

## Barometric Pressure Sensor | Pa600B

**Ideal for Weather Applications**

### At a Glance

- Range: 750-1250mbar Absolute
- Outputs: 4-20mA, 0-5Vdc, 0-10Vdc, 0.5-4.5Vdc, mV/V
- Environmental Protection: IP65 (IP67 optional)
- Accuracy:  $< \pm 0.25\%/FS$  ( $< \pm 0.1\%$  optional)
- Silicon-Based Sensing Element
- Low Power Consumption
- Ideal for Weather Applications
- IP65 Weather Proof as Standard
- Robust Construction Stainless Steel with Viton O-Ring
- Fast Delivery Time of Just 4 Weeks!
- High Volume Production Available
- Customised & OEM Versions
- Simple Setup with Custom Process Connections



### Description

The PA600B barometric pressure sensors measure absolute pressure and are designed for the measurement of atmospheric pressure fluctuations. The barometric pressure sensors are ideal for use in weather applications, including weather forecasting, where pressure changes in the atmosphere need to be monitored.

Applications include:

- Weather Applications
- Weather Forecasting
- Atmospheric Changes
- Altitude Compensation
- Altimeters
- Remote Weather Stations

Constructed from stainless steel, and available with a variety of process connections, these barometric pressure sensors are designed to withstand humidity, precipitation, and water ingress.

As standard our barometric pressure sensors Pa600B come with: Viton O-ring, 303 stainless steel case, 316L stainless steel sensing diaphragm and a G $\frac{1}{4}$  inch male process connection. Alternate case, O-ring material and process connections are available including G $\frac{1}{4}$  inch female and  $\frac{1}{4}$  inch NPT male.

The Pa600B barometric pressure sensors series provides a wide choice of electrical outputs from its ASIC-based amplifier circuit, these include 4-20mA, 0-5Vdc, 0-10Vdc, 10mV/V, as well as a ratiometric 0.5-4.5Vdc (10% to 90% of supply voltage) signal that requires a 5Vdc (2.7 – 5.5Vdc acceptable) to suit most dataloggers.

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**For pricing or any further information, please contact Omni Instruments Ltd.**

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Dundee, DD2 4UH.

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## Technical Specifications

Nominal Pressure Range	mbar absolute	750-1250
Permissible Overpressure	mbar	1500
Burst Pressure	bar	3

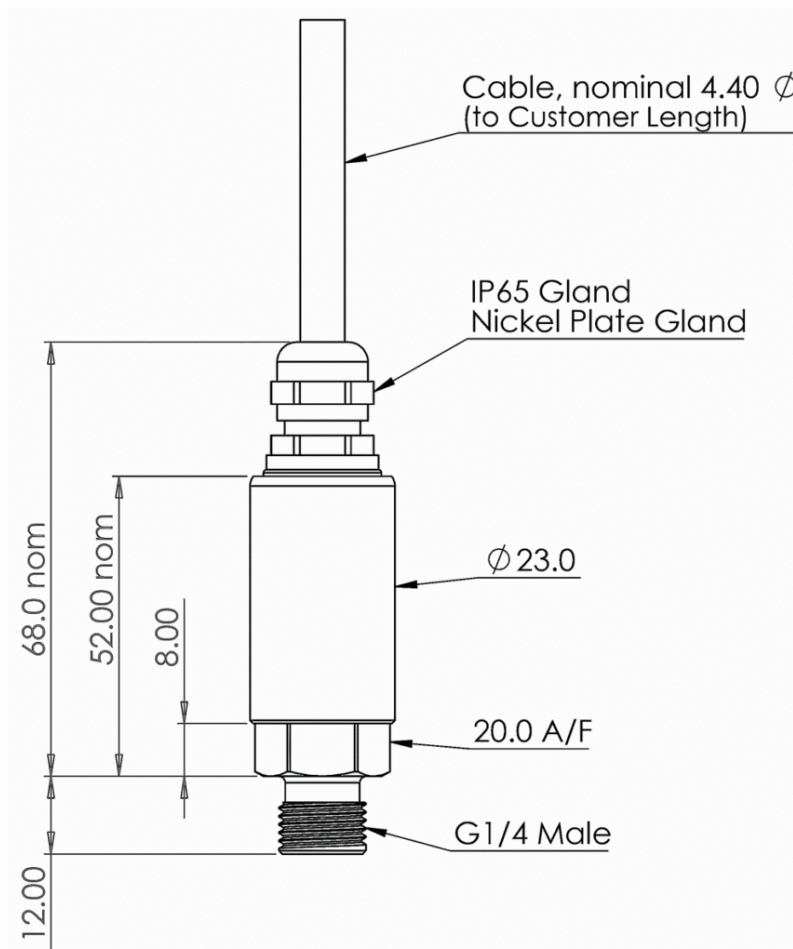
Output Signal & Supply Voltage	Wiring System	Output	Supply Voltage	Input Current	Input Resistance	Output Resistance
Pa642B	2 - wire	4 - 20 mA	9 - 32 Vdc	n/a	<500	<500
Pa605B	3 - wire	0 - 5V dc	9 - 32 Vdc	<10 mA	<500	<500
Pa6010B	3 - wire	0 - 10V dc	13 - 32 Vdc	<10 mA	<500	<500
Pa645B	3 - wire	0.5 to 4.5V dc	5 Vdc (2.7 - 5.5Vdc)	<3 mA	<500	<500
Pa602B	4 - wire	Passive mV/V (un-rationalised)	2 - 10 Vdc	<5 mA @ 10V	<2kΩ-6kΩ	<3.5kΩ-6kΩ
Pa610B	4 - wire	10mV/V (amplified)	2 - 10 Vdc			
Pa620B	4 - wire	20mV/V (amplified)	2 - 10 Vdc			

Performance		
Accuracy (non-linearity, hysteresis, repeatability)	% Full Scale Output	<±0.25 (BFSL) <±0.1 (BFSL) optional
Setting Errors (Zero Balance + Full Scale Output)	2-wire, 3-wire 4-wire un-rationalised	Zero <±1% / FS, Span <±0.5% / FS Zero <0.1mV/V, Span ±30%
Permissible Load	2-wire 3-wire 4-wire	Rmax = [(VS - VS min) / 0.02] Ω Rmin = 10 kΩ Rmin = 11kΩ
Influence Effects	Supply Effects Load Effect	mV/V & 0.5 to 4.5V - Ratimetric, Other Voltage Outputs - <0.005 % FS / 1V 4 - 20mA = <0.05% FSO / kΩ
Response Time (10% - 90%)	ms	≤1 (mV/V versions) ≤10 (amplified versions)
Warm-Up Time (amplified versions only)	ms	2 typ.
Permissible Temperatures & Thermal Effects		
Media Temperature	°C	-40 to +125
Ambient Temperature	°C	-20 to +85
Storage Temperature	°C	-20 to +85
Compensated Temperature Range	°C	+20 to +80
Thermal Zero Shift (TZS)	% / FS / °C	<±0.04 (standard) <±0.02 (option) <±0.01 (option)
Thermal Span Shift (TSS)	% output / °C	<-0.015
Electrical Protection		
Reverse Polarity Protection		No damage but also no function
Electromagnetic Compatibility		CE Compliant
Insulation Resistance	Megohms Ω at 50V dc	>500
Mechanical Stability		

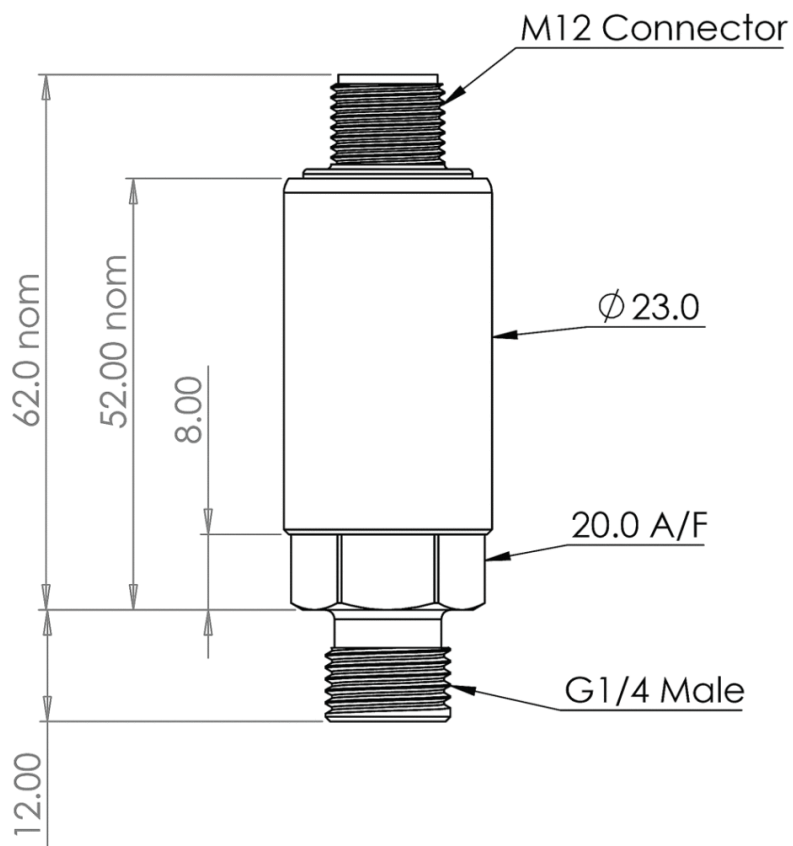
Performance		
Shock		100 g / 11 ms
Vibration		10 g RMS (20 ... 2000 Hz)
Materials		
Housing & process connection		303 Stainless Steel 316L Stainless Steel (optional)
'O' ring seals		Viton NBR/Nitrile (optional) EPDM (optional) Chemraz (optional)
Diaphragm		316L Stainless Steel
Media wetted parts		Housing 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	Mini Plug + Socket M12 x 1 Connector Cable Gland	IP65 IP67 IP65

## Product Dimensions

### Barometric Pressure Sensor Pa600B Gland outline



**Barometric Pressure Sensor Pa600B M12 Outline**



**Contact Details:**

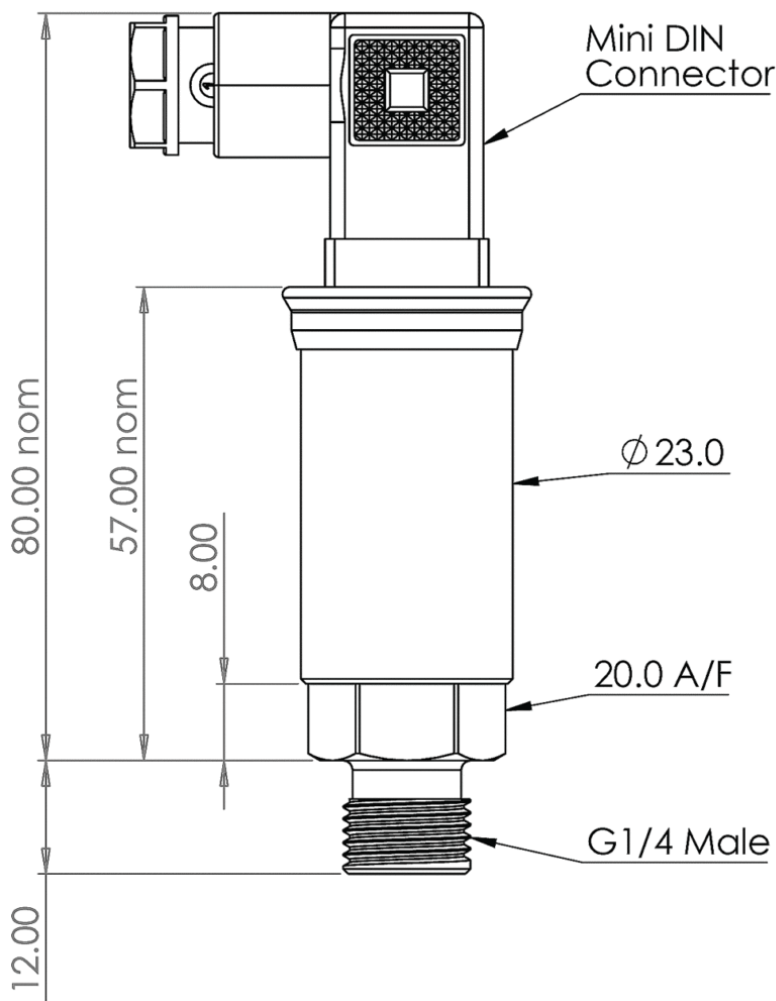
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## Wiring Details

		Small Plug & Socket	IP65 Cable	M12 x 1, 4-pin Connector	6-pin Bayonet Connector
2-wire	+ve Supply -ve Supply Ground	Pin 1 Pin 2 Earth Pin	Red Blue Yellow	Pin 1 Pin 2 Pin 4	Pin A Pin B Pin D
3-wire	+ve Supply -ve Supply +ve Output Ground	Pin 1 Pin 2 Pin 3 Earth Pin	Red Blue Green Yellow	Pin 1 Pin 2 Pin 3 Pin 4	Pin A Pin B Pin C Pin D
4-wire	+ve Supply -ve Supply +ve Output -ve Output	Pin 1 Pin 2 Pin 3 Earth Pin	Red Blue Green Yellow	Pin 1 Pin 2 Pin 3 Pin 4	Pin A Pin B Pin C Pin D

## Ordering Codes & Options

Pa642BP-BARO-A4AV-00-000 (example code)	Pa6	42B	P	-	BARO	-	A	4	A	V	-	00	-	000
Product Family														

## Ordering Codes & Options

Pa642BP-BARO-A4AV-00-000 (example code)	Pa6	42B	P	-	BARO	-	A	4	A	V	-	00	-	000
<b>Product Family</b>														
Pa6 Barometric Pressure Sensor	Pa6													
<b>Electrical Output</b>														
mV/V un-rationalised		02B												
10mV/V		10B												
20mV/V		20B												
4-20mA (2-wire)		42B												
0.5-4.5Vdc ratiometric (5V excitation)		45B												
0-5Vdc		05B												
0-10Vdc		010B												
<b>Electrical Connection / ATEX Certification</b>														
Mini DIN Plug & Socket			P											
IP65 Cable Gland + Screened, Un-Vented PVC Cable			C											
M12x1 4-pin Connector			M											
M12x1 4-pin Connector + Mating Half			MM											
6-pin Bayonet-Lock Mil-Spec Connector			BL											
6-pin Bayonet-Lock Mil-Spec Connector + Mating Half			BLM											
<b>Pressure Range</b>														
750-1250mbar absolute				-	BARO	-								
<b>Accuracy (Non-Linearity &amp; Hysteresis)</b>														
<±0.25%/FS (standard)							A							
<±0.1%/FS							B							
<b>Zero Temperature Compensation (TZS)</b>														
<±0.04%/FS/°C								4						
<±0.02%/FS/°C								2						
<±0.01%/FS/°C								1						

<b>Pa642BP-BARO-A4AV-00-000 (example code)</b>	<b>Pa6</b>	<b>42B</b>	<b>P</b>	<b>-</b>	<b>BARO</b>	<b>-</b>	<b>A</b>	<b>4</b>	<b>A</b>	<b>V</b>	<b>-</b>	<b>00</b>	<b>-</b>	<b>000</b>
<b>Process Connection</b>														
G¼" Male DIN 3852 in 303 St/Steel									A					
G¼" Male DIN 3852 in 316L St/Steel									B					
¼" NPT Male in 303 St/Steel									C					
7/16-20 UNF Male in 303 St/Steel									D					
G¼" Female in 303 St/Steel									E					
9/16 UNF Internal without Bleed Hole in 303 St/Steel									S					
<b>O-Ring Material</b>														
Viton (FKM)										V				
Nitrile (NBR)										N				
EPDM (Ethylene Propylene Diene Monomer)										E				
<b>Cable Length (in metres)</b>														
None											-	00	-	
1 metre											-	01	-	
<b>Specials Code</b>														
No Special Requirements														000

## Related Products & Services



USB Pressure Sensor | Digital | Pa600-USB

(<https://appmeas.co.uk/products/pressure-sensors/usb-pressure-sensor-pa600-usb/>)



Universal Process Input Digital Indicator | Intuitive4-P

(<https://appmeas.co.uk/products/instrumentation/universal-process-input-digital-indicator-int4-p/>)



Large Digit Load Cell Digital Display | Readout | FUSION

(<https://appmeas.co.uk/products/instrumentation/large-digit-load-cell-digital-display-fusion/>)

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