



**APPLIED MEASUREMENTS LTD.**  
Transducer Specialists...

+44 (0) 118 981 7339

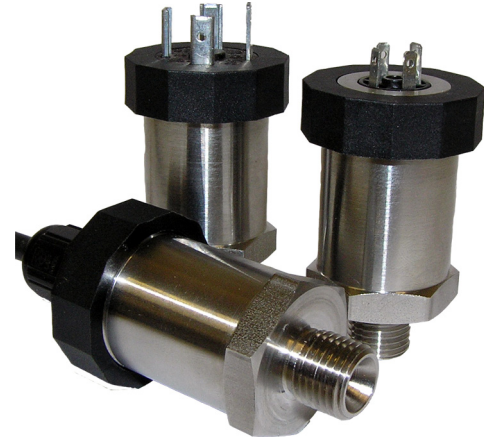
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## Pi600 Industrial Pressure Sensor

### Key Features:

- Ranges 0-50mbar up to 0-700bar
- Outputs: 4-20mA, 0-5Vdc, 0-10Vdc, 0.5-4.5Vdc, mV/V
- Sealed to IP65 (IP54, IP67 & IP68 optional)
- Accuracy:  $<\pm 0.25\%/FS$  (0.1% option)
- Gauge or Absolute Reference Versions
- Excellent Chemical and Abrasion Resistance
- Rugged Construction
- UKAS Traceable Calibration Certificate Included (UKAS Laboratory Certificate Optional)
- 3 Year Warranty



The Pi600 Series of pressure sensors are designed for measurement of gas and liquid pressure across a wide range of general purpose and industrial applications. Constructed from stainless steel, they are designed to be extremely rugged yet compact.

As standard the Pi600 comes with: Viton O Ring, stainless steel case, ceramic diaphragm (316 stainless steel diaphragm below 1 bar), G $\frac{1}{4}$  inch male process connection. Alternate case, o ring material and process connections are available; including G $\frac{1}{2}$ " male, G $\frac{1}{4}$ " female,  $\frac{1}{4}$ " NPT male and  $\frac{1}{2}$ " NPT male connectors.

The Pi600 series provides a wide choice of electrical outputs from its ASIC-based amplifier circuit, these include 4-20mA, 0-5Vdc & 0-10Vdc, 1-6Vdc and 10mV/V, as well as a ratiometric 0.5-4.5Vdc signal that requires a 5Vdc supply to suit most data loggers. The Pi600 series can also be supplied with any of our wide range of instrumentation to give you a complete calibrated system.

In addition, we can offer complete customisation to suit your application, please [contact our technical sales team](#).

### Options:

- Interim Pressure Ranges
- Manufacturing Materials
- Special Output Scaling
- Cable Gland, 6-Pin Bayonet Connector or M12x1 Connector Electrical Connections
- Improved Accuracy (NL&H):  $<\pm 0.10\%/FS$  (BFSL)
- Improved Accuracy (TZS):  $<\pm 0.02\%$  or  $<\pm 0.01\%/Span/^{\circ}C$  (Thermal Zero Shift)
- Supplied with Instrumentation and Calibrated as a Complete System with Traceable Certificate
- 316 Stainless Steel Case or High Grade UNS S31803 Stainless Steel Case
- Cleaning for Oxygen Service

### Applications:

- Hydraulics
- Research & Development
- Food Processing
- Plant and Machine Engineering
- Energy Industry
- Environmental Engineering (Water/Sewage/ Recycling)
- Medical Technology
- Meteorology



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## Specification:

Input Pressure Range						
Nominal Pressure Range	mbar (gauge, absolute or sealed gauge)	50	100	160	250	500
Compound Ranges	bar	-	-	-	-	-
Permissible Overpressure	bar	2	2	2	2	5
* $\pm 0.1\%$ / FS (BFSL) accuracy not possible in this range						

Input Pressure Range												
Nominal Pressure Range	Bar (gauge, absolute or sealed gauge)	1	2	5	10	20	50	100	250	400	600	700
Compound Ranges	Bar	1...0*	1...2*	1...5	1...9	1..19	1..29	-	-	-	-	-
Permissible Overpressure	Bar	2	4	10	20	40	100	200	400	650	880	880
Burst Pressure	Bar	4	5	12	25	50	120	250	500	650	880	880
* $\pm 0.1\%$ / FS (BFSL) accuracy not possible in this range												

Output Signal & Supply Voltage	Wiring System	Output	Supply Voltage	Input Current	Input Resistance	Output Resistance
Pi642	2 - wire	4 - 20 mA	9 - 32 Vdc	n/a	<500	<500
Pi605	3 - wire	0 - 5V dc	9 - 32 Vdc	<6 mA	<500	<500
Pi6010	3 - wire	0 - 10V dc	13 - 32 Vdc	<6 mA	<500	<500
Pi615	3 - wire	1 - 5V dc	9 - 32 Vdc	<6 mA	<500	<500
Pi6110	3 - wire	1 - 10V dc	13 - 32 Vdc	<6 mA	<500	<500
Pi616	3 - wire	1 - 6V dc	9 - 32 Vdc	<6 mA	<500	<500
Pi606	3 - wire	0 - 6V dc	9 - 32 Vdc	<6 mA	<500	<500
Pi645	3 - wire	0.5 to 4.5V dc	5 Vdc	<6 mA	<500	<500
Pi602	4 - wire	Passive mV/V (un-rationalised)	2 - 30 Vdc	<3 mA typ.	<11000	<11000
Pi607	4 - wire	2mV/V (rationalised)	2 - 30 Vdc	<3 mA typ.	<11000	<11000
Pi610	4 - wire	10mV/V (amplified)	3 - 12 Vdc	<3 mA typ.	<11000	<200

Performance		
Accuracy (non-linearity, hysteresis, repeatability)	% Full Scale Output	< $\pm 0.25$ (BFSL) < $\pm 0.1$ (BFSL) optional
Zero Balance	$\pm\%$ of Rated Output	<1.0
Setting Errors (offsets)	2-wire, 3-wire + 4-wire rationalised 4-wire un-rationalised	Zero & Full Scale, $\pm 0.5\%$ / FS Zero <0.1 mV/V, Span $\pm 30\%$
Permissible Load	2-wire 3-wire 4-wire	Rmax = $[(V_S - V_S \text{ min}) / 0.02] \Omega$ Rmin = 10 k $\Omega$ Rmin = 11 k $\Omega$
Influence Effects	Supply Effects Load Effect	mV/V & 0.5 to 4.5V - Ratiometric, Other Voltage Outputs - <0.005 % FS / 1V 4-20mA = <0.05 % FSO / k $\Omega$
Response Time (10% - 90%)	ms	$\leq 1$ (mV/V versions) $\leq 10$ (amplified versions)
Warm-Up Time (amplified versions only)	ms	2 typ.
Permissible Temperatures & Thermal Effects		
Media Temperature	$^{\circ}\text{C}$	-20 to +135 / -40 to +125 below 1bar (150 with optional integrated cooling element)
Ambient Temperature	$^{\circ}\text{C}$	-20 to +80
Storage Temperature	$^{\circ}\text{C}$	-40 to +125
Compensated Temperature Range	$^{\circ}\text{C}$	+20 to +80
Thermal Zero Shift (TZS)	% / FS / $^{\circ}\text{C}$	< $\pm 0.04$ (standard) < $\pm 0.02$ (option) < $\pm 0.01$ (option)
Thermal Span Shift (TSS)	% output / $^{\circ}\text{C}$	<-0.015
Electrical Protection		
Reverse Polarity Protection		No damage but also no function
Electromagnetic Compatibility		CE Compliant
Insulation Resistance	Megohms $\Omega$ at 50V dc	>500
Mechanical Stability		



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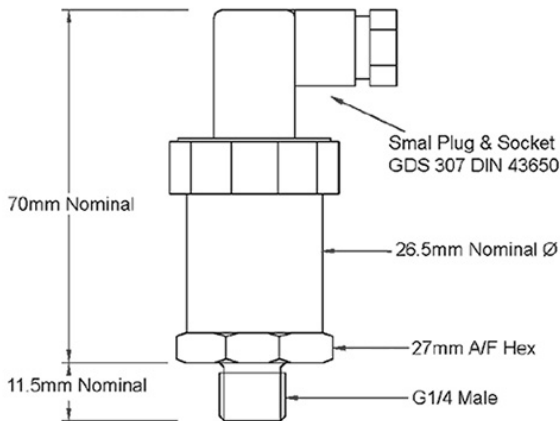
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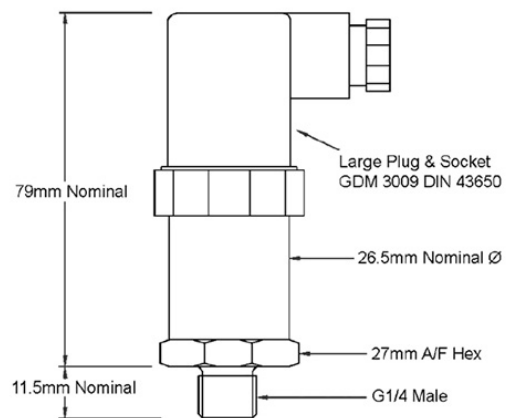
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Shock		100 g / 11 ms
Vibration		10 g RMS (20 ... 2000 Hz)
Materials		
Housing & process connection		303 Stainless Steel 316L Stainless Steel (optional) High Grade DUPLEX Stainless Steel UNS S31803 (optional)
'O' ring seals		Viton NBR/Nitrile (optional) EPDM (optional) Chemraz (optional)
Diaphragm		Ceramic Al <sub>2</sub> O <sub>3</sub> 96 % (316L Stainless Steel below 1 bar)
Media wetted parts		Housing and process connection, 'O' ring seal, diaphragm
Misc		
Weight	grams	100 nominal
Installation position		Any
Operational life	pressure cycles	> 100 x 10 <sup>6</sup>
Environmental Protection		IP54, IP65, IP67 or IP68 See dimension drawings below for details.

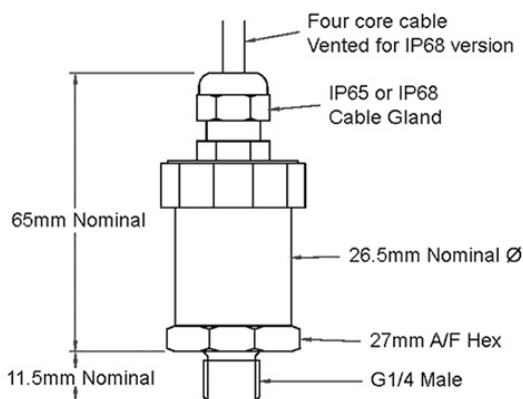
## Dimensions (mm):



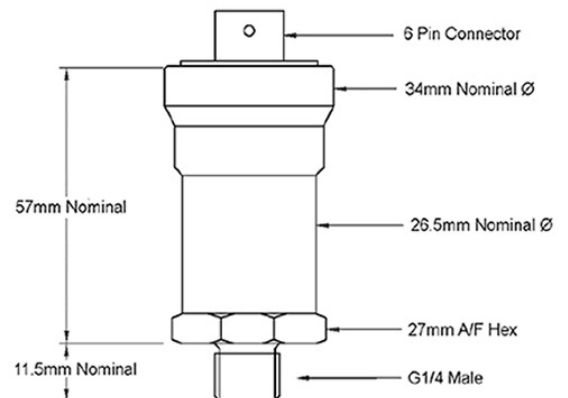
Small Plug & Socket (Pi6xxxP)  
IP65, GDS 307 DIN 43650



Large Plug & Socket (Pi6xxxLP)  
IP65, GDM 3009 DIN 43650



Cable Gland Assembly  
IP65 Cable (Pi6xxxC)  
IP68 Vented Cable (Pi6xxxCS)



6-Pin Bayonet-Lock Connector to  
MIL-C-26482, Shell Size 10  
IP67 (IP54 on gauge versions)  
(Pi6xxxBL + Pi6xxxBLP)



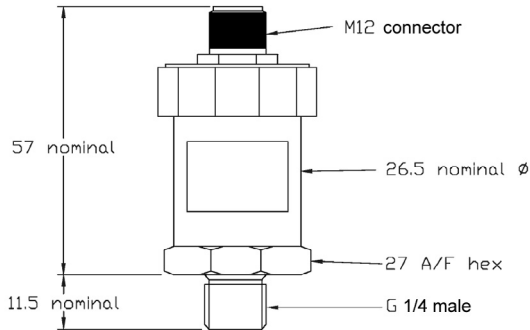
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M12x1, 4 Pin Connector (Pi6xxxM + Pi6xxxMM), IP67

## Wiring Designation:

		Small Plug & Socket (Code A)	Large Plug & Socket (Code B)	IP65 Cable (Code C)	AMP 6-pin Bayonet (Code D)	IP68 Vented Cable (Code E)	Binder 6-pin Connector (Code F)	M12 x 1, 4-pin Connector (Code G)
<b>2 - wire</b>	+ve Supply -ve Supply Ground	Pin 1 Pin 2 Earth Pin	Pin 1 Pin 2 Earth Pin	Red Blue Green	Pin 1 Pin 2 Earth Pin	Red Blue White	Pin 1 Pin 2 Pin 3	Pin 1 Pin 2 Pin 3
<b>3 - wire</b>	+ve Supply -ve Supply +ve Output Ground	Pin 1 Pin 2 Pin 3 Earth Pin	Pin 1 Pin 2 Pin 3 Earth Pin	Red Blue Green Yellow	Pin 1 Pin 2 Pin 3 Earth Pin	Red Blue White Yellow	Pin 1 Pin 2 Pin 3 Pin 4	Pin 1 Pin 2 Pin 3 Pin 4
<b>4 - wire</b>	+ve Supply -ve Supply +ve Output -ve Output	Pin 1 Pin 2 Pin 3 Earth Pin	Pin 1 Pin 2 Pin 3 Earth Pin	Red Blue Green Yellow	Pin 1 Pin 2 Pin 3 Pin 4	Red Blue White Yellow	Pin 1 Pin 2 Pin 3 Pin 4	Pin 1 Pin 2 Pin 3 Pin 4

## Associated Products:



[TR150 Handheld Indicator](#)



[T24 Wireless Telemetry Range](#)



[Intuitive4-L Panel-Mount Indicator](#)



[DSC-USB USB Signal Digitiser](#)



[Intuitive4-P Process Input Panel Mount Indicator](#)



[FUSION Large Digital Display](#)



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## Ordering Codes:

Pi642LP-10barg-A4AV-00-000	Pi6	42	LP	-	10barg	-	A	4	A	V	-	00	-	000
<b>Product Family</b>														
Pi6	Pi6													
<b>Electrical Output</b>														
02 = mV/V un-rationalised		02												
03 = 3mV/V		03												
07 = 2mV/V		07												
10 = 10mV/V		10												
42 = 4-20mA (2-wire)		42												
45 = 0.5-4.5Vdc (5V excitation)		45												
05 = 0-5Vdc		05												
010 = 0-10Vdc		010												
16 = 1-6Vdc		16												
<b>Electrical Connection / ATEX Certification</b>														
P = Mini DIN Plug & Socket			P											
LP = Large DIN Plug & Socket			LP											
C = IP65 Cable Gland + Screened, Un-Vented PVC Cable			C											
CS = IP68 Cable Gland + Screened, Vented PUR Cable			CS											
M = M12x1 4-pin Connector			M											
MM = M12x1 4-pin Connector + Mating Half			MM											
BL = 6-pin Bayonet-Lock Mil-Spec Connector			BL											
BLM = 6-pin Bayonet-Lock Mil-Spec Connector + Mating Half			BLM											
<b>Pressure Range</b>														
10barg = 0 to 10bar gauge					10barg									
M1P1barg = -1 to +1bar gauge					M1P1barg									
P15P500psia = +15 to +500psi absolute					P15P500psia									
2400psig = 0 to 2400psi gauge					2400psig									
<b>Accuracy (Non-Linearity &amp; Hysteresis)</b>														
A = $\leq \pm 0.25\%$ /FS (standard)							A							
B = $\leq \pm 0.1\%$ /FS							B							
<b>Zero Temperature Compensation (TZS)</b>														
4 = $\leq \pm 0.04\%$ /FS/°C								4						
2 = $\leq \pm 0.02\%$ /FS/°C								2						
1 = $\leq \pm 0.01\%$ /FS/°C								1						
Continued on next page														



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### Ordering Codes (Continued):

Pi642LP-10barg-A4AV-00-000	Pi6	42	LP	-	10barg	-	A	4	A	V	-	00	-	000
<b>Process Connection</b>														
A = G $\frac{1}{4}$ " Male DIN 3852 in 303 St/Steel									A					
B = G $\frac{1}{4}$ " Male DIN 3852 in 316L St/Steel									B					
C = $\frac{1}{4}$ " NPT Male 303 St/Steel									C					
D = 7/16 UNF-20 Male									D					
E = G $\frac{1}{4}$ " Female in 303 St/Steel									E					
F = G $\frac{1}{2}$ " Male DIN 3852									F					
G = $\frac{1}{2}$ " NPT Male									G					
H = F-250-C Autoclave (9/16 UNF Internal)									H					
I = G $\frac{1}{4}$ " Male DIN 3852 in High Grade Duplex St/Steel (UNS31803/SAF2205)									I					
J = G $\frac{1}{4}$ " Male DIN 3852 with Integrated Snubber									J					
K = G $\frac{1}{2}$ " Male DIN 3852 with Integrated Snubber									K					
L = M20x1.5 Male									L					
M = G1/8" Male DIN 3852									M					
N = 1/8" NPT Male									N					
O = G3/8" Male DIN 3852									O					
P = G $\frac{1}{4}$ " Male DIN 3852 with 150°C Integrated Cooling Coil									P					
Q = G $\frac{1}{2}$ " Male DIN 3852 with 150°C Integrated Cooling Coil									Q					
R = $\frac{1}{4}$ " NPT Male with 150°C Integrated Cooling Coil									R					
S = 9/16 UNF Internal (no bleed hole)									S					
T = 1/4" NPT Female									T					
U = G1/4" Male DIN 3852 in Hastelloy C276 (MOQ = 10 pieces)									U					
V = G1/4" Male in PEEK (Polyether Ethyl Ketone)									V					
<b>O-Ring Material</b>														
V = Viton (FKM)										V				
N = Nitrile (NBR)										N				
E = EPDM (Ethylene Propylene Diene Monomer)										E				
C = Chemraz (Perfluoroelastomer)										C				
<b>Cable Length (in metres)</b>														
00 = None												00		
01 = 1 metre												01		
<b>Specials Code</b>														
000 = No Special Requirements														000
010 = Cleaned for Oxygen Service														010