



## Subsea Pressure Sensor | Pa600SS

Submersible to 3000m Depths & Easily Customised

- **Lead Time:** 5-6 weeks
- **Buy online:** <https://appmeas.co.uk/shop/pressure-sensors/pa600ss/>



### AT A GLANCE

- Ranges: 0-1bar up to 0-700bar
- Outputs: 4-20mA, 0-5Vdc, 0-10Vdc, 0.5-4.5Vdc, mV/V
- Environmental Protection: IP68 Rated to 3000m Depth (300bar External Pressure)
- Accuracy:  $< \pm 0.25\%$ /FS (0.1% option)
- Rugged Duplex Stainless Steel Construction

- **Ideal for Subsea Pipeline Monitoring & Oil & Gas Exploration**
- Submersible IP68 to 3000m Depth/300 bar External Pressure as Standard
- Precision  $< \pm 0.25\%$  Accuracy (0.1% Optional)
- **Wet-Mateable 3-pin or 4-pin Subsea Connector**
- **Sealed Gauge or Absolute Reference Versions**
- **ASIC-based amplifier circuit**

### DESCRIPTION

Our Applied Measurements Pa600SS subsea pressure sensor series are ideal for the measurement of gas and liquid pressure in subsea and offshore applications. They have a submersible IP68 protection rating for depths of up to 3000m (300bar external pressure) and a UNS S31803 Duplex stainless steel construction as standard. Greater depths ratings to 8000m/800bar are also available on request.

Thanks to their wet-mateable 3-pin or 4-pin subsea connector type electrical connection, integrity at 3000m depths/300bar is guaranteed. Plus, along with their  $\pm 0.25\%$  of full-scale accuracy as standard, precision and optimum performance is ensured. If your application requires even further accuracy, we can also provide a 0.1% optional version.

Viton O-ring, Duplex stainless steel case, ceramic diaphragm (96% aluminium oxide Al<sub>2</sub>O<sub>3</sub>) and a G<sub>1</sub>/<sub>4</sub> inch male process connection come as standard with the Pa600SS subsea pressure sensor. Plus, Applied Measurements can provide alternate case, O-ring material and process connections to suit your requirement. We can also provide improved thermal zero stability of  $< \pm 0.02\%$  or  $< \pm 0.01\%$ /Span/°C.

The Pa600SS subsea 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 Pa600SS subsea pressure sensor 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	Bar (sealed gauge or absolute)	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	2	4	10	20	40	100	200	400	575	800	800
Burst Pressure	Bar	4	5	12	25	50	120	250	500	650	950	950

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

Output Signal & Supply Voltage	Wiring System	Output	Supply Voltage	Input Current	Input Resistance	Output Resistance
Pa642SS	2 - wire	4 – 20 mA	9 – 32 Vdc	n/a	<500	<500
Pa605SS	3 - wire	0 – 5V dc	9 – 32 Vdc	<10 mA	<500	<500
Pa6010SS	3 - wire	0 – 10V dc	13 – 32 Vdc	<10 mA	<500	<500
Pa645SS	3 - wire	0.5 to 4.5V dc	5 Vdc (2.7 - 5.5Vdc)	<3 mA	<500	<500
Pa602SS	4 - wire	Passive mV/V (un-rationalised)	2 – 30 Vdc	<1 mA @ 10V	<11000	<11000
Pa607SS	4 - wire	2mV/V (rationalised)	2 – 30 Vdc	<1 mA @ 10V	<11000	<11000
Pa610SS	4 - wire	10mV/V (amplified)	3 – 12 Vdc	<3 mA typ.	<11000	<2000 nom.
Pa620SS	4 - wire	20mV/V (amplified)	3 – 12 Vdc	<3 mA typ.	<11000	<2000 nom.

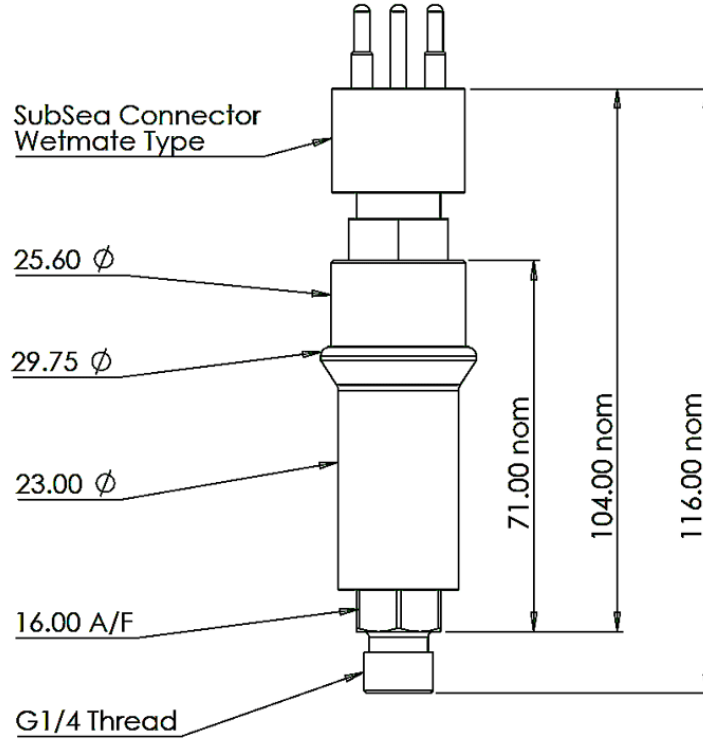
Performance		
Accuracy (non-linearity, hysteresis, repeatability)	% Full Scale Output	<math>\pm 0.25</math> (BFSL) <math>\pm 0.1</math> (BFSL) optional
Zero Balance	$\pm$ % of Rated Output	<math>< 1.0</math>
Setting Errors (offsets)	2-wire, 3-wire 4-wire rationalised 4-wire un-rationalised	Zero & Full Scale, <math>\pm 0.5\%</math> / FS Zero <math>< 0.2\text{mV/V}</math>, span $\pm 1\%</math>Zero <math>< 0.1\text{mV/V}</math>, Span \pm 30\%</math>$
Permissible Load	2-wire 3-wire 4-wire	Rmax = $[(VS - VS \text{ min}) / 0.02] \Omega</math>Rmin = 10 k \Omega</math>Rmin = 11 k \Omega</math>$
Influence Effects	Supply Effects Load Effect	mV/V & 0.5 to 4.5V – Ratiometric, Other Voltage Outputs - <math>< 0.005\%</math> FS / 1V 4-20mA = <math>< 0.05\%</math> FSO / k $\Omega</math>$
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 (non-freezing media only)
Ambient Temperature	$^{\circ}\text{C}$	-4 to +60
Storage Temperature	$^{\circ}\text{C}$	-20 to +60
Compensated Temperature Range	$^{\circ}\text{C}$	+20 to +60
Thermal Zero Shift (TZS)	% / FS / $^{\circ}\text{C}$	<math>\pm 0.04</math> (standard) <math>\pm 0.02</math> (option) <math>\pm 0.01</math> (option)



Permissible Temperatures & Thermal Effects		
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 $\Omega$ at 50V dc	>500
Mechanical Stability		
Shock		100 g / 11 ms
Vibration		10 g RMS (20 ... 2000 Hz)
Materials		
Housing & process connection		UNS S31803 Duplex Stainless Steel CA104 Marine Bronze or Titanium (optional)
'O' ring seals		Viton NBR/Nitrile (optional) EPDM (optional) FFKM / Chemraz (optional)
Diaphragm		Ceramic Al <sub>2</sub> O <sub>3</sub> 96 %
Media wetted parts		Housing and process connection, 'O' ring seal, diaphragm
Misc		
Weight	grams	150 nominal
Installation position		Any
Operational life	pressure cycles	> 100 x 10 <sup>6</sup>
Environmental Protection		IP68 to 3000m/300bar
Subsea Connector Type	SubConn® Circular Series Bulkhead	3-Pin Male (2-wire sensors) / 4-Pin Male (3-wire & 4-wire sensors)

## Product Dimensions



All dimensions are in mm

### Wiring Details

		Subsea Connector
2 - wire	+ve Supply -ve Supply Ground	Pin 1 Pin 2 Pin 3
3 - wire	+ve Supply -ve Supply +ve Output Ground	Pin 1 Pin 2 Pin 3 Pin 4
4 - wire	+ve Supply -ve Supply +ve Output -ve Output	Pin 1 Pin 2 Pin 3 Pin 4

## ORDERING CODES & OPTIONS

Pa6425S-10barg-A4AV-00-000	Pa6	42	SS	-	10barsg	-	A	4	A	V	-	00	-	000
<b>Product Family</b>														
Pa6	Pa6													
<b>Electrical Output</b>														
02 = mV/V un-rationalised		02												
07 = 2mV/V		07												



Pa642SS-10barg-A4AV-00-000	Pa6	42	SS	-	10barsg	-	A	4	A	V	-	00	-	000
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												
<b>Electrical Connection</b>														
SS = Subsea Connector			SS											
<b>Pressure Range</b>														
10barsg = 0 to 10bar sealed gauge				-	10barsg									
M1P1barsg = -1 to +1bar sealed gauge				-	M1P1barsg									
P15P500psia = +15 to +500psi absolute				-	P15P500psia									
2400psig = 0 to 2400psi sealed gauge				-	2400psig									
<b>Accuracy (Non-Linearity &amp; Hysteresis)</b>														
A = <±0.25%/FS (standard)							-	A						
B = <±0.1%/FS							-	B						
<b>Zero Temperature Compensation (TZS)</b>														
4 = <±0.04%/FS/°C									4					
2 = <±0.02%/FS/°C									2					
1 = <±0.01%/FS/°C									1					
<b>Process Connection</b>														
A = G¼" Male DIN 3852 in UNS S31803 Duplex St/Steel										A				
B = G¼" Male DIN 3852 in CA104 Marine Bronze										B				
C = G¼" Male DIN 3852 in Titanium Alloy										C				
D = ¼" NPT Male in UNS S31803 Duplex St/Steel										D				
E = G¼" Male DIN 3852 in 316L St/Steel										E				
F = G¼" Male DIN 3852 in Monel										F				
<b>O-Ring Material</b>														
V = Viton (FKM)												V		
N = Nitrile (NBR)													N	
E = EPDM (Ethylene Propylene Diene Monomer)													E	
C = Chemraz (Perfluoroelastomer/FFKM)														C



<b>Pa642SS-10barg-A4AV-00-000</b>	<b>Pa6</b>	<b>42</b>	<b>SS</b>	<b>-</b>	<b>10barsg</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>Mating Cable Assembly Length (in metres with flying leads at free end)</b>														
00 = No Mating Assembly											-	00		
01 = 1 metre											-	01		
05 = 5 metres											-	05		
<b>Specials Code</b>														
000 = No Special Requirements													-	000

## RELATED PRODUCTS & SERVICES



Low Cost Process Meter  
 | Panel Mount |  
 Intuitive-Lite4-P  
[\(https://appmeas.co.uk/products/instrumentation/low-cost-process-meter-il4-p/\)](https://appmeas.co.uk/products/instrumentation/low-cost-process-meter-il4-p/)



Universal Process Input  
 Digital Indicator |  
 Intuitive4-P  
[\(https://appmeas.co.uk/products/instrumentation/universal-process-input-digital-indicator-int4-p/\)](https://appmeas.co.uk/products/instrumentation/universal-process-input-digital-indicator-int4-p/)



Handheld Load Cell  
 Indicator | Digital  
 Display | TR150  
[\(https://appmeas.co.uk/products/instrumentation/tr150-digital-handheld-load-cell-indicator/\)](https://appmeas.co.uk/products/instrumentation/tr150-digital-handheld-load-cell-indicator/)



Wireless Telemetry for  
 Load Cells, Strain Gauge  
 Sensors & Transducers  
[\(https://appmeas.co.uk/products/instrumentation/t24-wireless-telemetry/\)](https://appmeas.co.uk/products/instrumentation/t24-wireless-telemetry/)



USB Load Cell Interface  
 | USB Strain Gauge  
 Digitiser |...  
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