 2000 to 50,000 lb.
- Hermetically Sealed
- 0-5 VDC or 4-20 mA Output Options
- Compression-Tension
- 0.25% Accuracy



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
B (+) Excitation
C (-) Excitation
D (-) Excitation
E (-) Output
F (+) Output



Dimensions

Range (lb.)	D (in.)	T	L2 (in.)	L1 (in.)	Unamplified only		Amplified only	
					A (in.)	B (in.)	E (in.)	F (in.)
2000 to 5000	1.75	3/4-16 UNF	0.95	3.56	0.75	0.82	1.95	1.50
10,000 to 15,000	2.50	1 1/2-12 UNF	1.75	6.12	0.75	0.82	1.95	1.50
25,000 to 50,000	3.50	2-12 UNF	2.25	8.00	0.75	0.82	1.95	1.50

Performance

Load Ranges.....	2000; 3000; 4000; 5000; 10,000; 15,000; 25,000; 50,000 lb.
Accuracy.....	0.25% Full Scale (note 1)
Linearity.....	+/- 0.25% Full Scale
Hysteresis.....	+/- 0.25% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Tolerance on Output.....	1mV/V nominal
Operation.....	Tension/ Compression
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 250° F
Temperature, Compensated.....	60° to 160° F
Temperature, Effect	
Zero.....	0.005% Full Scale/° F
Span.....	0.005% Full Scale/° F

Electrical

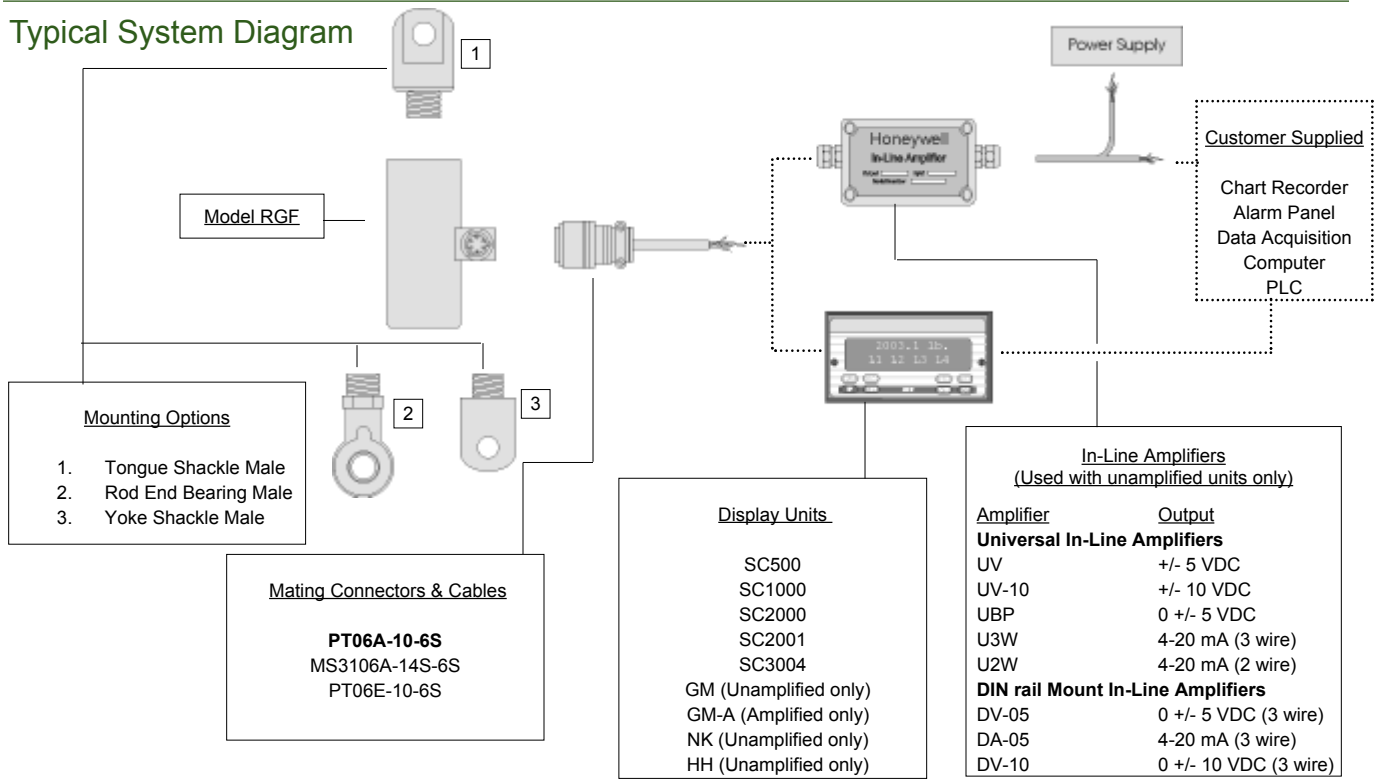
Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Excitation (acceptable).....	up to 15 VDC or AC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	700 Ohms
Shunt Calibration Data.....	Included
Electrical Termination (std).....	PTIH-10-6P or equivalent (Hermetic stainless)

Mechanical

Maximum Allowable Load.....	200% F.S. (note 1)
Case Material.....	Stainless Steel
Deflection Full Scale.....	0.003 in.
Life Cycles (approx.).....	>10 Million Cycles

Model RGF

Typical System Diagram



Deflections and Ringing Frequencies

Capacity (lb.)	Deflection @ Full Scale (in.)	Ringing Frequency (Hz)	Weight (lb)
2000	0.001	10,000	1.2
3000	0.001	12,000	1.2
5000	0.002	15,000	1.4
10,000	0.002	10,000	2.9
15,000	0.002	10,000	2.9
25,000	0.002	6,500	9.5
50,000	0.003	7,000	9.9

Range Codes

Range	Range Code
2000 lb.	DJ
3000 lb.	DN
5000 lb.	DR
10,000 lb.	DV
15,000 lb.	EJ
25,000 lb.	EM
50,000 lb.	EP

Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2b	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	+/- 5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply Bl*Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl*Output Common/ G*Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply Bl (+) Output W Case Ground	R (+) Supply Bl (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

1-888-282-9891

www.honeywell.com/sensotec

Options

	Build from Scratch
Load Range	2k, 3k, 4k, 5k, 10k, 15k, 25k, 50k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1h. 70° to 400° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2b. 4 wire +/- 5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2t. 0-10 VDC output 2n (2N). 4-20mA (2-wire) Intrinsically safe
Internal Amp Enhancements	3a. Input/ Output Isolation (note 7) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6b. MS type connector mates with MS3106- 14S 6 pin (max. 160°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded Integral cable: Polyurethane 6v. Phoenix connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 8)
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge
Bridge Resistance	12b. 5,000 Ohms (foil) (max. 250°F)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation 15b. Vertical Electrical Exit Port Orientation 15c. Radial Electrical Exit Port Orientation 15d. Connector on end of cable
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 9)

Supplied as standard

Special Customer Requirements (Consult Factory)

Cable Orientation
 Different Cable Lengths
 Different Electrical Connectors
 Different Materials
 Different Threads
 Dual Bridge
 ESD
 Fatigue Rating
 High Resistance Bridges
 Lightning Protection
 OEM Labels
 Enhanced Operational Temp
 Radiation Resistant
 Special Electrical O/P
 Special TC

Notes

- Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
- Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Not available with options 1c, 1e or 1f.
- Only available with options 2b or 2c.
- Not available with amplified options.
- Consult factory for TEDS availability with amplified models.

How to Order

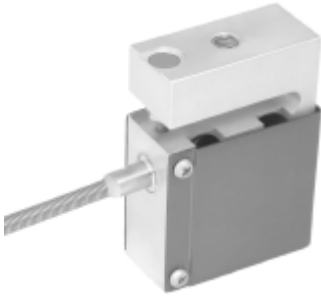
Combine the order code, the range code and the options code.

Sample Code: **AL428** **DV** **6i**
 Order Code Range Code Options Code

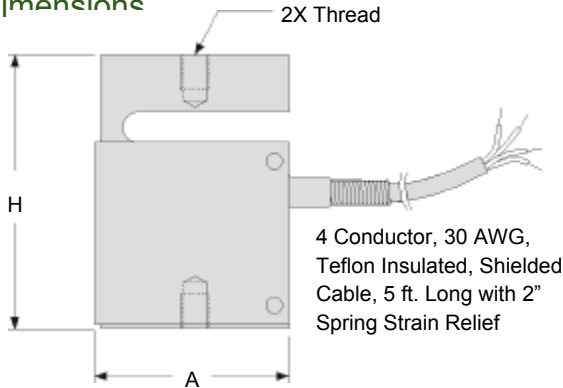
Model 81 Precision Tension Load Cell

Order Code BL433

- 5 to 250 lb.
- Compact Size
- 0.05% Linearity
- Enhanced Precision



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Range (lb.)	H (in.)	A (in.)	B (in.)	Thread
5; 10; 25; 50; 100	2.38	1.7	0.9	1/4-28 UNF
250	2.75	1.7	0.9	3/8-24 UNF

Performance

Load Ranges	5; 10; 25; 50; 100; 250 lb.
Linearity (max)	+/- 0.05% Full Scale
Hysteresis	+/- 0.03% Full Scale
Non-Repeatability	+/- 0.02% Full Scale
Output (tolerance)	
5 lb.	2 mV/V +/- 1%
10 to 250 lb.	3 mV/V +/- 1%
Operation	Tension
Resolution	Infinite

Environmental

Temperature, Operating	0° to 130° F
Temperature, Compensated	30° to 130° F
Storage Temperature	-100° to 200° F
Temperature, Effect	
Zero	0.001% Full Scale/° F
Span	0.0008% Full Scale/° F

Electrical

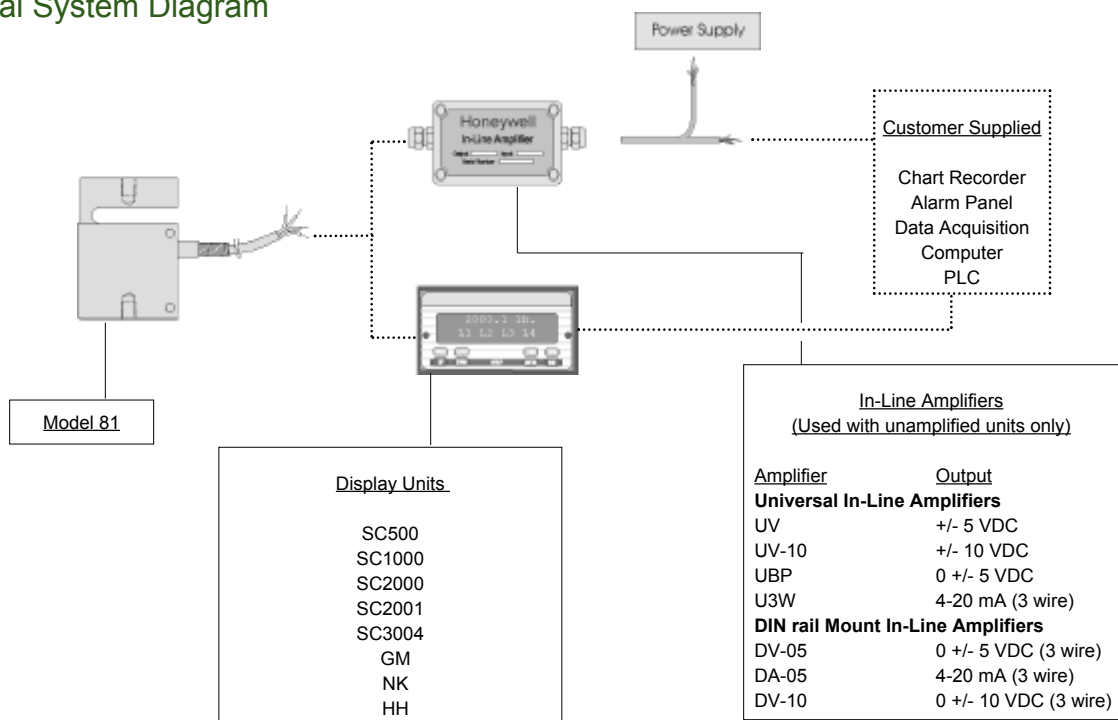
Strain Gage Type	Bonded Foil
Excitation (calibration)	10 VDC
Bridge Resistance (tolerance)	350 Ohms (nominal)
Zero Balance (tolerance)	1% Full Scale Max.
Shunt Calibration	Included
Electrical Termination (std)	Cable (5 ft.)

Mechanical

Maximum Allowable Load	150% F.S. (note 1)
Weight	0.3 lb.
Material	Aluminum

Model 81

Typical System Diagram



Range Codes

Range	Range Code
5 lb.	AT
10 lb.	AV
25 lb.	BL
50 lb.	BN
100 lb.	BR
250 lb.	CN

Options

	Build from Scratch
Load Range	5, 10, 25, 50, 100, 250 lbs.
Temperature Compensation	1b. 30° to 130° F 1d. -20° to 130° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	Cable (5 ft.)
Shock & Vibration	44a. Shock & vibration resistance

Supplied as standard

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

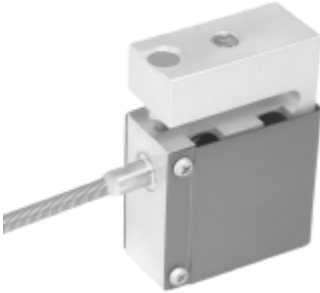
Combine the order code, the range code and the options code.

Sample Code: **BL433** **AT** **1d**
Order Code Range Code Options Code

Model 82 Precision Tension Load Cell

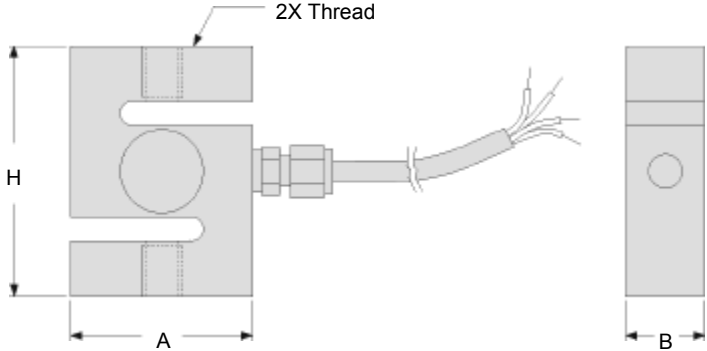
Order Code BL434

- 100 to 10,000 lb.
- Compact Size
- Enhanced Precision
- 0.03% Linearity



*Housing shown not included with Model 82

Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Range (lb.)	H (in.)	A (in.)	B (in.)	Thread	Weight (lb.)
100 to 250	3.00	2.00	1.00	1/4-28 UNF	1.5
500 to 3,000	3.00	2.19	0.94	1/2-20 UNF	1.5
5,000	3.75	2.25	1.00	3/4-16 UNF	2.0

Performance

Load Ranges.....	100; 250; 500; 1,000; 2,000; 3,000; 5,000; 10,000 lb.
Linearity (max).....	+/- 0.03% Full Scale
Hysteresis.....	+/- 0.02% Full Scale
Non-Repeatability.....	+/- 0.01% Full Scale
Output (tolerance).....	2 mV/V (nominal)
Operation.....	Tension
Resolution.....	Infinite

Environmental

Temperature, Operating.....	0° to 130° F
Temperature, Compensated.....	30° to 130° F
Storage Temperature	
100 lb.; 250 lb.....	-100° to 150° F
500 to 10,000 lb.....	-100° to 250° F
Temperature, Effect	
Zero.....	0.001% Full Scale/° F
Span.....	0.0008% Full Scale/° F

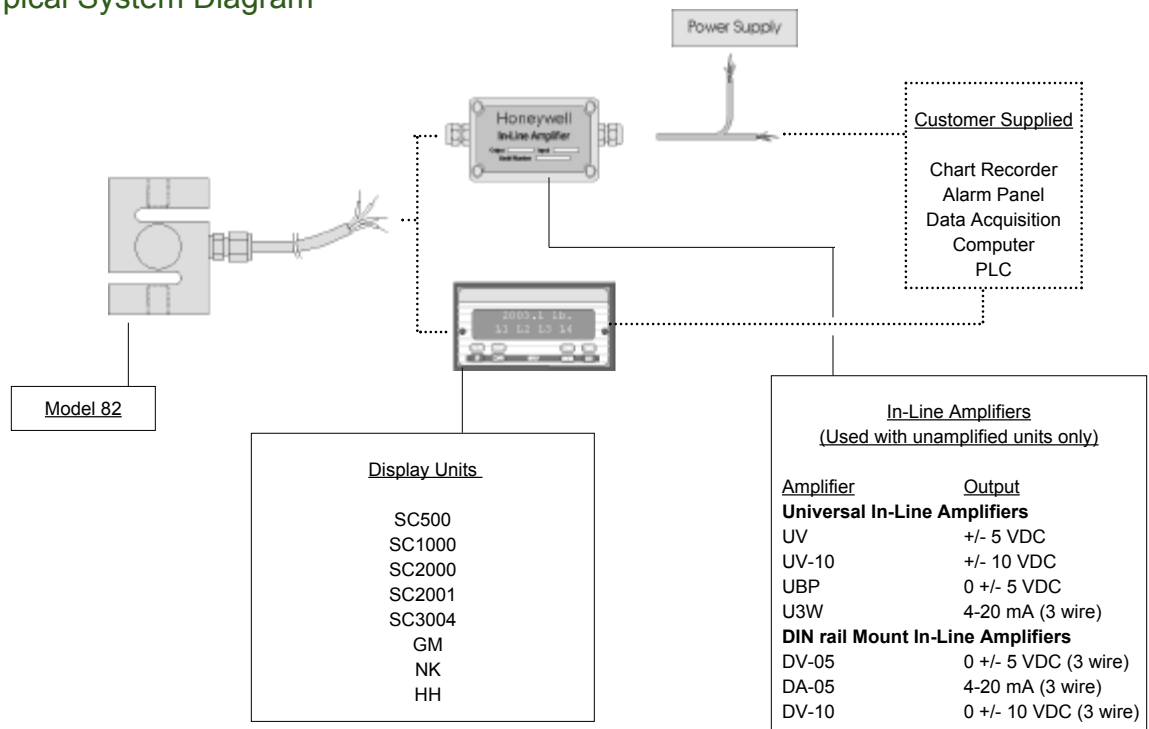
Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5,000 Megohms @ 50 VDC
Bridge Resistance (tolerance).....	350 Ohms
Zero Balance (tolerance).....	+/- 1% Full Scale
Shunt Calibration Data.....	Included
Electrical Termination (std).....	Cable (5 ft.)

Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material	
100 to 250 lb.....	Aluminum
5000 to 10,000 lb.....	Stainless Steel

Typical System Diagram



Range Codes

Range	Range Code	Range	Range Code
100 lb.	BR	2000 lb.	DL
250 lb.	CN	3000 lb.	DN
500 lb.	CR	5000 lb.	DR
1000 lb.	CV	10,000 lb.	DV

Options

	Build from Scratch
Load Range	100, 250, 500, 1000, 2000, 3000, 5000, 10,000 lbs.
Temperature Compensation	1b. 30° to 130° F 1d. -20° to 130° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	Cable (5 ft.)
Shock & Vibration	44a. Shock & vibration resistance

■ Supplied as standard

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

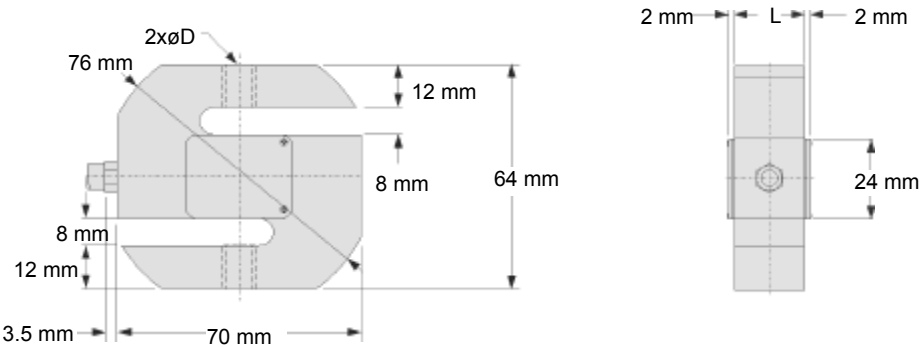
Combine the order code, the range code and the options code.

Sample Code: **BL434** **DV** **44a**
Order Code Range Code Options Code

Model 102 Load Cell

Order Code BL804

- Low Cost
- 20 to 1,000 kg Range
- +/- 0.02% Accuracy



Wiring Code

Red	(+) Supply
Black	(-) Supply
Green	(+) Output
White	(-) Output
Large Black	Shield

Dimensions

Load (kg)	D (thread)	L (mm)
20 - 150	M8x1.25	12
200 - 500	M12x1.75	20
700 - 1000	M12x1.75	25

Performance

Load Ranges 20; 50; 100; 200; 300; 500; 1,000 kg
Accuracy +/- 0.02% Full Scale
Output 2.0 mV/V
Creep (max.) +/- 0.02% Full Scale (30 minute)

Environmental

Temperature, Operating-30° to 70° C
Temperature, Compensated-20° to 55° C
Temperature, Effect
Zero +/- 0.02% Full Scale/ 10° C
Span +/- 0.02% Full Scale/ 10° C
Protection Class IP67

Electrical

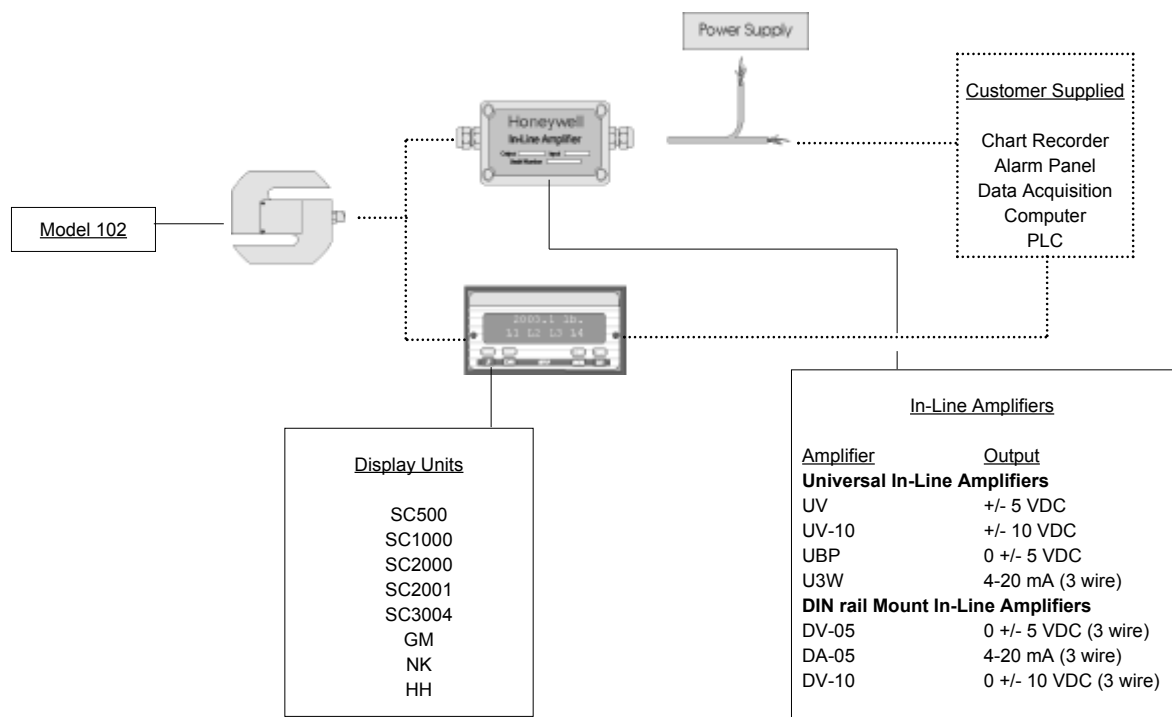
Strain Gage Type Bonded Foil
Excitation (acceptable) 10-12 VDC
Excitation (max.) 15 VDC
Insulation Resistance ≥ 5000 Megohms
Bridge Resistance (tolerance)
Input Resistance 400 +/- 10 Ohms (nominal)
Output Resistance 352 +/- 2 Ohms (nominal)
Zero Balance (tolerance) +/- 1% Full Scale
Electrical Termination (std) 3m flying leads

Mechanical

Maximum Allowable Load 150% F.S. (note 1)
Material Nickel Plated Alloy Steel or Stainless Steel
Deflection Less than or equal to 0.5mm

Model 102

Typical System Diagram



Range Codes

Range	Range Code
20 kg	LD
30 kg	LE
50 kg	LF
75 kg	LG
100 kg	LH
150 kg	LJ
200 kg	LK
250 kg	LL
300 kg	LM
500 kg	LN
1000 kg	LQ

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

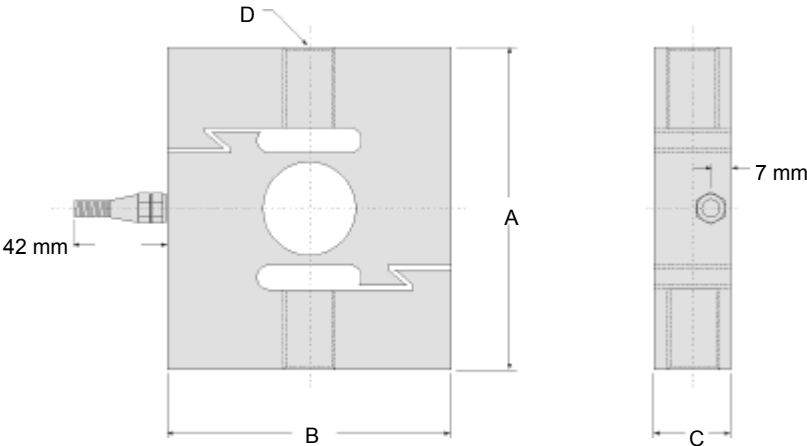
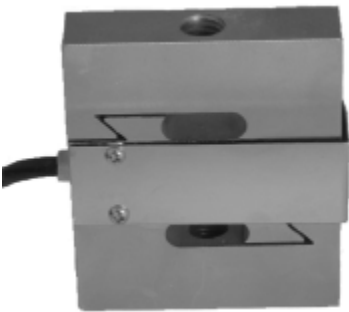
Combine the order code and the range code.

Sample Code: **BL804** **LD**
Order Code Range Code

Model 123 Load Cell

Order Code BL810

- Low Cost
- 1,000 to 20,000 kg Range
- +/- 0.03% Accuracy



Wiring Code

Red	(+) Supply
Black	(-) Supply
Green	(+) Output
White	(-) Output
Large Black	Shield

Dimensions

Range (kg)	A (mm)	B (mm)	C (mm)	D
1,000; 1,500	80	70	25	M12x1.75
2,000; 3,000; 5,000	108	95	25	M18x1.5
7,500; 10,000	178	130	51	M30x2
15,000; 20,000	190	160	60	M39x2

Performance

- Load Ranges.....1,000 to 20,000 kg
Accuracy.....+/- 0.03% Full Scale
Output.....2.0 mV/V
Creep (max.).....+/- 0.03% Full Scale (30 minutes)

Environmental

- Temperature, Operating.....-30° to 70° C
Temperature, Compensated.....-20° to 55° C
Temperature, Effect
Zero.....+/- 0.03% Full Scale/ 10° C
Span.....+/- 0.03% Full Scale/ 10° C
Protection Class.....IP67 (note 3)

Electrical

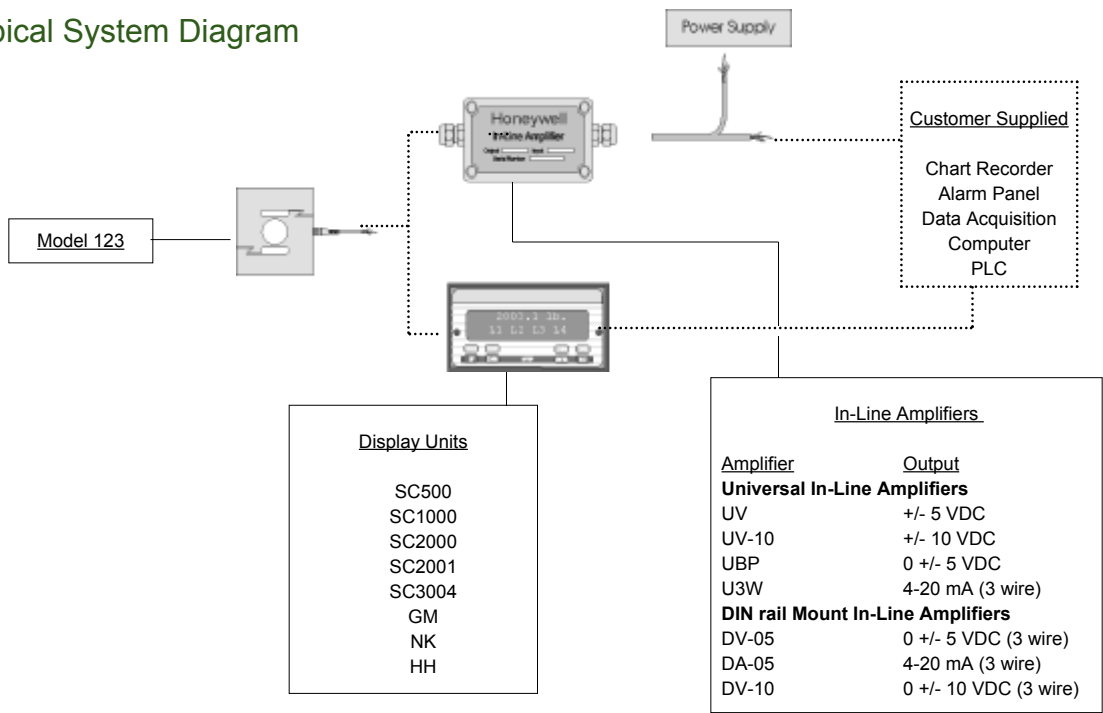
- Strain Gage Type.....Foil
Excitation (acceptable).....10-12 VDC
Excitation (max.).....15 VDC
Insulation Resistance.....≥ 5,000 Megohms
Bridge Resistance (tolerance)
Input Resistance.....400 +/- 10 Ohms (nominal)
Output Resistance.....352 +/- 2 Ohms (nominal)
Zero Balance (tolerance).....+/- 1% Full Scale
Electrical Termination (std).....6m of 5mm diameter cable

Model 123

Mechanical

Maximum Allowable Load.....120% F.S. (note 1)
Later Load Limit.....100% F.S.
Material.....Nickel Plated Alloy Steel

Typical System Diagram



Range Codes

Range	Range Code
1,000 kg	LQ
1,500 kg	LR
2,000 kg	LS
3,000 kg	LT
5,000 kg	LU
7,500 kg	LV
10,000 kg	LW
15,000 kg	LY
20,000 kg	LZ

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. IP68 rating for load ranges 7,500 kg and greater.

How to Order

Combine the order code and the range code.

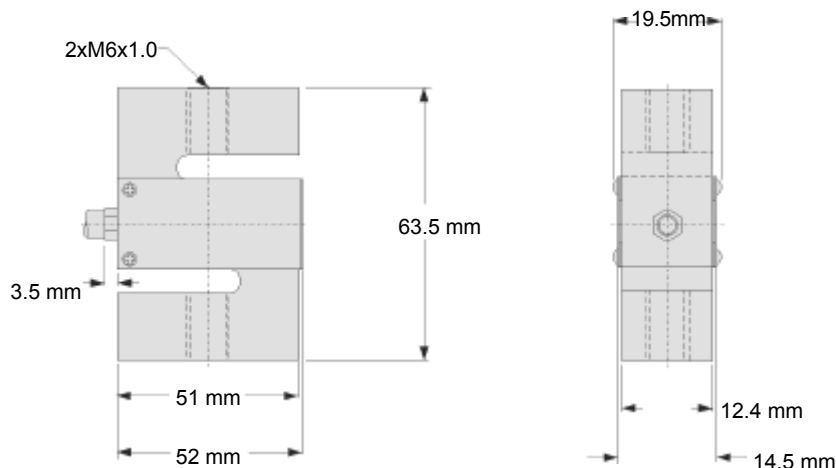
Sample Code: **BL810** **LR**
Order Code Range Code

Model 127 Load Cell

Order Code BL807

- Low Cost
- 50 kg; 100 kg Range
- 0.03% Accuracy

Dimensions



Wiring Code

Red	(+) Supply
Black	(-) Supply
Green	(+) Output
White	(-) Output
Large Black	Shield

Performance

Load Ranges.....50; 100kg
Accuracy.....+/- 0.03% Full Scale
Output.....3.0 mV/V
Creep (max.).....+/- 0.03% Full Scale (30 minutes)

Environmental

Temperature, Operating.....-30° to 70° C
Temperature, Compensated.....-20° to 55° C
Temperature, Effect
Zero.....+/- 0.03% Full Scale/ 10° C
Span.....+/- 0.03% Full Scale/ 10° C
Environmental Protection.....IP67

Electrical

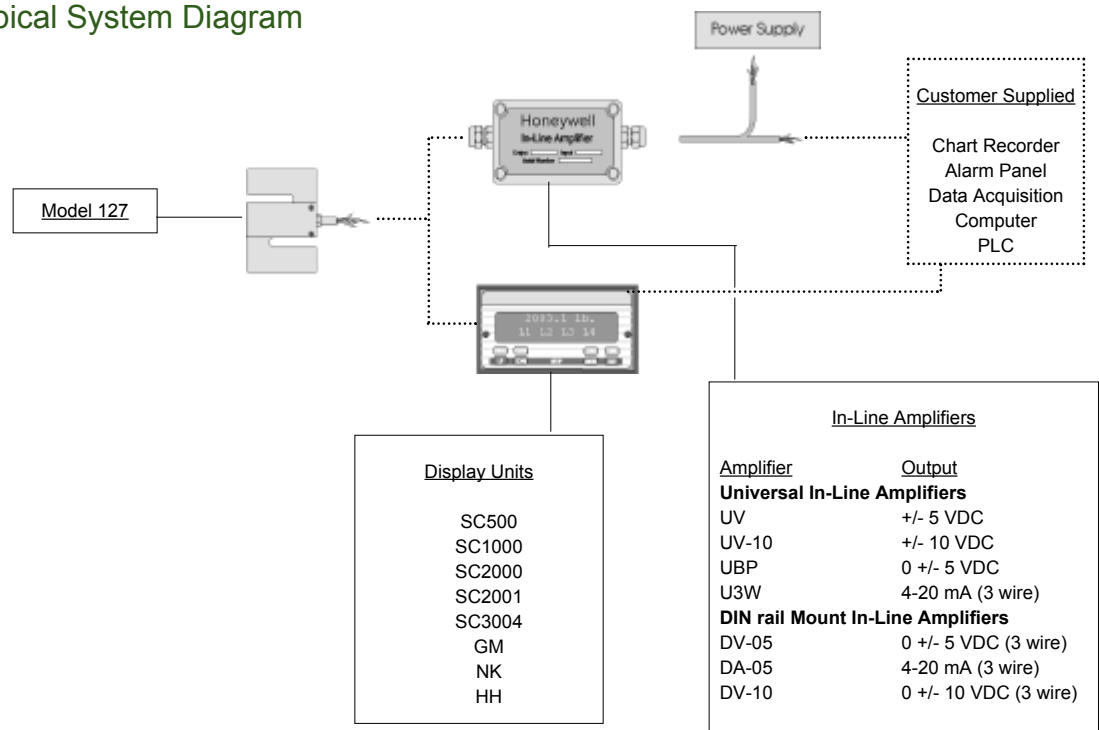
Strain Gage Type.....Bonded Foil
Excitation (calibration).....10-12 VDC
Excitation (max.).....15 VDC
Insulation Resistance.....≥ 5000 Megohms
Bridge Resistance (tolerance)
Input Resistance.....400 +/- 10 Ohms
Output Resistance.....352 +/- 2 Ohms
Zero Balance (tolerance).....+/- 1% Full Scale
Electrical Termination (std).....5m flying leads

Mechanical

Maximum Allowable Load.....150% F.S. (note 1)
Case Material.....Nickel Plated Alloy Steel

Model 127

Typical System Diagram



Range Codes

Range	Range Code
50 kg	LF
100 kg	LH

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

Combine the order code and the range code.

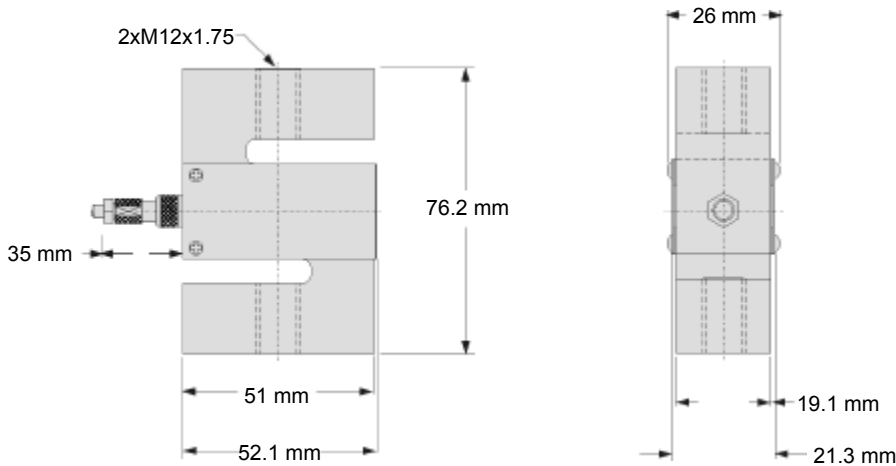
Sample Code: **BD807** **LH**
Order Code Range Code

Model 125 Load Cell

Order Code BL811

- Low Cost
- 100 to 500 kg Range
- 0.02% Accuracy

Dimensions



Wiring Code

(for mating cable, included)

Red	(+) Supply
Black	(-) Supply
Green	(+) Output
White	(-) Output
Large Black	Shield

Performance

Load Ranges 100; 200; 300; 500 kg
Accuracy+/- 0.02% Full Scale
Output 2.0 mV/V
Creep (max.)+/- 0.02% Full Scale (30 minutes)

Environmental

Temperature, Operating-30° to 70° C
Temperature, Compensated-20° to 55° C
Temperature, Effect
Zero+/- 0.02% Full Scale/ 10° C
Span+/- 0.02% Full Scale/ 10° C
Environmental Protection IP67

Electrical

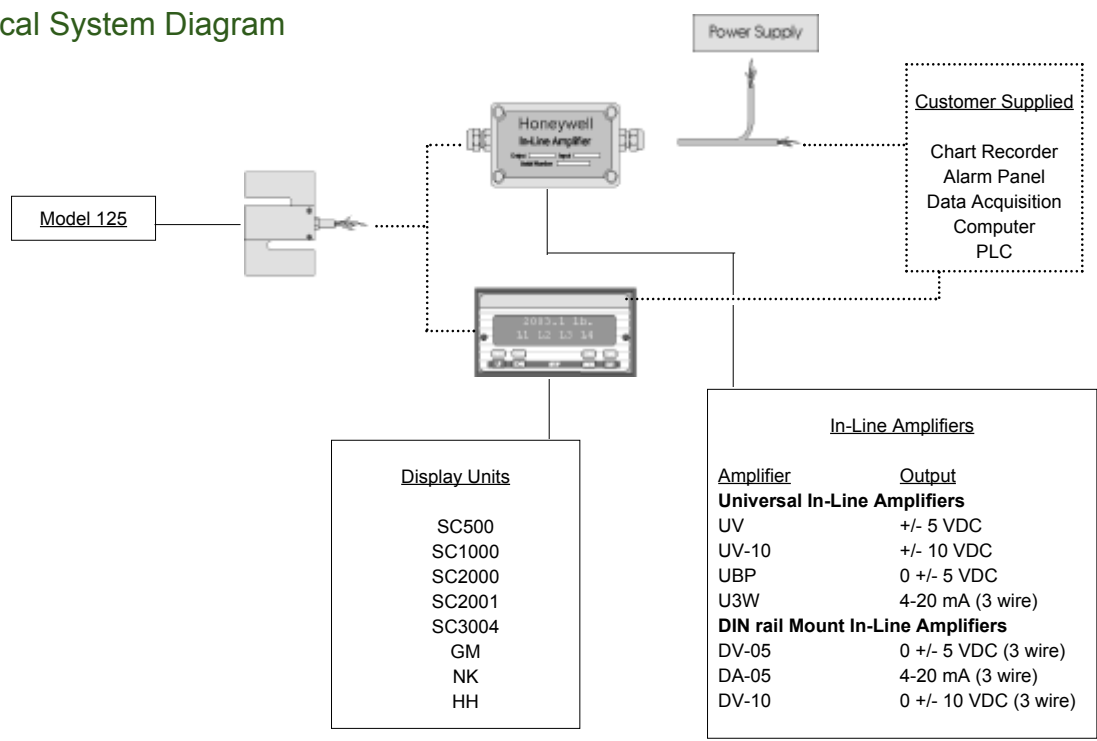
Strain Gage Type Bonded Foil
Excitation (calibration) 10-12 VDC
Excitation (max.) 15 VDC
Insulation Resistance≥ 5000 Megohms
Bridge Resistance (tolerance)
Input Resistance 400 +/- 10 Ohms
Output Resistance 352 +/- 2 Ohms
Zero Balance (tolerance)+/- 1% Full Scale
Electrical Termination (std) mating connector and 5m cable (included)

Mechanical

Maximum Allowable Load 150% F.S. (note 1)
Case Material Nickel Plated Alloy Steel

Model 125

Typical System Diagram



Range Codes

Range	Range Code
100 kg	LH
200 kg	LK
300 kg	LM
500 kg	LN

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

Combine the order code and the range code.

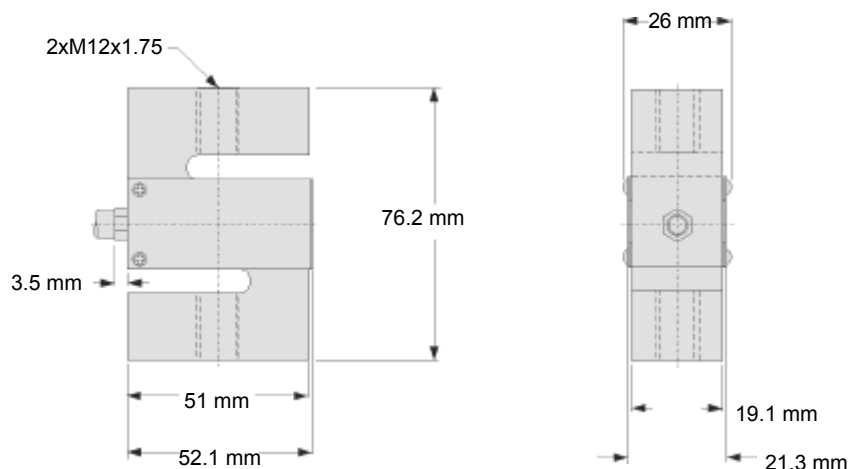
Sample Code: **BL811** **LH**
Order Code Range Code

Model 129 Load Cell

Order Code BL808

- Low Cost
- 1000 to 5000 kg Range
- 0.02% Accuracy

Dimensions



Wiring Code

Red	(+) Supply
Black	(-) Supply
Green	(+) Output
White	(-) Output
Large Black	Shield

Performance

Load Ranges.....1000; 2000; 3000; 5000 kg
Accuracy.....+/- 0.02% Full Scale
Output.....2.0 mV/V
Creep.....+/- 0.02% Full Scale (30 minutes)

Environmental

Temperature, Operating.....-30° to 70° C
Temperature, Compensated.....-20° to 55° C
Temperature, Effect
Zero.....+/- 0.02% Full Scale/ 10° C
Span.....+/- 0.02% Full Scale/ 10° C
Environmental Protection.....IP67

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....10-12 VDC
Excitation (max.).....15 VDC
Insulation Resistance.....≥ 5000 Megohms
Bridge Resistance (tolerance)
Input Resistance.....400 +/- 10 Ohms
Output Resistance.....352 +/- 2 Ohms
Zero Balance (tolerance).....+/- 1% Full Scale
Electrical Termination (std).....5m flying leads

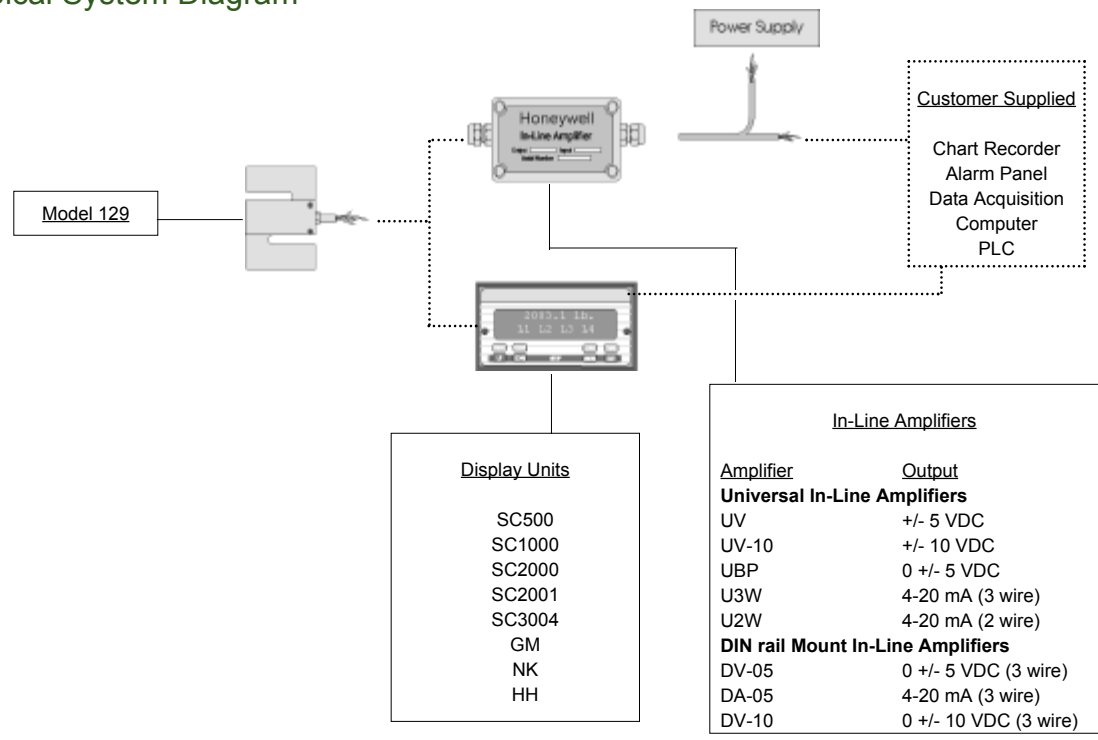
Mechanical

Maximum Allowable Load.....150% F.S. (note 1)
Case Material.....Nickel Plated Alloy Steel

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Typical System Diagram



Range Codes

Range	Range Code
1000 kg	LQ
2000 kg	LS
3000 kg	LT
5000 kg	LU

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

Combine the order code and the range code.

Sample Code: **BL808** **LS**

Order Code Range Code

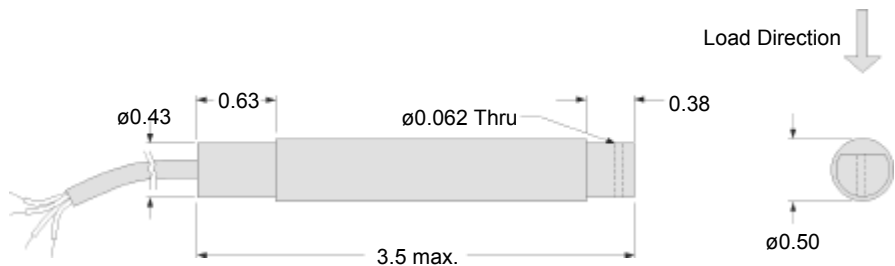
Model MBL Minigram Beam Load Cell

Order Code BL341

- 25 to 1000 g
- Miniature Size
- 0.1% Linearity



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Load Ranges.....	25; 50; 100; 150; 250; 500; 1000 g
Linearity (max.).....	+/- 0.1% Full Scale
Hysteresis (max.).....	+/- 0.1% Full Scale
Non-Repeatability (max.).....	+/- 0.03% Full Scale
Output (tolerance).....	20 mV/V (nominal)
Operation.....	Tension/ Compression (note 1)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	0° to 200° F
Temperature, Compensated.....	60° to 160° F
Storage Temperature.....	-100° to 200° F
Temperature, Effect	
Zero.....	0.015% Full Scale/° F
Span.....	0.02% Full Scale/° F

Electrical

Strain Gage Type.....	Bonded Semiconductor
Excitation (calibration).....	5 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	500 Ohms
Zero Balance.....	+/- 5% Full Scale
Electrical Termination (std).....	Cable (5 ft.)

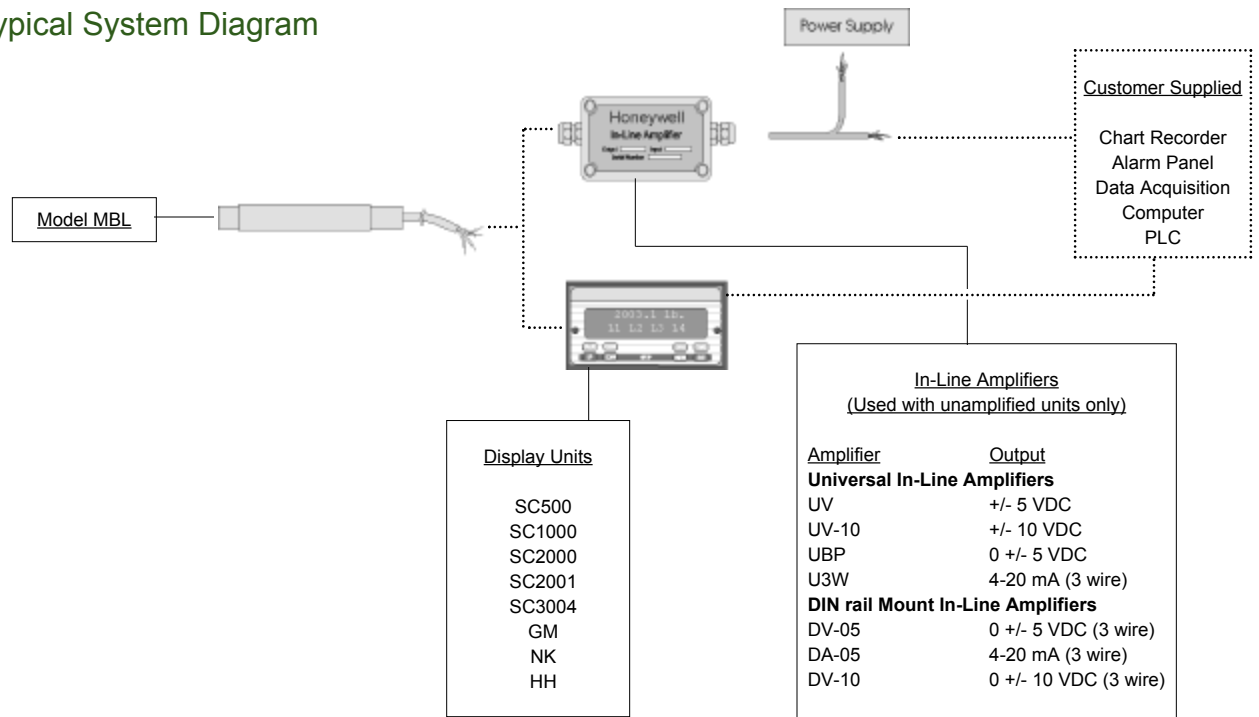
Mechanical

Maximum Allowable Load.....	400% F.S. (note 2)
Weight.....	50 g
Material.....	Aluminum

Range Codes

<u>Range</u>	<u>Range Code</u>
25 g	AH
50 g	AJ
100 g	AK
150 g	AL
250 g	AN
500 g	AP
1000 g	AR

Typical System Diagram



Options

	Built from Scratch
Load Ranges	25, 50, 100, 150, 250, 500, 1000g
Temperature Compensation	1a. 60° to 160° F
	1b. 30° to 130° F
	1c. 0° to 185° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon
	6d. Microtec DR-4S-4H 4 pin
Shunt Calibration	8a. Precision Internal Resistor
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 70° F

Supplied as standard

Special Customer Requirements (Consult Factory)

- Cable Orientation
- Different Cable Lengths
- Different Materials
- ESD
- OEM Labels
- Radiation Resistant
- Shock and Vibration Resistance
- Special TC

Notes

1. Positive in compression; calibrated in compression only.
2. Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
3. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

Combine the order code, the range code and the options code.

Sample Code: **BL341** **AH** **1b**

Order Code Range Code Options Code

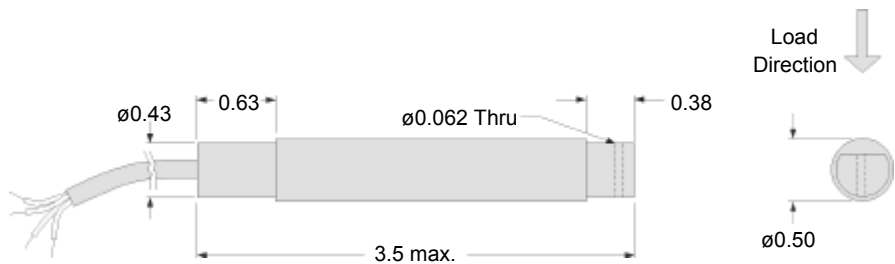
Model MBH Minigram Beam Load Cell

Order Code BL342

- 150 g to 10 lb. Range
- Miniature Size
- 0.1% Linearity



Dimensions



Wiring Code

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Load Ranges	150 g; 250 g; 500 g; 1000 g; 5 lb.; 10 lb.
Linearity (max.)	+/- 0.1% Full Scale
Hysteresis (max.)	+/- 0.1% Full Scale
Non-Repeatability (max.)	+/- 0.03% Full Scale
Output (tolerance)	2 mV/V (nominal)
Operation	Tension/ Compression (note 1)
Resolution	Infinite

Environmental

Temperature, Operating	0° to 160° F
Temperature, Compensated	60° to 160° F
Storage Temperature	-100° to 200° F
Temperature, Effect	
Zero	0.005% Full Scale/° F
Span	0.005% Full Scale/° F

Electrical

Strain Gage Type	Bonded Foil
Excitation (calibration)	5 VDC
Insulation Resistance	5000 Megohms @ 50 VDC
Bridge Resistance	350 Ohms
Zero Balance	+/- 5% Full Scale
Electrical Termination (std)	Cable (5 ft.)

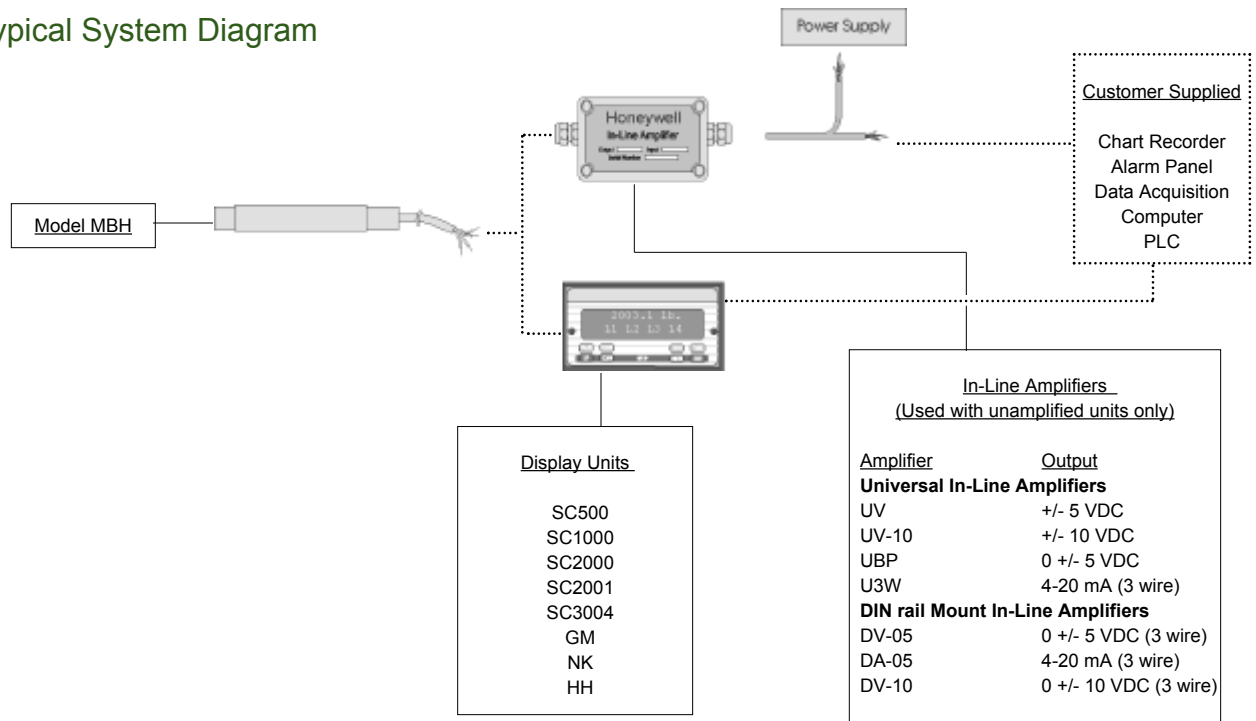
Mechanical

Maximum Allowable Load	400% F.S. or 20 lb., whichever is less (note 2)
Weight	50 g
Material	Aluminum

Range Codes

Range	Range Code
150 g	AL
250 g	AN
500 g	AP
1000 g	AR
5 lb.	AT
10 lb.	AV

Typical System Diagram



Options

	Built from Scratch
Load Ranges	150, 250, 500, 1000g 5, 10 lbs
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon 6d. Microtec DR-4S-4H 4 pin
Shunt Calibration	8a. Precision Internal Resistor
Special Calibration	9a. 10 point (5 up/5 down) 20% increments @ 70° F

Supplied as standard

Special Customer Requirements
(Consult Factory)

Cable Orientation
Different Cable Lengths
Different Materials
ESD
OEM Labels
Radiation Resistant
Shock and Vibration Resistance
Special TC

Notes

1. Positive in compression; calibrated in compression only.
2. Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
3. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

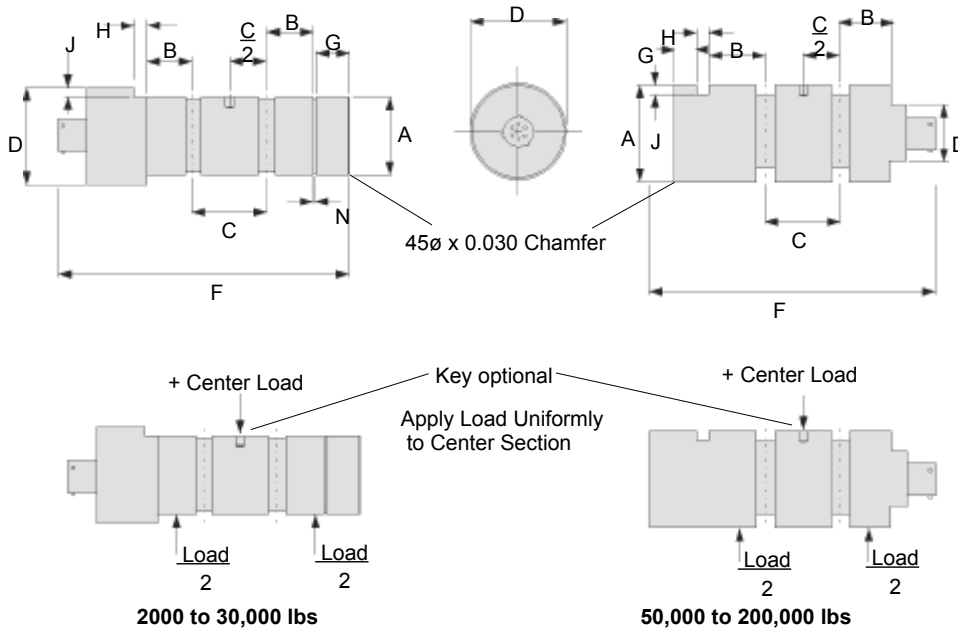
Combine the order code, the range code and the options code.

Sample Code: **BL342** **AL** **1b**
Order Code Range Code Options Code

Model LP Force Sensing Clevis Pin

Order Code AL441

- All Welded Construction
- Amplified Output Available



Wiring Code

Connector/ Unamplified (Std.)

- A (+) Excitation
- B (+) Excitation
- C (-) Excitation
- D (-) Excitation
- E (-) Output
- F (+) Output

Dimensions

Capacity (lb.)	A (in.)**	B (in.)	C (in.)	D (in.)	F (in.)	G (in.)	H (in.)	J (in.)	Key (in.)	SRG*	N (in.)
2000; 3000	0.500	0.50	0.75	1.50	3.98	0.25	0.20	0.25	N/A	0.468	0.039
5000; 6000	0.750	0.59	1.00	1.50	4.48	0.31	0.20	0.25	0.156	0.704	0.046
10,000; 12,500	1.000	0.63	1.00	1.50	4.74	0.50	0.20	0.25	0.219	0.940	0.046
18,000; 20,000	1.250	0.81	1.38	2.00	5.69	0.63	0.27	0.25	0.219	1.176	0.056
30,000	1.500	0.94	1.63	2.00	6.20	0.63	0.27	0.25	0.281	1.406	0.056

Capacity (lb.)	A (in.)**	B (in.)	C (in.)	D (in.)	F (in.)	G (in.)	H (in.)	J (in.)	Key (in.)
50,000	2.000	1.00	2.00	1.50	6.61	0.75	0.266	0.38	0.281
75,000	2.500	1.25	2.50	2.00	7.61	0.75	0.266	0.50	0.281
100,000	2.750	1.47	2.69	2.00	8.63	1.00	0.406	0.50	0.406
125,000	3.000	1.44	3.00	2.00	8.88	1.00	0.406	0.63	0.406
160,000	3.500	1.75	3.50	2.00	10.38	1.25	0.531	0.63	0.531
200,000	4.000	2.25	4.00	2.00	11.88	1.25	0.531	0.75	0.531

* SRG = Snap Ring Groove Diameter (in inches)

**Tolerance = +0.000 in.
-0.002 in.

Performance

Load Ranges.....2000; 3000; 5000; 6000; 10,000; 12,500; 18,000; 20,000; 30,000;
50,000; 75,000; 100,000; 125,000; 160,000; 200,000 lb.
Linearity (max).....from +/- 0.5% Full Scale (Consult Factory)
Hysteresis.....from +/- 0.5% Full Scale (Consult Factory)
Non-Repeatability.....+/- 0.15% Full Scale
Tolerance on Output.....1 mV/V nominal

Environmental

Temperature, Operating.....-65° to 250° F
Temperature, Compensated.....60° to 160°
Temperature, Effect
Zero.....0.003% Full Scale/° F
Span.....0.008% of Load/° F

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Model LP

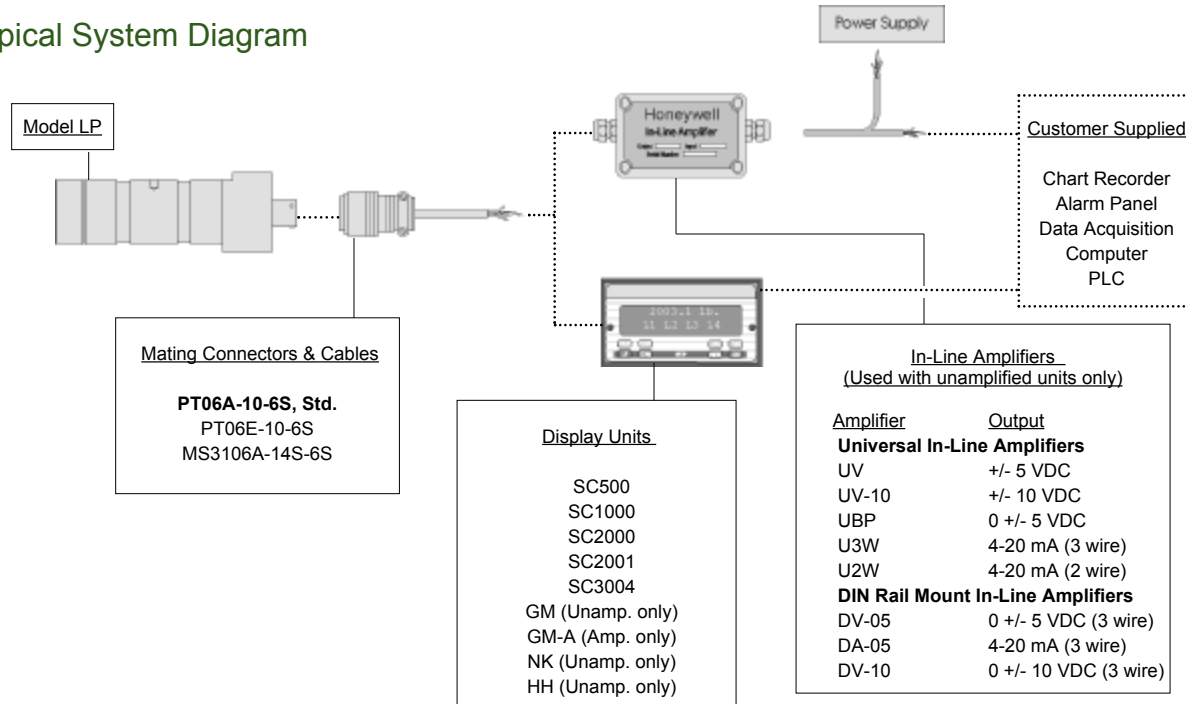
Electrical

Strain Gage Type Foil
 Excitation (calibration) 10 VDC
 Bridge Resistance 5000 Ohms
 Electrical Termination (std) PTIH-10-6P
 Mating Connector (not incl.) PT06A-10-6S or equivalent

Mechanical

Maximum Allowable Load 200% F.S. (note 1)
 Case Material 17-4 PH Stainless Steel

Typical System Diagram



Internal Amplifiers

Amplifier Specifications	Voltage Output Option 2a	Voltage Output Option 2c	Voltage Output Option 2t	Current 3 Wire Option 2j	Current 2 Wire Option 2k	Intrinsically Safe Option 2n (2N)***
Output Signal	0-5V	0-5V or +/- 5V @ 45mA	0-10V or +/- 10V @ 45mA	4-20 mA	4-20 mA	4-20 mA
Input Power (Voltage)	+/-15V or 26-32VDC	11-28 VDC	15-28 VDC	22-32 VDC	15-40 VDC	9-28 VDC
Input Power (Current)	45 mA	40 mA	40 mA	65 mA	4-28 mA	4-24 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60 db	60 db	60 db	60 db	60 db	60 db
Operating Temperature	-20° to 185° F	-20° to 185° F	-20° to 185° F	0° to 185° F	0° to 185° F	-20° to 185° F
Reverse Voltage Protection	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit Protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring Code: Connector (Std.) (note 4)	A (+) Supply B Output Common/ C Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B** Output Common/ C** Supply Return D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case Ground F No connection
Wiring Code: Cable (note 4) (note 5) (note 6)	R (+) Supply BI Output Common/ G Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI* Output Common/ G* Supply Return W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case Ground	R (+) Supply BI (+) Output W Case Ground

* Black and Green wires are internally connected.

** Pins B and C are internally connected.

*** See Sensotec website for most up-to-date information regarding Intrinsically Safe approvals ref. #008-0547-00.

Model LP

Range Codes	Range	Range Code	Range	Range Code	Range	Range Code
	2000 lb.	DL	12,500 lb.	DW	100,000 lb.	ET
	3000 lb.	DN	20,000 lb.	EL	125,000 lb.	FH
	5000 lb.	DR	30,000 lb.	EN	150,000 lb.	FJ
	6000 lb.	DS	50,000 lb.	EP	200,000 lb.	FL
	10,000 lb.	DV	75,000 lb.	ER		

Options

	Built from Scratch
Load Range	2k, 3k, 5k, 6k, 10k, 12.5k, 18k, 20k, 30k, 50k, 75k, 100k, 125k, 160k, 200k lbs.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F 1g. 70° to 325° F 1i. -65° to 250° F 1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C
Internal Amplifiers	2u. Unamplified, mV/V output 2a. 4 wire 0-5VDC output 2c. 0-5VDC 2j. 4-20mA (3-wire) output 2k. 4-20mA (2-wire) 2n (2N) 4-20mA (2-wire) Intrinsically Safe 2t. 0-10 VDC output
Internal Amp Enhancements	3a. Input/ Output Isolation (note 2) 3d. Remote Buffered Shunt Calibration
Electrical Termination	6a. Bendix PTIH-10-6P - (or equivalent) 6 pin (max. 250°F) 6b. MS type connector 6c. Cannon WK6-325 Series connector 6 pin 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft. of 4 conductor PVC cable 6q. Molded integral cable: Polyurethane 6v. Phoenix connector on end of cable 15d. Connector on end of cable
Shunt Calibration	8a. Precision Internal Resistor (note 3)
Special Calibration	9e. CE mark 9a. 10 point (5 up/5 down) 20% increments @ 70°F 9b. 20 point (10 up/10 down) 10% increments @ 70°F 9c. A.S.T.M. E-74 calibration
Bridge Type	11a. Square Bridge 11c. Square and Symmetrical Bridge 31a. Dual bridge.
Bridge Resistance	12b. 5,000 Ohms (foil)
Potentiometers	14a. No access to pots
Electrical Connector Orientation	15d. Connector on end of cable
Special Calibration	30a. Compression only (+) Output 30b. Tension and Compression (+,-) output 30c. Compression only (-) Output
Shock & Vibration	44a. Shock and vibration resistance
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451-4 Module (note 7)

Supplied as standard

Notes

- Allowable Maximum Loads- Maximum load to be applied without damage.
- Only available with options 2b or 2c.
- Not available with amplified options.

- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4-20mA 3-wire units) or 80% (voltage amplified units) of full scale output for quick calibration. Shunt Calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
- O=Orange; Y=Yellow; B=Blue; Bl=Black; R=Red; Br=Brown; W=White; G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Consult factory for TEDS availability with amplified models.

How to Order

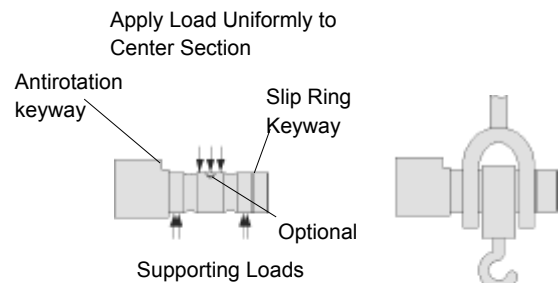
The order code consists of the product model, the desired range code and the available options.

Sample Code: **AL441** **DV** **2b**
Model Code Range Code Options Code

Special Customer Requirements (Consult Factory)

Amplified Output
Cable Orientation
Connector Guard
Different Cable Lengths
Different Electrical Connectors
Different Materials
Different Threads
Dual Bridge
ESD
Fatigue Rating
High Resistance Bridges
Lightning Protection
OEM Labels
Enhanced Operational Temp
Radiation Resistant
Special Electrical O/P
Special TC

Installation

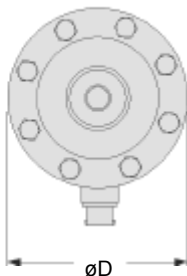
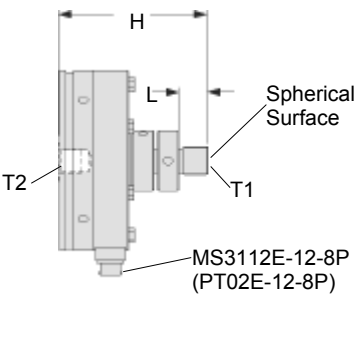


Standard uses for Sensotec clevis pins include tongue and yoke shackles and tension pulleys. Clevis pins are also often ideal for use in web tension applications. Consult factory for web tension measurement kits from 200 to 500,000 lb.

Model IC48 Imperial Class Tension & Compression Load Cell

Order Code AL121

- 100 to 100,000 lb. Range
- Designed as Calibration Reference Standards
- Enhanced Stability
- Optional ASTM E74 Calibration



Wiring Code

Connector/ Unamplified/ Sense Leads

A	(+) Excitation
B	(+) Sense
C	(-) Excitation
D	(-) Sense
E	(-) Output
F	(+) Output

Dimensions

Range (lb.)	D (in.)	H (in.)	L (in.)	T1	T2
100; 250	3.00	2.25	0.50	3/8-24 UNF-2A	3/8-24 UNF-2B
500; 1000; 2500; 5000	4.13	4.38	0.75	5/8-18 UNF-3A	5/8-18 UNF-3B
10,000; 25,000	6.06	6.38	1.50	1 1/4-12 UNF-3A	1 1/4-12 UNF-3B
50,000	8.00	8.25	2.00	1 3/4-12 UNF-3A	1 3/4-12 UNF-3B
100,000	11.00	9.75	2.50	2 3/4-8 UNF-3A	2 3/4-8 UNF-3B

Performance

Load Ranges.....	100 to 100,000 lb.
Accuracy (Static Error Band)(notes 1&2)	
100 to 1000 lb.....	+/- 0.02% Full Scale
2500 to 50,000 lb.....	+/- 0.03% Full Scale
100,000 lb.....	+/- 0.05% Full Scale
Linearity (max)	
100 to 1000 lb.....	+/- 0.02% Full Scale
2500 to 5000 lb.....	+/- 0.03% Full Scale
10,000 to 50,000 lb.....	+/- 0.04% Full Scale
100,000 lb.....	+/- 0.05% Full Scale
Hysteresis	
100 to 1000 lb.....	+/- 0.02% Full Scale
2500 to 25,000 lb.....	+/- 0.04% Full Scale
50,000 to 100,000 lb.....	+/- 0.05% Full Scale
Non-Repeatability.....	+/- 0.005% Full Scale
Tolerance on Output.....	2 mV/V
Resolution.....	Infinite
Eccentric Load Sensitivity.....	+/-0.1%/ m

Environmental

Temperature, Operating.....	-65° to 200° F
Temperature, Compensated.....	30° to 130° F
Temperature, Effect	
Zero.....	0.0008% Full Scale/° F
Span.....	0.0008% Full Scale/° F

Model IC48

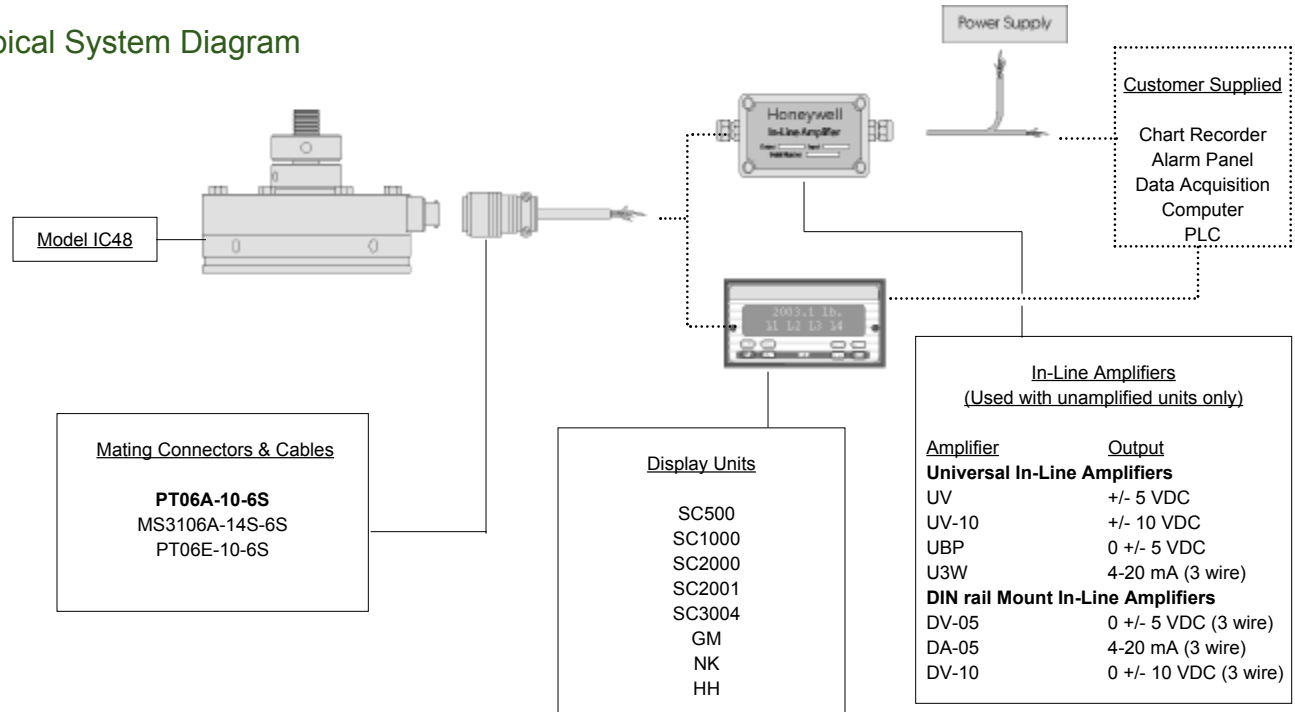
Electrical

Strain Gage Type.....	Foil
Excitation (calibration).....	10 VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Electrical Termination (std)	
100 to 250 lb.....	PTIH-10-6P
500 lb. and above.....	MS3112E-12-8P
Mating Connector (not incl.)	
100 to 250 lb.....	PT06A-10-6S
500 lb. and above.....	MS3116A-12-8S

Mechanical

Maximum Allowable Load.....	150% F.S. (note 3)
Weight(lb)	
For Load Range: 100 to 250 lb.....	4.5
500 to 5000 lb.....	7
10,000 to 25,000 lb.....	22
50,000 lb.....	48
100,000 lb.....	133
Deflection Full Scale	
100 to 250 lb.....	0.002 in.
500 to 1000 lb.....	0.001 in.
2500 to 25,000 lb.....	0.002 in.

Typical System Diagram



Ringling Frequencies

Capacity (lb.)	Ringling Frequency (Hz)
100 to 250	2,000
500	2,400
1000	3,400
2500	6,800
5000	9,100
10,000	5,700
25,000	7,000
50,000	6,300
100,000	4,500

Range Codes

Range	Range Code
100 lb.	BR
250 lb.	CN
500 lb.	CR
1000 lb.	CV
2500 lb.	DM
5000 lb.	DR
10,000 lb.	DV
25,000 lb.	EM
50,000 lb.	EP
100,000 lb.	ET

Options

	Build from Scratch
Load Range	100 to 100,000 lb.
Temperature Compensation	1b. 30° to 130° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6a. PTIH-10-6P (100 to 250 lb.) MS3112E-12-8P (≥ 500 lb.)
Special Calibration	9c. A.S.T.M. E-74 calibration
Electrical Connector Orientation	Tension only (+) output
	30a. Compression only (+) output
	30b. Tension & Compression only (+,-) output
	30c. Compression only (-) output

 Supplied as standard

Special Customer Requirements
(Consult Factory)

Calibration types, including standard calibration (performed in-house) with two 11-point tests (note 7) per direction specified:
Tension (std.)
Tension & Compression (30b)
Compression (30a or 30c)
Other size, range and output configurations

Notes

- 1. Static Error Band is the recommended performance specification. The static error band is calculated as the best fit straight line through zero, including the effects of linearity, hysteresis and non-repeatability.
- 2. Values noted are typical values but fall within the static error.
- 3. Allowable Maximum Loads- Maximum load to be applied without damage (note 4). Loads described allow for 100% full scale axial loading with the bending loads specified. Torque loading maximum is without axial or other load. For any other combination consult factory.
- 4. Without Damage- loading to this level will not cause excessive zero shift of performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
- 5. Maximum bending load without damage is 50% at capacity.
- 6. For Model IC48, load cell, pull plate and adapter are calibrated as a unit.
- 7. 11-point test is defined as 20% increments for increasing and decreasing load with one zero return reading (e.g. 0%, 20%, 40%, 60%, 80%, 100%, 80%, 60%, 40%, 20%, 0%)

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

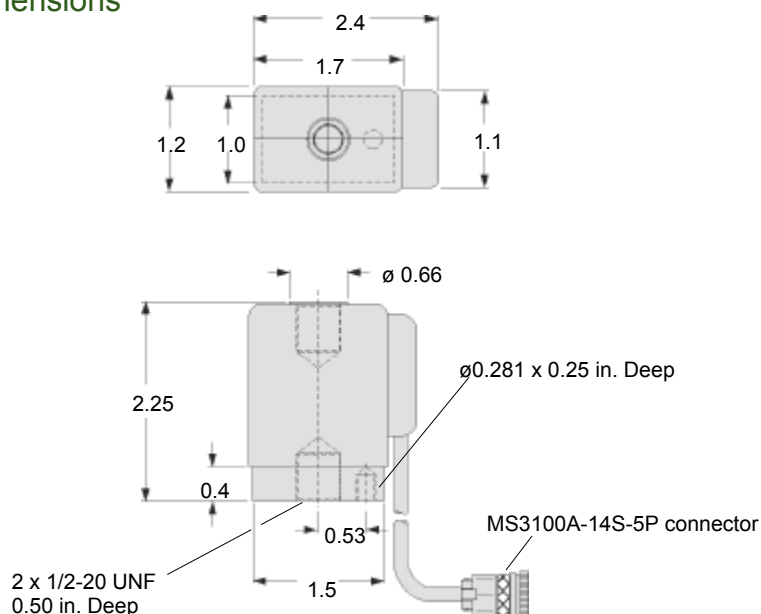
Model AL-SC High Output Load Cell

Order Code TL131

- 500 lb., 1,000 lb., & 2,000 lb. Range
- Tension/ Compression
- High Output/ Low Bridge Resistance
- Drive Meters Without Amplification
- Low Mechanical Deflection



Dimensions



Wiring Code

Tension

A	(+) Excitation
B	(+) Signal
C	(-) Signal
D	(-) Excitation
E	Shield

Compression

A	(+) Excitation
B	(-) Signal
C	(+) Signal
D	(-) Excitation
E	Shield

Performance

Load Ranges.....	500; 1,000; 2,000 lb.
Accuracy (Static Error Band) (note 1).....	+/- 1.25% Full Scale
Non-Repeatability.....	+/- 0.10% Full Scale
Output.....	70 mV/V Minimum
Operation.....	Tension/ Compression
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 200° F
Temperature, Compensated.....	10° to 120° F
Storage Temperature.....	-100° to 250° F
Temperature, Effect	
Zero.....	0.5% Full Scale/ °F
Span.....	1.0% Reading/ °F

Electrical

Strain Gage Type.....	Bonded semiconductor
Excitation (calibration).....	24 VDC or VAC (RMS)
Insulation Resistance.....	5000 Megohms @ 50V
Bridge Resistance	
Input.....	1000 Ohms (nominal)
Output.....	3000 Ohms (nominal)
Zero Balance.....	1.5% Full Scale max.
Electrical Termination (std).....	MS3100A-14S-5P at end of 1' cable

Mechanical

Maximum Allowable Load.....	200% F.S. (note 2)
Side Load Without Damage.....	25% Full Scale
Weight.....	See table
Material.....	17-4 PH Stainless Steel
Deflection.....	See table
Natural Frequency.....	See table

Notes:

1. Static error band is the recommended performance specification. The static error band is calculated as the best fit straight line through zero, including the effects of non-linearity, hysteresis and non-repeatability.
2. Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
3. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

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Deflections and Ringing Frequencies

Capacity (lb.)	Axial Deflection at Full Scale (in.)	Natural Frequency (Hz)	Weight (lb.)
500	0.0010	5000	1.2
1000	0.0015	6000	1.2
2000	0.0020	6700	1.2

Range Codes

Range	Range Code
500 lb.	CR
1000 lb.	CV
2000 lb.	DL

Options

	Built to Order
Load Range	500; 1000; 2000 lb.
Temperature Compensation	10° to 120° F
Internal Amplifiers	2u. Unamplified, mV/V Output
Electrical Termination	3106B-14S-5P connector mounted at end of 10 ft. cable
Special Calibration	30a. Compression only (+) output 30b. Tension and Compression (+,-) output 30c. Compression only (-) output

 Supplied as standard

How to Order

Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

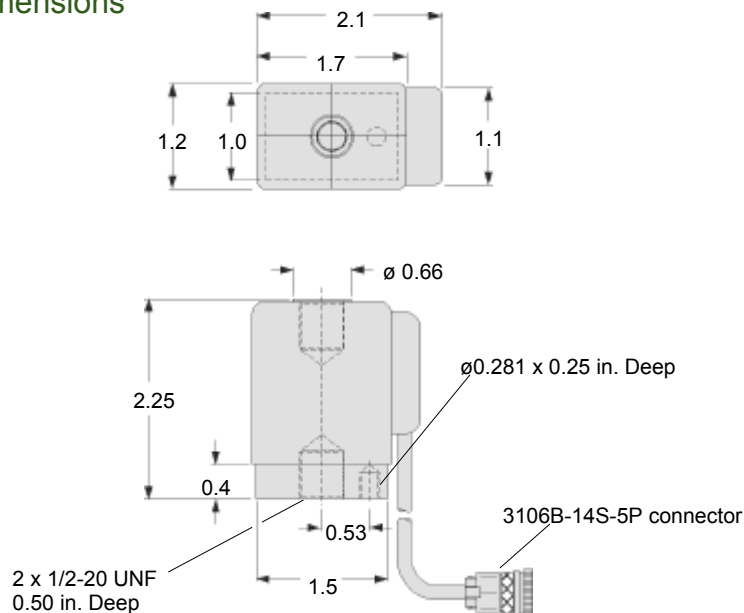
Model AL-JP High Output Load Cell

Order Code TL121

- 500 lb., 1000 lb., & 2000 lb. Range
- Tension/ Compression
- High Output/ Low Bridge Resistance
- Drive Meters Without Amplification
- Low Mechanical Deflection



Dimensions



Wiring Code

Tension

A	(+) Excitation
B	(+) Signal
C	(-) Signal
D	(-) Excitation
E	Shield

Compression

A	(+) Excitation
B	(-) Signal
C	(+) Signal
D	(-) Excitation
E	Shield

Performance

Load Ranges.....	500; 1000; 2000 lb.
Accuracy (Static Error Band) (note 1).....	+/- 0.15% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Output.....	30 mV/V Minimum
Operation.....	Tension/ Compression
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-65° to 200° F
Temperature, Compensated.....	30° to 130° F
Storage Temperature.....	-100° to 250° F
Temperature, Effect	
Zero.....	0.5% Full Scale/ °F
Span.....	0.5% Reading/ °F

Electrical

Strain Gage Type.....	Bonded semiconductor
Excitation (calibration).....	5 VDC or VAC (RMS)
Insulation Resistance.....	5000 Megohms @ 50V
Bridge Resistance.....	125 Ohms Nominal (Input and Output)
Zero Balance.....	3% Full Scale max.
Electrical Termination (std).....	3106B-14S-5P Connector mounted at end of 10' cable

Mechanical

Maximum Allowable Load.....	150% F.S. (note 2)
Side Load Without Damage.....	100%
Weight.....	See table
Material.....	17-4 PH Stainless Steel
Deflection.....	See table
Natural Frequency.....	See table

Notes:

1. Static error band is the recommended performance specification. The static error band is calculated as the best fit straight line through zero, including the effects of non-linearity, hysteresis and non-repeatability.
2. Allowable Maximum Loads- Maximum load to be applied without damage (note 3).
3. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

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Deflections and Ringing Frequencies

Capacity (lb.)	Axial Deflection at Full Scale (in.)	Natural Frequency (Hz)	Weight (lb.)
500	0.0010	5000	1.2
1000	0.0015	6000	1.2
2000	0.0020	6700	1.2

Range Codes

Range	Range Code
500 lb.	CR
1000 lb.	CV
2000 lb.	DL

Options

	Built from Scratch
Load Range	500; 1000; 2000 lb.
Temperature Compensation	10° to 120° F
Internal Amplifiers	2u. Unamplified, mV/V Output
Electrical Termination	3106B-14S-5P connector mounted at end of 10 ft. cable
Special Calibration	30a. Compression only (+) output 30b. Tension and Compression (+,-) output 30c. Compression only (-) output

 Supplied as standard

How to Order

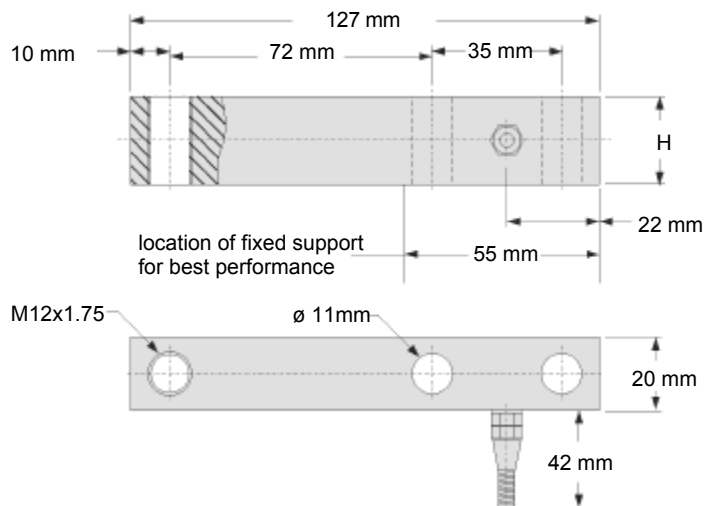
Combine the order code, the range code and the options code.

Sample Code:   
Order Code Range Code Options Code

Model 101 Load Cell

Order Code BL803

- Low Cost
- 50 to 1,000 kg Range
- +/- 0.02% Accuracy



Wiring Code

Red (+) Supply
Black (-) Supply
Green (+) Output
White (-) Output
Large Black Shield

Dimensions

Load (kg)	H (mm)	Recommended Bolt Torque (N-m)
50 - 250	18	60
500; 1,000	24	60

Performance

Load Ranges.....50; 100; 250; 500; 1,000 kg
Accuracy.....+/- 0.02% Full Scale
Output.....2.0 mV/V (nominal)
Creep (max.).....+/- 0.02% Full Scale (30 minute)

Environmental

Temperature, Operating.....-30° to 70° C
Temperature, Compensated.....-20° to 55° C
Temperature, Effect
Zero.....+/- 0.02% Full Scale/ 10° C
Span.....+/- 0.02% Full Scale/ 10° C

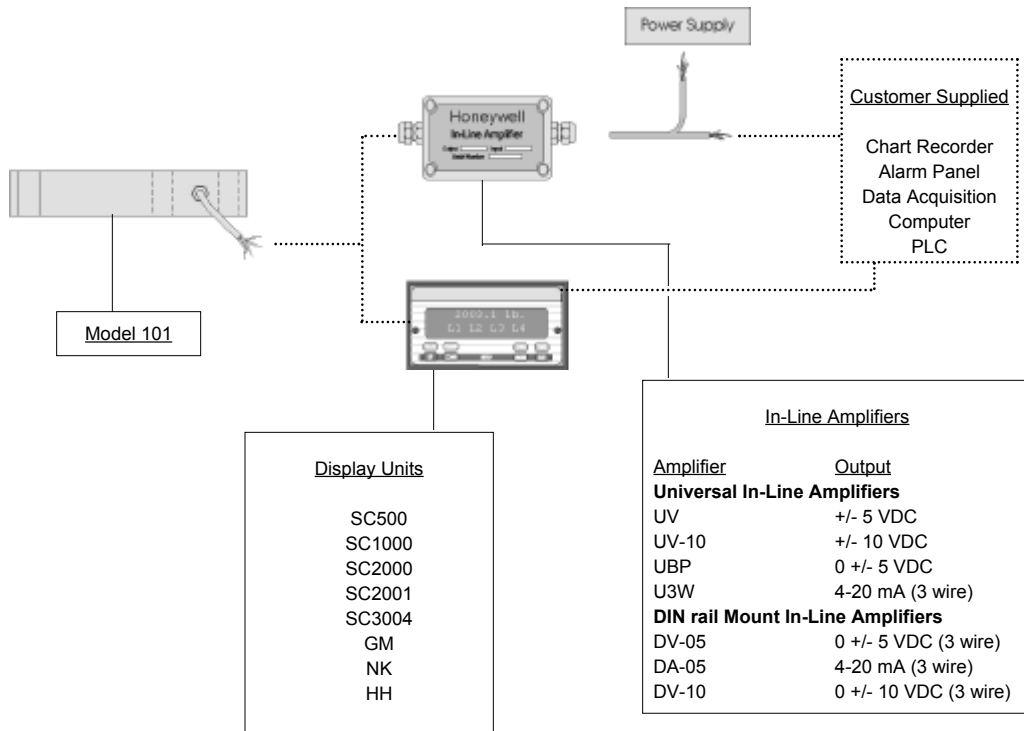
Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....10-12 VDC
Excitation (max.).....15 VDC
Insulation Resistance.....≥ 5000 Megohms
Bridge Resistance (tolerance)
Input Resistance.....400 +/- 10 Ohms (nominal)
Output Resistance.....352 +/- 2 Ohms (nominal)
Zero Balance (tolerance).....+/- 1% Full Scale
Electrical Termination (std).....3m flying leads
Maximum Allowable Load.....150% F.S. (note 1)

Mechanical

Material.....Nickel Plated Alloy Steel
Deflection.....Less than or equal to 2mm

Typical System Diagram



Range Codes

Range	Range Code
50 kg	LF
100 kg	LH
250 kg	LL
500 kg	LN
1,000 kg	LQ

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

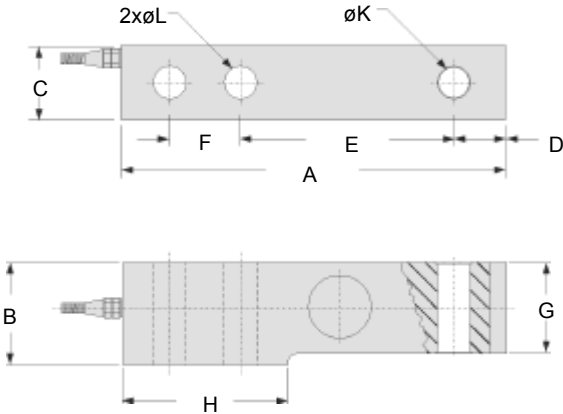
Combine the order code and the range code.

Sample Code: BL803 LL
Order Code Range Code

Model 103 Load Cell

Order Code BL805

- Low Cost
- 100 to 10,000 kg Range
- +/- 0.02% Accuracy



Wiring Code

Red (+) Supply
Black (-) Supply
Green (+) Output
White (-) Output
Large Black Shield

Dimensions

Load (kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	L (mm)	K (mm)	Recommended Bolt Torque (N-m)
100 to 300	135	36	26	18	75	25	32	58	11.5	11.5	60
500 to 2,000	135	38	30	18	75	25	34	58	13.5	13.5	100
3,000 to 5,000	170	48	38	20	85	50	39	79	18	18.5	255
10,000	263	60	60	30	118	90	52	134	26	26	860

Performance

Load Ranges.....100; 200; 300; 500; 1,000; 2,000; 3,000; 5,000; 10,000 kg
Accuracy.....+/- 0.02% Full Scale
Output.....2.0 mV/V (nominal)
Creep (max.).....+/- 0.02% Full Scale (30 minute)

Environmental

Temperature, Operating.....30° to 70° C
Temperature, Compensated.....-20° to 55° C
Temperature, Effect
Zero.....+/- 0.02% Full Scale/ 10° C
Span.....+/- 0.02% Full Scale/ 10° C

Electrical

Strain Gage Type.....Bonded Foil
Excitation (calibration).....10-12 VDC
Excitation (max.).....15 VDC
Insulation Resistance.....≥ 5000 Megohms
Bridge Resistance (tolerance)
Input Resistance.....400 +/- 10 Ohms (nominal)
Output Resistance.....352 +/- 2 Ohms (nominal)
Zero Balance (tolerance).....+/- 1% Full Scale
Electrical Termination (std)
100 to 300 kg.....3m flying leads
1,000 to 5,000 kg.....5m flying leads
10,000 kg.....8m flying leads

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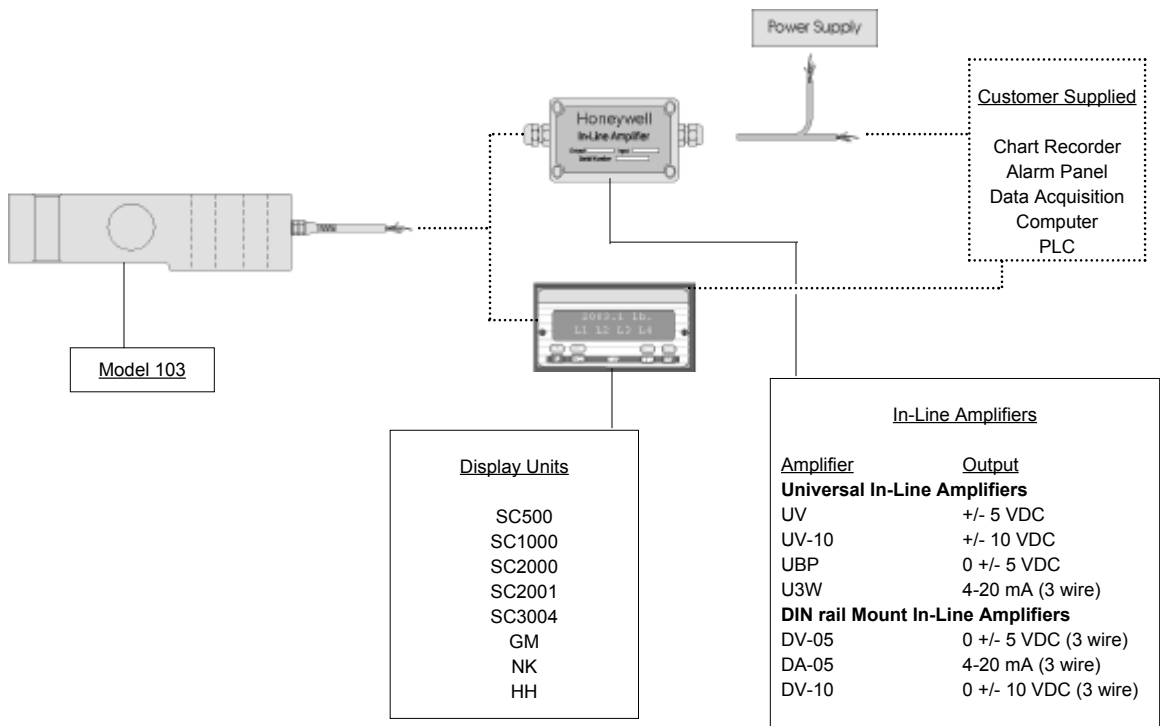
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Model 103

Mechanical

Maximum Allowable Load.....150% F.S. (note 1)
Material.....Nickel Plated Alloy Steel
Deflection.....Less than or equal to 1.5mm

Typical System Diagram



Range Codes

Range	Range Code
100 kg	LH
250 kg	LL
300 kg	LM
500 kg	LN
1,000 kg	LQ
2,000 kg	LS
5,000 kg	LU
10,000 kg	LW

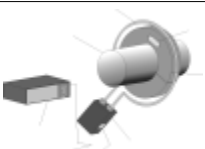
Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 2).
2. Without Damage- loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.

How to Order

Combine the order code and the range code.
Sample Code: **BL805** **LL**
Order Code Range Code

TORQUE

Potential Application			Model	Order Code	Page	
Rotary Torque	Wireless Telemetry Based	Flange Drive	RTC 6200	BT211 BT212	282 285	
		Clamp on Collar	9300	BT213	287	
		Special Applications	1211D 1602A 1603A 1605A 1642 2100 Series 2120 2126A 2145 2175	1000-1211 WM1000,WM1100 WM1200,WM1300 WM1400 1000-1642 WN1100-WN1600 1000-2120 1000-2126 1000-2145 1000-2175	289 290 292 294 296 297 299 300 301 302	
	Rotary Transformer Based	Shaft Drive	1202B 1205B TMS9000	WI1000 WI1100 see datasheet	303 305 316	
	Reaction Torque		Shaft Drive	QSFK-9	BT111	307
Flange Drive			QFFH-9	BT121	309	
Miniature			QWFK-8M QWLC-8M	BT311 BT312	311 313	
Handheld			Torque Watch	see datasheet	315	

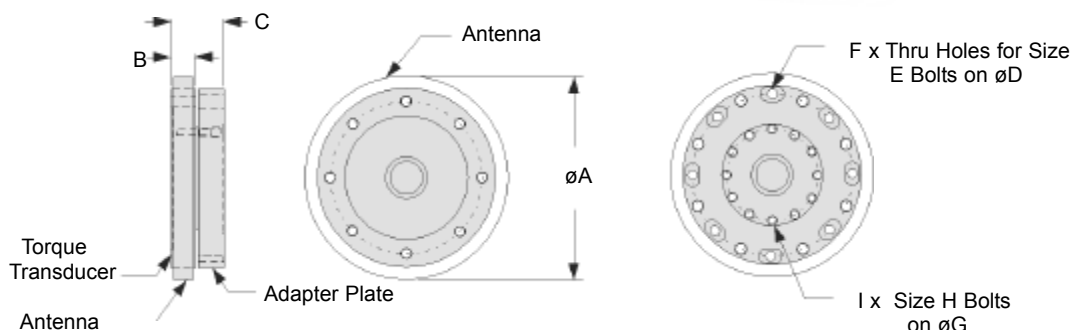
Model RTC Thin Profile In-Line Rotary Torque Transducer System

Order Code BT211 (Transducer)

- 1,500 to 170,000 lb.-in. Range
- Non Contacting Wireless Telemetry
- Frictionless

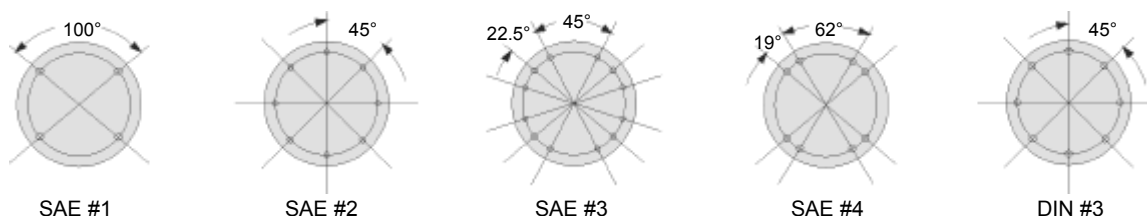


Dimensions



Max. Rated Capacity (lb.-in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F	G (in.)	H (in.)	I	Bolt Pattern Style
1,500	5.90	0.95	1.75	3.750	7/16-20	4	1.86	5/16-24	6	SAE #1
3,000	5.90	0.95	1.75	3.750	7/16-20	4	1.86	5/16-24	6	SAE #1
6,000	7.00	0.95	1.75	4.750	1/2-20	4	2.28	7/16-20	10	SAE #1
10,000	8.20	1.01	2.00	6.125	3/8-24	8	3.40	7/16-20	12	SAE #2
15,000	9.30	1.25	2.37	7.250	3/8-24	8	4.85	3/8-24	12	SAE #2
30,000	9.40	0.96	1.95	7.250	7/16-20	12	4.00	7/16-20	16	SAE #3
70,000	10.70	0.96	1.95	8.250	5/8-18	8	5.38	5/8-18	14	SAE #4
10,000	7.30	0.95	1.75	5.118	12mm-1.75	8	2.75	7/16-20	13	DIN #3
15,000	8.50	0.95	1.75	6.122	14mm-2.0	8	3.38	1/2-20	12	DIN #3
42,000	10.20	1.00	2.00	7.717	16mm-2.0	8	5.00	1/2-20	18	DIN #3
92,000	11.20	1.00	2.00	8.583	18mm-2.5	8	5.52	5/8-18	16	DIN #3
128,000	12.25	1.25	2.25	9.646	20mm-2.5	8	6.37	3/4-16	16	DIN #3
170,000	14.00	1.25	2.25	11.024	22mm-2.5	8	7.30	3/4-16	16	DIN #3

Bolt Pattern Style



Performance

Torque Ranges.....1,500 to 170,000 lb.-in.
Linearity.....+/- 0.25% Full Scale
Hysteresis.....+/- 0.25% Full Scale
Non-Repeatability.....+/- 0.05% Full Scale
Frequency Response.....DC to 1,000 Hz
Sensitivity (Transmitter).....175 microstrain (0.5mV/V)
Number of channels.....1
Sampling Rate.....10 kHz
Receiver Readout Display Type.....3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....-67° to 257° F
Temperature, Operating (Receiver/ IPS/ PSU).....5° to 149°F
Temperature, Compensated (Transmitter).....32° to 167°F
Temperature, Compensated (Receiver).....32° to 127°F
Static G Force (Rotating components).....15,000 G's
RPM Limits (Rotating components).....See Graph - depends on shaft diameter
Vibration (Rotating components).....100 G to 1 kHz
Collar Weight.....varies with shaft diameter
Electronics Weight (not including cables).....Receiver and IPS 7.5 lb.

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Model RTC

Electrical

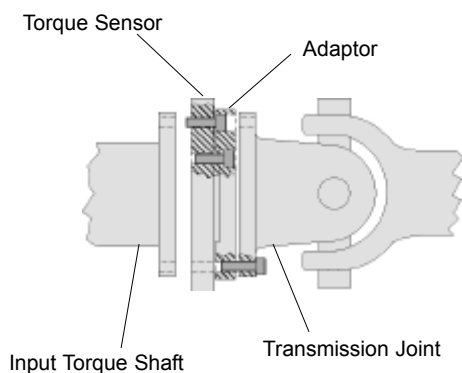
Induction Power Source.....	160 kHz +/- 6%
Cable Length (IPS to Receiver).....	15 ft. std. (note 1)
Max. Cable Length (IPS to Receiver).....	100 ft.
Power Supply Voltage (Receiver).....	120/ 240 VAC user-selectable
Power Consumption (Receiver).....	200 VA max.
RF Operating Frequency.....	Factory set, 13-22 MHz, 1MHz steps
RF Modulation Type.....	PWM
Signal Strength Indicator (Receiver).....	LED Bargraph
Analog Output (Receiver).....	+/- 10 VDC @ 1mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	BNC female
Mating Connector (Receiver Output).....	BNC male
Output Filter Capability (Receiver).....	user selectable 1,000, 500,200,100, 1 Hz

Mechanical

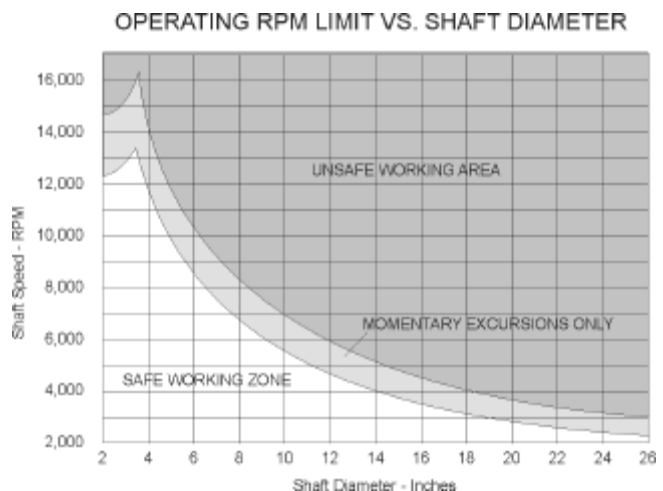
Dimensions (Collar Cross Section).....	1.25" x 1.25" Typical (6" OD min.)
Dimensions (Receiver).....	11.5" L x 8.6" W x 3.5" H
Dimensions (IPS).....	6" L x 4" W x 2.5" H
Shaft Diameter Limits (Collar).....	2" to 42"
Collar Material.....	Type G-11 Glass epoxy

Flange Style SAE	Max. Rated Capacity (in.-lb.)	Max Speed (RPM) (note 2)	Torsional Stiffness x 10 ⁶ (in.-lb./rad)	Rotating Inertia (lb.-in. ²)	Max. Thrust (lb.)	Max. Shear (Sideload) (lb.)	Max. Bending (in.-lb.)
37-41	1,500	16,000	11	10.5	750	700	600
37-41	3,000	16,000	23	10.5	2,000	1,400	1,200
48-55	6,000	15,000	57	24	3,000	2,000	2,500
61	10,000	13,000	136	51	3,500	2,000	6,000
71	15,000	11,000	246	94	3,500	2,000	9,500
81	30,000	11,000	485	98	7,000	4,000	15,000
88-91	70,000	9,000	1258	178	10,000	6,000	25,000
Flange Style DIN	Max. Rated Capacity (in.-lb.)	Max Speed (RPM) (note 2)	Torsional Stiffness x 10 ⁶ (in.-lb./rad)	Rotating Inertia (lb.-in. ²)	Max. Thrust (lb.)	Max. Shear (Sideload) (lb.)	Max. Bending (in.-lb.)
150	10,000	13,000	115	30	5,000	3,000	6,000
180	15,000	11,000	180	61	6,000	4,500	9,000
225	42,000	9,000	660	141	10,000	6,000	25,000
250	92,000	8,000	1610	219	13,000	8,000	8,000
285	128,000	7,000	2540	330	16,000	10,000	65,000
315	170,000	6,000	3870	608	20,000	12,000	75,000

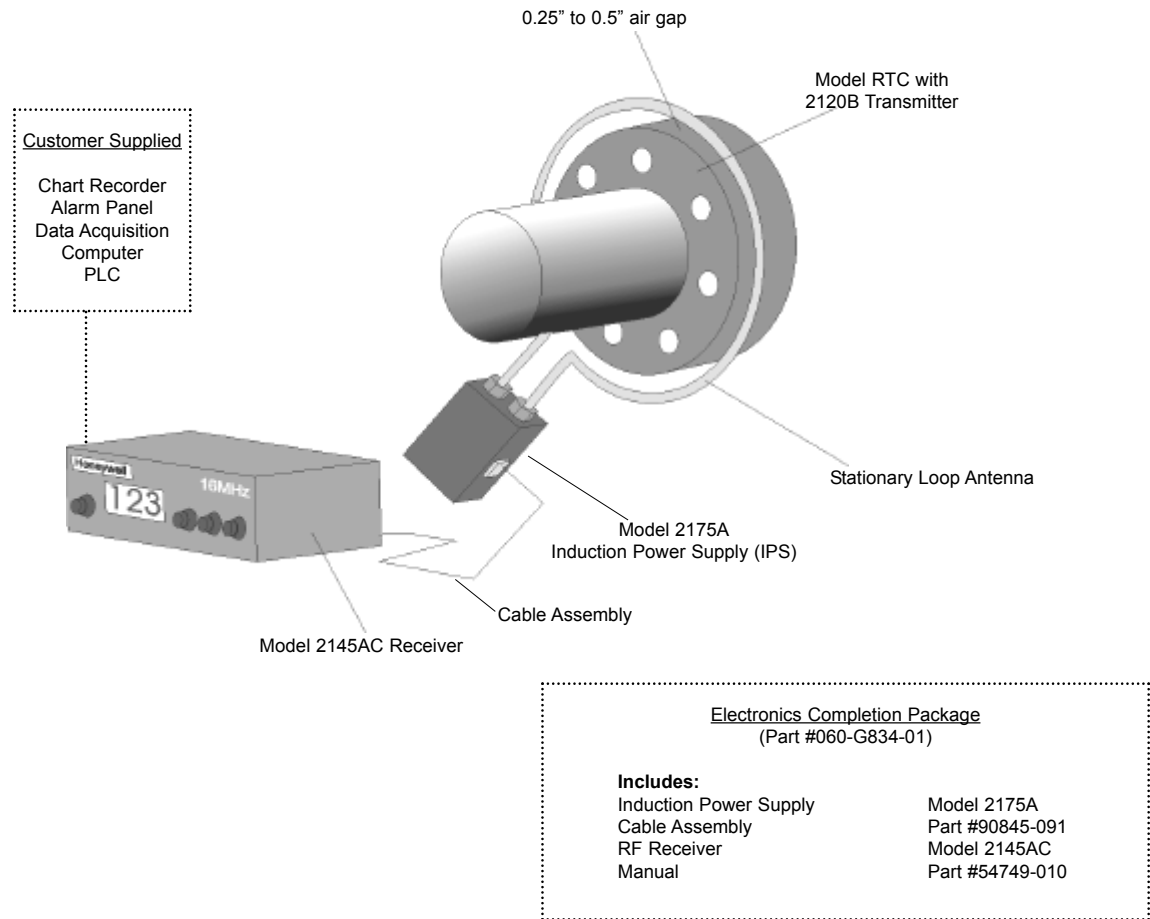
Typical Mounting Diagram



RPM Limits Graph



Typical System Diagram (note 3)



Options

	Built to Order
Torque Range	1,500 to 170,000 in.-lb.
Available Frequencies (note 4)	16MHz
Environmental Protection IPS	62h. Nema IPS
Receiver Power Supply	62v. DC (specify 12 VDC or 24 VDC)

Supplied as standard

Range Codes

Range	Range Code
1,500 in.-lb.	TQ
3,000 in.-lb.	TR
6,000 in.-lb.	TT
12,000 in.-lb.	TV
24,000 in.-lb.	TW

Notes

1. Consult factory for other cable lengths.
2. Consult factory for higher maximum speeds.
3. See Model 2100 datasheet for further information on the typical system setup.
4. Consult factory for other frequencies.

How to Order

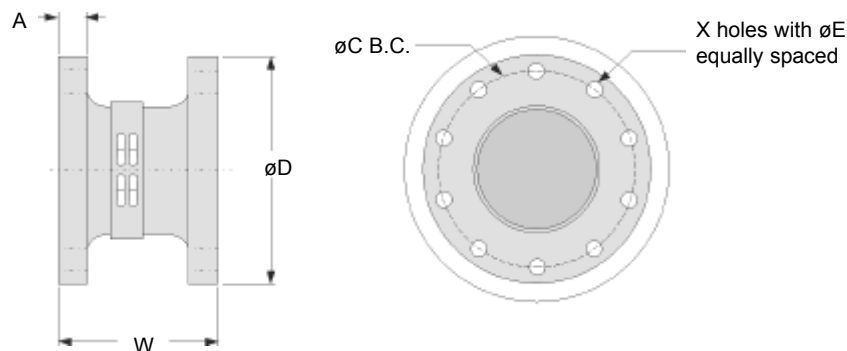
The order code consists of the product model, the desired range code and the available options.

Sample Code: **BT211** **TT** **62h**
Model Code Range Code Options

Model 6200 In-Line Rotary Torque Transducer System

Order Code BT212 (Transducer)

- 2000 to 100,000 lb.-in. Range
- Non Contacting
- Frictionless



Dimensions

Torque (lb.-in.)	ØD (in.)	W (in.)	A (in.)	X Holes	Bolt Circle C (in.)	Dia. Thru E (in.)
2000 to 10,000	5.00	3.50	0.63	8	4.25	0.39
15,000 to 30,000	6.25	5.00	0.75	10	5.25	0.65
35,000 to 50,000	8.00	6.00	1.00	10	6.50	0.78
75,000 to 100,000	10.00	8.00	1.25	10	8.25	0.90

Performance

Torque Ranges.....	2,000 to 100,000 lb.-in.
Linearity.....	+/- 0.25% Full Scale
Hysteresis.....	+/- 0.25% Full Scale
Non-Repeatability.....	+/- 0.03% Full Scale
Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	175 microstrain (0.5mV/V)
Number of channels.....	1
Sampling Rate.....	10 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....	-67° to 257° F
Temperature, Operating (Receiver/ IPS/ PSU).....	5° to 149°F
Temperature, Compensated (Transmitter).....	32° to 167°F
Temperature, Compensated (Receiver).....	32° to 127°F
Static G Force (Rotating components).....	15,000 G's
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	100 G to 1 kHz
Collar Weight.....	varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and IPS 7.5 lb.

Electrical

Induction Power Source.....	160 kHz +/- 6%
Cable Length (IPS to Receiver).....	15 ft. std. (note 1)
Max. Cable Length (IPS to Receiver).....	100 ft.
Power Supply Voltage (Receiver).....	120/ 240 VAC user-selectable
Power Consumption (Receiver).....	200 VA max.
RF Operating Frequency.....	Factory set, 16 MHz Standard
RF Modulation Type.....	PWM
Signal Strength Indicator (Receiver).....	LED Bargraph
Analog Output (Receiver).....	+/- 10 VDC @ 1mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	BNC female
Mating Connector (Receiver Output).....	BNC male
Output Filter Capability (Receiver).....	user selectable 1,000, 500,200,100, 1 Hz

Mechanical

Dimensions (Receiver).....	11.5" L x 8.6" W x 3.5" H
Dimensions (IPS).....	6" L x 4" W x 2.5" H
Shaft Diameter Limits (Collar).....	.2" to 42"
Collar Material.....	Type G-11 Glass epoxy

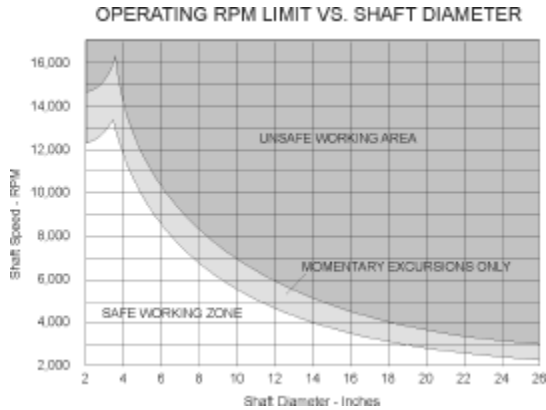
1-888-282-9891

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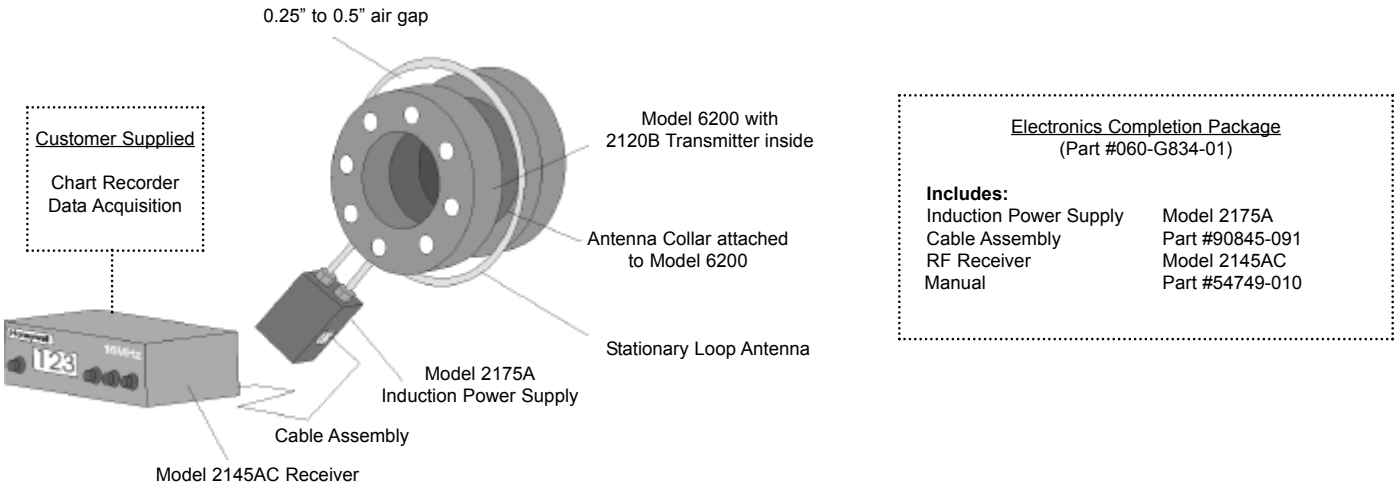
Mechanical (continued)

Max. Rated Capacity (in.-lb.)	Max. Speed (RPM)	Torsional Stiffness x 10 ⁶ (in.-lb./ Rad)	Rotating Inertia (lb.-in. ²)	Max. Thrust (lb.)	Max. Shear (sideload) (lb.)	Max. Bending (in.-lb.)
10,000	12,000	10.45	25	10,000	2,500	5,000
30,000	10,000	25.42	70	17,000	5,000	15,000
50,000	8,500	52.70	250	30,000	7,500	25,000
100,000	7,000	93.19	700	40,000	12,000	50,000

RPM Limits Graph



Typical System Diagram (note 2)



Options

	Built to Order
Torque Range	2,000 to 100,000 in.-lb.
Available Frequencies (note 3)	16 MHz
Environmental Protection IPS	62h. Nema IPS
Receiver Power Supply	62v. DC (specify 12 VDC or 24 VDC)

Supplied as standard

Range Codes

Range	Range Code
3,000 lb.-in.	TR
6,000 lb.-in.	TT
12,000 lb.-in.	TV
24,000 lb.-in.	TW

Notes

1. Consult factory for other cable lengths.
2. See Model 2100 datasheet for further information on the typical system setup.
3. Consult factory for other frequencies.

How to Order

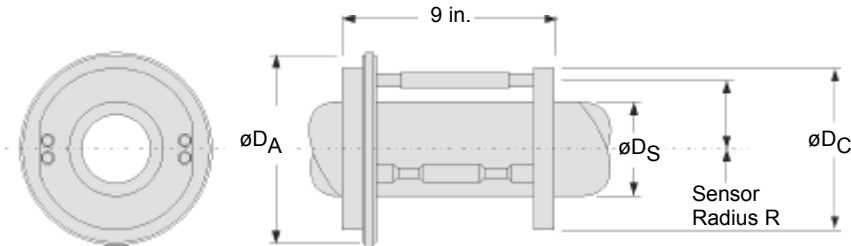
The order code consists of the product model, the desired range code and the available options.

Sample Code: **BT212** **TT** **62h**
Model Code Range Code Options

Model 9300 Clamp on Rotary Torque Transducer System

Order Code BT213 (Clamp on Assembly)

- Ideal for Short Term Testing
- Converts Your Shaft into a Torque Transducer
- Shaft Sizes From 2.5" to 15.4"



Dimensions

Shaft Diameter		Sensor Radius	Antenna Diameter	Collar Diameter
D_S (in.) (ID)	D_S (in.) (OD)	R (in.)	D_A (in.)	D_C (in.)
2.5	3.44	2.4	7.00	5.88
3.44	4.44	2.9	8.00	6.88
4.44	5.44	3.4	9.00	7.88
5.44	6.44	3.9	10.00	8.88
6.44	7.44	4.4	11.00	9.88
7.44	8.44	4.9	12.00	10.88
8.44	9.44	5.4	13.00	11.88
9.44	10.44	5.9	14.00	12.88
10.44	11.44	6.4	15.00	13.88
11.44	12.44	6.9	16.00	14.88
12.44	13.44	7.4	17.00	15.88
13.44	14.44	7.9	18.00	16.88
14.44	15.44	8.4	19.00	17.88

Performance

Torque Ranges.....	Varies on application; consult factory
Linearity.....	+/- 0.15% Full Scale
Non-Repeatability.....	+/- 0.05% Full Scale
Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	300 microstrain
Number of channels.....	1
Sampling Rate.....	5 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....	16° to 167° F
Temperature, Operating (Receiver/ IPS/ PSU).....	40° to 140°F
Temperature, Compensated (Transmitter).....	32° to 167°F
Temperature, Compensated (Receiver).....	32° to 127°F
Temperature Effects	
Zero (max.).....	+/- 0.01% Full Scale
Span (max.).....	+/- 0.005% Full Scale
Static G Force (Rotating components).....	100 G
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	10 G to 1 kHz
Collar Weight.....	varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and IPS 7.5 lb.

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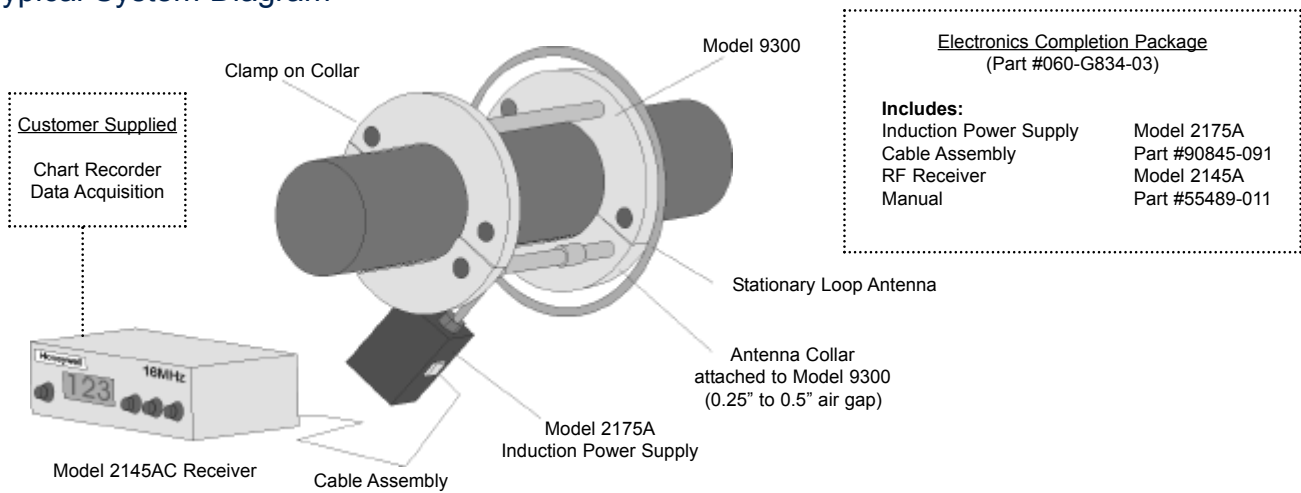
Electrical

Induction Power Source.....	160 kHz +/- 6%
Cable Length (IPS to Receiver).....	15 ft. std. (note 1)
Max. Cable Length (IPS to Receiver).....	100 ft.
Power Supply Voltage (Receiver).....	120/ 240 VAC user-selectable
Power Consumption (Receiver).....	200 VA max.
RF Operating Frequency.....	Factory set, 16 MHz standard
RF Modulation Type.....	PWM
Signal Strength Indicator (Receiver).....	LED Bargraph
Analog Output (Receiver).....	+/- 10 VDC @ 1mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	BNC female
Mating Connector (Receiver Output).....	BNC male
Output Filter Capability (Receiver).....	user selectable 1,000; 500; 200; 100; 1 Hz

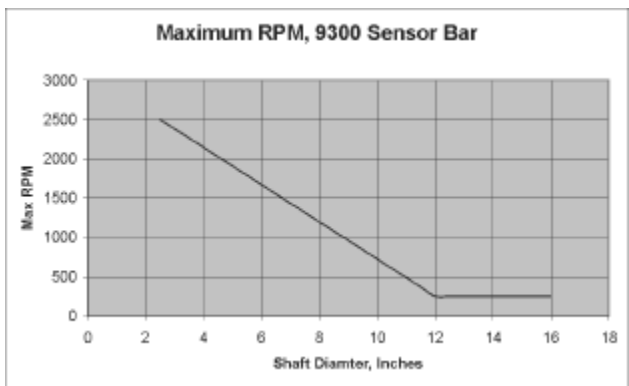
Mechanical

Dimensions (Collar Cross Section).....	Varies with shaft diameter
Dimensions (Receiver).....	11.5" L x 8.6" W x 3.5" H
Dimensions (IPS).....	6" L x 4" W x 2.5" H
Rotational Clearance (Collar).....	2.5" all around
Shaft Diameter Limits (Collar).....	2.5" to 15.4"
Collar Material.....	Phenolic, Steel

Typical System Diagram



RPM Limits Graph (note 2)



Options

	Built to Order
Torque Range	Varies on application; consult factory
Available Frequencies	16 MHz
Environmental Protection	62h. Nema IPS
Receiver Power Supply	62v. DC (specify 12 VDC or 24 VDC)

Notes

1. Consult factory for other cable lengths.
2. Consult factory for higher RPM speeds.

How to Order

The order code consists of the product model, the desired range and the available options.

Sample Code: **BT213** **3000lb.-in.** **62h**
Model Code Range Options

Model 1211D Power Separation Unit

Order Code 1000-1211

- Used by the 1200 and 1700 Series Products
- Maximum Cable Length of 500 ft. to Receiver
- Aluminum Case Material

The 1211D Power Separation Unit (PSU) is a flange mounted box which contains an impedance matching transformer and resonance capacitance decade switch. This device matches the high voltage low current 160 kHz oscillator power source to the low voltage high current single loop stationary antenna inserted into connections of the 1211D. In addition to transferring power to the transmitter, the antenna also receives the RF data signal and routes it via coaxial cable to the receiver for processing.



Environmental

Temperature, Operating.....5° to 122° F
Weight.....3 lb.

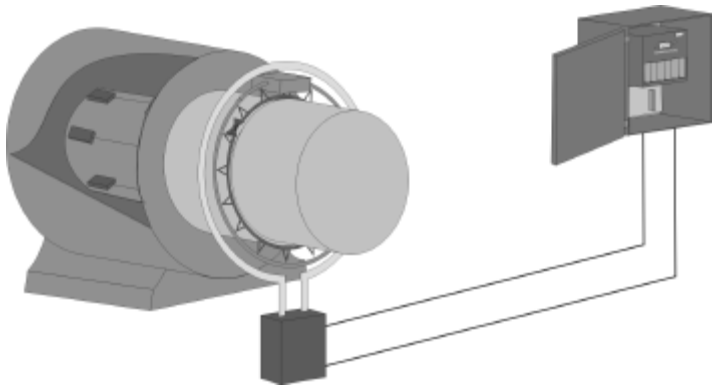
Electrical

Induction Power Source.....160 kHz +/- 6%
Cable Length (PSU to Receiver).....Varies on application
Max. Cable Length (PSU to Receiver).....500 ft.
Electrical Termination.....BNC Female
Mating Connector.....BNC Male

Mechanical

Dimensions.....6" L x 4" W x 2" H
Case Material.....Aluminum

Typical System Diagrams



1211D As part of the 1700 monitoring system

How to Order

Enter the order code.

Sample Code **1000-1211**
Order Code

1-888-282-9891

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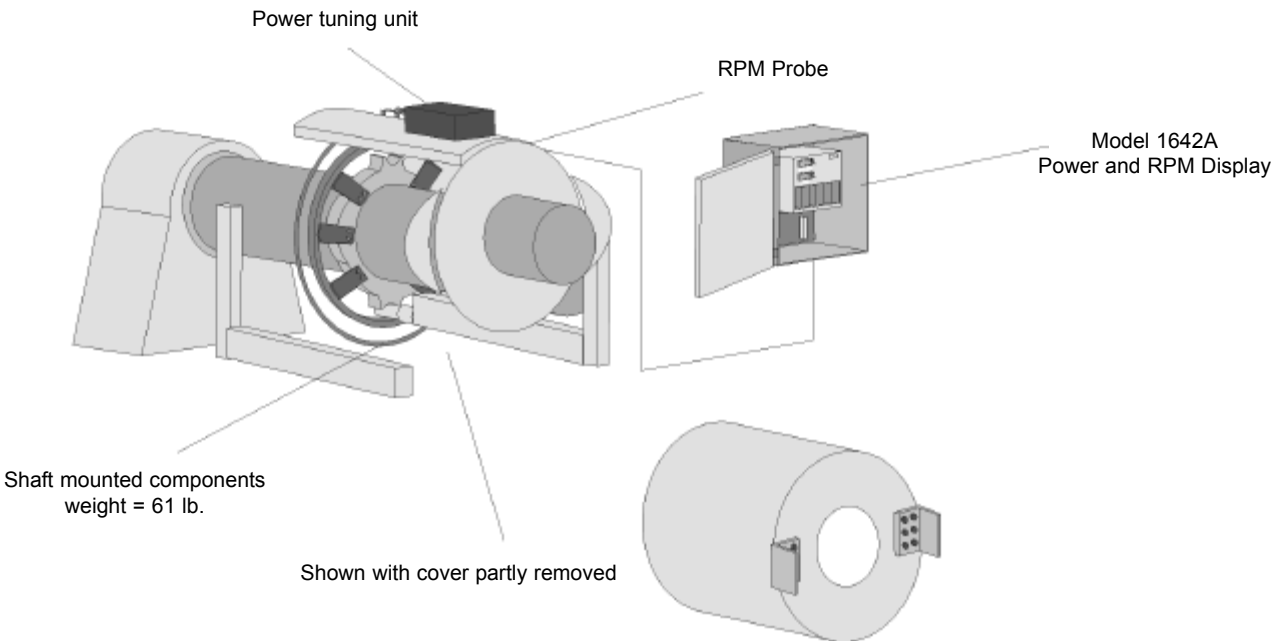
Model 1602A/ 1602A-01* Propulsion Monitoring Systems

Order Code WM1000(1602A)/ WM1100(1602A-01)

- Cost Effective
- Enhanced Stability
- Shaft Sizes From 15" to 30"

The 1602A Propulsion Monitoring System fits shaft sized from 15" to 30" in diameter. The system is enclosed in a strong outer cover and has an electronics readout assembly in a water tight enclosure. These units together provide the means for measuring shaft torque and rpm. Digital readouts are available to display torque, rpm and computed horsepower. Built-in calibration check circuitry can be activated at any time to verify that all local displays and outputs are functional. Enhanced stability and reduced maintenance are the payback for selecting this system. The Model 1602A/-01 systems can be used in a variety of potential applications including fuel conservation programs, hull and propeller fouling, load and balancing on twin screw vessels, power plant monitor and sea trial torsionmeter.

Typical System Diagram



Performance

Torque Ranges.....	Varies on application; consult factory
Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	300 microstrain
Number of channels.....	1 to 3 (Torque, RPM, HP)
Sampling Rate.....	5 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....	5° to 167° F
Temperature, Operating (Receiver/ IPS/ PSU).....	50° to 122° F
Temperature, Compensated (Transmitter).....	40° to 140° F
Temperature, Compensated (Receiver).....	50° to 122° F
Static G Force (Rotating components).....	100 G's
RPM Limits (Rotating components).....	See graph- depends on shaft diameter
Vibration (Rotating components).....	10 G to 1 kHz
Collar Weight.....	Varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and PSU 33 lb.

Electrical

Induction Power Source.....	160 kHz +/- 6%
Cable Length (PSU to Receiver).....	Cables NOT included
Max. Cable Length (PSU to Receiver).....	100 ft.
Power Supply Voltage (Receiver).....	115- 230 VAC (user-selectable)
Power Consumption (Receiver).....	100 VA max.
RF Operating Frequency.....	16 MHz
RF Modulation Type.....	FSK
Max. Analog Output (Receiver).....	+/- 10 VDC@ 1 mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	Screw Terminal

* 1602A and 1602A-01 are identical except that 1602A-01 is for torque measurement only.

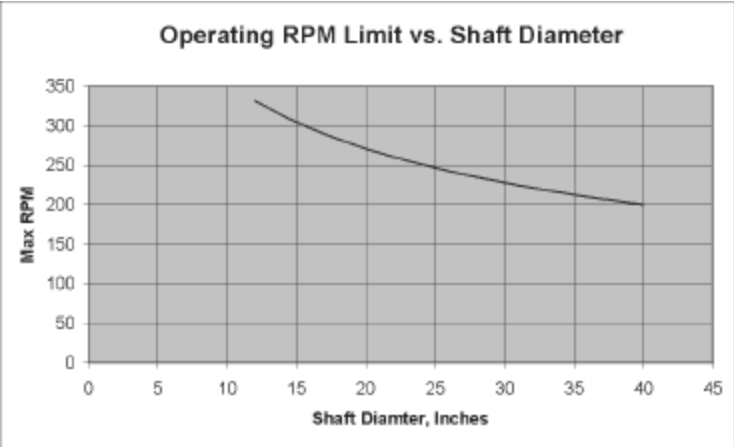
1-888-282-9891

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Mechanical

Dimensions (Collar Cross Section).....	Varies with shaft diameter
Dimensions (Receiver).....	16" L x 20" W x 10" H
Dimensions (PSU).....	Not Applicable (built into Shield Assembly)
Rotational Clearance (Collar).....	Varies with shaft diameter
Shaft Diameter Limits (Collar).....	15" to 30"
Collar Material.....	Zinc-Plated Steel

RPM Limits Graph



Options

	Built to Order
Totalizer	62a. Horsepower-hour totalizer 62b. Revolutions totalizer
RF Operating Frequency	16 MHz (note 1)
Display (Receiver)	62c. Remote display
Analog Output (Receiver)	62e. 1 Channel 4-20 mA isolated output 62f. 2 Channel 4-20 mA isolated output
Filter (Receiver)	62d. EMI filter
Collar Material	Zinc-Plated Steel (note 2)
Shock & vibration	62g. Heavy duty shield and receiver

■ Supplied as standard

Notes

1. Other frequencies available. Consult factory.
2. Other collar materials available. Consult factory.

How to Order

Combine the order code and the options code.

Sample Code: WM1100 62c
Order Code Options Code

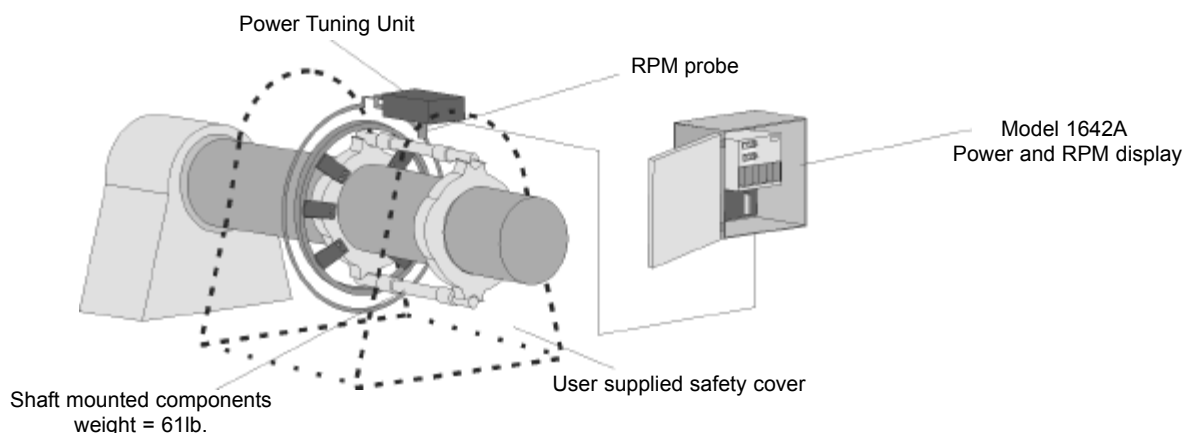
Model 1603A/ 1603A-01* Propulsion Monitoring System (without cover)

Order Code WM1200(1603A)/ WM1300(1603A-01)

- Enhanced Stability
- Enables Installation in Tight Spaces
- Shaft Sizes From 2.5" to 30"

The Model 1603A/-01 Power Measurement System is identical to the Model 1602A System except for the elimination of the cover over the shaft sensor unit which enables installation in tight spaces such as under existing covers or deck plates. The system fits shaft sizes from 2.5" to 30" in diameter. The system has an electronics readout assembly in a water tight enclosure. These units together provide means for measuring shaft torque and rpm. Digital readouts are available to display torque, rpm and computed horsepower. Built-in calibration check circuitry can be activated at any time to verify that all local displays and outputs are functional. Enhanced stability and reduced maintenance are the payback for selecting this system. The Model 1603A/-01 systems can be used in a variety of potential applications including fuel conservation programs, hull and propeller fouling, power plant monitor and sea trial torsionmeter.

Typical System Diagram



Performance

Torque Ranges.....	Varies on application; consult factory.
Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	300 microstrain
Number of channels.....	1 to 3 (Torque, RPM, HP)
Sampling Rate.....	5 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment red LED

Environmental

Temperature, Operating (Transmitter).....	5° to 167° F
Temperature, Operating (Receiver/ IPS/ PSU).....	50° to 122°F
Temperature, Compensated (Transmitter).....	40° to 140°F
Temperature, Compensated (Receiver).....	50° to 122°F
Static G Force (Rotating components).....	100 G's
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	10 G to 1 kHz
Collar Weight.....	varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and PSU 33 lb.

Electrical

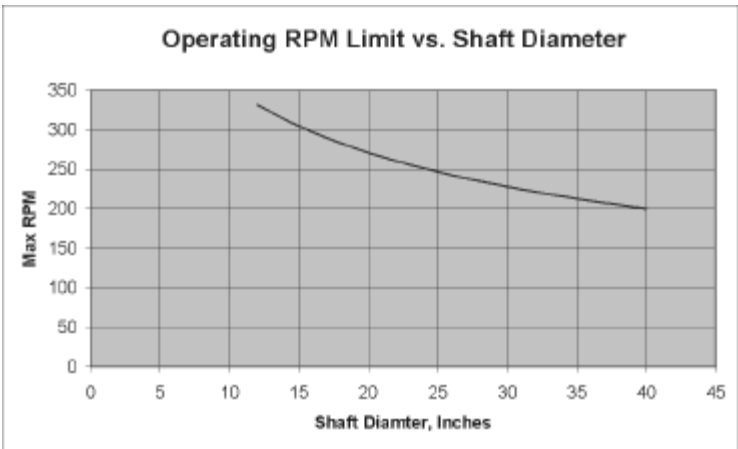
Induction Power Source.....	160 kHz +/- 6%
Cable Length (PSU to Receiver).....	Cables NOT included
Max. Cable Length (PSU to Receiver).....	100 ft.
Power Supply Voltage (Receiver).....	115/ 230 VAC (user-selectable)
Power Consumption (Receiver).....	100 VA max.
RF Operating Frequency.....	16 MHz
RF Modulation Type.....	FSK
Max. Analog Output (Receiver).....	+/- 10 VDC @ 1 mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	Screw Terminal

* 1603A and 1603A-01 are identical except that 1603A-01 is for torque measurement only.

Mechanical

Dimensions (Collar Cross Section)	Varies with shaft diameter
Dimensions (Receiver)	16" L x 20" W x 10" H
Dimensions (PSU)	6" L x 4" W x 2" H
Rotational Clearance (Collar)	2.5" all around
Shaft Diameter Limits (Collar)	2.5" to 30"
Collar Material	Phenolic/ Aluminum or Steel

RPM Limits Graph



Options

	Built to Order
Totalizer	62a. Horsepower-hour totalizer 62b. Revolutions totalizer
RF Operating Frequency	16 MHz (note 1)
Display (Receiver)	62c. Remote display
Analog Output (Receiver)	62e. 1 Channel 4-20 mA isolated output 62f. 2 Channel 4-20 mA isolated output
Filter (Receiver)	62d. EMI filter
RPM Sensor	62m. Optical 62l. Magnetic
System Material	62k. Non-magnetic
Shock & vibration	62j. Vibration/Shock rated PSU

■ Supplied as standard

Notes

1. Other frequencies available. Consult factory.

How to Order

Combine the order code and the options code.

Sample Code: WM1200 62c
Order Code Options Code

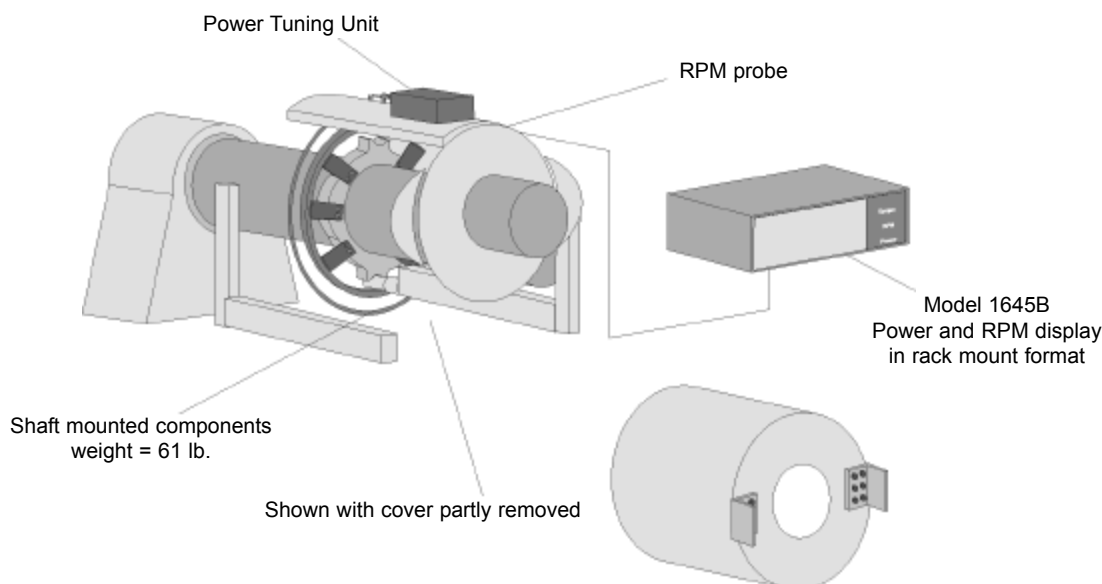
Model 1605A Horsepower Monitoring System

Order Code WM1400

- Enhanced Stability
- Readout can Handle all Diesel and Turbine Power Plants
- Shaft Sizes From 15" to 30"

The Model 1605B Universal power and torque measurement system consists of bolt-on shaft sensor units for shafts between 15" and 30," which can handle most diesel and turbine power plants. Most ranges of rpm and power are accommodated with large over range capability. The data band width is DC to 1000 Hz, allowing for torsional vibration measurement without a second monitoring system.

Typical System Diagram



Performance

Torque Ranges.....	Varies on application; consult factory.
Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	300 microstrain
Number of channels.....	1 to 3 (Torque, RPM, HP)
Sampling Rate.....	5 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment red LED

Environmental

Temperature, Operating (Transmitter).....	5° to 167° F
Temperature, Operating (Receiver/ IPS/ PSU).....	50° to 122°F
Temperature, Compensated (Transmitter).....	40° to 140°F
Temperature, Compensated (Receiver).....	50° to 122°F
Static G Force (Rotating components).....	100 G's
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	10 G to 1 kHz
Collar Weight.....	varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and PSU 33 lb.

Electrical

Induction Power Source.....	160 kHz +/- 6%
Cable Length (PSU to Receiver).....	Cables NOT included
Max. Cable Length (PSU to Receiver).....	100 ft.
Power Supply Voltage (Receiver).....	115/ 230 VAC (user-selectable)
Power Consumption (Receiver).....	100 VA max.
RF Operating Frequency.....	16 MHz
RF Modulation Type.....	FSK
Analog Output (Receiver).....	+/- 10 VDC @ 1 mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	BNC Female
Mating Connector (Receiver Output).....	BNC Male

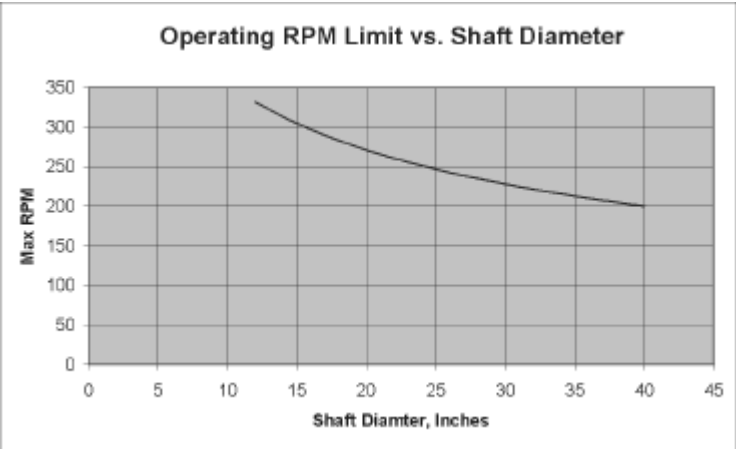
1-888-282-9891

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Mechanical

Dimensions (Collar Cross Section)	Varies with shaft diameter
Dimensions (Receiver)	17" L x 18" W x 5.25" H
Dimensions (PSU)	6" L x 4" W x 2" H
Rotational Clearance (Collar)	Varies with shaft diameter
Shaft Diameter Limits (Collar)	15" to 30"
Collar Material	Zinc-Plated Steel

RPM Limits Graph



Options

	Built to Order
RF Operating Frequency	16 MHz (note 1)
Display (Receiver)	62c. Remote display
Collar Material	Zinc-Plated Steel
Shock & Vibration (PSU)	62j. Vibration/ Shock rated PSU
Analog Output	+/- 10 VDC @ 1 mA max. 62e. 4-20 mA isolated output
RPM Sensor	Optical RPM-multireading

 Supplied as standard

Notes

1. Other frequencies available. Consult factory.

How to Order

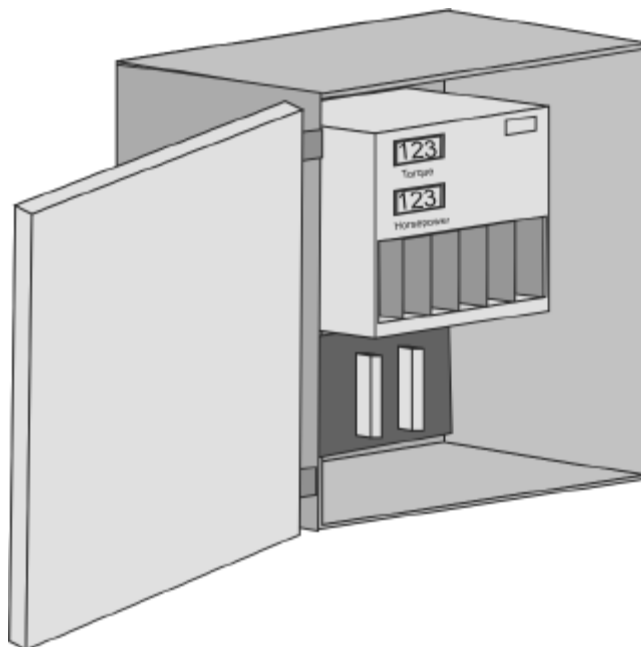
Combine the order code and the options code.

Sample Code: **WM1400** **62c**
Order Code Options Code

Model 1642 Receiver/ Display Unit

Order Code 1000-1642

- +/- 0.75% of Full Scale Torque Accuracy
- +/- 1% of Full Scale Power Accuracy
- DC to 1000 Hz Frequency Response



Performance

Readout Unit Displays (2).....+/- 3 1/2 digits
Frequency Response.....DC to 1000 Hz (3-dB limit)
Accuracy
Torque.....+/- 0.75% of Full Scale
RPM.....+/- 0.25% of Full Scale
Power.....+/- 1% of Full Scale

Environmental

Temperature, Operating.....50° to 120° F
Weight.....30 lb.

Electrical

Analog Recorder Outputs
Torque.....+/- 5 V scaled (+100% overrange, HP system only)
RPM.....0-10 V scaled
Power.....0-10 V scaled
Recorder Output Impedance.....<1.0 Ohm resistive nominal
Power Requirements.....115/ 230 VAC (-15% to + 10%) selectable, 50/ 60 Hz
Power Consumption.....100 VA max.

Mechanical

Enclosure- type.....Aluminum NEMA type 4 (water tight) wall mounting
Enclosure- size.....16" wide by 20" high by 10" deep
Output and Input Connections.....Screw terminals

How to Order

Enter the product order code

Sample Code **1000-1642**
Order Code

1-888-282-9891

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Model 2101 to 2106 Rotary Measurement Systems

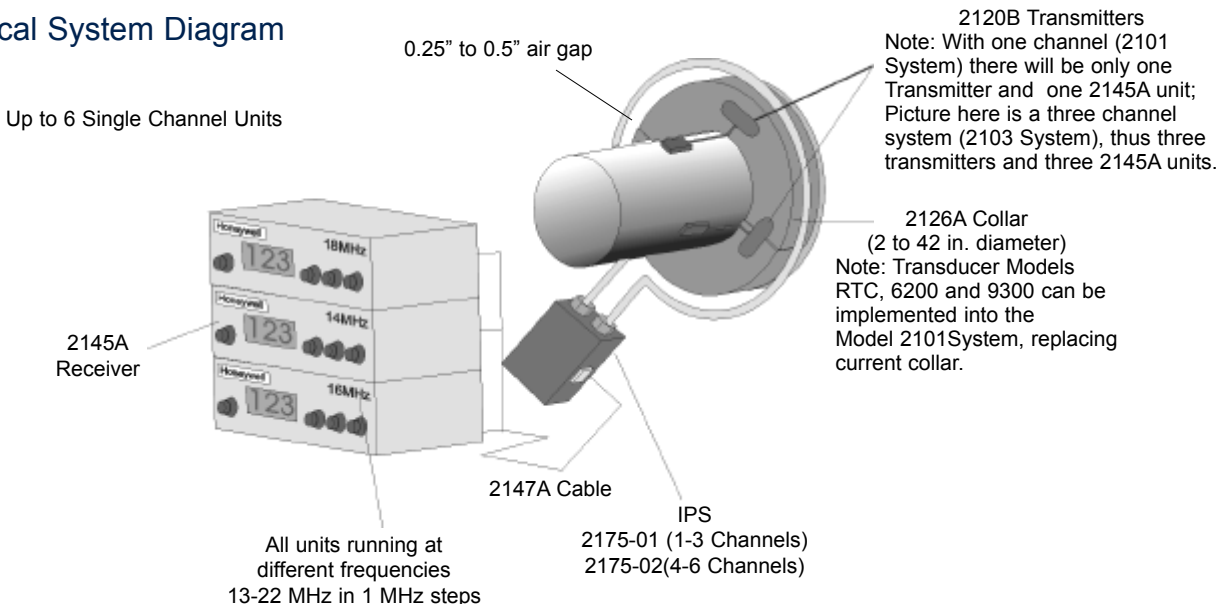
1 to 6 Channel Systems

- Quick Short Term Installation
- 1 to 6 Channels Wireless Telemetry
- Clamp-on Collar Machined to Fit Each Application

The 2100 series Rotary Torque Measurement Systems are well suited for both short and long term testing and monitoring of torque or strain on rotating applications where other measurement methods are affected by vibration, dust, moisture, high RPMs, and large axial/ radial shaft movements. The custom machined collar assembly, stationary loop antenna, induced power supply (IPS), and receiver are pre-tested as a set at the factory, enabling quick installation and setup of the system for the user. The collar has a preassembled antenna, embedded transmitter with pins for connecting to strain gages, and high-strength bolts to clamp on just about any type of shaft. The transmitter is powered by an AC voltage coupled from the stationary loop antenna to the antenna built into the collar. The transmitter provides a regulated excitation to the strain gages and converts the resulting low-voltage signal from the strain gage to a radio frequency (RF) signal. This RF signal is sent back to the receiver unit through the stationary antenna loop and IPS. The receiver converts the RF signal to a bipolar DC voltage that is proportional to the amount of torque or strain. This voltage is accessible via a BNC connector on the receiver so the user can interface to a chart recorder or Data Acquisition System. A scalable analog output and numeric display readout on the receiver provides an electrical and visual indication of the measurement. The receiver provides controls for gain and zero adjustments, display scaling, and IPS power setting. A combination of up to six transmitters and receivers operating on different frequencies will provide up to six points of measurement on the same shaft. Please contact the factory if more than six points of measurement are required.

Because the 2100 series systems are designed for a variety of rotating applications, strain gages are not included with the system. However, Honeywell Sensotec will custom gage your shaft or rotating component (e.g. turbine blade) to provide a complete pre-calibrated rotary measurement system. Please contact your Honeywell Sensotec sales representative for further details.

Typical System Diagram



Performance

Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	175 microstrain (0.5mV/V)
Number of channels.....	See table below
Sampling Rate.....	10 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....	-67° to 257° F
Temperature, Operating (Receiver/ IPS/ PSU).....	5° to 149°F
Temperature, Compensated (Transmitter).....	32° to 167°F
Temperature, Compensated (Receiver).....	32° to 127°F
Static G Force (Rotating components).....	15,000 G's
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	100 G to 1 kHz
Collar Weight.....	varies with shaft diameter
Electronics Weight (not including cables).....	See table below

Order Code	Number of Channels	Electronics Weight
WN1100	1	Receiver and IPS 7.5 lb.
WN1200	2	Receiver and IPS 14 lb.
WN1300	3	Receiver and IPS 20 lb.
WN1400	4	Receiver and IPS 26 lb.
WN1500	5	Receiver and IPS 32 lb.
WN1600	6	Receiver and IPS 38 lb.

1-888-282-9891

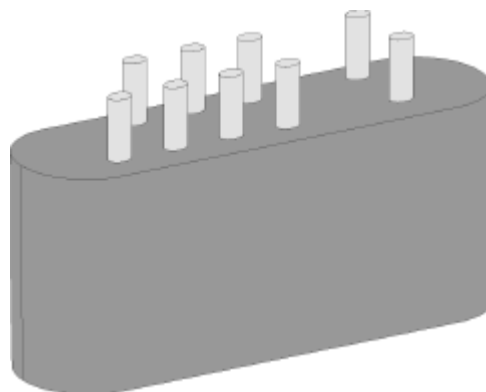
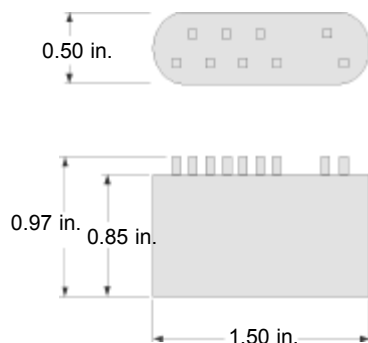
www.honeywell.com/sensotec

Model 2120B/C Strain Gage Transmitter

Order Code 1000-2120

- 5 VDC Regulated Excitation
- 175 Microstrain Sensitivity
- One Channel

Dimensions



Performance

Frequency Response.....DC to 1,000 Hz
Sensitivity (Transmitter).....175 microstrain (0.5 mV/V)
Number of Channels.....1
Sampling Rate.....10 kHz

Environmental

Temperature, Operating.....-67° to 257° F
Temperature, Compensated.....32° to 167° F
Static G Force (Rotating Components).....15,000 G's
RPM Limits (Rotating Components).....See graph- depends on shaft diameter
Vibration (Rotating Components).....100 G to 1 kHz
Weight.....0.036 lb. typical

Electrical

Induction Power Source.....160 kHz +/- 6%
RF Operating Frequency.....Factory set, 13-22 MHz, 1 MHz steps (specify
.....frequency in Order Code
RF Modulation Type.....PWM (FSK)
Bridge Excitation (Transmitter).....5 VDC @ 15 mA
Bridge Resistance (Transmitter).....350 Ohm min.
Electrical Termination.....9 pins, 0.025" diameter

Mechanical

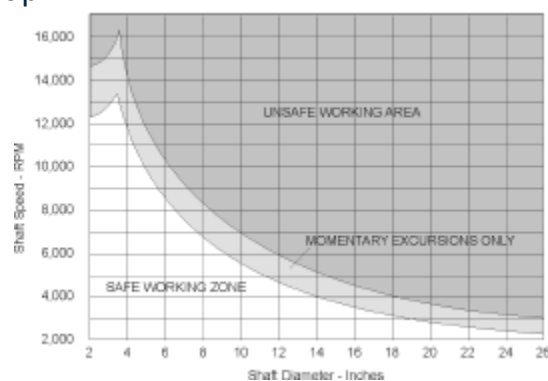
Dimensions.....1.5" L x 0.88" W x 0.5" H (not including pins)
Case Material.....Glass-Fiber DAP Resin

Options

	Built to Order
Extended Temperature Range	62s. Max. 100°C Operating temp.
Pin Access	62t. Unregulated Voltage Pin

RPM Limits Graph

OPERATING RPM LIMIT VS. SHAFT DIAMETER



How to Order

Combine the order code and option code.

Sample Code 1000-2120 62s
 Order Code Options Code

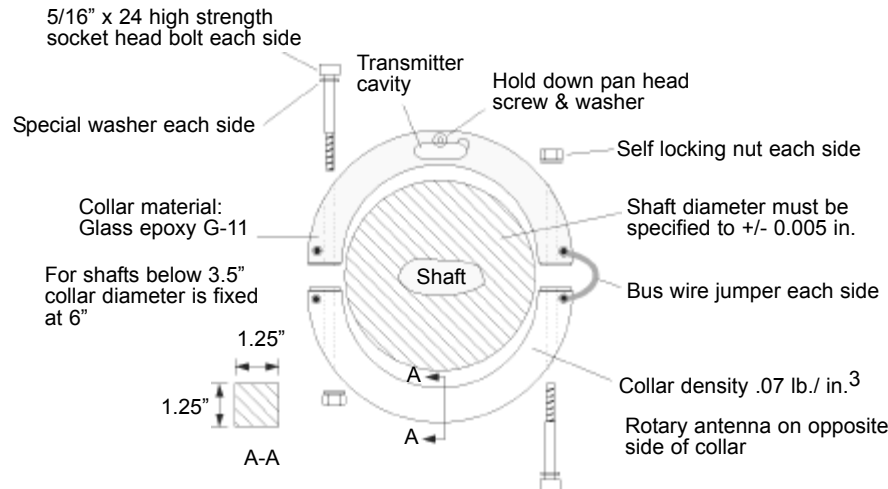
1-888-282-9891

www.honeywell.com/sensotec

Model 2126A Rotating Shaft Collar with Rotary Antenna

Order Code 1000-2126

- Type G-11 Glass Epoxy Collar Material
- Shaft Sizes From 2" to 42"



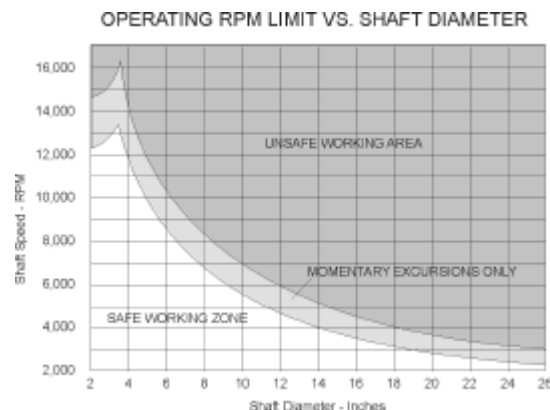
Environmental

Temperature, Operating.....	-67° to 257° F
Static G Force (Rotating Components).....	15,000 G's
RPM Limits (Rotating Components).....	See graph- depends on shaft diameter
Vibration (Rotating Components).....	100 G to 1 kHz
Weight.....	Varies with shaft diameter

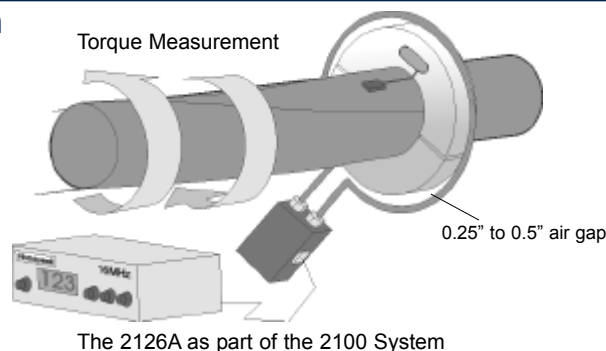
Mechanical

Shaft Diameter Limits (Collar).....	2" to 42"
Collar Material.....	Type G-11 Glass Epoxy

RPM Limits Graph



Typical System Diagram



The 2126A as part of the 2100 System

How to Order

Enter the order code and specify the shaft O.D. to +/- 0.005 in.

Sample Code	1000-2126	24.000
	Order Code	Shaft O.D.(in.)

1-888-282-9891

www.honeywell.com/sensotec

Model 2145AC/ DC Receiver

Order Code 1000-2145

- Scalable +/- 10 VDC Output
- User Selectable Output Filter
- DC to 1,000 Hz Frequency Response



Performance

Frequency Response.....DC to 1,000 Hz
Number of Channels.....1
Receiver Readout Display Type.....3.5 digit 7-segment LED

Environmental

Temperature, Operating.....5° to 149° F
Temperature, Compensated.....32° to 127° F
Weight.....6 lb.

Electrical

Induction Power Source.....To IPS 7.5 to 15 VDC @ 500 mA
Cable Length (IPS/ PSU to Receiver).....15 ft. standard
Max. Cable Length (IPS/ PSU to Receiver).....100 ft.
Power Supply Voltage
 2145AC.....120/ 240 VAC user-selectable
 2145DC.....10-18 VDC or 18-32 VDC
Power Consumption
 2145AC.....200 VA max.
 2145DC.....1,500 mA @ 12 VDC, 800 mA @ 24 VDC
RF Operating Frequency.....Factory set, 13-22 MHz, 1 MHz steps
RF Modulation Type.....PWM (FSK)
Signal Strength Indicator (Receiver).....LED Bargraph
Analog Output (Receiver).....+/- 10 VDC @ 1 mA max.
Output Impedance (Receiver).....< 1 Ohm
Electrical Termination.....BNC Female
Mating Connector.....BNC Male
Output Filter Capability (Receiver).....user selectable 1,000, 500, 200, 100, 1 Hz

Mechanical

Dimensions.....11.5" L x 8.6" W x 3.5" H
Case Material.....Aluminum

Options

	Built to Order
DC Input Power	62u. Please Specify: A. 10-18 VDC @ 1500 mA B. 18-32 VDC @ 800 mA

☐ Supplied as standard

How to Order

The order code consists of the order code and the available options.

Sample Code **1000-2145** **62u-A**
 Order Code Options Code

1-888-282-9891

Model 2175A Induced Power Supply Unit

Order Code 1000-2175

- Used by the 2100 Series Products up to 3 Channels (note 1)
- No Physical Contact to Rotating Components
- User Accessible Tuning for Different Antenna Diameters



The 2100 Series products use the 2175A Induction Power Supply (IPS) for systems up to 3 channels (note 1). The 2175 IPS receives variable DC power via the coaxial cable connected to the receiver. The IPS contains an oscillator that operates at 160 kHz whose signal is fed to current amplifiers. The current amplifiers drive a resonant transformer/ capacitor circuit through the stationary antenna. The 160 kHz power is coupled into the rotating antenna loop as in an air core transformer. The RF signal is received from the rotation antenna loop capacitively. A toroid transformer in the IPS separates the RF signal from the 160 kHz and places it on the coaxial cable for routing to the receiver. Internal switches and capacitor sockets allow user to adjust IPS for best resonance at various antenna sizes. For antenna diameters up to 12" use order code 1000-2175A-01. For antenna diameters greater than 12" use order code 1000-2175A-02.

Environmental

Temperature, Operating.....5° to 149° F
Weight.....1.5 lb.

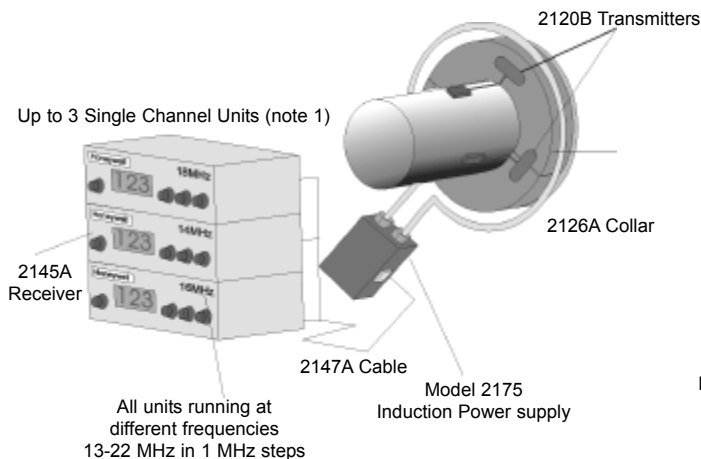
Electrical

Induction Power Source.....160 kHz +/- 6%
Cable Length (IPS to Receiver).....15 ft. standard
Max. Cable Length (IPS to Receiver).....100 ft.
Power Supply Voltage.....7.5 to 15 VDC
Power Consumption.....500 mA max.
Electrical Termination.....input: BNC Female
Mating Connector.....BNC Male

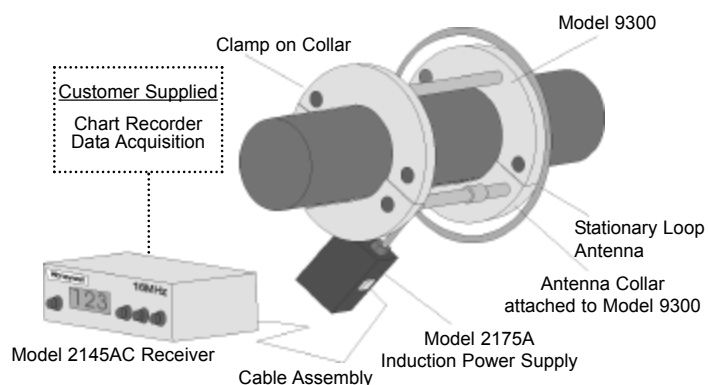
Mechanical

Dimensions.....6" L x 4" W x 2.5" H
Case Material.....Aluminum Alloy

Typical System Diagrams



2175 As part of the 2100 monitoring system



2175 As part of the 9300 torque monitoring system

Notes

1. For more than 3 channel systems consult factory.

How to Order

Combine the order code and antenna diameter code.

Sample Code 1000-2175A - 01
 Order Code Diameter Code

1-888-282-9891

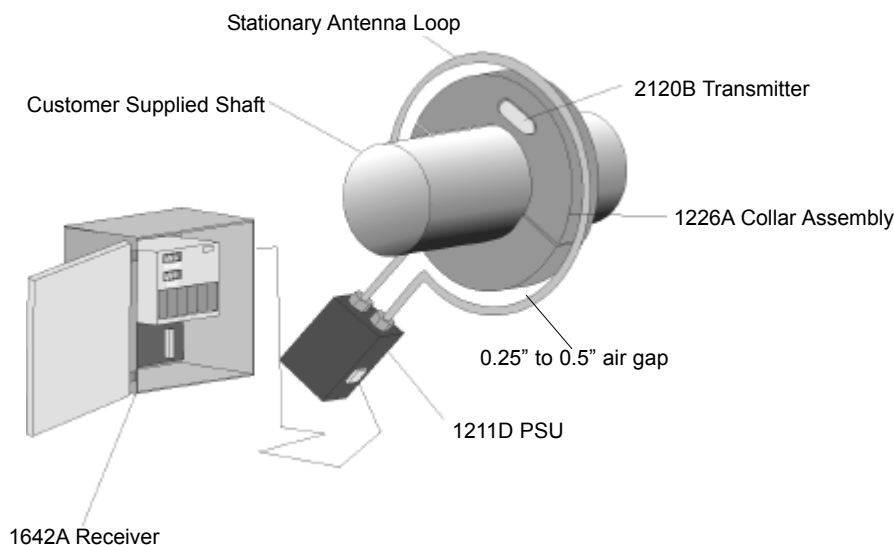
www.honeywell.com/sensotec

Model 1202B Rotary Torque/ RPM/ HP Measurement System

Order Code WI1000

- DC to 1,000 Hz Frequency Response
- 1-3 Channels Wireless Telemetry
- 175 microstrain (0.5 mV/V) Transmitter Sensitivity

Typical System Diagram



Performance

Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	175 microstrain (0.5mV/V)
Number of channels.....	1 to 3
Sampling Rate.....	10 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....	-67° to 257° F
Temperature, Operating (Receiver/ IPS/ PSU).....	50° to 122° F
Temperature, Compensated (Transmitter).....	32° to 167° F
Temperature, Compensated (Receiver).....	50° to 122° F
Static G Force (Rotating components).....	15,000 G's
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	100 G to 1 kHz
Collar Weight.....	Varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and PSU 33 lb.

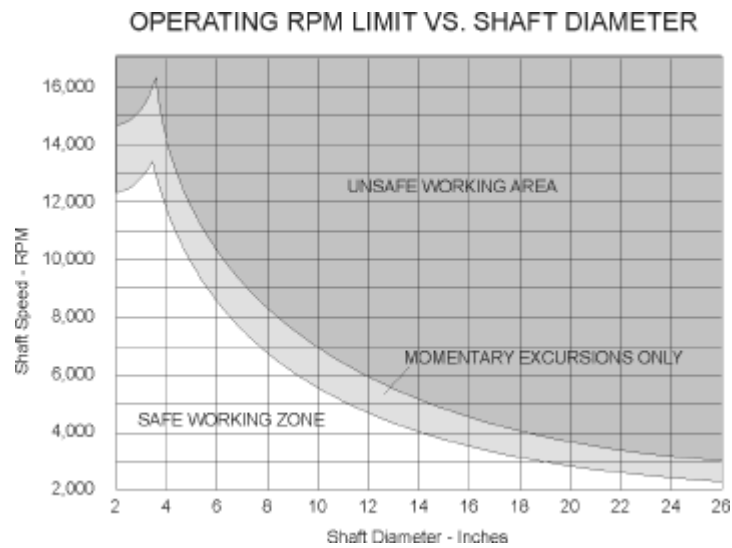
Electrical

Induction Power Source.....	160 kHz +/- 6%
Cable Length (IPS to Receiver).....	15 ft. std. (note 1)
Max. Cable Length (IPS to Receiver).....	500 ft.
Power Supply Voltage (Receiver).....	115/ 230 VAC user-selectable
Power Consumption (Receiver).....	100 VA max.
RF Operating Frequency.....	10.7 MHz (note 2)
RF Modulation Type.....	FSK
Max. Analog Output (Receiver).....	+/- 10 VDC @ 1mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	Screw Terminal
Electrical Termination (Transmitter).....	9 pins, 0.025" diameter

Mechanical

Dimensions (Collar Cross Section).....	1.25" x 1.25" Typical (6" OD min.)
Dimensions (Receiver).....	16" L x 20" W x 10" H
Dimensions (IPS).....	6" L x 4" W x 2" H
Shaft Diameter Limits (Collar).....	2" to 42" (note 3)
Collar Material.....	Type G-11 Glass epoxy

RPM Limits Graph



Options

	Built from Scratch
Max. Transmitter Temperature	62s. 100° C
Environmental Protection	62h. Nema IPS
Receiver	62a. Horsepower-hour totalizer 62b. Revolutions totalizer
Display (Receiver)	62c. Remote display
Filter (Receiver)	62d. EMI filter
Vibration & Shock (PSU)	62g. Heavy duty shield and receiver
RF Operating Frequency	10.7 MHz (note 1)
Analog Output (Receiver)	+/- 10 VDC @ 1 mA
	62e. 1 Channel 4-20 mA isolated output
	62f. 2 Channel 4-20 mA isolated output

Supplied as standard

Notes

- 1. 15ft. is the standard cable length, other lengths are available. Consult factory.
- 2. Consult factory for other frequencies.
- 3. 2" to 8" is standard shaft diameter, consult factory for other shaft diameters.

How to Order

Combine the order code and the options code.

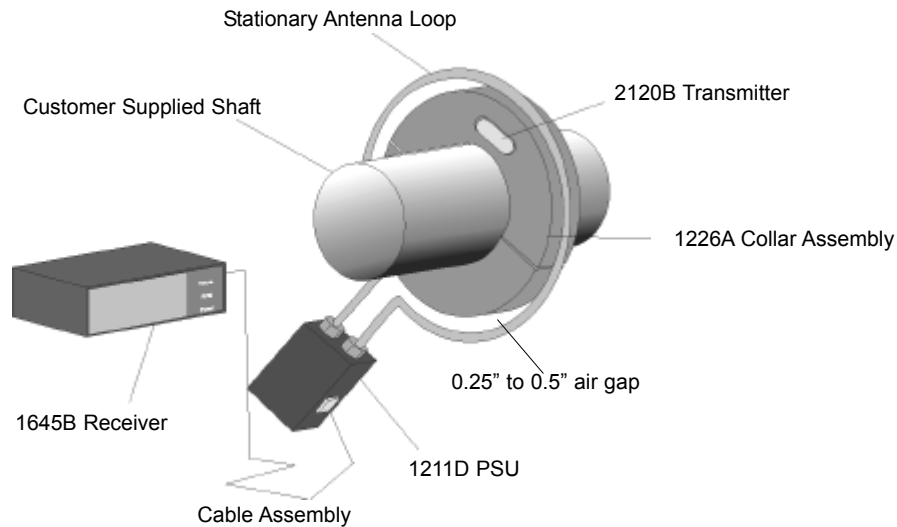
Sample Code: WI1000 62c
Order Code Options Code

Model 1205B Rotary Torque/ RPM/ HP Measurement System

Order Code WI1100

- DC to 1,000 Hz Frequency Response
- 1-3 Channels Wireless Telemetry
- 175 microstrain (0.5 mV/V) Transmitter Sensitivity

Typical System Diagram



Performance

Frequency Response.....	DC to 1,000 Hz
Sensitivity (Transmitter).....	175 microstrain (0.5mV/V)
Number of channels.....	1 to 3
Sampling Rate.....	10 kHz
Receiver Readout Display Type.....	3.5 digit 7 segment LED

Environmental

Temperature, Operating (Transmitter).....	-67° to 257° F
Temperature, Operating (Receiver/ IPS/ PSU).....	50° to 122°F
Temperature, Compensated (Transmitter).....	32° to 167°F
Temperature, Compensated (Receiver).....	50° to 122°F
Static G Force (Rotating components).....	15,000 G's
RPM Limits (Rotating components).....	See Graph - depends on shaft diameter
Vibration (Rotating components).....	100 G to 1 kHz
Collar Weight.....	Varies with shaft diameter
Electronics Weight (not including cables).....	Receiver and PSU 27 lb.

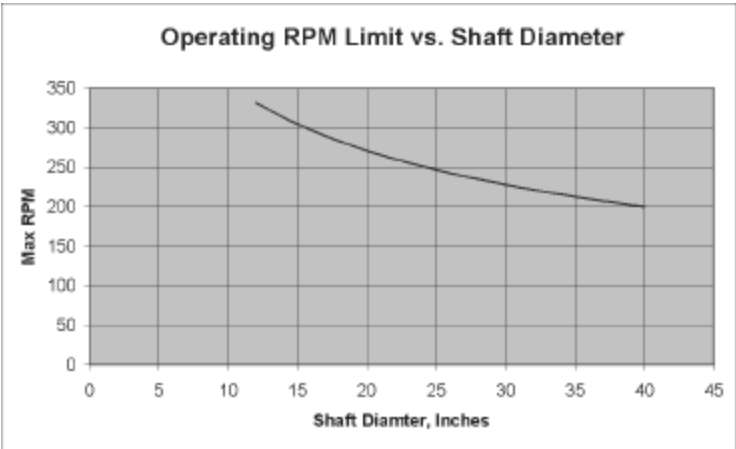
Electrical

Induction Power Source.....	160 kHz +/- 6%
Cable Length (IPS to Receiver).....	15 ft. std. (note 1)
Max. Cable Length (IPS to Receiver).....	500 ft.
Power Supply Voltage (Receiver).....	115/ 230 VAC user-selectable
Power Consumption (Receiver).....	100 VA max.
RF Operating Frequency.....	10.7 MHz (note 2)
RF Modulation Type.....	FSK
Analog Output (Receiver).....	+/- 10 VDC @ 5mA max.
Output Impedance (Receiver).....	< 1 Ohm
Electrical Termination (Receiver Output).....	BNC female
Mating Connector (Receiver output).....	BNC male
Electrical Termination (Transmitter).....	9 pins, 0.025" diameter

Mechanical

Dimensions (Collar Cross Section).....	1.25" x 1.25" Typical (6" OD min.)
Dimensions (Receiver).....	17" L x 18" W x 5.25" H
Dimensions (IPS).....	6" L x 4" W x 2" H
Shaft Diameter Limits (Collar).....	2" to 42" (note 3)
Collar Material.....	Type G-11 Glass epoxy

RPM Limits Graph



Options

	Built from Scratch
Max. Transmitter Temperature	62s. 100° C
Environmental Protection	62h. Nema IPS
Display (Receiver)	62c. Remote display
Filter (Receiver)	62d. EMI filter
Vibration & Shock (PSU)	62j. Vibration/Shock rated PSU
RF Operating Frequency	10.7 MHz (note 1)
Analog Output (Receiver)	+/- 10 VDC @ 5 mA
	62e. 1 Channel 4-20 mA isolated output

Supplied as standard

Notes

- 1. 15ft. is the standard cable length, other lengths are available. Consult factory.
- 2. Consult factory for other frequencies.
- 3. 2" to 8" is standard shaft diameter, consult factory for other shaft diameters.

How to Order

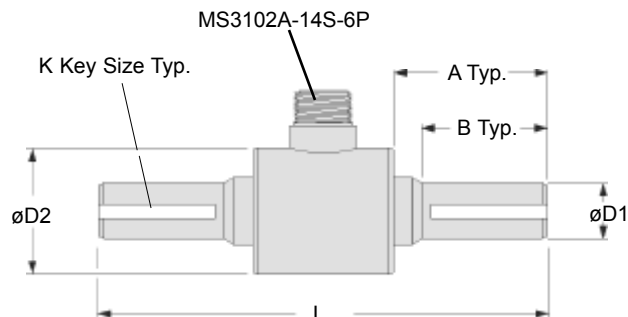
Combine the order code and the options code.

Sample Code: **WI1100** **62c**
Order Code Options Code

Model QSFK-9 Shaft Type Reaction Torque Transducer

Order Code BT111

- Wide Dynamic Range
- High Frequency
- Stainless Steel



Wiring Codes

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

Range (in.-lb.)	øD1 (in.)	øD2 (in.)	K (in.) Key Size	A (in.)	B (in.)	L (in.)
100	0.75	2.25	3/16	2.75	2.25	8.00
600; 1200	1.00	2.25	1/4	2.75	2.25	8.00
3000; 6000; 12,000	1.50	3.50	3/8	3.75	3.00	11.00
24,000	2.75	4.00	5/8	5.10	4.00	13.00

Performance

Ranges.....100 to 24,000 in.-lb.
System Accuracy.....+/- 0.1% Full Scale
Linearity.....+/- 0.1% Full Scale
Hysteresis.....+/- 0.1% Full Scale
Non-Repeatability.....+/- 0.03% Full Scale
Output.....2 mV/V nominal
Resolution.....Infinite

Environmental

Temperature, Operating.....-65° to 225° F
Temperature, Compensated.....60° to 160° F
Temperature Effect
Zero.....0.005% Full Scale/ °F
Span.....0.005% Reading/ °F

Electrical

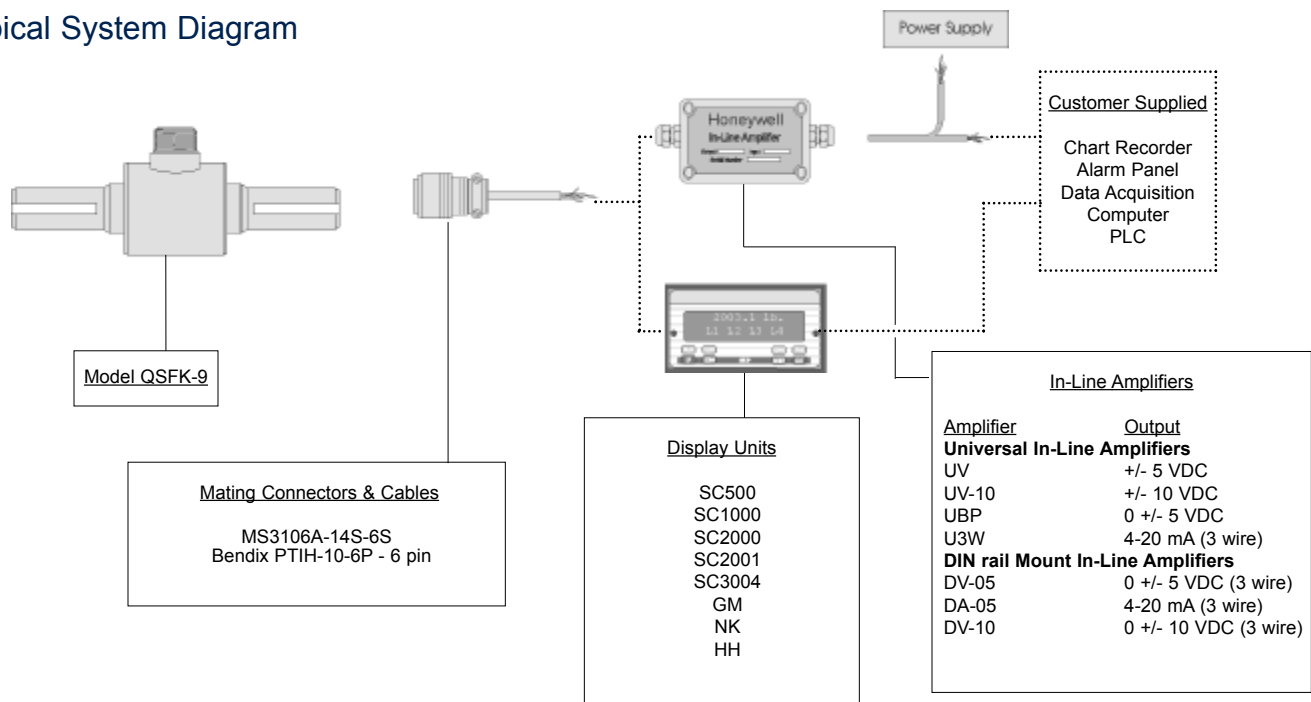
Strain Gage Type.....Bonded Foil
Excitation.....10 VDC
Bridge Resistance.....350 Ohms
Electrical Termination.....MS3102A-14S-6P or equivalent
Mating Connector.....MS3106A-14S-6S or equivalent (not included)

Mechanical

Static Overload Capacity.....50% over capacity
Case Material.....Stainless Steel

Model QSFK-9

Typical System Diagram



Options

	Built from Scratch
Torque Range	100, 300, 600, 1200, 3000, 6000, 12,000, 24,000 in.-lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6b. MS3102A-14S-6P or equivalent 6a. Bendix PTIH-10-6P - 6 pin (max. 250°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module

■ Supplied as standard

Range Codes

Range	Range Code
100 in.-lb.	TJ
300 in.-lb.	TL
600 in.-lb.	TN
1200 in.-lb.	TP
3000 in.-lb.	TR
6000 in.-lb.	TT
12,000 in.-lb.	TV
24,000 in.-lb.	TW

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BT111** **TT** **1b**
Model Code Range Code Options Code

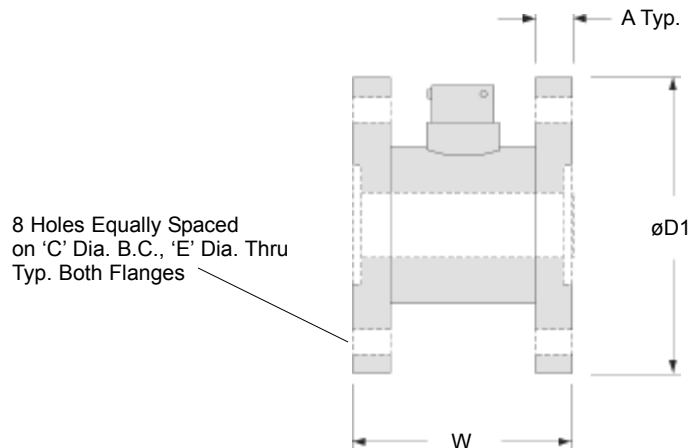
1-888-282-9891

www.honeywell.com/sensotec

Model QFFH-9 Flange Type Reaction Torque Transducer

Order Code BT121

- Wide Dynamic Range
- High Frequency
- Stainless Steel



Wiring Codes

Connector/ Unamplified

A & B	(+) Excitation
C & D	(-) Excitation
E	(-) Output
F	(+) Output

Dimensions

Range (in.-lb.)	øD1 (in.)	W (in.)	A (in.)	C (in.) Dia. B.C.	E (in.) Dia. Thru
3000; 6000	4.00	3.00	0.50	3.25	0.33
12,000; 24,000	5.00	3.50	0.75	4.25	0.39

Performance

Ranges.....3000; 6000; 12,000; 24,000 in.-lb.
System Accuracy.....+/- 0.1% Full Scale
Linearity.....+/- 0.1% Full Scale
Hysteresis.....+/- 0.1% Full Scale
Non-Repeatability.....+/- 0.03% Full Scale
Output.....2 mV/V nominal
Resolution.....Infinite

Environmental

Temperature, Operating.....-65° to 225° F
Temperature, Compensated.....60° to 160° F
Temperature Effect
Zero.....0.005% Full Scale/ °F
Span.....0.005% Reading/ °F

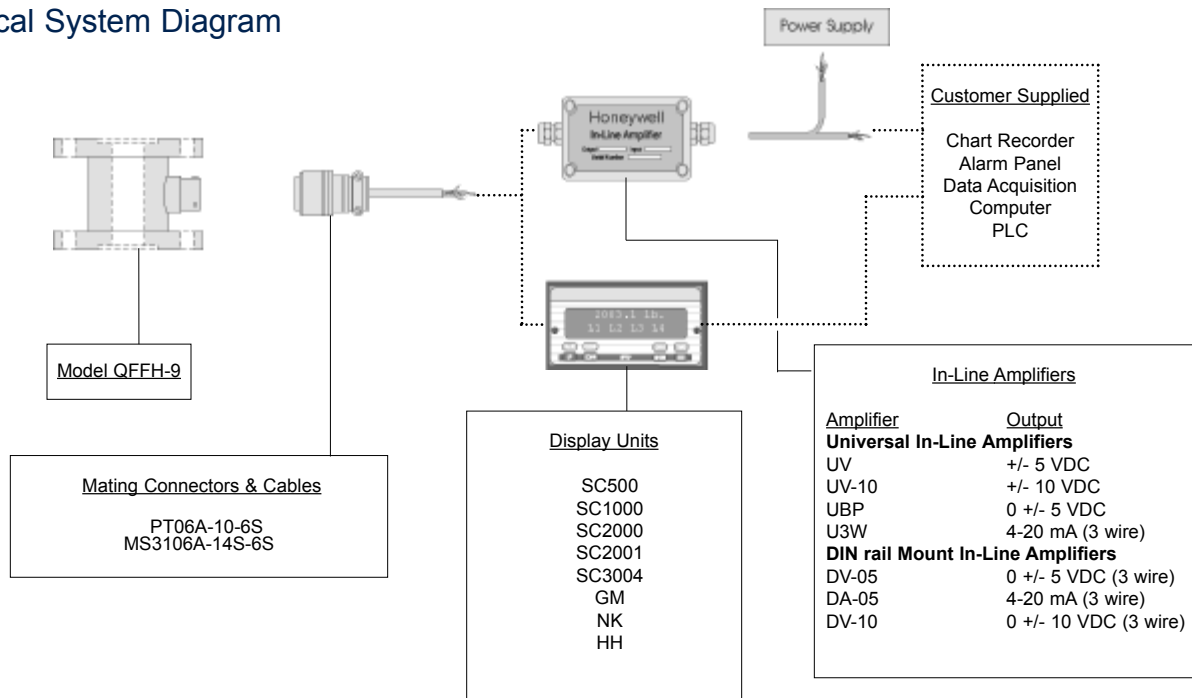
Electrical

Strain Gage Type.....Bonded Foil
Excitation.....10 VDC
Bridge Resistance.....350 Ohms
Electrical Termination.....Bendix PTIH-10-6P or equivalent
Mating Connector.....PT06A-10-6S or equivalent (not included)

Mechanical

Static Overload Capacity.....50% over capacity
Case Material.....Stainless Steel

Typical System Diagram



Options

	Built from Scratch
Torque Range	3000, 6000, 12,000, 24,000 in.-lb
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6b. MS3102A-14S-6P or equivalent 6a. Bendix PTIH-10-6P - 6 pin (max. 250°F) 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module

Range Codes

Range	Range Code
3000 in.-lb.	TR
6000 in.-lb.	TT
12,000 in.-lb.	TV
24,000 in.-lb.	TW

Supplied as standard

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BT121** **TT** **1b**
Model Code Range Code Options Code

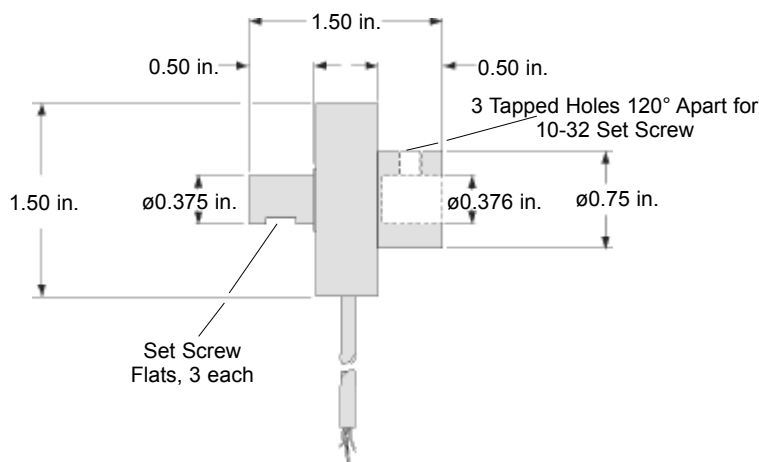
Model QWFK-8M Miniature Reaction Torque Transducer

Order Code BT311

- Compact Size
- High Frequency
- 0.1% Linearity



Dimensions



Wiring Codes

Cable/ Unamplified

Red	(+) Excitation
Black	(-) Excitation
Green	(-) Output
White	(+) Output

Performance

Ranges	25; 100; 250 in.-oz.; 50; 100; 300 in.-lb.
System Accuracy	+/- 0.1% Full Scale
Linearity	+/- 0.1% Full Scale
Hysteresis	+/- 0.1% Full Scale
Non-Repeatability	+/- 0.03% Full Scale
Output	2 mV/V nominal
Resolution	Infinite

Environmental

Temperature, Operating	-65° to 225° F
Temperature, Compensated	60° to 160° F
Temperature Effect	
Zero	0.005% Full Scale/ °F
Span	0.005% Reading/ °F

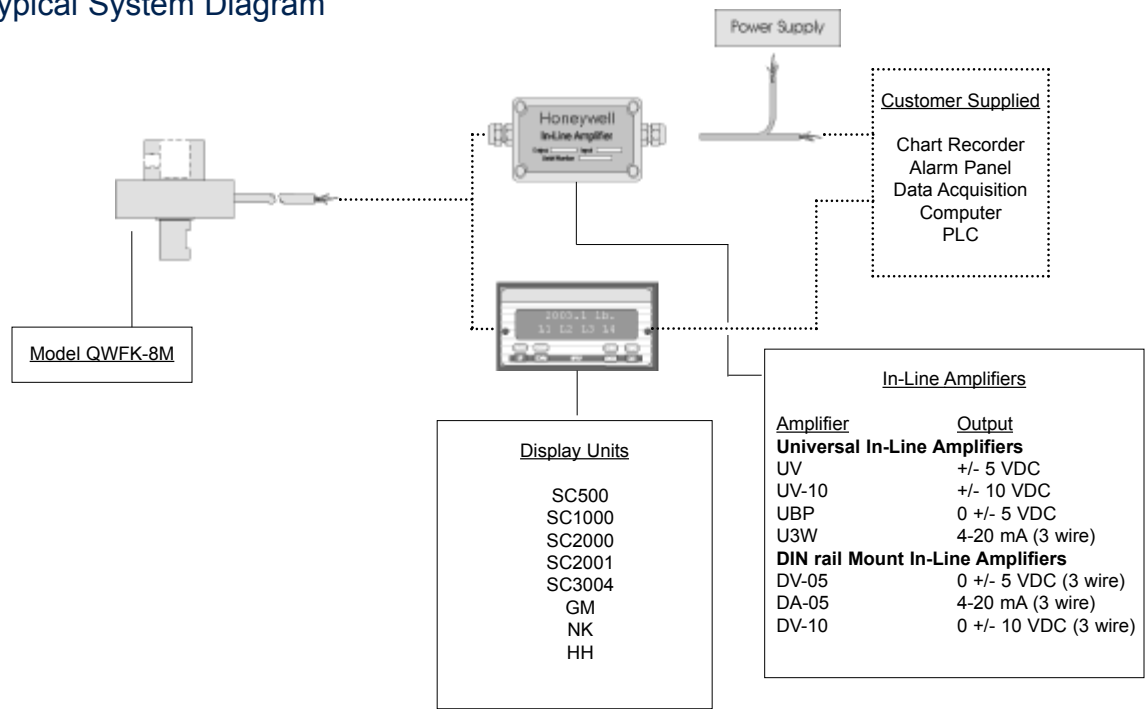
Electrical

Strain Gage Type	Bonded Foil
Excitation	10 VDC (5 VDC if Torque Range <= 100 in.-oz.)
Bridge Resistance	350 Ohms
Electrical Termination	Teflon Cable (5 ft.)

Mechanical

Static Overload Capacity	50% over capacity
Case Material	Stainless Steel
Deflection Torsional	
25 in.-oz. to 50 in.-lb.	0.0027 radians
100 to 300 in.-lb.	0.00255 radians

Typical System Diagram



Options

	Built from Scratch
Torque Range	25, 100, 250 in.-oz. 50, 100, 300 in.-lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module

■ Supplied as standard

Range Codes

Range	Range Code
25 in.-oz.	TB
100 in.-oz.	TD
250 in.-oz.	TF
50 in.-lb.	TH
100 in.-lb.	TJ
300 in.-lb.	TL

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BT311** **TL** **1b**
Model Code Range Code Options Code

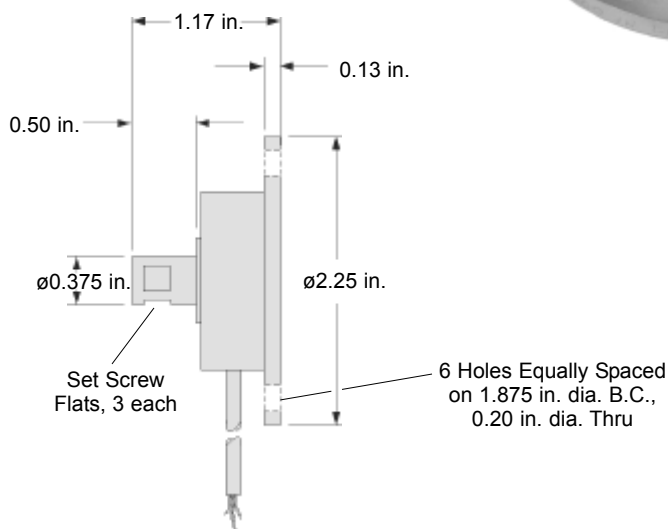
Model QWLC-8M Miniature Reaction Torque Transducer

Order Code BT312

- Compact Size
- High Frequency
- 0.1% Linearity



Dimensions



Performance

Ranges.....25; 100; 250 in.-oz.; 50; 100; 300 in.-lb.
System Accuracy.....+/- 0.1% Full Scale
Linearity.....+/- 0.1% Full Scale
Hysteresis.....+/- 0.1% Full Scale
Non-Repeatability.....+/- 0.03% Full Scale
Output.....2 mV/V nominal
Resolution.....Infinite

Environmental

Temperature, Operating.....-65° to 225° F
Temperature, Compensated.....60° to 160° F
Temperature Effect
Zero.....0.005% Full Scale/ °F
Span.....0.005% Reading/ °F

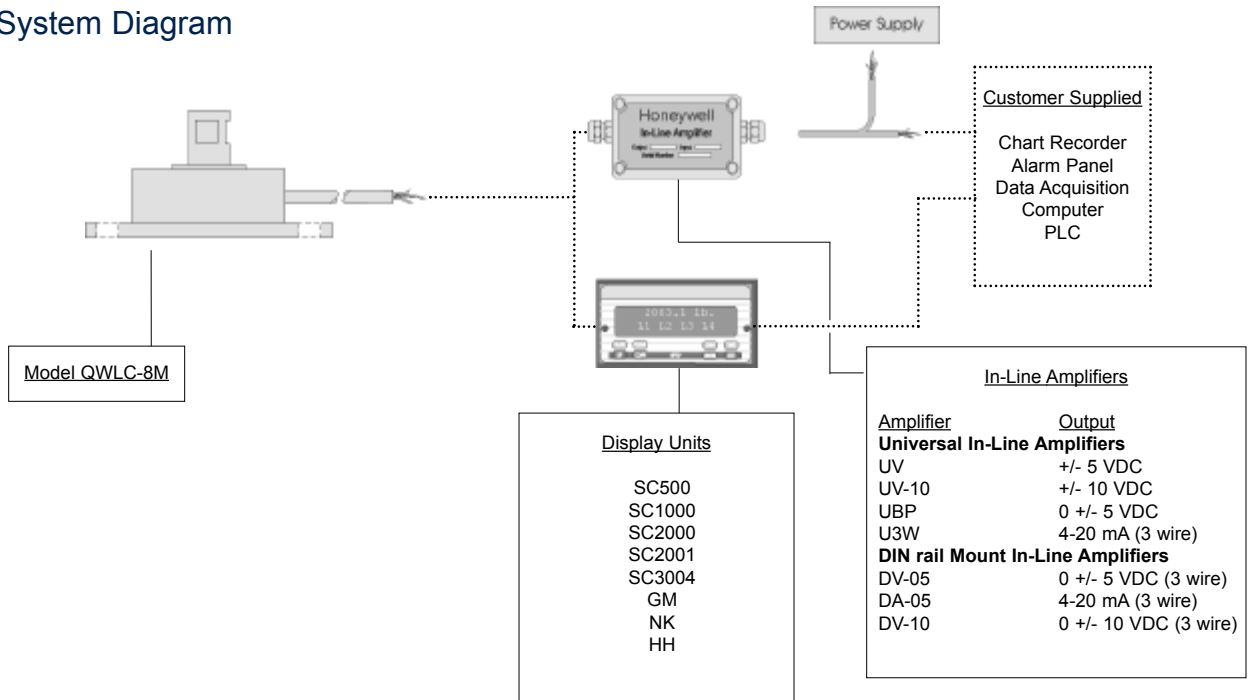
Electrical

Strain Gage Type.....Bonded Foil
Excitation.....10 VDC (5 VDC if Torque Range <= 100 in.-oz.)
Bridge Resistance.....350 Ohms
Electrical Termination.....Teflon Cable (5 ft.)

Mechanical

Static Overload Capacity.....50% over capacity
Case Material.....Stainless Steel
Deflection Torsional
25 in.-oz. to 50 in.-lb.....0.0027 radians
100 to 300 in.-lb.....0.00255 radians

Typical System Diagram



Options

	Built from Scratch
Torque Range	25, 100, 250 in.-oz. 50, 100, 300 in.-lb.
Temperature Compensation	1a. 60° to 160° F 1b. 30° to 130° F 1c. 0° to 185° F 1d. -20° to 130° F 1e. -20° to 200° F 1f. 70° to 250° F
Internal Amplifiers	2u. Unamplified, mV/V output
Electrical Termination	6e. Integral cable: Teflon
Interfaces	53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module

■ Supplied as standard

Range Codes

Range	Range Code
25 in.-oz.	TB
100 in.-oz.	TD
250 in.-oz.	TF
50 in.-lb.	TH
100 in.-lb.	TJ
300 in.-lb.	TL

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BT312** **TL** **1b**
Model Code Range Code Options Code

Models 366, 651 and 940 Torque Watch Gage Series

Order Code (see below)

Low Range 366 Series

Models 366-0, 366-2, 366-3

- 0.003 to 0.6 in.-oz.
- 0.2 to 42 gm-cm

The 366 Torque Watch Series accurately measures very low torque. Three miniature adapter chucks allow simple coupling to the device being measured.

To minimize friction, a calibrated helical spring, shaft, and pointer assembly are mounted in jeweled bearings. The unit can measure torque in either a clockwise or counterclockwise direction. A stainless steel internal rotation stop helps prevent damage from over-torque up to three times the normal range.



Standard

Metric

Accuracy	Model	Order Code	in.-oz.	Model	Order Code	gm-cm
+/- 5%	366-0	TQ3660	0.06 - 0.6	366-0M	TQ3660M	6 - 42
+/- 10%	366-2	TQ3662	0.01 - 0.1	366-2M	TQ3662M	1 - 7.5
+/- 10%	366-3	TQ3663	0.003 - 0.3	366-3M	TQ3663M	0.2 - 2

Mid Range 651 Series

Models 651C-1, 651C-2, 651C-3, 651X-2, 651X-3, 651X-4

- 0.05 to 40 in.-oz.
- 2.5 to 2.8 k gm-cm
- 0.5 to 265 N-mm

The 651 Torque Watch Series provides accurate measurement of low static torque. A 1/4 inch keyed chuck provides a simple means of coupling to the device under measurement.

The 651 Series utilizes a calibrated spring, shaft, and pointer assembly within a rugged steel and aluminum housing. The unit can measure torque in either a clockwise or counterclockwise direction. Internal stainless steel rotation stops help prevent damage from over-torque up to two times the normal range.



Standard

Metric

System International

Accuracy	Model	Order Code	in.-oz.	Model	Order Code	gm-cm	Model	Order Code	N-mm
+/- 2%	651C-1	TQ651C1	0.05 - 1.2	651C-1M	TQ651C1M	2.8 - 80	651C-1SI	TQ651C1SI	0.5 - 9
+/- 2%	651C-2	TQ651C2	1 - 20	651C-2M	TQ651C2M	50 - 1.2k	651C-2SI	TQ651C2SI	10 - 140
+/- 2%	651C-3	TQ651C3	2 - 40	651C-3M	TQ651C3M	150 - 2.8k	651C-3SI	TQ651C3SI	15 - 265
+/- 2%	651X-2	TQ651X2	0.1 - 2.4	651X-2M	TQ651X2M	5 - 150	651X-2SI	TQ651X2SI	1 - 18
+/- 2%	651X-3	TQ651X3	0.25 - 5	651X-3M	TQ651X3M	10 - 300	651X-3SI	TQ651X3SI	2 - 36
+/- 2%	651X-4	TQ651X4	0.5 - 10	651X-4M	TQ651X4M	25 - 600	651X-4SI	TQ651X4SI	5 - 70

Mid Range 940 Series

Models 940-1 and 940-2

- 15 to 200 in.-oz.
- 2.5 to 2.8 k gm-cm
- 0.1 to 1.4 N-m

The 940 Torque Watch Series accurately measures high range torque. A 3/8 inch keyed chuck and a 3/8 inch square socket driver adapter provides a simple means of coupling to the device under measurement.

The 940 Series utilizes a calibrated spring, shaft, and pointer assembly within a rugged steel and aluminum housing. The unit can measure torque in either a clockwise or counterclockwise direction. Internal stainless steel rotation stops help prevent damage from over-torque up to two times the normal range.



Standard

Metric

System International

Accuracy	Model	Order Code	in.-oz.	Model	Order Code	k gm-cm	Model	Order Code	N-m
+/- 2%	940-1	TQ9401	30 - 200	940-1M	TQ9401M	2 - 14	940-1SI	TQ9401SI	0.25 - 1.4
+/- 2%	940-2	TQ9402	15 - 100	940-2M	TQ9402M	1 - 7	940-2SI	TQ9402SI	0.1 - 0.7

How to Order

Sample Code: **366-2**
Model Code

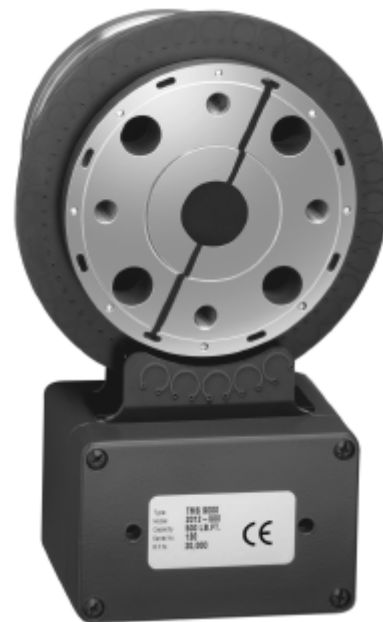
1-888-282-9891

www.honeywell.com/sensotec

TMS 9000 Rotary Torque Measurement System

- Standard or Custom Setup
- Single or Multi-Channel
- For Greater Control
- More Versatile Potential Applications
- Ranges to 200,000 lb.-ft.

The TMS 9000 torque measurement system represents an advanced generation of rotary transformer sensors designed to operate entirely in the digital domain for enhanced accuracy and versatility. The TMS 9000 series physically integrates rotor electronics and telemetry into one element, with all set-up and output controlled through computer software. This digital wireless telemetry system supplies power to the rotating sensor, supports two-way communications and provides wide testing capabilities. More than a stand-alone sensor, the specially designed TMS 9000 is a complete torque measurement system, with standard analog, frequency and digital outputs. Fully software driven, the durable TMS 9000 utilizes a custom 19-bit digital wireless telemetry system, which maximizes resolution and frequency response while also being able to provide excitation power across the wireless gap. System set-up can be changed “on-the-fly” without affecting calibration. The TMS 9000 can be expanded for future market needs by using standard PC104 cards.



Applications

- Transportation & Automotive
- Manufacturing & Production
- Aerospace & Military
- Medical
- Design & Engineering
- Testing & Quality



Performance

Torque Ranges.....	Varies on application; consult factory (max. 200,000 lb.-ft.)
Linearity.....	+/- 0.05% F.S.
Frequency Output	
Analog.....	5000(min.); 10,000(nom.); 15,000(max.) Hz or
.....	40,000(min.); 60,000(nom.); 80,000(max.) Hz
Digital.....	RS232-485
Resolution.....	0.01% - 0.001% F.S.
Measurement Frequency Range.....	0 - 3 kHz
Digital Filter.....	0.1 - 1 kHz
Sampling Rate.....	17.656 kHz

Environmental

Temperature, Operating.....	-40° to 185° F
Temperature, Compensated.....	14° to 158°F
Temperature Effects	
Zero.....	+/- 0.003% F.S./°F
Span.....	+/- 0.003% F.S./°F
RPM Limits (Rotating components).....	0-30,000 rpm

Electrical

Power Supply (standard, non-isolated).....	12 VDC (nom.)
Output	
Voltage.....	+/- 10 VDC
Current.....	4-20 mA
Load Impedance.....	500 Ohms (for current loop)

Mechanical Mating Configurations

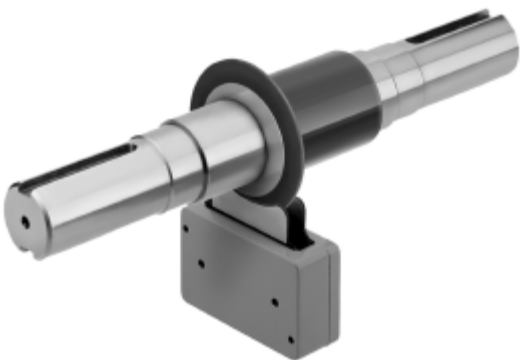
TMS 9000 Series torque sensors perform well under tough conditions. For years sensor operators in varied applications have acknowledged the enhanced accuracy, durability and quality built into each sensor. TMS 9000 Series sensors can be tailored to specific applications for even greater versatility with capacities up to 200,000 lb.-ft.



SAE-DIN Drive Shaft Yokes



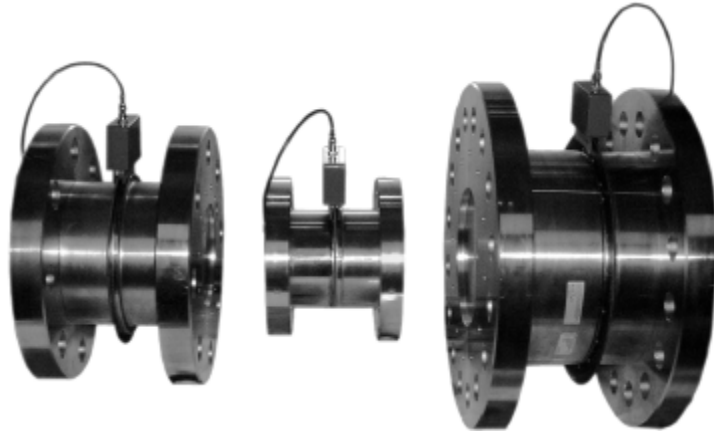
Integral Coupling



Rotating Circular Keyed Shaft

Mechanical Sensor Features

- No hoop antenna
- System error < 0.05% FS
- High torsional stiffness
- High overload capability
- Low rotating inertia
- Variety of mating flange designs
- Custom designs available



Dynamics of the TMS 9000

The rotor electronics module is encapsulated to enhance protection against vibration, G Force and chemicals.

- The rotating antenna is comprised of an annular printed circuit board, peripherally or centrally mounted on the rotor.
- Four layer construction ensures enhanced strength with no exposed tracks in the outer region.
- IP65 caliper-style coupling module with die cast aluminum casing. Provides power transmission and signal recovery with BNC connector for coaxial cable.

Electrical Features

- Rotor Electronics Module. This is embedded in the sensor and receives and conditions the input signal before transmitting it to the SPM.
- Signal Processing Module (SPM). This device integrates two microprocessors to share data processing and communications. It recovers the signal from the rotor, provides scaling and filtering, and offers a variety of outputs, compatible with various data acquisition systems.
- PC104 expansion. This option allows the operator functionality beyond the hardware and software provided.

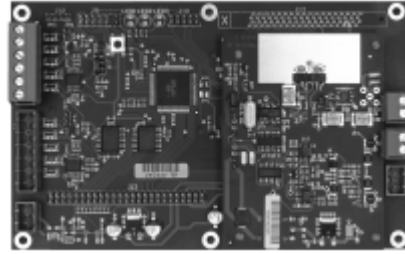
Signal Processing Module (SPM)

The SPM contains two separate microprocessors to share data processing and communications. Calibration is all digital, via RS232/485 link, eliminating potentiometers or dip switches. The durable unit has an external BNC connector for the RF coaxial cable, internal 2-part plug and socket connectors for output signals, digital communication and DC power. The SPM external housing also features a “SHUNT CAL” button and LED’s to indicate “Power ON”, “Rotor Active” and “SHUNT CAL Mode”. Because of these enhanced technologies, the end result is a true advancement in telemetry-based torque systems.



Software Features

The software at the heart of the TMS 9000 system is designed to offer flexibility and adaptability. The software puts the operator fully in control and can be tailored to the test conditions required at the time. Standard or custom set ups can be saved to parameter files and recalled at any time. Input scaling and output scaling is independent, providing a wider application advantage. The software-driven SPM (Signal Processing Module) is offered with five standard interfaces. Consult the factory for availability of optional interfaces such as: CAN-open, Ethernet and USB, and PC104 expansion cards. The software flexibility allows single or multiple sensors to share the same wireless telemetry link, with digital output as standard, or with multi-channel digital-to-analog available as an option.



SPM Card

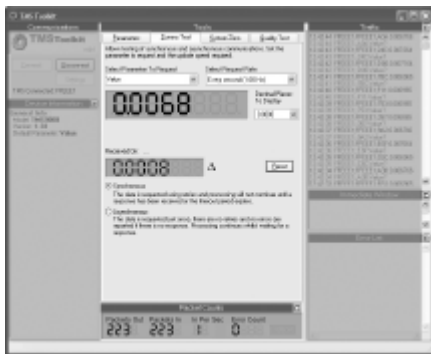
Toolkit Features

- Full Software Set Up
- No Potentiometers or Dip Switches
- Scalable Output "On-The-Fly"
- Nine Point Linearization Feature
- Multi-Digital Filter Feature
- Simple ASCII Communications Protocol

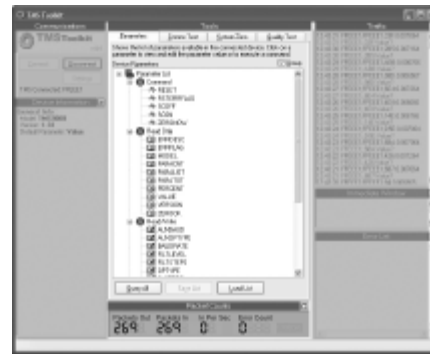
Additional Features

- Multiple Channels
- Multiplexing
- Custom Designs Available

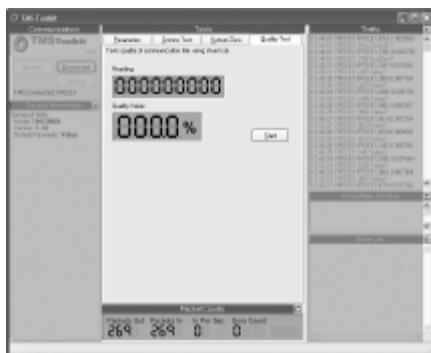
Software Toolkit Capabilities



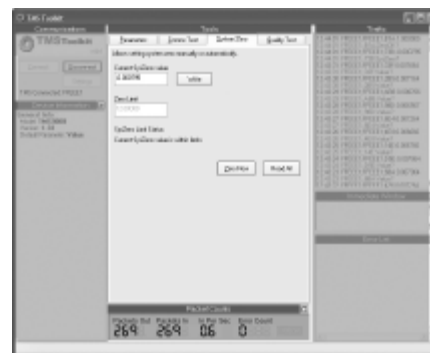
Test Communications



Parameters/System Setup



Systems Quality/Test



Systems Zero/Tare



How to Order

Please consult factory for ordering information.

Notes

ACCELEROMETERS

Potential Application	Model	Order Code	Dynamic Range	Page	
General Purpose	PA	AG714	+/- 5G to +/- 1000G	322	
	MA11	AG901,AG902,AG905	+/- 80G	323	
	MA12	AG903,AG904	+/- 80G	325	
Miniature	MA341/342	AG922/AG923	+/- 80G	327	
	MA21	AG913	+/- 80G	328	
	MA23	AG914	+/- 10G	329	
Low Frequency	MA311/312	AG915/AG916	+/- 1G to +/- 50G	330	
	MA321/322	AG917/AG918	+/- 1G to +/- 50G	331	
	JTF	AG111-AG113	+/- 5G to +/- 500G	332	
High Frequency	MAQ36	AG924	+/- 2000G	334	
High Temperature	MAQ13	AG908	+/- 800G	335	
	MAQ14	AG909,AG910	+/- 1000G	336	
	MAQ41	AG925	+/- 100G	337	
Velocity Output	MAV51	AG926,AG927	N/A	338	
Acceleration & Temperature	MAT53	AG930,AG931	+/- 80G	340	
Built-in Signal Conditioning	MA15	AG906,AG907	+/- 50G	342	
	MAV52	AG928,AG929,AG932	+/- 50G	343	
	MA331/332	AG919/AG920	+/- 1G to +/- 50G	345	
Hand Held System	VM110/120	AG941/AG942	N/A	346	

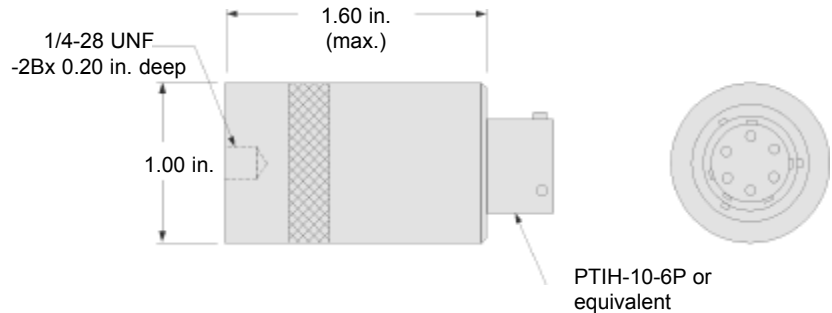
Model PA Amplified Piezoelectric Accelerometer

Order Code AG714

- Enhanced Sensitivity
- Case Isolated
- Rugged, High Impact



Dimensions



Wiring Codes

A	(+) 13.5 to 16.5 VDC
B	(-) Output/ Supply common
C	(-) 13.5 to 16.5 VDC
D	(+) Output (+/- 5 VDC)
E	Not Applicable
F	Not Applicable

Performance

Dynamic Range	+/- 5 to +/- 1,000 G
Sensitivity	See table
Frequency Range	3 to 5,000 Hz
Full Scale Output	+/- 5 V
Mounted Natural Frequency	30 kHz
Transverse Sensitivity	5% of Full Scale

Environmental

Shock Limits	3,000 G
Vibration Limits	2,000 G
Temperature, Operating	32° to 160° F

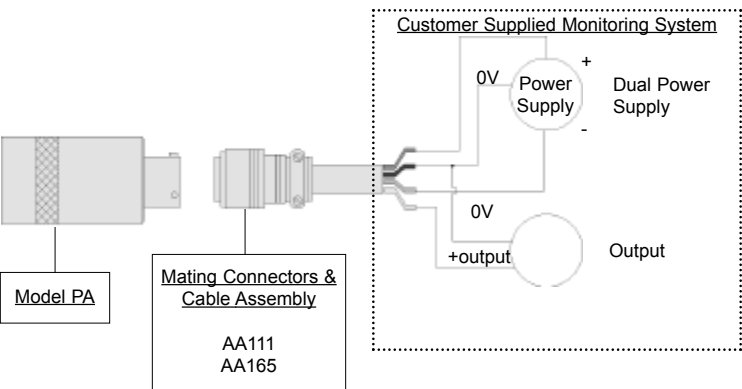
Electrical

Input Power	+/- 13.5 to +/- 16.5 VDC
Output Impedance	100 Ohms
Connector	PTIH-10-6P

Mechanical

Weight	3 oz.
Case Material	316 Stainless Steel
Sealing	Welded

Typical System Diagram



Range Codes

Range (G)	Sensitivity (mV/G)	Range Code
5	1,000	GJ
10	500	GK
50	100	GN
100	50	GP
500	10	GR
1,000	5	GS

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **AG714** **GJ**
Model Code Range Code

1-888-282-9891

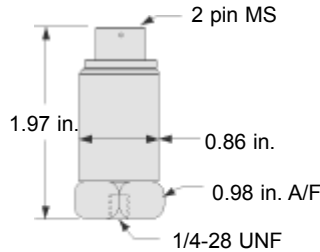
www.honeywell.com/sensotec

Model MA11 Accelerometer

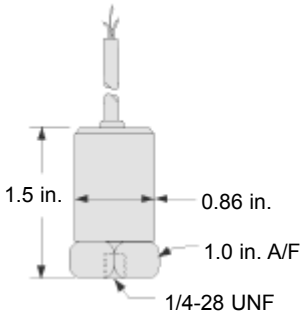
Order Code AG901; AG902; AG905

- General Purpose
- 2 Hz to 10 kHz Usable Frequency Range
- IEPE Output

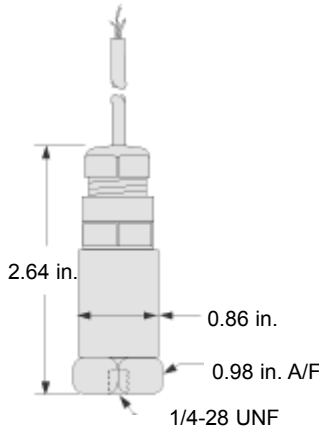
Dimensions



Model MA11 (order code AG901)



Model MA11 (order code AG902)



Model MA11 (order code AG905)



Wiring Codes

AG901

Pin A (+) Supply
Pin B Supply Return

AG902 & AG905

White (+) Supply (+) Output
Black Supply Return
Shield No Connection

Performance

Dynamic Ranges.....+/- 80 G
Sensitivity.....100 mV/G +/- 10%
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....2 Hz to 10 kHz +/- 5% 3db limits
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....18 kHz
Acceleration Range.....+/- 80 G (dependent on sensitivity)

Environmental

Temperature, Operating.....-70° to 280° F
Shock Limits.....2,000 G
Vibration Limits.....2,000 G
Sealing
AG901 & AG902.....IP67/ Nema 4
AG903.....IP68/ Nema 4x

Electrical

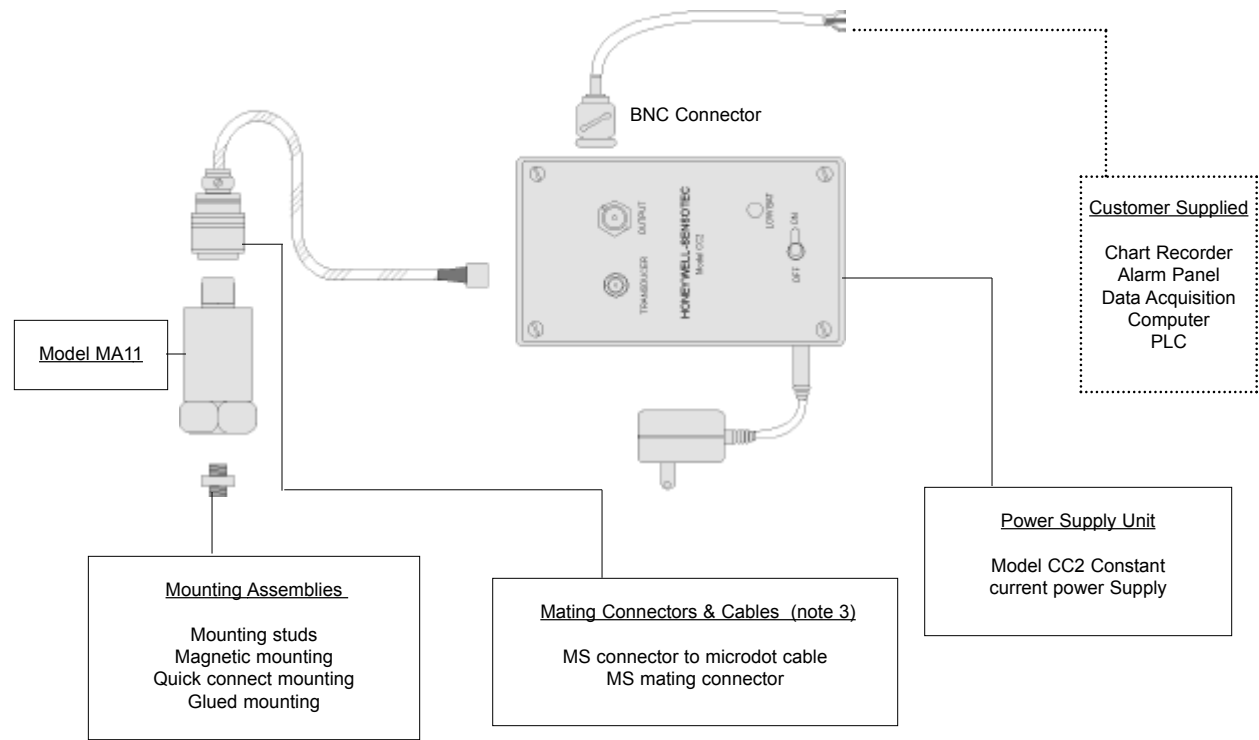
Input.....Constant Current
Current Range.....0.5 mA to 8 mA
Bias Voltage.....12 Vdc
Cable (note 2)
AG902.....S/S overbraided PTFE
AG903.....PU
Standard Cable Length (note 2)
AG902.....16 ft.
AG903.....Specify at time of order
Electrical Noise.....0.1 mG max.
Isolation.....Base isolated
Mating Connector (note 1).....MH002

Model MA11

Mechanical

Design.....	Isolated compression in faraday cage
Weight	
AG901 & AG902.....	3.85 oz.
AG903.....	5.3 oz.
Material.....	Stainless Steel
Mounting Torque.....	6 ft.-lb.

Typical System Diagram



Options

	Fast Track Manufacture	Built to Order
Sensitivity	100 mV/G	10mV/G; 1,000mV/G
Electrical Termination	2 pin MS (note 1) Cable (note 2)	
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female	

Supplied as standard

Sensitivity Codes

Sensitivity	Sensitivity Code
10 mV/G	GU
100 mV/G	GH
1,000 mV/G	GG

Notes

1. Only available with AG901.
2. Only available with AG902 & AG903.
3. AG902 & AG903 do not need mating connectors.

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: AG901 GU 17b
Model Code Sensitivity Code Options Code

1-888-282-9891

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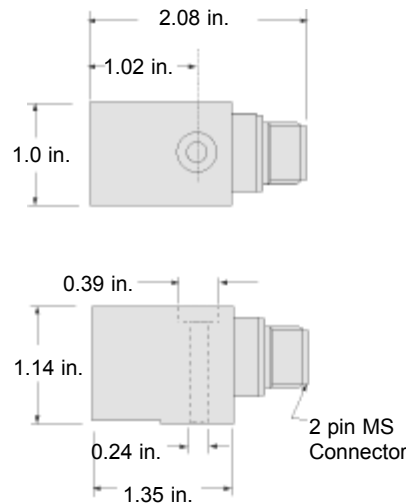
Model MA12 Accelerometer

Order Code AG903; AG904

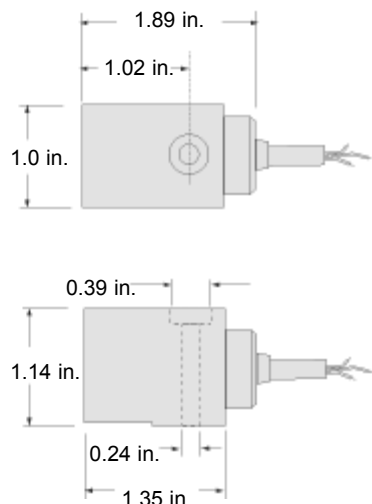
- General Purpose
- 2 Hz to 8 kHz Usable Frequency Range
- IEPE Output



Dimensions



Model MA12 (order code AG903)



Model MA12 (order code AG904)

Wiring Codes

AG903

Pin A (+) Supply
Pin B Supply Return

AG904

White (+) Supply (+) Output
Black Supply Return
Shield Connected to Case

Performance

Dynamic Ranges.....+/- 80G
Sensitivity.....100 mV/G +/- 10%
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....2 Hz to 8 kHz
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....18 kHz

Environmental

Temperature, Operating.....-70° to 280° F
Sealing.....IP67/ Nema 4

Electrical

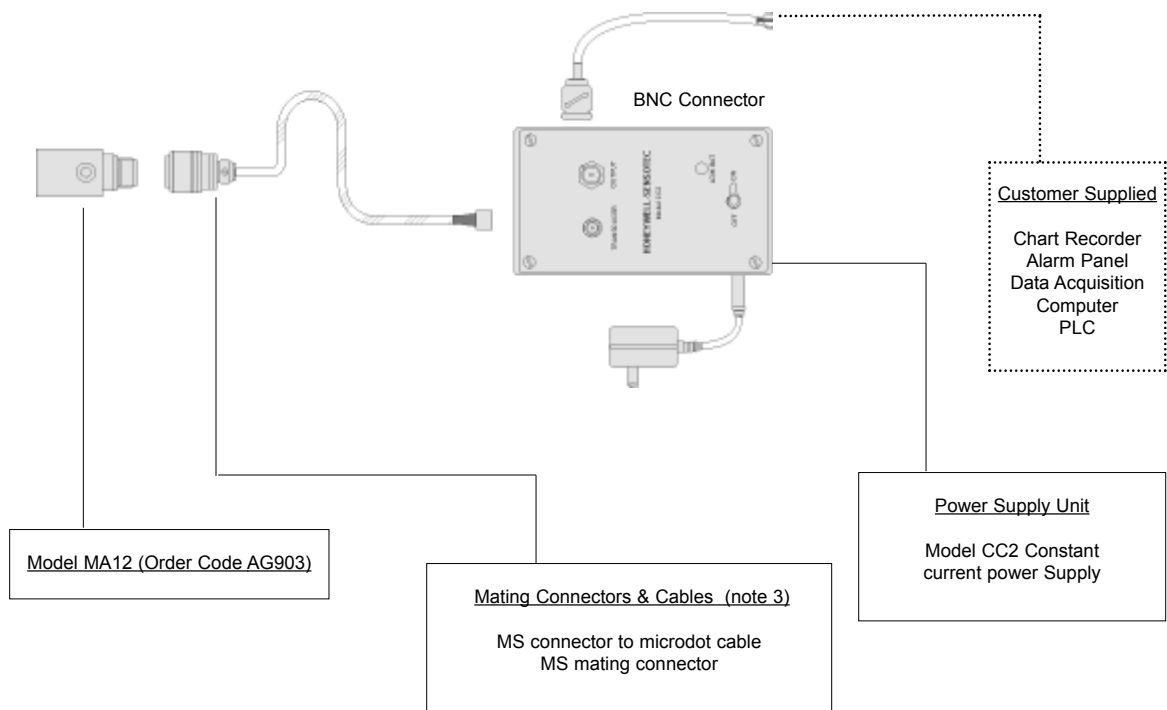
Input.....Constant Current
Current Range.....0.5 mA to 8 mA
Bias Voltage.....12 Vdc
Cable (note 2).....S/S overbraided PTFE
Electrical Noise.....0.1 mg max.
Isolation.....Base isolated
Mating Connector (note 1).....MH002

Mechanical

Weight.....6 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Model MA12

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Sensitivity	100 mV/G	10mV/G; 1,000mV/G
Electrical Termination	Cable length (Specify at time of ordering)	

Supplied as standard

Sensitivity Codes

Sensitivity	Sensitivity Code
10 mV/G	GU
100 mV/G	GH
1,000 mV/G	GG

Notes

1. Not applicable for AG904.
2. Not applicable for AG903.
3. AG904 does not need mating connectors.

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: AG903 GH
Model Code Sensitivity Code

1-888-282-9891

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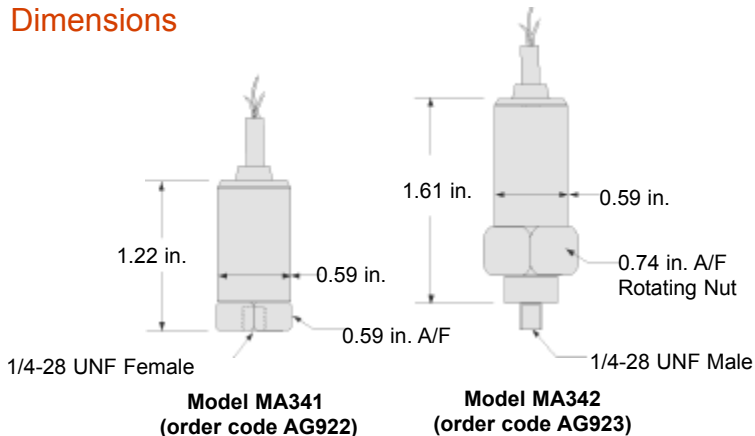
Models MA341 & MA342 Accelerometers

Order Code AG922; AG923

- High Frequency
- 2 Hz to 15 kHz Usable Frequency Range
- IEPE Output



Dimensions



Wiring Codes

Black (+) Supply/ (+) Output
White Supply Return

Performance

Dynamic Ranges.....+/- 80G
Sensitivity.....100 mV/G +/- 10%
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....2 Hz to 15 kHz +/- 5%
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....22 kHz

Environmental

Temperature, Operating.....-10° to 280° F
Sealing.....IP67/ Nema 4

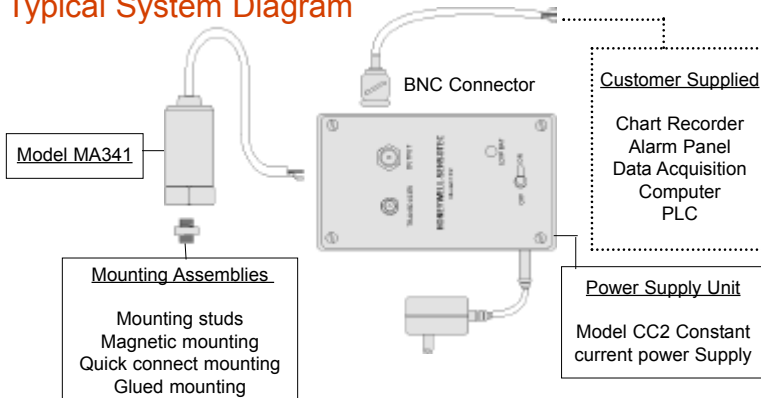
Electrical

Input.....Constant Current
Current Range.....0.5 mA to 8 mA
Bias Voltage.....12 Vdc
Cable.....S/S overbraided PTFE
Electrical Noise.....0.1 mG max.
Isolation.....Base isolated

Mechanical

Weight.....1 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
10 mV/G	GU
30 mV/G	GC
100 mV/G	GH
1,000 mV/G	GG

Options

	Fast Track Delivery	Built to Order
Sensitivity	100 mV/G	10mV/G; 1,000mV/G; 30 mV/G
Electrical Termination	Cable length (Specify at time of order)	

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **AG913** **GH**
Model Code Sensitivity Code

1-888-282-9891

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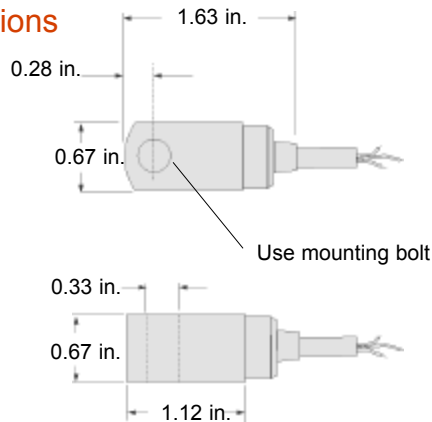
Model MA21 Accelerometer

Order Code AG913

- Miniature Size
- Low Profile
- IEPE Output



Dimensions



Wiring Codes

White	(+) Supply (+) Output
Black	Supply Return
Shield	Connected to Case

Performance

Dynamic Ranges	+/- 80 G
Sensitivity	100 mV/G +/- 10% @ 80 Hz
Transverse Sensitivity	Less than 5%
Temperature Sensitivity	0.145/ °F
Frequency Range	2 Hz to 9 kHz
Amplitude Linearity	Better than 1% Linearity
Mounted Base Resonance	18 kHz

Environmental

Temperature, Operating	10° to 280° F
Sealing	IP67/ Nema 4

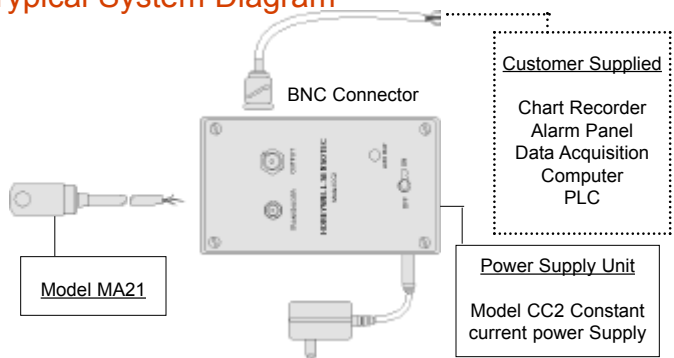
Electrical

Input	Constant Current
Current Range	0.5 mA to 8 mA
Bias Voltage	12 Vdc
Cable	S/S overbraided PTFE
Standard Cable Length	16 ft.
Electrical Noise	0.1 mG max.
Isolation	Base isolated

Mechanical

Weight	3.90 oz.
Material	Stainless Steel
Mounting Torque	6 ft.-lb.

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
10 mV/G	GU
30 mV/G	GC
100 mV/G	GH
1,000 mV/G	GG

Options

	Fast Track Delivery	Built to Order
Sensitivity	100 mV/G	10mV/G; 1,000mV/G; 30 mV/G
Electrical Termination	Cable length (Specify at time of order)	

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **AG913** **GH**
Model Code Sensitivity Code

1-888-282-9891

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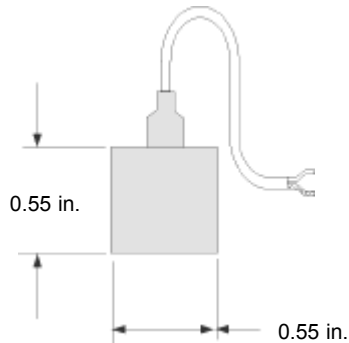
Model MA23 Accelerometer

Order Code AG914

- Miniature Size
- Low Profile
- IEPE Output



Dimensions



Wiring Codes

Center (+) Supply (+) Output
Shield Supply Return

Performance

Dynamic Ranges.....+/- 10G
Sensitivity.....1V/G
Transverse Sensitivity.....5% max.
Temperature Sensitivity.....0.145/ °F
Frequency Range.....5 Hz to 14 kHz +/- 10%
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....25 kHz

Environmental

Temperature, Operating.....-70° to 250° F
Sealing.....IP65/ Nema 2

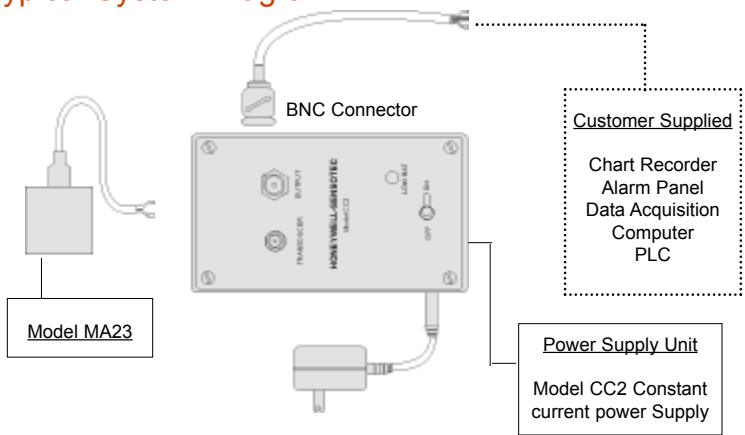
Electrical

Input.....Constant Current
Current Range.....18-30 V
Bias Voltage.....12 V
Cable.....PTFE
Standard Cable Length.....16 ft.
Electrical Noise.....0.1 mG max.
Isolation.....Base isolated

Mechanical

Weight.....0.3 oz.
Material.....HE 30 Aluminum
Mounting.....Beeswax or adhesive

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
100 mV/G	GH
1000 mV/G	GG

Options

	Fast Track Delivery	Built to Order
Sensitivity	1000 mV/G	100mV/G
Electrical Termination	Cable length(Specify at time of order)	

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired sensitivity code.

Sample Code: **AG914** **GH**
Model Code Sensitivity Code

1-888-282-9891

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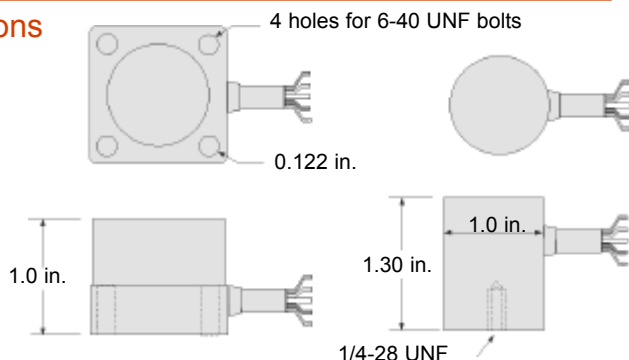
Model MA311 & MA312 Accelerometer

Order Code AG915; AG916

- DC Response
- Amplified Voltage Output
- Up to 0-1800 Hz Usable Range



Dimensions



Model MA311 (order code AG915)

Model MA312 (order code AG916)

Wiring Codes

Red	(+) Supply
Blue	(-) Supply
Yellow	(+) Output
Green	(-) Output
Shield	Not Connected

Performance

Sensitivity	100 mV/G
Transverse Sensitivity	Less than 5%
Temperature Sensitivity	0.145/ °F
Frequency Range	dependent on dynamic range +/- 5% (see below)
+/- 1G & +/- 2G	DC to 250 Hz
+/- 5G	DC to 300 Hz
+/- 10G	DC to 500 Hz
+/- 20G	DC to 700 Hz
+/- 50G	DC to 1 kHz
Amplitude Linearity	Better than 1% Linearity
Mounted Base Resonance	18 kHz
Acceleration Limits	x 20 of dynamic range

Environmental

Temperature, Operating	0° to 180° F
Sealing	IP65/ Nema 2

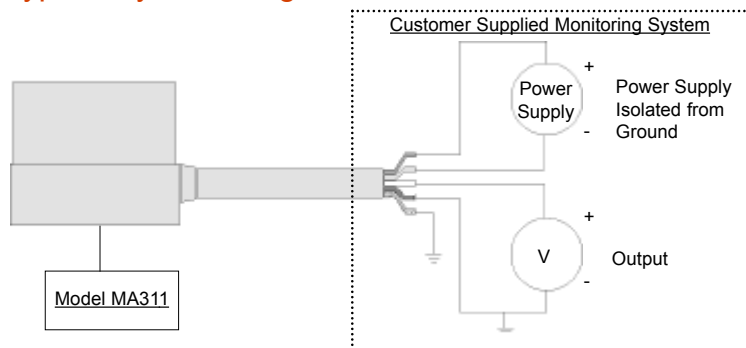
Electrical

Input	Voltage
Supply Voltage	12-24V @ 7mA
Output Impedance	50 Ohms
Cable	Stainless Steel overbraided PTFE
Standard Cable Length	16 ft.
Electrical Noise	10 mG
Isolation	Base isolated

Mechanical

Weight	1.40 oz.
Case Material	Stainless Steel

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
100 mV/G	GH

Options

	Fast Track Delivery
Dynamic Range	+/- 1, 2, 5, 10, 20, 50 G
Electrical Termination	Cable length (Specify at time of order)
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AG915** **GH** **17c**
Model Code Sensitivity Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

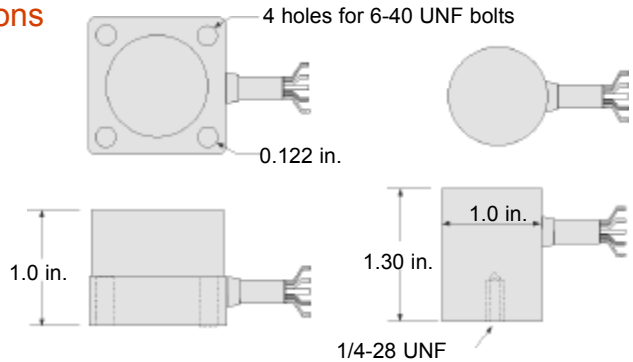
Model MA321 & MA322 Accelerometer

Order Code AG917; AG918

- DC Response
- 4-20 mA Output Proportional to G
- Built-in Signal Conditioning



Dimensions



Model MA321 (order code AG917)

Model MA322 (order code AG918)

Wiring Codes

Red	(+) Supply
Blue	(+) Supply
Shield	Not Connected

Performance

Output	4-20 mA range, 12 mA @ 0 G with sensitivity scaled to a full range output, i.e. +/- 5 G = 1.6 mA/G
Transverse Sensitivity	Less than 5%
Temperature Sensitivity	0.145/ °F
Frequency Range	dependent on dynamic range +/- 5% (see below)
+/- 1G & +/- 2G	DC to 250 Hz
+/- 5G	DC to 300 Hz
+/- 10G	DC to 500 Hz
+/- 20G	DC to 700 Hz
+/- 50G	DC to 1 kHz
Amplitude Linearity	Better than 1% Linearity
Mounted Base Resonance	18 kHz
Acceleration Limits	x 20 of dynamic range

Environmental

Temperature, Operating	0° to 180° F
Sealing	IP65/ Nema 2

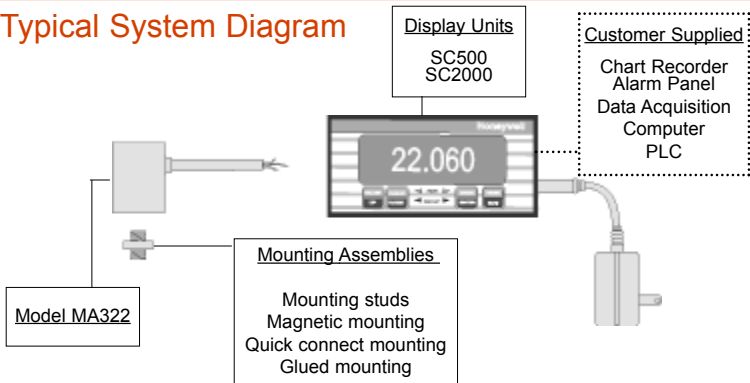
Electrical

Input	Voltage
Supply Voltage	10 to 30V
Output Impedance	3,000 Ohms
Cable	Stainless Steel overbraided PTFE
Standard Cable Length	16 ft.
Electrical Noise	10 mG
Isolation	Base isolated

Mechanical

Weight	1.40 oz.
Case Material	Stainless Steel

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Dynamic Range	+/- 1, 2, 5, 10, 20, 50 G	
Electrical Termination	Cable length	
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female	10-32 UNF Female

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available options.

Sample Code: **AG918** **17c**
Model Code Options Code

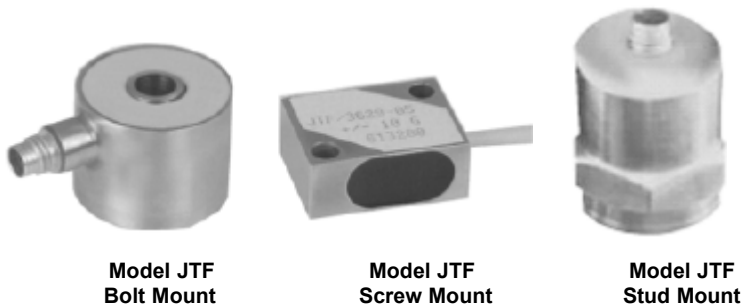
1-888-282-9891

www.honeywell.com/sensotec

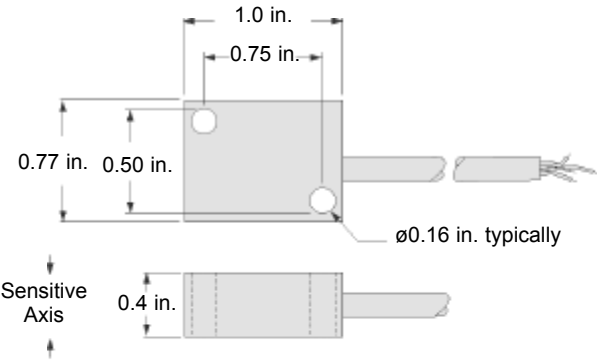
Model JTF General Purpose Accelerometer

Order Code AG111; AG112; AG113

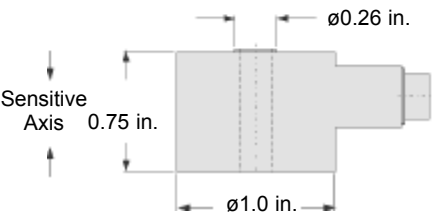
- Zero Hertz Operation
- Easy Calibration
- Low Impedance



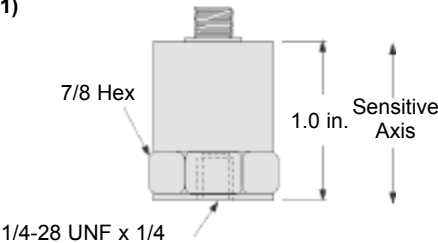
Dimensions



Model JTF Screw Mount (order code AG111)



Model JTF Bolt Mount (order code AG112)



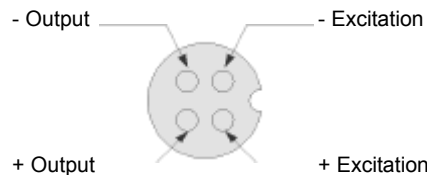
Model JTF Stud Mount (order code AG113)

Wiring Codes

Screw Mount

- Red (+) Excitation
- Black (-) Excitation
- Green (-) Output
- White (+) Output

Bolt or Stud Mount



Performance

Dynamic Ranges.....	+/- 5 to 500 Peak G
Sensitivity.....	See table
Transverse Sensitivity.....	Less than 5%
Frequency Range.....	See table
Frequency Response.....	+/- 5% (note 1)
Non-Linearity & Hysteresis.....	+/- 1% Full Scale
Mounted Base Resonance.....	See table
Damping Ratio (nominal).....	0.7 C @ 70° F

Environmental

Temperature, Operating.....	-40° to 250° F
Temperature, Compensated.....	70° to 200 ° (note 1)
Temperature Effect	
Zero (max.).....	0.02% Full Scale/ ° F
Sensitivity (max.).....	+/- 10%

Electrical

Excitation (calibration).....	5 VDC
Excitation (acceptable).....	Up to 10 VDC
Electrical Termination	
AG111.....	Teflon Cable 5'
AG112 & AG113.....	10-32 UNF 4-pin connector
Mating Connector.....	10-32 UNF socket plug (note 2)

Available Range (peak G)	Sensitivity Nominal (mV/G)	Sensitivity Range (mV/G)	Usable Frequency Range (Hz)	Mounted Resonant Frequency (Hz)
+/- 5	8	5.0-12	0-300	800
+/- 10	3.8	2.4-5.0	0-400	1,00
+/- 20	1.8	1.2-2.4	0-600	1,500
+/- 50	0.8	0.5-1.2	0-1,000	2,000s
+/- 100	0.38	0.24-0.5	0-1,500	3,000
+/- 200	0.18	0.12-0.24	0-2,000	4,000
+/- 500	0.08	0.05-0.12	0-2,400	5,000

1-888-282-9891

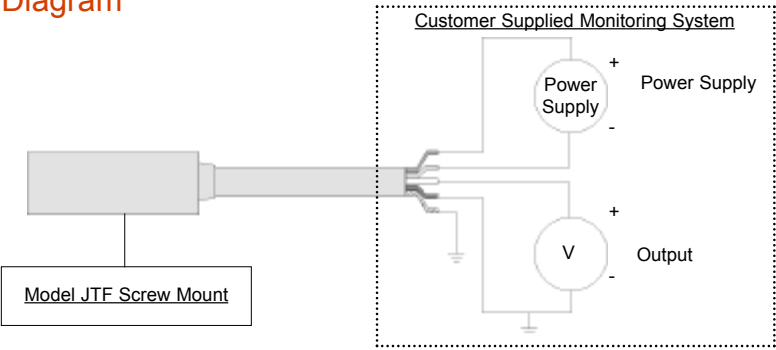
www.honeywell.com/sensotec

Model JTF

Mechanical

Acceleration Limits (any direction).....	20x
Weight	
AG111.....	1 oz.
AG112 & AG113.....	2.1 oz.
Case Material	
AG111.....	Anodized Aluminum
AG112 & AG113.....	Stainless Steel

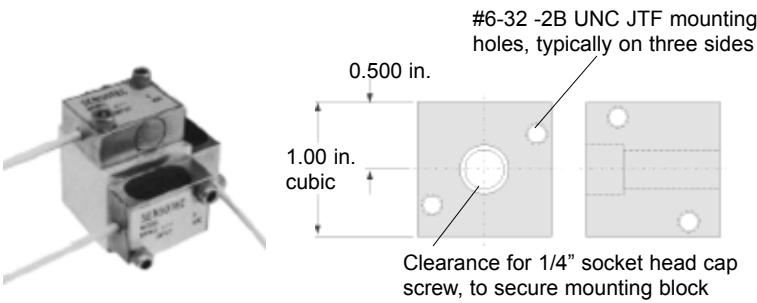
Typical System Diagram



Options

	Same Day Ship	Built to Order
AG111		
Range	10, 50G	5, 20, 100, 200, 500G
AG112& AG113		
Range		5, 10, 20, 50, 100, 200, 500G

Triaxial Mounting Block (order code AA235) for Model AG111



Specifications

Range Codes	Available Ranges (peak G)	Sensitivity		Usable Frequency Range (Hz)	Mounted Resonant Frequency (Hz)
		Nominal (mV/G)	Range (mV/G)		
GJ	+/-5	8	5.0-12	0-300	800
GK	+/-10	3.8	2.4-5.0	0-400	1000
GL	+/-20	1.8	1.2-2.4	0-600	1500
GN	+/-50	0.8	0.5-1.2	0-1000	2000
GP	+/-100	0.38	0.24-0.5	0-1500	3000
GV	+/-200	0.18	0.12-0.24	0-2000	4000
GR	+/-500	0.08	0.05-0.12	0-2400	5000

Notes

1. Output voltage is proportional to input voltage.
2. Only available with AG112 & AG113.

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **AG111** **GV**
Model Code Range Code

1-888-282-9891

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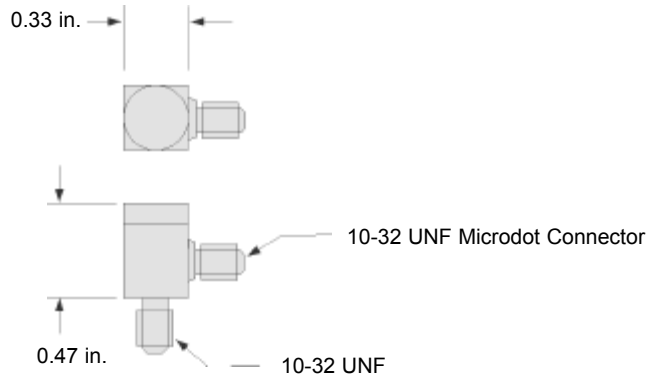
Model MAQ36 Accelerometer

Order Code AG924

- Sub-Miniature
- Charge Output
- 45 kHz Mounted Frequency



Dimensions



Wiring Codes

Center (+) Output
Shield Case Ground

Performance

Dynamic Ranges.....+/- 2,000 G
Sensitivity.....5 pC/g +/- 10%
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.045/ °F
Frequency Range.....1 Hz to 30 kHz
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....45 kHz

Environmental

Temperature, Operating.....-70° to 480° F
Sealing.....IP67/ Nema 4

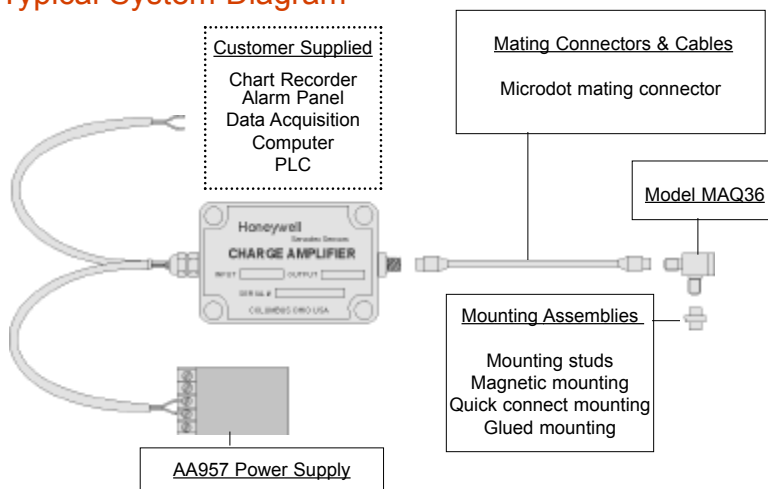
Electrical

Input.....Self Generating
Output.....Charge
Charge Amplitude Required.....CA2
Mating Connector.....Microdot
Capacitance.....300 pf
Isolation.....Base isolated

Mechanical

Weight.....0.25 oz.
Material.....Stainless Steel
Mounting Torque.....2 ft.-lb.

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
0.5 pC/G	YA
5 pC/G	YB
50 pC/G	YF

Options

	Fast Track Delivery	Built to Order
Sensitivity	5 pC/G	0.5 pC/g; 50 pC/G

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **AG924** **YA**
Model Code Sensitivity Code

1-888-282-9891

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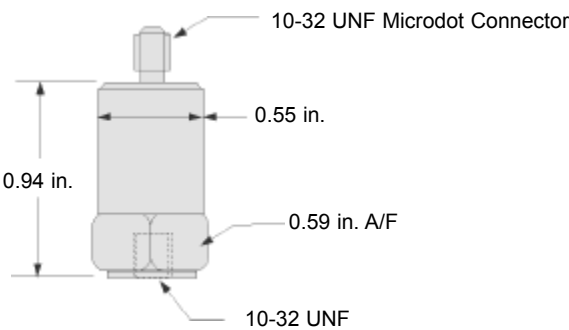
Model MAQ13 Accelerometer

Order Code AG908

- Small Size
- Charge Output
- 30 kHz Mounted Frequency
- General Purpose



Dimensions



Wiring Codes

Center (+) Output
Shield Case Ground

Performance

Dynamic Ranges +/- 800 G
Sensitivity 10, 20, 30 pC/G
Transverse Sensitivity Less than 5%
Temperature Sensitivity 0.145/ °F
Frequency Range dependent on charge amplifier
Amplitude Linearity Better than 1% Linearity
Mounted Base Resonance 30 kHz

Environmental

Temperature, Operating -70° to 480° F
Sealing IP67/ Nema 4

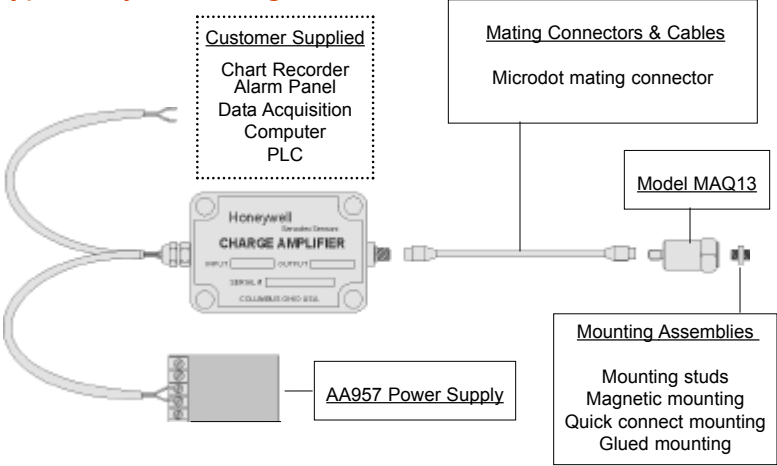
Electrical

Input Self Generating
Output Charge
Charge Amplitude Required CA2
Mating Connector Microdot
Capacitance 450 pf
Isolation Base isolated

Mechanical

Weight 1.00 oz.
Material Stainless Steel
Mounting Torque 2 ft.-lb.

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
10 pC/G	YC
20 pC/G	YD
30 pC/G	YE

Options

	Fast Track Delivery	Built to Order
Sensitivity	20 pC/G	10, 30 pC/G

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired sensitivity code.

Sample Code: **AG908** **YC**
Model Code Sensitivity Code

1-888-282-9891

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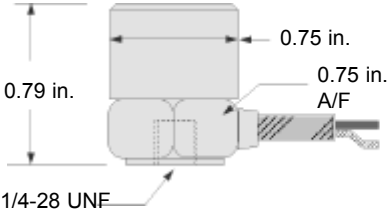
Model MAQ14 Accelerometer

Order Code AG909; AG910

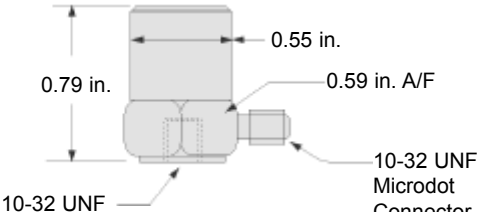
- Small Size
- Charge Output
- 18 kHz Mounted Frequency
- General Purpose



Dimensions



Model MAQ14
(order code AG910)



Model MAQ14
(order code AG909)

Wiring Codes

AG909

Center Shield (+) Output
Case Ground

AG910

Center Shield (+) Output
Case Ground

Performance

Dynamic Ranges.....1,000 G
Sensitivity.....10, 30, 50 pC/G
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....1 Hz to 10 kHz
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....18 kHz

Environmental

Temperature, Operating.....-70° to 480° F
Sealing.....IP67/ Nema 4

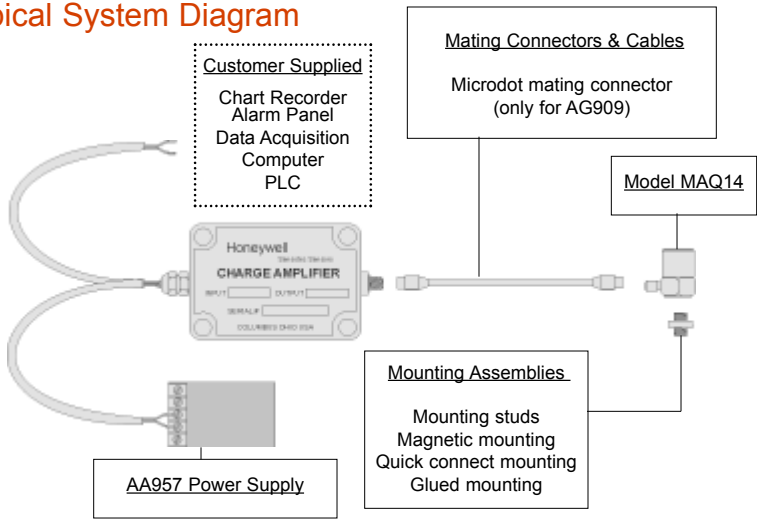
Electrical

Input.....Self Generating
Standard Cable Length.....16 ft. (only AG910)
Charge Amplitude Required.....CA2
Mating Connector.....Microdot (only AG909)
Capacitance.....450 pf
Isolation.....Base isolated

Mechanical

Weight.....1.20 oz.
Material.....Stainless Steel
Mounting Torque.....2 ft.-lb.

Typical System Diagram



Sensitivity Codes

Sensitivity	Sensitivity Code
10 pC/G	YC
30 pC/G	YE
50 pC/G	YF

Options

	Fast Track Delivery	Built to Order
Sensitivity	50 pC/G	10, 30 pC/G

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired sensitivity code.

Sample Code: **AG909** **YC**
Model Code Sensitivity Code

1-888-282-9891

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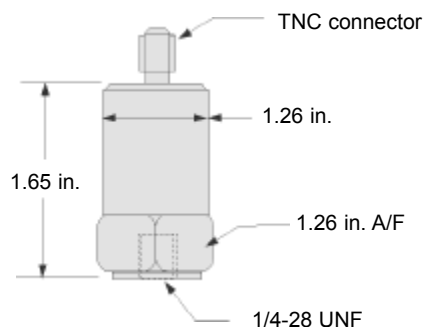
Model MAQ41 Accelerometer

Order Code AG925

- Enhanced Output
- Charge Output
- 10 kHz Mounted Frequency



Dimensions



Wiring Codes

Center (+) Output
Shield Case Ground

Performance

Dynamic Ranges.....+/- 100 G
Sensitivity.....1,100 pC/G +/- 10%
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....dependent on charge amplifier
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....10 kHz

Environmental

Temperature, Operating.....-70° to 480° F
Sealing.....IP67/ Nema 4

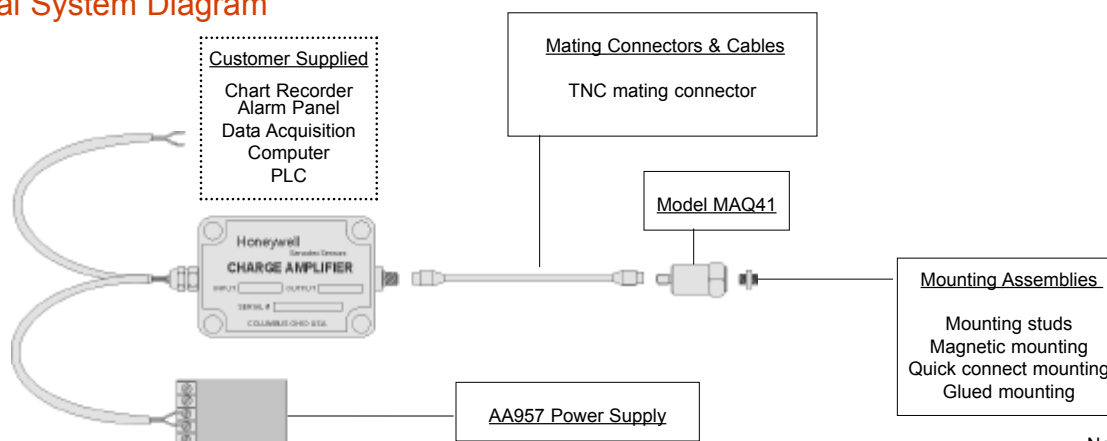
Electrical

Input.....Self Generating
Charge Amplitude Required.....CA2
Mating Connector.....TNC
Capacitance.....4,000 pf
Isolation.....Non-isolated

Mechanical

Weight.....3.50 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Typical System Diagram



-Not RoHS Compliant

How to Order

Sample Code: **AG925**
Model Code

1-888-282-9891

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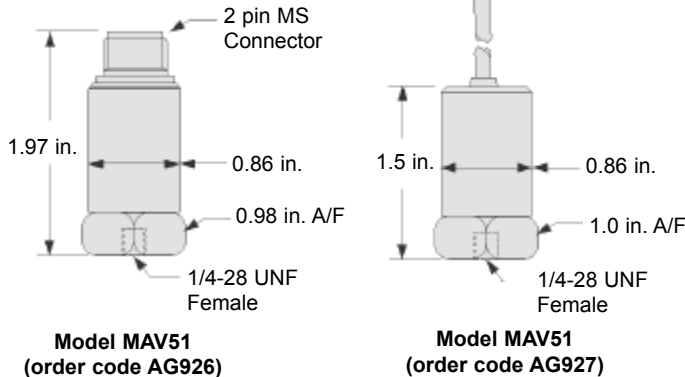
Model MAV51 Accelerometer

Order Code AG926; AG927

- Velocity Measurement
- 5 Hz to 4 kHz +/- 5% Usable Frequency Range
- IEPE Output



Dimensions



Wiring Codes

AG926

Pin A (+) Supply/ (+) Output
Pin B Supply Return

AG927

White (+) Supply (+) Output
Black Supply Return
Shield Not Connected

Performance

Sensitivity.....100 mV/in./sec
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....5 Hz to 4 kHz +/- 5%
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....18 kHz nominal

Environmental

Temperature, Operating.....-10° to 280° F
Sealing.....IP67/ Nema 4

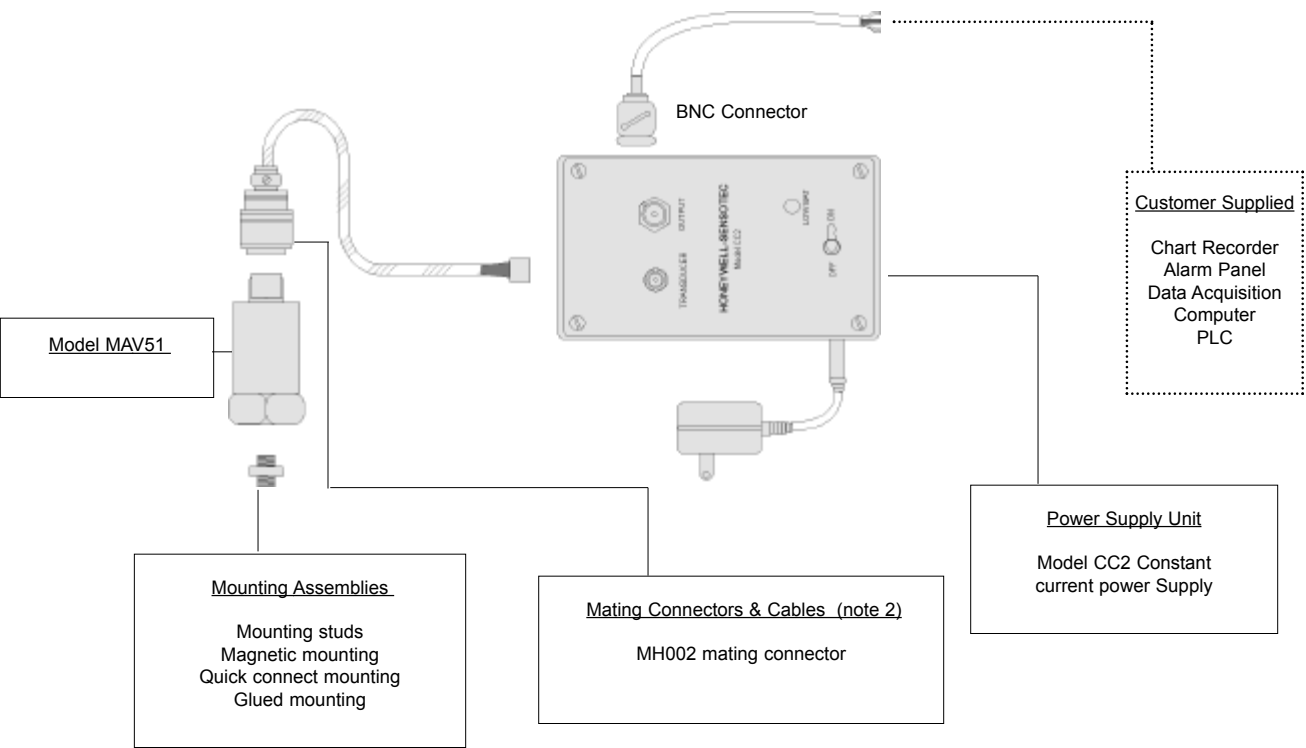
Electrical

Input.....Constant Current
Current Range.....0.5 mA to 8 mA
Bias Voltage.....12 Vdc
Cable (note 1).....S/S overbraided PTFE
Standard Cable Length (note 1).....16 ft.
Electrical Noise.....0.3 mG max.
Isolation.....Base isolated
Mating Connector (note 2).....MH002

Mechanical

Weight.....3.88 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Typical System Diagram



Options

	Fast Track Delivery
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female

Notes

1. Not applicable for AG926.
2. Not applicable for AG927.

How to Order

The order code consists of the product model and the available options.

Sample Code: **AG926** **17c**
Model Code Options Code

1-888-282-9891

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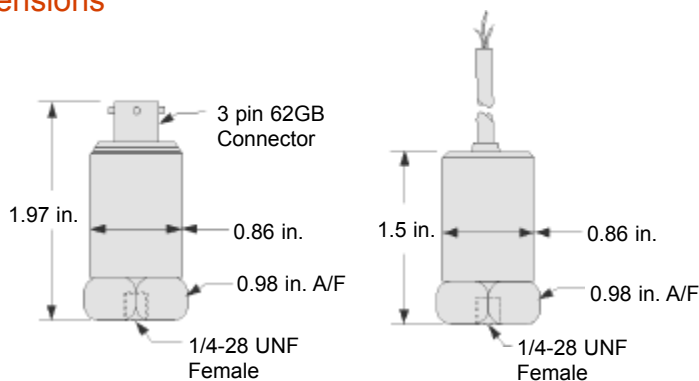
Model MAT53 Accelerometer

Order Code AG930; AG931

- Temperature & Vibration Output
- 2 Hz to 10 kHz Usable Frequency Range
- IEPE Output
- Current O/P for Temperature



Dimensions



Model MAT53
(order code AG930)

Model MAT53
(order code AG931)

Wiring Codes

AG930

Pin A (+) Supply/ (+) Output
Pin B Supply Return
Pin C (+) Temperature

AG931

White (+) Supply (+) Output
Black (+) Temperature
Shield Supply Return

Performance

Dynamic Ranges.....+/- 80G
Sensitivity.....100 mV/G +/- 10%
Temperature Range.....0 - 200°F
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....10 mV/ °F
Frequency Range.....2 Hz to 10 kHz +/- 5%
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....18 kHz

Environmental

Temperature, Operating.....-10° to 280° F
Sealing.....IP67/ Nema 4

Electrical

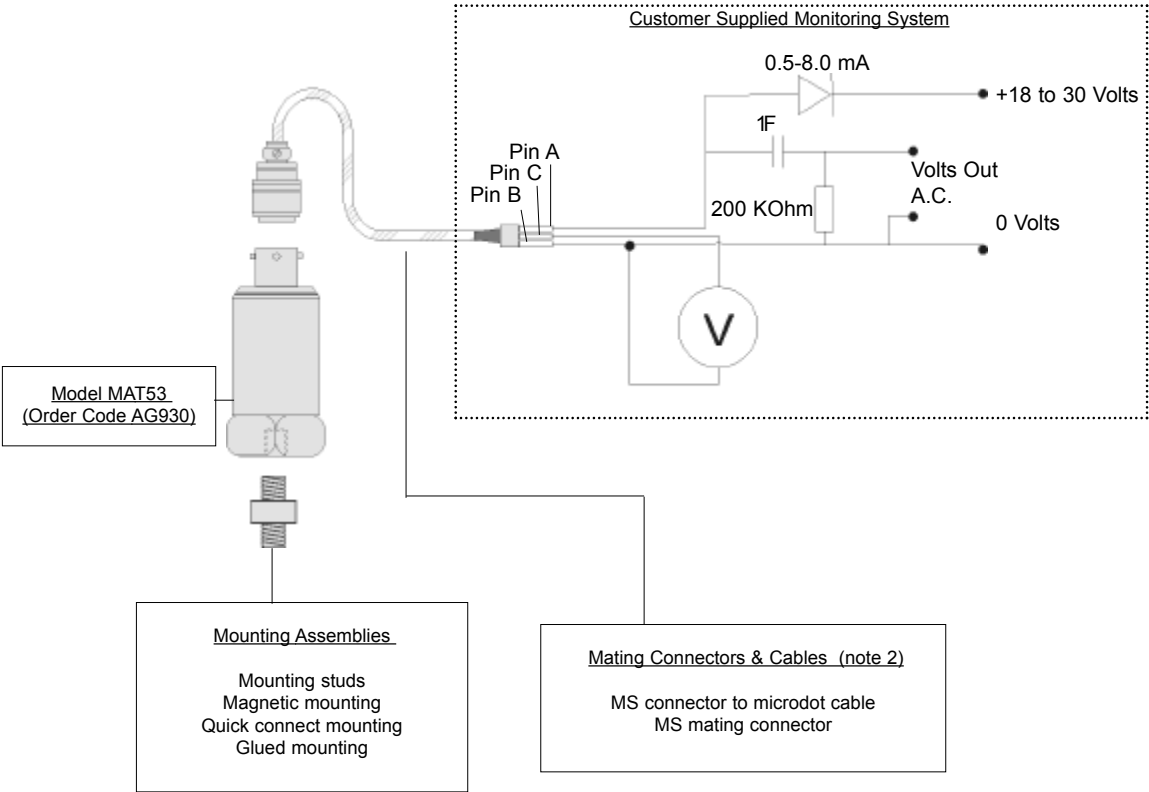
Input.....Constant Current
Current Range.....0.5 mA to 8 mA
Bias Voltage.....12 Vdc
Cable (note 1).....S/S overbraided PTFE
Standard Cable Length (note 1).....16 ft.
Electrical Noise.....0.3 mG max.
Isolation.....Base isolated
Mating Connector (note 2).....MH008

Mechanical

Weight.....3.80 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Model MAT53

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Sensitivity	100 mV/G	10mV/G; 1,000mV/G; 30 mV/G
Electrical Termination	Cable (note 2)	
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female	

Sensitivity Codes

Sensitivity	Sensitivity Code
10 mV/G	GU
30 mV/G	GB
100 mV/G	GH
1,000 mV/G	GG

Notes

1. Not applicable for AG930.
2. Not applicable for AG931.

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AG930** **GH** **17c**
Model Code Sensitivity Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

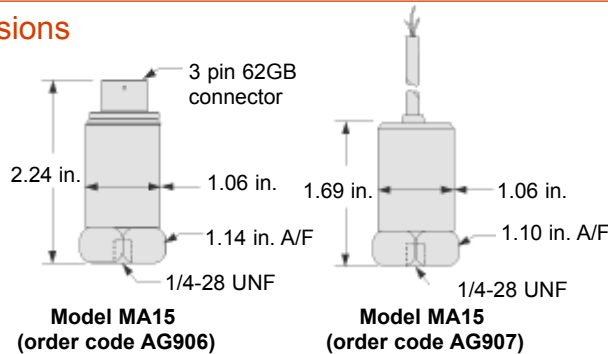
Model MA15 Accelerometer

Order Code AG906; AG907

- General Purpose
- 4-20 mA Proportional to G
- 2 Hz to 1 kHz Usable Range



Dimensions



Wiring Codes

AG906

Pin A (+) Supply
Pin B No Connection
Pin C (+) Output

AG907

White (+) Supply
Black (+) Output
Shield Case Ground

Performance

Dynamic Ranges.....+/- 1G to +/-50 G
Range.....4-20 mA for 50 G
Transverse Sensitivity.....Less than 5%
Temperature Sensitivity.....0.145/ °F
Frequency Range.....2 Hz to 1 kHz +/- 10%
Amplitude Linearity.....Better than 1% Linearity
Mounted Base Resonance.....5 kHz

Environmental

Temperature, Operating.....-10° to 210° F
Sealing.....IP67/ Nema 4

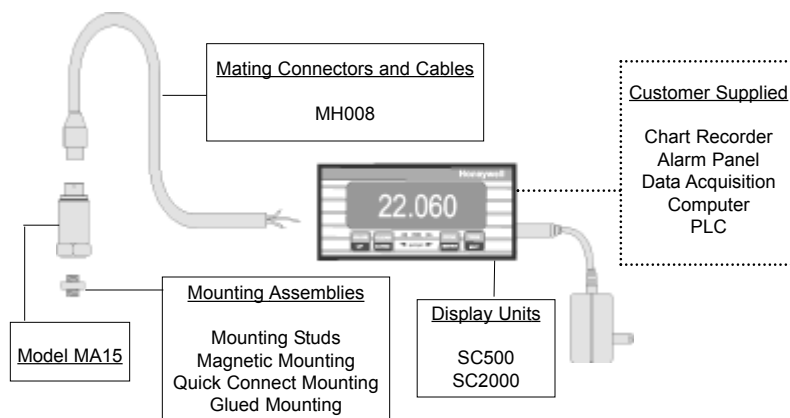
Electrical

Input.....Voltage
Output.....4-20 mA for 50 G
Supply Voltage.....12-32 V
Cable (AG907).....Stainless Steel overbraided PTFE
Standard Cable Length (AG907).....16 ft.
Mating Connector (AG906).....MH008
Electrical Noise.....0.3 mG max.
Isolation.....Base isolated

Mechanical

Weight.....5 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Typical System Diagram



Range Codes

Range	Range Code
1G	GE
2G	GF
5G	GJ
10G	GK
20G	GL
50G	GN

Options

	Fast Track Delivery	Built to Order
Dynamic	50G	1, 2, 5, 10, 20G
Electrical Termination	17b. 1/4-28 UNF 17c. Quickfit Female	

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AG906** **GE** **17c**
Model Code Range Code Options Code

1-888-282-9891

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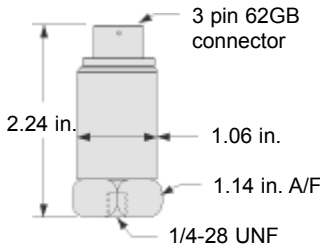
Model MAV52 Accelerometer

Order Code AG928; AG932; AG929

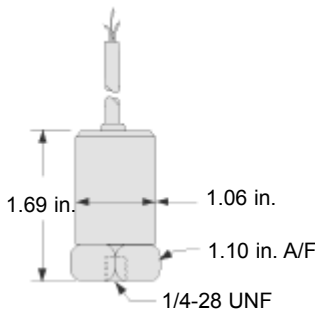
- Velocity Measurement
- 2 Hz to 10 kHz Usable Frequency Range
- 4-20 mA Proportional to Velocity
- Submersible Option



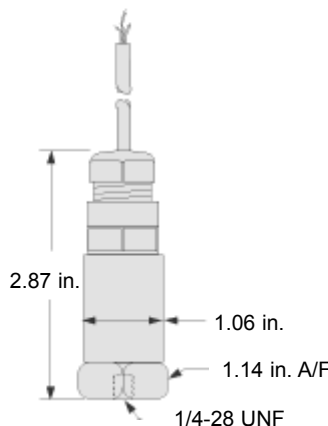
Dimensions



Model MAV52 (order code AG928)



Model MAV52 (order code AG932)



Model MAV52 (order code AG929)

Wiring Codes

AG928

Pin A	(+) ve Accel.
Pin B	No Connection
Pin C	0 volts

AG932

White	(+) Supply
Black	(+) Output
Shield	Case Ground

AG929

Red	(+) Supply
Blue	(+) Output
Shield	Case Ground

Performance

Dynamic Ranges	50G
Sensitivity	1 in./sec for 4-20 mA
Transverse Sensitivity	Less than 5%
Temperature Sensitivity	0.145/ °F
Frequency Range	2 Hz to 1 kHz +/- 10%
Amplitude Linearity	Better than 1% Linearity
Mounted Base Resonance	5 kHz

Environmental

Temperature, Operating	-10° to 210° F
Sealing	
AG928 & AG932	IP67/ Nema 4
AG929	IP68/ Nema 4x

Electrical

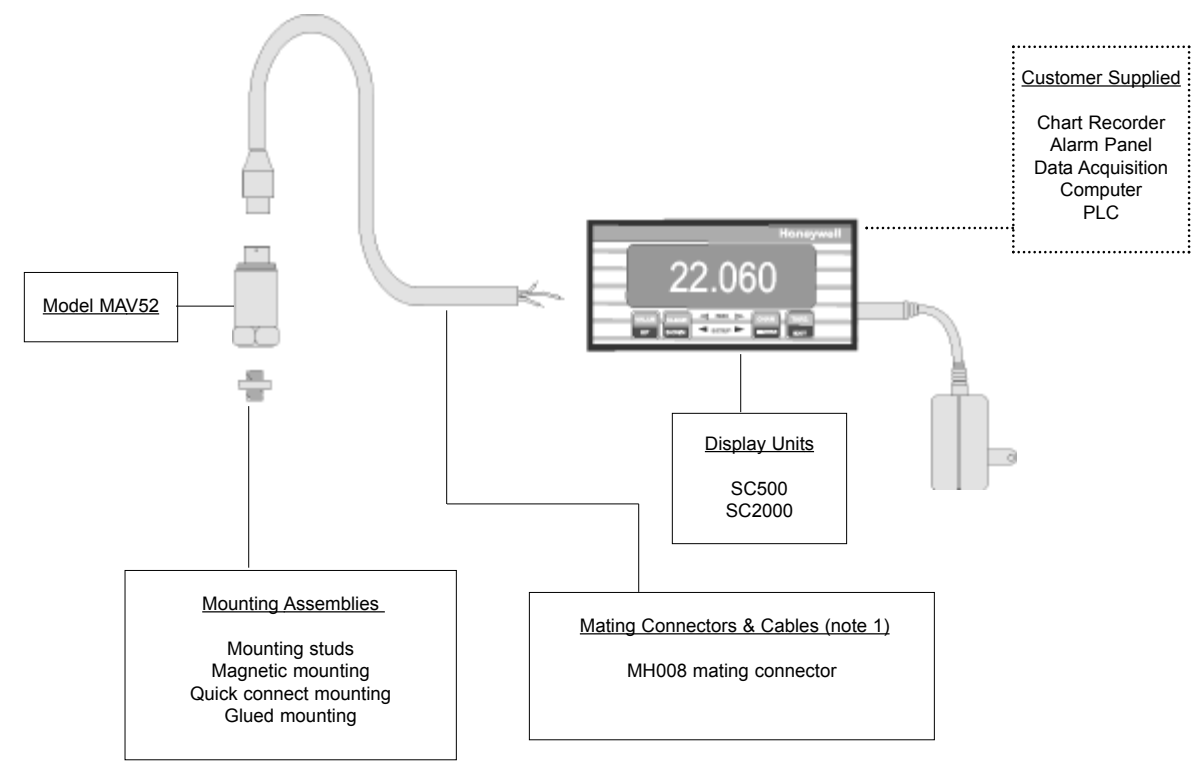
Input	Voltage
Output	4-20 mA
Supply Voltage	12-32 V
Current Range	0.5 mA to 8 mA
Bias Voltage	12 Vdc
Cable (note 2)	
AG932	Stainless Steel armored PTFE
AG929	PU
Standard Cable Length (note 2)	16 ft.
Electrical Noise	0.3 mG max.
Isolation	Base isolated
Mating Connector (note 1)	MH008

Model MAV52

Mechanical

Weight.....5 oz.
Material.....Stainless Steel
Mounting Torque.....6 ft.-lb.

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Sensitivity	1 in./sec RMS	0.5, 2, 4 in/sec RMS
Electrical Termination	Cable length (note 2)	
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female	

Supplied as standard

Range Codes

Range	Range Code
0.5 in./sec RMS	SA
1 in./sec RMS	SB
2 in./sec RMS	SC
4 in./sec RMS	SD

Notes

1. Only available with AG928.
2. Only available with AG932 & AG929.

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: AG928 SA 17b
Model Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

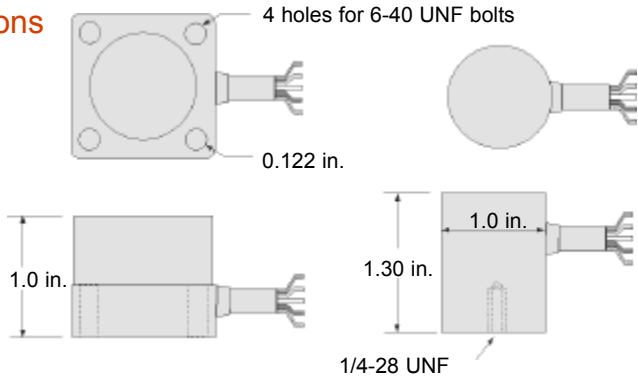
Model MA331 & MA332 Accelerometer

Order Code AG919; AG920

- DC Response
- mV Output
- For Use With Strain Gage Amps



Dimensions



Model MA331 (order code AG919)

Model MA332 (order code AG920)

Wiring Codes

Red	(+) Supply
Blue	(-) Supply
Yellow	(+) Output
Green	(-) Output
Shield	Not Connected

Performance

Output	15-75 mV Full Scale
Transverse Sensitivity	Less than 5%
Temperature Sensitivity	0.145/ °F
Frequency Range	dependent on dynamic range +/- 5% (see below)
+/- 1G & +/- 2G	DC to 250 Hz
+/- 5G	DC to 300 Hz
+/- 10G	DC to 500 Hz
+/- 20G	DC to 700 Hz
+/- 50G	DC to 1 kHz
Amplitude Linearity	Better than 1% Linearity
Mounted Base Resonance	18 kHz
Acceleration Limits	x 20 of dynamic range

Environmental

Temperature, Operating	0° to 180° F
Sealing	IP65/ Nema 2

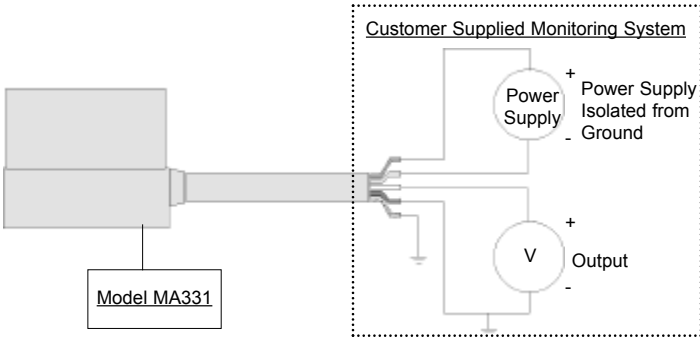
Electrical

Input	Voltage
Supply Voltage	5V @ 7mA
Output Impedance	3,000 Ohms
Cable	Stainless Steel overbraided PTFE
Standard Cable Length	16 ft.
Electrical Noise	10 mG
Isolation	Base isolated

Mechanical

Weight	1.40 oz.
Case Material	Stainless Steel

Typical System Diagram



Range Codes

Range	Range Code
1G	GE
2G	GF
5G	GJ
10G	GK
20G	GL
50G	GN

Options

	Fast Track Delivery	Built to Order
Dynamic Range	1, 2, 5, 10, 20, 50G	
Electrical Termination	Cable length	
Mounting Arrangement	17b. 1/4-28 UNF 17c. Quickfit Female	10-32 UNF Female

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code:	AG919	GE	17c
	Model Code	Range Code	Options Code

1-888-282-9891

www.honeywell.com/sensotec

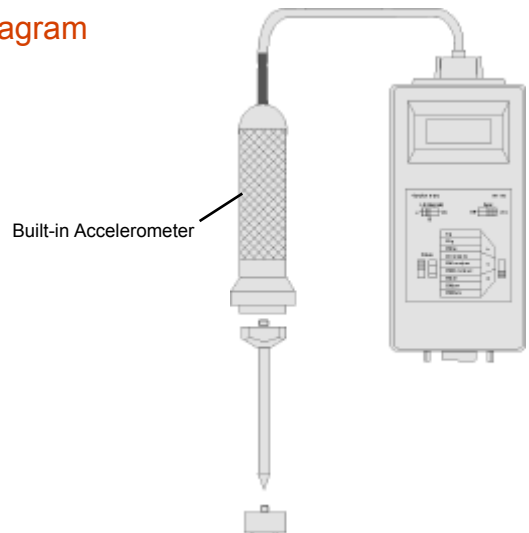
Models VM110 & VM120 Vibration Meter Kit

Order Code AG941; AG942

- Hand Held
- LCD Display
- Battery Powered



Typical System Diagram



Performance

Acceleration.....	2, 20, 200 G
Ranges	
Velocity.....	2 in./sec., 20 in./sec., 200 in./sec.
Displacement.....	2 thou, 20 thou, 200 thou
Upper Frequency.....	Selectable low pass filters of 5 kHz, 10 kHz and 20 kHz
Lower Frequency.....	Fixed, Acceleration: 5 Hz, Velocity: 10 Hz, Displacement: 15Hz
Detector.....	RMS or Peak switch selectable
Display.....	1/2 in., 3.5 digit LCD (3 readings per second)

Electrical

Accuracy	
Acceleration.....	1.5% RMS, 3% Peak
Velocity.....	2.5% RMS, 4% Peak
Displacement.....	3.5% RMS, 5% Peak
Noise	
Acceleration.....	2 mG RMS; 6 mG Peak
Velocity.....	0.01 in./sec. RMS; 0.03 in./sec. Peak
Displacement.....	0.02 in. RMS; 0.06 in. Peak
Input.....	10 mV/G from hand held accelerometer or other MA Series via cal hood
Output.....	AC 200 mV, full range as selected; DC 200 mV, full range as selected
Power.....	(2) PP3 9-volt battery, low battery indicator on display
Battery life	15 hours approximately
Kit Contents.....	(1) Vibration Meter; (1) Hand held probe; (1) Magnet;
(1) 4 in. Spike; (1) Carrying case	

Accessories

MTN/1100C	100 mV/G accelerometer, 5 meters integral PTFE cable
MTN/1100	100 mV/G, 2 pin MS connector
MTN/1020	100 mV/G, TNC connector
MTN/CA42	Coiled cable assembly 2 pin MS to IA110 for use with MTN/1100
MTN/CA43	Coiled cable assembly TNC to IA110 for use with MTN/1020
MTN/2100	Hand held probe
MTN/CA61	IA110 adapter for use with MTN/1100C
MTN/MM1	Magnet, 1/4" UNF mounting, 35 mm, strength 20 kg
MTN/PS1	Hand held spike, 25 mm, 1/4" UNF mounting
MTN/PS2	Hand held spike, 100 mm, 1/4" UNF mounting
MTN/PS3	Hand held spike, 150 mm, 1/4" UNF mounting
MTN/PS4	Hand held spike, 300 mm, 1/4" UNF mounting
MTN/HE1	Carrying case with foam cut outs

Options

Other MA Series accelerometers

-Not RoHS Compliant

How to Order

Sample Code: **AG941**
Model Code

1-888-282-9891

www.honeywell.com/sensotec

LVDTs

Potential Application		Model	Order Code	Stroke Range	Page	
Amplified	Unguided	JEC DLB	AY321 BY127	+/-0.5" to +/-8.0" +/-0.5" to +/-8.0"	348 350	
	Captive Guided	JECC DLE	AY323 BY128	+/-0.5" to +/-18.5" +/-0.5" to +/-18.5"	352 354	
	Spring Loaded	JECAG DLF	AY322 BY129	+/-0.5" to +/-3.0" +/-0.5" to +/-3.0"	356 358	
	Miniature Unguided	MS3	BY327	+/-0.1" to +/-0.4"	360	
	Miniature Spring Loaded	S3C	BY324	+/-0.1" to +/-0.4"	362	
	Submersible Unguided	DW7U	AY250	+/-0.5" to +/-4.0"	364	
	Submersible Captive Guided	DW7C	AY251	+/-0.5" to +/-4.0"	366	
	Submersible Spring Loaded	DW7S SSD	AY252 AY911	+/-0.5" to +/-3.0" +/-0.5" to +/-4.0"	368 370	
Unamplified	Unguided	MVL7	BY125	+/-0.5" to +/-8.0"	372	
	Captive Guided	MVL7C	BY126	+/-0.5" to +/-18.5"	374	
	Spring Loaded	VL7A	BY122	+/-0.5" to +/-3.0"	376	
	Miniature	M5C PLVX S5	AY318 AY111 AY112	+/-0.025" to +/-0.5" +/-0.02" to +/-0.2" +/-0.01" to +/-0.5"	378 380 382	
	Submersible Unguided	LW7U SSA	AY200 AY910	+/-0.5" to +/-4.0" +/-0.5" to +/-4.0"	384 386	
	Submersible Spring Loaded	LW7C LW7S	AY201 AY202	+/-0.5" to +/-4.0" +/-0.5" to +/-3.0"	388 390	
	Submersible Miniature Unguided	MS7A	BY921	+/-0.04" to +/-0.5"	392	
	Submersible Miniature Spring Loaded	S7C	BY912	+/-0.04" to +/-0.5"	394	

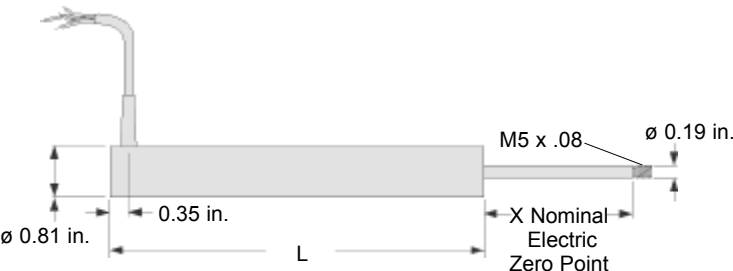
Model JEC DC-DC Long Stroke LVDT

Order Code AY321

- Stainless Steel
- Voltage Regulation
- Reverse Polarity Protected



Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Body Weight (oz.)	Approx. Armature Weight (oz.)
HP	+/- 0.5 in.	6.9	1.7	7.5	1.0
HQ	+/- 1.0 in.	8.0	2.7	9.5	2.0
HR	+/- 2.0 in.	12.5	3.2	13.0	2.5
HS	+/- 3.0 in.	16.9	4.7	17.5	3.0
HT	+/- 4.0 in.	18.7	5.2	22.0	3.5
HU	+/- 6.0 in.	26.2	7.2	30.0	4.0
HV	+/- 8.0 in.	33.7	10.2	44.0	5.0

Wiring Code

Dual Supply

Red +12 to +20 V Input
Blue -12 to -20 V Input
Black OV, I/P, O/P Common

Single Supply (*floating)

Red +24 to +40 V Input
Blue Supply Negative

Outputs

Yellow 0-10 Volt
Green +/- 5 VDC

*Output common floats at voltage source/ 2

Performance

Stroke Range.....+/- 0.5 to 8.0 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Output Load (min.).....2,000 Ohms with 3-wire supply, 20,000 Ohms with floating supply
Output Impedance.....2 Ohms
Output Sensitivity.....+/- 5 VDC or 0-10 VDC (field selectable)
Isolation.....1,000 V input to output
Polarity.....Output is positive for outward stroke

Environmental

Temperature, Operating.....-58° to 176°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.017% Full Scale/°F

Electrical

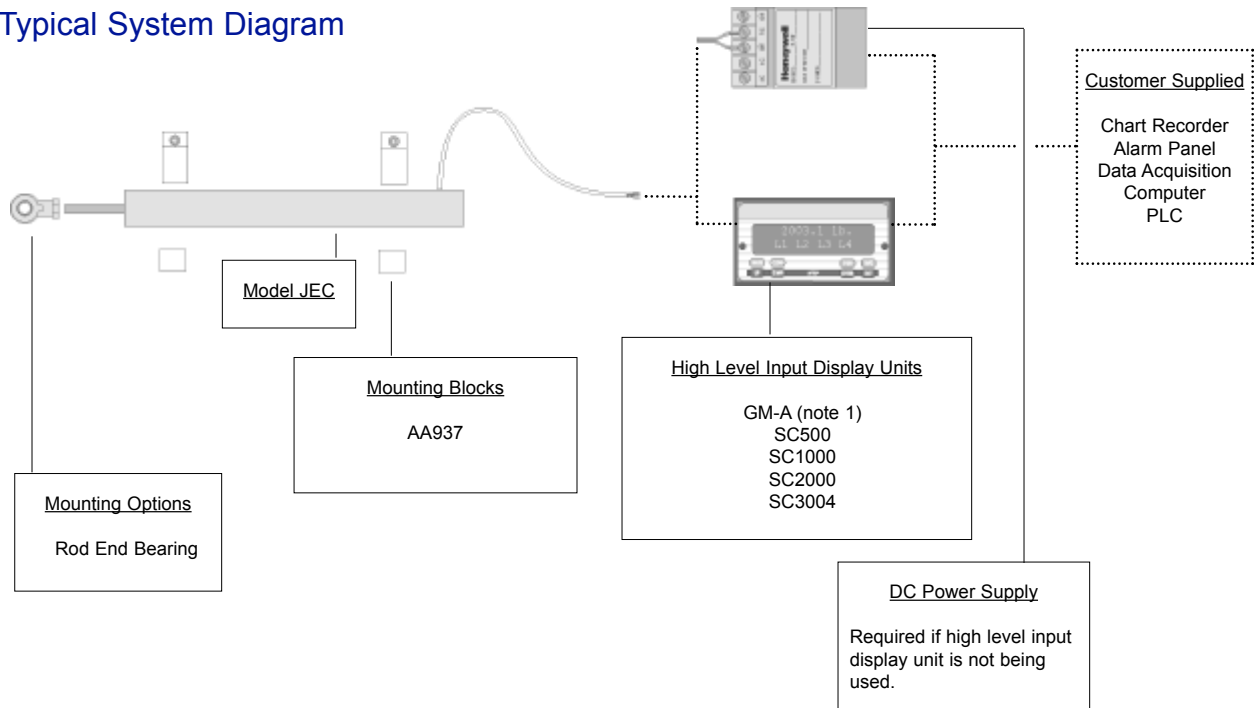
Element Type.....DC-DC LVDT
Power Supply
Single Supply.....+24 to +40 VDC @ 30 mA
Dual Supply.....+/-12 to +/-24 VDC @ 30 mA
Ripple.....30 mV peak to peak
Electrical Termination.....Multiconductor Shielded Cable (6 ft.)
Reverse Polarity Protection.....Yes

Mechanical

Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Free Unguided
Probe Thread.....M5 x 0.8
Weight.....See Above Table
Spring Force (max.).....Not Applicable

Model JEC

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 8.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT
+/- 6.0 in.	HU
+/- 8.0 in.	HV

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY321** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

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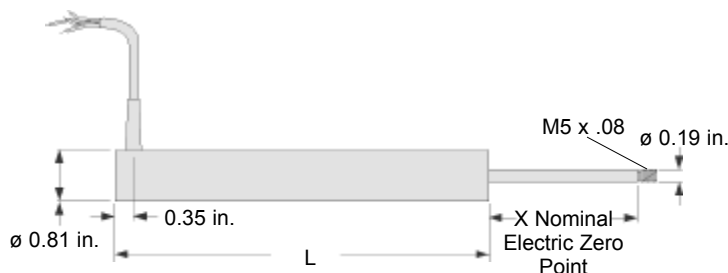
Model DLB DC-DC Long Stroke LVDT

Order Code BY127

- Low Voltage Requirements
- Easy to Operate
- Stainless Steel
- Reverse Polarity Protected



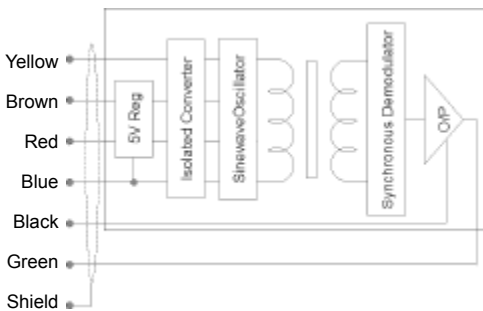
Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Body Weight (oz.)	Approx. Armature Weight (oz.)
HP	+/- 0.5 in.	6.9	1.7	7.5	1.0
HQ	+/- 1.0 in.	7.9	2.7	9.5	2.0
HR	+/- 2.0 in.	12.5	3.2	13.0	2.5
HS	+/- 3.0 in.	16.9	4.7	17.5	3.0
HT	+/- 4.0 in.	18.7	5.2	22.0	3.5
HU	+/- 6.0 in.	26.2	7.2	30.0	4.0
HV	+/- 8.0 in.	33.7	10.2	44.0	5.0

Wiring Codes

5V Supply	Wire	6-18VDC Supply
+5V Input	Yellow	Connect to Brown
Insulate	Brown	Connect to Yellow
Insulate	Red	+6 to +18 VDC
Supply Com. (0V)	Blue	Supply Com. (0V)
Output Low	Black	Output Low
Output High	Green	Output High
Instrument Ground	Shield	Instrument Ground



NOTE: Incorrect connection may cause irreparable damage, contact factory for assistance

Performance

Stroke Range.....	+/- 0.5 to 8.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Output Load (min.).....	2,000 Ohms
Output Impedance.....	2 Ohms
Output Sensitivity.....	+/- 2 VDC (nominal)
Isolation.....	1,000 V input to output
Polarity.....	Output positive for outward stroke

Environmental

Temperature, Operating.....	-58° to 158°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.017% Full Scale/°F

Electrical

Element Type.....	DC-DC LVDT
Input Supply (acceptable)	
Regulated.....	5 VDC @ 100 mA max.
Unregulated.....	+6 V to +18 VDC @ 100 mA max.
Ripple.....	30 mV peak to peak
Electrical Termination.....	Multiconductor Shielded Cable (6 ft.)
Reverse Polarity Protection.....	Yes

Mechanical

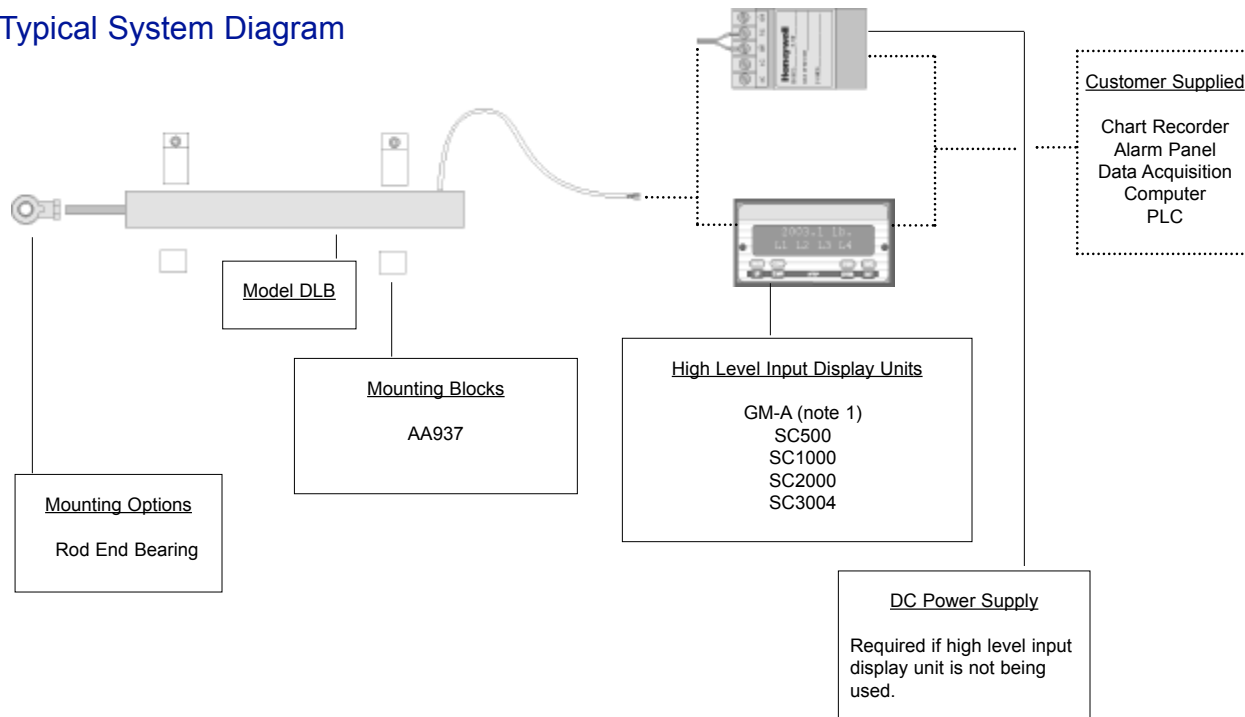
Case Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Free Unguided
Probe Thread.....	M5 x 0.8
Weight.....	See Above Table
Spring Force (max.).....	Not Applicable

1-888-282-9891

www.honeywell.com/sensotec

Model DLB

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 8.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT
+/- 6.0 in.	HU
+/- 8.0 in.	HV

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration



Approved

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY127** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

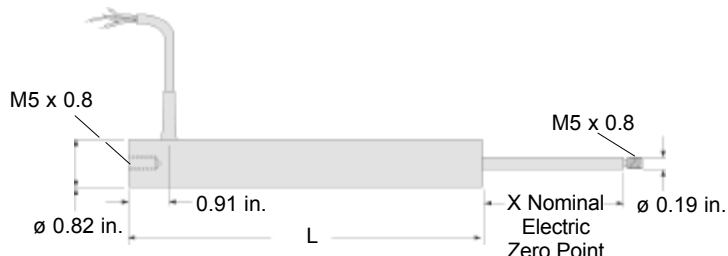
Model JEC-C DC-DC Long Stroke LVDT

Order Code AY323

- Voltage Regulation
- Easy to Operate
- Reverse Polarity Protection



Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Unit Weight (oz.)
HP	+/- 0.5 in.	7.65	1.5	12.0
HQ	+/- 1.0 in.	8.75	2.5	14.0
HR	+/- 2.0 in.	13.25	3.0	18.0
HS	+/- 3.0 in.	17.65	4.5	22.0
HT	+/- 4.0 in.	19.45	5.0	27.0
HU	+/- 6.0 in.	26.95	7.0	36.0
HV	+/- 8.0 in.	34.45	10.0	51.0
HW	+/- 10.0 in.	42.0	12.0	59.0
HY	+/- 15.0 in.	58.0	16.0	78.0
HZ	+/- 18.5 in.	68.5	20.0	92.0

Wiring Code

Dual Supply

Red +12 to +20 V Input
Blue -12 to -20 V Input
Black OV, I/P, O/P Common

Single Supply (*floating)

Red +24 to +40 V Input
Blue Supply Negative

Outputs

Yellow 0-10 Volt
Green +/- 5 VDC

* Output common floats at voltage source/2

Performance

Stroke Range.....+/- 0.5 to 18.5 in.
Non-Linearity (max.)
+/- 0.5 in. to +/- 10.0 in.....+/- 0.25% Full Scale
+/- 15.0 in. to +/- 18.5 in.....+/- 0.5% Full Scale
Output Load (min.).....2,000 Ohms with 3-wire supply, 20,000 Ohms with floating supply
Output Impedance.....2 Ohms
Output Sensitivity.....+/- 5 VDC or 0-10 VDC (field selectable)
Isolation.....1,000 V input to output
Polarity.....Output positive for outward stroke

Environmental

Temperature, Operating.....-58° to 158°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.017% Full Scale/°F

Electrical

Element Type.....DC-DC LVDT
Power Supply
Single Supply.....+24 to +40 VDC @ 30 mA
Dual Supply.....+/-12 to +/-24 VDC @ 30 mA
Ripple.....30 mV peak to peak
Electrical Termination.....Multiconductor Shielded Cable (6 ft.)
Reverse Polarity Protection.....Yes

Mechanical

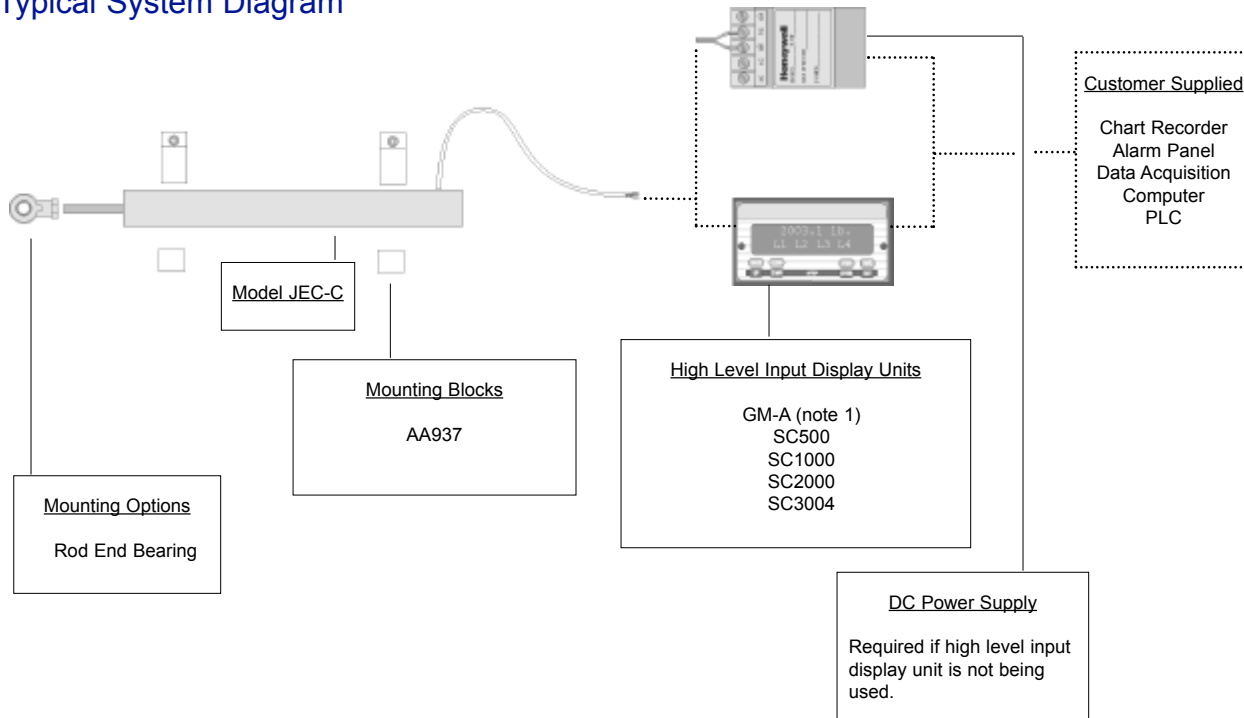
Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Captive Guided
Probe Thread.....M5 x 0.8
Weight.....See Above Table
Spring Force (max.).....N/A

1-888-282-9891

www.honeywell.com/sensotec

Model JEC-C

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 18.5 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT
+/- 6.0 in.	HU
+/- 8.0 in.	HV
+/- 10.0 in.	HW
+/- 15.0 in.	HY
+/- 18.5 in.	HZ

Notes

- GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration



Approved

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY323** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

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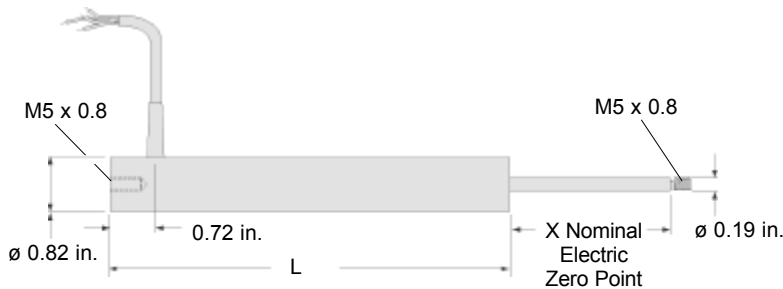
Model DLE DC-DC Long Stroke LVDT

Order Code BY128

- +/-0.5 to 18.5 in. Range
- Captive Guided Armature
- Stainless Steel Construction
- Reverse Polarity Protected



Dimensions



Wiring Codes

5V Supply

+5V Input
Insulate
Insulate
Supply Com. (0V)
Output Low
Output High
Instrument Ground

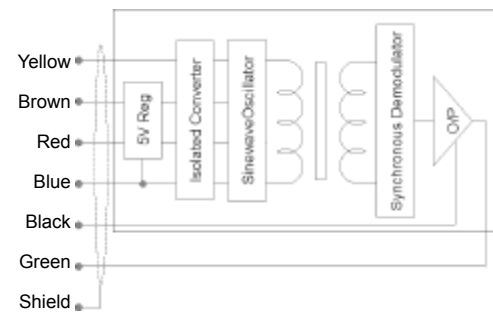
Wire

Yellow
Brown
Red
Blue
Black
Green
Shield

6-18VDC Supply

Connect to Brown
Connect to Yellow
+6 to +18 VDC
Supply Com. (0V)
Output Low
Output High
Instrument Ground

Range Codes	Available Ranges	L (in.)	X (in.)	Approx. Weight (oz.)
HP	+/- 0.5 in.	7.65	1.5	12.0
HQ	+/- 1.0 in.	8.75	2.5	14.0
HR	+/- 2.0 in.	13.25	3.0	18.0
HS	+/- 3.0 in.	17.65	4.5	22.0
HT	+/- 4.0 in.	19.45	5.0	27.0
HU	+/- 6.0 in.	26.95	7.0	36.0
HV	+/- 8.0 in.	34.45	10.0	51.0
HW	+/- 10.0 in.	42.0	12.0	59.0
HY	+/- 15.0 in.	58.0	16.0	78.0
HZ	+/- 18.5 in.	68.5	20.0	92.0



NOTE: Incorrect connection may cause irreparable damage, contact factory for assistance

Performance

Stroke Range.....+/- 0.5 to 18.5 in.
Non-Linearity (max.)
+/- 0.5 in. to +/- 10.0 in.....+/- 0.25% Full Scale
+/- 15.0 in. to +/- 18.5 in.....+/- 0.5% Full Scale
Output Load (min.).....2,000 Ohms
Output Impedance.....2 Ohms
Output Sensitivity.....+/- 2 VDC (nominal)
Isolation.....1,000 V input to output
Polarity.....Output positive for outward stroke

Environmental

Temperature, Operating.....-58° to 158°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.017% Full Scale/°F

Electrical

Element Type.....DC-DC LVDT
Input Supply (acceptable)
Regulated.....5 VDC @ 100 mA max.
Unregulated.....+6 to +18 VDC @ 100 mA max.
Ripple.....30 mV peak to peak
Electrical Termination.....Multiconductor Shielded Cable (6 ft.)
Reverse Polarity Protection.....Yes

Mechanical

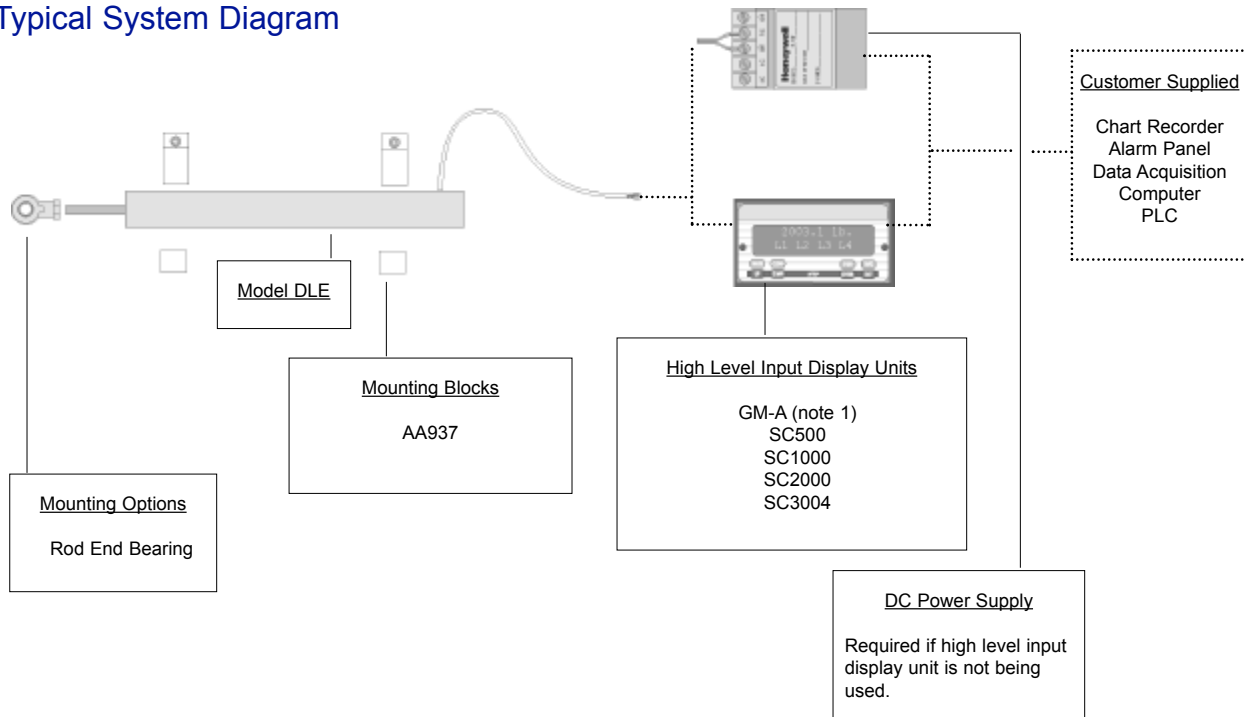
Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Captive Guided
Probe Thread.....M5 x 0.8
Weight.....See Above Table
Spring Force (max.).....Not Applicable

1-888-282-9891

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Model DLE

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 18.5 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT
+/- 6.0 in.	HU
+/- 8.0 in.	HV
+/- 10.0 in.	HW
+/- 15.0 in.	HY
+/- 18.5 in.	HZ

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration



Approved

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY128** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

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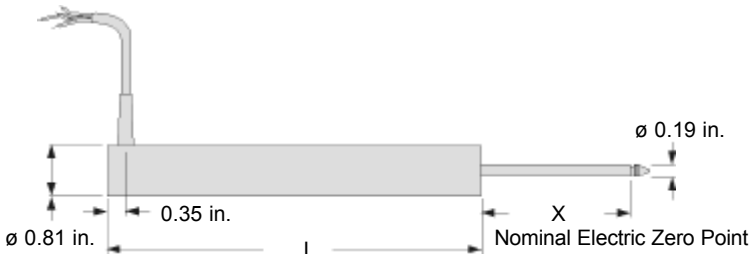
Model JEC-AG DC-DC Long Stroke LVDT

Order Code AY322

- Stainless Steel
- Voltage Regularity
- Reverse Polarity Protected



Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Unit Weight (oz.)
HP	+/- 0.5 in.	7.15	1.5	8.0
HQ	+/- 1.0 in.	8.25	2.5	10.0
HR	+/- 2.0 in.	12.75	3.0	14.0
HS	+/- 3.0 in.	17.4	4.5	18.0

Wiring Code

Dual Supply

Red	+12 to +20 V Input
Blue	-12 to -20 V Input
Black	OV, I/P, O/P Common

Single Supply (*floating)

Red	+24 to +40 V Input
Blue	Supply Negative

Outputs

Yellow	0-10 Volt
Green	+/- 5 VDC

* Output common floats at voltage source/2

Performance

Stroke Range.....	+/- 0.5 to 3.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Output Load (min.).....	2,000 Ohms with 3-wire supply, 20,000 Ohms with floating supply
Output Impedance.....	2 Ohms
Output Sensitivity.....	+/- 5 VDC or 0-10 VDC (field selectable)
Isolation.....	1,000 V input to output
Polarity.....	Output positive for outward stroke

Environmental

Temperature, Operating.....	-58° to 176°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.017% Full Scale/°F

Electrical

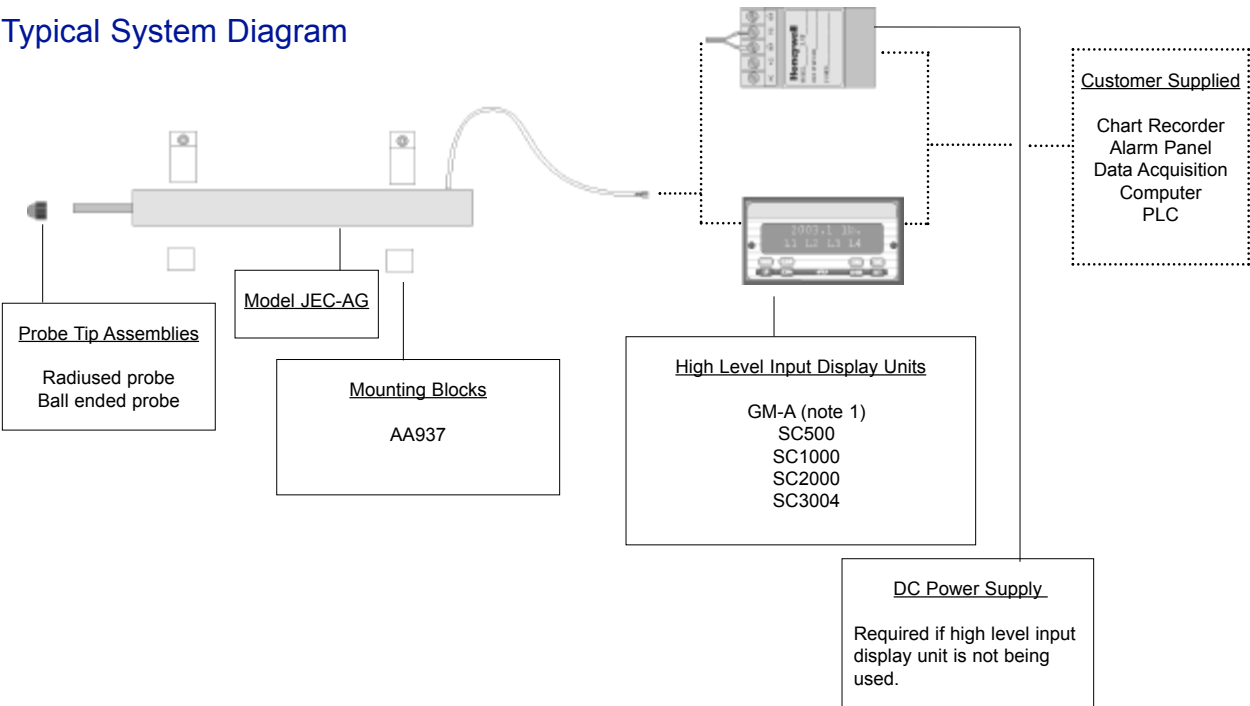
Element Type.....	DC-DC LVDT
Power Supply	
Single Supply.....	+24 to +40 VDC @ 30 mA
Dual Supply.....	+/-12 to +/-24 VDC @ 30 mA
Ripple.....	30 mV peak to peak
Electrical Termination.....	Multiconductor Shielded Cable (6 ft.)
Reverse Polarity Protection.....	Yes

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided Spring Return
Probe Thread.....	Not Applicable
Weight.....	See Above Table
Spring Force (max.).....	4 oz./ in.

Model JEC-AG

Typical System Diagram



Options

	Same Day Ship	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5; +/- 1.0; +/- 2.0 in.	3.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)		TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation			TM49. Axial cable exit
Mounting Threads			TM511. 13/16 - 32 UNF
Improved Linearity		L10. +/- 0.1% max. linearity	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY322** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

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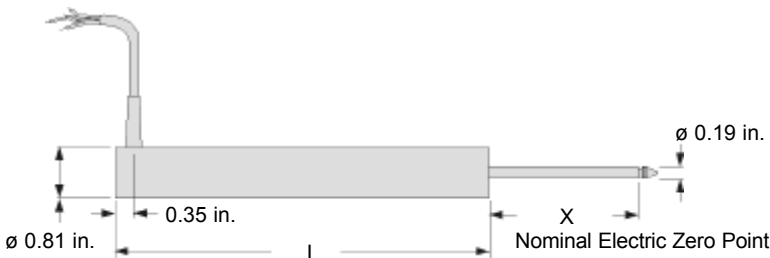
Model DLF DC-DC Long Stroke LVDT

Order Code BY129

- Low Voltage Requirements
- Easy to Operate
- Stainless Steel
- Reverse Polarity Protected



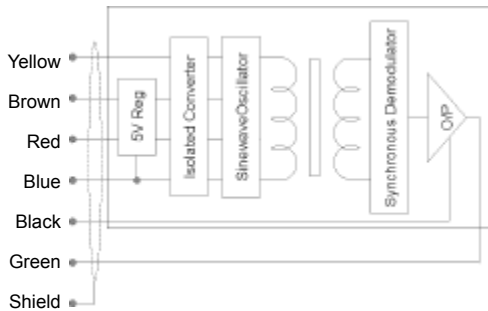
Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Unit Weight (oz.)
HP	+/- 0.5 in.	7.15	1.5	8.0
HQ	+/- 1.0 in.	8.25	2.5	10.0
HR	+/- 2.0 in.	12.75	3.0	14.0
HS	+/- 3.0 in.	17.4	4.5	18.0

Wiring Codes

5V Supply	Wire	6-18VDC Supply
+5V Input	Yellow	Connect to Brown
Insulate	Brown	Connect to Yellow
Insulate	Red	+6 to +18 VDC
Supply Com. (0V)	Blue	Supply Com. (0V)
Output Low	Black	Output Low
Output High	Green	Output High
Instrument Ground	Shield	Instrument Ground



NOTE: Incorrect connection may cause irreparable damage, contact factory for assistance

Performance

Stroke Range.....	+/- 0.5 to 3.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Output Load (min.).....	2,000 Ohms
Output Impedance.....	2 Ohms
Output Sensitivity.....	+/- 2 VDC (nominal)
Isolation.....	1,000 V input to output
Polarity.....	Output positive for outward stroke

Environmental

Temperature, Operating.....	-58° to 158°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.017% Full Scale/°F

Electrical

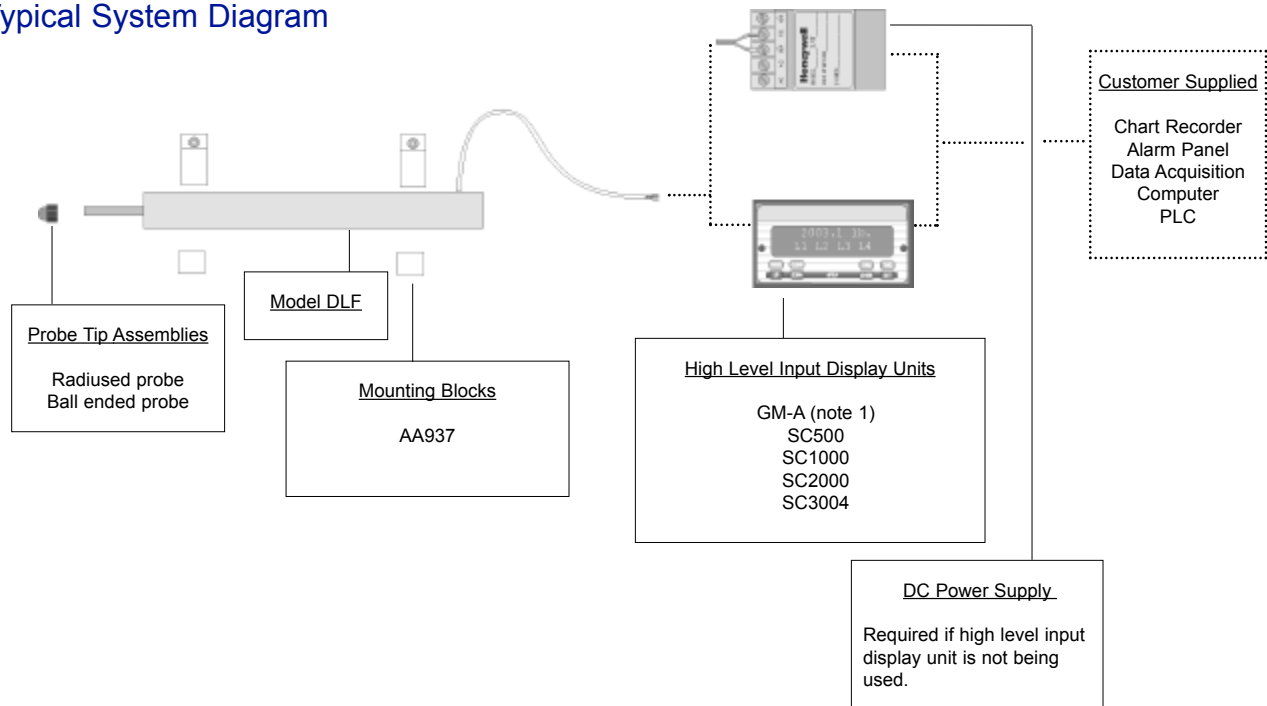
Element Type.....	DC-DC LVDT
Input Supply (acceptable)	
Regulated.....	5 VDC @ 100 mA max.
Unregulated.....	+6 V to +18 VDC @ 100 mA max.
Ripple.....	30 mV peak to peak
Electrical Termination.....	Multiconductor Shielded Cable (6 ft.)
Reverse Polarity Protection.....	Yes

Mechanical

Case Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided Spring Return
Probe Thread.....	M2.5 Female
Weight.....	See Above Table
Spring Force (max.).....	4.0 oz./ in.

Model DLF

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 3.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration



-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY129** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

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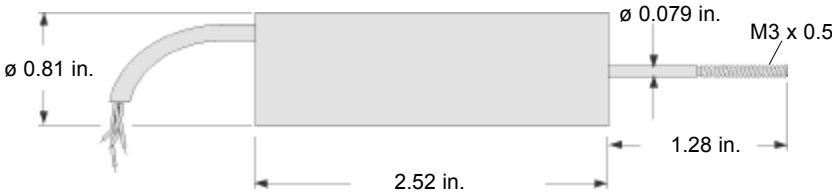
Model MS3 DC-DC Miniature LVDT

Order Code BY327

- Miniature Design
- Cost Effective
- 0.25% Non-Linearity



Dimensions



Wiring Code

Dual Supply

Red +12 to +20 V Input
Blue -12 to -20 V Input
Black OV, I/P, O/P Common

Single Supply (*floating)

Red +24 to +40 V Input
Blue Supply Negative

Outputs

Yellow 0-10 Volt
Green +/- 5 VDC

* Output common floats at voltage supply/2

Performance

Stroke Range.....+/- 0.1 to 0.4 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Output Impedance.....2 Ohms
Output Load (min.).....2,000 Ohms
Output Sensitivity.....+/- 5 VDC or 0-10 VDC (field selectable)
Resolution.....Infinite

Environmental

Temperature, Operating.....-58° to 176°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.017% Full Scale/°F

Electrical

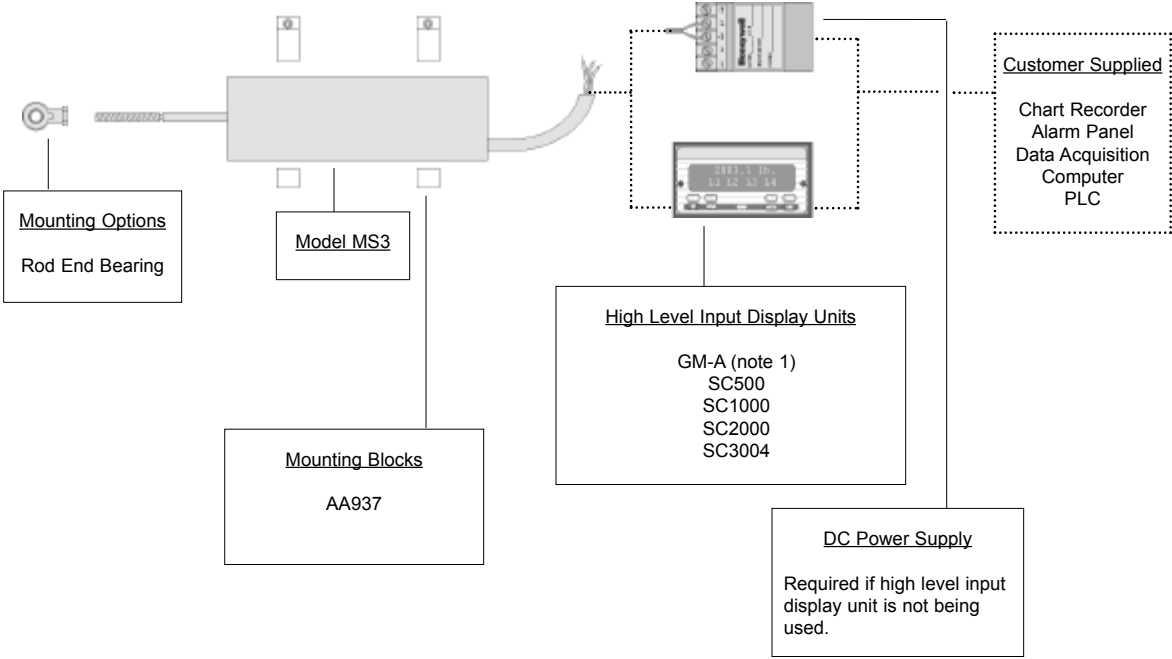
Element Type.....DC-DC LVDT
Power Supply
Single Supply.....+24 to +40 VDC @ 30 mA
Dual Supply.....+/-12 to +/-20 VDC @ 30 mA
Noise (filtered output).....30 mV p-p
Electrical Termination.....Multiconductor Shielded Cable (6 ft.)

Mechanical

Case Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Free unguided
Probe Thread.....M3 x 0.5
Weight.....2.6 oz. (73.5 g)

Model MS3

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.1 to 0.4 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	6a. Bendix PTIH-10-6P Right angle Bendix
Electrical Cable Orientation		Ra. Right angle
Mounting Threads		13a. 1/2-20 UNF 13f. 3/8-32 UNF
Improved Linearity	L10. 0.1% on some models	

■ Supplied as standard

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Range Codes

Range	Range Code
+/- 0.1 in.	HM
+/- 0.2 in.	HN
+/- 0.3 in.	HF
+/- 0.4 in.	HG

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY327** **HN** **L10**
Model Code Range Code Options Code

1-888-282-9891

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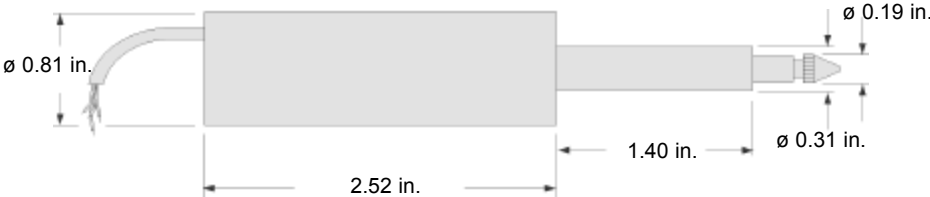
Model S3C DC-DC Miniature LVDT

Order Code BY324

- Miniature Design
- Cost Effective
- 0.25% Non-Linearity



Dimensions



Wiring Code

Dual Supply

Red	+12 to +20 V Input
Blue	-12 to -20 V Input
Black	OV, I/P, O/P Common

Single Supply (*floating)

Red	+24 to +40 V Input
Blue	Supply Negative

Outputs

Yellow	0-10 Volt
Green	+/- 5 VDC

*Output common floats at voltage source/ 2

Performance

Stroke Range.....	+/- 0.1 to 0.4 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Output Impedance.....	2 Ohms
Output Load (min.).....	2,000 Ohms
Output Sensitivity.....	+/- 5 VDC or 0-10 VDC (field selectable)
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-58° to 176°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.017% Full Scale/°F

Electrical

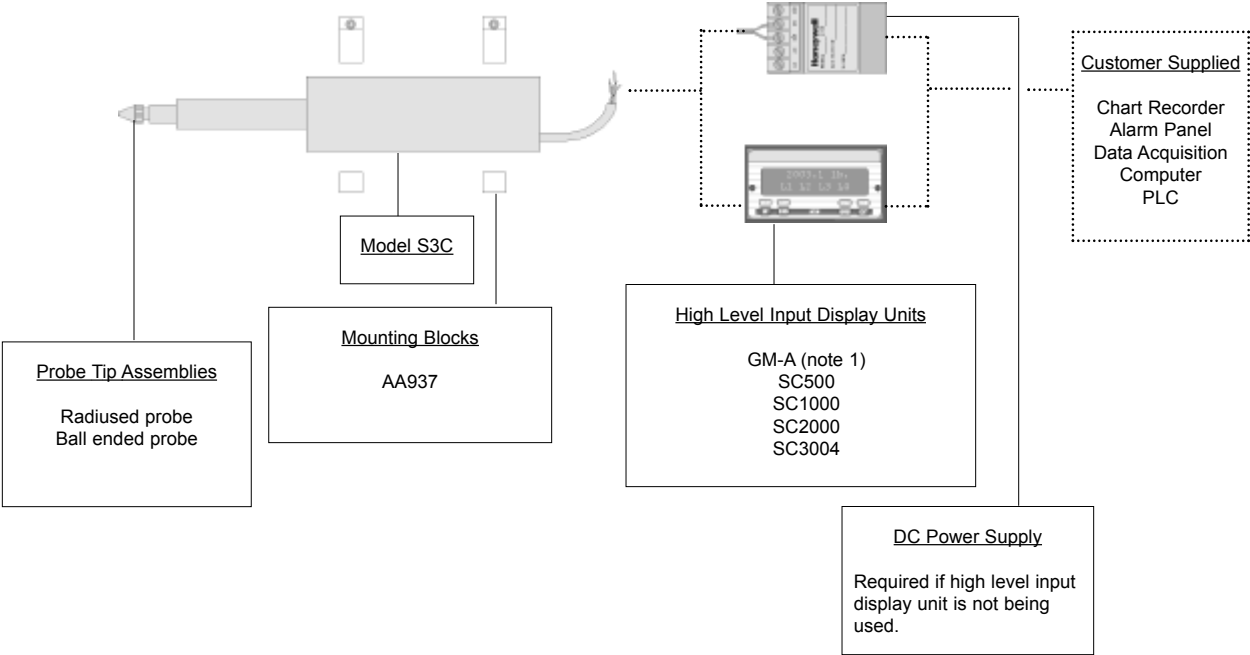
Element Type.....	DC-DC LVDT
Power Supply	
Single Supply.....	+24 to +40 VDC @ 30 mA
Dual Supply.....	+/-12 to +/-20 VDC @ 30 mA
Noise.....	30 mV p-p
Electrical Termination.....	Multiconductor Shielded Cable (6 ft.)

Mechanical

Case Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive guided spring return
Probe Thread.....	Not applicable
Weight.....	82.5 grams

Model S3C

Typical System Diagram



Options

	Same Day Ship	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.2 in.	+/- 0.1; +/- 0.3; +/- 0.4 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)		6a. Bendix PTIH-10-6P Right angle Bendix
Electrical Cable Orientation			Ra. Right angle
Mounting Threads			13a. 1/2-20 UNF 13f. 3/8-32 UNF
Improved Linearity		L10 0.1% on some models	

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.1 in.	HM
+/- 0.2 in.	HN
+/- 0.3 in.	HF
+/- 0.4 in.	HG

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY324** **HN** **13f**
Model Code Range Code Options Code

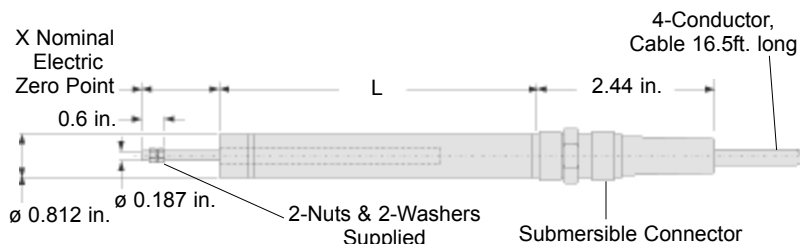
Model DW7U DC-DC Submersible* LVDT

Order Code AY250

- Submersible
- Stainless Steel
- +/- 0.5 to +/- 4.0 in. Range



Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Weight Armature (oz.)	Typical F.S. Output
HP	+/- 0.5 in.	8.00	1.5	0.75	+/- 5 VDC
HQ	+/- 1.0 in.	9.10	2.5	1.0	+/- 5 VDC
HR	+/- 2.0 in.	13.95	3.0	1.5	+/- 5 VDC
HS	+/- 3.0 in.	18.52	4.5	3.0	+/- 5 VDC
HT	+/- 4.0 in.	19.80	5.0	3.7	+/- 5 VDC

Wiring Codes

Dual Power Supply

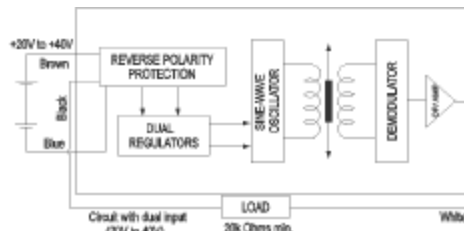
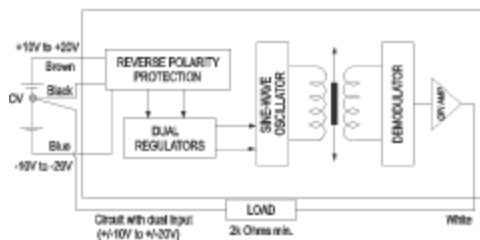
Brown (+) Supply (+10 to +20 VDC)
Blue (-) Supply (-10 to -20 VDC)
Black (-) Output Common/ Supply Return
White (+) Output +/-5 VDC
(min. 2k Ohm across Black and White)

Reverse polarity protected with voltage regulator.
Cable shield is not connected to transducer.

Single Power Supply

Brown (+) Supply (+20 to +40 VDC)
Blue Supply Return
Black (-) Output
White (+) Output +/-5 VDC
(min. Ohm across Black and White)

Reverse polarity protected with voltage regulator.
Cable shield is not connected to transducer.
Either black or blue must float. If both are grounded or connected together, the unit will be destroyed.



Performance

Stroke Range..... +/- 0.5 to 4.0 in.
Non-Linearity (max.)..... +/- 0.25% Full Scale
Output Sensitivity..... See table above
Noise..... 30 mV p-p

Environmental

Temperature, Operating..... -40° to 158°F
Temperature, Effect
Zero (max.)..... 0.005% Full Scale/°F
Span (max.)..... 0.015% Full Scale/°F
Pressure Rating, Std..... 150 psi, up to 3,000 psi with cable options

Electrical

Element Type..... DC-DC LVDT
Input Supply (acceptable)..... +/- 10 to 20 VDC unregulated (45 mA max.)
or 20 to 40 VDC unregulated (45 mA max.)
Electrical Termination..... Submersible mating connector with 16.5' cable

Mechanical

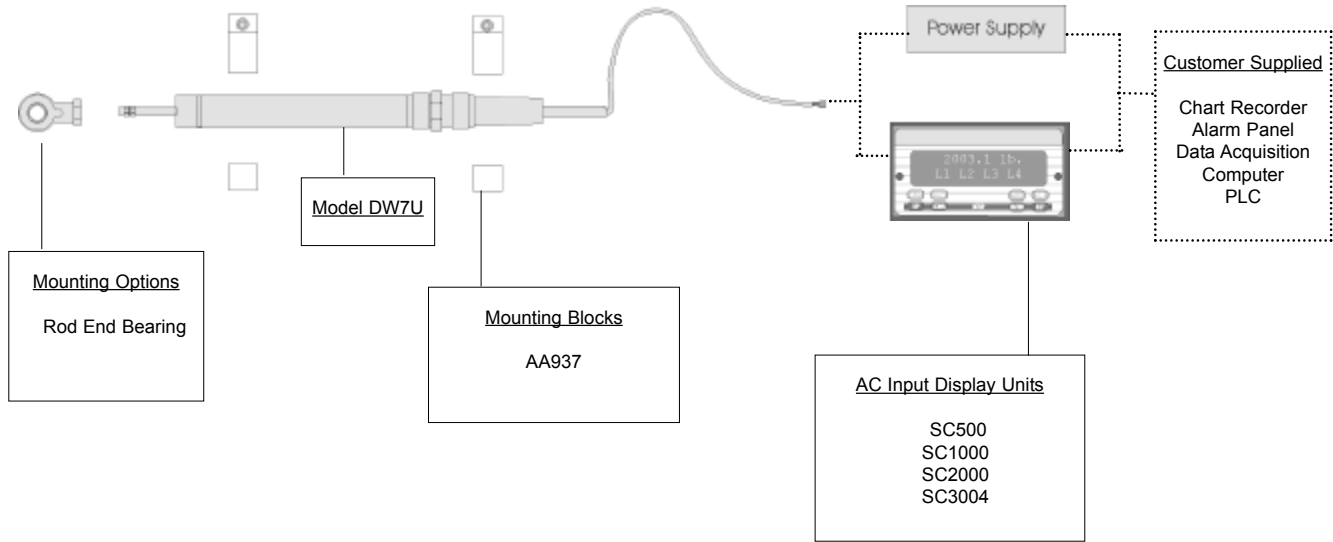
Material..... Stainless Steel
Probe Material..... Stainless Steel
Armature Type..... Free Unguided
Probe Thread..... M5 x 0.8"
Spring Force (max.)..... Not Applicable

*Not recommended for salt water use. Consult Factory for saltwater submersible applications.

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Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 4.0 in.	
Electrical Termination	Submersible mating connector with 16.5' cable	OPT1. No connector or cable, terminated with solder pins
Electrical Cable Orientation		OPT7. Radial outlet submersible connector with 16.5' cable
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT

Special Customer Requirements (Consult Factory)

Mineral insulated welded stainless steel sheathed cable
 0.12" diameter cable
 1 to 164 ft. lengths available
 -67° to 390° F
 3,000 psi
 Output options of 0-10 or 4-20 mA available
 T.E.D.S. IEEE 1451.4 module
 Signature Calibration



-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY250** **HQ** **L10**
 Model Code Range Code Options Code

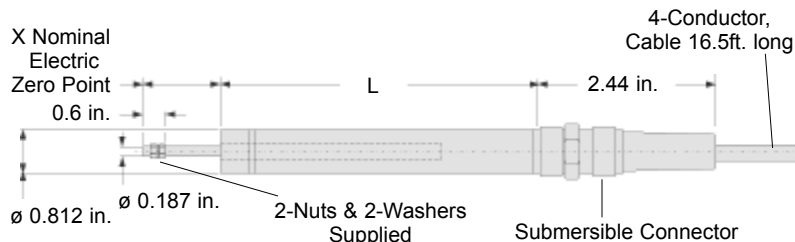
Model DW7C DC-DC Submersible* LVDT

Order Code AY251

- Submersible
- Stainless Steel
- +/- 0.5 to +/- 4.0 in. Range



Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Weight Armature (oz.)	Typical F.S. Output
HP	+/- 0.5 in.	8.00	1.5	0.75	+/- 5 VDC
HQ	+/- 1.0 in.	9.10	2.5	1.0	+/- 5 VDC
HR	+/- 2.0 in.	13.95	3.0	1.5	+/- 5 VDC
HS	+/- 3.0 in.	18.52	4.5	3.0	+/- 5 VDC
HT	+/- 4.0 in.	19.80	5.0	3.7	+/- 5 VDC

Wiring Codes

Dual Power Supply

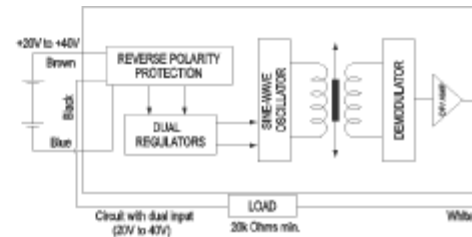
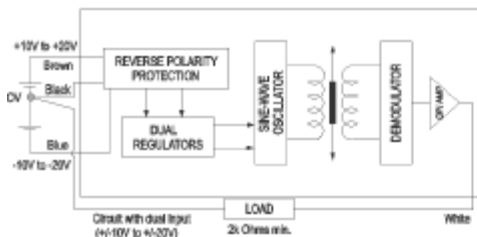
Brown (+) Supply (+10 to +20 VDC)
Blue (-) Supply (-10 to -20 VDC)
Black (-) Output Common/ Supply Return
White (+) Output +/-5 VDC
(min. 2k Ohm across Black and White)

Reverse polarity protected with voltage regulator.
Cable shield is not connected to transducer.

Single Power Supply

Brown (+) Supply (+20 to +40 VDC)
Blue Supply Return
Black (-) Output
White (+) Output +/-5 VDC
(min. Ohm across Black and White)

Reverse polarity protected with voltage regulator.
Cable shield is not connected to transducer.
Either black or blue must float. If both are grounded or connected together, the unit will be destroyed.



Performance

Stroke Range.....+/- 0.5 to 4.0 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Output Sensitivity.....See table above
Noise.....30 mV p-p

Environmental

Temperature, Operating.....-40° to 158°F
Temperature, Effect
Zero (max.).....0.005% Full Scale/°F
Span (max.).....0.015% Full Scale/°F
Pressure Rating, Std.....150 psi, up to 3,000 psi with cable options

Electrical

Element Type.....DC-DC LVDT
Input Supply (acceptable).....+/- 10 to 20 VDC unregulated (45 mA max.)
or 20 to 40 VDC unregulated (45 mA max.)
Electrical Termination.....Submersible mating connector with 16.5' cable

Mechanical

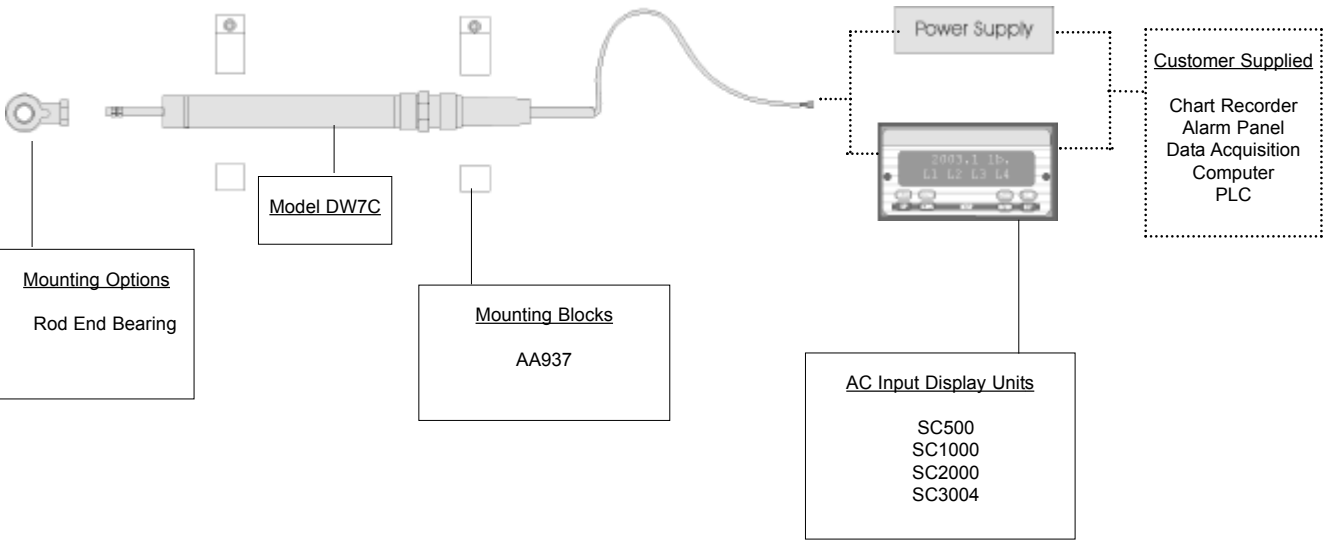
Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Captive Guided
Probe Thread.....M5 x 0.8"
Spring Force (max.).....Not Applicable

*Not recommended for salt water use. Consult Factory for saltwater submersible applications.

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Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 4.0 in.	
Electrical Termination	Submersible mating connector with 16.5' cable	OPT1. No connector or cable, terminated with solder pins
Electrical Cable Orientation		OPT7. Radial outlet submersible connector with 16.5' cable
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT

Special Customer Requirements (Consult Factory)

Mineral insulated welded stainless steel sheathed cable
0.12" diameter cable
1 to 164 ft. lengths available
-67° to 390° F
3,000 psi
Output options of 0-10 or 4-20 mA available
T.E.D.S. IEEE 1451.4 module
Signature Calibration



-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY251** **HQ** **L10**
Model Code Range Code Options Code

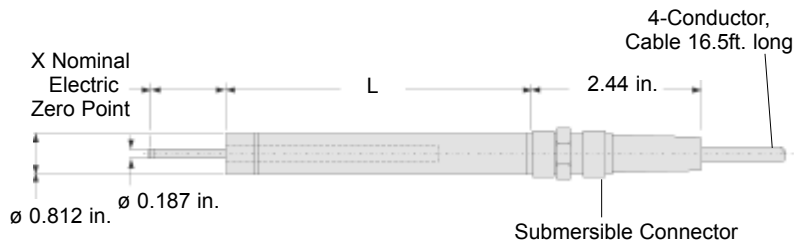
Model DW7S DC-DC Submersible* LVDT

Order Code AY252

- Submersible
- Stainless Steel
- +/- 0.5 to +/- 3.0 in. Range



Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Spring Force (oz./ in.)	Typical F.S. Output
HP	+/- 0.5 in.	8.00	1.5	4	+/- 5 VDC
HQ	+/- 1.0 in.	9.10	2.5	4	+/- 5 VDC
HR	+/- 2.0 in.	13.95	3.0	4	+/- 5 VDC
HS	+/- 3.0 in.	18.52	4.5	4	+/- 5 VDC

Wiring Codes

Dual Power Supply

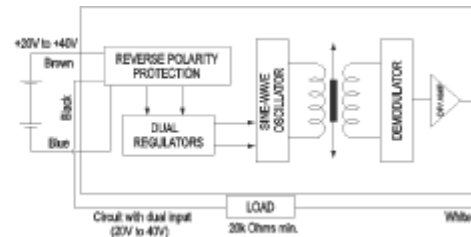
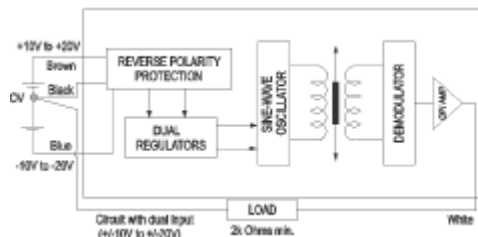
Brown (+) Supply (+10 to +20 VDC)
Blue (-) Supply (-10 to -20 VDC)
Black (-) Output Common/ Supply Return
White (+) Output +/-5 VDC
(min. 2k Ohm across Black and White)

Reverse polarity protected with voltage regulator.
Cable shield is not connected to transducer.

Single Power Supply

Brown (+) Supply (+20 to +40 VDC)
Blue Supply Return
Black (-) Output
White (+) Output +/-5 VDC
(min. 20k Ohm across Black and White)

Reverse polarity protected with voltage regulator.
Cable shield is not connected to transducer.
Either black or blue must float. If both are grounded or connected together, the unit will be destroyed.



Performance

Stroke Range.....+/- 0.5 to 3.0 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Non-Repeatability (max.).....<20 microinches
Output Sensitivity.....See table above
Noise.....30 mV p-p

Environmental

Temperature, Operating.....-40° to 158°F
Temperature, Effect
Zero (max.).....0.005% Full Scale/°F
Span (max.).....0.015% Full Scale/°F
Pressure Rating, Std.....150 psi, up to 3,000 psi with cable options

Electrical

Element Type.....DC-DC LVDT
Input Supply (acceptable).....+/- 10 to 20 VDC unregulated (45 mA max.)
or 20 to 40 VDC unregulated (45 mA max.)
Electrical Termination.....Submersible mating connector with 16.5' cable

Mechanical

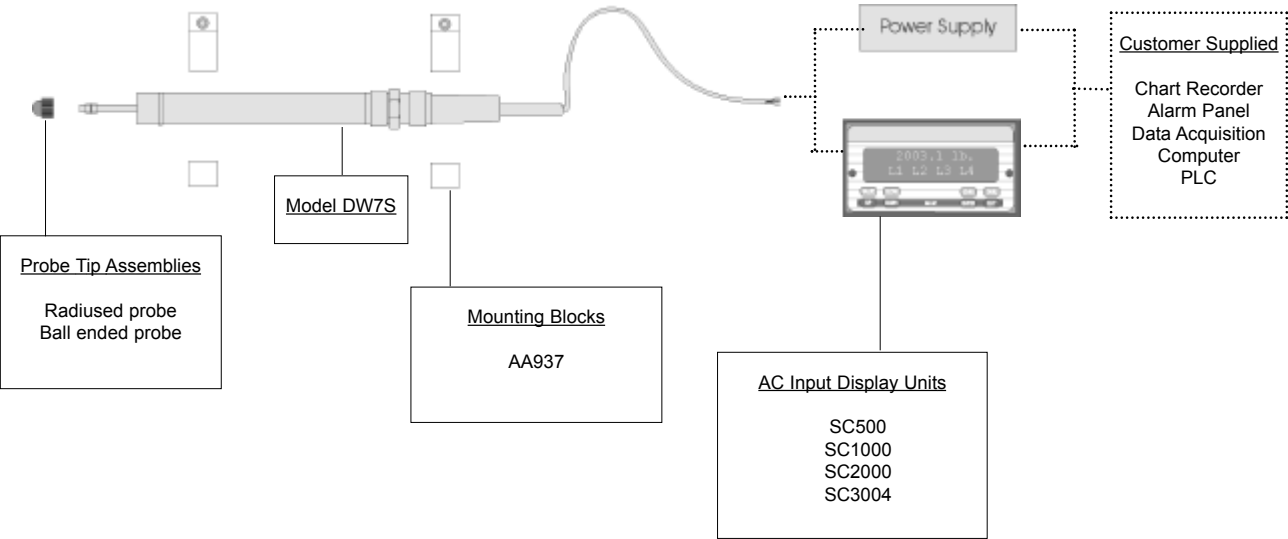
Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Captive Guided Spring Return
Probe Thread.....Not Applicable
Spring Force (max.).....4 oz./ in.

*Not recommended for salt water use. Consult Factory for saltwater submersible applications.

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Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 3.0 in.	
Electrical Termination	Submersible mating connector with 16.5' cable	OPT1. No connector or cable, terminated with solder pins
Electrical Cable Orientation		OPT7. Radial outlet submersible connector with 16.5' cable
Improved Linearity	L10. +/- 0.1% max. linearity	

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS

Special Customer Requirements
(Consult Factory)

Mineral insulated welded stainless steel sheathed cable
0.12" diameter cable
1 to 164 ft. lengths available
-67° to 390° F
3,000 psi
Output options of 0-10 VDC or 4-20 mA available
T.E.D.S. IEEE 1451.4 module
Signature Calibration



-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY252** **HQ** **L10**
Model Code Range Code Options Code

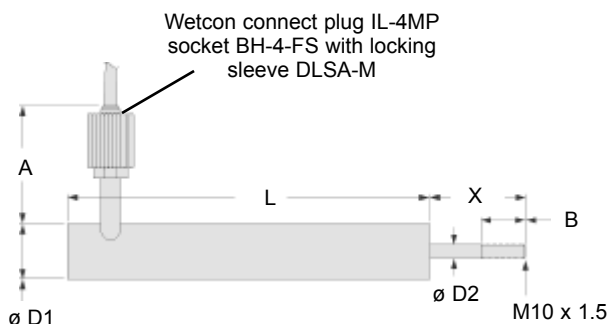
Model SSD DC-DC Sub-Sea Displacement Sensor

Order Code AY911

- All-Welded 316 Stainless Steel
- Up to 7,500 ft. Depth
- +/- 0.5 in. to +/- 4.0 in. Range



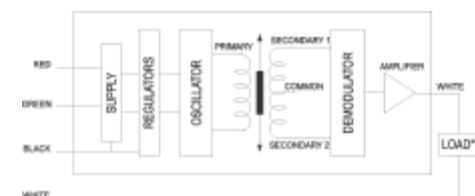
Dimensions



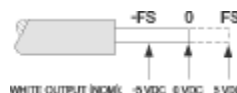
Range Codes	Available Stroke Ranges	L (in.)	X (in.)	D1 (in.)	D2 (in.)	A (in.)	B (in.)
HP	+/- 0.5 in.	8.8	2.1	1.5	0.39	3.6	1.2
HQ	+/- 1.0 in.	9.9	2.6	1.5	0.39	3.6	1.2
HR	+/- 2.0 in.	13.6	3.6	1.5	0.39	3.6	1.2
HS	+/- 3.0 in.	17.1	4.6	1.5	0.39	3.6	1.2
HT	+/- 4.0 in.	21.1	5.6	1.5	0.39	3.6	1.2

Wiring Codes

Color or Pin	Designation	
Red or A	Single Supply*	Dual Supply
Green or B	20 to 40 V	+10 to +20 V
Black or C	Supply Common	-10 to -20 V
White or D	Output Common**	0 V Common
	Output	Output



- * Supply must be fully floating
- ** Output common floats at V supply/ 2
- *** Min 2,000 Ohms with dual supply, 20,000 Ohms with single supply



Performance

Stroke Range.....+/- 0.5 to 4.0 in.
Non-Linearity (max.).....+/- 0.5% Full Scale
Output Sensitivity.....+/- 5 VDC
Resolution.....Infinite

Environmental

Temperature, Operating.....-40° to 140°F (Note: +15° to +140° F on 4-20 mA)
Temperature, Effect
Zero (max.).....0.005% Full Scale/°F
Span (max.).....0.015% Full Scale/°F
Operating Pressure.....3,500 psi

Electrical

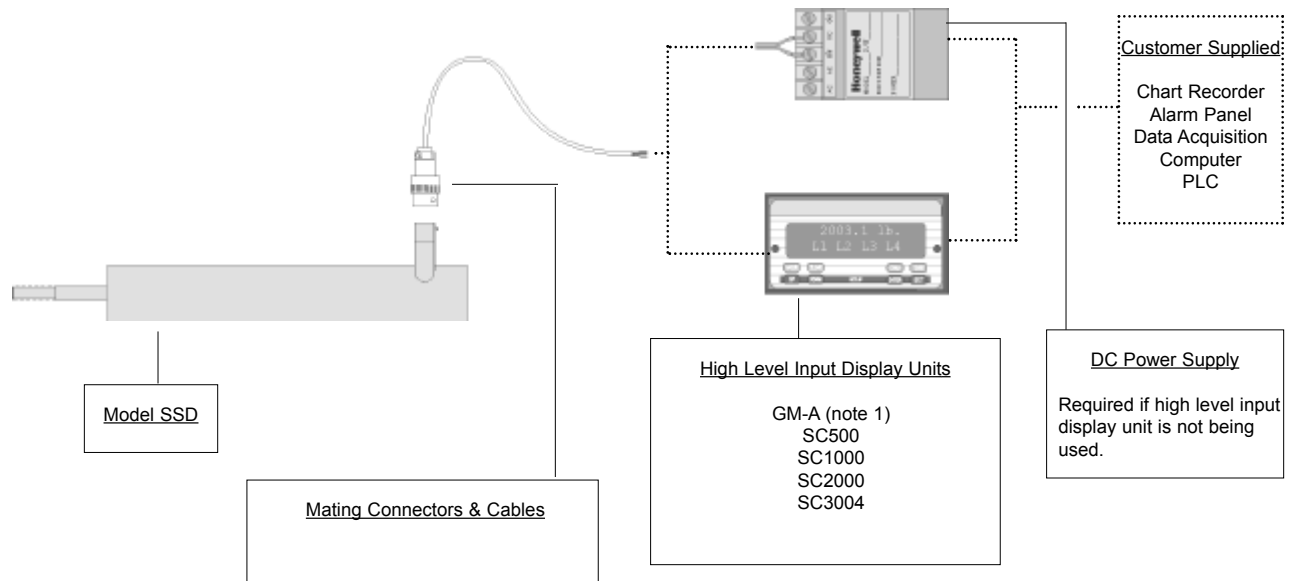
Element Type.....DC-DC LVDT
Input Supply (acceptable)
Single Floating Supply.....+20 to 40 VDC @ 25 mA
Dual Supply.....+/- 10 to 20 VDC @ 25 mA
Ripple.....30 mV peak to peak
Electrical Termination.....Includes a submersible, neoprene and nickel-aluminum bronze connector molded to 6 ft. of neoprene jacketed 0.40 in. diameter cable. The electrical connector may be mated under water up to 500 psi or 1100 ft. Longer cable lengths are available up to 3,250 ft. Contact factory for information.

Mechanical

Case Material.....316 Stainless Steel with all welded construction
Probe Material.....316 Stainless Steel with all welded construction
Probe Thread.....M10 x 1.5

Model SSD

Typical System Diagram



Options

	Fast Track Delivery
Stroke Ranges	+/- 0.5 to 4.0 in.
Electrical Termination	Submersible, neoprene and nickel-aluminum bronze connector molded to 6 ft. of neoprene jacketed cable

■ Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT

Notes

1. GM-A should not be used with an amplified LVDT unless using an external power supply to power the LVDT.

Special Customer Requirements (Consult Factory)

4-20mA or 0-10VDC output
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **AY911** **HQ**
Model Code Range Code

1-888-282-9891

www.honeywell.com/sensotec

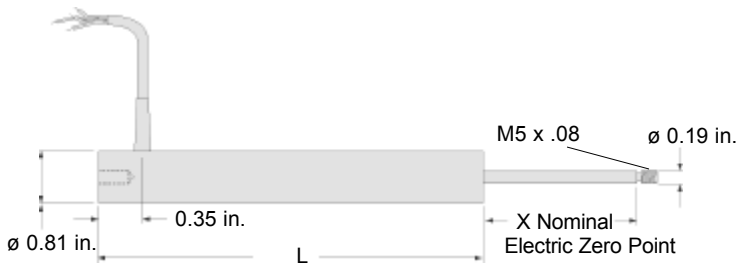
Model MVL7 AC-AC Long Stroke LVDT

Order Code BY125

- 0.25% Non-Linearity
- Stainless Steel
- 0.5 to 8.0 in. Ranges



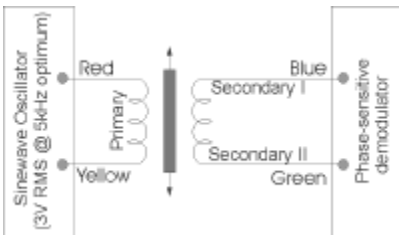
Dimensions



Wiring Codes

Wire	Supply
Red	(+) Supply (Calibrated @ 3V RMS 5 kHz)
Yellow	Supply Return
Blue	Output
Green	Output Return
Black	Secondary Center Tap (normally not connected)

Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Body Weight (oz.)	Approx. Armature Weight (oz.)	Typical F.S. Output at 3V RMS
HP	+/- 0.5 in.	5.0	1.7	6	1.25	2.4V RMS
HQ	+/- 1.0 in.	6.0	2.7	8	1.75	3.0V RMS
HR	+/- 2.0 in.	10.6	3.2	13	2.0	4.8V RMS
HS	+/- 3.0 in.	15.0	4.7	16	2.2	4.5V RMS
HT	+/- 4.0 in.	16.75	5.2	20	2.5	9.5V RMS
HU	+/- 6.0 in.	24.25	7.2	29	4.0	7.2V RMS
HV	+/- 8.0 in.	31.75	10.2	42	5.1	4.8V RMS



Performance

Stroke Range.....	+/- 0.5 to 8.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Non-Repeatability (max.).....	Not Applicable
Output Sensitivity.....	See table above
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-58° to 257°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.006% Full Scale/°F

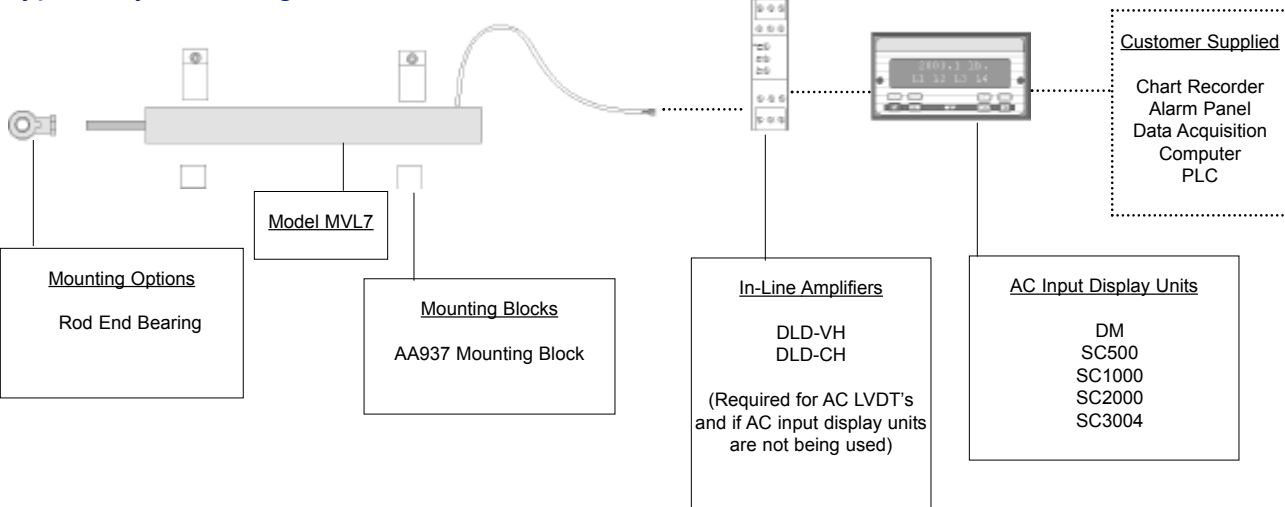
Electrical

Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 2-10 kHz
Electrical Termination.....	Multiconductor shielded cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Free Unguided
Probe Thread.....	M5 x 0.8
Weight.....	See table above
Spring Force (max.).....	Not Applicable

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 8.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	
Higher Temperature		TM315. 400° F up to +/- 4.0 in.

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT
+/- 6.0 in.	HU
+/- 8.0 in.	HV

Special Customer Requirements (Consult Factory)

Moisture resistant
Radiation resistance 100M rads
Longer cable length, limited on certain models
Threaded body
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY125** **HQ** **L10**
Model Code Range Code Options Code

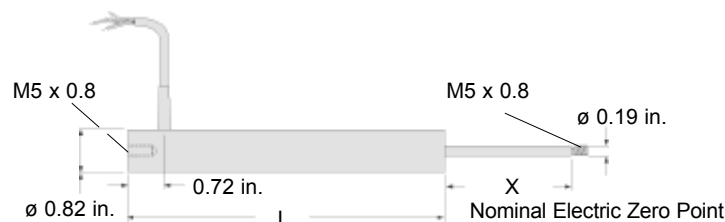
Model MVL7C AC-AC Long Stroke LVDT

Order Code BY126

- 0.25% Non-Linearity
- Stainless Steel
- 0.5 to 18.5 in. Ranges



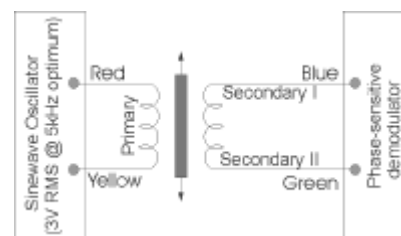
Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Approx. Unit Weight (oz.)	Typical F.S. Output at 3V RMS
HP	+/- 0.5 in.	6.0	1.5	10	2.4V RMS
HQ	+/- 1.0 in.	7.0	2.5	12	3.0V RMS
HR	+/- 2.0 in.	11.6	3.0	18	4.8V RMS
HS	+/- 3.0 in.	16.0	4.5	23	4.5V RMS
HT	+/- 4.0 in.	17.8	5.0	25	9.6V RMS
HU	+/- 6.0 in.	25.3	7.0	36	7.2V RMS
HV	+/- 8.0 in.	32.8	10.0	50	4.8V RMS
HW	+/- 10.0 in.	40.5	12.0	56	6.0V RMS
HY	+/- 15.0 in.	56.5	16.0	75	9.0V RMS
HZ	+/- 18.5 in.	67.0	20.0	89	11.1V RMS

Wiring Codes

Wire	Supply
Red	(+) Supply (Calibrated @ 3V RMS @ 5 kHz)
Yellow	Supply Return
Blue	Output
Green	Output Return
Black	Secondary Center Tap (normally not connected)



Performance

Stroke Range.....	+/- 0.5 to 18.5 in.
Non-Linearity (max.)	
+/- 0.5 in. to +/-10.0 in.....	+/- 0.25% Full Scale
+/- 15.0 in. to +/- 18.5 in.....	+/- 0.5% Full Scale
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-58° to 257°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.006% Full Scale/°F

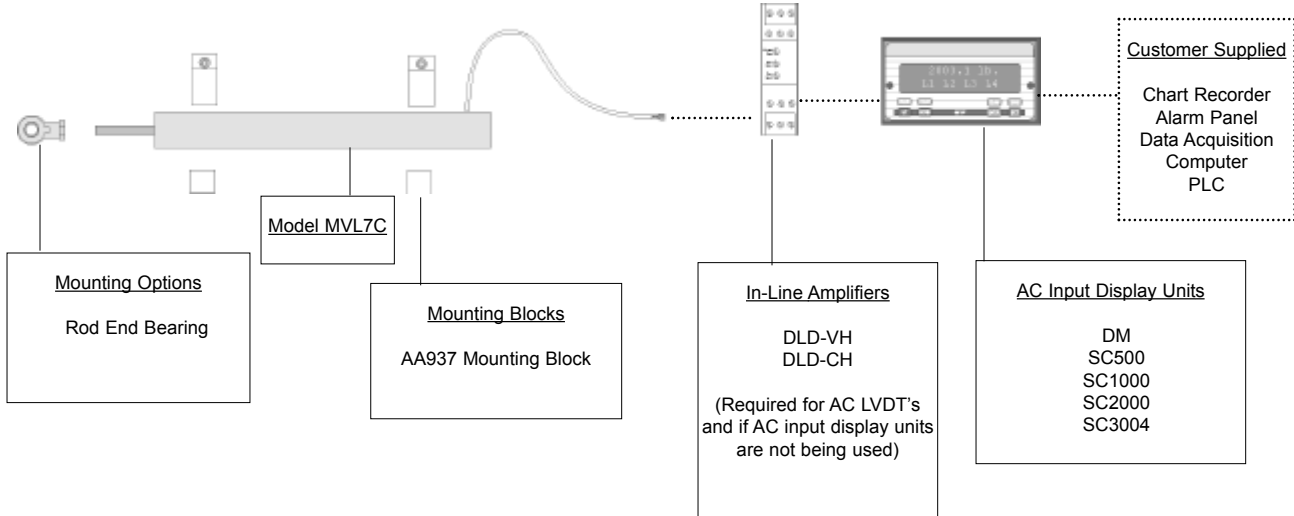
Electrical

Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 2-10 kHz
Electrical Termination.....	Multiconductor shielded cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided
Probe Thread.....	M5 x 0.8
Weight.....	See table above
Spring Force (max.).....	Not Applicable

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 18.5 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation		TM49. Axial cable exit
Mounting Threads		TM511. 13/16 - 32 UNF
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	
Higher Temperature		TM315. 400° F up to +/- 4.0 in.

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT
+/- 6.0 in.	HU
+/- 8.0 in.	HV
+/- 10.0 in.	HW
+/- 15.0 in.	HY
+/- 18.5 in.	HZ

Special Customer Requirements (Consult Factory)

Moisture resistant
Radiation resistance 100M rads (up to +/- 4.0 in.)
Longer cable length, limited on certain models
Threaded body
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY126** **HQ** **L10**
Model Code Range Code Options Code

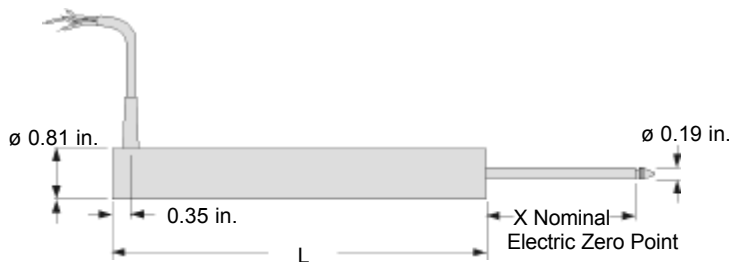
Model VL7A AC-AC Long Stroke LVDT

Order Code BY122

- +/- 0.5 to 3.0 in. Ranges
- Stainless Steel Construction
- 0.25% Non-Linearity
- Spring Return

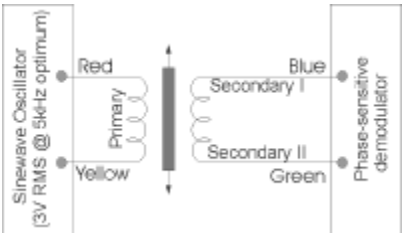


Dimensions



Wiring Codes

Wire	Supply
Red	(+) Supply (Calibrated @ 3V RMS 5 kHz)
Yellow	Supply Return
Blue	Output
Green	Output Return
Black	Secondary Center Tap (normally not connected)



Order Code with Ranges	Available Ranges	L (in.)	X (in.)	Approx. Unit Weight (oz.)	Typical F.S. Output @ 3V RMS
BY122HP	+/- 0.5 in.	5.35	1.5	6.5	2.4V RMS
BY122HQ	+/- 1.0 in.	6.35	2.5	8.0	3.0V RMS
BY122HR	+/- 2.0 in.	11.0	3.0	14.0	4.8V RMS
BY122HS	+/- 3.0 in.	15.35	4.5	17.0	4.5V RMS

Performance

Stroke Range.....	+/- 0.5 to 3.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Non-Repeatability (max.).....	<20 microinches
Output Sensitivity.....	See table above
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-58° to 257°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.006% Full Scale/°F

Electrical

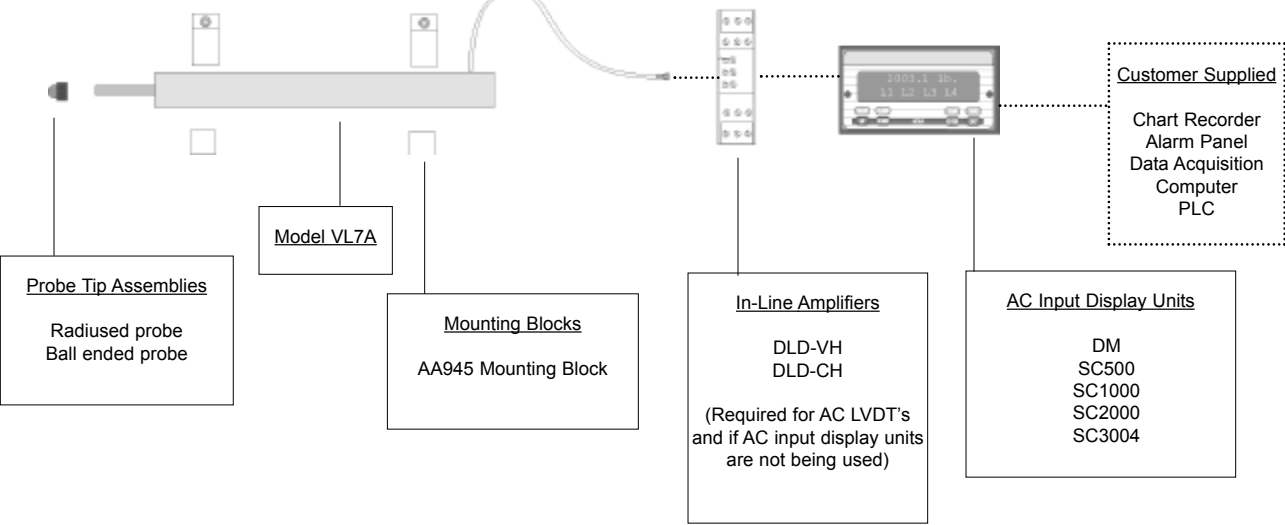
Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 2-10 kHz
Electrical Termination.....	Multiconductor shielded cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided Spring Return
Probe Thread.....	Not Applicable
Weight.....	See table above
Spring Force (max.).....	4 oz./ in.

Model VL7A

Typical System Diagram



Options

	Same Day Ship	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to +/- 2.0 in.	+/-3.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)		TM405. Axial Bendix connector on body Radial (side) TM406. Bendix connector on body
Electrical Cable Orientation			TM49. Axial cable exit
Mounting Threads			TM511. 13/16 - 32 UNF
Improved Linearity		L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	
Higher Temperature			TM315. 400° F

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS

Special Customer Requirements (Consult Factory)

Moisture resistant
Radiation resistance 100M rads
Longer cable length, limited on certain models
Threaded body
Spring retract
Optional tips
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY122** **HQ** **L10**
Model Code Range Code Options Code

1-888-282-9891

www.honeywell.com/sensotec

Model M-5C AC-AC Miniature LVDT

Order Code AY318

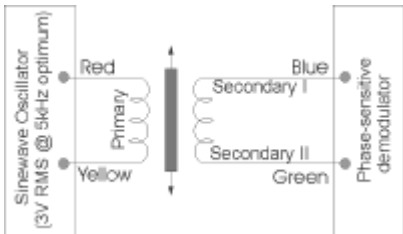
- Miniature Design
- Rugged, High Accuracy



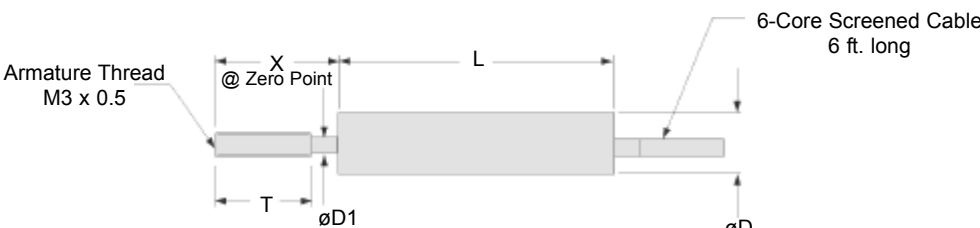
Wiring Codes

Connections

Red Supply (calibrated @ 3V RMS 5 kHz)
Yellow Supply Return
Blue Output
Green Output Return
Black Secondary Center Tap
(normally not connected)
Cable shield is not connected to transducer



Dimensions



Order Code with Ranges	Available Stroke Ranges	L (in.)	X (in.)	D (in.)	D1 (in.)	T (in.)	Total Weight	Armature Weight	Output Sensitivity mV/V/0.001 in.
AY318HJ	+/- 0.025 in.	1.38	1.1	0.375	0.075	0.75	0.5 oz.	0.045 oz.	2
AY318HM	+/- 0.1 in.	1.69	0.75	0.375	0.09	0.59	0.56 oz.	0.05 oz.	4
AY318HN	+/- 0.2 in.	2.2*	1	0.375	0.08	0.71	0.63 oz.	0.07 oz.	4*
AY318HF	+/- 0.3 in.	2.28	1.18	0.375	0.08	0.71	0.78 oz.	0.078 oz.	2
AY318HG	+/- 0.4 in.	2.48	1.28	0.375	0.08	0.71	0.99 oz.	0.067 oz.	2
AY318HP	+/- 0.5 in.	3.11	1.37	0.375	0.08	0.71	1.27 oz.	0.081 oz.	2

* New L dimension and Output Sensitivity for +/- 0.2 in. range. For old L dimension and Output Sensitivity, consult factory.

Performance

Stroke Range.....+/- 0.10 to 0.50 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Non-repeatability.....Not measurable
Output Sensitivity.....See table
Output Load (min.).....100 Ohms
Resolution.....Infinite
Phase Shift.....< 10° @ 5 kHz

Environmental

Temperature, Operating.....-4° to 257°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.006% Full Scale/°F

Electrical

Element Type.....AC-AC LVDT
Input Supply (calibrated).....3 V RMS @ 5 kHz
Input Supply (acceptable).....1-7V RMS @ 2-10 kHz
Electrical Termination.....Multiconductor shielded cable (6 ft.)

Mechanical

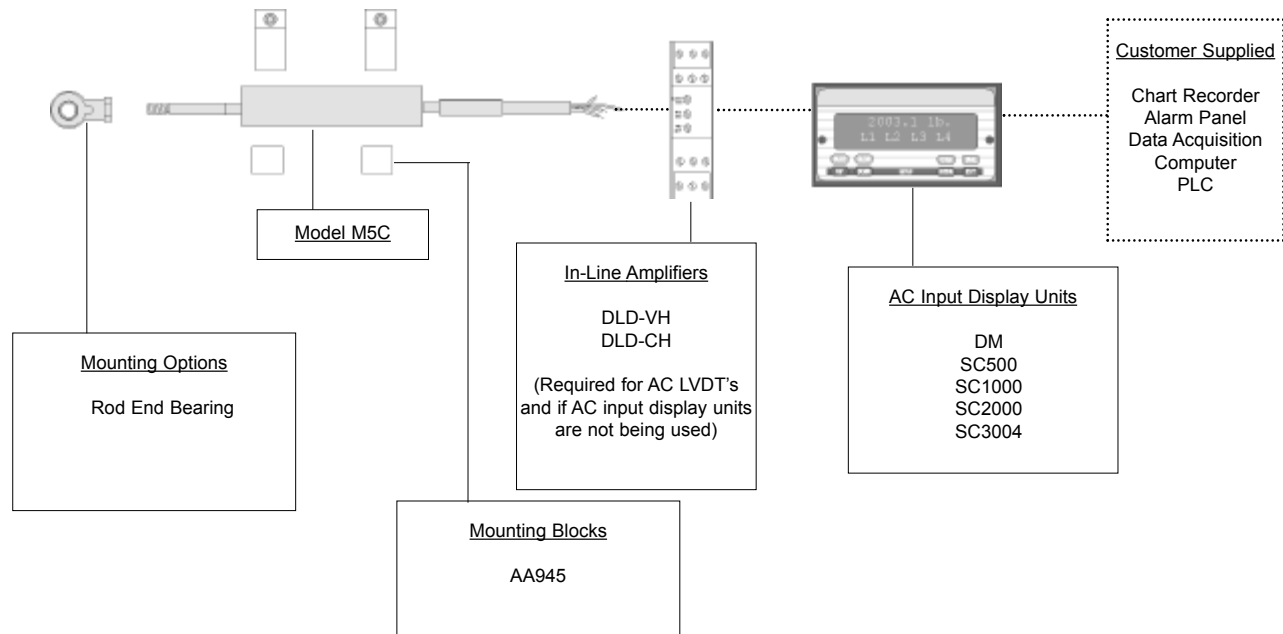
Case Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Free Unguided
Probe Thread.....M3 x 0.5
Weight.....See table

1-888-282-9891

www.honeywell.com/sensotec

Model M5C

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.10 to 0.50 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	
Electrical Cable Orientation		Ra. Right angle cable exit
Mounting Threads		13g. 1/8" BSP
Improved Linearity		L10. 0.1% Linearity (only for +/-0.1 in. to +/-0.3 in.)

Supplied as standard

Range Codes

Range	Range Code
+/- 0.10 in.	HM
+/- 0.20 in.	HN
+/- 0.30 in.	HF
+/- 0.40 in.	HG
+/- 0.50 in.	HP

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY918** **HP** **13g**
Model Code Range Code Options Code

1-888-282-9891

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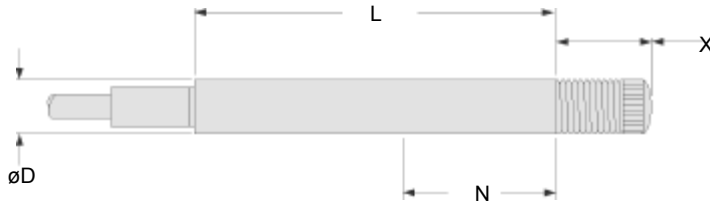
Model PLVX AC-AC Ultra Precision LVDT

Order Code AY111

- 0.25% Non-Linearity
- Non-Rotating Probe
- Stainless Steel



Dimensions

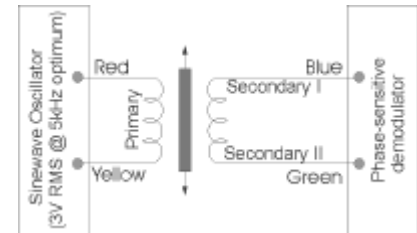


Range Codes	Available Stroke Ranges	Output Sensitivity mV/V/0.001 in.	L (in.)	N (in.)	D (in.)	X (in.)	Approx. Unit Wt. (oz.)	Max. Spring Force (oz.)
HI	+/- 0.02 in.	6	1.02	0.22	0.315	0.30	0.45	3.5
HK	+/- 0.04 in.	4	2.09	0.55	0.315	0.55	0.56	3.56
HM	+/- 0.1 in.	4	2.24	.071	0.315	0.79	0.63	4.16
HN	+/- 0.2 in.	4*	3.41*	1.18	0.315	0.87	0.78	5.29

* New L dimension and Output Sensitivity for +/- 0.2 in. range. For old L dimension and Output Sensitivity, consult factory.

Wiring Codes

Wire	Supply
Red	(+) Supply (Calibrated @ 3V RMS 5 kHz)
Yellow	Supply Return
Blue	Output
Green	Output Return
Black	Secondary Center Tap (normally not connected)



Performance

Stroke Range.....	+/- 0.02 to 0.2 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Non-Repeatability (max.).....	6 microinches
Output Sensitivity.....	See table above
Output Load (min.).....	100,000 Ohms
Resolution.....	Infinite
Phase Shift.....	< 10° @ 5 kHz

Environmental

Temperature, Operating.....	-40° to 212°F
Temperature, Effect	
Zero (max.).....	0.005% Full Scale/°F
Span (max.).....	0.005% Full Scale/°F

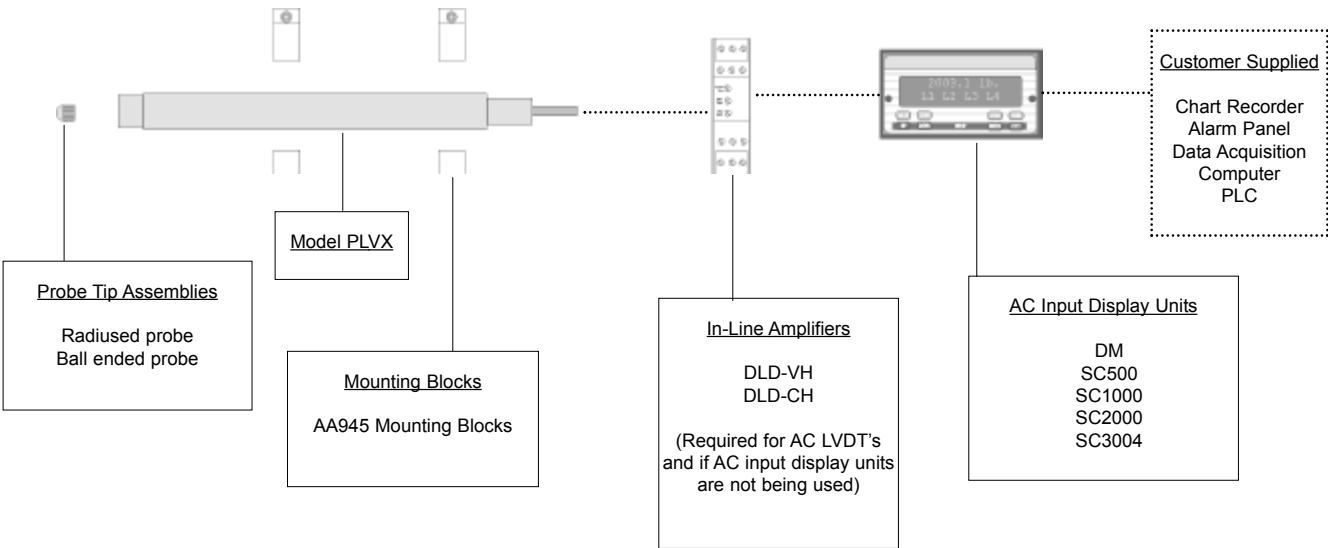
Electrical

Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 2-10 kHz
Electrical Termination.....	Multiconductor shielded cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided Spring Return
Weight.....	See table above
Spring Force (max.).....	See table above

Typical System Diagram



Options

	Same Day Ship	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.1 in.	+/- 0.02; +/- 0.04; +/- 0.01 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)		
Electrical Cable Orientation			Ra. Right angle cable exit
Mounting Threads			TM392. 3/8-32 UNF Thread Sleeve
Improved Linearity			L10. 0.1% Linearity* (only for +/- 0.04 in. to +/- 0.2 in.)

Supplied as standard

*Air activated models.

Range Codes

Range	Range Code
+/- 0.02 in.	HI
+/- 0.04 in.	HK
+/- 0.1 in.	HM
+/- 0.2 in.	HN

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY111** **HK** **Ra**
Model Code Range Code Options Code

Model S5 AC-AC Ultra Precision LVDT

Order Code AY112

- 0.25% Non-Linearity
- Non-Rotating Probe
- Stainless Steel

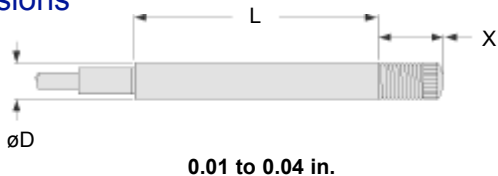


0.1 to 0.5 in.

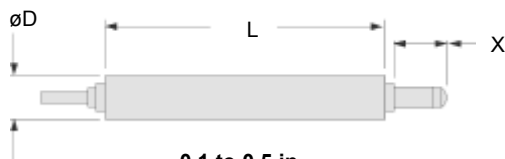


0.01 to 0.04 in.

Dimensions



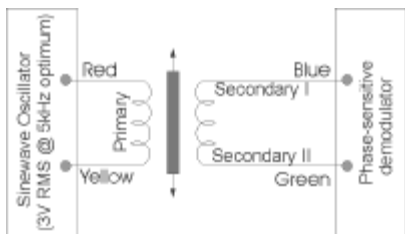
0.01 to 0.04 in.



0.1 to 0.5 in.

Wiring Codes

Wire	Supply
Red	(+) Supply (Calibrated @ 3V RMS 5 kHz)
Yellow	Supply Return
Blue	Output
Green	Output Return
Black	Secondary Center Tap (normally not connected)



Range Codes	Available Stroke Ranges	Output Sensitivity mV/V/0.001 in.	L (in.)	D (in.)	X (in.)	Approx. Unit Wt. (oz.)	Max. Spring Force (oz.)
HH	+/- 0.01 in.	4	1.89	0.31	0.43	14	7.5
HI	+/- 0.02 in.	4	1.89	0.31	0.43	14	7.5
HK	+/- 0.04 in.	4	2.01	0.31	0.51	18	7.5
HM	+/- 0.1 in.	4	2.40	0.37	0.45	22	4.23
HN	+/- 0.2 in.	4*	3.07*	0.37	0.45	26	4.58
HF	+/- 0.3 in.	2	3.46	0.37	0.60	30	8.64
HG	+/- 0.4 in.	2	3.90	0.37	0.75	34	7.40
HP	+/- 0.5 in.	2	4.76	0.37	0.85	42	7.58

* New L dimension and Output Sensitivity for +/- 0.2 in. range. For old L dimension and Output Sensitivity, consult factory.

Performance

Stroke Range.....	+/- 0.01 to 0.5 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Non-Repeatability (max.).....	<20 microinches
Output Sensitivity.....	See table above
Output Load (min.).....	100,000 Ohms
Resolution.....	Infinite
Phase Shift.....	< 10° @ 5 kHz

Environmental

Temperature, Operating.....	-4° to 257°F
Temperature, Effect	
Zero (max.).....	0.006% Full Scale/°F
Span (max.).....	0.006% Full Scale/°F

Electrical

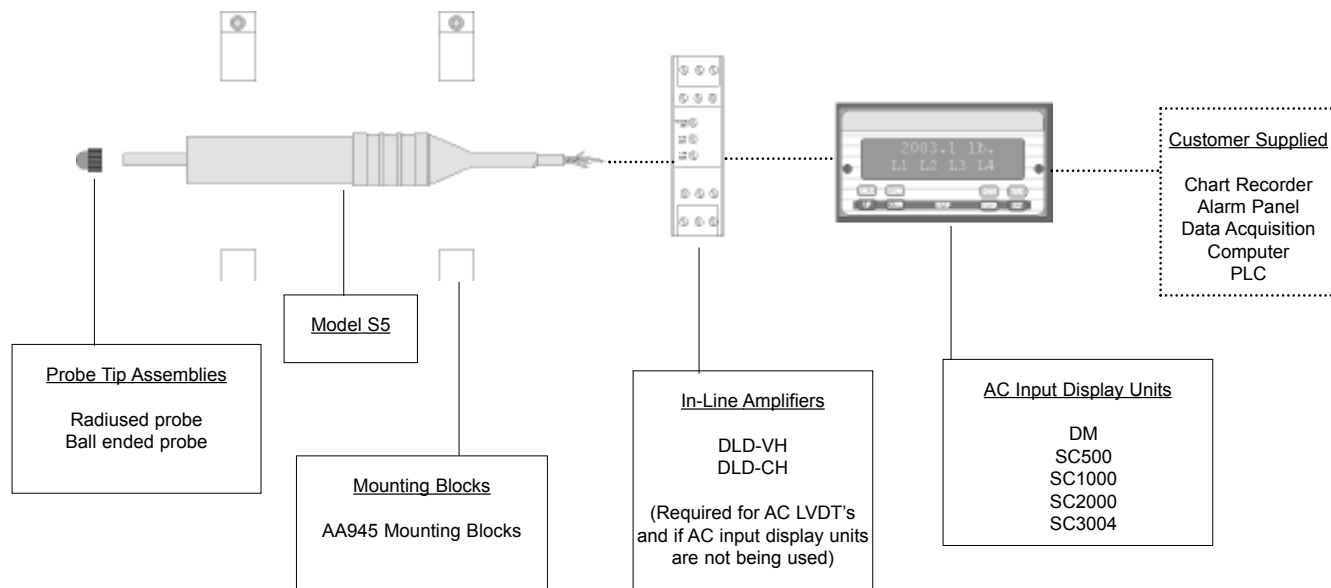
Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 2-10 kHz
Electrical Termination.....	Multiconductor shielded cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided Spring Return
Weight.....	See table above
Spring Force (max.).....	See table above

Model S5

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.01 to 0.5 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	
Electrical Cable Orientation		Ra. Right angle cable exit
Mounting Threads		TM392. 3/8-32 UNF Thread Sleeve
Improved Linearity		L10. 0.1% Linearity* (only for +/- 0.040 in. to +/- 0.2 in.)
Higher Temperature		TM315. 400° F

Supplied as standard

Range Codes

Range	Range Code
+/- 0.01 in.	HH
+/- 0.02 in.	HI
+/- 0.04 in.	HK
+/- 0.1 in.	HM
+/- 0.2 in.	HN
+/- 0.3 in.	HF
+/- 0.4 in.	HG
+/- 0.5 in.	HP

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY112** **HG** **Ra**
Model Code Range Code Options Code

1-888-282-9891

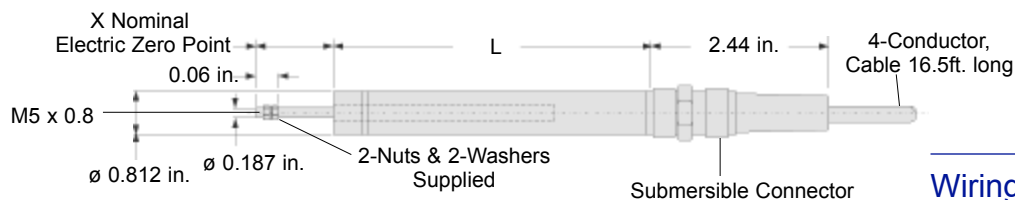
www.honeywell.com/sensotec

Order Code AY200

- Submersible
- Stainless Steel
- +/- 0.5 to +/-4.0 in. Range



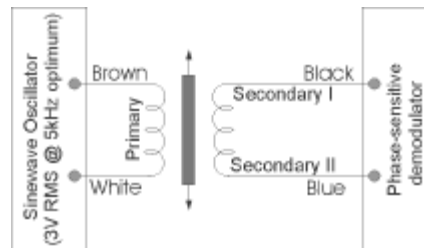
Dimensions



Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Weight Armature (oz.)	Typical F.S. Output at 5V RMS
HP	+/- 0.5 in.	6.02	1.5	0.75	3.5V RMS
HQ	+/- 1.0 in.	7.12	2.5	1.0	4.5V RMS
HR	+/- 2.0 in.	11.97	3.0	1.5	7.6V RMS
HS	+/- 3.0 in.	16.53	4.5	3.0	7.5V RMS
HT	+/- 4.0 in.	17.83	5.0	3.7	16.05V RMS

Wiring Codes

<u>Wire</u>	<u>Supply</u>
Brown	Supply
White	Supply Return
Blue	Output
Black	Output Return



Performance

Stroke Range.....+/- 0.5 to 4.0 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Output Sensitivity.....See table above
Resolution.....Infinite

Environmental

Temperature, Operating.....	-40° to 194°F
Temperature, Effect	
Zero (max.).....	0.005% Full Scale/°F
Span (max.).....	0.005% Full Scale/°F
Pressure Rating, Std.....	150 psi, up to 3,000 psi with cable options

Electrical

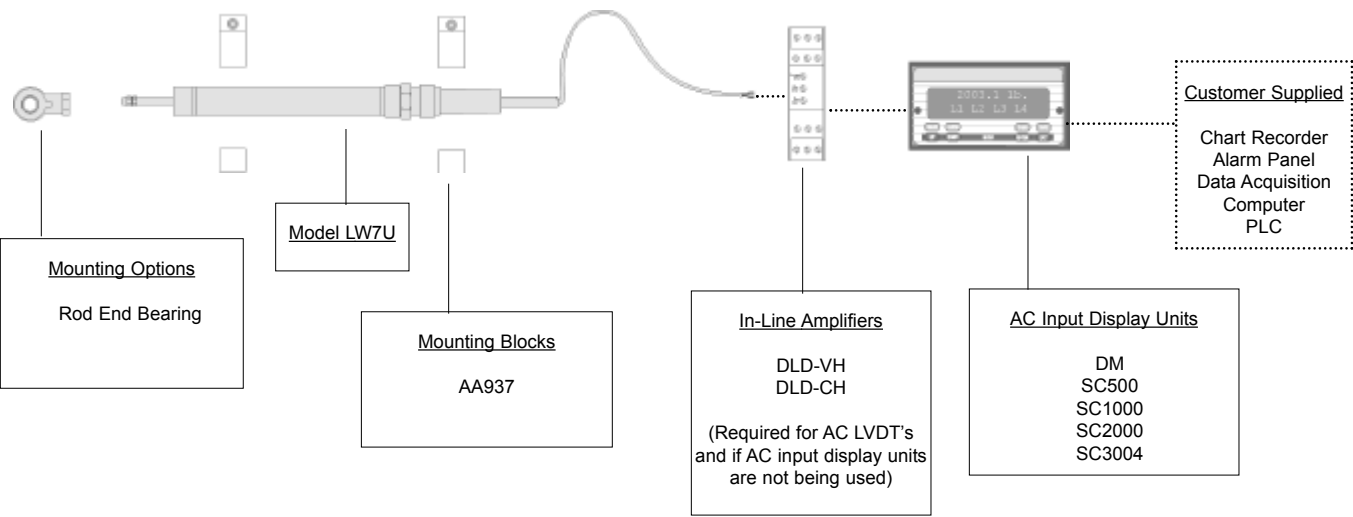
Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 5 kHz
Output Load (min.).....	100,000 Ohms
Electrical Termination.....	Submersible mating connector with 16.5' cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Free Unguided
Probe Thread.....	M5 x 0.8
Spring Force (max.).....	Not Applicable

*Not recommended for salt water use. Consult Factory for saltwater submersible applications.

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 4.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	OPT1. No connector or cable, terminated with solder pins
Electrical Cable Orientation		OPT7. Radial outlet submersible connector with 16.5' cable
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	
Higher Temperature		TM315. 400° F (less than or equal to +/- 4 in)

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT

Special Customer Requirements (Consult Factory)

Mineral insulated welded stainless steel sheathed cable
0.12" diameter cable
1 to 164 ft. lengths available
-67° to 390° F
3,000 psi
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY200** **HQ** **L10**
Model Code Range Code Options Code

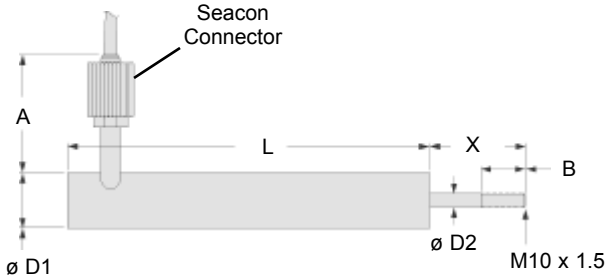
Model SSA AC-AC Sub-Sea Displacement Sensor

Order Code AY910

- All-Welded 316 Stainless Steel
- Up to 7,500 ft. Depth
- +/- 0.5 in. to +/- 4.0 in. Range

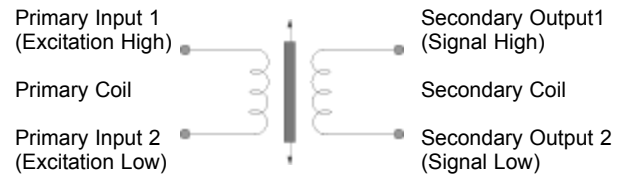


Dimensions



Wiring Codes

Black	Excitation High
White	Excitation Low
Red	Signal High
Green	Signal Low



Phasing: Output is in phase with supply when the armature is outward of the electrical zero position.

Range Codes	Available Stroke Ranges	L (in.)	X (in.)	D1 (in.)	D2 (in.)	A (in.)	B (in.)
HP	+/- 0.5 in.	8.8	2.1	1.5	0.39	3.6	1.2
HQ	+/- 1.0 in.	9.9	2.6	1.5	0.39	3.6	1.2
HR	+/- 2.0 in.	13.6	3.6	1.5	0.39	3.6	1.2
HS	+/- 3.0 in.	17.1	4.6	1.5	0.39	3.6	1.2
HT	+/- 4.0 in.	21.1	5.6	1.5	0.39	3.6	1.2

Performance

Stroke Range.....+/- 0.5 to 4.0 in.
Non-Linearity (max.).....+/- 0.5% Full Scale
Output Sensitivity.....Contact factory; 0.3 to 3 V RMS range dependent
Resolution.....Infinite

Environmental

Temperature, Operating.....-40° to 140°F
Temperature, Effect
Zero (max.).....0.005% Full Scale/°F
Span (max.).....0.005% Full Scale/°F
Operating Pressure.....3,500 psi

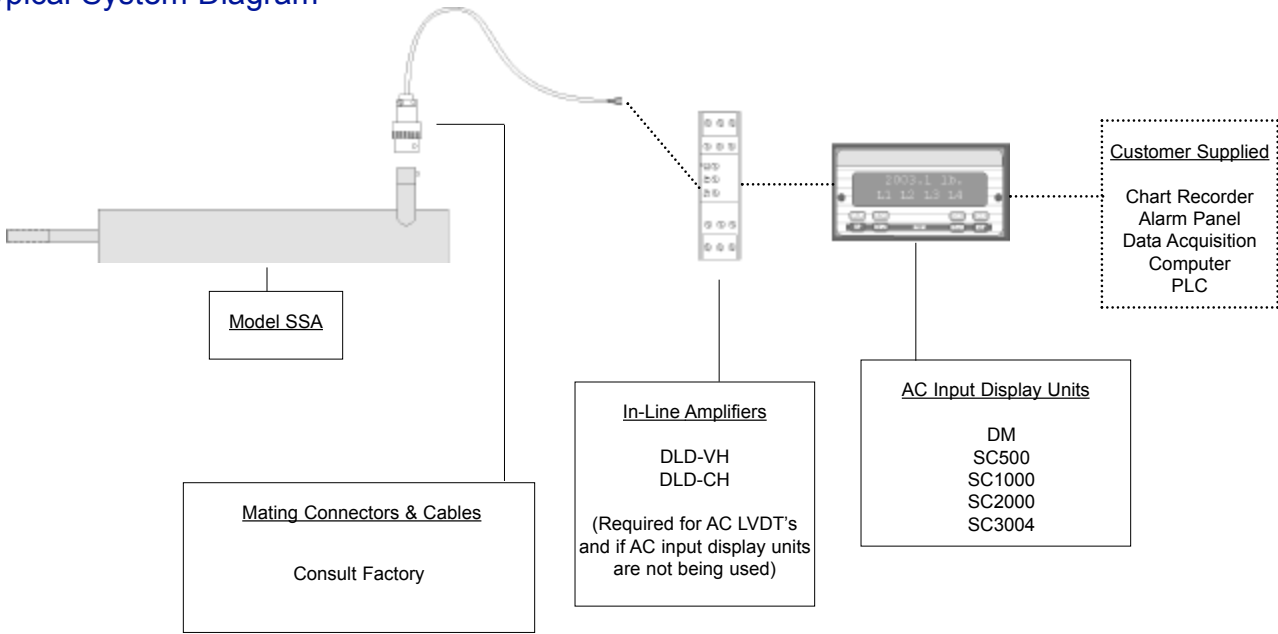
Electrical

Element Type.....AC-AC LVDT
Input Supply (acceptable).....0.5 to 7 V RMS @ 5 kHz
Ripple.....Not Applicable
Electrical Termination.....Includes a submersible, neoprene and nickel-aluminum bronze connector molded to 6 ft. of neoprene jacketed 0.40 in. diameter cable. The electrical connector may be mated under water up to 500 psi or 1100 ft. Longer cable lengths are available up to 3,250 ft. Contact factory for information.

Mechanical

Case Material.....316 Stainless Steel with all welded construction
Probe Material.....316 Stainless Steel with all welded construction
Probe Thread.....M10 x 1.5

Typical System Diagram



Options

	Fast Track Delivery
Stroke Ranges	+/- 0.5 to 4.0 in.
Electrical Termination	Submersible, neoprene and nickel-aluminum bronze connector molded to 6 ft. of neoprene jacketed cable

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, and the desired range code.

Sample Code: **AY910** **HQ**
Model Code Range Code

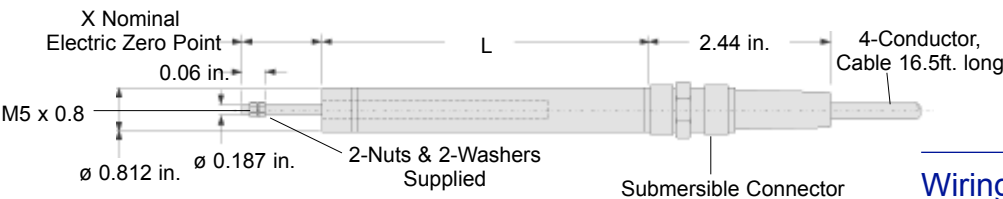
Model LW7C AC-AC Submersible* LVDT

Order Code AY201

- Submersible
- Stainless Steel
- 3 Armature Designs



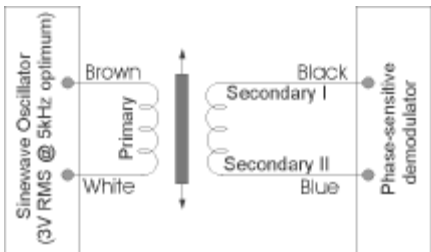
Dimensions



Wiring Codes

Wire	Supply
Brown	Supply
White	Supply Return
Blue	Output
Black	Output Return

Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Weight Armature (oz.)	Typical F.S. Output at 5V RMS
HP	+/- 0.5 in.	6.02	1.5	0.75	3.5V RMS
HQ	+/- 1.0 in.	7.12	2.5	1.0	4.5V RMS
HR	+/- 2.0 in.	11.97	3.0	1.5	7.6V RMS
HS	+/- 3.0 in.	16.53	4.5	3.0	7.5V RMS
HT	+/- 4.0 in.	17.83	5.0	3.7	16.05V RMS



Performance

Stroke Range.....	+/- 0.5 to 4.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Output Sensitivity.....	See table above
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-40° to 194°F
Temperature, Effect	
Zero (max.).....	0.005% Full Scale/°F
Span (max.).....	0.005% Full Scale/°F
Pressure Rating, Std.....	150 psi, up to 3,000 psi with cable options

Electrical

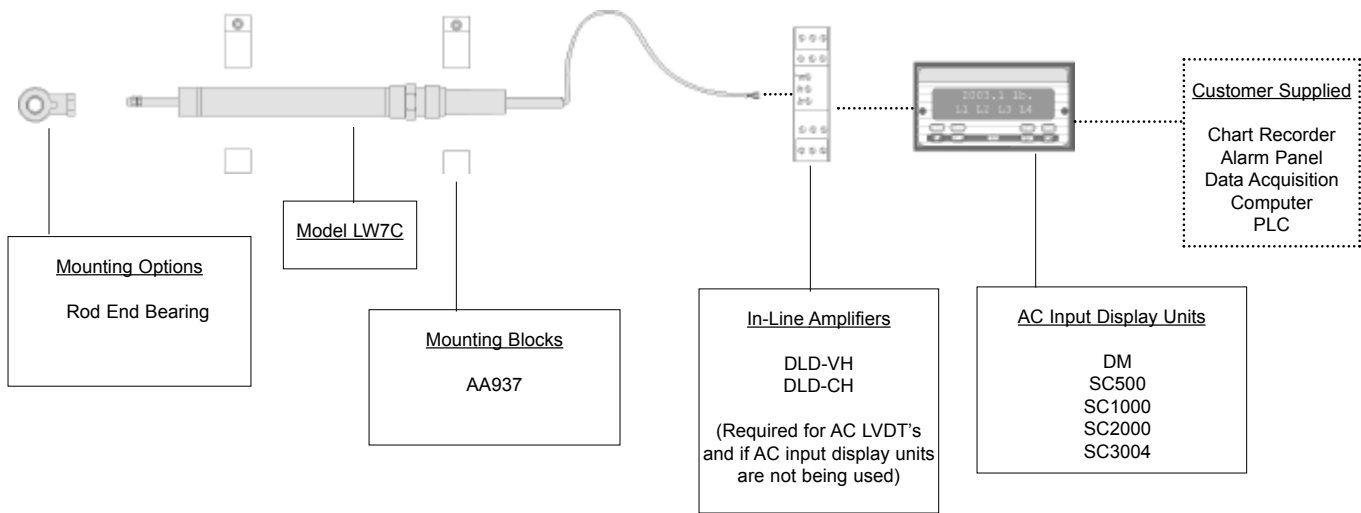
Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 5 kHz
Output Load (min.).....	100,000 Ohms
Electrical Termination.....	Submersible mating connector with 16.5' cable

Mechanical

Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided
Probe Thread.....	M5 x 0.8
Spring Force (max.).....	Not Applicable

*Not recommended for salt water use. Consult Factory for saltwater submersible applications.

Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 4.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	OPT1. No connector or cable, terminated with solder pins
Electrical Cable Orientation		OPT7. Radial outlet submersible connector with 16.5' cable
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	
Higher Temperature		TM315. 400° F (less than or equal to +/- 4 in)

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS
+/- 4.0 in.	HT

Special Customer Requirements (Consult Factory)

Mineral insulated welded stainless steel sheathed cable
0.12" diameter cable
1 to 164 ft. lengths available
-67° to 390° F
3,000 psi
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY201** **HQ** **L10**
Model Code Range Code Options Code

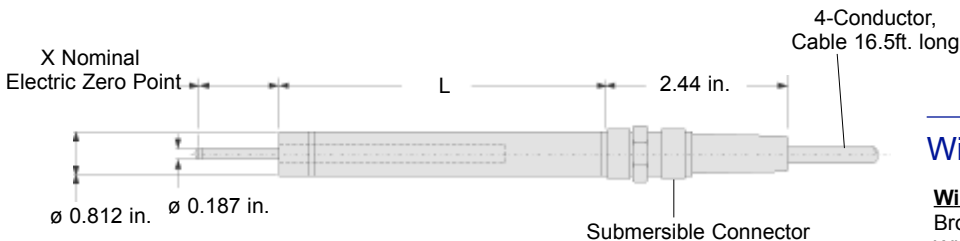
Model LW7S AC-AC Submersible* LVDT

Order Code AY202

- Submersible
- Stainless Steel
- +/- 0.5 to +/- 3.0 in. Range



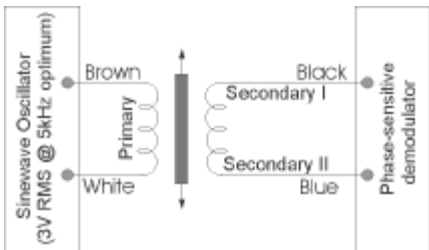
Dimensions



Wiring Codes

Wire	Supply
Brown	Supply
White	Supply Return
Blue	Output
Black	Output Return

Range Codes	Available Stroke Ranges	L (in.)	X (in.)	Spring Force (oz.-in.)	Typical F.S. Output at 5V RMS
HP	+/- 0.5 in.	6.02	1.5	4	3.5V RMS
HQ	+/- 1.0 in.	7.12	2.5	4	4.5V RMS
HR	+/- 2.0 in.	11.97	3.0	4	7.6V RMS
HS	+/- 3.0 in.	16.53	4.5	4	7.5V RMS



Performance

Stroke Range.....	+/- 0.5 to 3.0 in.
Non-Linearity (max.).....	+/- 0.25% Full Scale
Non-Repeatability (max.).....	<20 microinches
Output Sensitivity.....	See table above
Resolution.....	Infinite

Environmental

Temperature, Operating.....	-40° to 194°F
Temperature, Effect	
Zero (max.).....	0.005% Full Scale/°F
Span (max.).....	0.005% Full Scale/°F
Pressure Rating, Std.....	150 psi, up to 3,000 psi with cable options

Electrical

Element Type.....	AC-AC LVDT
Input Supply (calibrated).....	3 V RMS @ 5 kHz
Input Supply (acceptable).....	1-7 V RMS @ 5 kHz
Output Load (min.).....	100,000 Ohms
Electrical Termination.....	Submersible mating connector with 16.5' cable

Mechanical

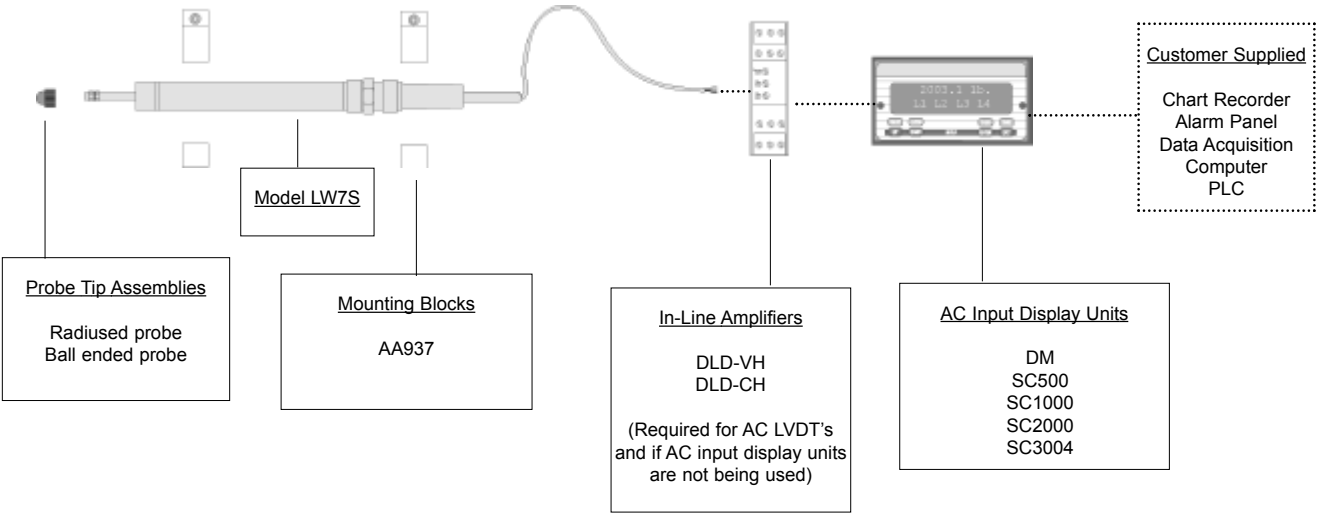
Material.....	Stainless Steel
Probe Material.....	Stainless Steel
Armature Type.....	Captive Guided Spring Return
Probe Thread.....	Not Applicable
Spring Force (max.).....	4 oz./ in.

*Not recommended for salt water use. Consult Factory for saltwater submersible applications.

1-888-282-9891

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Typical System Diagram



Options

	Fast Track Delivery	Built to Order
Stroke Ranges	+/- 0.5 to 3.0 in.	
Electrical Termination	Multiconductor Shielded Cable (6 ft.)	OPT1. No connector or cable, terminated with solder pins
Electrical Cable Orientation		OPT7. Radial outlet submersible connector with 16.5' cable
Improved Linearity	L10. +/- 0.1% max. linearity (less than or equal to +/- 4 in.)	
Higher Temperature		TM315. 400° F

Supplied as standard

Range Codes

Range	Range Code
+/- 0.5 in.	HP
+/- 1.0 in.	HQ
+/- 2.0 in.	HR
+/- 3.0 in.	HS

Special Customer Requirements (Consult Factory)

Mineral insulated welded stainless steel sheathed cable
0.12" diameter cable
1 to 164 ft. lengths available
-67° to 390° F
3,000 psi
T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **AY202** **HQ** **L10**
Model Code Range Code Options Code

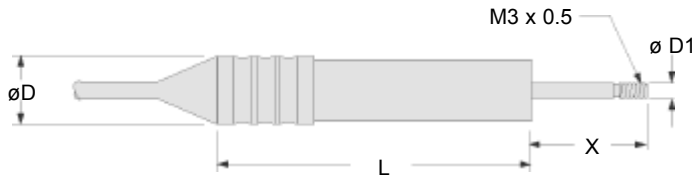
Model MS7A AC-AC Submersible* LVDT

Order Code BY921

- Waterproof Design
- Withstands 250 psi
- +/- 0.04 to +/- 0.50 in. Range



Dimensions



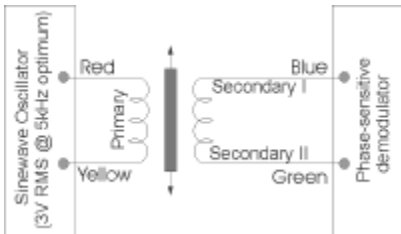
Wiring Codes

Connections

Red Supply (calibrated @ 3V RMS 5 kHz)
Yellow Supply Return
Blue Output
Green Output Return
Black Secondary Center Tap
(normally not connected)

Cable shield is not connected to transducer

Range Codes	Available Stroke Ranges	L (in.)	D (in.)	X (in.)**	D1 (in.)	Total Weight***	Weight Armature (oz.)
HK	+/- 0.04 in.	1.61	0.315	0.669	0.092	0.90 oz.	0.13
HM	+/- 0.10 in.	1.85	0.375	0.708	0.092	1.00 oz.	0.20
HN	+/- 0.20 in.	1.98	0.375	0.900	0.092	1.15 oz.	0.25
HF	+/- 0.30 in.	2.75	0.375	1.150	0.092	1.60 oz.	0.35
HG	+/- 0.40 in.	2.91	0.375	1.280	0.092	1.70 oz.	0.37
HP	+/- 0.50 in.	3.54	0.375	1.375	0.092	2.10 oz.	0.45



Performance

Stroke Range.....+/- 0.04 to 0.50 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Non-repeatability.....< 10 microinches
Output Sensitivity.....2 mV/V/ 0.001"
Output Load (min.).....100,000 Ohm
Resolution.....Infinite

Environmental

Temperature, Operating.....-4° to 257°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.006% Full Scale/°F

Electrical

Element Type.....AC-AC LVDT
Input Supply (calibrated).....5V RMS @ 5 kHz
Input Supply (acceptable).....1-7V RMS @ 2-10 kHz
Electrical Termination.....Hermetically sealed waterproof cable (6 ft.)

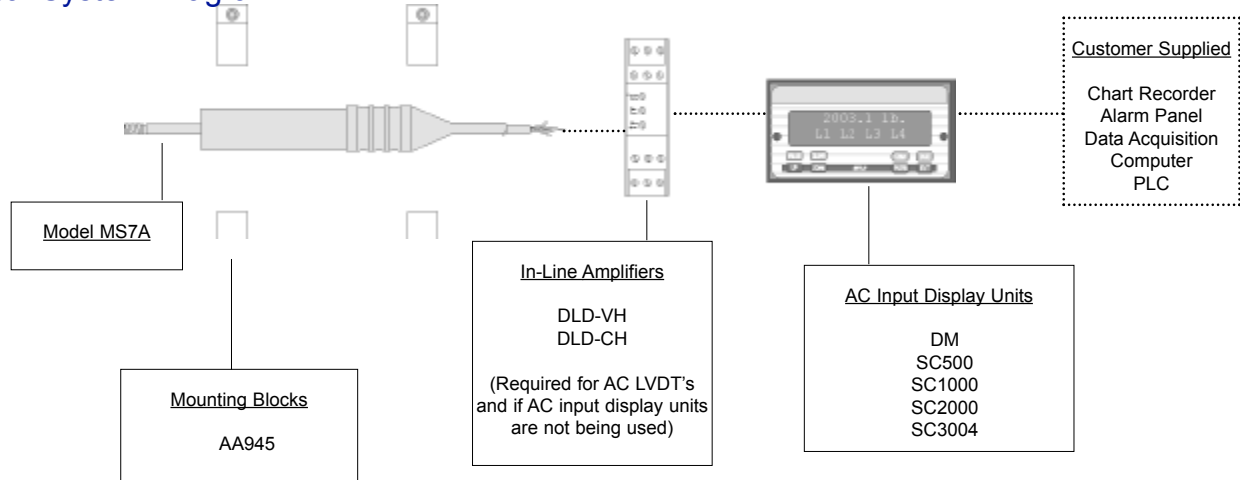
Mechanical

Case Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Free Unguided
Probe Thread.....M3 x 0.5

* Not recommended for salt water use.
** Dimensions at "X" at nominal electrical zero
*** Excluding cable

Model MS7A

Typical System Diagram



Options

	Fast Track Delivery
Stroke Ranges	+/- 0.04 to 0.50 in.
Electrical Termination	Hermetically sealed waterproof cable (6 ft.)

Supplied as standard

Range Codes

Range	Range Code
+/- 0.04 in.	HK
+/- 0.10 in.	HM
+/- 0.20 in.	HN
+/- 0.30 in.	HF
+/- 0.40 in.	HG
+/- 0.50 in.	HP

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model and the desired range code.

Sample Code: **BY921** **HP**
Model Code Range Code

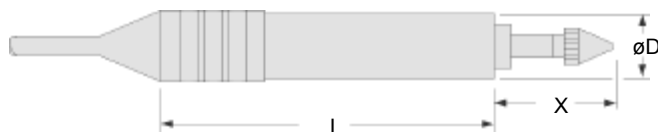
Model S7C AC-AC Submersible* LVDT

Order Code BY912

- Waterproof Design
- Withstands 250 psi
- +/- 0.04 to +/- 0.50 in. Range



Dimensions



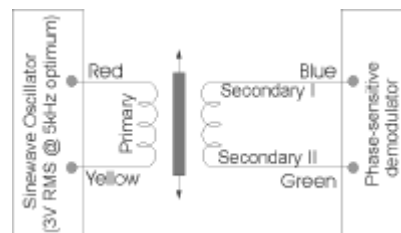
Range Codes	Available Stroke Ranges	L (in.)	D (in.)	X (in.)**	Total Weight***	Maximum Spring Force
HK	+/- 0.04 in.	2.00	0.315	0.45	1.8 oz.	7.5 oz.
HM	+/- 0.10 in.	2.52	0.375	0.46	2.9 oz.	5.0 oz.
HN	+/- 0.20 in.	2.75	0.375	0.48	2.9 oz.	5.0 oz.
HF	+/- 0.30 in.	3.75	0.375	0.72	3.9 oz.	5.0 oz.
HG	+/- 0.40 in.	4.19	0.375	0.87	4.4 oz.	5.0 oz.
HP	+/- 0.50 in.	5.08	0.375	0.97	5.4 oz.	5.0 oz.

Wiring Codes

Connections

Red Supply (calibrated @ 3V RMS 5 kHz)
Yellow Supply Return
Blue Output
Green Output Return
Black Secondary Center Tap (normally not connected)

Cable shield is not connected to transducer



Performance

Stroke Range.....+/- 0.04 to 0.50 in.
Non-Linearity (max.).....+/- 0.25% Full Scale
Non-repeatability.....< 10 microinches
Output Sensitivity.....2 mV/V/ 0.001"
Output Load.....100,000 Ohm
Resolution.....Infinite

Environmental

Temperature, Operating.....-4° to 257°F
Temperature, Effect
Zero (max.).....0.006% Full Scale/°F
Span (max.).....0.006% Full Scale/°F

Electrical

Element Type.....AC-AC LVDT
Input Supply (calibrated).....5V RMS @ 5 kHz
Input Supply (acceptable).....1-7V RMS @ 2-10 kHz
Electrical Termination.....Hermetically sealed waterproof cable (6 ft.)

Mechanical

Case Material.....Stainless Steel
Probe Material.....Stainless Steel
Armature Type.....Captive Guided Spring Return
Probe Thread.....Not Applicable

* Not recommended for salt water use.

** Dimensions at "X" at nominal electrical zero

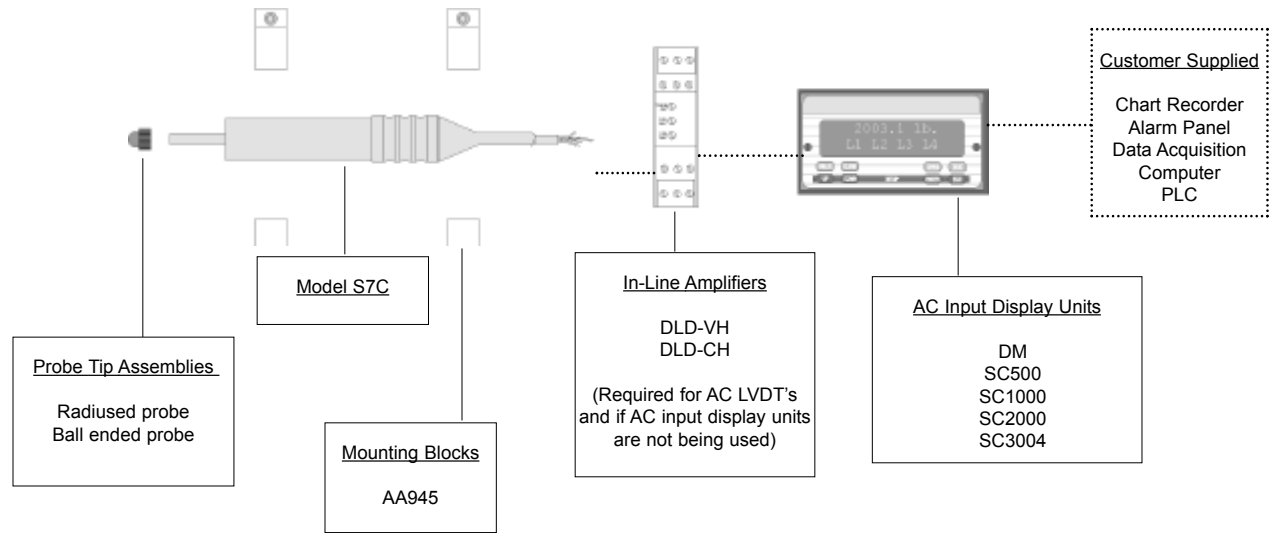
*** Excluding cable

1-888-282-9891

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Model S7C

Typical System Diagram



Options

	Fast Track Delivery
Stroke Ranges	+/- 0.04 to 0.50 in.
Electrical Termination	Hermetically sealed waterproof cable (6 ft.)

Supplied as standard

Range Codes

Range	Range Code
+/- 0.04 in.	HK
+/- 0.10 in.	HM
+/- 0.20 in.	HN
+/- 0.30 in.	HF
+/- 0.40 in.	HG
+/- 0.50 in.	HP

Special Customer Requirements (Consult Factory)

T.E.D.S. IEEE 1451.4 module
Signature Calibration

-Not RoHS Compliant

How to Order

The order code consists of the product model, the desired range code and the available options.

Sample Code: **BY912** **HP**
Model Code Range Code

1-888-282-9891

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LVDT Selection Considerations

The following factors should be considered when selecting an LVDT:

1. Measurement range.
2. Armature type.
3. AC-AC vs. DC-DC.
4. Environment.

Measurement Range LVDTs are available with ranges from $\pm 0.01"$ to $\pm 18.5"$. An LVDT with a $\pm 18.5"$ range can be used in one direction to measure up to $37"$. If accuracy is important, the range selected should not be any larger than necessary.

Armature Type Three armature types are available: free unguided armatures, captive guided spring return armatures, and captive guided armatures.

Free unguided armatures are recommended for applications in which the target being measured moves parallel to the transducer body as well as those which require frequent or continuous measurements. This armature type is well suited for dynamic applications. When using a free unguided armature, the armature and the LVDT body must be mounted so that their correct relative positions are maintained. This type of LVDT features an armature/threaded push rod assembly which is completely separable from the LVDT body. Since the free unguided armature involves no mechanical coupling between the armature and the LVDT body, there are no springs or bearings to fatigue. This unit often has a virtually unlimited fatigue life.

Captive guided spring return armatures are often well suited for those applications requiring the measurement of multiple targets or applications in which the target moves transverse to the armature and changes in a structure's surface are being measured. In this type of LVDT, the armature moves over bearings in the LVDT body. The armature is biased by an internal spring so that the ball-ended probe bears against the surface of the target whose displacement is being measured. The LVDT is held in position by clamping the body alone. The armature is not attached to the target being measured.

Captive guided armatures are designed for applications requiring a longer working range. The armature moves freely over machined bearings but cannot be removed from the body. The LVDT body has a threaded mounting hole and the armature is attached to the structure being measured. The armature end is threaded so that special adapters such as spherical bearings or rollers can be attached.

AC-AC vs. DC-DC The major advantages of DC-DC LVDTs are the ease of installation, the ability to operate from dry cell batteries in remote locations, and lower system cost, which AC-AC LVDT advantages include enhanced accuracy and a smaller body size.

An AC-AC LVDT can be equipped with more sophisticated electronics such as Sensotec's SC instrumentation. The SC instrument provides an AC power supply, a phase sensitive demodulator, a scaling amplifier and DC output. The AC-AC LVDT system has less residual noise at minimum readings than DC-DC units which utilize internal electronics.

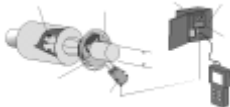
Environment For applications involving very high humidity or requiring submersion of the LVDT, a submersible LVDT is required. Submersible units are available for either AC-AC or DC-DC operation and with free unguided or captive spring return armatures.

The unit selected should also operate and survive at the temperatures dictated by the application. Note that AC-AC units will operate at higher temperatures (up to 257°F) than the DC-DC units (up to 158°F) which have internal electronics.

Side Loads Side loads must be kept to a minimum since they will cause rubbing between the armature and the LVDT body. This friction will cause excessive wear of bearings and parts and in extreme cases, the armature may bend. At a minimum, side loads will reduce the unit's life and accuracy.

Mounting Block Mounting blocks come in two sizes. The large size (Order Code AA937) accommodates LVDTs with an outside diameter of $0.80"$ (20.6mm). The small size (Order Code AA945) is for units with outside diameters of $0.37"$ (9.5mm) or $0.32"$ (8mm). The mounting blocks are designed to be bolted to a flat surface. The sensor is clamped with a captive cap head screw. Two mounting cap screws are furnished. Both units are made from glass filled nylon and have an operating temperature of -20° to 230°F . Strokes up to $0.4"$ require 1 mounting block, strokes over $0.5"$ require 2 mounting blocks. See Accessories section of Appendix for outline and dimensional drawings.

INSTRUMENTS

Potential Application		Model	Order Code	Page	
In-Line Amplifiers	Plastic or Die Cast	UV UV-10 UBP U3W U2W CA2/CA3	BE124 BE127 BE123 BE125 BE128 AE411/AE413	398 399 400 401 402 403	
	DIN Rail Mount	DV-05 DA-05 DV-10 DLD-VH DLD-CH	BE151 BE153 BE155 BE152 BE154	404 406 408 410 411	
Display & Conditioning Units	Single Channel	DM GM GM-A SC500	AE214 AE213 AE216 AE236-AE238	412 414 417 419	
	Multi-Channel	SC1000 SC2000 SC3004	see datasheet see datasheet see datasheet	423 423 428	
	Portable	SC2001 NK	see datasheet AE221	433 434	
	Hand Held	HH	AE222	436	
Temperature Monitoring Systems		1400 Series 1700 Series	WK1000,WK1100 see datasheet	438 439	
Diagnostic & Calibration		TS	AE415	443	
Power Supplies		CC2 DC Power Supply	AE412 AA951-AA957	444 445	
Digital Gages		JK LK	see datasheet see datasheet	446 447	

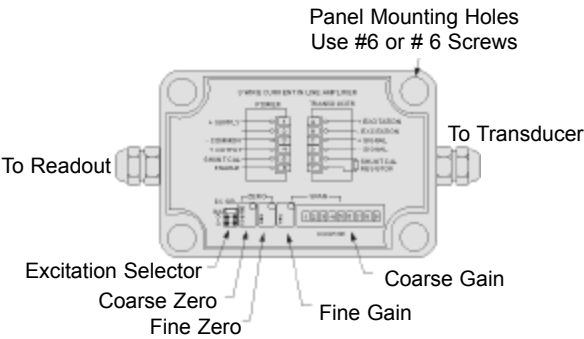
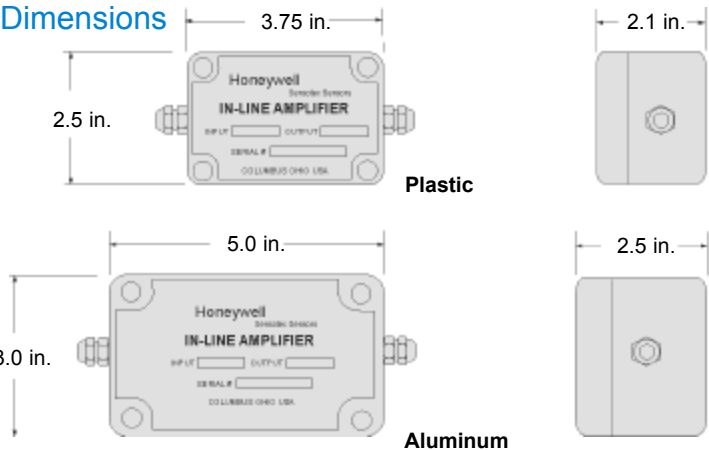
Model UV Bridge Based Sensor In-Line Amplifier

Order Code BE124

- Strain Gage Sensor Amplifier
- 11-28 VDC Supply Voltage
- NEMA 4 Housing
- Selectable Excitation Voltages
- +/-5 VDC 3 Wire Output



Dimensions



General

- Number of Channels.....1
Case Material.....Plastic or Painted Aluminum
Mounting.....Use #6 or #8 Screws

Environmental

- Temperature, Operating.....5° to 122° F
Sealing.....IP-66 or NEMA-4

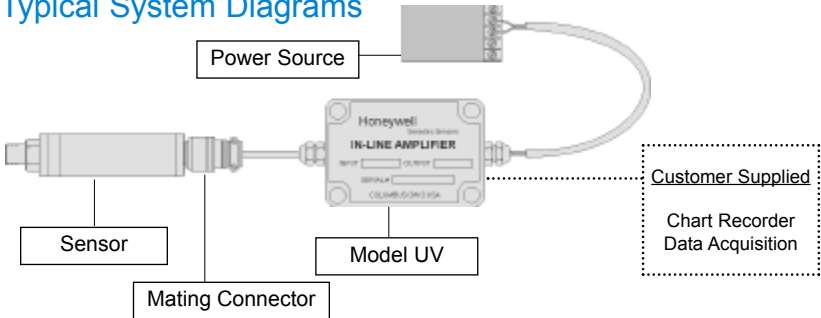
Transducer Interface

- Transducer Type.....Bridge based sensor
Transducer Excitation.....3 or 5 VDC @ 70 mA

Amplifier Characteristics

- Supply Voltage.....11-28 VDC
Current Draw.....70 mA
Frequency Response (-3db).....DC to 5,000 Hz
Zero Adjustment Range
Coarse.....+/- 50%
Fine.....+/- 15%
Span Adjustment Range.....0.5 - 5 mV/V +/- 25% fine adjustment
Linearity.....0.02% of Full Scale
Shunt Calibration.....Solid state relay on board
Output.....+/- 5VDC
Output Current.....2 mA max.
Signal to Noise Ratio.....65 db
DC Power Supply Rejection Ration.....> 110 db

Typical System Diagrams



Options

2 Pole Active Filter	Built to Order	Built from Scratch
Filter Setting	1 Hz 3 Hz 5 Hz 10 Hz 20 Hz 30 Hz	50 Hz 100 Hz 300 Hz 500 Hz 1,000 Hz User Specified

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available filter setting.

Sample Code **BE124** **30Hz**
Model Code Filter Setting

1-888-282-9891

www.honeywell.com/sensotec

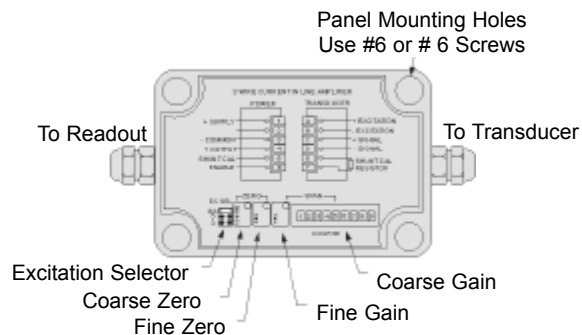
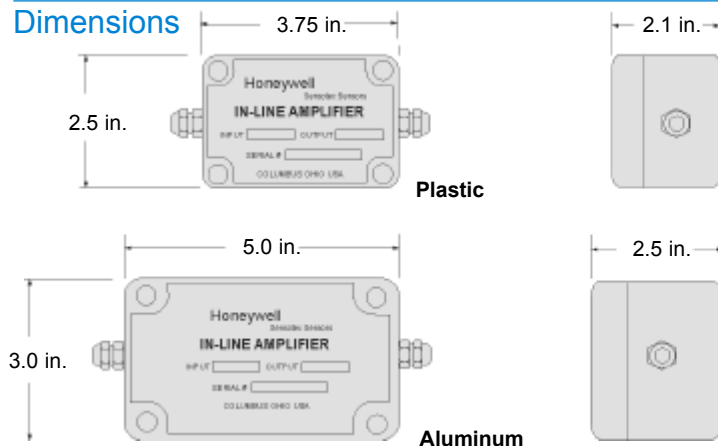
Model UV-10 Bridge Based Sensor In-Line Amplifier

Order Code BE127

- Strain Gage Sensor Amplifier
- 18-32 VDC Supply Voltage
- NEMA 4 Housing
- Selectable Excitation Voltages
- +/-10 VDC 3 Wire Output



Dimensions



General

Number of Channels.....1
Case Material.....Plastic or Painted Aluminum
Mounting.....Use #6 or #8 Screws

Environmental

Temperature, Operating.....5° to 122° F
Sealing.....IP-66 or NEMA-4

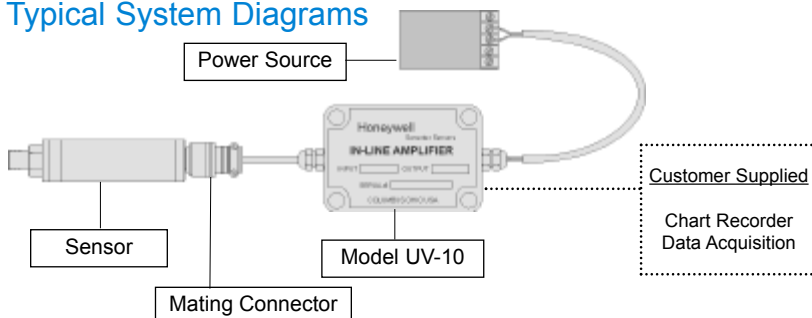
Transducer Interface

Transducer Type.....Bridge based sensor
Transducer Excitation.....3, 5 or 10 VDC @ 50 mA

Amplifier Characteristics

Supply Voltage.....18-32 VDC
Current Draw.....50 mA
Frequency Response (-3db).....DC to 5,000 Hz
Zero Adjustment Range
Coarse.....+/- 25%
Fine.....+/- 10%
Span Adjustment Range.....1 - 20 mV/V
Linearity.....0.02% of Full Scale
Shunt Calibration.....Solid state relay on board
Output.....+/- 10VDC
Output Current.....2.5 mA
Signal to Noise Ratio.....65 db
DC Power Supply Rejection Ration.....> 110 db

Typical System Diagrams



Options

2 Pole Active Filter	Built to Order	Built from Scratch
Filter Setting	1 Hz 3 Hz 5 Hz 10 Hz 20 Hz 30 Hz	50 Hz 100 Hz 300 Hz 500 Hz 1,000 Hz User Specified

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available filter setting.

Sample Code **BE127** **30 Hz**
Model Code Filter Setting

1-888-282-9891

www.honeywell.com/sensotec

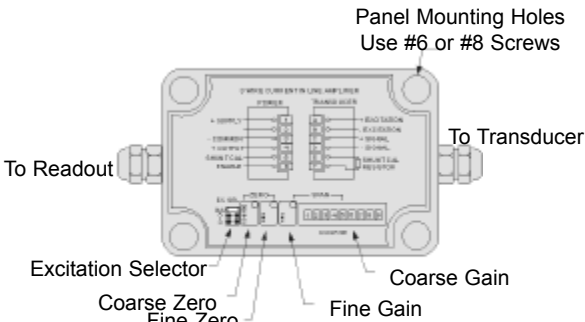
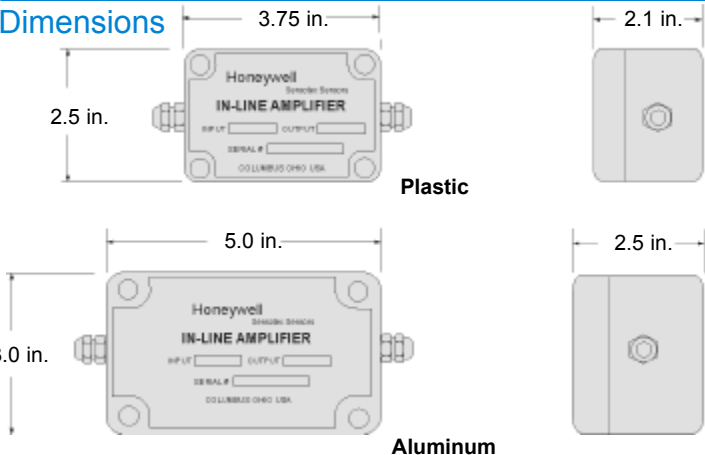
Model UBP Universal Bi-Polar In-Line Amplifier

Order Code BE123

- For Replacement Only, Not to be Used in New Design
- +/- 15 VDC Supply Voltage
- NEMA 4 Housing
- Selectable Excitation Voltages
- +/-5 VDC Output



Dimensions



General

Number of Channels.....1
Case Material.....Plastic or Painted Aluminum
Mounting.....Use #6 or #8 Screws

Environmental

Temperature, Operating.....-20° to 158° F
Sealing.....IP-66 or NEMA-4

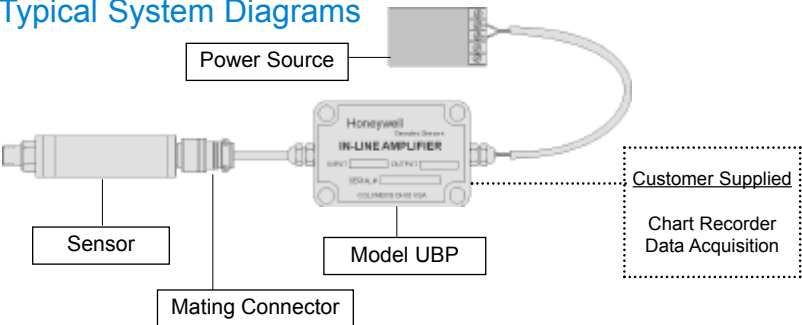
Transducer Interface

Transducer Type.....Bridge based sensor
Transducer Excitation.....3, 5 or 10 VDC @ 70 mA

Amplifier Characteristics

Supply Voltage.....+/- 15 VDC
Current Draw.....70 mA
Frequency Response (-3db).....DC to 5,000 Hz
Zero Adjustment Range
Coarse.....+/- 50%
Fine.....+/- 15%
Span Adjustment Range.....0.5 - 10 mV/V
Linearity.....0.01% of Full Scale
Shunt Calibration.....Solid state relay on board
Signal Output.....+/- 5 VDC
Output Current.....1 mA max.
Signal to Noise Ratio.....65 db
DC Power Supply Rejection Ratio.....> 110 db

Typical System Diagrams



Options

2 Pole Active Filter	Built to Order		Built from Scratch
Filter Setting	3 Hz	50 Hz	User Specified
	5 Hz	100 Hz	
	10 Hz	300 Hz	
	20 Hz	500 Hz	
	30 Hz	1,000 Hz	

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available filter setting.

Sample Code **BE123** **30Hz**
Model Code Filter Setting

1-888-282-9891

www.honeywell.com/sensotec

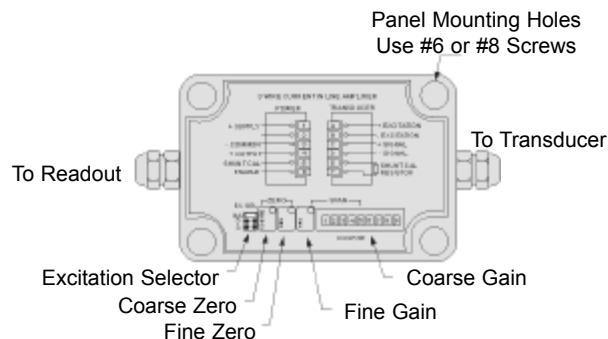
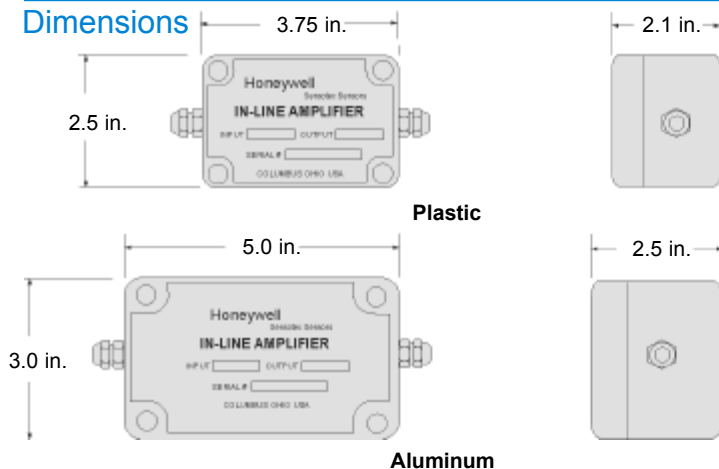
Model U3W Bridge Based Sensor In-Line Amplifier

Order Code BE125

- Strain Gage Sensor Amplifier
- 18-32 VDC Supply Voltage
- NEMA 4 Housing
- Selectable Excitation Voltages
- 4-20 mA Analog Output



Dimensions



General

Number of Channels.....1
Case Material.....Plastic or Painted Aluminum
Mounting.....Use #6 or #8 Screws

Environmental

Temperature, Operating.....5° to 122° F
Sealing.....IP-66 or NEMA-4

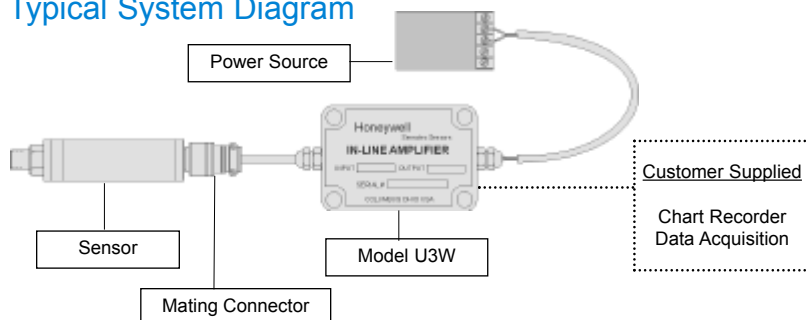
Transducer Interface

Transducer Type.....Bridge based sensor
Transducer Excitation.....3 or 5 VDC @ 70 mA

Amplifier Characteristics

Supply Voltage.....18-32 VDC
Current Draw.....70 mA
Frequency Response (-3db).....DC to 5,000 Hz
Zero Adjustment Range
Coarse.....+/- 70%
Fine.....+/- 25%
Span Adjustment Range.....0.5 - 6.6 mV/V +/- 25% fine adjustment
Linearity.....0.02% of Full Scale
Shunt Calibration.....Solid state relay on board
Signal Output.....4-20 mA (3 wire)
Signal to Noise Ratio.....65 db
DC Power Supply Rejection Ratio.....> 110 db

Typical System Diagram



Options

2 Pole Active Filter	Built to Order		Built from Scratch
Filter Setting	3 Hz	50 Hz	User Specified
	5 Hz	100 Hz	
	10 Hz	300 Hz	
	20 Hz	500 Hz	
	30 Hz	1,000 Hz	

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available filter setting.

Sample Code **BE125** **30Hz**
Model Code Filter Setting

1-888-282-9891

www.honeywell.com/sensotec

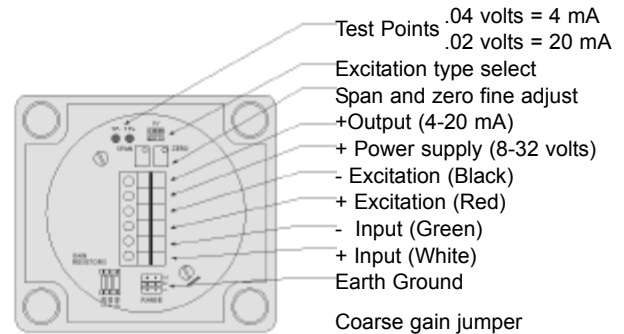
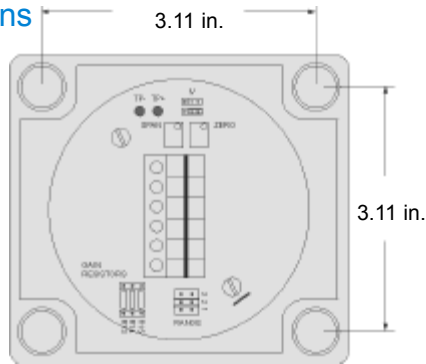
Model U2W Bridge Based Sensor In-Line Amplifier

Order Code BE128

- Strain Gage Sensor Amplifier
- 8-32 VDC Supply Voltage
- NEMA 4 or IP-66 Housing
- Lightning Protection
- 4-20 mA Analog Output



Dimensions



General

Number of Channels.....1
Case Material.....Plastic or Painted Aluminum
Mounting.....Use #6 or #8 Screws

Environmental

Temperature, Operating.....-20° to 158° F
Sealing.....IP-66 or NEMA-4
Lightning Protection.....Yes

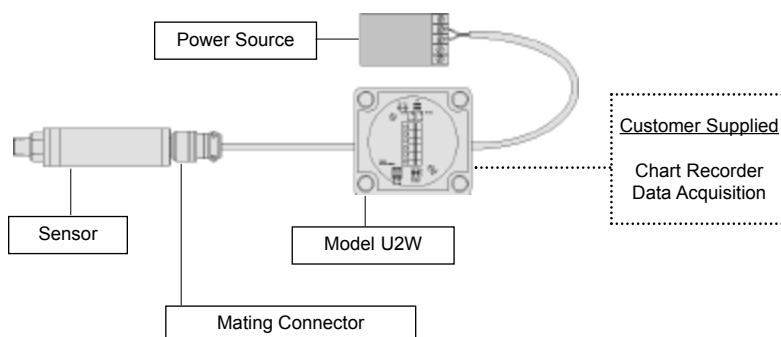
Transducer Interface

Transducer Type.....Bridge based sensor
Transducer Bridge Excitation & Resistance
Constant Voltage Mode.....5 VDC @ 2 mA max.; 3k to 10 k Ohms
Constant Current Mode.....0.5 mA with 3 V compliance; 2k to 6k Ohms

Amplifier Characteristics

Supply Voltage.....8-32 VDC
Frequency Response.....1 kHz @ 2mV/V
Zero Adjustment Range.....+/- 15% fine
Span Adjustment Range.....Jumper selectable and +/- 20% fine adjustment
Shunt Calibration.....Solid state relay on board
Signal Output.....4-20 mA (2 wire)

Typical System Diagrams



Options

2 Pole Active Filter	Built to Order	Built from Scratch
Filter Setting	3 Hz 5 Hz 10 Hz 20 Hz 30 Hz	50 Hz 100 Hz 300 Hz 500 Hz 1,000 Hz User Specified

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available filter setting.

Sample Code **BE128** **30Hz**
Model Code Filter Setting

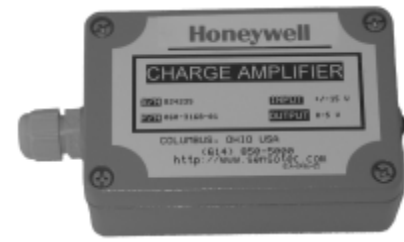
1-888-282-9891

www.honeywell.com/sensotec

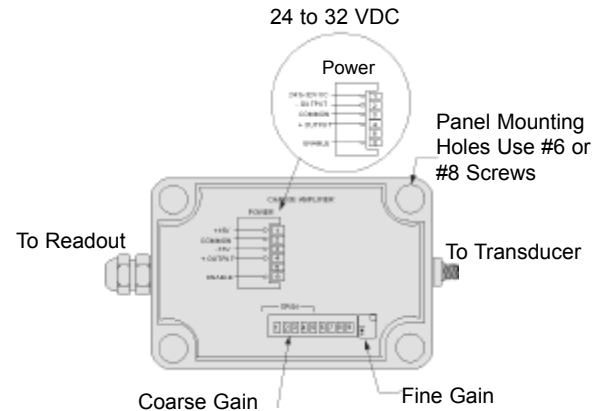
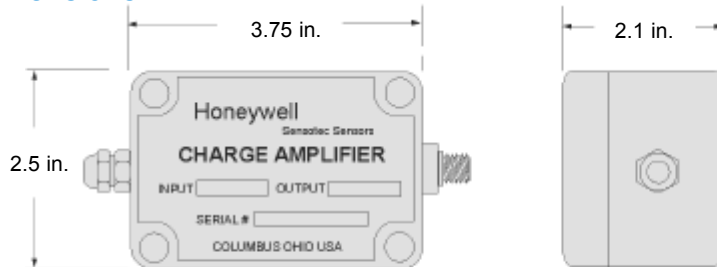
Model CA2/ CA3 Charge Amplifier

Order Code AE411 & AE413

- Piezo-Electric Accelerometer Amplifier
- +/- 15 VDC or 24-32 VDC Supply
- NEMA 4 Housing
- Programmable Sensitivity
- +/- 5 V Output



Dimensions



Power Requirements

Input Voltage..... +/- 15 VDC or 24-32 VDC
Input Current..... 20 milliamperes

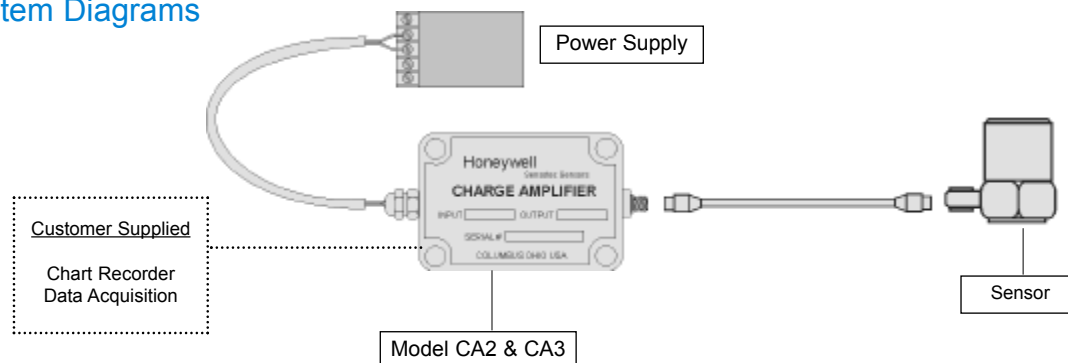
Amplifier Characteristics

Sensitivity..... Programmable (0.05 mV/pc to 6.4 mV/pc)
Input Range..... 780 pc to 100,000 pc
Output..... +/- 5V RMS max.
Frequency Response
Model CA2..... 3 Hz to 30 kHz (-3db)
Model CA3..... DC to 30 kHz
Time Constant
Model CA2..... 50 milliseconds
Model CA3..... 2000 seconds
Short Circuit Protected..... +Output to -Output

Physical Characteristics

Size..... 3.8" L x 2.5" W x 2.2" H
Temperature, Operating..... 32° to 180° F
Environmental Protection..... Moisture and dust resistant painted aluminum box
Method of Connection
Input..... Terminal strip inside of box
Sensor Connection..... Miniature coaxial connector
Mounting..... Precressed screws, outside of the sealed volume

Typical System Diagrams



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code **AE411**
Model Code

1-888-282-9891

www.honeywell.com/sensotec

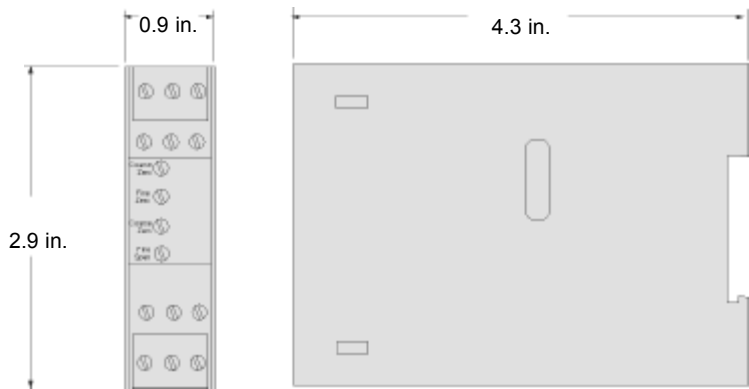
Model DV-05 DIN Rail Mount In-Line Amplifiers

Order Code BE151

- DIN Rail Mount
- Unamplified Transducer Input
- Bridge Based Transducer Input
- 0 to +/-5V 3-Wire Output
- RFI, ESD Protected CE



Dimensions



General

Number of Channels.....One
Case Material.....Plastic
Mounting.....35 mm DIN
Certification.....CE Approved

Environmental

Temperature, Operating.....-40° to 200° F
Temperature, Storage.....-40° to 200° F

Transducer Interface

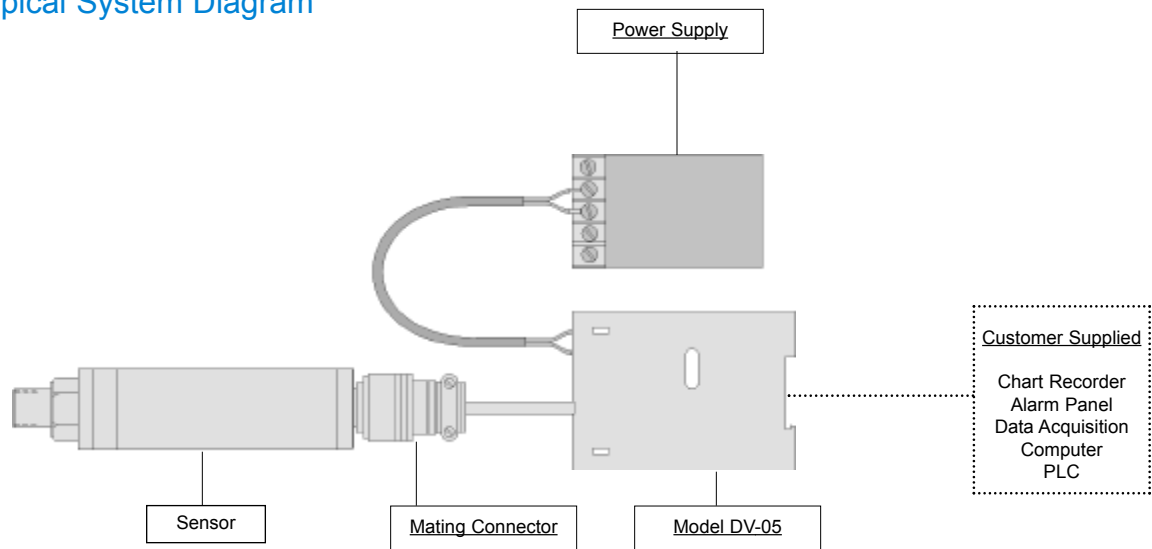
Transducer Type.....Bridge based sensor
Transducer Excitation.....3 or 5 VDC @ 30 mA (Short circuit protection)

Amplifier Characteristics

Supply Voltage.....11-28 VDC
Current Draw.....60 mA
Zero Adjustment Range.....+/- 60% coarse adjustment
.....+/- 10% fine adjustment
Span Adjustment Range.....Switch selectable 0.5 to 13.3 mV/V
.....+/- 20% fine adjustment
Linearity.....+/- 0.01%
Output.....+/- 5 VDC
Output Current.....2 mA
Frequency Response (-3 db).....DC-7,000 Hz with 350 Ohm bridge
.....DC-2,500 Hz with 5,000 Ohm bridge
Rise Time (0 to 90%).....56 s with 350 Ohm bridge
.....145 s with 5,000 Ohm bridge
Signal to Noise Ratio.....66 db
DC Power Supply Rejection Ratio.....Greater than 110 db

Model DV-05

Typical System Diagram



Options

	Built to Order
58e, 2 Pole Filter Option	1 Hz
	3 Hz
	5 Hz
	10 Hz
	20 Hz
	30 Hz
	50 Hz
	100 Hz
	300 Hz
	500 Hz
	1,000 Hz
	2,500 Hz (350 Ohm bridge)
	7,000 Hz (5,000 Ohm bridge)

Supplied as standard



Approved

-Not RoHS Compliant

How to Order

Combine the order code, the options code and the filter frequency.

Sample Code: **BE151** **58e, 50 Hz**
Order Code Filter with Frequency

1-888-282-9891

www.honeywell.com/sensotec

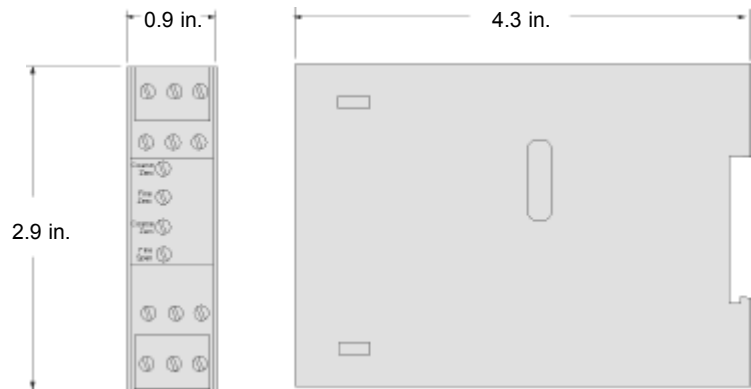
Model DA-05 DIN Rail Mount In-Line Amplifier

Order Code BE153

- DIN Rail Mount
- Strain Gage Transducer Input
- Bridge Based Transducer Input
- 4-20 mA 3-Wire Output
- RFI, ESD Protected CE



Dimensions



General

Number of Channels.....One
Case Material.....Plastic
Mounting.....35 mm DIN
Certification.....CE Approved

Environmental

Temperature, Operating.....-40° to 200° F
Temperature, Storage.....-40° to 200° F

Transducer Interface

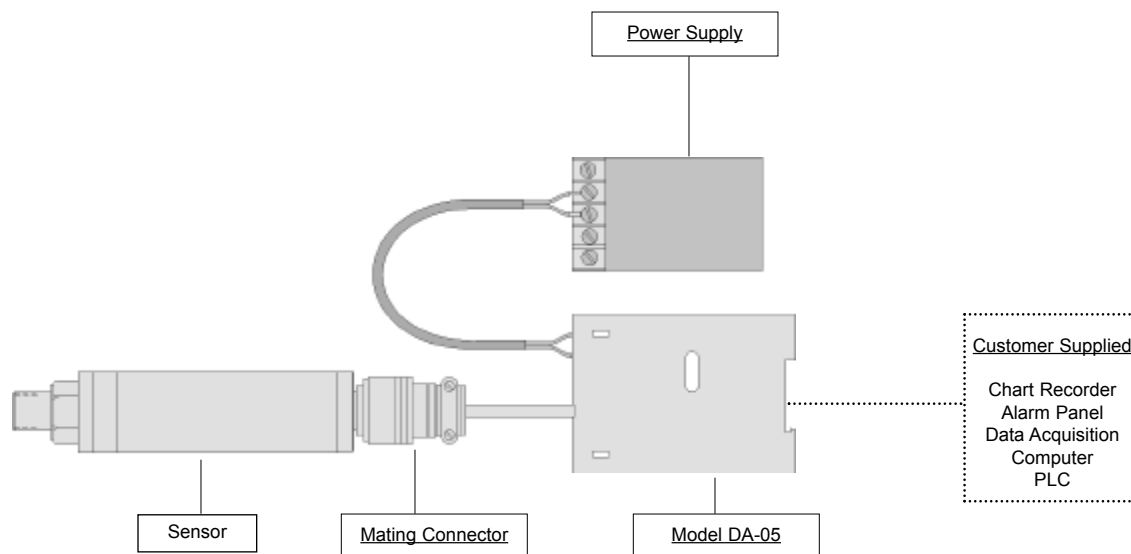
Transducer Type.....Bridge based sensor
Transducer Excitation.....3 or 5 VDC @ 30 mA (Short circuit protection)

Amplifier Characteristics

Supply Voltage.....13.5-28 VDC
Current Draw.....60 mA
Zero Adjustment Range.....+/- 60% coarse adjustment
.....+/- 10% fine adjustment
Span Adjustment Range.....Switch selectable 0.5 to 13.3 mV/V
.....+/- 20% fine adjustment
Linearity.....+/- 0.01%
Output.....4-20 mA 3 wire
Frequency Response (-3 db).....DC-6,200 Hz with 350 Ohm bridge
.....DC-2,300 Hz with 5,000 Ohm bridge
Rise Time (0 to 90%).....63 s with 350 Ohm bridge
.....160 s with 5,000 Ohm bridge
Signal to Noise Ratio.....70 db
DC Power Supply Rejection Ratio.....90 db

Model DA-05

Typical System Diagram



Options

	Built to Order
58e, 2 Pole Filter Option	1 Hz
	3 Hz
	5 Hz
	10 Hz
	20 Hz
	30 Hz
	50 Hz
	100 Hz
	300 Hz
	500 Hz
	1,000 Hz
	6200 Hz (350 Ohm bridge)
	2300 Hz (5,000 Ohm bridge)

Supplied as standard



Approved

-Not RoHS Compliant

How to Order

Combine the order code, the options code and the filter frequency.

Sample Code: **BE153** **58e, 50 Hz**
Order Code Filter with Frequency

1-888-282-9891

www.honeywell.com/sensotec

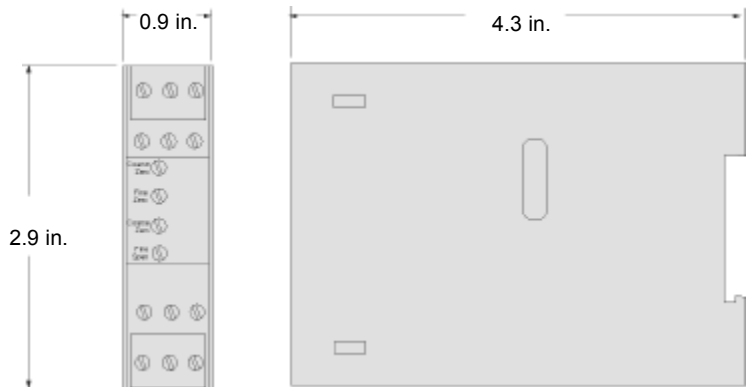
Model DV-10 DIN Rail Mount In-Line Amplifiers

Order Code BE155

- DIN Rail Mount
- Unamplified Transducer Input
- Bridge Based Transducer Input
- 0 to +/-10V 3-Wire Output
- RFI, ESD Protected CE



Dimensions



General

Number of Channels.....One
Case Material.....Plastic
Mounting.....35 mm DIN
Certification.....CE Approved

Environmental

Temperature, Operating.....-40° to 200° F
Temperature, Storage.....-40° to 200° F

Transducer Interface

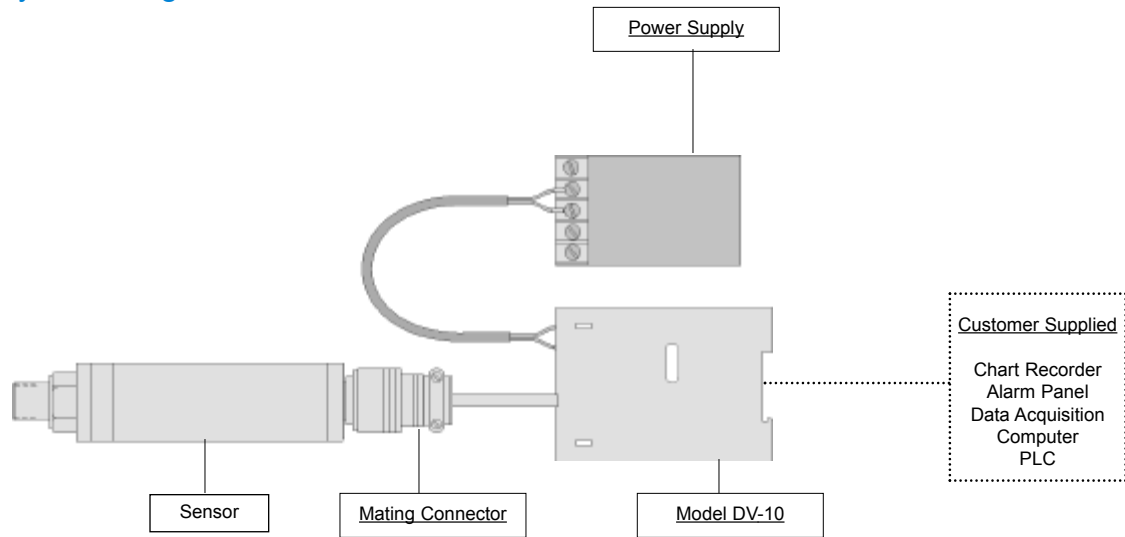
Transducer Type.....Bridge based sensor
Transducer Excitation.....5.4 or 9 VDC @ 30 mA (Short circuit protection)

Amplifier Characteristics

Supply Voltage.....15-28 VDC
Current Draw.....60 mA
Zero Adjustment Range.....+/- 30% coarse adjustment
.....+/- 5% fine adjustment
Span Adjustment Range.....Switch selectable 1.75 to 13.3 mV/V
.....-8 to +20 fine adjustment
Linearity.....+/- 0.01%
Output.....+/- 10 VDC (3 wire)
Output Current.....2 mA
Frequency Response.....DC- 5,000 Hz

Model DV-10

Typical System Diagram



Options

	Built to Order
58e, 2 Pole Filter Option	1 Hz
	3 Hz
	5 Hz
	10 Hz
	20 Hz
	30 Hz
	50 Hz
	100 Hz
	300 Hz
	500 Hz
	1,000 Hz
	2,500 Hz (350 Ohm bridge)
	7,000 Hz (5,000 Ohm bridge)

Supplied as standard



-Not RoHS Compliant

How to Order

Combine the order code, the options code and the filter frequency.

Sample Code: BE155 58e, 50 Hz
Order Code Filter with Frequency

1-888-282-9891

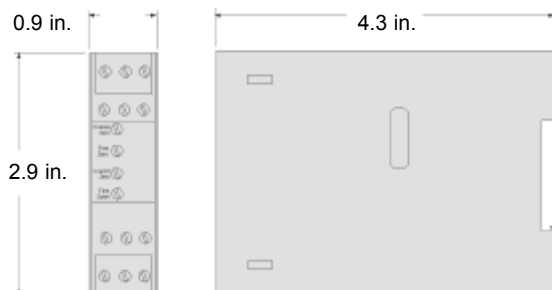
www.honeywell.com/sensotec

Model DLD-VH DIN Rail Mount In-Line Amplifiers

Order Code BE152

- DIN Rail Mount
- AC LVDT Input
- 0+/-5 or 0+/-10VDC, Field Selectable
- RFI, ESD Protected

Dimensions



General

Number of Channels.....One
Case Material.....Plastic
Mounting.....35 mm DIN

Environmental

Temperature, Operating.....-20° to 140° F
Temperature, Storage.....-40° to 200° F

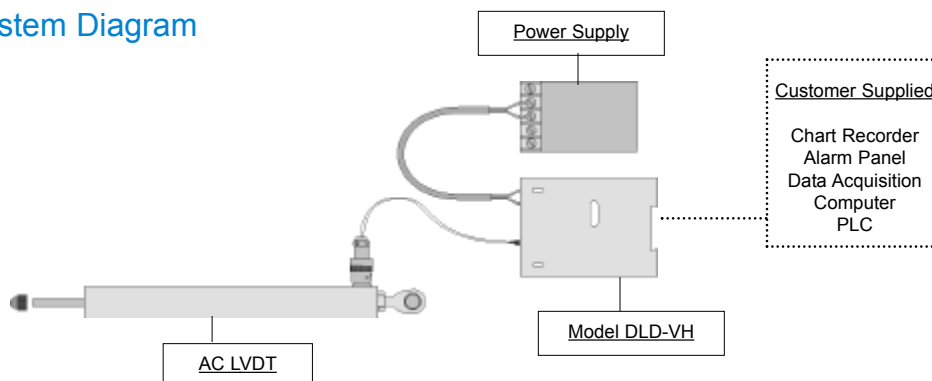
Transducer Interface

Transducer Type.....AC LVDTs
Transducer Excitation.....3 volts RMS @ 5 kHz

Amplifier Characteristics

Supply Voltage.....18-36 VDC
Power Supply Isolation 500 V
Current Draw.....70 mA
Zero Adjustment Range.....+/- 100% coarse adjustment
+/- 20% fine adjustment
Span Adjustment Range.....Switch selectable 0.1 to 15 VRMS input range
+/- 10% fine adjustment
Linearity.....+/- 0.05%
Output.....0 +/- 5 or 0 +/- 10 VDC (field selectable)
Frequency Response.....300 Hz (-3 db)
DC Power Supply Rejection Ratio.....85 db

Typical System Diagram



-Not RoHS Compliant

How to Order

Enter the order code

Sample Code: BE152

Order Code

1-888-282-9891

www.honeywell.com/sensotec

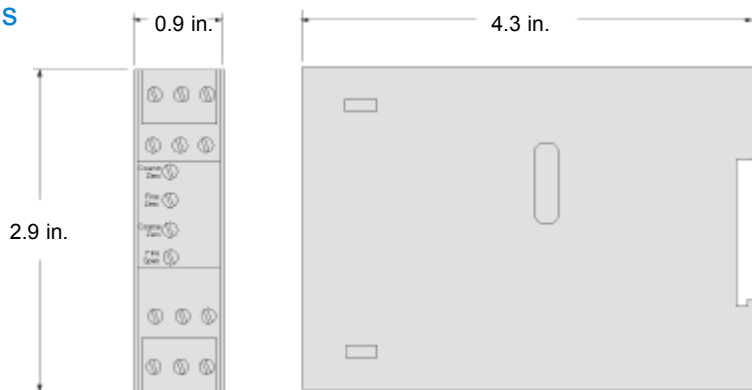
Model DLD-CH DIN Rail Mount In-Line Amplifiers

Order Code BE154

- DIN Rail Mount
- AC LVDT Input
- 4-20 mA Output
- RFI, ESD Protected



Dimensions



General

Number of Channels.....One
Case Material.....Plastic
Mounting.....35 mm DIN

Environmental

Temperature, Operating.....-20° to 140° F
Temperature, Storage.....-40° to 200° F

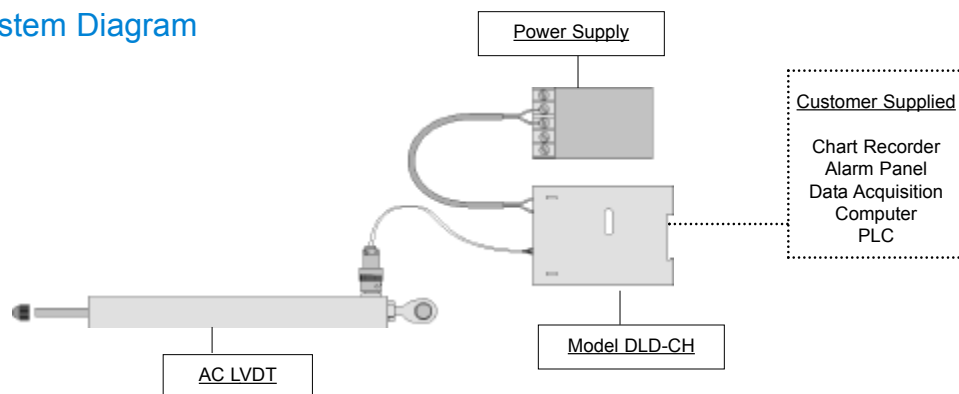
Transducer Interface

Transducer Type.....AC LVDTs
Transducer Excitation.....3 volts RMS @ 5 kHz

Amplifier Characteristics

Supply Voltage.....18-36 VDC
Power Supply Isolation 500 V
Current Draw.....90 mA
Zero Adjustment Range.....+/- 100% coarse adjustment
+/- 20% fine adjustment
Span Adjustment Range.....Switch selectable 0.1 to 15 VRMS input range
+/- 10% fine adjustment
Linearity.....+/- 0.05%
Output.....4-20 mA
Frequency Response.....300 Hz (-3 db)
DC Power Supply Rejection Ratio.....85 db

Typical System Diagram



-Not RoHS Compliant

How to Order

Enter the order code

Sample Code: **BE154**

Order Code

1-888-282-9891

www.honeywell.com/sensotec

Model DM Demodulator for AC Transducers

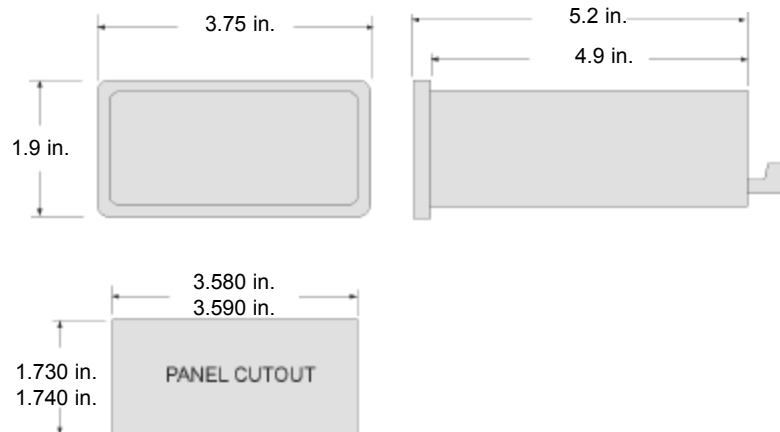
Order Code AE214

- Used With LVDTs
- 4 1/2 Digit LED Display
- 3 Conversions Per Second



Model DM, for carrier transducers, is a low-cost bench, panel or rack-mounted instrument which contains a power supply, signal conditioner, amplifier (Bipolar 5 Volt output), and digitizer. The 4 1/2-digit LED display features bright, easy-to-read 0.56" high characters. The compact 1/8 DIN size case measures 3.8" W x 1.9" H x 5.2" D. Wires easily attach to the rear connector using screw terminals. The model DM features a 5 kHz. drive supply for the transducer, a stable signal amplifier and a novel demodulation technique that produces an enhanced accuracy result.

Dimensions



Transducer Interface

Transducer Excitation.....	1-2 VRMS @ 5 kHz.
Type of Inputs Accepted.....	AC, LVDT, VRT
Input Gain Range.....	< 1 to 300
Calibration Methods.....	Manual displacement
Noise & Ripple.....	< 300 microvolts
Transducer Minimum Impedance.....	7 Ohms

Electrical

Number of Characters Displayed.....	4 1/2
Conversions per Second.....	3
Power Requirements	
Standard.....	115 VAC @ 5 Watts
Optional.....	220 VAC, 12 VDC
Scaling.....	0-19,999
Scaling Method.....	Potentiometer
Polarity Indication.....	Yes
Decimal Point Selection.....	Jumper (non-solder)
Display Size.....	0.56 in.
Overrange Indication.....	Flashing Display
Display Resolution.....	1/ 20,000 max.
Digital Display.....	LED
Analog Output.....	+/- 5 VDC
Amplifier Output Impedance.....	< 2 Ohms
Accuracy.....	+/- 0.2% Full Scale
Amplifier Frequency Response.....	300 Hz
Common Mode Rejection.....	60 db
Fine Scan Adjust.....	> +/- 15%
Coarse Scan Adjust.....	> +/- 80%
Fine Zero Adjust.....	> +/- 5%
Coarse Zero Adjust.....	> +/- 20%
Short Circuit Protected.....	Yes

Environmental

Temperature, Storage.....	-20° to 200° F
Temperature, Operating.....	32° to 130° F

Physical

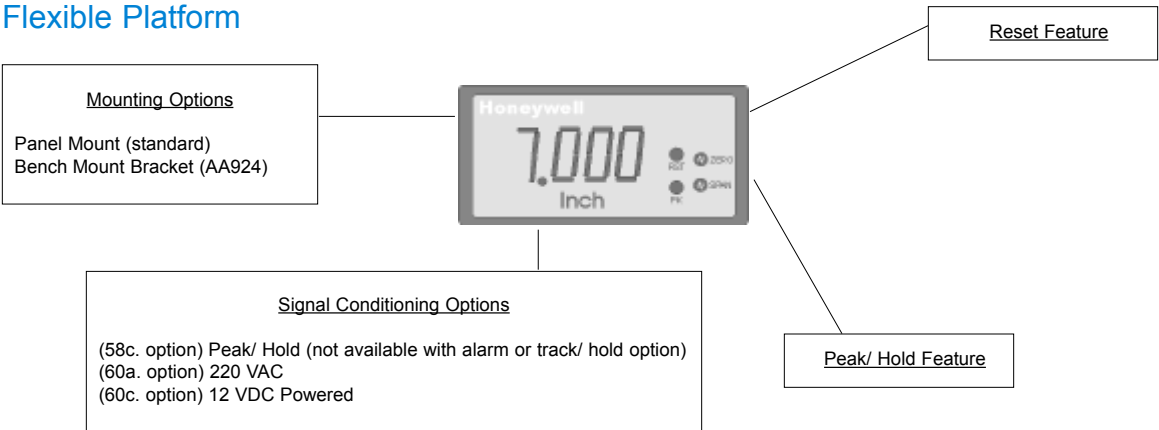
Weight.....	2 lb.
Mounting.....	Bench, Rack or Panel
Case Size (std.).....	1/8 DIN
Case Material.....	Noryl plastic
Input/ Output Connector.....	Removable with screw terminals

1-888-282-9891

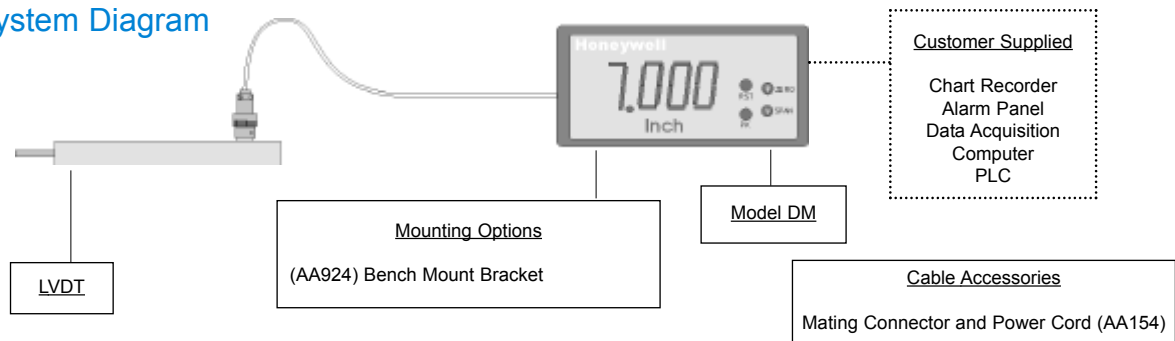
www.honeywell.com/sensotec

Model DM

Flexible Platform

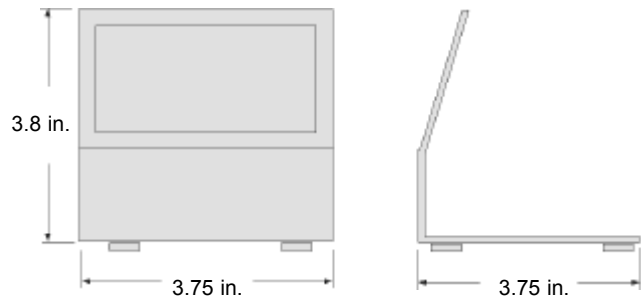


Typical System Diagram



Accessories and Options Dimensions

AA924 Bench Mount Bracket



Options

	Same Day Stock	Configured to Order	Assembled to Order	Built to Order
Alarm Outputs	58a. Hi-Lo limits			
Display Options		58c. Peak/ hold 58d. Track/ hold		
Power Supply	110 VAC	60a. 220 VAC	60c. Battery Powered (12 VDC)	
Front Panel				51d. Custom front panel
Mounting Options				51a. Rack mount adapter

■ Supplied as standard

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available options.

Sample Code **AE216** **58c**
Model Code Options Code

1-888-282-9891

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Model GM Digital Display/ Signal Conditioner

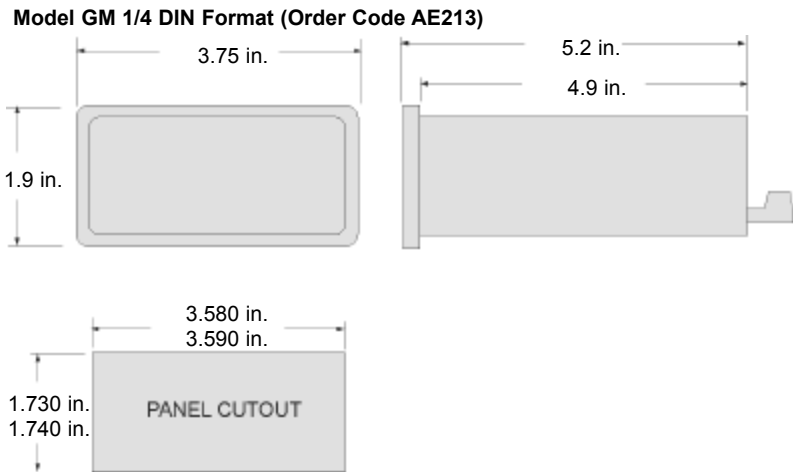
Order Code AE213

- Bridge Based Transducer Input
- 4 1/2 Digit LED Display
- Large 0.56" Readout
- High Speed Analog Output (up to 27 kHz)



The GM is a versatile full function signal conditioner, amplifier and power supply that works with unamplified mV/V transducers. It also provides shunt calibration (R-cal) which enables the system to be setup without using an expensive primary stimulus (done at no extra charge at the factory if the readout and transducer are purchased at the same time). A full range of options like peak/ hold, track/ hold and dual limits are available.

Dimensions



Electrical

Input Signal.....	1 to 5 mV/V or 5 to 50 mV/V (optional)
Number of Characters Displayed.....	4 1/2
Power Requirements	
Standard.....	115 VAC @ 5 Watts
Optional.....	12 VDC, 220 VAC
Conversions per Second.....	3
Scaling Method.....	Potentiometer
Polarity Indication.....	Yes
Decimal Point Selection.....	Jumper (non-solder)
Display Size.....	0.56 in.
Overrange Indication.....	Flashing Display
Display Resolution.....	1/ 20,000 max.
Digital Display.....	LED
Analog Output.....	+/-5 VDC or 4-20 mA (optional)
Amplifier Output Impedance.....	< 2 Ohms
Accuracy.....	35mm DIN
Amplifier Frequency Response.....	DC to 250 Hz
Common Mode Rejection.....	80 db
Fine Scan Adjust.....	< +/- 15%
Coarse Scan Adjust.....	> 80%
Fine Zero Adjust.....	< +/- 15%
Coarse Zero Adjust.....	> 80%

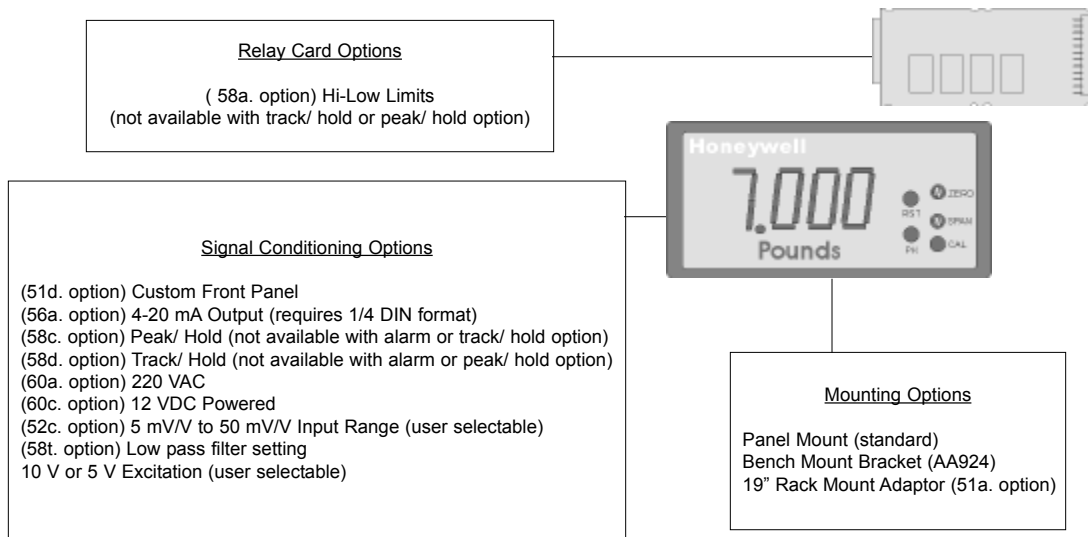
Environmental

Temperature, Storage.....	-20° to 200° F
Temperature, Operating.....	32° to 130° F

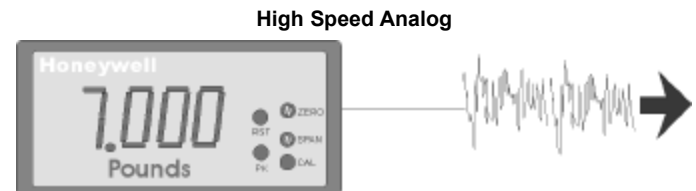
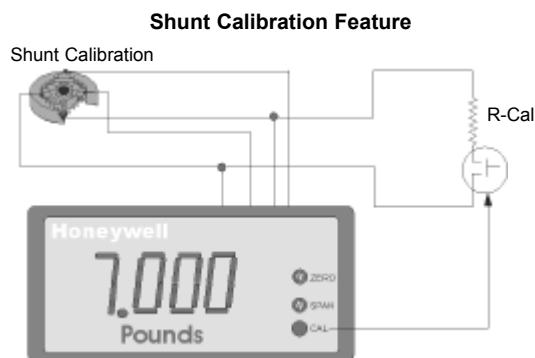
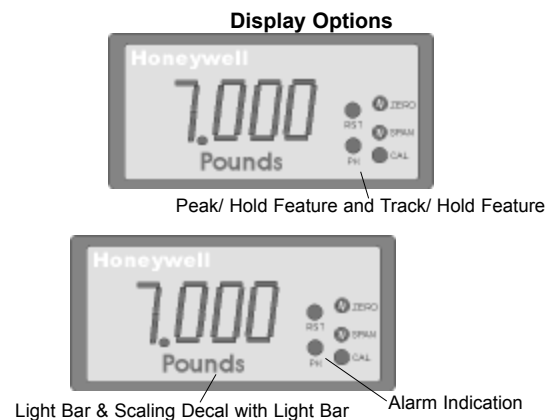
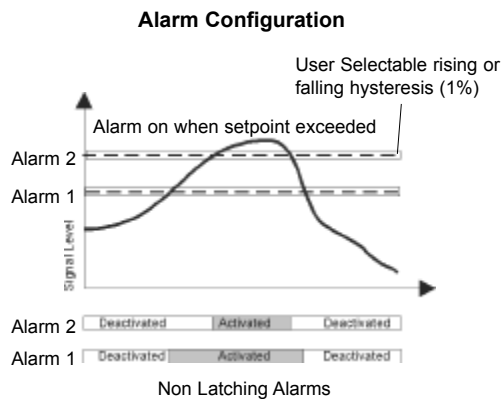
Physical

Weight.....	2.25 lb.
Mounting.....	Bench, Rack or Panel (Panel mount included with unit)
Case Size (std.).....	1/8 DIN
Case Material.....	Noryl plastic
Input/ Output Connector.....	Removable with screw terminals

Flexible Platform

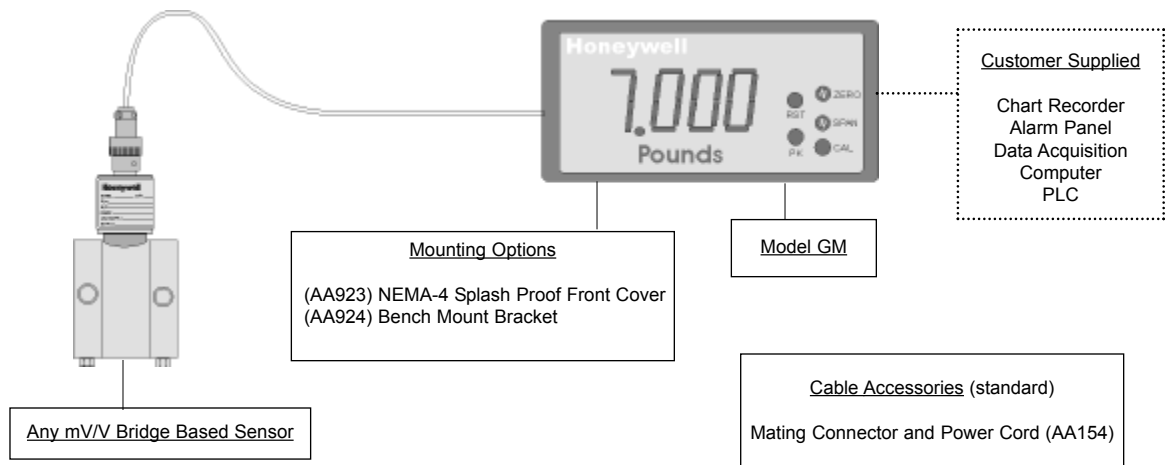


Comprehensive Signal Conditioning

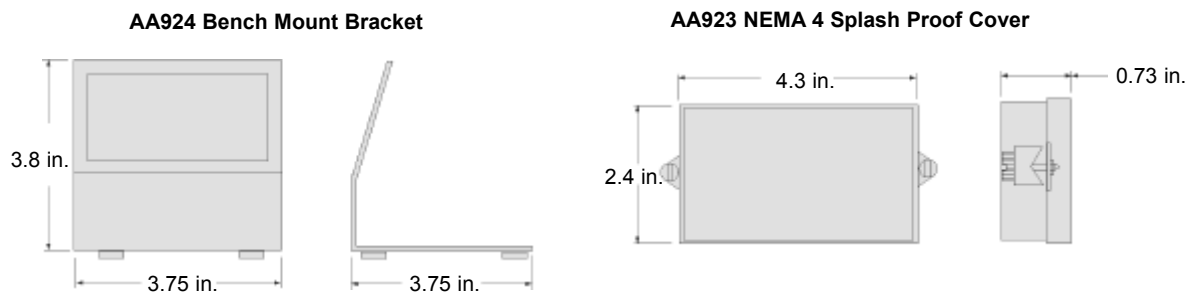


Model GM

Typical System Diagram



Accessories and Options Dimensions



Options

	Same Day Stock	Configured to Order	Assembled to Order	Built to Order
Input Range	0.5 to 5 mV/V	52c. 5 to 50 mV/V		
Analog Output	Filter setting 260 Hz	58t. Optional Filter setting (10Hz, 30Hz, 10kHz, 27kHz)		
Alarm Outputs	58a. Hi-Lo limits			
Display Options	58c. Peak/ hold	58d. Track/ hold		
Power Supply	110 VAC	60a. 220 VAC	60c. Battery Powered (12 VDC)	56a. 4-20 mA output
Front Panel				51d. Custom front panel
Mounting Options				51a. Rack mount adapter 51c. NEMA Enclosure

■ Supplied as standard

-Not RoHS Compliant

How to Order

The order code consists of the product model, the available options and the filter setting.

Sample Code **AE213** **60a** **30Hz**
Model Code Option Code Filter Setting

1-888-282-9891

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Model GM-A Digital Display/ Signal Conditioner

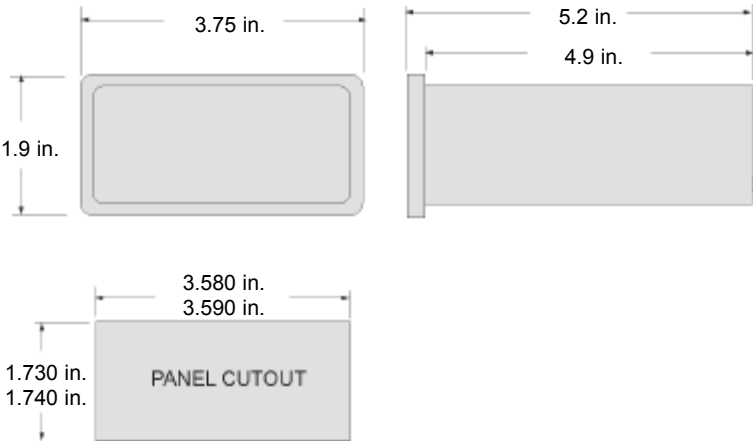
Order Code AE216



- High Level (Amplified) Transducer Input
- 4 1/2 Digit LED Display
- Large 0.56" Readout
- High Speed Analog Output

The GM-A is a low cost digital readout that works with amplified (0-5 V or 4-20 mA) transducers or transmitters. This unit supplies power to the sensors. Two wire current is user jumper selectable for use with two wire current transducers. Separate power supply required for 3-wire use. Not for use with intrinsically safe applications utilizing a barrier.

Dimensions



Electrical

Number of Characters Displayed.....	4 1/2
Power Requirements	
Standard.....	115 VAC @ 5 Watts
Optional.....	220 VAC
Conversions per Second.....	3
Scaling Method.....	Potentiometer
Polarity Indication.....	Yes
Decimal Point Selection.....	Jumper (non-solder)
Display Size.....	0.56 in.
Overrange Indication.....	Flashing Display
Display Resolution.....	1/ 20,000 max.
Digital Display.....	LED
Analog Output.....	+/- 5 VDC
Amplifier Output Impedance.....	< 2 Ohms
Accuracy.....	+/- 0.03%
Amplifier Frequency Response.....	DC to 1 kHz
Coarse Zero Adjust.....	40%

Environmental

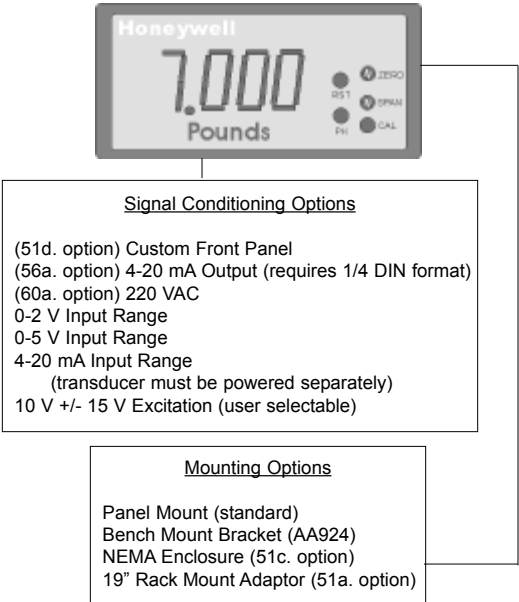
Temperature, Storage.....	-20° to 200° F
Temperature, Operating.....	32° to 130° F

Physical

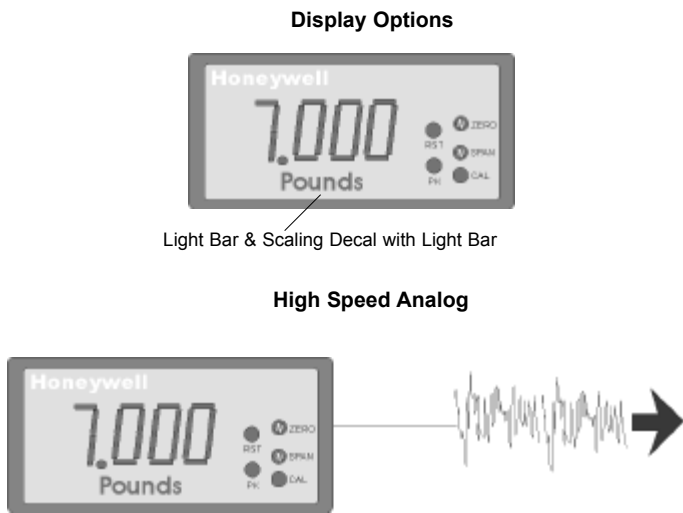
Weight.....	2.25 lb.
Mounting.....	Bench, Rack or Panel (Panel mount included with unit)
Case Size (std.).....	1/8 DIN
Case Material.....	Noryl plastic
Input/ Output Connector.....	Removable with screw terminal

Model GM-A

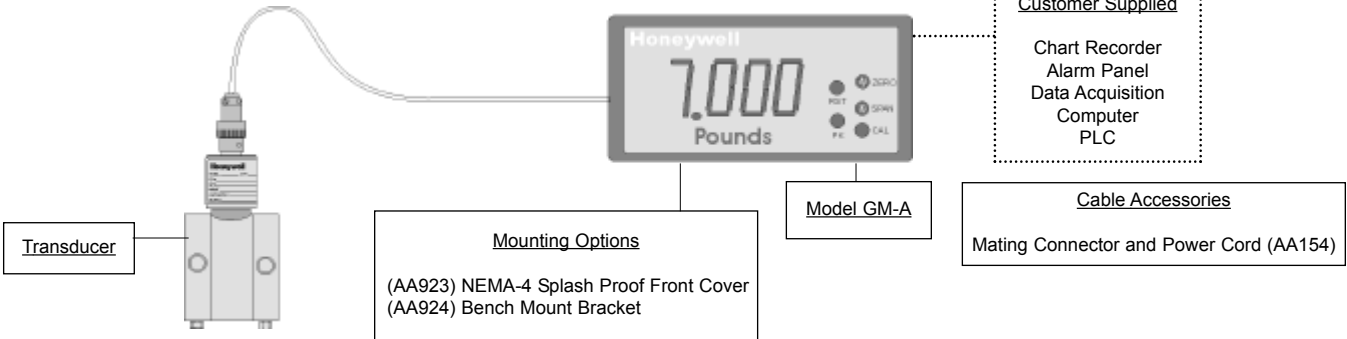
Flexible Platform



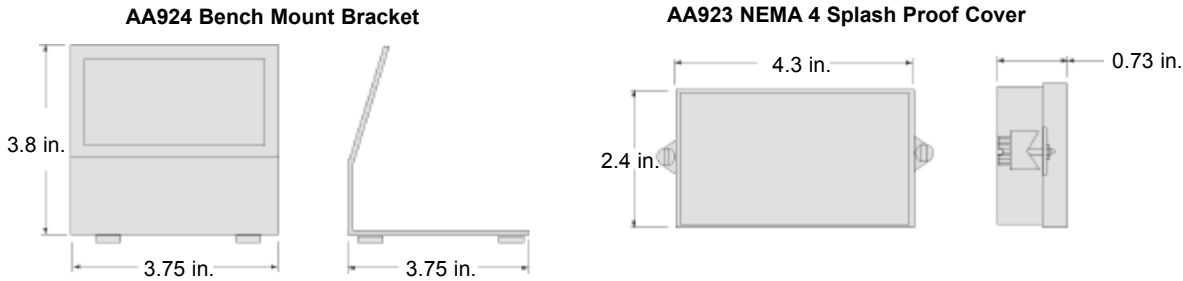
Comprehensive Signal Conditioning



Typical System Diagram



Accessories and Options Dimensions



Options

	Same Day Stock	Built to Order	Built From Scratch
Power Supply	110 VAC	60a. 220 VAC	
Front Panel			51d. Custom front panel
Mounting Options			51a. Rack mount adaptor 51c. NEMA Enclosure

Supplied as standard

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available options.

Sample Code **AE216** **51a**
Model Code Option Code

Model SC500 Programmable Single-Channel Transducer Indicator/ Conditioner

Order Code (See below)

- Choice of Transducer Inputs
- Small 1/8 DIN Form Factor
- Automatic Setup, Calibration via Sig Cal
- Shunt-Cal, mV/V or Known Load Calibration
- Peak/ Valley Capture
- Optional Analog Output and RS-232/ RS-485
- Field Selectable Frequency Response and Calibration



Physical

Form Factor.....1/8 DIN
Case Material.....Aluminum

Environmental

Temperature, Operating.....40° to 105°F (5° to 40°C)
Temperature, Storage.....-40° to 195°F (-30° to 90°C)

Display

Display Type.....Vacuum fluorescent
Numeric Display Format.....+999,999 to -999,999 (0, 1, 2, 3, 4, 5 decimal places)
Digit Size (Normal Mode).....0.2" H x 0.1" W (5mm H x 2.5mm W) (with engineering units)
Digit Size (Large Mode).....0.4" H x 0.2" W (10mm H x 5mm W) (no engineering units)
Engineering Units Display.....4 characters, available in normal mode only
Display Update Per Second.....4

Power

Power Supply Type.....AC (with included wall-mount adapter) or DC
DC Power Supply Requirements.....10 - 26 VDC @ 1A
AC Wall-Mount Adapter (included).....Interchangeable plugs for use in the Americas, Europe, the United Kingdom and Australia (100 - 240 VAC)

Analog Output (optional)

Voltage Range.....5, +/-5, 10 or +/-10 VDC (field selectable)
Isolation.....500 V
Digital-to-Analog Resolution.....15 bits
Frequency Response.....Same as input

Communications Output (optional)

Serial Setup & Output.....Isolated RS-232 or RS-485 (factory option)
Max. Baud Rate.....38400 Baud

Limits Output (optional)

Quantity.....2 Form C or 3 Form A (factory option)
Response Time.....Same as input
Relay Energized when Signal is.....less than, greater than, inside or outside set points
Contact Ratings.....1A @ 30 VDC, 0.5 A @ 50 VAC

Input

	Strain Gage Millivolts	High Level Volts/ mA	AC/AC LVDT
Order Code	AE236	AE237	AE238
Transducer Type	unamplified pressure or load	amplified pressure or load, DC/DC LVDT	LVDT
Range	0.5 to 21 mV/V	+/-5 or +/-10 VDC, 4-20 mA	0.1 to 15 VRMS
Frequency Response & Resolution	See table on next page	See table on next page	See table on next page
Calibration Type (Field Selectable)	Shunt, mV/V, 2-, 3-or 5-point known load	Shunt, 2-, 3-or 5-point known load	2-, 3-or 5-point known load
Transducer Excitation	5 VDC @ 60 mA max.	+12 VDC, +/-15 VDC, +28 VDC	3 VAC @ 5 kHz
Push-button 100% Tare	Yes	Yes	Yes
Push-button Shunt Test	Yes	Yes	No

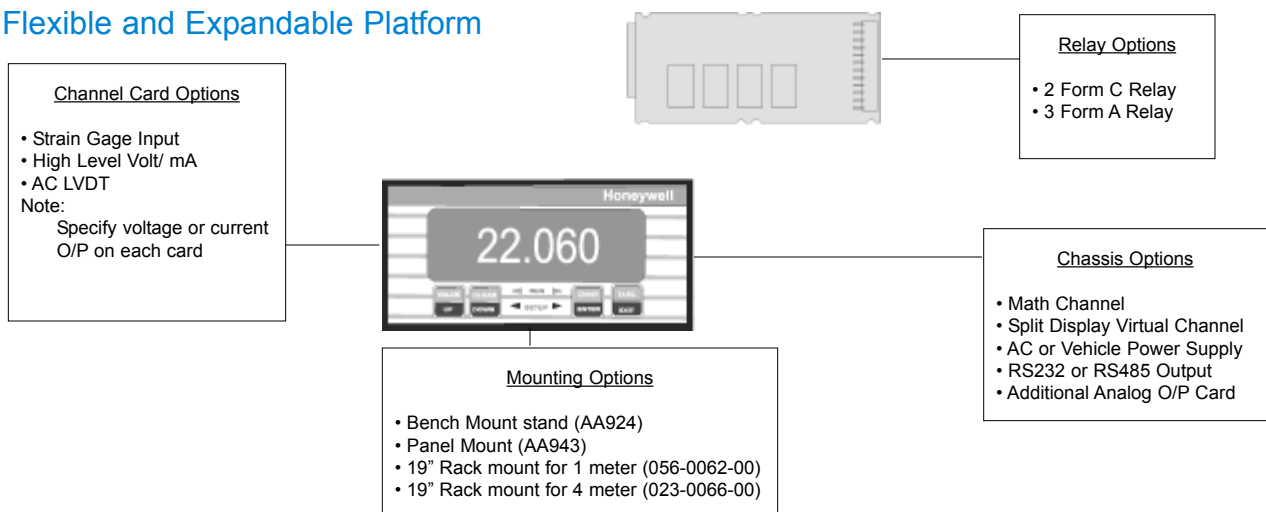
1-888-282-9891

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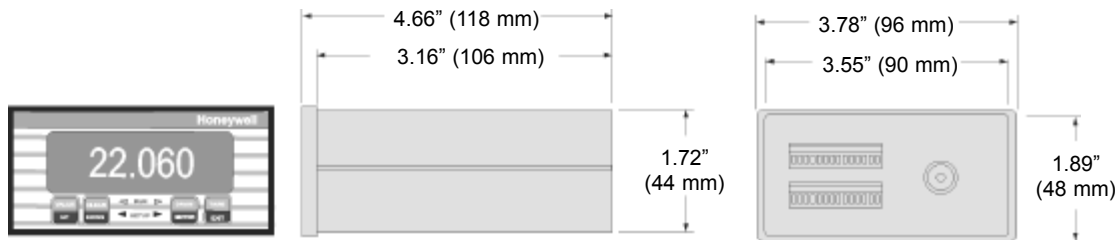
Input (continued)

Frequency Response (Hz) (Field Selectable)	Step Response (ms) (typical)	Resolution (counts) (not including min. 10% overrange/ underrange capability)		
		Strain Gage	High Level	AC/AC LVDT
2 (fast mode)	40	+/- 50,000	+/- 50,000	+/- 25,000
2	440	+/- 50,000	+/- 50,000	+/- 25,000
8	110	+/- 25,000	+/- 25,000	+/- 15,000
16	55	+/- 20,000	+/- 25,000	+/- 10,000
32	28	+/- 10,000	+/- 20,000	+/- 10,000
50	16	+/- 5,000	+/- 15,000	+/- 5,000
100	8	+/- 5,000	+/- 10,000	+/- 5,000
250	3	+/- 2,000	+/- 10,000	+/- 2,000

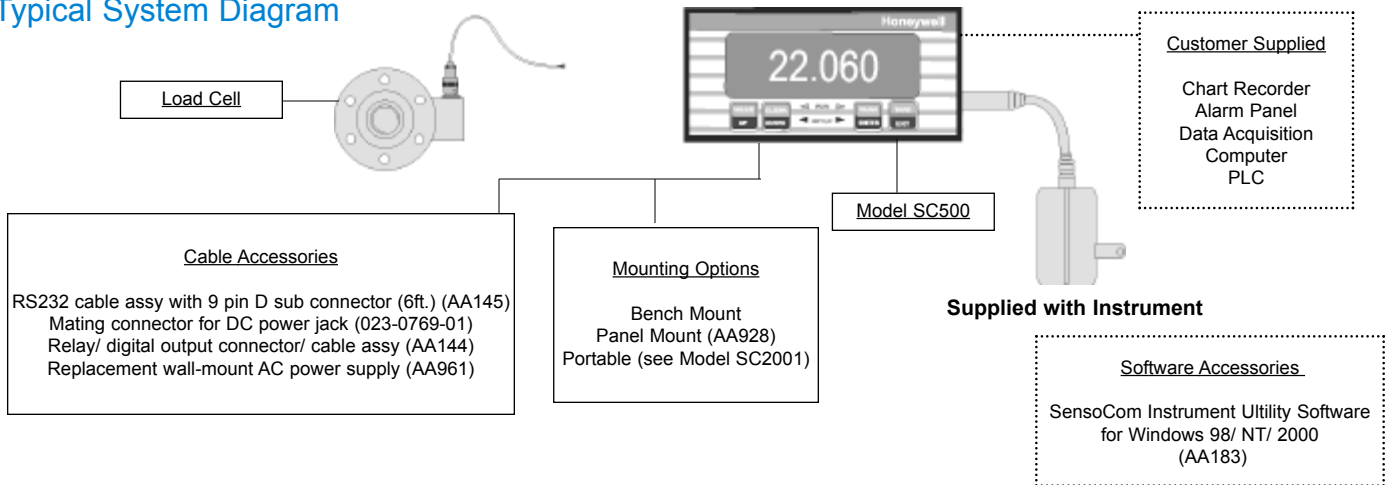
Flexible and Expandable Platform



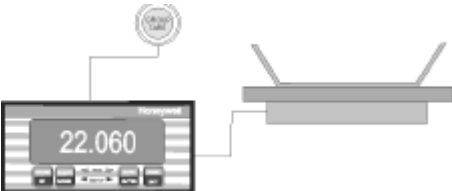
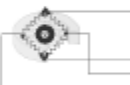
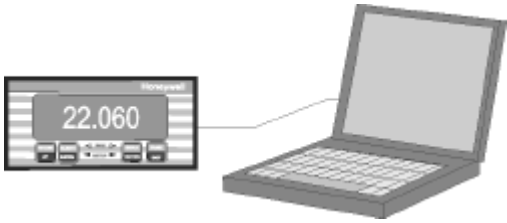
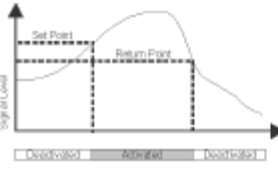
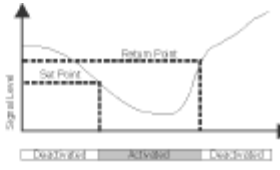
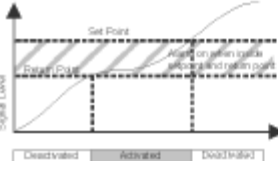
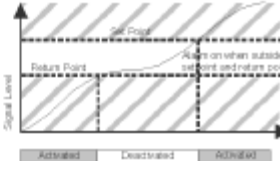
Dimensions



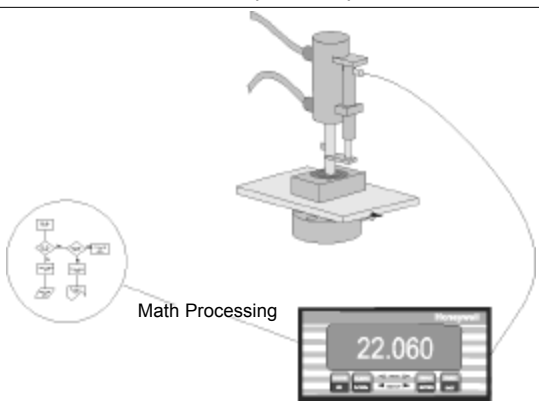
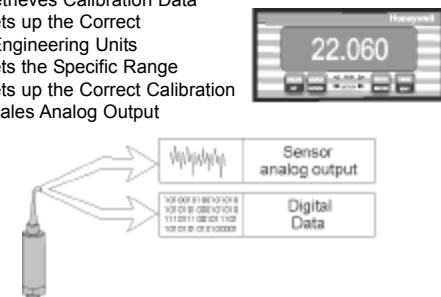
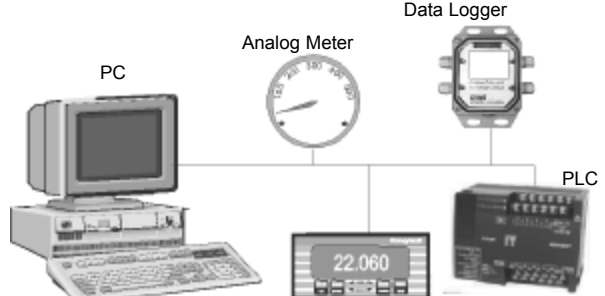
Typical System Diagram



SC500 Capabilities

Front Panel or Remote Tare	Flexible User Setup
	Update signature module Number of decimal places Serial communications (optional)  Output voltage (optional) Engineering units Alarm outputs (optional) Display averaging
mV/V or Shunt Calibration or 5 Point Calibration	Remote Setup
Shunt Calibration  mV/V Calibration  2, 3 or 5 point calibration for applied load, pressure, speed, etc. 	
User Selectable Display Options	Different Alarm Configurations (optional)
Dual line display  Shows status of alarms User selected decimal point 6 digit display  Valley tracking Peak tracking User selected units  Large Display Mode 	Alarm on when setpoint exceeded and until return point is reached  Alarm on when below setpoint and until return point is reached  Alarm on when signal is between setpoint and return point  Alarm on when outside setpoint and return point 

SC500 Capabilities (continued)

User Selectable Filtering 	Math Channel (Optional) Can Act Like PLC 
Sig Cal Auto Set Up Auto Setup Retrieves Calibration Data Sets up the Correct Engineering Units Sets the Specific Range Sets up the Correct Calibration Scales Analog Output 	Analog & Digital Outputs (Optional) PC Analog Meter Data Logger PLC 

Options

	Built to Order
Output Options	53a. RS-232 (not available with 53d) 53d. RS-485 (not available with 53a) 58a. 2 limit set-points with Form C contact relays (not available with 58h) 58h. 3 limit set-points with Form A contact relays (not available with 58a) 58i. Isolated digital-to-analog (DAC) voltage



-Not RoHS Compliant

How to Order

The order code consists of the product model and the available options.

Sample Code: **AE236** **58h**
Model Code Options Code

Model SC1000/ SC2000 Transducer Display & Signal Conditioning Unit

- 1 to 4 Channels
- +/- 6 Digit Display
- "Sig Cal" Auto Set Up
- Pressure, Load, LVDT, Voltage, Current, Strain Gage based Sensor Input
- Alarm Outputs



The SC series models are self-calibrating microprocessor-based Transducer Signal Conditioners when used with Sig Mod equipped transducers. Indicators are available with several different types of input channels and output channels. When used with unamplified strain gage transducers that have the Sensotec *Signature Calibration Module* installed, these instruments will completely self calibrate zero, span, decimal point, and engineering units automatically.

Input channels are available for a variety of transducers. Each input channel includes an excitation power supply and either an isolated voltage or isolated current analog output.

- Unamplified pressure or load
- Pressure or load with internal voltage amplifiers
- Pressure or load with internal or external 2-wire current amplifiers
- AC/AC LVDT
- DC/DC LVDT
- RTD Temperature probes (Pt100)

Available output channels for the Model SC2000 include:

- Contact relays for the 4 standard limits or additional limits (max. 16 limits/ chassis)
- Isolated digital-to-analog voltage (+/- 5 or 0-10 VDC) or current (4-20 mA)

In addition to the physical input and output channels, up to 8 virtual channels can be configured to assist in many applications:

- Summation for weighing
- Floating-point mathematics
- Split screen display
- Conditional programs
- Timer applications
- Units conversion

Four Channel Chassis

The models SC1000 and SC2000 can hold up to 4 physical channels in their 3/8 DIN aluminum bench-top chassis. A bright, dual-line 16-character display can display 5, 6 or 7 numeric digits; simply press a button to select the next channel to be viewed. If configured for split-screen operation, up to 4 channel values can be displayed at the same time. The SC2000 includes 4 open collector limit (alarm) outputs plus peak and valley detection.

General

Model.....	SC1000/ SC2000
Number of Physical Channels.....	1 to 4
Number of Virtual Channels.....	1 to 8
Case Material.....	Aluminum
Form factor.....	3/8 DIN
Mounting.....	Bench (std.)
Size.....	5.6" W x 2.8" H x 8.75" D
Weight.....	4 lb.

Display

Number of Displays.....	1
Number of Lines/ Display.....	2
Number of Characters/ Line.....	16
Scaling.....	Automatic or manual setup
Max. Display Count.....	9,999,999
Decimal Point Selection.....	0 to 5
Display Type.....	Vacuum/ Fluorescent

Environmental

Temperature, Storage.....	-20° to 200°F
Temperature, Operating.....	40° to 105° F

Special Features

(for SC2000 only)

Limits Setup.....	Front panel
Limits Output (std.).....	Open-collector
Limits Output (Relay Output Channel).....	Contact relays
Limits Quantity.....	4 std., 16 max. (contact relays)
Peak/ Valley Hold on Input Channels.....	Yes
Digital, Isolated Control Inputs.....	4
Approvals.....	CE approved (except vehicle powered unit)
Interfaces.....	Signature Calibration

Communications

Serial Setup & Output.....RS-232/ RS-485
 Isolation.....500 V
 Max. Baud Rate.....38400

Power

Power Consumption.....max. 200 VA (at startup)
 Standard AC Powered.....100 to 230 VAC, 47 to 63 Hz
 Excitation Drive.....120 mA max.

Input Amplifier Cards

All input cards include non-isolated open-collector control inputs that can be field configured for any one of the following functions: • Track hold • Peak/ Valley hold • Tare on • Tare off

Input	Strain Gage Millivolts	High Level Volts/ mA	RTD Millivolts	AC/AC LVDT
Transducer Types	unamplified sensors	amplified pressure or load, DC/DC LVDT	platinum 100 Ohm, alpha = 0.00985	AC/AC LVDT
Ranges*	0.5 to 11 mV/V @ 5V 0.5 to 5.5 mV/V @ 10V	+/-5 or +/-10 VDC 4-20 mA	-328° to 1472°F	0.1 to 15 VRMS
Frequency Response	See table below	See table below	See table below	See table below
Resolution	See table below	See table below	See table below	See table below
Calibration type	shunt; mV/V; 2-, 3- or 5- point	shunt; 2-, 3- or 5-point known load	2-, 3- or 5- point known load	2-, 3- or 5- point known load
Transducer Excitation	5 or 10 VDCw/ sense	+/- 15 VDC, +28 VDC or +12 VDC	10 VDC	3VAC @ 3kHz
Push-button 100% tare	yes	yes	N/A	yes
Push-button Shunt Test	yes	yes	N/A	yes

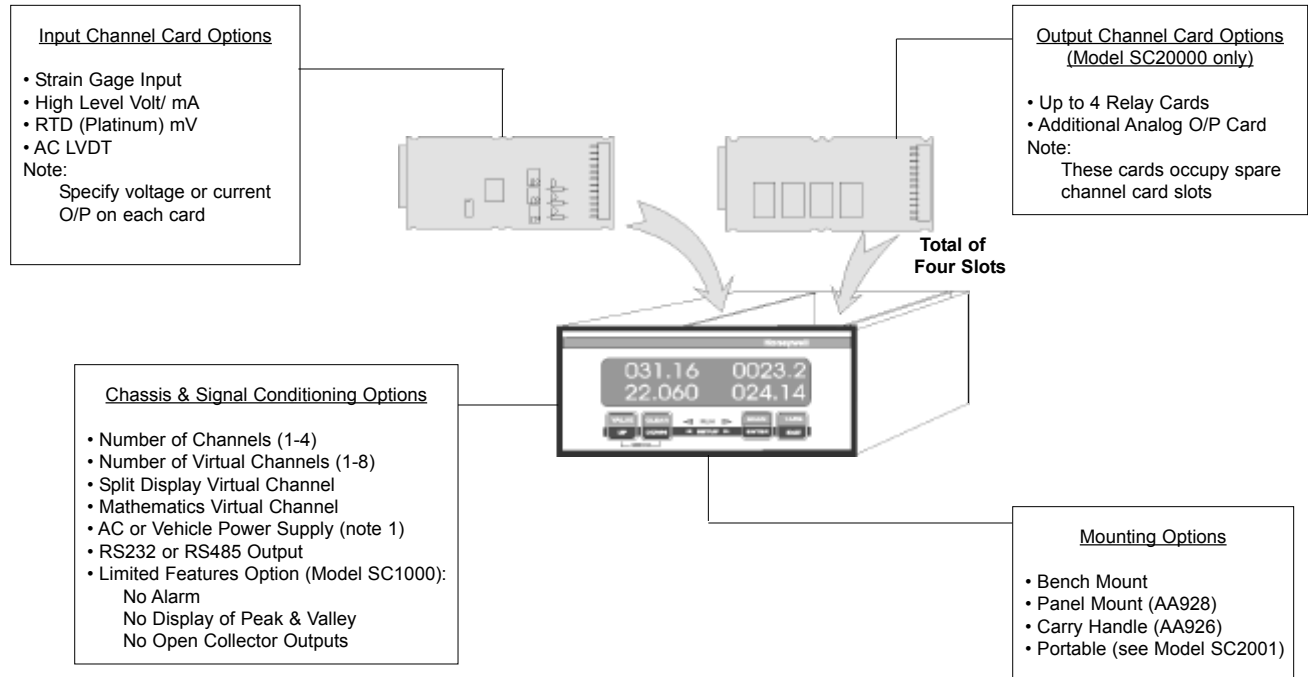
*Ranges are field-programmable, except for RTD input

Output	Strain Gage Millivolts	High Level Volts/ mA	RTD Millivolts	AC/AC LVDT
Voltage Range (Field Selectable)	5, +/-5, 10, +/-10 VDC	5, +/-5, 10, +/-10 VDC	5, +/-5, 10, +/-10 VDC	5, +/-5, 10, +/-10 VDC
Current Range	4-20 mA	4-20 mA	4-20 mA	4-20 mA
Source	any channel	any channel	any channel	any channel
Isolation	500V	500V	500V	500V
Resolution	13 bits	13 bits	13 bits	13 bits
Frequency Response	same as input	same as input	same as input	same as input

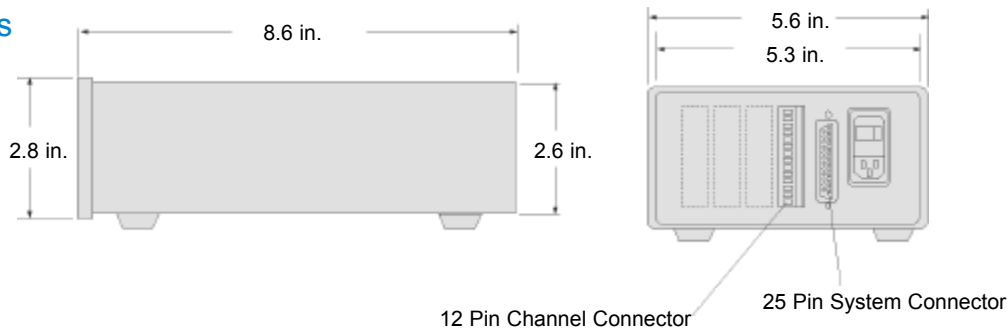
Frequency Response (Hz) (Field Selectable)	Step Response (ms) (typical)	Resolution (counts) (not including minimum 10% overrange/ underrange capacity)		
		Strain Gage/ RTD	High Level	AC/AC LVDT
2 (fast mode)	40	+/- 50,000	+/- 50,000	+/- 25,000
2	440	+/- 50,000	+/- 50,000	+/- 25,000
8	110	+/- 25,000	+/- 25,000	+/- 15,000
16	55	+/- 20,000	+/- 25,000	+/- 10,000
32	28	+/- 10,000	+/- 20,000	+/- 10,000
50	16	+/- 5,000	+/- 15,000	+/- 5,000
100	8	+/- 5,000	+/- 10,000	+/- 5,000
250	3	+/- 2,000	+/- 10,000	+/- 2,000
500	2	+/- 2,000	+/- 4,000	+/- 2,000
800	2	+/- 2,000	+/- 2,500	+/- 2,000

Model SC1000/ SC2000

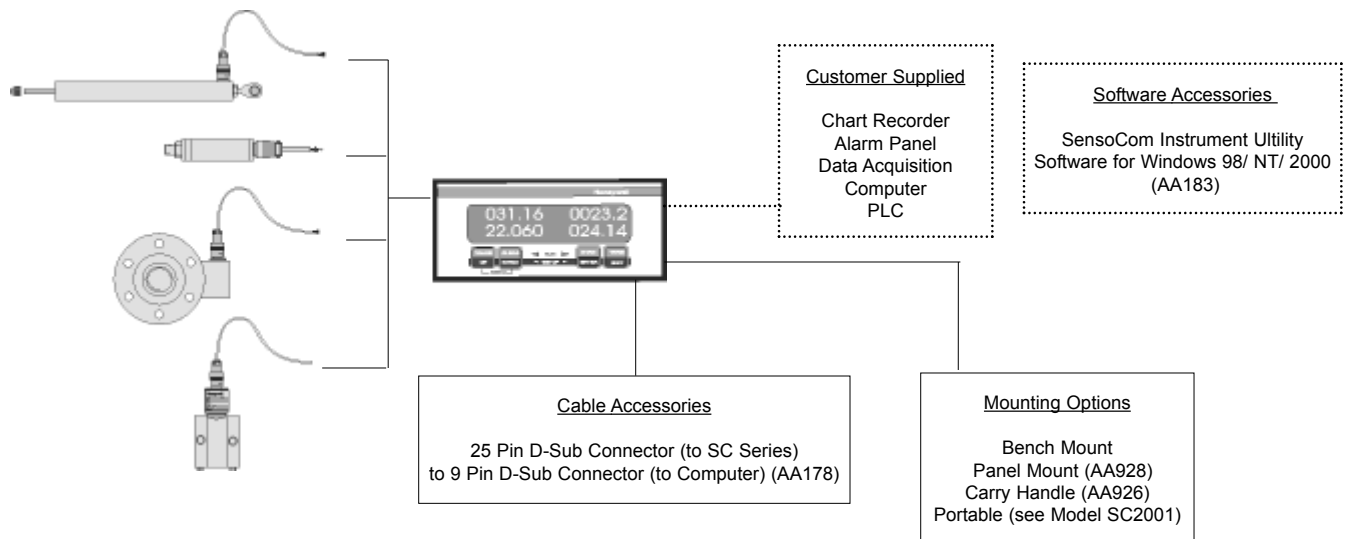
Flexible and Expandable Platform Options



Dimensions



Typical System Diagram

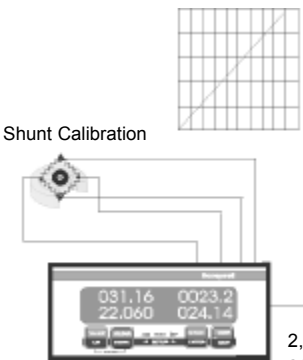
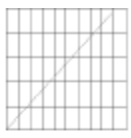


Note:
1. Vehicle power supply is not CE certified.

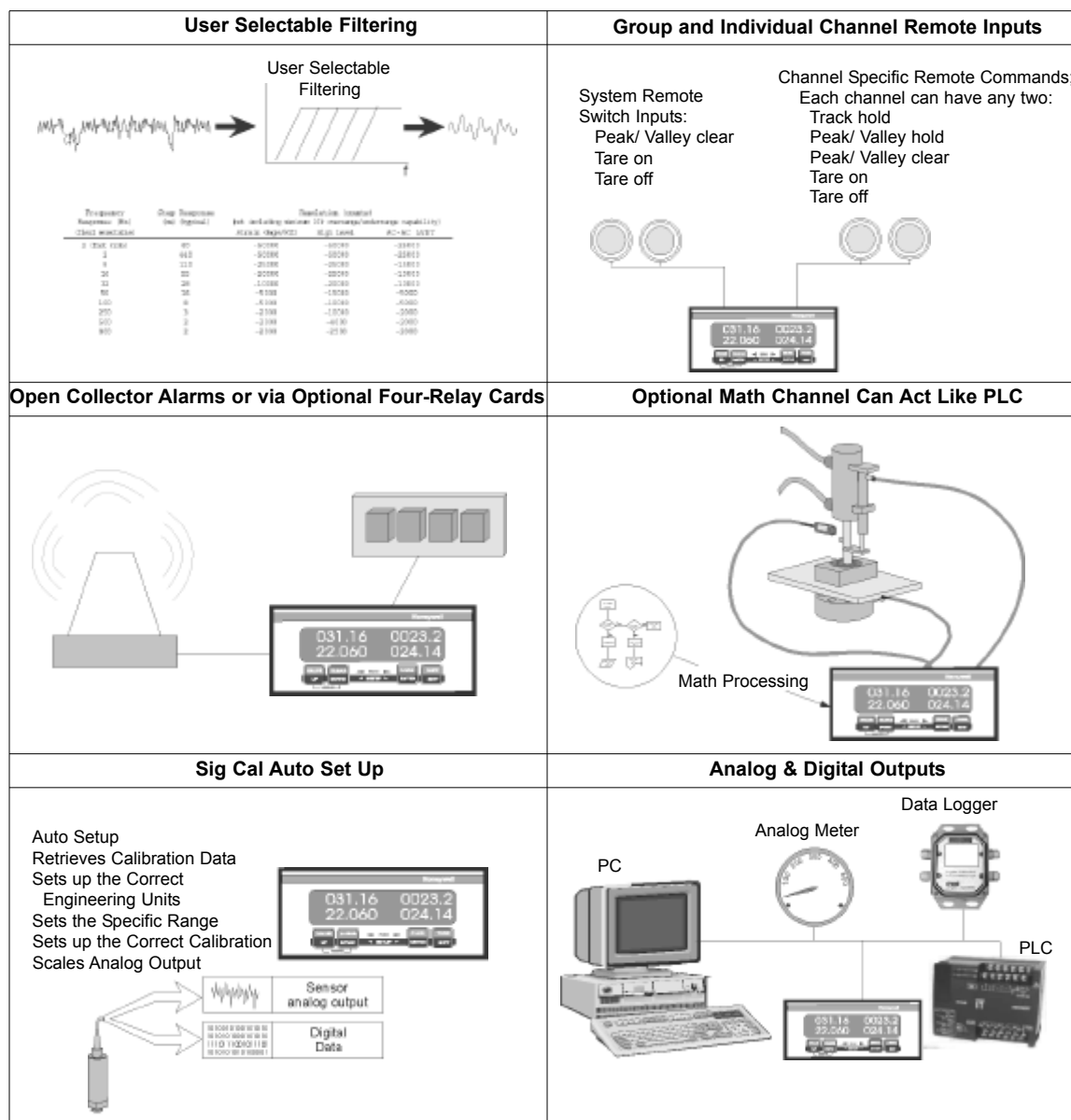
1-888-282-9891

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SC2000 Capabilities

Front Panel or Remote Tare 	Flexible User Setup Number of channels for display Calibration data Serial communications Number of decimal places  Output voltage Engineering units Alarm outputs Display averaging Update signature module
mV/V or Shunt Calibration or 5 Point Calibration Shunt Calibration mV/V Calibration  2, 3 or 5 point calibration for applied load, pressure, speed, etc.	Remote Setup 

SC2000 Capabilities



CE
Approved

-Not RoHS Compliant

How to Order

First, select the order code for the chassis of your instrument.

Readout	Output	SC1000	SC2000
1 Display	RS-232	AE600	AE601
	RS-485	AE616	AE617
1 Display Vehicle Power	RS-232	AE632	AE633
	RS-485	AE648	AE649

Next, select the Channel Input Option Codes and their quantities.

	Strain Gage	High Level	RTD	AC/AC LVDT
Voltage Output	A	C	E	G
Current Output	B	D	F	H

Then select any additional Option Codes and their quantities.

	Option Code	
Relay Output Channel	R	(SC2000 only)
Voltage DAC Output Channel	O	(SC2000 only)
Current DAC Output Channel	P	(SC2000 only)
Split Display Virtual Channel	T	
Mathematics Virtual Channel	S	

Combine the Chassis code, the Channel codes and all other options (with quantities) in alphabetical order.

Sample Code: **AE617** **A2** **R1** **S1**
Chassis Code Channel Option Codes with Quantities

For example, order code AE617,A2,R1,S1 specifies SC2000 instrument with RS485 output, 2 strain gage input channels, 1 relay output card and 1 math channel. Note the options codes are listed in alphabetical order.

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Model SC3004 Transducer Display & Signal Conditioning Unit

- 1 to 14 Channels
- +/- 6 Digit Display
- "Sig Cal" Auto Set Up
- Pressure, Load, LVDT, Voltage, Current, Strain Gage based Sensor Input
- Alarm Outputs



The SC series models are self-calibrating microprocessor-based Transducer Signal Conditioners. Indicators are available with several different types of input channels and output channels. When used with unamplified strain gage transducers that have the Sensotec *Signature Calibration Module* installed, these instruments will completely self calibrate zero, span, decimal point, and engineering units automatically.

Input channels are available for a variety of transducers. Each input channel includes an excitation power supply and either an isolated voltage or isolated current analog output.

- Unamplified pressure or load
- Pressure or load with internal voltage amplifiers
- Pressure or load with internal or external 2-wire current amplifiers
- AC/AC LVDT
- DC/DC LVDT
- RTD Temperature probes (Pt100)

Available output channels for the Model SC3004 include:

- Contact relays for the 4 standard limits or an additional 4 limits per card up to 16 limits
- Isolated digital-to-analog voltage (+/- 5 or 0-10 VDC) or current (4-20 mA)

In addition to the physical input and output channels, up to 8 virtual channels can be configured to assist in many applications:

- Summation for weighing
- Floating-point mathematics
- Split screen display
- Conditional programs
- Timer applications

Fourteen Channel Chassis

Model SC3004 can hold up to 14 physical channels in its 19", 2U rack-mount enclosure. Up to three quad-line displays can be installed which will display the values of up to 12 channels. Split displays can increase display capacity.

General

Model.....	SC3004
Number of Physical Channels.....	1 to 14
Number of Virtual Channels.....	8
Case Material.....	Aluminum
Form factor.....	2U rack
Mounting.....	rack or bench with included rubber feet
Size.....	19" W x 3.5" H x 8.75" D
Weight.....	11 lb.

Display

Number of Characters/ Lines.....	20
Number of Line/ Display.....	4
Number of Displays.....	1, 2 or 3 (max. 12 Channel display)
Scaling.....	Automatic or manual setup
Max. Display Count.....	9,999,999
Decimal Point Selection.....	0 to 5
Display Type.....	Vacuum/ Fluorescent

Environmental

Temperature, Storage.....	-20° to 200°F
Temperature, Operating.....	40° to 105° F

Special Features

Limits Setup.....	Front panel
Limits Output (std.).....	Open-collector
Limits Output (Relay Output Channel).....	Contact relays
Limits Quantity.....	4 std., 16 max. (contact relays)
Peak/ Valley Hold on Input Channels.....	Yes
Digital, Isolated Control Inputs.....	4
Approvals.....	CE approved

Communications

Serial Setup & Output.....RS-232/ RS-485
Isolation.....500 V
Max. Baud Rate.....38400

Power

Power Consumption.....max. 230 VA
Standard AC Powered.....100 to 230 VAC, 47 to 63 Hz
Excitation Drive.....400 mA max.

Input Amplifier Cards

All input cards include non-isolated open-collector control inputs that can be field configured for any one of the following functions: • Track hold • Peak/ Valley hold • Tare on • Tare off

Input	Strain Gage Millivolts	High Level Volts/ mA	RTD Millivolts	AC/AC LVDT
Transducer Types	unamplified pressure or load sensors	amplified pressure or load, DC/DC LVDT	platinum 100 Ohm, alpha = 0.00985	AC/AC LVDT
Ranges*	0.5 to 11 mV/V @ 5V 0.5 to 5.5 mV/V @ 10V	+/-5 or +/-10 VDC 4-20 mA	-328° to 1472°F	0.1 to 15 VRMS
Frequency Response	See table below	See table below	See table below	See table below
Resolution	See table below	See table below	See table below	See table below
Calibration type	shunt; mV/V; 2-, 3- or 5- point	shunt; 2-, 3- or 5-point known load	2-, 3- or 5- point known load	2-, 3- or 5- point known load
Transducer Excitation	5 or 10 VDCw/ sense	+/- 15 VDC, +28 VDC or +12 VDC	10 VDC	3VAC @ 3kHz
Push-button 100% tare	yes	yes	N/A	yes
Push-button Shunt Test	yes	yes	N/A	yes

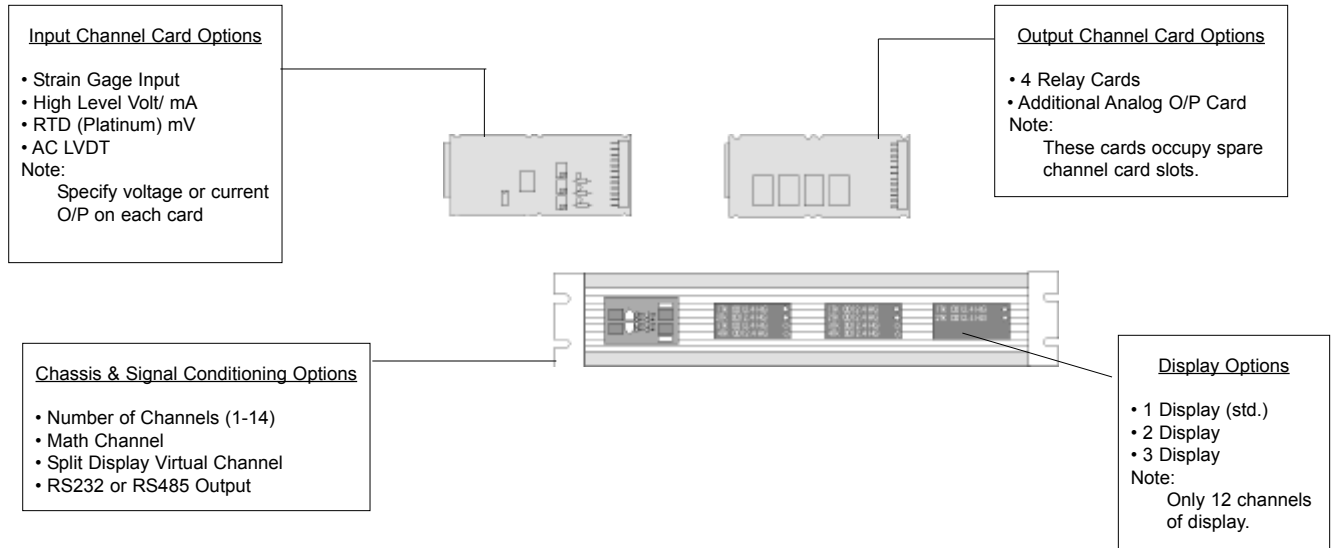
*Ranges are field-programmable, except for RTD input

Output	Strain Gage Millivolts	High Level Volts/ mA	RTD Millivolts	AC/AC LVDT
Voltage Range (Field Selectable)	5, +/-5, 10, +/-10 VDC	5, +/-5, 10, +/-10 VDC	5, +/-5, 10, +/-10 VDC	5, +/-5, 10, +/-10 VDC
Current Range	4-20 mA	4-20 mA	4-20 mA	4-20 mA
Source	any channel	any channel	any channel	any channel
Isolation	500V	500V	500V	500V
Resolution	13 bits	13 bits	13 bits	13 bits
Frequency Response	same as input	same as input	same as input	same as input

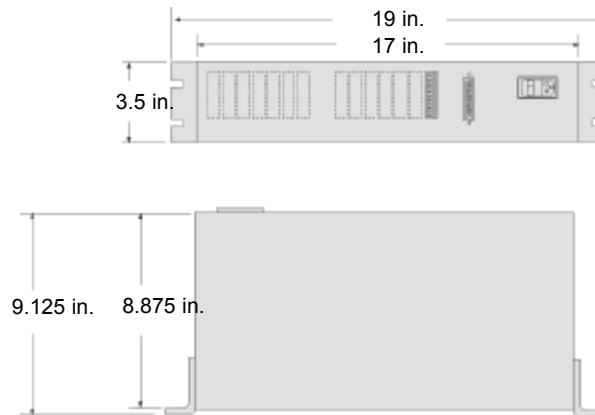
Frequency Response (Hz) (Field Selectable)	Step Response (ms) (typical)	Resolution (counts) (not including minimum 10% overrange/ underrange capacity)		
		Strain Gage/ RTD	High Level	AC/AC LVDT
2 (fast mode)	40	+/- 50,000	+/- 50,000	+/- 25,000
2	440	+/- 50,000	+/- 50,000	+/- 25,000
8	110	+/- 25,000	+/- 25,000	+/- 15,000
16	55	+/- 20,000	+/- 25,000	+/- 10,000
32	28	+/- 10,000	+/- 20,000	+/- 10,000
50	16	+/- 5,000	+/- 15,000	+/- 5,000
100	8	+/- 5,000	+/- 10,000	+/- 5,000
250	3	+/- 2,000	+/- 10,000	+/- 2,000
500	2	+/- 2,000	+/- 4,000	+/- 2,000
800	2	+/- 2,000	+/- 2,500	+/- 2,000

Model SC3004

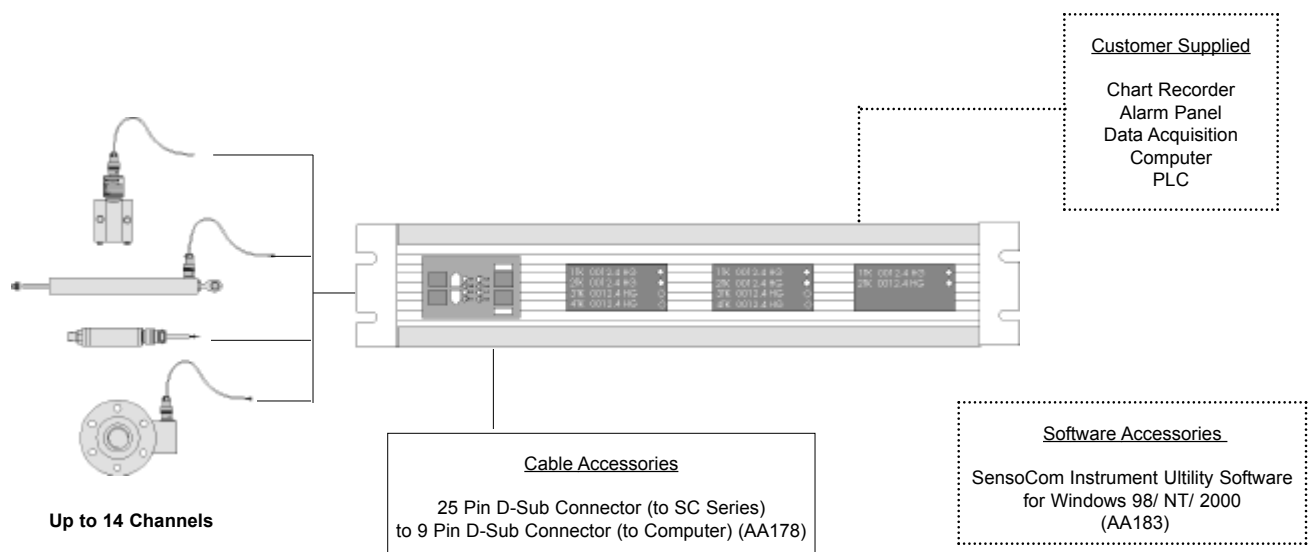
Flexible and Expandable Platform



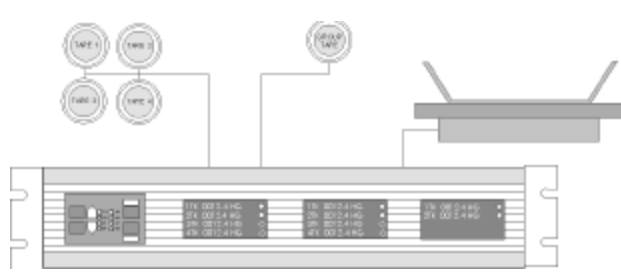
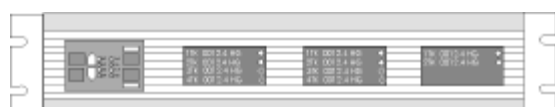
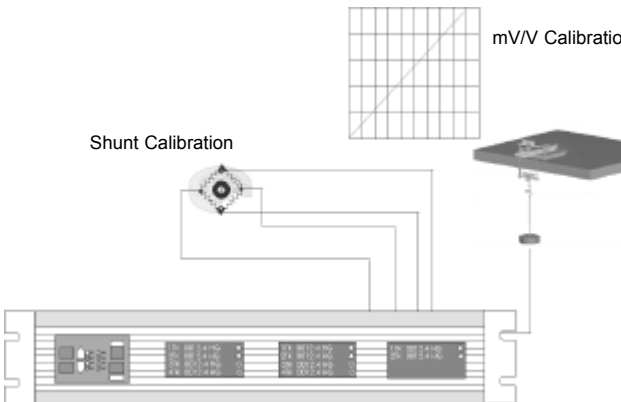
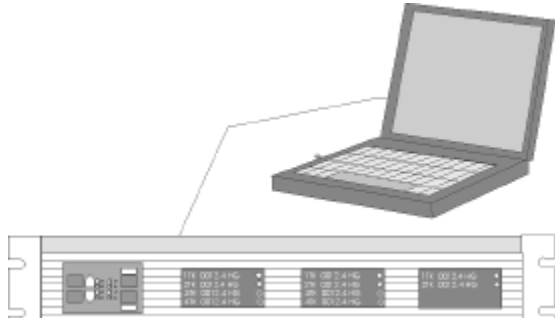
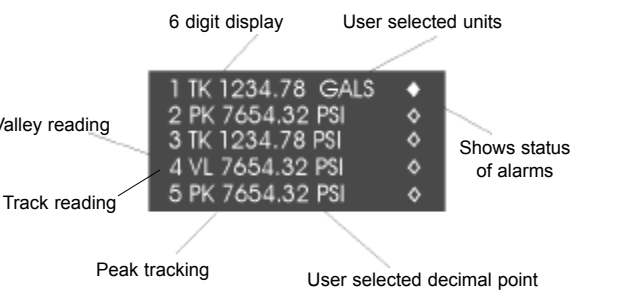
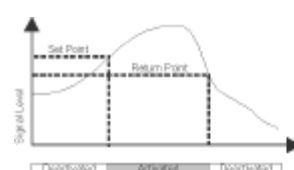
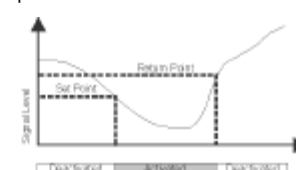
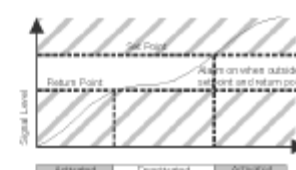
Dimensions



Typical System Diagram



SC3004 Capabilities

Front Panel or Remote Tare 	Flexible User Setup Number of channels for display Calibration data Serial communications Number of decimal places  Output voltage Engineering units Alarm outputs Display averaging Update signature module
mV/V or Shunt Calibration or 5 Point Calibration  mV/V Calibration Shunt Calibration 5 point applied load, pressure, speed, etc. calibration	Remote Setup 
User Selectable Display Options  6 digit display User selected units Valley reading Track reading Peak tracking User selected decimal point Shows status of alarms	Different Alarm Configurations Alarm on when setpoint exceeded and until return point is reached  Alarm on when below setpoint and until return point is reached  Alarm on when setpoint exceeded and until return point is reached  Alarm on when below setpoint and until return point is reached 

SC3004 Capabilities

User Selectable Filtering

Frequency Response (Hz)	Gain Response (dB)	Resolution (mV)	Resolution (mV)	Resolution (mV)
0.0001	40	-10000	-10000	-10000
0.001	40	-10000	-10000	-10000
0.01	40	-10000	-10000	-10000
0.1	40	-10000	-10000	-10000
1	40	-10000	-10000	-10000
10	40	-10000	-10000	-10000
100	40	-10000	-10000	-10000
1000	40	-10000	-10000	-10000
10000	40	-10000	-10000	-10000
100000	40	-10000	-10000	-10000
1000000	40	-10000	-10000	-10000

Group and Individual Channel Remote Inputs

System Remote Switch Inputs:
Peak/ Valley clear
Tare on
Tare off

Channel Specific Remote Commands;
Each channel can have any one:
Track hold
Peak/ Valley hold
Peak/ Valley clear
Tare on
Tare off

Open Collector Alarms or via Optional Four-Relay Cards

Optional Math Channel Can Act Like PLC

Linearity points

Sensotec Model CIP liquid level sensor

Math Processing to convert linearity points

Sig Cal Auto Set Up

Auto Setup
Retrieves Calibration Data
Sets up the Correct Engineering Units
Sets the Specific Range
Sets up the Correct Calibration Scales Analog Output

Analog & Digital Outputs

PC

Analog Meter

Data Logger

PLC

How to Order

First, select the order code for the chassis of our instrument.

Readout	Output	Order Code
1 Display	RS-232	AE606
	RS-485	AE622
2 Display	RS-232	AE607
	RS-485	AE623
3 Display	RS-232	AE608
	RS-485	AE624

Next, select the Channel Input Option Codes and their quantities.

	Strain Gage	High Level	RTD	AC/AC LVDT
Voltage Output	A	C	E	G
Current Output	B	D	F	H

Combine the Chassis code, the Channel codes and all other options (with quantities) in alphabetical order.

Sample Code: **AE606** **A4** **R2** **S1**
Chassis Code Channel Option Codes with Quantities

For example, order code AE606,A4,R2,S1 specifies SC3004 instrument with a single display, RS232 output, 4 strain gage input channels, 2 relay output cards and 1 math channel. Note the options codes are listed in alphabetical order.



Approved

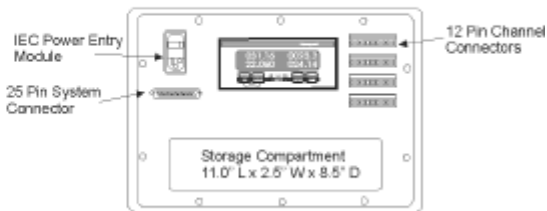
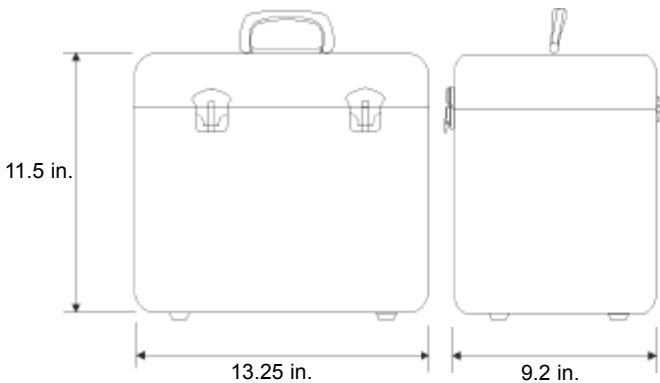
-Not RoHS Compliant

Model SC2001 Transducer Display & Signal Conditioning Unit

- Portable Mounting for SC2000
- Vehicle Power or AC Power Input
- Easy Hook up of Sensors
- Pressure, Load, LVDT Voltage Current, Strain Gage Based Sensor Input
- Convenient Cable Storage



Dimensions



General

Model.....SC2001
Case Material.....Aluminum
Form factor.....Suitcase
Mounting.....Portable
Size.....13.25" W x 11.5" H x 9.2" D

Display, Environmental, Special
Features, Communications, Power,
Input Amplifier Cards, Capabilities,
Options, System Diagram

See SC2000 Datasheet



Approved

-Not RoHS Compliant

How to Order

First, select the order code for the chassis of your instrument.

Readout	Output	SC2001
1 Display	RS-232	AE602
	RS-485	AE618
1 Display	RS-232	AE634
Vehicle Power	RS-485	AE650

Next, select the Channel Input Option Codes and their quantities.

	Strain Gage	High Level	RTD	AC/AC LVDT
Voltage Output	A	C	E	G
Current Output	B	D	F	H

Then select any additional Option Codes and their quantities.

	Option Code
Split Display Virtual Channel	T
Mathematics Virtual Channel	S

Combine the Chassis code, the Channel codes and all other options (with quantities) in alphabetical order.

Sample Code: **AE618** **A2** **S1** **T1**
Chassis Code Channel Option Codes with Quantities

For example, order code AE618,A2,S1,T1 specifies SC2001 instrument with RS485 output, 2 strain gage input channels, 1 math channel and 1 split display channel. Note the options codes are listed in alphabetical order.

Model NK Portable Display/ Signal Conditioner

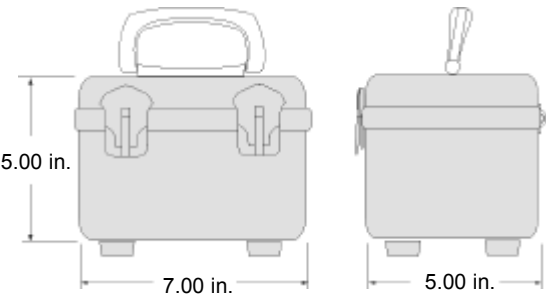
Order Code AE221

- Bridge Based Transducer Input
- 4-1/2 Digit LED Display
- Battery Powered
- Analog Output Option



The Model NK portable instrument features a full 4 1/2 digit display and is designed for use in remote field operations as a portable calibrator or readout device. Shunt calibration offers the operator quick field setup with a minimum of warm-up. A peak/ hold feature is optional.

Dimensions

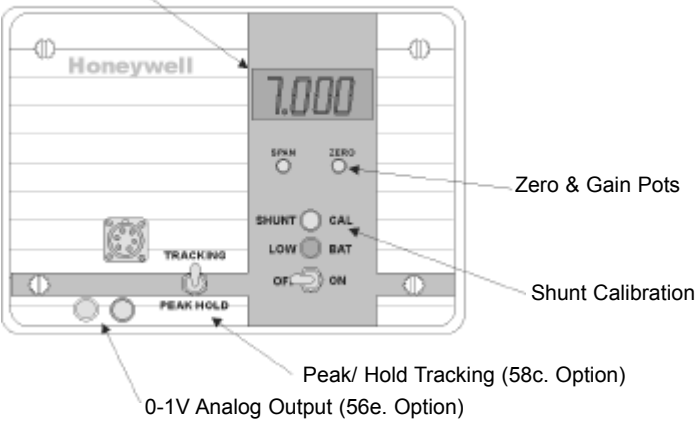


Wiring Code

A	(+) Excitation
B	(+) Sense
C	(-) Excitation
D	(-) Sense
E	(-) Input
F	(+) Input

Features

4 1/2 Digit Display



General

Number of Channels.....1
Material.....Deep drawn aluminum case

Environmental

Temperature, Operating.....32° to 130° F
Temperature, Storage.....-20° to 150° F
Power Requirement.....Batteries- 4 "D" cells

Transducer Interface

Transducer Excitation.....4 VDC
Types of Inputs Accepted.....0.5 to 4 mV/V
Transducer Bridge Range.....350 Ohms
Pushbutton Shunt Cal.....Yes
Calibration Method.....Manual
Electrical Connection Type.....PT02A-10-6S (note 1)
Zero Balance.....+/- 15% of Full Scale (min.)
Noise & Ripple.....30 microvolts

Notes:

1. PT06A-10-6P (SR) mating connector, order code AA119

1-888-282-9891

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Model NK

Amplifier Characteristics

Full Scale Outputs Available.....	0-1V (optional)
Output Impedance.....	< 1 Ohm (optional)
Non-linearity.....	+/- 0.02% of Full Scale (max.)
Drift	
Zero.....	+/- 5 mV (max.)
Span.....	+/- 5 mV (max.)
Stability	
Zero.....	0.1% of Full Scale/ year
Span.....	0.1% of Full Scale/ year
Frequency Response.....	1,000 Hz
Fine Span Adjustment.....	+/- 15% of Range
Coarse Span Adjustment.....	100% of Range
Fine Zero Adjustment.....	+/- 15% of Range
Coarse Zero Adjustment.....	100% of Range
Short Circuit Protection.....	Yes

Digital Display Characteristics

Number of Display Characters.....	4-1/2
Conversion/ second.....	1.5
Scaling.....	0-19,999
Scaling Method.....	Potentiometer
Maximum Display Count.....	19,999
Polarity Indications.....	Yes
Programmable Decimal Points.....	Yes
Display Size.....	0.4 in.
Overrange Indication.....	Yes
Resolution.....	1/20,000
Type.....	LCD
Maximum Sensitivity.....	1 microvolt/ count
Peak/ Hold.....	Yes (optional)

Physical Characteristics

Weight.....3 lb.

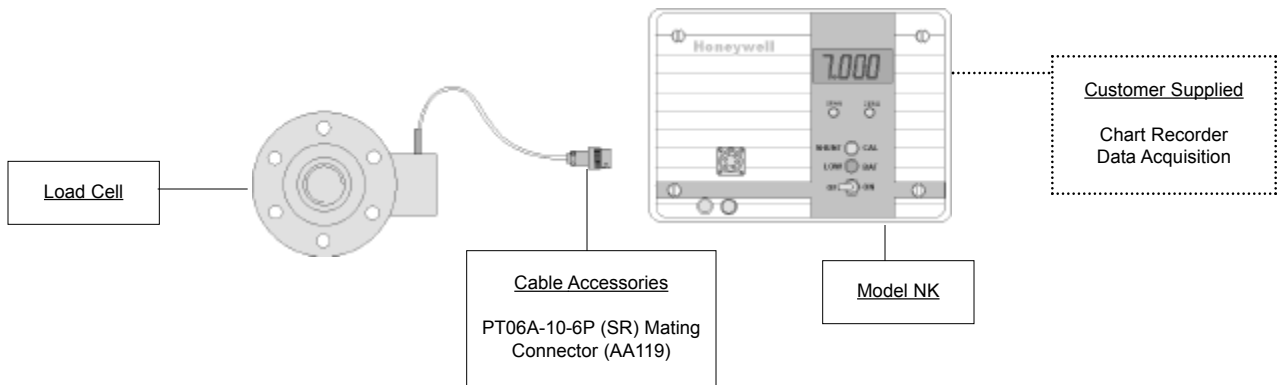
Power Supply

Power Requirements.....4 "D" cells

Front Panel

Digital Display.....4-1/2 digits LCD
Environmentally Sealed.....Weatherproof case

Typical System Diagram



Options

	Built to Order
Input	52c. 0-4.5 mV/V to 0-40 mV/V
Outputs	56e. 0-1 VDC
Special Features	58c. Peak/ Hold 58m.Knob Potentiometer Adjustments

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available options.

Sample Code **AE221** **56e**
Model Code Options Code

1-888-282-9891

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Model HH Portable Display/ Signal Conditioner

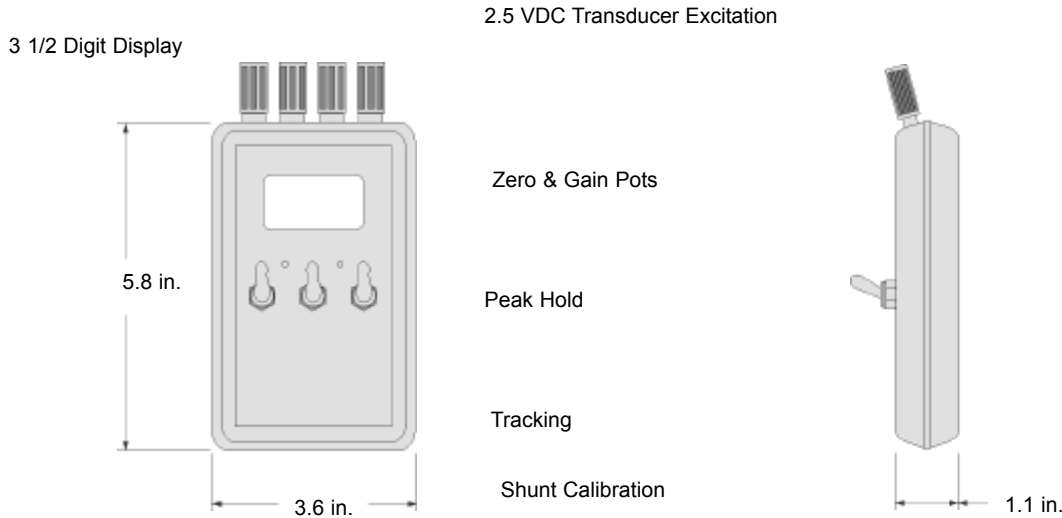
Order Code AE222

- Bridge Based Transducer Input
- 3-1/2 Digit LED Display
- Battery Powered
- Peak Hold & Shunt Cal Features



The Model HH handheld instrument features a full 3 1/2 digit display and is designed for use in remote field operations as a portable calibrator or readout device. Shunt calibration offers the operator quick field setup with a minimum of warm-up. A peak/ hold feature is standard.

Dimensions



General

Number of Channels.....	1
Material.....	Hand-held plastic case

Environmental

Temperature, Operating.....	32° to 130° F
Temperature, Storage.....	-20° to 150° F
Power Requirement.....	Battery - one 9V cell

Transducer Interface

Transducer Excitation.....	2.5 VDC
Types of Inputs Accepted.....	0.5 to 8 mV/V
Transducer Bridge.....	120 Ohms min.
Pushbutton Shunt Cal.....	Yes
Calibration Method.....	Manual
Electrical Connection Type.....	4 banana jacks
Zero Balance.....	+/- 15% of Full Scale (min.)
Noise & Ripple.....	30 microvolts

Amplifier Characteristics

Non-linearity.....	+/- 0.1% of Full Scale (max.)
Drift	
Zero.....	+/- 50 mV (max.)
Span.....	+/- 50 mV (max.)
Stability	
Zero.....	1.0% of Full Scale/ year
Span.....	1.0% of Full Scale/ year
Frequency Response.....	5 Hz
Fine Span Adjustment.....	+/- 15% of Range
Fine Zero Adjustment.....	+/- 15% of Range
Short Circuit Protection.....	Yes

Model HH

Digital Display
Characteristics

Number of Display Characters.....	3-1/2
Conversion/ second.....	1.5
Scaling.....	0-1,999
Scaling Method.....	Potentiometer
Maximum Display Count.....	1,999
Polarity Indications.....	Yes
Programmable Decimal Points.....	Yes
Display Size.....	0.4 in.
Overrange Indication.....	Yes
Resolution.....	1/2,000
Type.....	LCD
Maximum Sensitivity.....	0.1 microvolt/ count
Peak/ Hold.....	Yes

Physical Characteristics

Weight.....	1 lb.

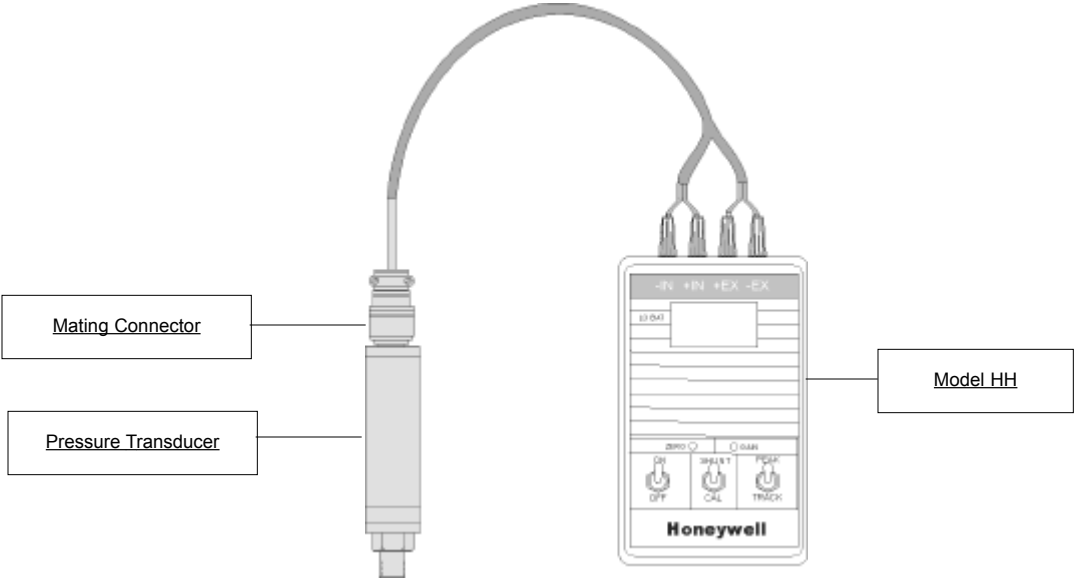
Power Supply

Power Requirements.....	One 9V cell

Front Panel

Digital Display.....	3-1/2 digits LCD

Typical System Diagram



Options

	Built to Order	
Input	52c.	0-4.5 mV/V to 0-40 mV/V

-Not RoHS Compliant

How to Order

The order code consists of the product model and the available options.

Sample Code	AE222	52c
	Model Code	Options Code

Model 1400B/1401 Digital Temperature Monitoring System

Order Code WK1000 (1400B); WK1100 (1401B)

- Non-Contact
- Rugged & Reliable
- Save Energy
- Protect Internal Structures

The Models 1400B and 1401B digital temperature monitoring systems are often ideal for use with internally-fired lime recovery, cement and alumina kilns as well as industrial dryers and incinerators for hazardous waste disposal. They are designed to provide internal temperature data that can be vital in a variety of applications. The 1400 series features a digital transmitter mounted on the exterior of the rotating surface to constantly monitor and transmit data from isolated thermocouples mounted inside or on the skin of the kiln. The system uses inductive power so that temperatures can be obtained continuously from rotating equipment without the use of wires or batteries. The 1401B is used for kiln diameters up to 6 ft, and the 1400B is used for kiln diameters of greater than 6 ft. Consult factory for custom options (special ranges, etc).



ACCURATE Thermocouples provide direct internal temperature readings from process materials inside the kiln. Typically $\pm 1.7^{\circ}\text{C}$ over the measurement range for a Type K thermocouple.

TELEMETRY-BASED Non-contact technology transmits thermocouple data to a receiver. There, it is converted to voltage or current signals. The system is not generally affected by hand-held communication transmitters.

RELIABLE The 1400 series uses digitally coded telemetry transmissions that have high signal-to-noise ratios compared to analog methods. Only valid data is accepted and processed.

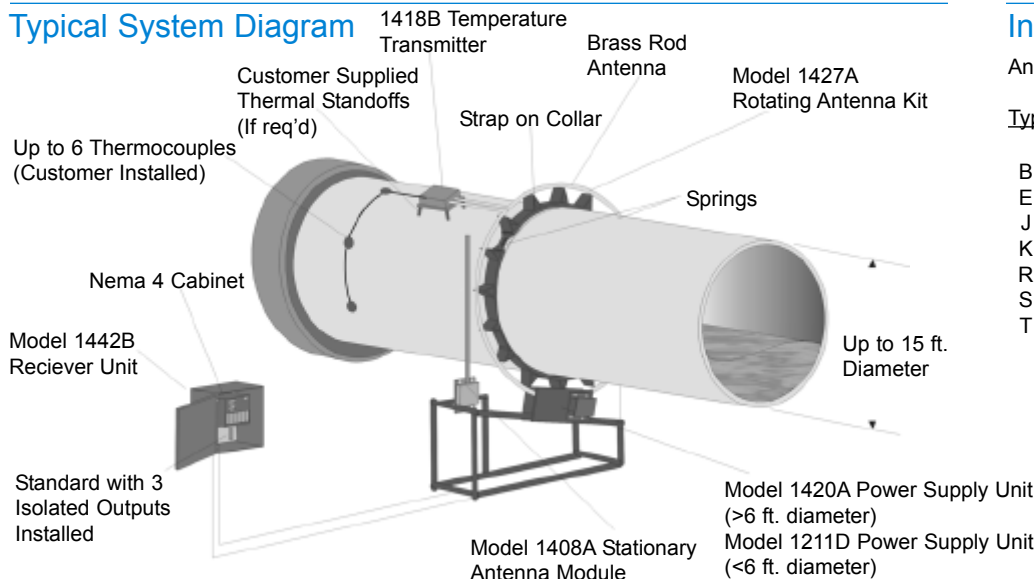
RUGGED This system generally is unaffected by the electrical noise of other equipment. Enclosures are all water and dust tight (NEMA 4). The system operates reliably in the harsh, hot industrial environments of kilns, dryers, and incinerators.

FIELD PROVEN The 1400 series is a third generation design built on years of experience. It can be a reliable method for obtaining accurate internal temperature measurements from difficult-to-access center locations away from either end of the kiln.

Performance

Accuracy.....	25V T/C outputs @ $25^{\circ}\text{C} - \text{V}/^{\circ}\text{C}$ ($\pm 1.7^{\circ}\text{C}$ for Type K thermocouple)	$\pm 1.0^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$
Power Requirements.....	115/230 VAC; 60/60 Hz; 200 VA	
Output		
Current.....	4-20 mA; 0-20 mA (max loop resistance: 600 Ohms)	
Voltage.....	0-5 V; 10 V or 1-5V; 10V	
Display.....	LCD (Alphanumeric - displays system status and sensor outputs with error messages)	
Sampling Rate.....	32/sec/channel	
Input channels per system.....	3 (std., expandable to 6)	
All wiring enclosures.....	Nema 4 type	
Size.....	46"L x 32"W x 43"H	
Weight (approximate).....	175 lb (80Kg)	

Typical System Diagram



Inputs

Any isolated T/C Type, any input channel

Type	Range $^{\circ}\text{C}$	Range $^{\circ}\text{F}$
B	+200 to 1,820	+392 to 3,308
E	-95 to 1,000	-139 to 1,832
J	-109 to 1,000	-139 to 1,832
K	-154 to 1,370	-245 to 2,498
R	-167 to 1,665	-269 to 3,029
S	-167 to 1,665	-269 to 3,029
T	-157 to 400	-251 to 752

-Not RoHS Compliant

How to Order

Please Specify:	Sample Order:
Order Code	WK1000
Thermocouple Type(s)	B (3)
System Outputs	0-10 V
Kiln Diameter (approx.)	10ft.
Special Options	0-50mV input

1-888-282-9891

www.honeywell.com/sensotec

Model 1700A 6 Channel Temperature Monitoring System (RTD Based - Clamp On Collar)

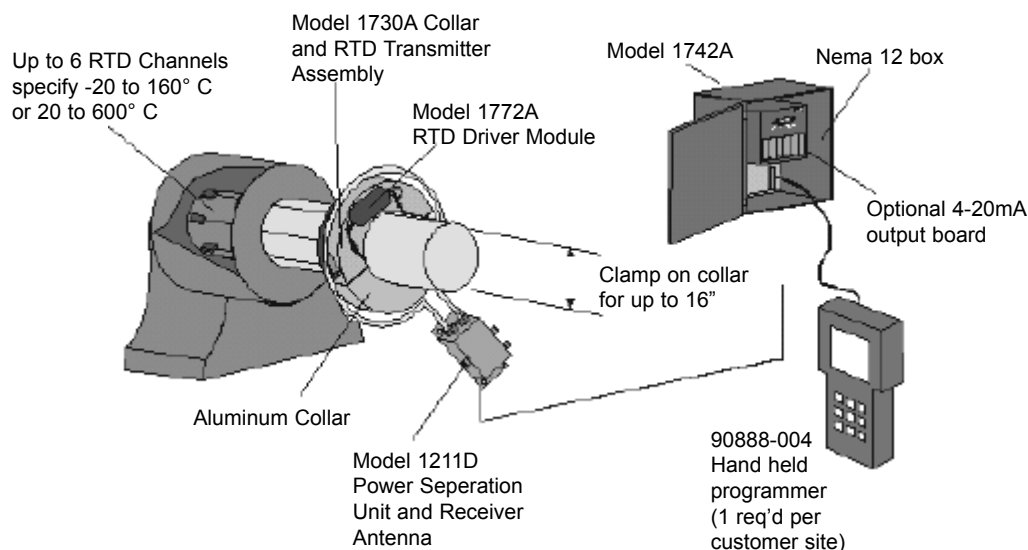
Order Code WE1000

The 1700 Systems are designed as safety instruments for large motors (350 HP and larger). The Systems monitor 6 customer set temperature points, using 100 Ohm platinum RTDs (see Models 1705 and 1706 for Thermocouples) and provide an alarm for over-temperature conditions. The system can be configured to shut down the motors. With modification the systems can monitor ground fault and/or diode fault.

The Model 1700 System scans multiple Resistance Temperature Devices (RTDs) installed within the rotor windings or the starter bars providing data on minute changes in thermal condition of the motor. Reliable temperature monitoring of the windings is key to smooth operation. Overheating is a clear signal of an impending problem.

This system monitors 6 rotor winding temperatures simultaneously, provides all 6 analog outputs simultaneously and will indicate any channel with a temperature greater than a programmable alarm set point. The alarm feature has a relay output. The non-contact transmission method means no-fault path from the rotor to ground exists.

Typical System Diagram



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code WE1000
Order Code

1-888-282-9891

www.honeywell.com/sensotec

Model 1701A 6 Channel Temperature Monitoring System (RTD Based - Strap On Collar)

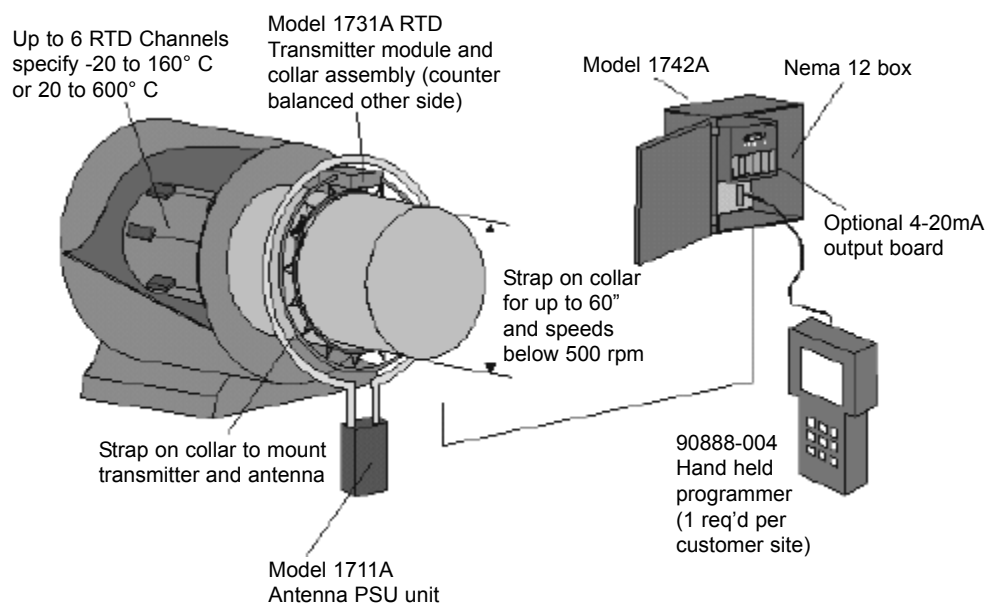
Order Code WE1100

The 1701 Systems are designed as safety instruments for large motors (350 HP and larger). The Systems monitor 6 customer set temperature points, using 100 Ohm platinum RTDs (see Models 1705 and 1706 for thermocouples) and provide an alarm for over-temperature conditions. The system can be configured to shut down the motors. With modification the systems can monitor ground fault and/or diode fault.

The Model 1701 System scans multiple Resistance Temperature Devices (RTD's) installed within the rotor windings or the starter bars providing data on minute changes in thermal condition of the motor. Reliable temperature monitoring of the windings is key to smooth operation. Overheating is a clear signal of an impending problem.

This system monitors 6 rotor winding temperatures simultaneously, provides all 6 analog outputs simultaneously and will indicate any channel with a temperature greater than a programmable alarm set point. The alarm feature has a relay output. The non-contact transmission method means no-fault path from the rotor to ground exists.

Typical System Diagram



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code WE1100
Order Code

1-888-282-9891

www.honeywell.com/sensotec

Model 1705A 6 Channel Temperature Monitoring System (Thermocouple Based - Clamp On Collar)

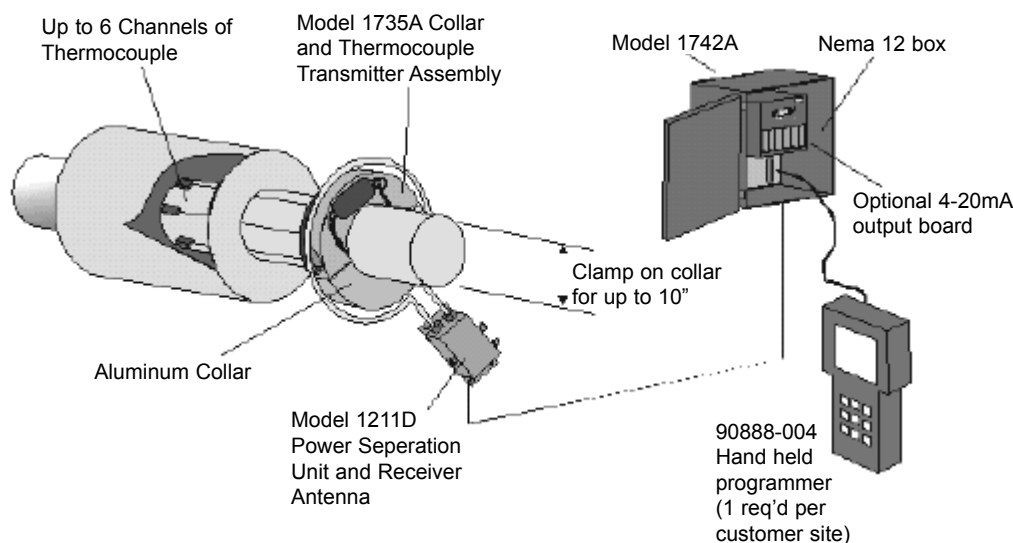
Order Code WE1300

The 1705 Systems are designed as safety instruments for large motors (350 HP and larger). The Systems monitor 6 customer set temperature points, using isolated Thermocouples (see 1700 and 1701 for RTD's) and provide an alarm for over-temperature conditions. The system can be configured to shut down the motors. With modification the systems can monitor ground fault and/or diode fault.

The Model 1705 System scans multiple thermocouples installed within the rotor windings or the starter bars providing data on minute changes in thermal condition of the motor. Reliable temperature monitoring of the windings is key to smooth operation. Overheating is a clear signal of an impending problem.

This system monitors 6 rotor winding temperatures simultaneously, provides all 6 analog outputs simultaneously and will indicate any channel with a temperature greater than a programmable alarm set point. The alarm feature has a relay output. The non-contact transmission method means no-fault path from the rotor to ground exists.

Typical System Diagram



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code **WE1300**
Order Code

1-888-282-9891

www.honeywell.com/sensotec

Model 1706A 6 Channel Temperature Monitoring System (Thermocouple Based - Strap On Collar)

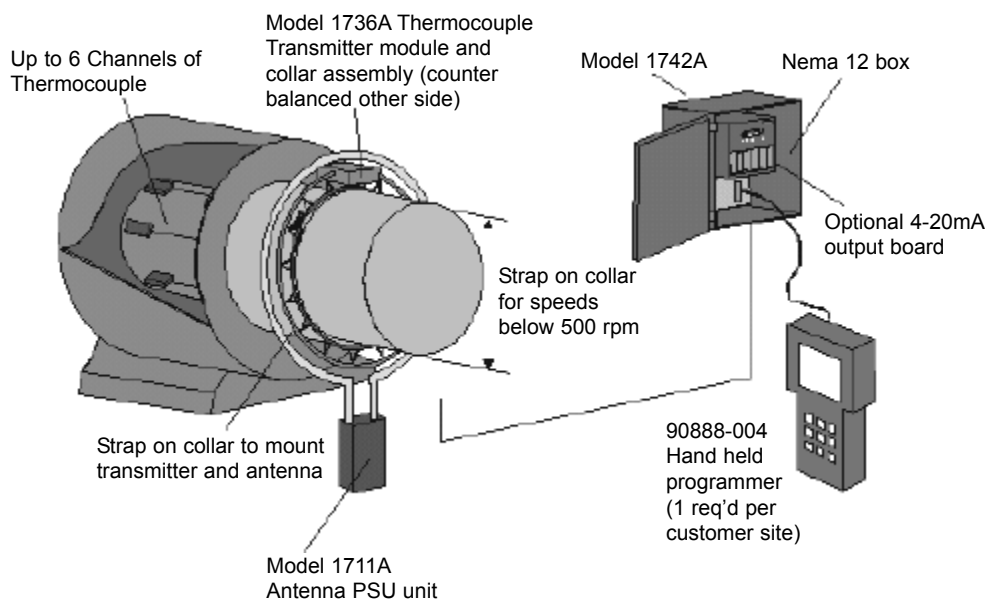
Order Code WE1400

The 1706 Systems are designed as safety instruments for large motors (350 HP and larger). The Systems monitor 6 customer set temperature points, using isolated Thermocouples (see 1700 and 1701 for RTD's) and provide an alarm for over-temperature conditions. The system can be configured to shut down the motors. With modification the systems can monitor ground fault and/or diode fault.

The Model 1706 System scans multiple thermocouples installed within the rotor windings or the starter bars providing data on minute changes in thermal condition of the motor. Reliable temperature monitoring of the windings is key to smooth operation. Overheating is a clear signal of an impending problem.

This system monitors 6 rotor winding temperatures simultaneously, provides all 6 analog outputs simultaneously and will indicate any channel with a temperature greater than a programmable alarm set point. The alarm feature has a relay output. The non-contact transmission method means no-fault path from the rotor to ground exists.

Typical System Diagram



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code **WE1400**
Order Code

1-888-282-9891

www.honeywell.com/sensotec

Model TS Strain Gage Transducer Simulator

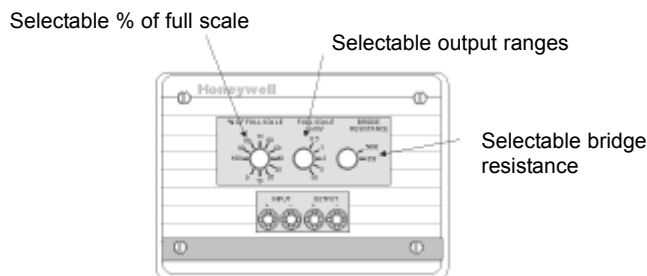
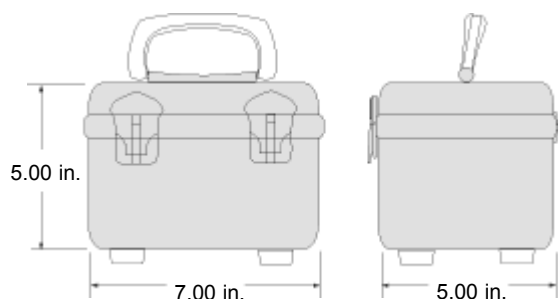
Order Code AE415

- Easy to Use
- Simulates Either 350 or 5,000 Ohm Transducer Bridge
- Rugged, Weatherproof Case
- Precision Wire-Wound Resistors

The Model TS is a strain gage transducer simulator for use in calibration or testing pressure, force, torque or weigh systems indicators and signal conditioning amplifiers. It greatly assists in trouble shooting, and testing of systems that use strain gage transducers. The Model TS simulates either a 350 Ohm or 5,000 Ohm strain gage transducer bridge with precise adjustments for transducer sensitivities in five ranges in 0.5 to 10 millivolts per volt. The output adjustments are in 10% increments from 0 to 100 % of each of the above ranges. No batteries to replace as the excitation voltage is supplied by the instrument to be calibrated.



Dimensions



Electrical

Input Excitation Requirements.....	4.5 to 12 VDC, constant voltage only
Input Resistance.....	350 or 5,000 Ohms
Full-Scale Output Ranges.....	0.5, 1, 2, 5 and 10 mV/V
Output Adjustment.....	0% to 100% in 10% steps
Output Linearity and Hysteresis	
Typical.....	+/- 0.05% of Full Scale
Maximum.....	+/- 0.10% of Full Scale
Output Zero Balance	
350 Ohm Resistance.....	+/- 100 microvolts max.
5,000 Ohm Resistance.....	0.01% of Full Scale max.

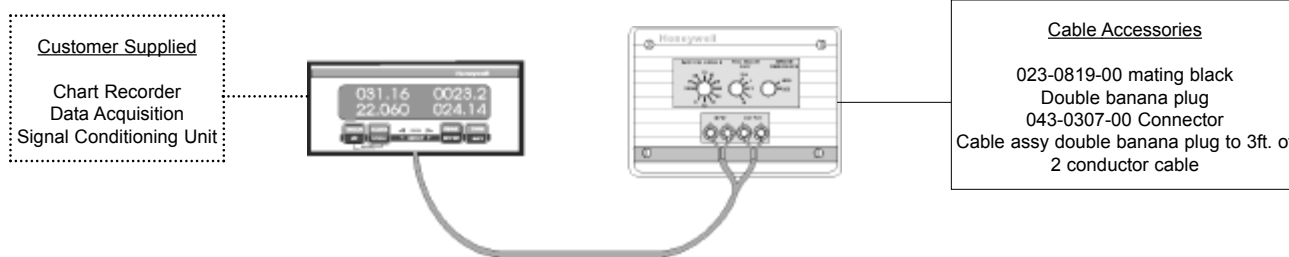
Environmental

Temperature, Operating.....	40° to 100° F
Temperature, Storage.....	-20° to 195° F

Physical

Connections.....	Binding posts for use with wire or banana jackets
Case Size.....	7" W x 5" H x 5" D
Case Material.....	Aluminum
Weight.....	2.5 lb.

Typical System Diagrams



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code **AE415**
Model Code

1-888-282-9891

www.honeywell.com/sensotec

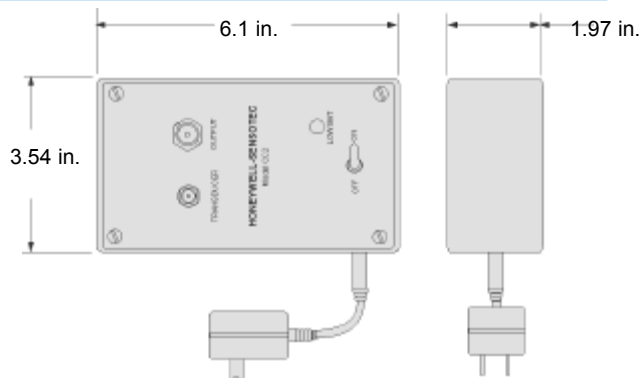
Model CC2 IEPE Accelerometer Power Supply

Order Code AE412

- Constant Current Power Supply
- Used with IEPE Accelerometers
- Adjustable Drive Current
- Battery or AC Powered
- 10 V Output



Dimensions



Power Requirements

Batteries.....9V alkaline (3)
Battery Life.....110 hrs @ 2 mA
Low Battery Indicator.....LED lights at approximately 17.5V

Input Characteristics

Current to Transducer.....Adjustable 1.5 - 10 mA
Input Connector.....Miniature coaxial

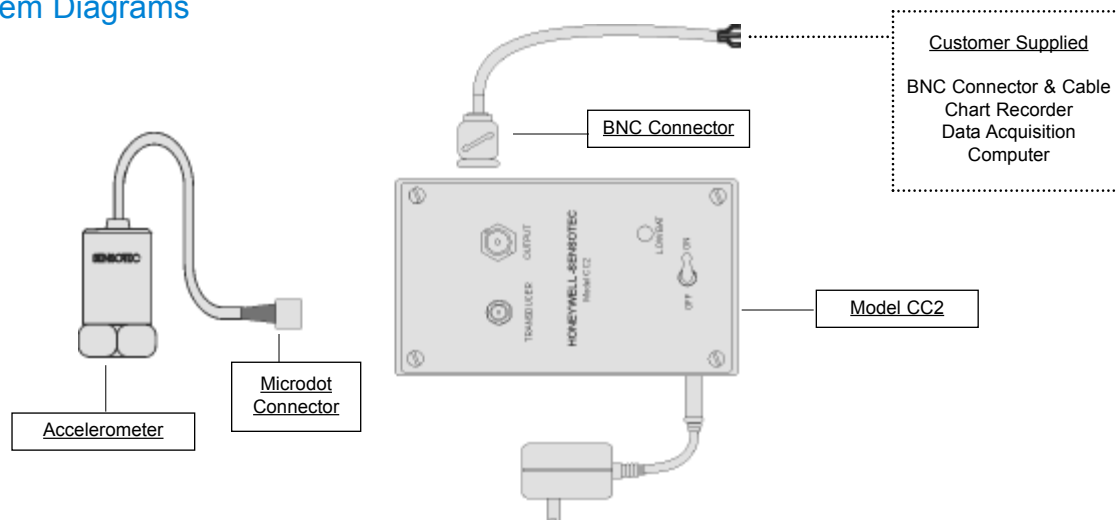
Output Characteristics

Gain.....Unity
Coupling Time Constant.....2 seconds (1 Megohm Load)
Load Impedance.....> 100K
Output Connector.....BNC
Output.....10V peak to peak max.

Physical Characteristics

Size.....5.12" L x 3.7" W x 2.24" H
Temperature.....32° to 150° F

Typical System Diagrams



-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code **AE412**
Model Code

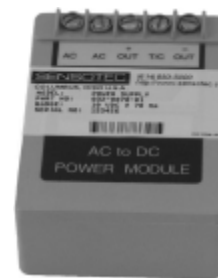
1-888-282-9891

www.honeywell.com/sensotec

DC Power Supply for Amplified Transducers

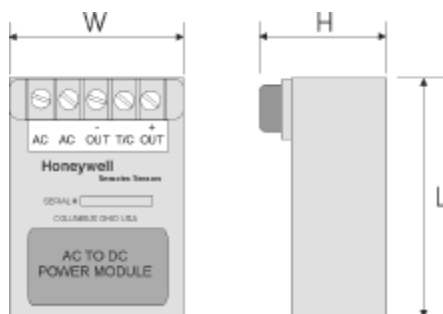
Order Codes (see chart)

- Regulated
- Miniature Size
- Terminal-Strip Connection



Provides regulated voltages ranging from 10 to 28 VDC and output currents to 600 milliamps. Terminal strip connections eliminate soldering. Features include short-circuit protection, encapsulated construction and conservative design aimed at providing long-term stability. Power supplies may be used in series. No derating or heat sinking required.

Dimensions



Power Supplies for in-line amplifiers or internally amplified transducers and transmitters:

Order Code	Output Voltage	Output Current	Height H	L x W
AA951	10 VDC	240mA max	1.4	2.5 x 3.5
AA952	24VDC	600mA max	2.375	3.5 x 2.5
AA953	+/-15 VDC	100mA max	1.375	3.5 x 2.5
AA954	28VDC	500mA max	2.375	3.5 x 2.5
AA955	28VDC	300mA max	1.625	3.5 x 2.5
AA956	28VDC	150mA max	1.375	3.5 x 2.5
AA957	28VDC	80mA max	1.375	3.5 x 2.5

Performance

Input Voltage.....	105-125 VAC, 47-420Hz, Single Phase
Output Specifications.....	see table below
Output Voltage Trim Adjustment.....	Outputs are factory set to +/-1% of nominal output voltage. Single output models may be trimmed to the nominal output voltage with an external trim resistor.
Polarity.....	Either positive or negative terminal of a single output module may be grounded. Dual output modules have a positive/common/negative output terminal configuration.
Impedence.....	0.07 Ohms at 1 kHz (approx.) 0.2 Ohms at 10 kHz (approx.)
Regulation (Line).....	+/- 0.05%
Regulation (Load).....	+/- 0.1%
Ripple.....	1mV RMS
Optional 230 VAC input.....	For operation on an input of 230 VAC, 46-420Hz.

Environmental

Ambient Operating Temperature.....	0° to 150°F
Storage Temperature.....	-67° to 185°F
Temperature Error.....	0.008% F.S./°F nominal

-Not RoHS Compliant

How to Order

Enter the order code.

Sample Code: **AA951**
Model Code

1-888-282-9891

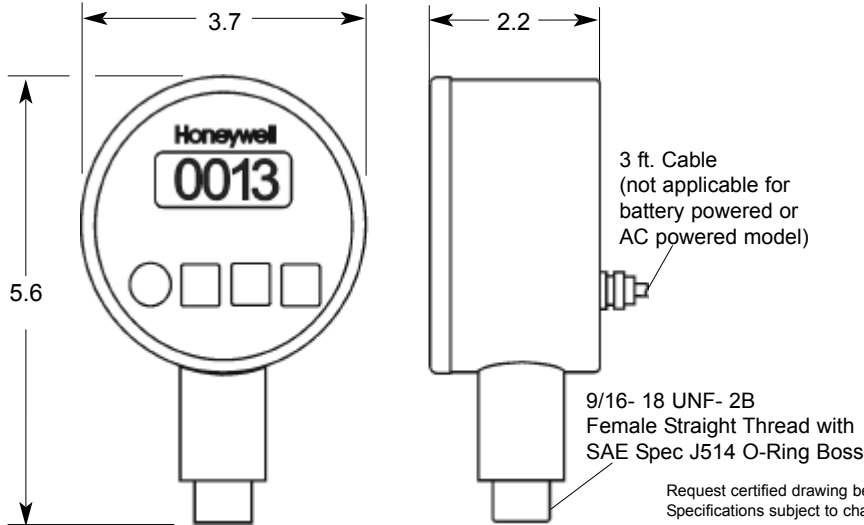
www.honeywell.com/sensotec

Model JK Digital Pressure Gauge

- Ranges to 10,000 psi
- 0.2% Accuracy
- Field Selectable Engineering Units
- Available 0° to 180°F Operating Temperature (note 4)

- Stainless Steel Construction
- 9 Volt Battery Power
- Visit www.sensotec.com/dct for more digital gauges
- High/Low Capture & Store
- On/Off Switch

Dimensions



Field Selectable Standard Units of Measure (note 2)

psi is standard
Bar = Bar
mBar = Millibar
kPa = Kilopascals
MPa = Megapascals
Ft H2O = Feet of water
In H2O = Inches of water
In Hg = Inches of mercury
mmHg = Millimeters of mercury

Performance

Ranges.....1; 5; 15; 30; 50; 100; 200; 300; 500; 750; 1000; 1500; 2000; 3000; 5000;
.....7500; 10,000 psi
Accuracy.....0.2% (note 1)
Update speed.....3 per second

Environmental

Temperature, Operating.....30°F to 160°F (0°F to 180°F with optional NEMA 4 rating)
Rating.....NEMA 2, std. (NEMA 4 optional except Model JKT)

Electrical

Display.....LCD, 4 1/2-digit, 0.5" high
Power supply
Model JKW.....1 or 2 9-Volt Batteries (included)
Model JKT.....110 Volt AC adaptor @ 60 Hz (included)
Model JKV.....11 to 32 VDC @ 100 mA
Electrical Connection.....3 ft. cable (std.) for Model JKV
Low Battery Indication.....Standard on Model JKW
Calibration Data.....Stored on memory chip
High and Low Capture.....Standard

Mechanical

Pressure Port.....9/16- 18 UNF- 2B Female Straight Thread with
SAE Spec J514 O-Ring Boss
Case Material.....Stainless Steel
Wetted parts.....316 Stainless Steel

Pressure Range (psi)	1	5	15	30	50	100	200	300	500
Maximum Safe Over Pressure (psi)	10	25	75	150	250	500	1000	1200	1500
Incremental Display Steps	0.001	0.005	0.01	0.02	0.05	0.1	0.1	0.2	0.5
Pressure Range (psi)	750	1000	1500	2000	3000	5000	7500	10,000	
Maximum Safe Over Pressure (psi)	1500	2000	3000	4000	6000	7500	12,000	15,000	
Incremental Display Steps	0.5	1	1	1	2	5	5	5	

Notes

1. Accuracies stated are for Best Fit Straight Line for all errors including linearity, hysteresis and repeatability through zero.
2. Consult factory for optional units of measure.
3. Consult factory for optional electrical connectors and cable lengths.
4. 0°F to 180°F Operating Temperature only with optional NEMA 4 rating.

Ordering Information

Enter the following information: **EXAMPLE ORDER CODE**
JK W 1000 G Z 4

SERIES JK
MODEL CODE
W = Battery
V = Vehicle powered
T = AC adaptor included

PRESSURE RANGE
(note 2)
Pressure range in PSI

REFERENCE
G = Gauge
A = Absolute
V = Vacuum
C = Compound (reads +/- vacuum pressure)

ELECTRICAL TERMINATION
(note 3)
Z = No connector
C = Cable exit
T = AC adaptor

OTHER OPTIONS
4 = NEMA 4 rating



1-888-282-9891

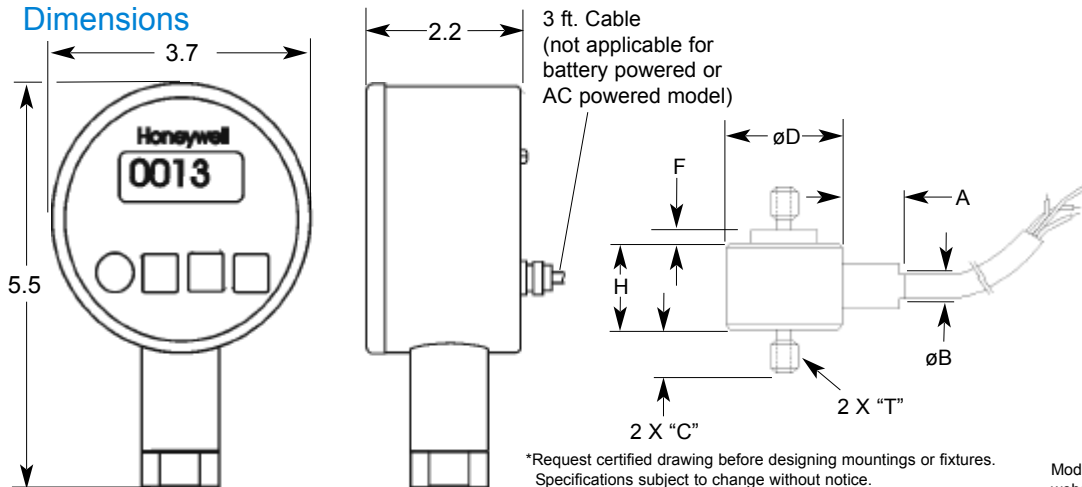
www.honeywell.com/sensotec

Model LK Digital Force Indicator

- Ranges to 10,000 lbs.
- Tension and Compression Measurement
- High & Low Force Capture

- Zero Offset/Tare
- NIST Statement
- Visit www.sensotec.com/dct for more digital gages
- Field Selectable Engineering Units (lb., N, kN, g, kg)
- Customer Recalibration

Dimensions



Model LK shown with optional handle. Visit our website for more information on optional handles.

Ranges (lb.)	T	D (in.)	H (in.)	C (in.)	F (in.)	A (in.)	B (in.)
1 lb.	#6-32 UNC	1.00	0.75	0.25	0.11	0.50	0.38
5 to 10 lb.	#6-32 UNC	1.00	0.45	0.25	0.05	0.31	0.19
25 to 100 lb.	#10-32 UNF	1.00	0.52	0.25	0.03	0.50	0.25
250 to 1000 lb.	1/4"-28 UNF	1.00	0.52	0.38	0.03	0.50	0.25
2000 to 3000 lb.	3/8"-24 UNF	1.00	0.72	0.50	0.03	0.50	0.38
4000 to 5000 lb.	1/2"-20 UNF	1.25	0.94	0.63	0.03	0.50	0.38
7500 to 10,000 lb.	3/4"-16 UNF	1.38	1.10	0.88	0.03	0.50	0.38

Field Selectable Standard Units of Measure (note 2)

lb. is standard

N = Newton

kN = Kilonewton

g = Grams

kg = Kilograms

Performance

Ranges.....1; 5; 10; 25; 50; 100; 250; 500; 1000; 2000; 3000; 4000; 5000; 7500; 10,000 lb.
Repeatability.....0.2% (note 1)
Update speed.....3 per second

Environmental

Temperature, Operating.....30°F to 160°F
Rating.....NEMA 2 (NEMA 4 optional except Model LKT)

Electrical

Display.....LCD, 4 1/2-digit, 0.5" high
Power supply
Model LKW.....1 or 2 9-Volt Batteries (included)
Model LKT.....110 Volt AC adaptor @ 60 Hz (included)
Model LKV.....11 to 32 VDC @ 100 mA
Electrical Connection.....3 ft. cable (std.) for Model LKV
Low Battery Indication.....Standard on Model LKW
Calibration Data.....Stored on memory chip
Zero and span adjustment.....Standard

Mechanical

Case Material.....Stainless Steel

Range (lb.)	1	5	25	50	100	250	500
Incremental Display Steps	0.001	0.005	0.02	0.01	0.02	0.05	0.1
Range (lb.)	1000	2000	3000	4000	5000	7500	10,000
Incremental Display Steps	0.2	0.5	2	2	1	2	2

Notes

1. Accuracies stated are for Best Fit Straight Line for all errors including linearity, hysteresis and repeatability through zero.
2. Consult factory for optional units of measure.
3. Consult factory for optional electrical connectors and cable lengths.

Ordering Information

Enter the following information:

EXAMPLE ORDER CODE
LK W 1000 K Z 4

SERIES	MODEL CODE	LOAD RANGE	REFERENCE	ELECTRICAL TERMINATION	OTHER OPTIONS
LK	W = Battery V = Vehicle powered T = AC adaptor included	(note 2) Load range in lb.	K = Compression T = Tension C = Compound	(note 3) Z = No connector C = Cable exit T = AC adaptor	4 = NEMA 4 rating

1-888-282-9891

www.honeywell.com/sensotec

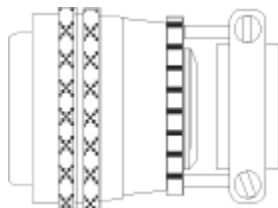
Notes

APPENDIX

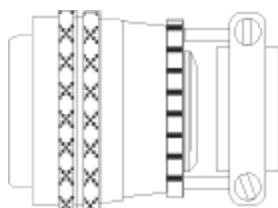
Accessories	450
Internal Amplifiers	461
Wiring Codes	463
Setup Instructions	467
Conversion Tables	469
Terminology	470
How To Order	473
Options	474
Range Codes	476
Sample Purchase Order	479
Plug And Play	480
Troubleshooting Guide	Inside Back Cover
Warranty/ Remedy	Back Cover

Accessories

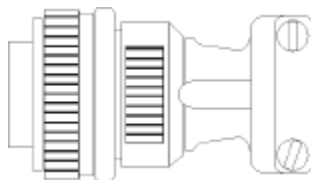
Mating Connectors and Connector/Cable Assemblies



Order Code	Model	Description	Mating Connector for
AA111	PT06A-10-6S	Mating connector	Sensors with PT1H-10-6P connector
AA118	PT06E-10-6S	Environmental mating connector	Sensors with PT1H-10-6P connector



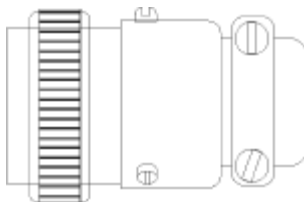
Order Code	Model	Description	Mating Connector for
AA119	PT06A-10-6P (SR)	Mating connector	Model NK portable instruments



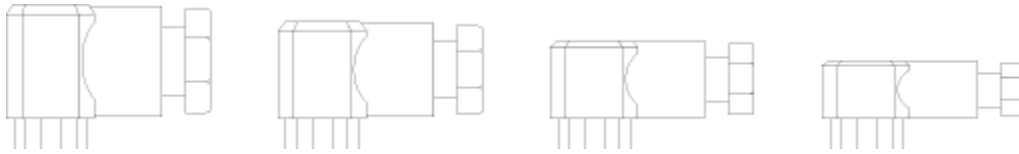
Order Code	Model	Description	Mating Connector for
AA121	MS3106A-14S-6S	Mating connector	Sensors with MS3102E-14S-6P connector



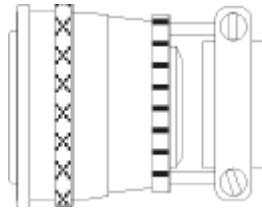
Order Code	Model	Description	Mating Connector for
AA141	DP-4S-1	Mating connector	Miniature sensors with Microtec type connectors



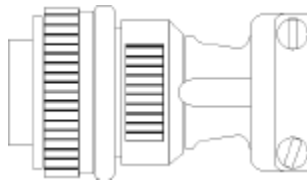
Order Code	Model	Description	Mating Connector for
AA151	MS3476L10-6S	Mating connector	Sensors with PT1H-10-6P connectors and high temperature (250° F to 400° F) specifications



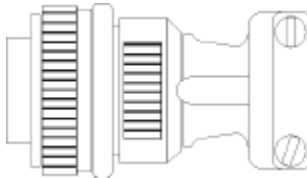
Order Code	Model	Description	Mating Connector for
AA155	DIN43650	Mating connector 1/2" NPTF conduit fitting	Model 440 Pressure Sensors
AA156	DIN43650	PG9 Socket for 4.5-7 mm cable	Model 440 Pressure Sensors
AA157	DIN43650	PG11 Socket for 6-10 mm cable	Model 440 Pressure Sensors
AA161	DIN40050	PG7 Socket for 3.5-6 mm cable	Model FP2000 Pressure Sensors



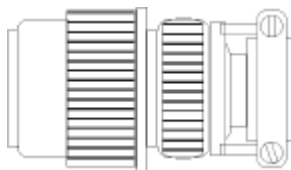
Order Code	Model	Description	Mating Connector for
AA162	PC06A-10-6S	Mating connector	Model 45 & 47



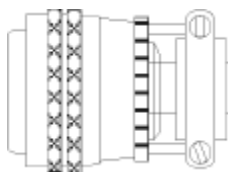
Order Code	Model	Description	Mating Connector for
AA174	MS3106F-10SL-3S	Mating connector	Model PEI & PEL



Order Code	Model	Description	Mating Connector for
MH002	2 Pin MS Type Connector	Mating connector	MA11, MA12 and MAV51 accelerometers



Order Code	Model	Description	Mating Connector for
MH008	62GB Connector	Mating connector	MA15, MAT53 and MAV52 accelerometers



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

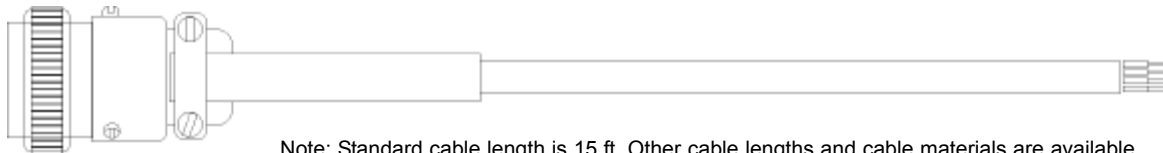
Where a distance of 35 feet or more separates the readout device and the transducer, remote voltage sensing is recommended (Model NK or SC).
Use 6 conductor cable in this case.

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA112	PT06A-10-6S	Mating connector with 15 ft. of 6 conductor PVC cable	A (+) Excitation B (+) Sense/sig mod C (-) Excitation D (-) Sense/sig mod E (-) Output F (+) Output	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output Blue (-) Sense/sig mod Brown (+) Sense/sig mod	Unamplified units with PT1H-10-6P connector, sense leads or Sug Mod, but no shunt cal
AA113	PT06A-10-6S	Mating connector with 15 ft. of 4 conductor PVC cable	A & B (+) Excitation C & D (-) Excitation E (-) Output F (+) Output	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output	Unamplified units with PT1H-10-6P connector
AA114	PT06A-10-6S	Mating connector with 15 ft. of 6 conductor PVC cable	A (+) Supply B (-) Supply Return C (-) Supply D (+) Output E (-) Shunt cal 1 F (+) Shunt cal 2	Red (+) Supply Black (-) Supply Return Green (-) Output White (+) Output Blue (-) Shunt cal 1 Brown (+) Shunt cal 2	All amplified units with PT1H-10-6P connector and with the 2a or 2b amplifier
AA115	PT06A-10-6S	Mating connector with 15 ft. of 5 conductor PVC cable	A (+) Supply B & C (-) o/p common D (+) Output E (-) Shunt cal 1 F (+) Shunt cal 2	Red (+) Supply Black (-) Output common White (+) Output Blue (-) Shunt cal 1 Brown (+) Shunt cal 2	All amplified units with PT1H-10-6P connector and with the 2c, 2t or 2j amplifier
AA116	PT06A-10-6S	Mating connector with 15 ft. of 3 conductor PVC cable	A (+) Supply B N/C C N/C D (+) Output E Ground F N/C	Red (+) Supply Black (+) Output White Case Ground	All amplified units with PT1H-10-6P connector and with the 2k, 2p, 2y or 2n (2N) amplifier
AA513	PT06A-10-6S	Mating connector with 15 ft. of 5 conductor PVC cable	A (+) Excitation B (-) Excitation C (+) Output D (-) Output E N/C F Shunt Cal	Red (+) Excitation Black (-) Excitation White (+) Output Green (-) Output Brown Shunt Cal	FP2000 with option 2u and 3d
AA516	PT06A-10-6S	Mating connector with 15 ft. of 3 conductor PVC cable	A (+) Supply B N/C C N/C D (+) Output E N/C F Shunt Cal	Red (+) Supply White (+) Output Black Shunt Cal	FP2000 with option 2n (2N) or 2y and 3d
AA517	PT06A-10-6S	Mating connector with 15 ft. of 5 conductor PVC cable	A (+) Supply B Supply Return C (-) Output D (+) Output E N/C F Shunt Cal	Red (+) Supply Black Supply Return Green (-) Output White (+) Output Blue Shunt Cal	FP2000 with option 2e or 2f and 3d
AA117	PT06A-10-6S	Mating connector with 15 ft. of 4 conductor PVC cable	A (+) Supply B Supply Return C (-) Output D (+) Output E N/C F N/C	Red (+) Supply Black Supply Return Green (-) Output White (+) Output	FP2000 with option 2d or 2g



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA143	DP-4S-1	Mating connector with 15 ft. of 4 conductor Teflon cable	Pin1 (+) Excitation Pin2 (+) Output Pin3 (-) Output Pin4 (-) Excitation PIN 2 PIN 3 PIN 1 PIN 4	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output	Miniature sensors with Microtec type connector



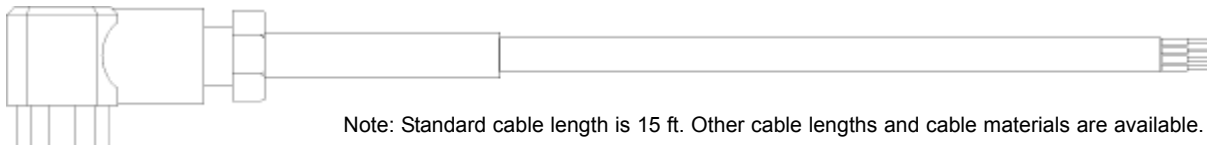
Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA152	MS3476L10-6S	Mating connector with 15 ft. of 6 conductor Teflon cable	A (+) Excitation B (+) Sense C (-) Excitation D (-) Sense E (-) Output F (+) Output	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output Blue (-) Sense Brown (+) Sense	All unamplified units with high temperature option (250° F to 450° F) and sense leads but no shunt cal
AA153	MS3476L10-6S	Mating connector with 15 ft. of 4 conductor Teflon cable	A & B (+) Excitation C & D (-) Excitation E (-) Output F (+) Output	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output	All unamplified units with high temperature option (250° F to 450° F) and no shunt cal or sense leads



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

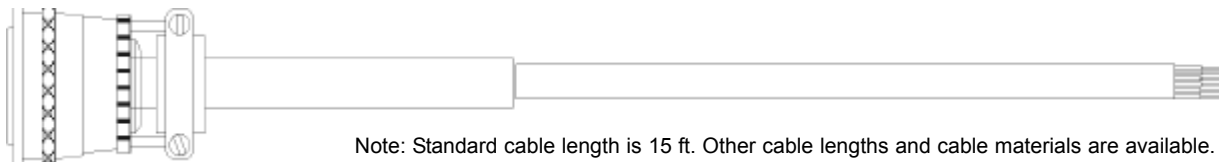
Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA158	064-0435	Mating connector with 5 ft. low noise miniature coaxial cable	Center (+) Signal Case Supply Return	Center (+) Signal Case Supply Return	Piezo-electric accelerometers with pc/g output
AA160	064-0567	Mating connector with 5 ft. low noise miniature coaxial cable	Center (+) Signal Case Supply Return	Center (+) Signal Case Supply Return	Piezo-electric accelerometers with pc/g output



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

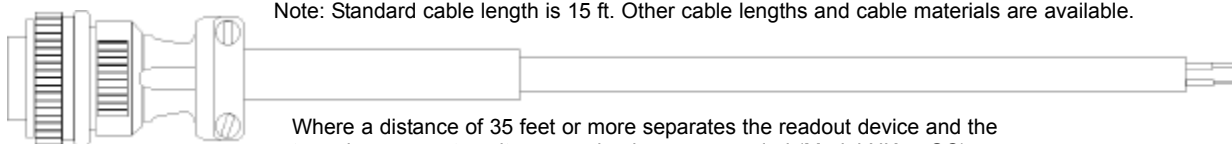
Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA159	060-0603-68	Mating connector with 15 ft. of 4 conductor polyurethane cable	Pin1 (+) Supply Pin2 (+) Output Pin3 N/C GND Case Ground	Pin1 Red Pin2 White Pin3 Green GND Black	Model 440 or Model FP2000 with option 6m

Note: Wiring Code is for 2-wire output. Other amplifier options and wiring codes are available.



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

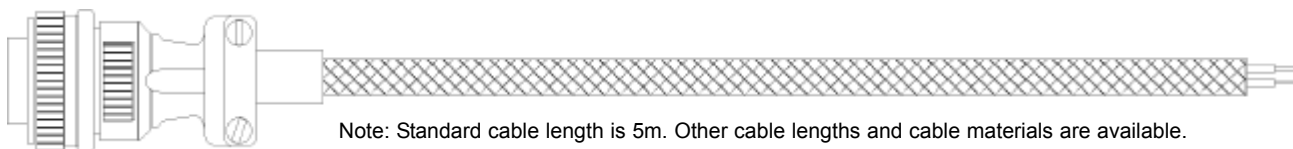
Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA163	PC06A-10-6S	Mating connector with 15 ft. of 6 conductor shielded Neoprene cable	A (+) Excitation B (+) Output C (-) Output D (-) Excitation E Sense/Sig Mod F Sense/Sig Mod	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output Blue N/C Brown N/C	All unamplified Model 45 & 47 units with sense leads or Sig Mod but no shunt cal



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

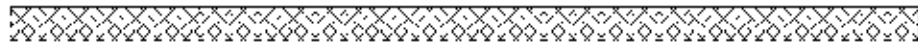
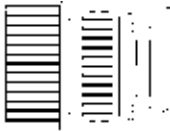
Where a distance of 35 feet or more separates the readout device and the transducer, remote voltage sensing is recommended (Model NK or SC).

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA170	MS3106F-14S-2S	Mating connector with 15 ft. of 2 conductor PVC cable	A N/C B (+) Output C (+) Supply D Case Ground	N/C (+) Output (+) Supply Case Ground	Model 424 & 425 Pressure Sensors



Note: Standard cable length is 5m. Other cable lengths and cable materials are available.

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
CA052	MS3106F-10SL-3S	Mating connector with 5m of 2 conductor PVC cable stainless steel overbraided	A (+) Excitation B (-) Excitation	White (+) Supply (+) o/p Black (-) Supply Return Shield Not connected	MA11, MA12 and MAV51 accelerometers
CA053	MS3106F-10SL-3S	Mating connector with 5m of 2 conductor PTFE cable stainless steel overbraided	A (+) Excitation B (-) Excitation	White (+) Supply (+) o/p Black (-) Supply Return Shield Not connected	MA11, MA12 and MAV51 accelerometers



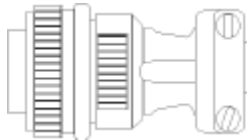
Note: Standard cable length is 5m. Other cable lengths and cable materials are available.

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
CA108	62GB Connector	Mating connector with 5m of 2 conductor PVC cable stainless steel overbraided	A (+) Supply B Not Connected C (+) Output	White (+) Supply (+) o/p Black (-) Supply Return Shield Not connected	MA15, MAT53 and MAV52 accelerometers
CA137	62GB Connector	Mating connector with 5m of 2 conductor PTFE cable stainless steel overbraided	A (+) Supply B Not Connected C (+) Output	White (+) Supply (+) o/p Black (-) Supply Return Shield Not connected	MA15, MAT53 and MAV52 accelerometers



Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

Order Code	Model	Description	Connector Wiring Code	For Use with
CA051	Microdot	Microdot to microdot connector with 15 ft. of PVC cable	Center (+) Output Case Ground	PEC, PEC-S, MAQ13, MAQ36, MAQ41 accelerometers
CA338	Microdot	Microdot to microdot connector with 15 ft. of PTFE overbraided cable	Center (+) Output Case Ground	PEC, PEC-S, MAQ13, MAQ36, MAQ41 accelerometers

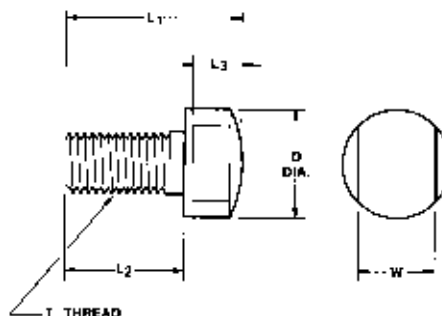


Note: Standard cable length is 15 ft. Other cable lengths and cable materials are available.

Where a distance of 35 feet or more separates the readout device and the transducer, remote voltage sensing is recommended (Model NK or SC). Use 6 conductor cable in this case.

Order Code	Model	Description	Connector Wiring Code	Cable Wiring Code	For Use with
AA122	MS3106A-14S-6S	Mating connector with 15 ft. of 6 conductor PVC cable	A (+) Excitation B (+) Sense/sig mod C (-) Excitation D (-) Sense/sig mod E (-) Output F (+) Output	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output Blue (-) Sense/sig mod Brown (+) Sense/sig mod	Unamplified units with MS3102E-14S-6P connector, sense leads or Sig Mod but no shunt cal (Model UG, WG, MPB and high capacity ranges for Model 41, 43, 73, 75)
AA123	MS3106A-14S-6S	Mating connector with 15 ft. of 4 conductor PVC cable	A & B (+) Excitation C & D (-) Excitation E (-) Output F (+) Output	Red (+) Excitation Black (-) Excitation Green (-) Output White (+) Output	Unamplified units with MS3102E-14S-6P connector, without sense leads or Sig Mod and without shunt cal (Model UG, WG, MPB and high capacity ranges for Model 41, 43, 73, 75)
AA124	MS3106A-14S-6S	Mating connector with 15 ft. of 6 conductor PVC cable	A (+) Supply B (-) Supply Return C (-) Supply D (+) Output E (-) Shunt cal 1 F (+) Shunt cal 2	Red (+) Supply Black (-) Supply Return Green (-) Output White (+) Output Blue (-) Shunt cal 1 Brown (+) Shunt cal 2	Amplified units with MS3102E-14S-6P connector and with the 2a or 2b amplifier (Model UG, WG, MPB and high capacity ranges for Model 41, 43, 73, 75)
AA125	MS3106A-14S-6S	Mating connector with 15 ft. of 5 conductor PVC cable	A (+) Supply B & C (-) o/p common D (+) Output E (-) Shunt cal 1 F (+) Shunt cal 2	Red (+) Supply Black (-) Output common White (+) Output Blue (-) Shunt cal 1 Brown (+) Shunt cal 2	Amplified units with MS3102E-14S-6P connector and with the 2c, 2t or 2j amplifier (Model UG, WG, MPB and high capacity ranges for Model 41, 43, 73, 75)

Load Buttons

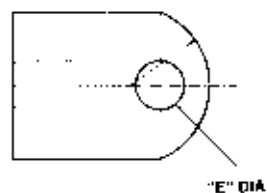
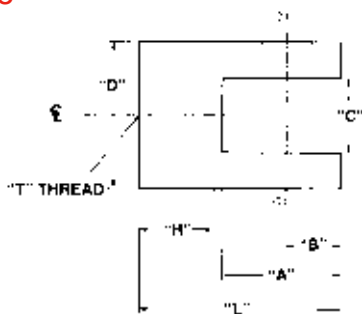


Order Code	Models 41 & 42 Range in lbs.	Model 75 Range in lbs.	T	L1"	L2"	L3"	D"	W"
AA241	5 to 25	N/A	1/4-28 UNF-2B	1.125	0.750	0.250	0.500	0.375
AA242	50 to 1K	50 to 100	3/8-24 UNF-2B	1.250	0.875	0.250	0.750	0.625
AA243	2K to 5K	1K to 2K	1/2-20 UNF	1.375	0.875	0.375	0.750	0.625
AA244	7500 to 15K	3K to 7500	1-14 UNS	2.375	1.625	0.562	1.500	1.250
AA245	20K to 50K	10K to 20K	1 1/2-12 UNF	2.625	1.625	0.750	2.250	2.000
AA246	75K to 100K	30K to 50K	2-12 UN	3.000	1.875	0.938	3.000	2.750
AA247	150K to 200K	75K to 100K	2 1/2-12 UN	4.250	2.500	1.125	3.500	3.250
AA248	300K to 500K	150K to 200K	3 1/2-8 UN	6.000	4.000	1.500	6.000	5.000

Order Code	Model UG Range in lbs.	T	L1"	L2"	L3"	D"	W"
AA251	50 to 500	3/8-24 UNF-2B	0.750	0.375	0.250	0.750	0.625
AA252	1K to 4K	1/2-20 UNF	1.000	0.500	0.375	0.750	0.625
AA253	5K to 10K	1-14 UNS	1.750	1.000	0.562	1.500	1.250
AA254	15K to 30K	1 1/2-12 UNF	2.500	1.500	0.750	2.250	2.000
AA255	50K to 75K	2-12 UN	3.125	2.000	0.938	3.000	2.750
AA256	100K to 150K	3-8 UN	5.000	3.000	1.500	4.500	4.000
AA257	200K	4-8 UN	6.000	4.000	1.500	5.500	5.000

Order Code	Models 45 & 47 Range in lbs.	T	L1"	L2"	L3"	D"	W"
AA290	250; 500; 1K; 2.5K; 5K	5/8-18 UNF-3A	1.28	1.00	0.28	1.06	0.94
AA291	12.5K; 25K	1-1/4-12 UNF-3A	1.56	0.69	1.49	1.75	1.25
AA292	50K	1-3/4-12 UNF-3A	3.75	2.12	1.63	2.50	1.75
AA293	100K	2-3/4-8 UNF-3A	5.00	3.12	1.88	4.00	2.75

Yoke Shackle



(For Models RM and 31 only)
(STAINLESS STEEL)

Order Code	Static Load Rating*	"T" Thread	"A"	"B"	"C"	"D" Dia.	"E" Dia.	"L" Length	"H"
AA360	100,000 lb	2 1/2-8 UN-2B	6.50"	3.00"	3.04"	6.00"	3.01"	10.25"	3.50"
AA361	100,000 lb	2 1/2-12 UN-2B	6.50"	3.00"	3.04"	6.00"	3.01"	10.25"	3.50"
AA362	50,000 lb	1 1/2-12 UNF-2B	4.35"	1.81"	2.54"	5.00"	1.76"	7.00"	2.25"
AA363	20,000 lb	1-14 UNF-2B	2.42"	1.11"	1.52"	3.00"	1.01"	4.25"	1.50"
AA364	10,000 lb	3/4-16 UNF-2B	1.94"	0.94"	1.28"	2.50"	0.76"	3.50"	1.25"
AA365	5,000 lb	1/2-20 UNF-2B	1.30"	0.55"	0.78"	1.75"	0.51"	2.00"	0.70"

(CARBON STEEL)

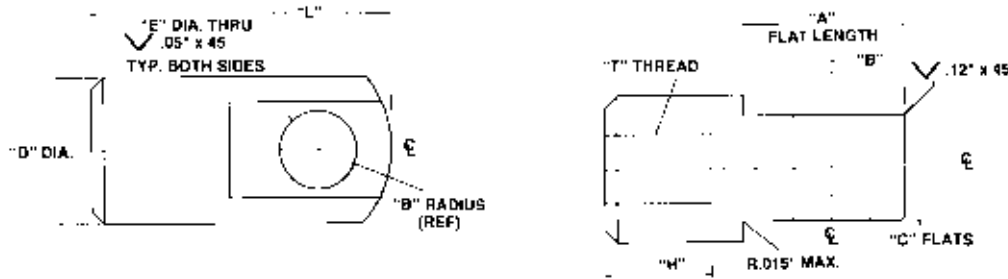
Order Code	Static Load Rating*	"T" Thread	"A"	"B"	"C"	"D" Dia.	"E" Dia.	"L" Length	"H"
AA370	120,000 lb	2 1/2-12 UN-2B	6.00"	2.75"	3.00"	6.00"	3.00"	9.50"	3.50"
AA371	45,600 lb	1 1/2-12 UNF-2B	4.00"	1.75"	2.50"	5.00"	1.75"	6.25"	2.25"
AA372	21,700 lb	1-14 UNF-2B	2.31"	1.00"	1.50"	3.00"	1.00"	3.94"	1.63"
AA373	11,200 lb	3/4-16 UNF-2B	1.75"	0.75"	1.25"	2.50"	0.75"	2.88"	1.13"
AA374	4,900 lb	1/2-20 UNF-2B	1.25"	0.50"	0.75"	1.75"	0.50"	2.00"	0.75"

*The static load rating is the maximum capacity in lbs. for that part based on a 4:1 load factor (in tension).

1-888-282-9891

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Tongue Shackle



(For Models RM and 31 only)
(STAINLESS STEEL)

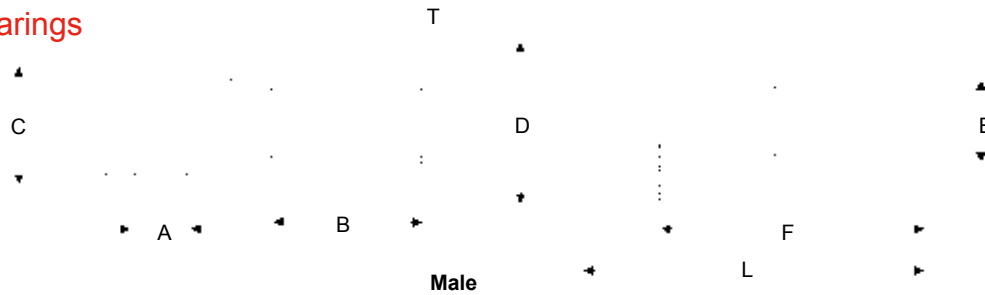
Order Code	Static Load Rating*	"T" Thread	"A" Flat Length	"B"	"C" Flats	"D" Dia.	"E" Dia.	"L" Length	"H"
AA380	100,000 lb	2 1/2-8 UN-2B	6.38"	3.00"	3.00"	4.50"	3.01"	9.75"	3.56"
AA381	100,000 lb	2 1/2-12 UN-2B	6.38"	3.00"	3.00"	4.50"	3.01"	9.75"	3.56"
AA382	50,000 lb	1 1/2-12 UNF-2B	4.22"	2.03"	2.50"	3.00"	1.76"	7.00"	2.62"
AA383	20,000 lb	1-14 UNF-2B	2.54"	1.16"	1.50"	2.00"	1.01"	4.00"	1.25"
AA384	10,000 lb	3/4-16 UNF-2B	2.07"	0.94"	1.25"	1.50"	0.76"	3.25"	1.31"
AA385	5,000 lb	1/2-20 UNF-2B	1.30"	0.55"	0.75"	1.00"	0.51"	2.00"	0.70"

(CARBON STEEL)

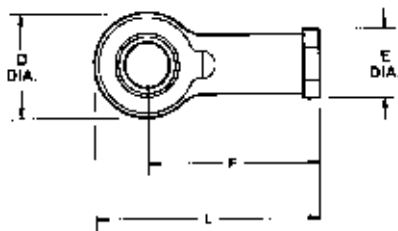
Order Code	Static Load Rating*	"T" Thread	"A" Flat Lengths	"B"	"C" Flats	"W" Width	"E" Dia.	"L" Length	"H"
AA390	110,000 lb	2 1/2-12 UN-2B	9.13"	3.00"	3.00"	6.00"	3.00"	9.13"	3.50"
AA391	45,000 lb	1 1/2-12 UNF-2B	5.75"	1.75"	2.50"	3.50"	1.75"	5.75"	2.25"
AA392	21,700 lb	1-14 UNF-2B	3.81"	1.00"	1.50"	2.00"	1.00"	3.81"	1.63"
AA393	12,000 lb	3/4-16 UNF-2B	2.81"	0.75"	1.25"	1.50"	0.75"	2.81"	1.13"
AA394	5,700 lb	1/2-20 UNF-2B	2.00"	0.50"	0.75"	1.00"	0.50"	2.00"	0.75"

*The static load rating is the maximum capacity in lbs. for that part based on a 4:1 load factor (in tension).

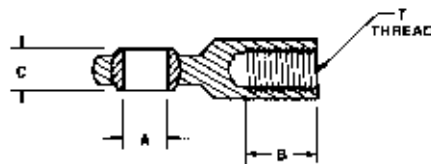
Rod End Bearings



Order Code	A"	B"	C"	D" Dia.	E" Dia.	F"	L"	T Thread	Approx. Wt (lbs)	Static Load Rating (based on 3:1 load factor)
AA275	0.250	1.000	0.375	0.750	0.250	1.562	1.937	1/4-28 UNF	0.043	1700 lb
AA276	0.375	1.250	0.500	1.000	0.375	1.938	2.438	3/8-24 UNF	0.112	3100 lb
AA277	0.500	1.500	0.625	1.312	0.500	2.438	3.094	1/2-20 UNF	0.249	5400 lb
AA278	0.750	1.750	0.875	1.750	0.750	2.875	3.750	3/4-16 UNF	0.602	9300 lb
AW900**	0.196	0.79	0.31	0.63	0.24	1.3	1.62	M5 x 0.8 (male)	N/A	N/A



Female



Order Code	A"	B"	C"	D" Dia.	E" Dia.	F"	L"	T Thread	Approx. Wt (lbs)	Static Load Rating (based on 3:1 load factor)
AA271	0.250	0.687	0.375	0.750	0.500	1.312	1.687	1/4-28 UNF	0.05	2300 lb
AA272	0.375	0.812	0.500	1.000	0.687	1.625	2.125	3/8-24 UNF	0.13	3600 lb
AA273	0.500	1.062	0.625	1.312	0.875	2.125	2.781	1/2-20 UNF	0.29	6300 lb
AA274	0.750	1.562	0.875	1.750	1.125	2.875	3.750	3/4-16 UNF	0.63	10000 lb
AW900**	0.196	0.55	0.31	0.63	0.24	1.06	1.38	M5 x 0.8 (female)	N/A	N/A

**The AW900 is a kit containing both the male and female LVDT rod end bearings

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Accelerometer Mounting Studs and Adapters



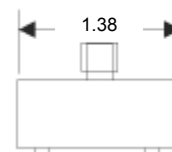
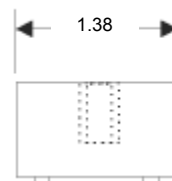
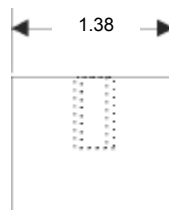
Male Stud



Set Screw

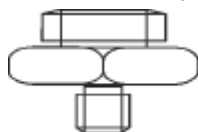
Order Code		
MS028	10-32 UNF	to M8
MS036	1/4" - 28 UNF	to M6
MS039	1/4" - 28 UNF	to 10-32 UNF
MS065	10-32 UNF	to M6
MS067	1/4" - 28 UNF	to M8
MS068	1/4" - 28 UNF	to 1/4" - 28 UNF
MS124	1/4" - 28 UNF	to M10
MS132	1/4" - 28 UNF	to M12

Magnetic Adapters



Order Code	
MM001	1/4" - 28 UNF Male
MM004	10-32 UNF Male
MM005	(Uses MS005 Adapter)
MM023	1/4" - 28 UNF Female

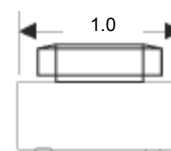
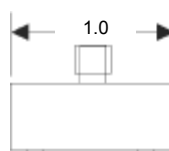
Quick Fit Adapters



Glue Type

Order Code		
MS001	Q/F Male	to Glue Base
MS002	Q/F Male	to M8 Male
MS003	Q/F Male	to M10 Male
MS004	Q/F Male	to 1/4" - 28 UNF Male
MS005	Q/F Male	to 1/4" - 28 UNF Female
MS006	Q/F Male	to M6 Male
MS007	Q/F Male	to 10-32 UNF Female
MS008	Q/F Male	to M8 Female
MS010	MA35 Q/F Male	to Glue Base
MS055	MA35 Q/F Male	to M8 Male
MS072	MA35 Q/F Male	to M6 Male
MS106	Q/F Male	to M10 Female
MS117	MA35 Q/F Male	to 1/4" - 28 UNF Male

Magnetic Adapters



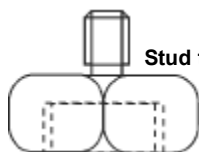
Order Code	
MM008	1/4" - 28 UNF Male
MM009	10-32 UNF Male
MM010	(Uses MS005 Adapter)
MM013	Quick Fit Large Thread

Mounting Block

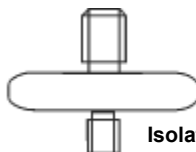


Order Code	
AA235	Triaxial mounting block for Model JTF

Other Adapters



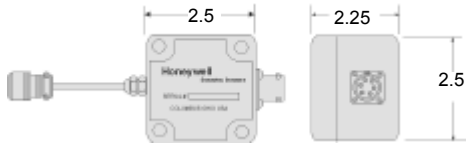
Stud to Q/F Female



Isolated Stud

Order Code		
MS011	1/4" - 28 UNF	to Q/F Female
MS013	1/4" - 28 UNF	to Glue Base
MS033	1/4" - 28 UNF	to Q/F Female
MS034	1/4" - 28 UNF	to 1/4" - 28 UNF Female
MS061	1/4" - 28 UNF	to 10-32 UNF Male
MS079	1/4" - 28 UNF	to Q/F Female
MS093	M6 Male	to M6 Female
MS102	MA35 Q/F Female	to 10-32 UNF Male

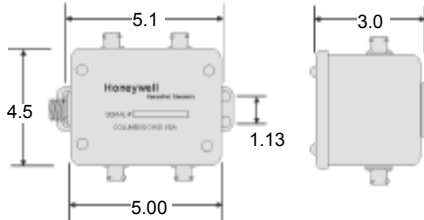
Miscellaneous



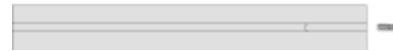
AA180 Signature Calibration Module (In-Line)



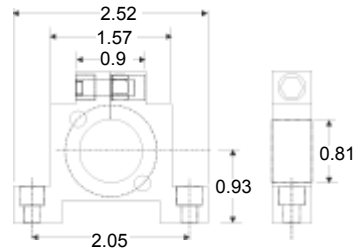
AA926 Bench Top/Handle (3/8 DIN)



AA911 4 Transducer (maximum) Summing Junction Box



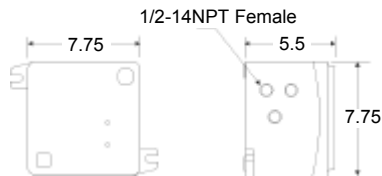
AA928 Panel Mount Adapter (3/8 DIN)



AA937 LVDT mounting block (DC/DC only)



AA912 Set of 5 Mating Connectors for AA911 Summing Junction Box



AA921 Explosion Proof Enclosure (Gage or Absolute Pressure)
AA922 Explosion Proof Enclosure (Differential Pressure)



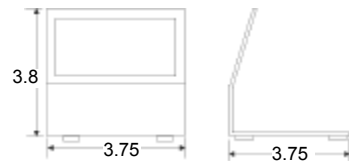
AA943 Panel Mount Adapter (1/8 DIN)



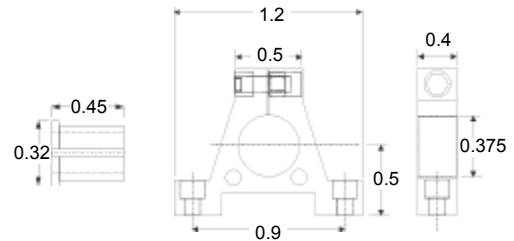
AA944 Bench Mount Kit for 1/8 DIN



AA923 GM NEMA-4 Splashguard for all DIN



AA924 GM Bench Mount Adapter



AA945 Miniature LVDT mounting block

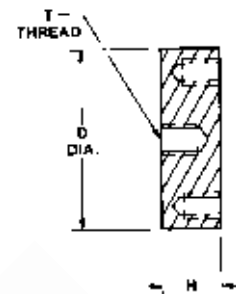
Shunt Calibration Resistors

Order Code	Calibration Resistance
AA211	59,000 Ohm for 1.6 to 3 mV/V output
AA212	90,000 Ohm for 1 to 1.5 mV/V output
AA213	200,000 Ohm for less than 1 mV/V output

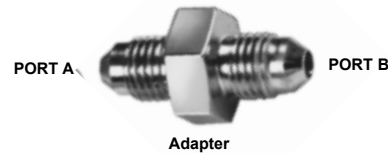
Pull Plates

Order Code	Used w/Models 41 and 42 (Range in lbs.)	Used w/Model 75 (Range in lbs.)	T" Thread	D" Dia.	H	# Bolt Holes	Size	Depth
AA221	5 to 25	N/A	1/4-28 UNF-2B	2.50	0.75	6	8-32	0.50
AA222	50 to 1000	50 to 500	3/8-24 UNF-2B	3.00	1.00	6	1/4-28	0.50
AA223	2K to 5K	1K to 2K	1/2-20 UNF	3.50	1.00	6	5/16-24	0.50
AA224	7500 to 15K	3K to 7500	1-14 UNS	5.50	1.50	8	3/8-24	0.75
AA225	20K to 50K	10K to 20K	1 1/2-12 UNF	6.00	1.80	8	1/2-13	1.00
AA233	N/A	30K to 50K	2-12 UNC	7.50	2.50	8	3/4-16	1.75
AA234	N/A	75K to 100K	2 1/2-12 UNC	9.00	3.00	12	5/8-18	1.00
AA226	75K to 100K	N/A	2-12 UNC	9.00	3.00	12	5/8-18	1.00
AA227	150K to 200K	N/A	2 1/2-12 UN	11.00	3.50	12	3/4-16	1.00
AA228	300K to 500K	150K to 200K	3 1/2-8	14.00	4.25	12	1-8	2.25

Note: Mounting bolts included with pull plates.



Pressure Port Adapters



(STAINLESS STEEL)
Order Code

Pressure Port A

Pressure Port B

AA310	9/16 - 18 UNF Male
AA311	1/4 - 18 NPT Female
AA312	1/4 - 18 NPT Female
AA313	1/4 - 18 NPT Female
AA314	1/4 - 18 NPT Male
AA315	1/4 - 18 NPT Male
AA316	1/4 - 18 NPT Male
AA317	1/8 - 27 NPT Male
AA318*	1/4 - 18 NPT Male
AA319	1/4 - 18 NPT Female
AA333	1/8 - 27 NPT Male
AA334	1/8 - 27 NPT Female
AA335	1/8 - 27 NPT Male
AA336	1/8 - 27 NPT Male
AA337	1/4 BSP Female
AA338	1/4 - 18 NPT Female

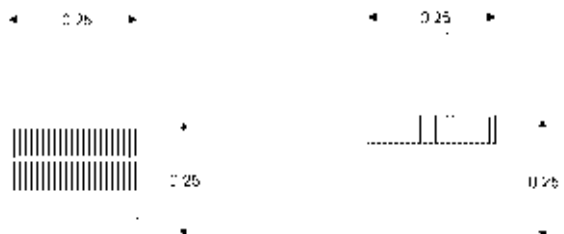
1/4 - 18 NPT Male
1/8 - 27 NPT Female
7/16 - 20 UNF Female (MS33649-04)
7/16 - 20 UNF Male (MS33656-E4)
1/8 - 27 NPT Female
7/16 - 20 UNF Female (MS33649-04)
7/16 - 20 UNF Male (MS33656-E4)
7/16 - 20 UNF Male (MS33656-E4)
1/4 - 18 NPT Male
1/4 - 18 NPT Female
1/8 - 27 NPT Male
7/16 - 20 UNF Male (MS33656-E4)
7/16 - 20 UNF Male (MS33656-E4)
1/4 - 18 NPT Male
1/4 - 18 NPT Male
1/4 - 18 NPT Female

* Maximum pressure range is 6000 psi.

The pressure ports indicated describe the adapter, which may be installed in either direction.

LVDT Tips

Order Code	Description
AA946	Domed Tip
AA947	Rolling Tip



1-888-282-9891

www.honeywell.com/sensotec

Internal Amplifiers

Internal amplifiers are practical if temperatures at the transducer are in the range of 0° F to 185° F. When temperatures are beyond these levels, in-line amplifiers can be used to amplify the transducer output. Our internal transducer electronics condition and amplify the strain gage millivolt signal to a standard output range of 0-5 vdc or 4-20mA.

The amplifier is constructed as an integral part of the electrical connector end of the pressure transducer or load cell. Potentiometer adjustments for the zero and span (gain), accessible through two small holes in the transducer body, are usually provided. (Potentiometers may not be available on units with conduit or cable exit.) These holes are covered with O-ring sealed screws to provide environmental protection. The range of zero and span adjustments are +/- 15% min. of full scale. **With the exception of the 2-wire current amp, the internal amplifiers listed below include an internal shunt calibration resistor as a standard feature.**

Voltage Amp (Option 2a)

Connect ± 15 vdc power input to get non-floating output. This amplifier is used when only positive output is required. (ie: gage or absolute pressure transducers, compression-only load cells, etc.) Use wiring code 11, 12, or 13 depending on electrical termination (Reference application sheet #008-0356-00).*

Bipolar Voltage Amp (Option 2b)

Connect ± 15 vdc power input to get non-floating output. This amplifier is used when both positive and negative output are required. (ie: differential pressure transducers, tension/compression load cells, accelerometers.) Use wiring code 11, 12, or 13 depending on electrical termination (Reference application sheet #008-0356-00).*

Vehicle Powered Voltage Amp (Option 2c)

Connect with power pack or vehicle battery power for field use. This amplifier has a high degree of regulation to accept battery voltage changes plus transient protection. It can drive loads of up to 5 milliamperes at full output. Use wiring code 14, 15, or 16 depending on electrical termination. (Reference application sheet #008-0357-00).

Voltage Amp 3-Wire 0-10 or ± 10 V (Option 2t)

Connect with any power supply from 15 to 28 VDC to get output of 0-10 VDC or ± 10 VDC, with respect to the (-) power supply terminal. Can drive loads up to 2.5 mA at 10 V output. (Reference application sheet #008-0360-00).

Current Amp 3-Wire (Option 2j)

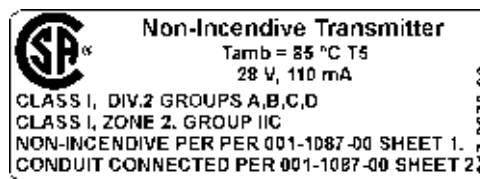
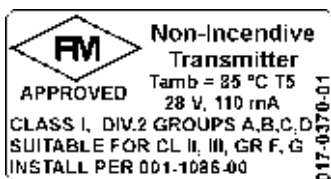
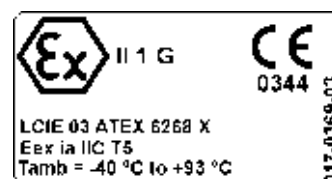
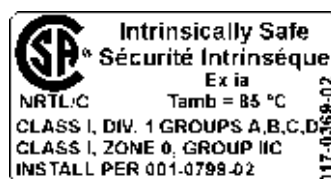
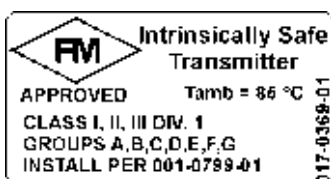
This amplifier has inherent protection against shorting any combination of pins to ground. Applying 32 volts on output will not harm amplifier. Maximum load resistance is 500 ohms. Long lead wires reduce loss in accuracy. Use wiring code 19, 20, or 21 depending on electrical termination. (Reference application sheet #008-0361-00).

Current Amp 3-Wire (Option 2k)

This amplifier is often ideal for unregulated power supplies in rugged industrial locations, fits two-wire 4-20ma current loops, and is often useable and accurate over great distances. (not available on all transducer models, 5000 ohm bridge required.) Use wiring code 22 or 23 depending on electrical termination (Reference application sheet #008-0358-00).

Current Amp 2-Wire Intrinsically Safe (Option 2n or 2N)

Honeywell Sensotec products configured with a 4-20 mA, 2-wire output using option code 2n or 2N are marked as follows:



Connection options: Products with option code 2n or 2N feature a standard welded, stainless steel electrical connector. Products with permanent integral cable and CSA or ATEX approval are limited to 30.5m (100ft.) of cable.

Honeywell Sensotec document #008-0547-00, available from our web site, contains up-to-date information regarding:

- Intrinsically Safe installation
- Entity Parameters
- CSA Certificate of Conformity
- ATEX Declaration of Conformity
- Non-Incendive installation

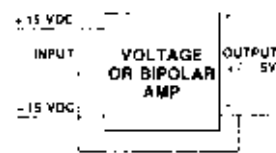
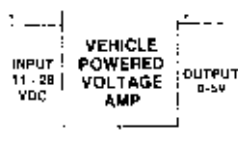
Explosion-proof transmitters Models 811 and 911 are NOT intrinsically safe and thus do not use option code 2n or 2N.

Power is the input voltage required to drive the transducer bridge including the built-in electronics. When the illustration shows a voltage input of, for example, 26-32 vdc, this means that the amplified transducer will run on any input voltage between 26-32 volts. Slow variation in input voltage will not have any effect on the output because the internal electronics have built-in voltage regulation. The specification for output means the transducer is calibrated at the factory for the specified output at full range. For example, for a 100 psia pressure transducer, the output would be 5 volts DC when 100 psia pressure is applied to the transducer.

* Not for new design, for replacement only.

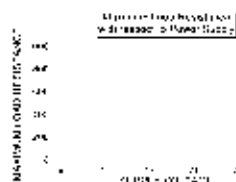
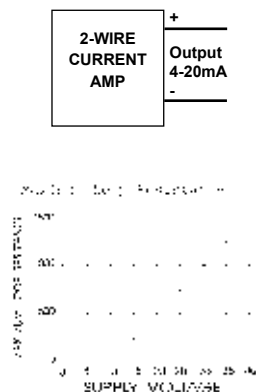
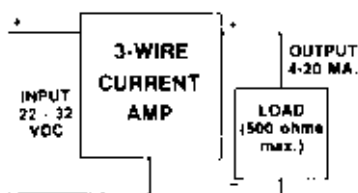
Specifications

	Voltage Output Option 2c	Voltage Output Option 2t	Voltage Output Option 2b
Input Power (Voltage)	11-28 VDC	15-28 VDC	+ / - 15 VDC
Input Power (Current)	40 mA	40 mA	45 mA
Output Signal	0-5V or + / - 5 @ 5 mA	0-10 V or + / -10V @ 5mA	+ / - 5V @ 2.5 mA
Frequency Response	3000 Hz	3000 Hz	3000 Hz
Power Supply Rejection	60db	60db	80 db w. + / - 15V pwr. 60 db w. 26-32V power
Operating Temperature	-20° F to 185° F	-20° F to 185° F	0° F to 185° F
Reverse Voltage Protection:	Yes	Yes	Yes
Short Circuit Protection:	Momentary	Momentary	Output to Output Gnd.
Possible Options	Special Temp. Ranges Remote Buffered Shunt Calib.	Special Temp. Ranges Remote Buffered Shunt Calib.	Special Temp. Ranges Programmable Range Changing Remote Buffered Shunt Calib.



Specifications

	Current 3-Wire Option 2j	Current 2-Wire Option 2k	Intrinsically Safe Amp Option 2n (2N)
Input Power (Voltage)	22-32 VDC (depends on load resistance)	9-32 VDC typical (depends on load resistance)	9-28 VDC
Input Power (Current)	65 mA	4-28 mA	4-24 mA
Output Signal	4-20 mA	4-20 mA	4-20 mA
Frequency Response	2500 Hz	300 Hz	2000 Hz
Power Supply Rejection	60db	60db	60db
Operating Temperature	0° F to 185° F	0° F to 185° F	-20° F to 200° F
Reverse Voltage Protection:	Yes	Yes	Yes
Short Circuit Protection:	Yes	Yes	Yes
Possible Options	Special Temp. Ranges Remote Buffered Shunt Calib.	Special Temp. Ranges Remote Buffered Shunt Calib.	Remote Buffered Shunt Calib.



Wiring Codes

Standard Wiring Codes

		Standard Cable	Standard Connector	Submersible Cable
Option 2u	Unamplified – no shunt cal.			
	– no shunt cal.	#1	#2	#3
	– with shunt cal. (50%)*	#4	#5	#6
Option 2c	– with sense leads	#7	#8	#9
	Voltage amp. (Vehicle powered)			
	0-5 VDC with 11-28 VDC supply @ 25mA			
Option 2t	– with shunt cal. (80%)*	#14	#15	#16
	Voltage amp. 0-10 VDC with 15-28 VDC supply @ 40mA			
Option 2j	– with shunt cal. (80%)	#46	#47	#48
	Current amp. (3wire, 4-20mA) with 22-32 VDC supply @ 65mA			
Option 2k	– no shunt cal.	#17	#29	#18
	– with shunt cal. (75%)*	#19	#20	#21
Option 2n	Current amp. (2-wire, 4-20mA), Not FM approved			
	– no shunt cal.	#22	#23	S
Option 2N	Current amp. (2-wire, 4-20mA), FM approved			
	– no shunt cal**	#22	#23	S

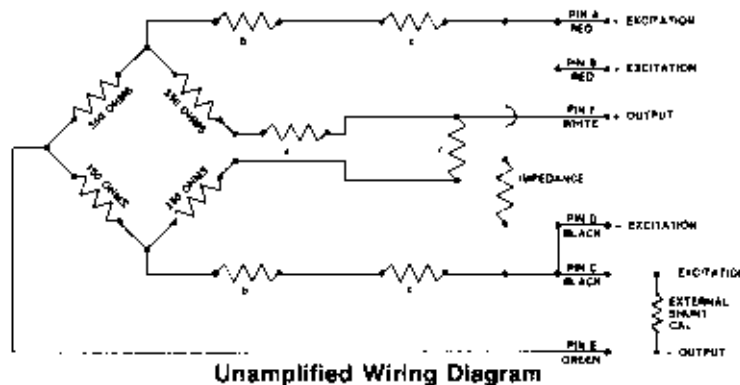
* Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal (see wiring code) provides 50% (unamplified units) or 75% (4-20mA 3 wire only), 80% (voltage amp) of full scale output for quick calibration.

** Relay buffered shunt cal is optional, consult factory.

S Special (consult factory)

Definitions

- Supply:** Positive lead of source (power supply) used to drive amplified transducer.
- Supply Return:** Negative lead of source (power supply) used to drive amplified transducer.
- + **Output or Output:** Signal side of output.
- **Output or Output Return:** Reference side of output signal.
- Supply Common:** Center terminal if bipolar supplies (i.e. $\pm 15\text{VDC}$) are used.
- + **Excitation:** Positive lead of source (power supply) used to drive unamplified transducer.
- **Excitation:** Negative lead of source (power supply) used to drive unamplified transducer.
- + **Sense:** Positive lead used for sensing bridge excitation with long cables.
- **Sense:** Negative lead used for sensing bridge excitation with long cables.



- a - Zero temperature compensation resistor
- b - Span temperature compensation resistors
- c - Trim resistors for output standardization
- d - Zero balance trim resistors

- #1 Cable/Unamplified**
 Red (+) Excitation
 Black (-) Excitation
 Green (-) Output
 White (+) Output
- #2 Connector/Unamplified**
 A & B (+) Excitation
 C & D (-) Excitation
 E (-) Output
 F (+) Output
- #3 Cable/Unamplified/Submersible**
 Red (+) Excitation
 Brown (-) Excitation
 Yellow (-) Output
 Orange (+) Output
- #4 Cable/Unamplified/Int. Shunt Cal**
 Red (+) Excitation
 Black (-) Excitation
 Green (-) Output
 White (+) Output
 Blue Shunt Cal 1*
 Brown Shunt Cal 2*
- #5 Connector/Unamplified/Int. Shunt Cal**
 A (+) Excitation
 B (-) Excitation
 C (+) Output
 D (-) Output
 E Shunt Cal 1*
 F Shunt Cal 2*
- #6 Cable/Unamplified/Int. Shunt Cal/ Submersible**
 Red (+) Excitation
 Blue (-) Excitation
 Orange (+) Output
 Green (-) Output
 Brown Shunt Cal 1*
 Yellow Shunt Cal 2*
- #7 Cable/Unamplified/Sense Leads**
 Red (+) Excitation
 Black (-) Excitation
 Green (-) Output
 White (+) Output
 Blue (-) Sense
 Brown (+) Sense
- #8 Connector/Unamplified/Sense Leads**
 A (+) Excitation
 B (+) Sense
 C (-) Excitation
 D (-) Sense
 E (-) Output
 F (+) Output
- #9 Cable/Unamplified/Sense/Leads/Submersible**
 Red (+) Excitation
 Blue (-) Excitation
 Orange (+) Output
 Green (-) Output
 Brown (+) Sense
 Yellow (-) Sense
- #10 Cable/Voltage (+/-5VDC Output with +/-15VDC supply) /Submersible**

+/-15VDC Supply	Wire
(+) Supply (+15VDC)	Red
(-) Supply (-15VDC)	Orange
(+) Output (+/-5VDC)	Yellow
(-) Output/Supply Com.	Brown
- #11 Cable/Voltage (+/-5VDC Output with +/-15VDC supply) /Int. Shunt Cal**

+/-15VDC Supply	Wire
(+) Supply (+15VDC)	Red
(-) Supply (-15VDC)	Black
(-) Output/Supply com.	Green
(+) Output (+/-5VDC)	White
Shunt cal 1*	Blue
Shunt cal 2*	Brown
- #12 Connector/Voltage (+/-5VDC Output with +/-15VDC /Int. Shunt Cal**

+/-15VDC Supply	Pin
(+) Supply (+15VDC)	A
(-) Output/Supply com.	B
(-) Supply (-15VDC)	C
(+) Output (+/-5VDC)	D
Shunt cal 1*	E
Shunt cal 2*	F
- #13 Cable/Voltage (+/-5VDC Output with +/-15VDC /Int. Shunt Cal/Submersible**

+/-15VDC Supply	Wire
(+) Supply (+15VDC)	Red
(-) Supply (-15VDC)	Brown
(-) Output/Supply com.	Orange
(+) Output (+/-5VDC)	Green
Shunt cal 1*	Blue
Shunt cal 2*	Yellow
- #14 Cable/Vehicle Voltage 0-5VDC Supply/Internal Shunt Cal**
 Red (+) Supply (+11-26VDC)
 Black, Green Output Common/Supply Return (Internal Connection)
 White (+) Output (0-5VDC)
 Blue Shunt Cal 1*
 Brown Shunt Cal 2*
- #15 Connector/Vehicle Voltage 0-5VDC w/11-26VDC Supply/Internal Shunt Cal**
 A (+) Supply (+11-26VDC)
 B, C Output Common/Supply Return (Internal Connection)
 D (+) Output (0-5VDC)
 E Shunt Cal 1*
 F Shunt Cal 2*
- #16 Cable/Vehicle Voltage 0-5VDC w/11-26VDC Supply/Internal Shunt Cal/Submersible**
 Red (+) Supply (+11-26VDC)
 Brown, Orange Output Common/Supply Return (Internal Connection)
 Green (+) Output (0-5VDC)
 Blue Shunt Cal 1*
 Yellow Shunt Cal 2*
- #17 Cable/3 wire current**
 Red (+) Supply
 Black Output common/
 Green Supply return (Internal Connection)
 White (+) Output
- #18 Cable/3 wire current, 4-20mA/Submersible**
 Red (+) Supply
 Brown, Output common/
 Yellow Supply return (Internal Connection)
 Green for outputs
 Orange (+) Output (4-20mA)
- #19 Cable/3 wire current, 4-20mA/Shunt Cal**
 Red (+) Supply
 Black, Output common/
 Green Supply return (Internal Connection)
 White (+) Output (4-20mA)
 Blue Shunt Cal 1*
 Brown Shunt Cal 2*
- #20 Connector/3 wire current, 4-20mA/Shunt Cal**
 A (+) Supply
 B, C Output common/Supply return (Internal connection)
 D (+) Output (4-20mA)
 E Shunt Cal 1*
 F Shunt Cal 2*

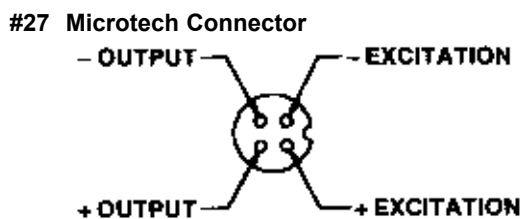
**#21 Cable/3 wire current, 4-20mA/
Int. Shunt Cal/Submersible**
 Red (+) Supply
 Brown, Output common/
 Green Supply return (Internal Connection)
 Orange (+) Output (4-20mA)
 Blue Shunt Cal 1*
 Yellow Shunt Cal 2*

#22 Cable/2 wire current, 4-20mA
 Red (+) Supply
 Black (+) Output (4-20mA)
 White Case Ground

#23 Connector/2 wire current, 4-20mA
 A (+) Supply
 B, C & F No Connection
 D (+) Output (4-20mA)
 E Case Ground

**#24 Cable/Frequency Output/
Internal Shunt Cal**
 Red (+) Supply
 Black, Output common/
 Green Supply return (Internal Connection)
 White (+) Output
 Blue Shunt Cal 1*
 Brown Shunt Cal 2*

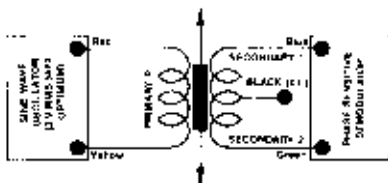
**#25 Connector/Frequency Output/
Internal Shunt Cal**
 A (+) Supply
 B, C Output common/Supply return
 (Internal Connection)
 D (+) Output
 E Shunt Cal 1*
 F Shunt Cal 2*



#28 Consult factory

#29 Connector/3 wire current, 4-20mA/w/22-32VDC Supply
 A (+) Supply (+22-32VDC)
 B, C Output common/Supply return
 (Internal Connection)
 D (+) Output (4-20mA)
 E & F No Connection

#30 AC/AC LVDT
 Red Supply (Calibrated @ 3V RMS 5 kHz)
 Yellow Supply return
 Blue Output
 Green Output return
 Black Secondary Center Tap (normally not connected)
 Cable shield is not connected to transducer.



**#31 DC/DC LVDT (single power supply)
Reverse polarity protected w/voltage regulator**

Dual Supply

Red +12 to +20V input
 Blue -12 to -20V input
 Black OV common

Single Supply

Red +24 to 40V input
 Blue Supply negative

Outputs

Yellow 0-5-10 Volt
 Green ± 5 VDC

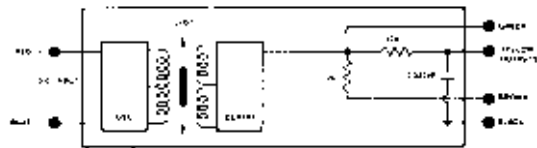
* Must be floating output common = $\frac{1}{2}$ supply voltage

#32 DC/DC LVDT (single power supply) without reverse polarity protection or voltage regulation

Red (+) Supply (+6 to +12VDC)
 Blue Supply return
 Yellow Note: See below
 Green for outputs
 Black
 Brown

- Short Black and Brown for internal 10,000 ohm load
- Filtered output - Yellow and Black/Brown
- Unfiltered output - Green and Black/Brown

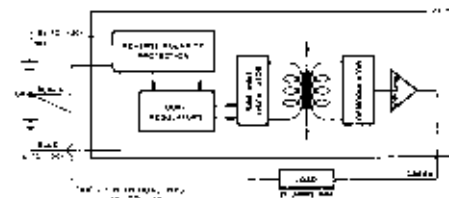
Cable shield is not connected to transducer.



**#35 DC/DC LVDT (single power supply)
Reverse polarity protected w/voltage regulator**

Yellow +5V, Regulated Input
 Brown +5V, Regulated Output
 Red +6V to 18V, Unregulated
 Blue OV, supply common/ground
 Black Output (lo)
 Green Output (hi)
 Shield Connect to Instrument ground

Link the Yellow and Brown wires together when using the +6V./+18V. Input Option. Ensure the Red and Brown wires are disconnected when using the 5V. The D.C. Output signal is electrically isolated from the Input voltage.



#36 Connector/2 wire current, 4-20 mA

1 + Supply
 2 + Output
 3 N/C
 Case Ground

- #37 Connector/Unamplified**
 1 + Excitation
 2 + Output
 3 - Output
 - Excitation
- #38 Connector/Voltage**
 1 + Supply
 2 + Output
 3 Supply/Output Common
 N/C to Case
- #39 Connector/Unamplified**
 A + Excitation
 B + Output
 C - Output
 D - Excitation
- #40 Unamplified, 6 pin Connector with Signature Module**
 A (+)Excitation
 B (+)Signature
 C (-)Excitation
 D (-)Signature
 E (-)Output
 F (+)Output
- #41 Unamplified, 6 Conductor for Signature Module**
 Red (+)Excitation
 Black (-)Excitation
 Green (-)Output
 White (+)Output
 Blue (-)Signature (Memory -)
 Brown (+)Signature (Memory +)
- #44 Cable, 4-20mA out**
 Red (+)Supply
 Black (+)Output (4-20mA)
 White Case Ground
- #45 Unamplified, 6 pin header for coil connections on LVDT**
 1 & 6 Primary Coil
 2 & 5 Secondary Coils
 3 or 4 Secondary Centre Tap (whichever is longer)
- #46 Vehicle amplifier 0-10VDC**
 Red (+)Supply
 Black Supply return
 Green (-)Output
 White (+)Output (0-10VDC)
 Blue Shunt Cal 1
 Brown Shunt Cal 2
- #47 Vehicle amplifier 0-10VDC**
 A (+)Supply
 B (-)Output
 C Supply return
 D (+)Output (0-10VDC)
 E Shunt Cal 1
 F Shunt Cal 2
- #48 Vehicle amplifier 0-10VDC/ Submersible Cable**
 Red (+)Supply
 Brown (-)Output
 Orange Supply return
 Green (+)Output (0-10VDC)
 Blue Shunt Cal 1
 Yellow Shunt Cal 2
- #49 FP2000, current output, Bendix connector**
 A (+)Supply 9-28VDC (red)
 B N/C
 C N/C
 D (+) Output 4-20 (black)
 E N/C
 F N/C
- #50 FP2000, voltage output, Bendix connector**
 A (+) Supply 9-28VDC (red)
 B (-) Supply return (black)
 C (-) Output (green)
 D (+) Output 0-5VDC (white)
 E N/C
 F N/C
- #51 FP2000, current output, cable exit**
 (+) Supply 9-28VDC (red)
 (-) Output 4-20 mA (black)
- #52 FP2000, voltage output, cable exit**
 (+) Supply 9-28VDC (red)
 Supply return (black)
 (-) output (green)
 (+) output (0-5 VDC) (white)
- #53 FP2000, current output, I.S., DIN connector, opt 2N**
 1 (+) Supply
 2 (+) Output
 3 Case ground
- #54 FP2000 current output DIN connector, option 2p**
 1 + supply
 2 + output 4-20 mA
 3 No connection
 GND No connection
- #55 FP2000 current output DIN connector, option 2y with shunt cal.**
 1 + supply
 2 + output 4-20 mA
 3 N/C
 GND Shunt Cal
- #56 FP2000 voltage output pin conn opt. 2e/2f with shunt calibration**
 1 + supply
 2 + output
 3 Supply ret/-output
 GND Shunt Cal
- #57 FP2000 Millivolt output Bendix conn opt. 2u**
 A + excitation
 B - excitation
 C + output
 D - output
 E N/C
 F Shunt Cal
- #58 FP2000 current output Bendix conn opt. 2y**
 A + supply
 B N/C
 C N/C
 D + output (4-20mA)
 E N/C
 F Shunt Cal
- #59 FP2000 current output Bendix connector shunt cal opt. 2N IS**
 A + supply
 B N/C
 C N/C
 D + output (4-20mA)
 E Case ground
 F Shunt Cal
- #60 Voltage output with shunt cal Bendix conn. opts. 2e/2f**
 A + supply
 B - supply return
 C - output
 D + output
 E N/C
 F Shunt Cal
- #61 Current output w/ shunt cal & integral cable opt. 2y/6r/6q**
 Red + supply
 Black + output
 Green Shunt Cal
- #62 Current output with shunt cal & integral cable opt. 2N IS/6r/6q**
 Red + supply
 Black + output (4-20mA IS)
 Green Shunt
 White Case ground
- #63 Voltage output with shunt cal & integral cable opt. 2e/2f/6r/6q**
 Red + supply
 Black - supply return
 Green Shunt Cal
 White + output
- #64 Current output 2N is with shunt cal & DIN connector**
 1 + supply
 2 + output (4-20mA)
 3 Case ground
 GND Shunt Cal

Field Set-up of Transducer and Instrument

The most common method for quick field calibration is the "shunt calibration" technique. This method applies a known, accurate resistance across one leg of the transducer, which simulates an actual physical stimulus when one is not present. Upon application of this resistance, the output of the transducer changes exactly as it would if a known pressure or load were applied.

In performing shunt calibration, the transducer should have no pressure or load applied, so that it is at "zero" initially. The data instrument's ZERO control can then be adjusted to give a zero output on its indicator, or a zero voltage on its output terminals. (In the case of 4-20 milliampere outputs, this value would be a 4 milliamperes.) The shunt calibration circuitry may then be activated by use of the front-panel SHUNT CAL button. A step change in amplifier output or reading will occur. If the amount of the step change does not agree with the expected change as indicated by the Transducer Calibration Data sheet, adjust the SPAN or GAIN control until it does. This will insure that the amplification given by the data device will be correct, so that an actual stimulus will give correct readings.

It is advisable to recheck the zero when the shunt calibration resistance is removed, since there may be some interaction if the GAIN or SPAN control adjustments were large.

Strain gage transducers with internal amplifiers usually have a shunt calibration resistor installed. The shunt calibration resistor may be activated by interconnecting two terminals on the connector. The wiring code section of the Transducer Calibration Data sheet will indicate which terminals are to be interconnected to activate the shunt calibration. For current output units (4-20 milliamperes), several full cycles of adjusting the ZERO and SPAN controls may be required, since these controls interact greatly in such units.

Shown is a typical Transducer Calibration Data sheet. This sheet will be used as an example to illustrate the setup procedure for both unamplified transducers, as well as instruments with an amplified output. The calibration record for amplified transducers includes the "amplified" shunt cal value so no calculation is required.

Calibration Data Sheet

Honeywell	
Sensotec Sensors	
2000 ARLINGDALE AVE. COLUMBUS, OHIO 43228 (614) 850-5000	
CERTIFICATE OF CALIBRATION	
MODEL: TJE/9278-03TJD	CAPACITY: 30 PSID PRESSURE
SERIAL NUMBER: 597642	CALIBRATED AT: 30 PSID
CALIBRATION DATE: Dec 03/1998	EXCITATION: 10.0 VOLTS
INPUT RESISTANCE: 358.Ω	CALIBRATION FACTOR: 2.0065 MV/V
OUTPUT RESISTANCE: 352.Ω	SHUNT RESISTOR: 59KΩ
LEAKAGE: ∞	SHUNT CAL FACTOR: 1.5090 MV/V
WIRING CODE	
UNAMPLIFIED	
FIN	DESIGNATION
A	(+) EXCITATION
H	(-) SIGNATURE
C	(-) EXCITATION
D	(-) SIGNATURE
E	(-) OUTPUT
I	(-) OUTPUT
Accepted and Certified by: <i>Michael A. Stanley</i>	
Date Printed: 6/2/1999	

Step-by-Step Procedure for Shunt Cal

1. Make all required connections between the transducer and the instrument.
 2. Apply power and allow 10 to 20 minutes for stabilization.
 3. Turn the ZERO adjustment so that the indicator reads zero. (If you are working with a PSIA transducer, the transducer must be evacuated to get zero. However, the unit can be shunt calibrated at atmosphere, and the atmospheric reading added to the shunt calibration reading.)
 4. From the Transducer Calibration Data sheet, obtain the transducer full scale output in millivolts per volt, and the shunt calibration output in millivolts per volt.
 5. Select and perform the proper calculation from the discussion below.
 6. Depress the SHUNT CAL switch and turn the SPAN or GAIN adjustment to obtain the value calculated in step 5.
-

Unamplified Transducers

Transducers with millivolt outputs usually do not have internal shunt calibration circuitry, but the effect of a known shunt calibration resistor being connected across the leads will be noted on the Transducer Calibration Data sheet. To determine the output of an unamplified transducer under shunt calibration conditions, perform the following calculation:

$$(\text{Shunt Cal Factor in mV/V}) \times \text{Excitation Voltage} = \text{Output Voltage}$$

Substituting the values from the sample Transducer Calibration Data sheet into the above equation provides the following:

$$(1.5090 \text{ mV/V}) \times (10 \text{ V}) = 15.090 \text{ millivolts}$$

Instrument with 0 to 5 Volt Output

Consider next an amplified transducer with a 0 to 5 volt output, or an instrument which has been factory calibrated with a transducer. Determining the output under shunt calibration conditions is done with the following equation:

$$\frac{\text{Shunt Cal Factor in mV/V}}{\text{Full-Scale Output in mV/V}} \times \text{Full-Scale Output} = \text{Output Voltage}$$

Using the same data sheet as before, and assuming an amplified transducer with a 5 volt full scale provides:

$$\frac{(1.5090 \text{ mV/V})}{(3.0057 \text{ mV/V})} \times 5 \text{ volts} = 2.510 \text{ volts}$$

Instrument with 4-20 Milliampere Output

Consider next the case of a 4-20 milliampere output from an amplified transducer. Notice that this represents a span of 16 milliamperes, offset upward by 4 milliamperes. To calculate the shunt cal output, use the following equation:

$$\frac{\text{Shunt Cal Output in mV/V}}{\text{Full-Scale Output in mV/V}} \times 16 \text{ mA.} + 4 \text{ mA.} = \text{Output Current}$$

Using the same data sheet again, and assuming a 4-20 mA. case,

$$\frac{(1.5090 \text{ mV/V})}{(3.0057 \text{ mV/V})} \times 16 \text{ mA.} + 4 \text{ mA.} = 12.033 \text{ mA.}$$

Instrument Display

The following equation applies to instruments with a display:

$$\frac{\text{Shunt Cal Factor in mV/V}}{\text{Full-Scale Output in mV/V}} \times \frac{\text{Full-Scale Display Value}}{\text{Value}} = \frac{\text{Shunt Cal Display Value}}{\text{Value}}$$

Since the transducer shown on the Transducer Calibration Data sheet is a 1,000-pound unit, the display should read:

$$\frac{(1.5090 \text{ mV/V})}{(3.0057 \text{ mV/V})} \times 1,000 \text{ lbs.} = 502 \text{ lbs.}$$

Conversion Tables

Pressure

</

Load

		Multiply Number of			
To Obtain	by	Pound	Grams	Newton	Dyne
	Pound	1	2.205 X 10 ⁻³	.2248	2.248 X 10 ⁻⁶
	Grams	453.6	1	102.0	1.020 X 10 ⁻³
	Newton	4.448	9.807 X 10 ⁻³	1	1.0 X 10 ⁻⁵
	Dyne	4.448222 X 10 ⁵	980.665	1.0 X 10 ⁵	1

Torque

	N-m
1 oz-in	7.06 X 10 ⁻³
1 lb-in	0.113
1 lb-ft	1.3558
1 kg-m	9.806
1 dyne-cm	1.00 X 10 ⁻⁷

Temperature

$^{\circ}\text{C} = (^{\circ}\text{F} - 32)/1.8$
$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$

Accelleration

$$1g = 9.806650 \text{ m/s}^2 = 9.81 \approx 10$$

Metric Equivalents

LINEAR MEASURE	
1 centimeter	0.3937 inch
1 inch	2.54 centimeters
1 foot	0.3048 meter
1 meter	38.37 inches...1.0936 yds.
1 yard	0.9144 meter
1 rod	5.029 meters
1 kilometer	0.621 mile
1 miles	1.609 kilometers

WEIGHTS	
1 gram	0.03527 ounce
1 ounce	28.35 grams
1 kilogram	2.2046 pounds
1 pound	0.4536 kilogram
1 metric ton	0.98421 English ton
1 English ton	1.016 metric ton

Linear Displacement

inch	SI unit
0.01	0.254 mm
0.1	2.54 mm
1.0	2.54 cm
1.0	25.4 mm
2.0	50.8 mm
3.0	76.2 mm
4.0	101.6 mm
5.0	127.0 mm
6.0	152.4 mm
7.0	177.8 mm
8.0	203.2 mm
9.0	228.6 mm
10.0	254.0 mm
1 ft	0.3048 m
1 yd	0.9144 m

Technical Definitions of Terminology

ABSOLUTE PRESSURE TRANSDUCER: A transducer that has an internal reference chamber sealed at or close to 0 psia (full vacuum) and normally provides increasing output voltage for increases in pressure.

ACCURACY: The combined error of nonlinearity, repeatability, and hysteresis expressed as a percent of full scale output.

AXIAL LOAD: A load applied along or parallel to and concentric with the primary axis.

BFSL: Best fit straight line. The sensitivity of a sensor is ideally a straight line but is often has some small non-linearity associated with it. BFSL takes all the data points from the curve and describes a straight line through these data points such that the deviation (and hence the error) between the curve and the straight line is at a minimum.

BRIDGE: A Wheatstone bridge configuration utilizing four active strain gages.

BRIDGE RESISTANCE: The nominal value of the individual legs that make up a complete Wheatstone bridge.

CALIBRATION: The comparison of transducer voltage outputs against the outputs of a reference standard.

DAMPING: The reduction of response at the resonant frequency through the use of a damping media such as oil. Usually specified as the ratio of critical damping.

DEAD VOLUME: The volume inside the pressure port of a transducer at room temperature and barometric pressure.

DEFLECTION: The change in length along the primary axis or distance a diaphragm moves at the center between no-load and rated load conditions.

DIAPHRAGM: The sensing membrane which is deformed when pressure is applied.

EXCITATION, ELECTRICAL: The voltage or current applied to the input terminals of the transducer.

FLUSH DIAPHRAGM: Sensing element is located on the very tip of the transducer (No pressure port).

FREQUENCY RESPONSE: The range of frequencies over which the transducer voltage output will follow the sinusoidally varying mechanical input within specified limits.

FULL SCALE: See Rated Capacity.

FULL SCALE OUTPUT: The algebraic difference between the minimum output (normally zero) and the rated capacity.

GAGE PRESSURE: The pressure above (or below) atmospheric. Represents positive difference between measured pressure and existing atmospheric pressure. Can be converted to absolute by adding actual atmospheric pressure value.

GAGE PRESSURE TRANSDUCER: A transducer which measures pressure relative to the atmospheric pressure.

HYSTERESIS: the maximum difference between output readings for the same measured point, one point obtained while increasing from zero and the other while decreasing from full scale. The points are taken on the same continuous cycle. The deviation is expressed as a percent of full scale.

IEEE 1451.4: IEEE1451.4 specifies a table of self-identifying parameters that are stored within the sensor in the form of a TEDS (Transducer Electronic Datasheet). This standard directs its attention to only the TEDS part of the sensor and signal conditioning system. (As opposed to IEEE1451.2 which is for 'smart sensors'.)

INPUT IMPEDANCE: The resistance measured across the excitation terminals of a transducer at room temperature, with no load applied, and with the output terminals open-circuited.

INSULATION (Isolation) RESISTANCE: The DC resistance expressed in ohms measured between any electrical connector pin or lead wire and the transducer body or case. Normally measured at 50 VDC.

LINEARITY: The maximum deviation of the calibration curve from a straight line between zero and full scale, expressed as a percent of full scale output and measured on increasing measured only.

LINE PRESSURE: The maximum pressure in the pressure vessel or pipe for differential pressure measurement.

Technical Definitions of Terminology

LOAD: The weight, torque, or force applied to the transducer.

LOAD BUTTONS: The spherical shape of the top surface of a load cell where the load is applied.

MEASURED MEDIA: The physical quantity, property, or condition which is measured. (eg: pressure, load, weight, acceleration).

MOUNTED RESONANT FREQUENCY: the frequency at which the internal spring/mass system of an accelerometer resonates, producing a 90° phase shift in output signal vs. applied acceleration.

OUTPUT: The electrical signal measured at the output terminals which is produced by an applied input to a transducer.

OUTPUT IMPEDANCE: The resistance as measured on the output terminals of a transducer at standard temperature, with no measured applied, and with the excitation terminals open-circuited.

OVERRANGE, SAFE: the maximum pressure or load which may be applied to the transducer without causing a permanent change in the performance specifications.

PHASE SHIFT: The phase angle between the output signal and the applied acceleration.

PRIMARY AXIS: The axis along which the transducer is designed to be loaded; normally its geometric centerline.

PSI: Pounds per square inch.

PSIA: Pounds per square inch absolute.

PSID: Pounds per square inch differential.

PSIG: Pounds per square inch gage.

PULL PLATE: Load cell attachment which allows tension or compression force to be directed at the center line of a load cell through a threaded center hole.

RANGE: the measured values, over which a transducer is intended to measure specified by their upper and lower limits.

RATED CAPACITY: The maximum measured that a transducer is designed to measure within its specification.

REPEATABILITY: The ability of a transducer to reproduce output readings when the same measured value is applied to it consecutively, under the same conditions and in the same direction. Repeatability is expressed as the maximum difference between output readings as a percent of full scale.

RESOLUTION: The smallest change in mechanical input which produces a detectable change in the output signal.

SENSING ELEMENT: The part of the transducer which reacts directly in response to the measured.

SENSITIVITY: The ratio of change in transducer output to a change in the value of the measured.

SHUNT CAL (R-CAL): The change in electrical output caused by placing a fixed resistor between the appropriate transducer terminals. Used "in the field" for quick calibration.

SPAN: The algebraic difference between the limits of the range from zero to full scale.

SPECIFICATIONS: The group of error limits within which each device will operate.

STRAIN GAGE: A measuring element for converting force, pressure, tension, etc., into an electrical signal.

TEDS: Transducer Electronic Datasheet. An electronic table of parameters that identify a transducer and are stored within the transducer on an EEPROM for interrogation by external electronics. TEDS is the data contained on a sensor as defined by IEEE1451.4.

Technical Definitions of Terminology

TEMPERATURE, COMPENSATED: The range of temperature over which a transducer can operate up to full scale and still meet all specifications.

TEMPERATURE COMPENSATION: The utilization of supplementary devices, materials, or components within the bridge to minimize sources of error caused by changing temperature.

TEMPERATURE, OPERATING: The range of temperature over which a transducer may be safely operated up to full scale without causing failure, but specifications may not be met.

TEMPERATURE EFFECT ON SPAN: The change in rated output due to a change in ambient temperature. Usually expressed as +/- a percentage change in rated output per degree F change in ambient temperature, over the compensated temperature range.

TEMPERATURE EFFECT ON ZERO: The change in zero balance due to a change in ambient temperature. Usually expressed as +/- a percentage change in rated output per degree F change in ambient temperature over the compensated temperature range.

TRANSDUCER: A device (or medium) that converts energy from one form to another. The term is generally applied to devices that take physical phenomenon (pressure, temperature, humidity, flow, etc.) and convert it to an electrical signal.

TRANSMITTER: A transducer that has a 4-20 mA two-wire output.

TRANSVERSE SENSITIVITY: Signal output as a result of acceleration perpendicular to the sensitive axis. Specified as a percentage of sensitive axis output for equivalent right angle acceleration or as a decimal fraction.

TRUE GAGE: A true gage transducer differs from a standard gage because it has a second diaphragm. The additional diaphragm seals the strain gages and element in a hermetic chamber, keeping moisture and potentially corrosive gasses out. Wet or dry atmospheric pressure is vented to the back side of the second diaphragm to reference barometric changes on the sensing element. Higher range units (750 psi and above) are sealed at atmospheric pressure.

VIBRATION ERROR: the maximum change in output of a transducer when a specific amplitude and range of frequencies are applied to a specific axis at room temperature.

WET/DRY DIFFERENTIAL: A differential pressure transducer or transmitter that uses a metal diaphragm at the wet port where fluids can be applied, and no diaphragm at the dry port. The dry port exposes the internal circuitry to the medium, so only clean dry gas can be applied to this port.

WET/WET DIFFERENTIAL: A differential pressure transducer or transmitter that has a metal diaphragm in each pressure port to permit fluid into both ports.

WETTED PARTS: the diaphragm and pressure port material that comes in direct contact with the medium (gas, liquid).

ZERO ADJUSTMENTS: Used when "setting up" a transducer to adjust the output signal to zero when zero load/pressure is applied.

ZERO BALANCE: The output signal of the transducer with rated excitation and with no-load applied, usually expressed as a percent of rated output.

ZERO RETURN: The difference in zero balance measured immediately before rated load application of specified duration and measured after removal of the load, and when the output has stabilized.

How To Create An Order Code

After selecting the appropriate product model, identify the desired range and the available options, if any, that you require, and build an appropriate order code. The order code consists of a series of numbers and letters which identify the specific characteristics of the unit you select.

Sample Order Code

AP131
1
Model
Order Code
from
Product Page

BR
2
Range
Code
from page
AP-22

1c, 2a
3
Option
Codes
from pages
AP-20, 21

The Order Code has three basic sections:

1. **The first 5 characters** of the Order Code identify the **specific product** and are located directly above the product specifications on each product page. (eg. AP131, BD141).
2. **The next 2 characters** of the Order Code identify the product's **operating range** (pressure, load, etc.). Available ranges for each model are listed in the dimensions section on each product page and on page AP-20. Select an available range and insert its range code (eg. BR, ET) as the next 2 characters of the order code string.
3. **The remaining characters** of the Order Code identify the **options**, if any, which you select. (Note that options and premium options are provided at an additional charge and may increase delivery time). Available options for each model are identified via option codes on each product page. Flip out the back insert (page AP-18) for a description of the options. Insert the option code for each option selected at the end of the order code string.

Order Code Example

AP131BR, 1c, 2c is a Model Z, 100 psi gage pressure transducer, which is temperature compensated from 0° F to 185° F, and has an internal voltage amplifier which provides an output of 0-5VDC.

After building a complete order code string, prepare a purchase order like the example on page AP-23), including the order code and a detailed description of the product and options. Please provide a name and telephone number for both a purchasing and a technical contact at your company for the order. When purchasing sensors and instruments as a system, specify which sensor is to be calibrated with each instrument or each instrument channel.

Special Requirements

If you require assistance in selecting the proper sensor or require options that aren't listed as available, call Customer Service or your local Honeywell Sensotec Sales Representative and be prepared to provide the following minimum information about your application: accuracy requirements; dimensional limitation; environmental conditions including temperature, humidity, or corrosion factors; normal and maximum operating ranges; output requirements; power limitations; cycle rate; and delivery requirements.

Since 1973, we have designed thousands of different transducers. One of these designs is likely to meet your requirements. If not, our engineers will be happy to design a unit to meet your unique requirements. Special modifications are available on some models for large orders. These modifications include special temperature compensated ranges, special internal amplifiers, overload stops, special pressure ports, special electrical terminations, special wetted diaphragm and casing materials, special calibration, explosion proof enclosures, special testing, and extended temperature ranges, to name a few.

Options List

IMPORTANT

Options and premium options are available at an additional charge. Consult the options section of product specification page(s) for information on availability/restrictions. Certain options may affect the performance characteristics on some models.

GENERAL

Temperature Compensated Range

1a. 60° to 160° F	1e. -20° to 200° F	1i. -65° to 250° F
1b. 30° to 130° F	1f. 70° to 250° F	1j. 0° C to 50° C
1c. 0° to 185° F	1g. 70° to 325° F	1k. -20° C to 85° C
1d. -20° to 130° F	1h. 70° to 400° F	1m. -25° C to 110° C

Internal Amplifiers

(Also available as In-Line units) – See Internal Amplifier section for details. Note that all internal amplifiers listed below already include a precision internal shunt calibration resistor (except 2-wire amplifiers, option 2k) and have an operating temperature range of 0° F to 185° F.

- 2c. **Voltage Amp Vehicle Powered:** 0-5VDC output with 11-28VDC supply at 25ma.
- 2t. **Voltage Amp:** 0-10VDC output with 15-28VDC supply.
- 2j. **Current Amp:** 4-20ma (3-wire) output with 22-32VDC supply @ 65ma.
- 2k. **Current Amp:** 4-20ma (2-wire) output with 9-32 VDC typical supply.
- 2n. **(Also 2N) Current amp:** 4-20mA (2-wire) out, 9-28 VDC supply. Intrinsically safe with pots and shunt cal.

For replacement purposes only - not for new designs:

- 2a. **Voltage Amp:** 4 wire 0-5VDC output with +/-15VDC @ 45ma. (Used with gage and absolute pressure transducers and compression-only or tension-only load cells.)
- 2b. **Bipolar Voltage Amp:** 4 wire +/-5VDC output with +/-15VDC @ 45ma. (Used with differential pressure transducers and tension/compression load cells.)

Internal Amplifier Enhancements

- 3a. Input/output isolation.
- 3d. **(Also 3D) Remote Buffered Shunt Calibration:** Available with all internal amplifiers. Allows user to recalibrate a transducer using the internal relay circuit, thereby removing the effects of cable length in long-cable installations.

Overload Stops

- 4a. Overload stops.

Pressure Ports

5a. 1/4" - 18 NPT Female	5r. 9/16 - 18 2A Male - SAE straight thread
5b. 1/4" - 18 NPT Male	5s. 9/16 - 18 2A Female - SAE straight thread
5c. 7/16" - 20 UNF Female (per MS33649-4)	5t. G 1/2 Male
5d. 7/16" - 20 UNF Male (per MS33656E4)	5u. 9/16-18 Autoclave F-250-C
5f. G 1/4 British Pipe Female	5w. VCR Male
5g. G 1/4 Male	5z. VCR Female
5h. 1/8"-27 Female	
5i. 1/8"-27 Male	

Electrical Termination

- Connectors and cable attached to transducer.**
- 6a. Bendix PTIH-10-6P – (or equivalent) 6 pin (max. 250° F)
- 6b.* MS type connector mates with MS3106-14S 6 pin (max. 160° F)
- 6c. Cannon WK6-325 Series connector 6 pin (max. 160° F). Special Wiring Code.
- 6d. Microtec DR-4S-4H 4 pin (max. 250° F)
- 6e. Integral cable: Teflon (-65 to 475° F)
- 6f. Integral cable: PVC (-20 to 160° F)
- 6g.* Integral cable: Neoprene (0 to 180° F)
- 6h. Integral cable: Silicone (-65 to 300° F)
- 6i.* Integral underwater cable (max. 180° F)
- 6j. 1/2-14 conduit fitting with 5' of 4 conductor PVC cable (may be used with 6e-i)
- 6m. DIN 43650
- 6n. DIN 40050
- 6q.* Molded Integral Cable: Polyurethane (max. 180°F)
- 6r. Solder pins (hermetic)
- 6s. G 1/2 conduit (British Pipe Thread)
- 6t. Integral Cable with Heyco Spring Strain relief (5 ft.)
- 6v. Phoenix connector on end of cable.

Shunt Calibration

- 8a. Precision Internal Resistor (max. 250° F)

Special Calibration (Subject to available calibration levels)

- 9a. 10 point (5 up/5 down) 20% increments @ 70° F
- 9b. 20 point (10 up/10 down) 10% increments @ 70° F
- 9c. A.S.T.M. E-74 calibration
- 9e. CE mark

Wetted Diaphragm

- 10a. 316 Stainless steel
- 10b. Crucible A-286
- 10c. Hastelloy-C
- 10d. Monel K-500
- 10e. Inconel X-750

* Not available with option 1c, 1e, 1f, 1g, 1h, or 1i.

Bridge Type	11a. Square bridge. 11b. Symmetrical bridge. 11c. Square & symmetrical bridge.
Bridge Resistance	12a. 1,000 ohm (foil) (max. 400° F) 12b. 5,000 ohm (foil) (max. 250° F)
Thread Option (Specify M or F)	13a. 1/2"-20 (Load Cell) 13b. 3/4"-16 (Load Cell) 13c. 7/8"-14 (Load Cell) 13d. 1"-14 (Load Cell) 13e. 1-1/2"-12 (Load Cell) 13f. 3/8"-32 UNEF (LVDT body thread) 13g. 1/8" BSP (LVDT body thread) 13h. M-10 (LVDT body thread) 13s. 2-1/2" - 12 13t. 2-1/2" - 8
Potentiometers	14a. No access to pots. 14b. Top access to pots 14c. Side access to pots
Electrical Connector Orientation	15a. Horizontal Electrical Exit Port Orientation (models RM, RF, RGM, RGH, & RGF) 15b. Vertical Electrical Exit Port Orientation (Models RM, RF, RGM, RGH, & RGF) 15c. Radial Electrical Exit Port Orientation (Models RM, RF, RGM, RGH, & RGF) 15d. Connector on end of cable.
CIP Flanges	16b. 1.5" Tri-Clover 16c. 2.0" Tri-Clover 16d. 2.5" Tri-Clover 16e. 3.0" Tri-Clover 16f. 1.5" Cherry Burrell 16g. 2.0" Cherry Burrell 16h. 2.5" Cherry Burrell 16i. 3.0" Cherry Burrell

High Line Pressure

- 25a. 2,000 psi line pressure
25b. 3,000 psi line pressure
25c. 5,000 psi line pressure

O-Ring Seals	26a. Metal	26b. Vi-ton	26c. Teflon

LOAD CELLS ONLY

Load cells which operate in tension and compression are calibrated in tension only unless one of the following options is specified.

Special Calibration

- 30a. Compression only (+) output
30b. Tension and Compression (+,-) output
30c. Compression only (-) output
31a. Dual bridge.

Metric Threads

32a. M3 x 0.5	32j. M24 x 1.5
32b. M4 x 0.7	32k. M27 x 1.5
32c. M5 x 0.8	32l. M36 x 3.0
32d. M6 x 1.0	32m. M39 x 1.5
32e. M10 x 1.0	32n. M52 x 3.0
32f. M10 x 1.5	32p. M64 x 2.0
32g. M12 x 1.5	32q. M90 x 4.0
32h. M12 x 1.75	32r. M14 x 1.5 male
32i. M20 x 1.5	32s. M15 x 1.5 female

Shock and Vibration	44a. Shock and vibration resistance.

AMPLIFIERS AND INSTRUMENTS ONLY

Mounting and Packaging

- 51a. Rack mount adapter (GM) 19"
51k. Metal enclosure In-Line Amplifiers
51d. Custom front panel or logo

Inputs Accepted

- 52a. 0-5VDC
52b. 4-20ma
52c. 0-4.5mv/v to 0-40mv/v

Interfaces

- 53d. RS-485 interface
53e. Signature Calibration (Temp. range -20 to 160° F only) (Wiring Code # 40)
53t. T.E.D.S. IEEE 1451.4 Module
53s. Phoenix with signature module cable termination.

Outputs

- 56a. 4-20ma
56c. 0-20ma
56e. 0-1VDC

Special Features

- 58a. Hi/Lo limits (dual)
58c. Peak/Hold
58d. Track/Hold

Electrical Connection	59e. Turck connectors (In-Line amplifiers)

Power

- 60a. 220VAC
60c. Battery power (12VDC)

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Range Codes

Use these codes to specify the desired range when ordering.

Range Code	Gage/Absolute Pressure	Differential Pressure	Load
AF	N/A	N/A	10 gm.
AH	N/A	N/A	25 gm.
AJ	N/A	N/A	50 gm.
AL	N/A	N/A	150 gm.
AN	.5 psi	.5 psid	250 gm.
AP	1 psi	1 psid	500 gm.
AR	2 psi	2 psid	1000 gm.
AS	2.5 psi	2.5 psid	2.5 lbs.
AT	5 psi	5 psid	5 lbs.
AV	10 psi	10 psid	10 lbs.
BJ	15 psi	15 psid	N/A
BL	25 psi	25 psid	25 lbs.
BM	30 psi	30 psid	30 lbs.
BN	50 psi	50 psid	50 lbs.
BP	75 psi	75 psid	N/A
BR	100 psi	100 psid	100 lbs.
CJ	150 psi	150 psid	N/A
CL	200 psi	200 psid	N/A
CN	250 psi	250 psi	250 lbs.
CP	300 psi	300 psid	N/A
CQ	400 psi	400 psid	400 lbs.
CR	500 psi	500 psid	500 lbs.
CS	600 psi	600 psid	600 lbs.
CT	750 psi	750 psid	N/A
CV	1,000 psi	1,000 psid	1,000 lbs.
DJ	1,500 psi	N/A	N/A
DL	2,000 psi	2,000 psid	2,000 lbs.
DM	2,500 psi	2,500 psid	2,500 lbs.
DN	3,000 psi	3,000 psid	3,000 lbs.
DP	N/A	N/A	4,000 lbs.
DR	5,000 psi	5,000 psid	5,000 lbs.
DS	6,000 psi	6,000 psid	6,000 lbs.
DT	7,500 psi	7,500 psid	7,500 lbs.
DV	10,000 psi	10,000 psid	10,000 lbs.
EJ	15,000 psi	N/A	15,000 lbs.
EL	20,000 psi	N/A	20,000 lbs.
EM	25,000 psi	N/A	25,000 lbs.
EN	30,000 psi	N/A	30,000 lbs.
EP	50,000 psi	N/A	50,000 lbs.
ER	75,000 psi	N/A	75,000 lbs.
ES	60,000 psi	N/A	60,000 lbs.
ET	100,000 psi	N/A	100,000 lbs.
FJ	150,000 psi	N/A	150,000 lbs.
FK	175,000 psi	N/A	175,000 lbs.
FL	200,000 psi	N/A	200,000 lbs.
FN	N/A	N/A	300,000 lbs.
FP	N/A	N/A	400,000 lbs.
FU	N/A	N/A	1,500,000 lbs.

Range Codes

ACCELERATION

Code	Range
GJ	5g
GK	10g
GL	20g
GN	50g
GP	100g
GR	500g

TORR

Code	Range
HA	15
HB	50
HC	135
HD	250
HE	750
HF	1500

mBAR

Code	Range
JA	35
JB	70
JC	175
JD	350
JE	700
JF	750
JG	1,000
JH	3,500
JI	7,000
JK	10,000

KPa

Code	Range
KA	2
KB	7
KC	15
KD	35
KE	70
KF	100
KG	200
KH	300
KJ	700
KL	1,000
KM	1,500
KN	1,700
KP	2,000
KQ	3,000
KR	5,000
KS	7,000
KT	10,000
KU	15,000
KV	20,000
KW	35,000
KY	50,000
KZ	70,000

LOAD CELL, HIGH RANGE

Code	Range
RA	1 Metric Ton
RB	3 Metric Ton
RC	5 Metric Ton
RD	10 Metric Ton
RE	20 Metric Ton
RF	30 Metric Ton
RG	50 Metric Ton
RH	100 Metric Ton
RI	200 Metric Ton

TORQUE

Code	Range
TA	10 in. ozs.
TB	25 in. ozs.
TD	100 in. ozs.
TF	250 in. ozs.
TH	50 in. lbs.
TJ	100 in. lbs.
TL	300 in. lbs.
TN	600 in. lbs.
TP	1,200 in. lbs.
TR	3,000 in. lbs.
TT	6,000 in. lbs.
TV	12,000 in. lbs.
TW	24,000 in. lbs.
TX	Special

LIQUID PRESSURE

Inches Hg (mercury)

Code	Range
UB	1" Hg
UD	2" Hg
UF	5" Hg
UA	10" Hg
UC	15" Hg
UE	20" Hg
UG	30" Hg
UI	50" Hg
UK	60" Hg
UM	80" Hg
UP	100" Hg
UH	200" Hg
UJ	300" Hg
UL	500" Hg
UN	1,000" Hg
UQ	16"-32" Hg
UR	26"-32" Hg
US	0"-32" Hg

LIQUID PRESSURE

mm Hg (mercury)

Code	Range
VA	15mm Hg
VB	50mm Hg
VC	135mm Hg
VD	250mm Hg
VE	750mm Hg
VF	1,500mm Hg

LIQUID PRESSURE

Inches H₂O (water)

Code	Range
WA	10" H ₂ O
WC	20" H ₂ O
WE	30" H ₂ O
WG	50" H ₂ O
WI	100" H ₂ O
WK	120" H ₂ O
WM	150" H ₂ O
WP	200" H ₂ O
WR	300" H ₂ O
WS	500" H ₂ O

Range Codes

Range Code	Gage, Absolute & Differential Pressure		Load	
MA	.035 bar	N/A	N/A	N/A
MB	.1 bar	1.45 psi	.1 Newton	N/A
MC	.2 bar	2.9 psi	.2 Newton	N/A
MD	.5 bar	7.25 psi	.5 Newton	50.9 gm
ME	1 bar	14.5 psi	1 Newton	101.8 gm
MF	2 bar	29 psi	2 Newton	203.6 gm
NA	3.5 bar	50.75 psi		
MG	5 bar	72.5 psi	5 Newton	1.12 gm
NB	7 bar	101.5 psi		
MH	10 bar	145 psi	10 Newton	2.2 lbs
MI	20 bar	290 psi	20 Newton	4.496 lbs
MJ	30 bar	435 psi	30 Newton	N/A
NC	35 bar	507.5 psi		
MK	50 bar	725 psi	50 Newton	11.24 lbs
ND	70 bar			
ML	100 bar	1,450 psi	100 Newton	22.48 lbs
NE	135 bar			
MY	200 bar	2,900 psi	500 Newton	112.4 lbs
NG	350 bar			
MM	500 bar	7,250 psi	200 Newton	44.96 lbs
NH	700 bar			
MN	1,000 bar	14,500 psi	1,000 Newton	224.8 lbs
MO	2,000 bar	29,000 psi	2,000 Newton	449 lbs
MP	3,000 bar	43,500 psi	3,000 Newton	674.4 lbs
MQ	5,000 bar	72,500 psi	5,000 Newton	1,124 lbs
MR	10,000 bar	N/A	10,000 Newton	2,248 lbs
MS	N/A	N/A	20,000 Newton	4,496 lbs
MT	N/A	N/A	50,000 Newton	11,240 lbs
MU	N/A	N/A	100,000 Newton	22,480 lbs
MV	N/A	N/A	200,000 Newton	44,960 lbs

METRIC THREADS

Code	Range
32a	M3 x 0,5
32b	M4 x 0,7
32c	M5 x 0,8
32d	M6 x 1,0
32e	M10 x 1,0
32f	M10 x 1,5
32g	M12 x 1,5
32h	M12 x 1,75
32i	M20 x 1,5
32j	M24 x 1,5
32k	M27 x 1,5
32l	M36 x 3,0
32m	M39 x 1,5
32n	M52 x 3,0
32p	M64 x 2,0

Sample Purchase Order

TO: HONEYWELL Sensotec Sensors 2080 Arlingate Lane Columbus, Ohio 43228		Purchase Order #: ABC123 Customer #: XXXX ← A Date: 1/1/03
Bill To: ABC, Inc. P.O. Box 123 New York, NY 10001 Attn: Accounts Payable		Ship to: ABC, Inc. 123 Anyplace Dr. New York, NY 10001 Attn: John Doe
Ship Via: United Parcel Service (UPS) ← B		
Item	Qty	Unit Price
1	2	XXX.XX ← C
Model/Description AP122CV, 1c, 5d, (P/N 060-1495-25) Model TJE Absolute pressure transducer; 0-1000 psia range; 0.1% accuracy. Options: Temperature compensated from 0° F to 185° F; and a 7/16" -20 UNF male pressure port.		
		← D
		← E
2	1	XXX.XX ← F
AE221, 53a, 58c Model 450D instrument. Options: RS232 serial output and peak/hold. Item 2 to be used with item 1.		
		← G
3	1	XXX.XX
AA112 PT06A-10-6S Mating connector/cable assembly with 50 ft. of 6 conductor cable to be used with items 1 and 2.		
		← G
		← H
Ship Date:		XX/XX/XX ← H
Purchasing Contact: Jane Smith (212) 646-1000 X 211 Technical Contact: John Doe (212) 646-1000 X 315		← I

- A** Existing customers have an established customer number for specific bill to and ship to locations.
- B** Unless otherwise specified, Honeywell Sensotec will ship your product UPS. Other means of shipment such as Emery, Federal Express, UPS next day, etc. are available. Terms: FOB Honeywell Sensotec plant.
- C** Order Code identifies product model, range, and options.
- D** If you wish to reorder an exact duplicate of a product ordered previously, you can use the part number (ie: part number 060-1495-25 would appear as TJE/1495-25 on the product label) when ordering. Otherwise, leave this space blank.
- E** It is important to include a full description of the product after the order code. By providing both the order code and a full description, you reduce the possibility of an order error and avoid unnecessary delays in shipment.
- F** Unit price includes the list price for the model/range you select, plus any additional charges for options specified, less any quantity or GSA discount.
- G** By specifying which items will be used together, you help insure that compatible products will be shipped. When you purchase both the transducer and instrument from Honeywell Sensotec and specify that they will be used together, we calibrate the two units as a system, free of charge.
- H** Ship dates should be confirmed by the Customer Service Department. Items with different ship dates should be listed separately. Unless otherwise specified on the order, Honeywell Sensotec assumes that early and/or partial shipments are acceptable. When ordering products from the stocking program, specify "Ship From Stock" on the order.
- I** The name and telephone number of both a purchasing and a technical contact should be provided so that questions concerning the order can be easily resolved without unnecessarily delaying processing and shipment.

Plug and Play Sensors and Signal Conditioning

- IEEE 1451.4 or Sensotec "Sig Cal" Protocol
- Built In As New, Retrofittable or Virtual
- Cal Data Stored on Sensor for Automatic Setup



Sensotec can supply your sensor with Sig Cal or IEEE1451.4 plug and play technology. These are two different protocols. Sig Cal conforms to the Sensotec standard, and IEEE1451.4 conforms to the IEEE standard. The plug and play technology for both protocols consists of adding a memory chip to the sensor and having software (Sig Cal is standard on the SC2000) to interpret the data that then automatically sets up and calibrates your system so that you are ready to take data. Its as easy as 1-2-3.

The transducer electronic data sheet (T.E.D.S), common for Sig Cal or IEEE1451.4, contains sensor specifications, calibration data and user defined location information and is stored in the sensor. When connected to the SC2000 the Sig Cal sensor is interrogated for the TEDS information and automatically sets up and calibrates the signal conditioning with the sensor.

No More Paper. Plug and play eliminates the need to read and enter data from a paper calibration sheet. You don't have to endure the hassle of having the sheet filed in one location while the sensor is used in another or worst of all, that the calibration sheet will get misplaced or lost.

Labeling and Cabling Made Easy. Sensor users often find themselves with a bundle of cables, trying to figure out which cable goes with which sensor so they can make the proper connections to their signal conditioner. Plug and play technology introduces the potential for enabling the signal conditioner to read not only a sensor's type and calibration information but also its location.

Swapping Made Easy. Even a rugged sensor can be damaged in an industrial testing situation. When that happens, you want to change sensors and get your test back up and running as soon as possible. With a TEDS sensor that automatically provides calibration data to an active signal conditioner, often a technician unfamiliar with calibration procedures can swap sensors quickly without jeopardizing the integrity of system operations.

Plug and Play Inventory Control. Burning location data onto each sensor's TEDS will also help you inventory your sensors.

Plug and Play Supplied With Your Sensor



IEEE 1451.4 TEDS or Sensotec "Sig Cal" sensors are available in most strain gage based sensors with 4 wire unamplified, amplified voltage or current outputs. TEDS uses two wires so a 6 pin connector or 6 wire cable is fitted to these sensors. Miniature sensors require the TEDS chip to be mounted as an in-line module or mounted in the connector.

TEDS Availability

		Unamplified	Amplified
Pressure	General Purpose	Available	Consult Factory
	Miniature	Integral Cable Units Only	Consult Factory
	Subminiature	Integral Cable Units Only	Consult Factory
	Differential	Available	Consult Factory
Load	General Purpose	Available	Consult Factory
	Miniature	Integral Cable Units Only	Consult Factory
	Subminiature	Available	Consult Factory
Torque	Reaction	Available	Consult Factory
	Rotary Transformer Based	Custom Only	Consult Factory
	Slip Ring Based	Custom Only	Consult Factory
	Wireless Telemetry Based	Not Available	Not Available
LVDTs	AC-AC	Not Available	N/A
	DC-DC	N/A	Consult Factory
Accelerometers		Not Available	Not Available
Digital Gages		N/A	Not Available
Instruments	SC2000	Sig Cal Only	Sig Cal Only
	Other Units	Not Available	Not Available

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Troubleshooting Guide

Unamplified Transducers

Symptom/Problem	Action/Troubleshooting
No Output	Verify correct wiring Verify excitation per calibration sheet. Make sure pressure, load, etc. is being applied. Check strain gage bridge for continuity per calibration sheet.
Erratic/Intermittent Output or Zero Drift	Check electrical connections for discontinuity or damage. Check for isolation resistance between bridge wiring and transducer body. Make sure pressure, load, etc. is constant. Check stability of excitation power supply. Check millivolt output with volt meter. Check for RFI/EMI interference. Make sure there are no rapid changes in temperature.
Incorrect Output	Check actual input and output resistance against calibration sheet data for possible change or open bridge. Check Zero offset to see if high.
High Zero Offset	Usually indicates transducer was overranged beyond specifications. Overranged transducers should be recalibrated. Check actual input and output resistance measurements against calibration sheet for possible changes or open bridge. Check for possible mechanical preload or damping on transducer body.

Amplified Transducers

Symptom/Problem	Action/Troubleshooting
No Output	Make sure power supply voltage meets transducer requirements. Check wiring connections and wiring code. Check transducer specifications for type of output provided (i.e. voltage, frequency, etc.). Make sure pressure, load, etc. is being applied. Make sure that the output load is not shorted.
Incorrect Zero Level	Check for pre-load on transducer. Adjust zero or balance control. For load cells check mounting fixture bias. For pressure transducers, check for orientation bias.
Erratic/Intermittent Output or Zero Drift	Make sure pressure, load, etc. is constant. Make sure power supply remains within specifications. Check for RFI interference. Make sure there are no rapid changes in temperature. Check electrical connections for discontinuity or damage. Check output with volt meter. Check for insulation resistance between amplifier wiring and transducer shell.
Incorrect Output	Check "shunt" calibration output value against calibration sheet and adjust span control per instructions. Verify that transducer is being operated within its temperature compensated range. Check transducer range on label. Check for insulation resistance between amplifier wiring and transducer shell.

Transducers with Instrument Readout

Symptom/Problem	Action/Troubleshooting
Erratic Display	Check electrical connections for continuity and wiring code for pin layout.
No Display/No Output Voltage	Check powerline fuse per instrument instructions.
Blinking Display	Indicated overload; make sure wires are all connected, and transducer is within its range.
Incorrect Readout Value	Check transducer range on label. Verify that system was set-up per instructions. Review set-up procedure. Refer to transducer troubleshooting guide and verify that transducer operates properly. Use Shunt-Cal to verify calibration.

Worldwide customer support

At Honeywell, products are based upon technology providing you with enhanced quality and reliability. When service is needed, our customer support engineers and service centers are strategically located around the world to provide efficient and responsive support.

Honeywell Sensing and Control designs, manufactures and markets one of the industry's most extensive lines of sensing and control technologies available from a single switch or sensor manufacturer. Honeywell aims to develop the right products that are delivered on time and work right.

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E-Mail: sales@sensotec.com

Internet: www.honeywell.com/sensotec

Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective.

The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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Sensotec Sensors
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