GENERAL PRESSURE TRANSDUCERS
GPT SERIES

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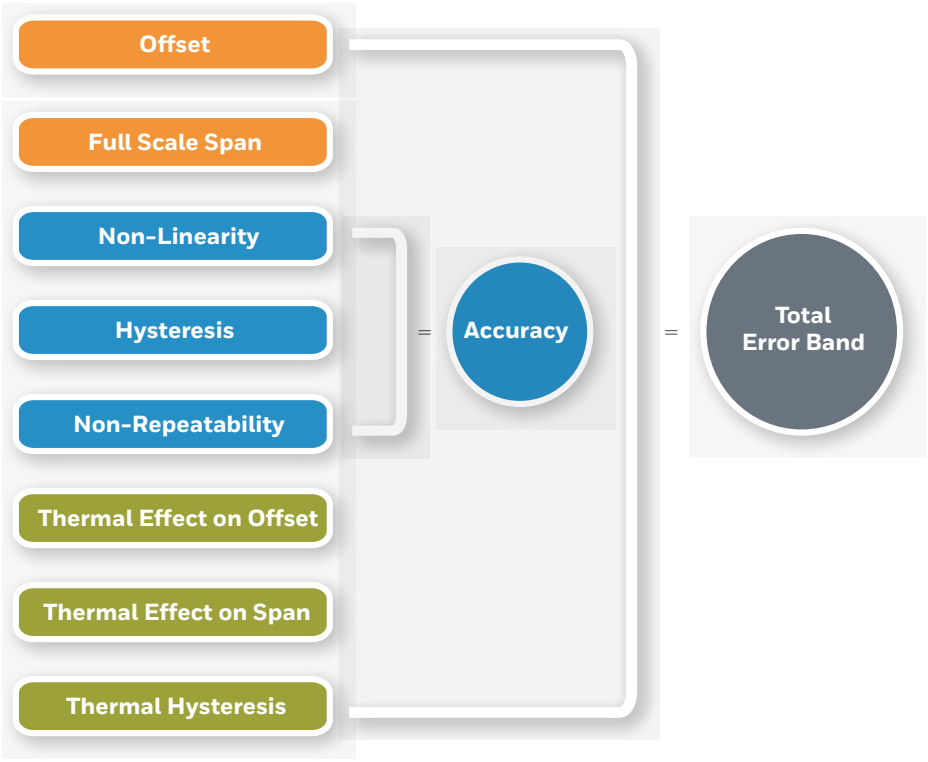
DESCRIPTION

Honeywell's GPT Series Pressure Transducers use piezoresistive sensing technology with ASIC (Application Specific Integrated Circuit) signal conditioning in a stainless steel housing with electrical connector. The GPT Series are fully calibrated including temperature compensation from 0°C to 80°C.

VALUE TO CUSTOMERS

- Total Error Band (TEB) (±2.0 %FSS): Provides the most comprehensive, clear and meaningful indication of the transducer's true measurement performance over a specified temperature range; small error promotes system uptime and efficiency. (See Figure 1.)

Figure 1. TEB and Accuracy Definition



- High insulation resistance and dielectric strength: Protect the user and transducer in high over-voltage situations, and ensure that the device is compliant with industry standards.

- Robust EMC performance: Operate reliably in the presence of electromagnetic fields, such as near wireless signals, RF communication, and electrical devices.

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FEATURES AND BENEFITS

DIFFERENTIATION

- Efficient: Proven tight TEB and accuracy (See Figure 1.).
- Great customer value: Multiple configuration possibilities with the right combination of features provide flexibility of use in the application; configurability on standard ports, pressure reference type, and pressure range and output.
- Durable: Provides the tough environmental specs needed, including insulation resistance and dielectric strength, and EMC performance.

FEATURES

- Fully media isolated
- Pressure range: 5MPa - 60MPa (sealed gage)
- Output: 4-20mA, Ratiometric and Regulated
- Fully calibrated and temperature compensated
- Total Error Band: ±2.0 %FSS from 0 °C to 80 °C
- Insulation resistance: >100 Mohm, 500 Vdc
- Dielectric strength: 250 Vac, 1 min.
- EMC: Heavy Industrial Level
- Response time: <2 ms TYP. (without snubber)
- RoHS, REACH, and CE compliant

POTENTIAL APPLICATIONS

- Industrial: Machine Tools
- Transportation: Construction Machinery, Agriculture Machinery

PORTFOLIO

Honeywell's GPT Series joins the PX2 Series, PX3 Series, MLH Series, and SPT Series heavy duty pressure transducers.

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Table 1. Electrical Specifications

Characteristic	Parameter				
Output Code	**AA**	**BC**	**BE**	**BF**	**CH**
Output	10%-90% Vs	1-6Vdc	0.5-4.5Vdc	0-10Vdc	4-20mA
Supply Voltage (Vs)	4.75-5.25Vdc	8-32Vdc	8-32Vdc	12-32Vdc	8-32Vdc
Over and reverse Voltage	±16 Vdc	±36 Vdc	±36 Vdc	±36 Vdc	±36 Vdc

Table 2. Performance Specifications (At 25 °C unless otherwise noted.)

Characteristic	Parameter
Operating temperature range	-40 °C to 85 °C
Storage temperature range	-40 °C to 125°C
Compensated temperature range	0 °C to 80°C
Accuracy[1]	±0.5%FSS
Total Error Band[2]	±2%FSS over 0 °C to 80°C
Response time	<2 ms TYP (10% to 90% step change in pressure) without snubber
Turn on time[3]	<7 ms
EMC rating	
Electrostatic discharge	±4 kV contact, ±8 kV air per IEC 61000-4-2
Radiated immunity	10 V/m (80 MHz to 1000 MHz) per IEC 61000-4-3
Fast transient burst	±1 kV per IEC 61000-4-4
Surge Immunity	±1 kV per IEC 61000-4-5
Immunity to conducted disturbances	3 V per IEC 61000-4-6
Radiated emissions	40 dB (30 MHz to 230 MHz), 47 dB (230 MHz to 1000 MHz) per CISPR 11:2009, A1:2010
Radiated immunity[4]	>100V/m (200 to 2500 MHz) per ISO 11452-2
Insulation resistance	>100 Mohm, 500 Vdc
Dielectric strength	250 Vac, 1 min.
Load resistance	Voltage output: 2k ohm min; Current Output: (Vs-8)*50 ohm max
Life	10 million cycles minimum to 90% full scale pressure

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[1]**Accuracy:** The maximum deviation in output from a Best Fit Straight Line (BFSL) fitted to the output measured over the pressure range at 25 °C [77 °F]. Includes all errors due to pressure non-linearity, pressure hysteresis, and pressure non-repeatability. See Figure 1.

[2]**Total Error Band:** The maximum deviation from the ideal transfer function over the entire compensated temperature and pressure range. Includes all errors due to offset, full scale span, pressure non-linearity, pressure hysteresis, pressure non-repeatability, thermal effect on offset, thermal effect on span, and thermal hysteresis. See Figure 1.

[3]**Turn on time:** Duration from power applied until first valid output.

[4]**Radiated immunity:** This characteristic is only for 4 to 20mA current output.

Table 3. Pressure Reference Definitions

Pressure Reference	Definition
Sealed gage	The output is calibrated to be proportional to the difference between applied pressure and a reference of 1 standard atmosphere (1.013 barA).

Table 4. Pressure Ratings

MPa			Bar		
Rated Pressure	**Over Pressure**	**Burst Pressure**	**Rated Pressure**	**Over Pressure**	**Burst Pressure**
<=6	3XFS	5XFS	<=60	3XFS	5XFS
7	2.5XFS	5XFS	70	2.5XFS	5XFS
10	1.7XFS	3.5XFS	100	1.7XFS	3.5XFS
<=25	3XFS	5XFS	<=250	3XFS	5XFS
35	62.5	125	350	625	1250
40	2.5XFS	5XFS	400	2.5XFS	5XFS
50	2.5XFS	5XFS	500	2.5XFS	5XFS
60	2.5XFS	5XFS	600	2.5XFS	5XFS

Table 5. Environmental and Mechanical Specifications

Characteristic	Parameter
Vibration	20 G sweep, 10 Hz to 2000 Hz
Shock	100 G per MIL-STD-202G, Method 213B, Cond. C
Humidity	0 %RH to 95 %RH, non-condensing
Wetted materials	Port and Diaphragm:17-4PH;Gasket:NBR
External materials housing connector	304 stainless steel PBT 30% GF

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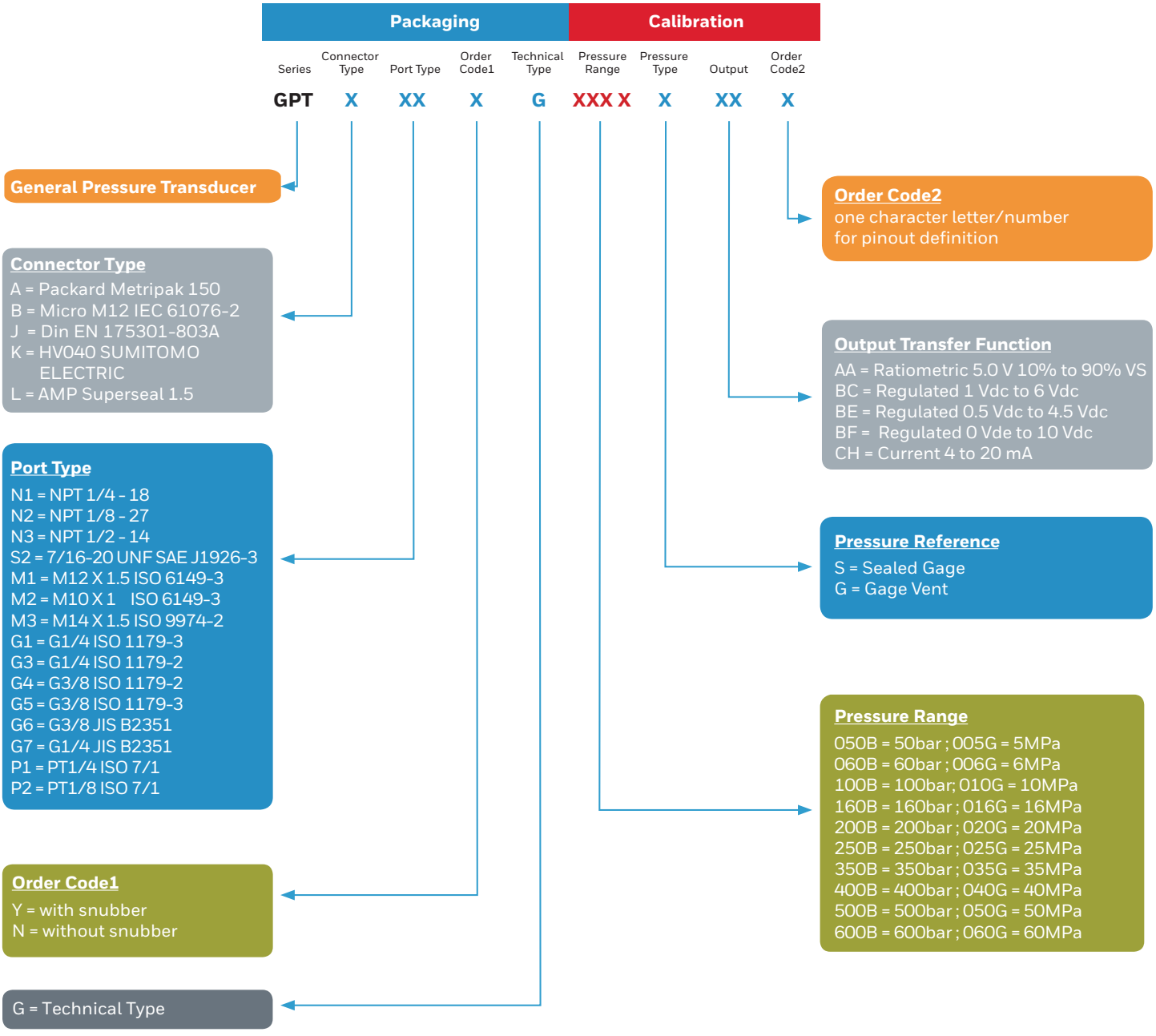
Nomenclature and order guide[1]



[1]Continuing development some configuration of pressure range, pressure reference, pressure port , electrical terminal and transfer function, please consult with Honeywell representative.

[2]Clogging of the snubber holes may occur in liquids containing particles which may cause wrong output.

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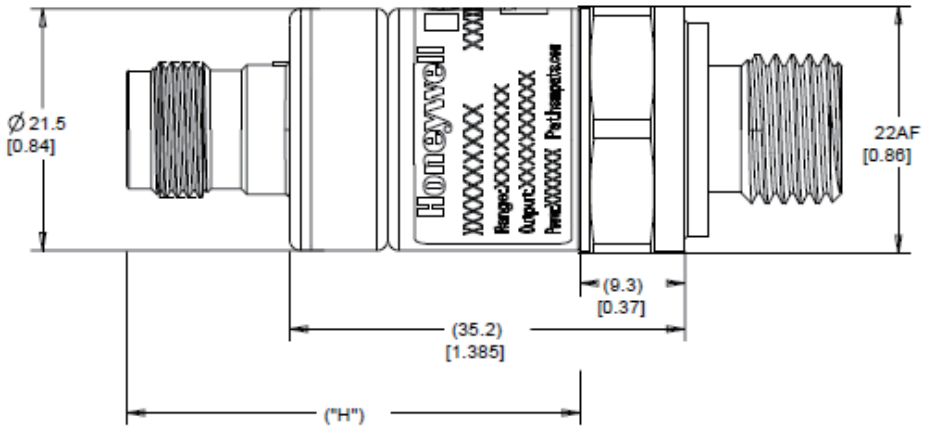
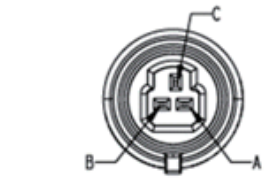
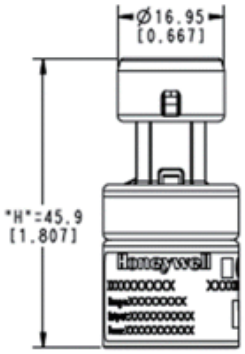
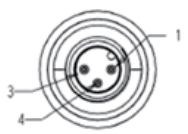
Mounting Dimensions Shows by Connectors (Reference only :mm [in])

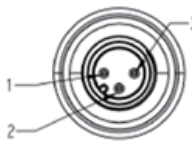


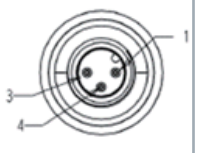
A=Delphi Metri-Pack150					B=Micro M12 IEC 61076-2						
Connector:DELPHI 12078088 Mating Connector:DELPHI 12110192 IP Rating:IP65					Mating Connector:4 POS TYPE D IP Rating:IP 67						
PIN NO	Voltage Output	Current Output	Voltage Output	Voltage Output	PIN NO	Voltage Output	Current Output	Voltage Output	Current Output	Current Output	Current Output
A	GND	RTN	Vout	Vs	1	Vs	Vs	Vs	Vs	Vs	Vs
B	Vs	Vs	GND	GND	2	--	--	Vout	NC	--	RTN
C	Vout	NC	Vs	Vout	3	GND	RTN	GND	RTN	NC	NC
					4	Vout	NC	--	--	RTN	--
Standard			Option1	Option2	Standard			Option1		Option2	Option3

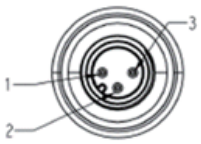


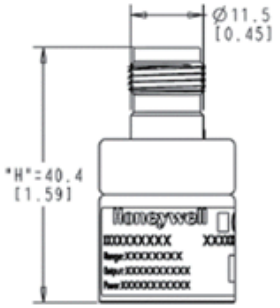












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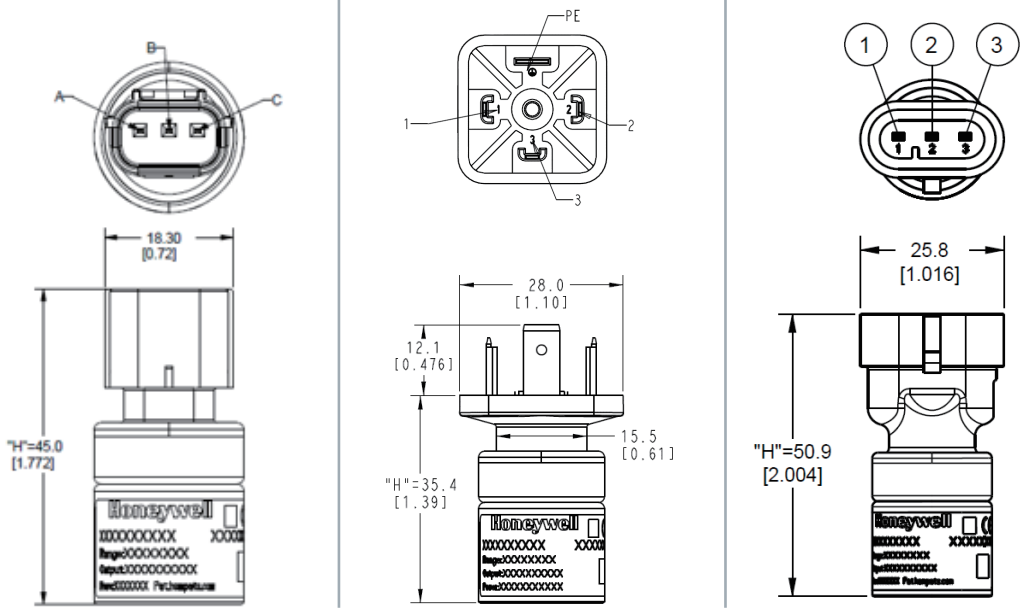
K-Sumitomo (HV040)			J=DIN EN 175301-803A			L=AMP Superseal 1.5		
Connector: HV series-4775 Mating Connector: HV series 6189-7037 IP Rating: IP67			Mating Connector: DIN EN 175301-803A, 18mm IP Rating: IP65			Mating Connector: AMP Superseal 1.5; IP Rating: IP67		
PIN NO	Voltage Output	Current Output	PIN NO	Voltage Output	Current Output	PIN NO	Voltage Output	Current Output
A	Vs	Vs	1	Vs	Vs	1	Vs	Vs
B	GND	RTN	2	GND	RTN	2	GND	RTN
C	Vout	NC	3	Vout	NC	3	Vout	NC
			PE	NC	NC			



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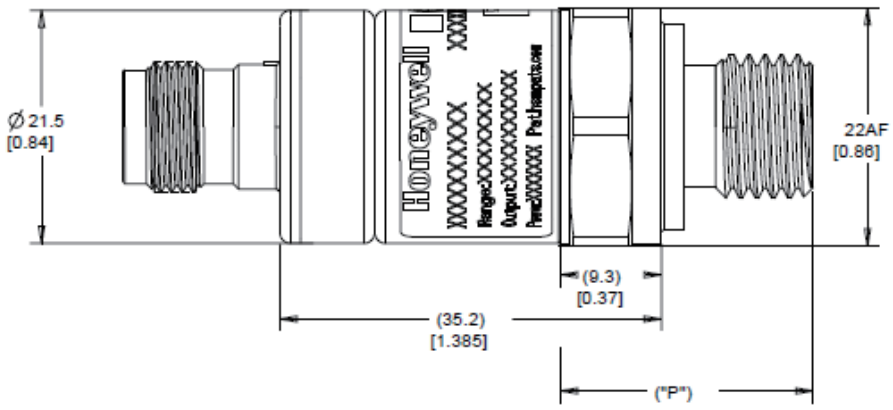
Mounting Dimensions Shows by Ports (Reference only :mm [in])



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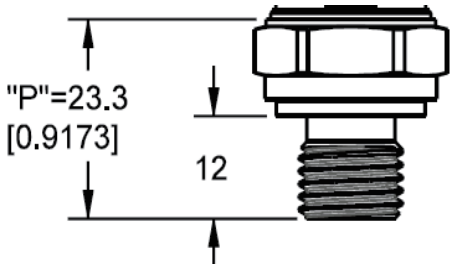
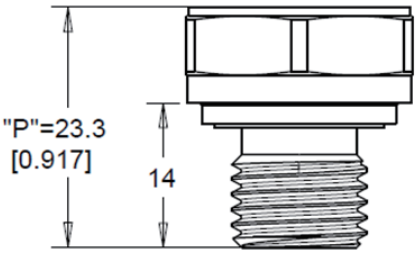
G3=G1/4 ISO 1179-2

Seal[2,3]
Mating Geometry: ISO 1179-1
Installation Torque[1]: 50 N m [38.9 ft lb]



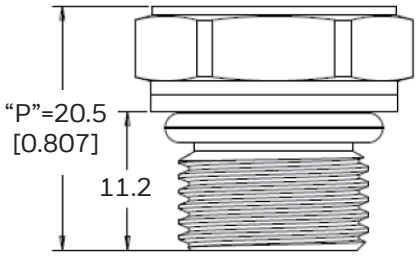
G4=G3/8 ISO 1179-2

Seal[2,3]
Mating Geometry: ISO 1179-1
Installation Torque[1]:50 N m [38.9 ft lb]



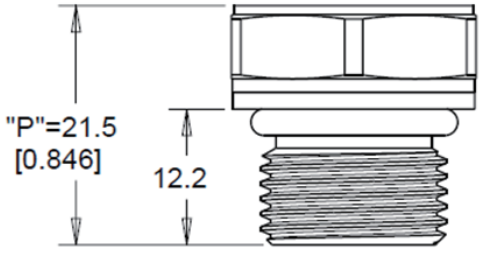
G5=G3/8 ISO 1179-3

Seal:O-ring[2,3]
Mating Geometry: ISO 1179-1
Installation Torque[1]:50 N m [38.9 ft lb]



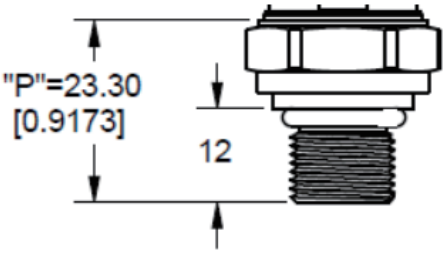
G6=G3/8 JISB2351

Seal:O-ring[2,3]
Mating Geometry: JISB 2351
Installation Torque[1]:50 N m [38.9 ft lb]



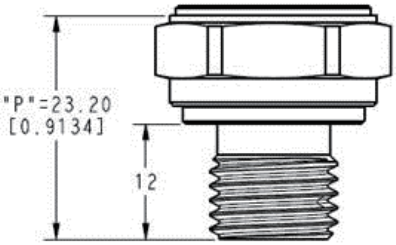
G7=G1/4 JIS B2351

Seal: O-ring[2,3]
Mating Geometry: JIS B2351
Installation Torque[1]: 50 N m [38.9 ft lb]



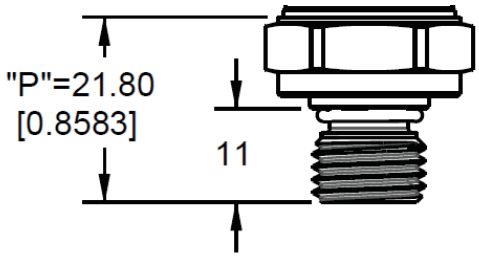
M3=M14X1.5 ISO 9974-2

Seal[2,3]
Mating Geometry: ISO 9974-2
Installation Torque: 50 N m [11.04 ft lb]



S2=7/16-20 UNF SAE J1926-3

Seal: O-ring[2,3]
Mating Geometry: SAE J1926-3
Installation Torque[1]: 50 N m [38.9 ft lb]



[1]Straight thread maximum torque is validated to 90Nm installation torque

[2]Seals for port are included and assembled to the sensor

[3]Seal for port order codes G3 M3 is NBR -30°C to 100°C, others are Buna N -30°C to 125°C

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Caution

PRODUCT DAMAGE

- Ensure torque specifications are determined for the specific application. Values provided are for reference only. (Mating materials and thread sealants can result in significantly different torque values from one application to the next.)
- When using mating parts made of stainless steel, use a thread sealant with anti-seize properties to prevent thread galling. Ensure the sealant is rated for the application.
- Use appropriate tools (such as an open ended wrench or deep well socket) to install transducers.
- Always hand-start transducers into the hole to prevent cross threading and damage.
- Ensure that torque is not applied to the electrical connector.
- Ensure that the proper mating electrical connector with a seal is used to connect the transducer. Improper or damaged seals can compromise ingress protection leading to short circuits.

Failure to comply with these instructions may result in product damage.

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.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. Do not use this document as a product installation guide.
- 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.

ADDITIONAL INFORMATION

The following associated literature is available on the Honeywell web site at sensing.honeywell.com:

- Product line guide
- Product range guide
- Product installation instructions
- Application notes:
  - Heavy Duty Pressure Transducers, PX2 Series and PX3 Series
  - PX2 Series and PX3 Series Heavy Duty Pressure Transducers for Potential Use in Industrial Refrigeration
  - PX2 Series and PX3 Series Heavy Duty Pressure Transducers for Potential Use in Industrial HVAC/R Applications
- Technical Notes:
  - Total Error Band Specification for Honeywell Heavy Duty Pressure Transducers, PX2 Series and PX3 Series
- CAD models, please contact with Honeywell at sensing.honeywell.com

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. 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 other 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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霍尼韦尔安全与生产力解决方案集团
上海市浦东新区张江高科技园区环科路 555 号 1 号楼

官方网站：sensing.honeywell.com.cn
服务热线：400 639 6841
官方邮箱：Bin.Rong@Honeywell.com

SPS-GPT SERIES-60MPA / 600BAR-Mar. 2020-EN01

THE FUTURE IS WHAT WE MAKE IT

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