Pa600 Industrial Pressure Sensor

Key Features:

- Ranges 0-500mbar up to 0-700bar
- Outputs: 4-20mA, 0-5Vdc, 0-10Vdc, 0.5-4.5Vdc, mV/V
- Sealed to IP65 (IP67 optional)
- Accuracy: <±0.25%/FS (0.1% option)
- Gauge, Sealed Gauge or Absolute Reference Versions
- Excellent Chemical and Abrasion Resistance
- Rugged Construction
- Low Power Consumption
- UKAS Traceable Calibration Certificate Included (UKAS Laboratory Certificate Optional)
- 3 Year Warranty

The Pa600 series of industrial 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 Pa600 comes with: Viton O-ring, 303 stainless steel case, ceramic diaphragm (96% aluminium oxide Al_2O_3) and a G¼ inch male process connection. Alternate case, O-ring material and process connections are available including G¼" female and ¼" NPT male.

The Pa600 series provides a wide choice of electrical outputs from its ASIC-based amplifier circuit, these include 4-20mA, 0-5Vdc, 0-10Vdc, 10mV/V and 20mV/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. The Pa600 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. Why not have a look at our full range of pressure sensors?

Options:

- Interim Pressure Ranges
- Manufacturing Materials
- Special Output Scaling
- Cable Gland, 6-Pin Bayonet Connector or M12x1 Connector Electrical Connections
- Improved Accuracy (NL&H) : <±0.10%/FS (BFSL)
- Improved Thermal Zero Stability: <±0.02% or <±0.01%/Span/˚C
- Supplied with Instrumentation and Calibrated as a Complete System with Traceable Certificate
- 316L Stainless Steel Case (Other Materials on Request)
- Cleaning for Oxygen Service

Applications:

- Hydraulics
- Research & Development
- Food Processing
- Plant and Machine Engineering
- Energy Industry
- Environmental Engineering (Water/Sewage/ Recycling)
- Medical Technology
- Meteorology
- OEM Installations
- Data Loggers
- Lab Research
- Aerospace Testing

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

Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Fax: +44 1382 453197
Email: info@omni.uk.com

Mailing Address: Unit 1, 14 Nobel Road, Wester Gourdie Industrial Estate, Dundee, DD2 4UH.

Website: www.omniinstruments.co.uk

Specification:

Input Pressure Range													
Nominal Pressure Range	Bar (gauge, absolute or sealed gauge	0-0.5	0-1	0-2	0-5	0-10	0-20	0-50	0-100	0-250	0-400	0-600	0-700
Compound Ranges	Bar	-	-1…0 *	-1…+2 *	-1…+5	-1…+9	-1...+19	-1...+29	-	-	-	-	-
Permissible Overpressure	Bar	1	2	4	10	20	40	100	200	400	575	800	800
Burst Pressure	Bar	2	4	5	12	25	50	120	250	500	650	950	950

*<±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
Pa642	2 – wire	4 – 20 mA	9 – 32 Vdc	n/a	<500	<500
Pa605 Pa6010 Pa645	3 - wire 3 - wire 3 - wire	0 – 5V dc 0 – 10V dc 0.5 to 4.5V dc	9 – 32 Vdc 13 – 32 Vdc 5 Vdc (2.7 - 5.5Vdc)	<10 mA <10 mA <3 mA	<500 <500 <500	<500 <500 <500
Pa602 Pa607 Pa610 Pa620	4 – wire 4 – wire 4 – wire 4 - wire	Passive mV/V (un-rationalised) 2mV/V (rationalised) 10mV/V (amplified) 20mV/V (amplified)	2 – 30 Vdc 2 – 30 Vdc 3 – 12 Vdc 3 – 12 Vdc	<1 mA @ 10V <1 mA @ 10V <3 mA typ. <3 mA typ.	<11000 <11000 <11000 <11000	<11000 <11000 <2000 nom. <2000 nom.

Performance		
Accuracy (non-linearity, hysteresis, repeatability)	% Full Scale Output	<±0.25 (BFSL) <±0.1 (BFSL) optional
Zero Balance	±% of Rated Output	<1.0
Setting Errors (offsets)	2-wire, 3-wire 4-wire rationalised 4-wire un-rationalised	Zero & Full Scale, <±0.5% / FS Zero <0.2mV/V, span ±1% Zero<0.1mV/V, Span ±30%
Permissible Load	2-wire 3-wire 4-wire	Rmax = [(VS – VS min) / 0.02] Ω Rmin = 10 k Ω Rmin = 11 k Ω
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 +135
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		
Shock		100 g / 11 ms
Vibration		10 g RMS (20 ... 2000 Hz)

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

Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Fax: +44 1382 453197
Email: info@omni.uk.com

Mailing Address: Unit 1, 14 Nobel Road,
Wester Gourdie Industrial Estate,
Dundee, DD2 4UH.

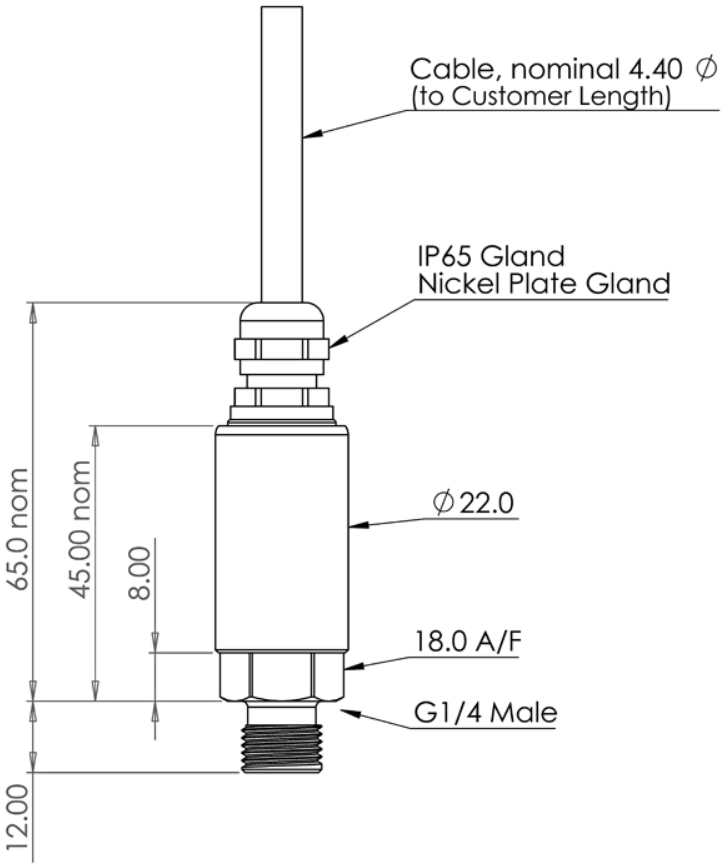
Website: www.omniinstruments.co.uk

Specification:

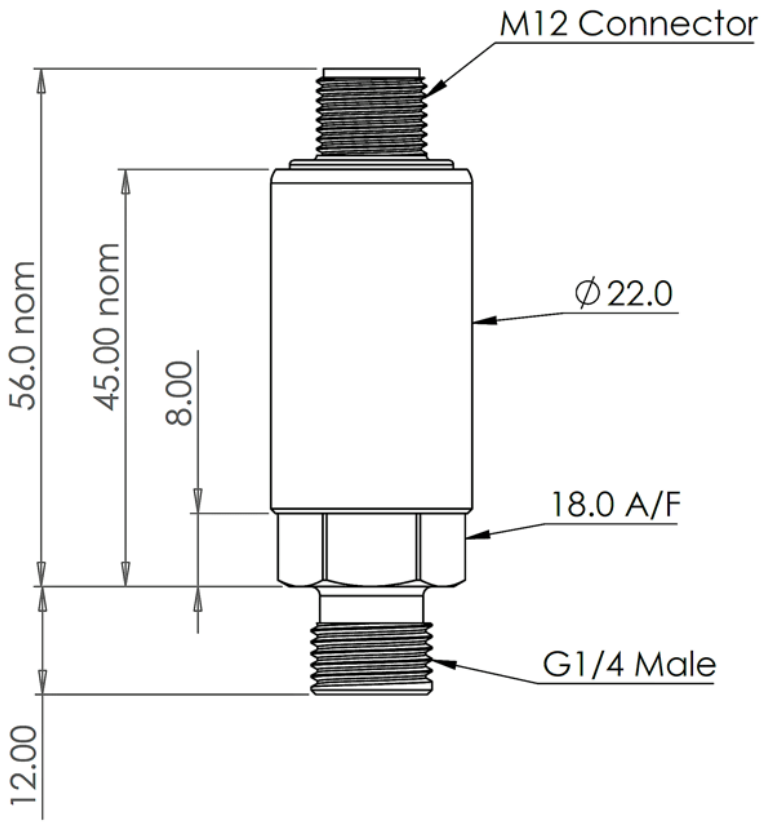
Materials		
Housing & process connection		303 Stainless Steel 316L Stainless Steel (optional)
'O' ring seals		Viton NBR/Nitrile (optional) EPDM (optional) Chemraz (optional)
Diaphragm		Ceramic Al_2O_3 96 %
Media wetted parts		Housing and process connection, 'O' ring seal, diaphragm
Misc		
Weight	grams	100 nominal
Installation position		Any
Operational life	pressure cycles	> 100 x 10^6
Environmental Protection	Mini Plug + Socket M12 x 1 Connector Cable Gland	IP65 Gauge Reference ≤ 50bar : IP65 / Absolute, Sealed Gauge or >50bar Range : IP67 IP65

Dimensions (mm):

Pa600 with IP65 Cable Gland



Pa600 with M12 Connector



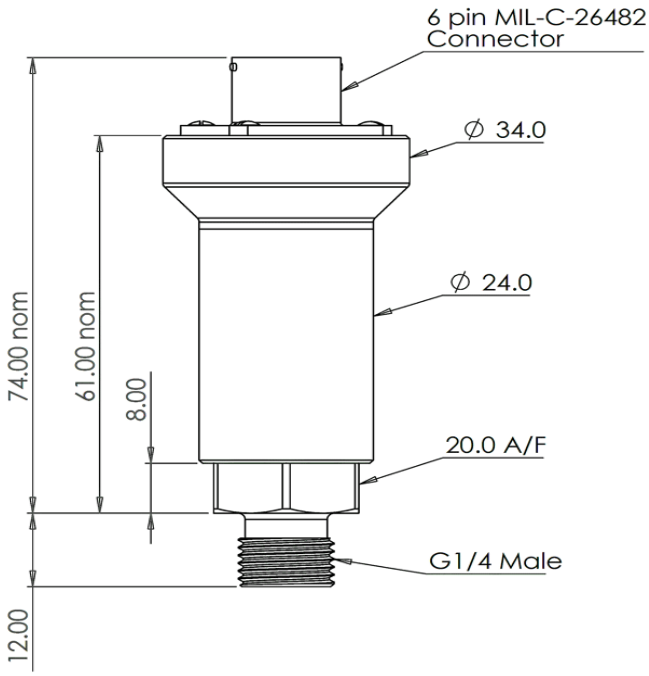
For pricing or any further information, please contact Omni Instruments Ltd.

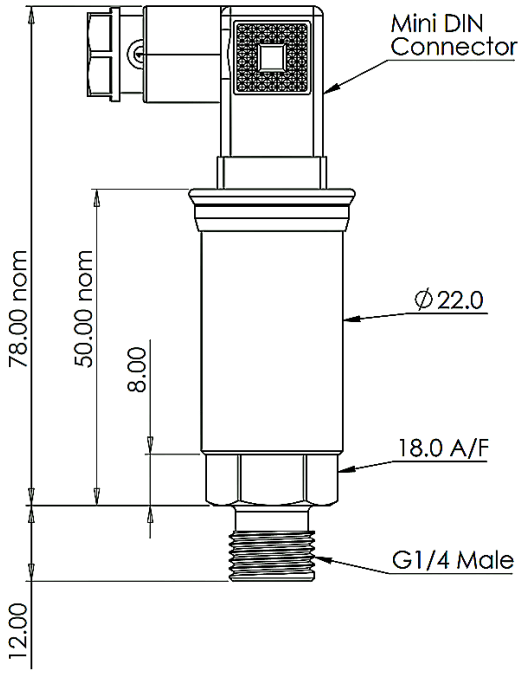
Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Fax: +44 1382 453197
Email: info@omni.uk.com

Mailing Address: Unit 1, 14 Nobel Road,
Wester Gourdie Industrial Estate,
Dundee, DD2 4UH.

Website: www.omniinstruments.co.uk





Wiring Designation:

		Small Plug & Socket	IP65 Cable	M12x1, 4-pin Connector	6-pin Bayonet Connector
2 - wire	+ve Supply -ve Supply Ground	Pin 1 Pin 2 Earth Pin	Red Blue Green	Pin 1 Pin 2 Pin 3	Pin A Pin B Pin C
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

Associated Products:

TR150 Handheld Indicator

T24 Wireless Telemetry Range

Intuitive4-P Process Input Panel Mount Indicator

FUSION Large Digital Display

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

Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Fax: +44 1382 453197
Email: info@omni.uk.com

Mailing Address: Unit 1, 14 Nobel Road,
Wester Gourdie Industrial Estate,
Dundee, DD2 4UH.

Website: www.omniinstruments.co.uk

Ordering Codes:

Pa642P-10barg-A4AV-00-000	Pa6	42	P	-	10barg	-	A	4	A	V	-	00	-	000
Product Family														
Pa6	Pa6													
Electrical Output														
02 = mV/V un-rationalised		02												
07 = 2mV/V		07												
10 = 10mV/V		10												
20 = 20mV/V		20												
42 = 4-20mA (2-wire)		42												
45 = 0.5-4.5Vdc ratiometric (5V excitation)		45												
05 = 0-5Vdc		05												
010 = 0-10Vdc		010												
Electrical Connection / ATEX Certification														
P = Mini DIN Plug & Socket			P											
C = IP65 Cable Gland + Screened, Un-Vented PVC Cable			C											
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											
Pressure Range														
10barg = 0 to 10bar gauge					10barg									
M1P1barg = -1 to +1bar gauge					M1P1barg									
P15P500psia = +15 to +500psi absolute					P15P500psia									
2400psig = 0 to 2400psi gauge					2400psig									
Accuracy (Non-Linearity & Hysteresis)														
A = <±0.25%/FS (standard)							A							
B = <±0.1%/FS							B							
Zero Temperature Compensation (TZS)														
4 = <±0.04%/ºC								4						
2 = <±0.02%/FS/ºC								2						
1 = <±0.01%/FS/ºC								1						

Continued on next page

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

Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Fax: +44 1382 453197
Email: info@omni.uk.com

Mailing Address: Unit 1, 14 Nobel Road,
Wester Gourdie Industrial Estate,
Dundee, DD2 4UH.

Website: www.omniinstruments.co.uk

Ordering Codes (Continued):

Pa642P-10barg-A4AV-00-000	Pa6	42	P	-	10barg	-	A	4	A	V	-	00	-	000
Process Connection														
A = G¼" Male DIN 3852 in 303 St/Steel									A					
B = G¼" Male DIN 3852 in 316L St/Steel									B					
C = ¼" NPT Male in 303 St/Steel									C					
D = 7/16 UNF-20 Male in 3030 St/Steel									D					
E = G¼" Female in 303 St/Steel									E					
F = G¼" Male DIN 3852 in PVDF (Polyvinylidene Fluoride)									F					
G = G¼" Male with 60° Internal Cone in 303 St/Steel									G					
I = G¼" Male DIN 3852 in UNS S31803 Duplex St/Steel									I					
J = G¼" Male DIN 3852 with Snubber in 303 St/Steel									J					
K = ¼" NPT Male in PVDF (Polyvinylidene Fluoride)									K					
M = G1/8" Male DIN 3852 in 303 St/Steel									M					
S = 9/16 UNF Internal (no bleed hole) in St/Steel									S					
O-Ring Material														
V = Viton (FKM)										V				
N = Nitrile (NBR)										N				
E = EPDM (Ethylene Propylene Diene Monomer)										E				
C = Chemraz (Perfluoroelastomer)										C				
Cable Length (in metres)														
00 = None												00		
01 = 1 metre												01		
Specials Code														
000 = No Special Requirements														000
010 = Cleaned for Oxygen Service														010

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

Measurement and data acquisition solutions

Contact Details:
Tel: +44 1382 443000
Fax: +44 1382 453197
Email: info@omni.uk.com

Mailing Address: Unit 1, 14 Nobel Road, Wester Gourdie Industrial Estate, Dundee, DD2 4UH.

Website: www.omniinstruments.co.uk