

Low Range Pressure Sensors | Pa600-LR

Precise, Accurate and Ideal for Very Low Range Pressure Measurement

At a Glance

- Ranges: 0-50mbar up to 0-450mbar
- Outputs: 4-20mA, 0-5V, 0-10V, 0.5-4.5V, mV/V
- Environmental Protection: IP65 (IP67 optional)
- Accuracy: $< \pm 0.25\% / FS$ ($< \pm 0.1\%$ optional)
- Silicon-Based Sensing Element
- Ideal for Extremely Low Range Pressure Measurements
- IP65 Splash-Proof Protected as Standard
- Fast Delivery Time of Just 5-7 Working Days!
- High Volume Production Available
- Customised & OEM Versions
- Simple Setup with Custom Process Connections



Description

The PA600-LR low range pressure sensors are specifically designed for the measurement of gas and liquid pressure in low range applications. Constructed from stainless steel, they are designed to be extremely rugged, yet compact.

As standard the PA600-LR comes 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 PA600-LR series provides a wide choice of electrical outputs from its ASIC-based amplifier circuit, these include 4-20mA, 0-5V, 0-10V and mV/V, as well as a ratiometric 0.5-4.5V (10% to 90% of supply voltage) signal that requires a 5V supply (2.7 – 5.5VDC acceptable range) to suit most dataloggers. The PA600-LR series can also be supplied with any of our wide range of instrumentation to give you a complete calibrated system.

Technical Specifications

Nominal Pressure Range	mbar gauge	0 - 50	0 - 100	0 - 200	0 - 300	0 - 400	0 - 450
Compound Ranges	mbar gauge	-50...+50*	-100...+100*	-200...+200*	-300...+300	-400...+400	-450...+450
Permissible Overpressure	mbar gauge	100	300	300	550	1000	1500
Burst Pressure	bar gauge	0.2	0.3	0.3	1	2	3
Absolute Ranges	mbar absolute				0 - 350	0 - 400	0 - 450
Permissible Overpressure	mbar absolute				1500	1500	1500
Burst Pressure	bar absolute				3	3	3

* $< \pm 0.1\%$ / FS (BFSL) accuracy not possible in this range

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Output Signal & Supply Voltage	Wiring System	Output	Supply Voltage	Input Current	Input Resistance	Output Resistance
Pa642	2 - wire	4 – 20 mA	9 – 32 Vdc	n/a	<500Ω	<500Ω
Pa605	3 - wire	0 – 5V dc	9 – 32 Vdc	<10 mA	<500Ω	<500Ω
Pa6010	3 - wire	0 – 10V dc	13 – 32 Vdc	<10 mA	<500Ω	<500Ω
Pa645	3 - wire	0.5 to 4.5V dc	5 Vdc (2.7 - 5.5Vdc)	<3 mA	<500Ω	<500Ω
Pa602	4 - wire	Passive mV/V (un-rationalised)	2 – 10 Vdc	<5 mA @ 10V	<2kΩ-6kΩ	<3.5kΩ-6kΩ

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 rationalised 4-wire un-rationalised	Zero <±1% / FS, Span <±0.5% / FS Zero <0.2mV/V, Span ±1% / FS Zero <0.1mV/V, Span ±30%
Permissible Load	2-wire 3-wire 4-wire	$R_{max} = [(V_S - V_{Smin}) / 0.02] \Omega$ $R_{min} = 10 k\Omega$ $R_{min} = 11k\Omega$
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 / 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/Storage Temperature	°C	-20 to +85
Compensated Temperature Range	°C	+20 to +80
Thermal Zero Shift (TZS)	% / FS / °C	<±0.04 (standard) <±0.02 or <±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		
Shock		100 g / 11 ms
Vibration		10 g RMS (20 ... 2000 Hz)

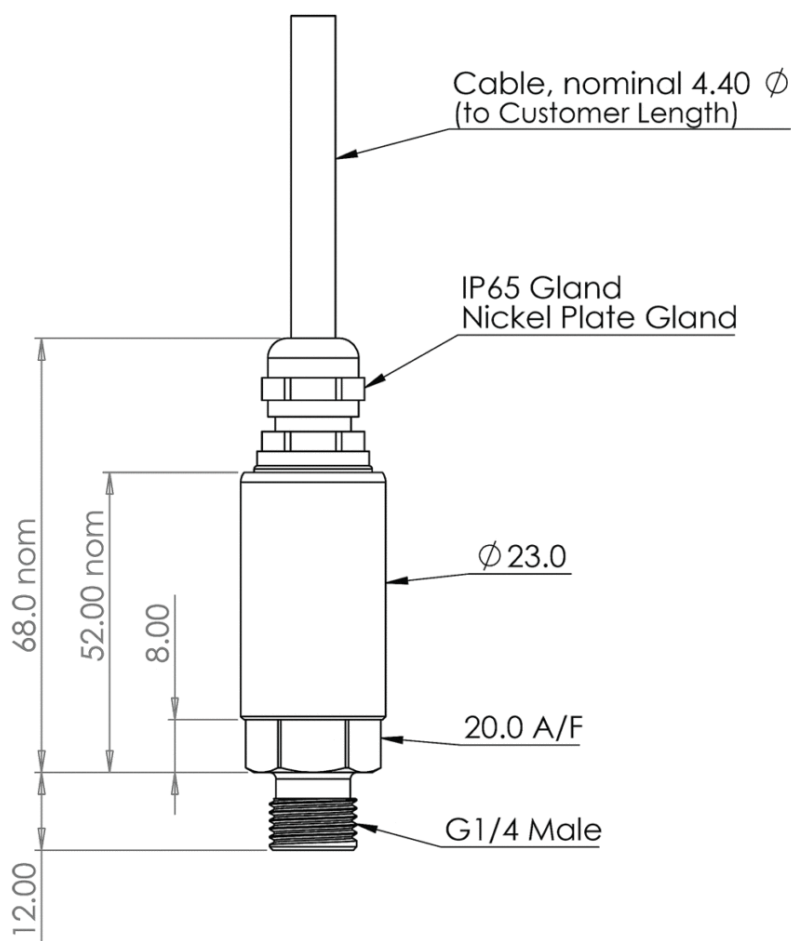
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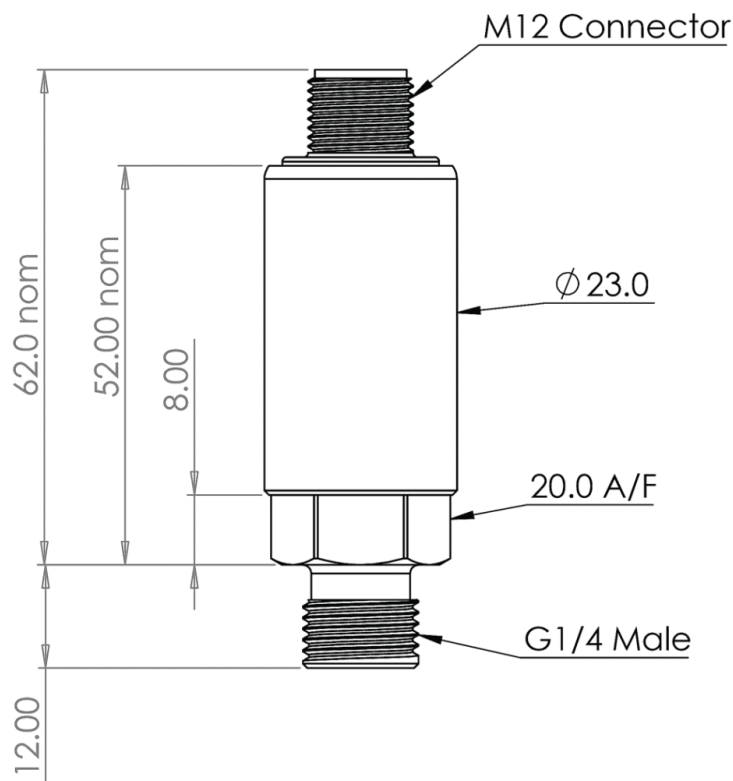
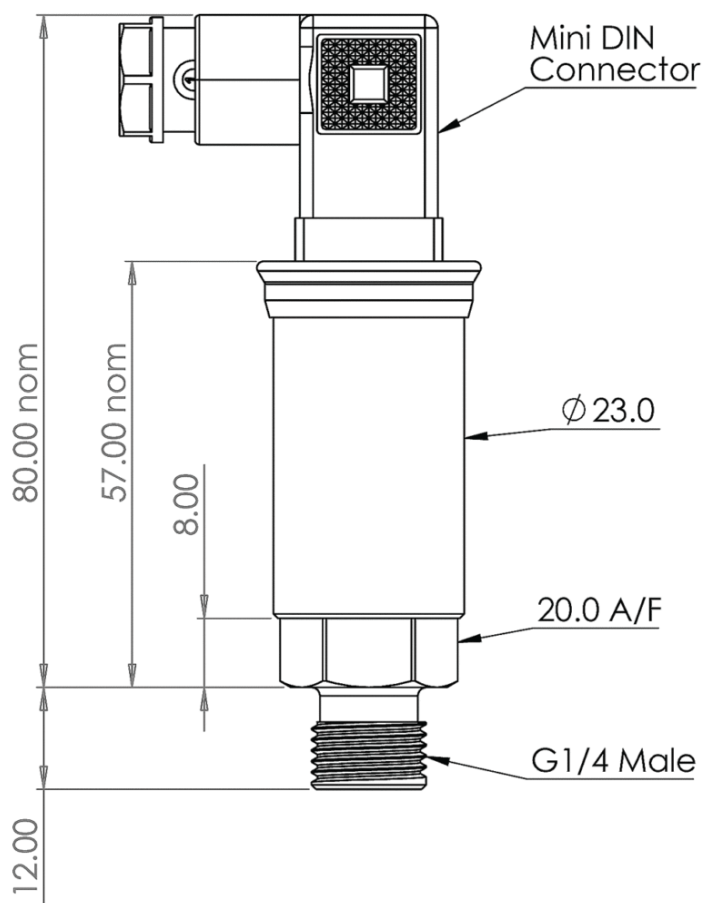
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Materials		
Housing & process connection		303 Stainless Steel 316L Stainless Steel (optional)
'O' ring seals		Viton NBR/Nitrile (optional) EPDM (optional) Chemraz (optional)
Diaphragm		316L Stainless Steel
Media wetted parts		Housing and process connection, 'O' ring seal, diaphragm
Misc		
Weight	grams	100 nominal
Installation position		Any
Operational life	pressure cycles	$> 100 \times 10^6$
Environmental Protection	Mini Plug + Socket M12 x 1 Connector	IP65 Gauge Reference $\leq 50\text{bar}$: IP65 / Absolute, Sealed Gauge or $>50\text{bar}$ Range : IP67
	Cable Gland	IP65

Product Dimensions

Low Range Pressure Sensor Pa600-LR Gland outline





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

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Ordering Codes & Options

Pa642P-50mbarg-A4AV-00-000 (example code)	Pa6	42	P	-	50mbarg	-	A	4	A	V	-	00	-	000
Pa6 Series Pressure Sensor	Pa6													
Electrical Output														
mV/V un-rationalised		02												
4-20mA (2-wire)		42												
0.5-4.5Vdc ratiometric (5V excitation)		45												
0-5Vdc		05												
0-10Vdc		010												
Electrical Connection														
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											
Pressure Range														
50mbarg = 0 to 50 mbar gauge				-	50mbarg	-								
M50P50mbarg				-	M50P50mbarg	-								
12psia = 0 to 12psi absolute				-	12psia	-								
5psig = 0 to 5psi gauge				-	5psig	-								
Accuracy (Non-Linearity & Hysteresis)														
<±0.25%/FS (standard)							A							
<±0.1%/FS (not available on Pa602)							B							
Zero Temperature Compensation (TZS)														
<±0.04%/FS/°C								4						
<±0.02%/FS/°C								2						
<±0.01%/FS/°C								1						
Process Connection														
G¼" Male DIN 3852 in 303 St/Steel									A					
¼" NPT Male in 303 St/Steel									C					
G½" Male DIN 3852 in 303 St/Steel									R					

Pa642P-50mbarg-A4AV-00-000 (example code)	Pa6	42	P	-	50mbarg	-	A	4	A	V	-	00	-	000
O-Ring Material														
Viton (FKM)										V				
Nitrile (NBR)										N				
EPDM (Ethylene Propylene Diene Monomer)										E				
Cable Length (in metres)														
None											-	00	-	
1 metre											-	01	-	
Specials Code														
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/>)



Handheld Load Cell Indicator | Digital Display | TR150

(<https://appmeas.co.uk/products/instrumentation/tr150-digital-handheld-load-cell-indicator/>)



Advanced Wireless Portable Handheld Receiver Display | T24-HA

(<https://appmeas.co.uk/products/instrumentation/advanced-wireless-portable-handheld-receiver-display-t24-ha/>)

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