



bar

## AHP1000

High Pressure Transmitter

### FEATURES

- Silicon-on-Sapphire sensor technology for outstanding performance
- Pressure ranges to 5,000 bar
- Pressure diaphragm and process connection is machined from one piece of Titanium with no seals or welds
- High resistance to overpressure and pressure transients
- ATEX/IECEx option available (includes M1 for mining applications) for 4-20 mA versions
- DNV-GL certification available



The advanced sensor design consists of a piezoresistive silicon strain gauge circuit, which is epitaxially grown onto the surface of a sapphire diaphragm to form a single crystalline structure. The sapphire sensor element is then molecularly bonded to a titanium alloy sub-diaphragm.

This enables the sensor to endure higher over-pressures and provides superb corrosion resistance. The sensor exhibits virtually no hysteresis and excellent longterm stability over wide temperature ranges.

### SPECIFICATIONS

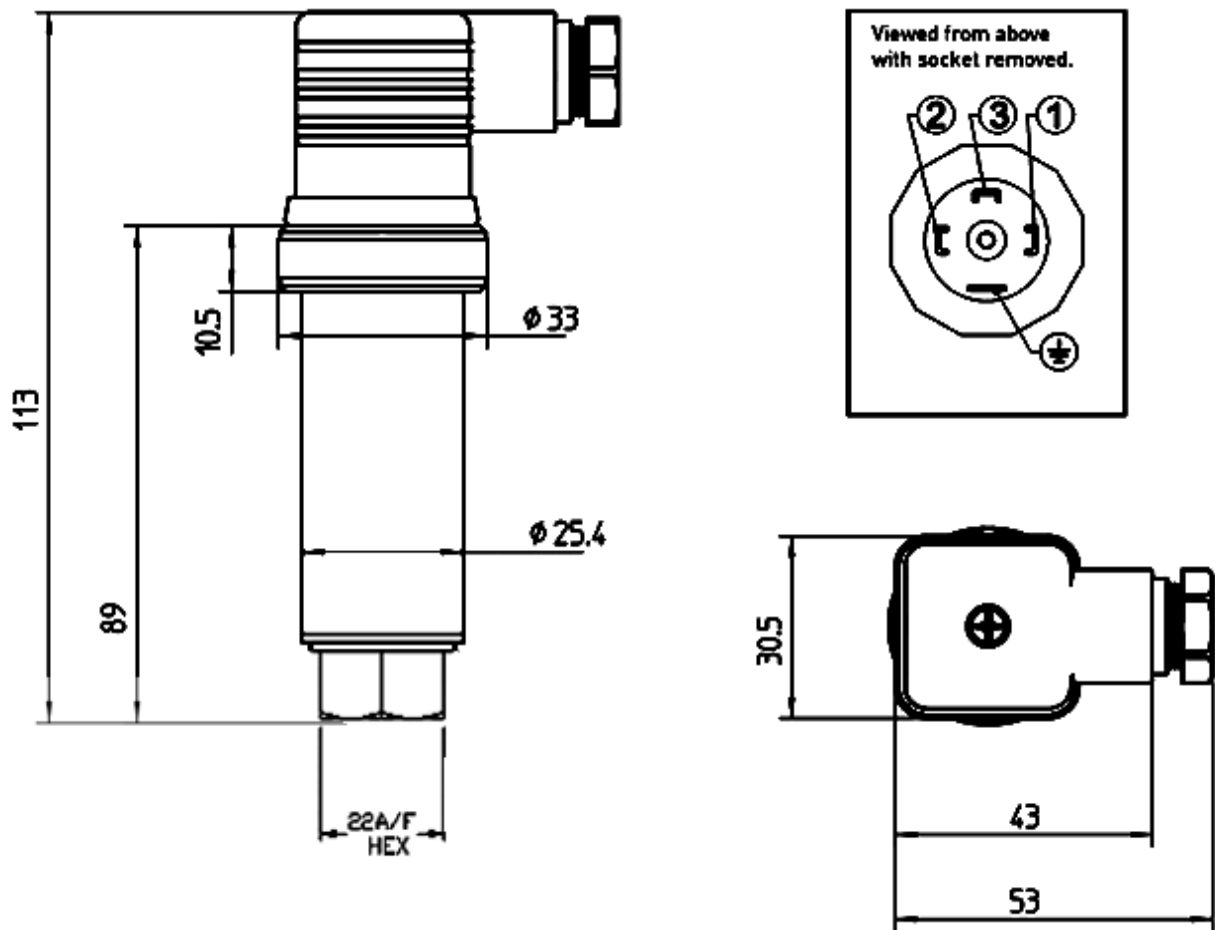
The AHP1000 series of high pressure transmitters with state-of-the-art SOS sensor technology offers high performance pressure measurement in extremely high pressure applications up to 5,000 bar ranges. ATEX and IECEx approval and protection by intrinsic safety is optional and intended for installation and operation in zone 0, gas group IIC, temperature class T4 and zone 20 dust and M1 mining. DNV GL rules for classification of ships, high speed & light craft and DNV GL offshore standards.

#### Typical applications include:

- Oil and Gas monitoring
- Aerospace
- High pressure Industrial



**DIMENSIONS (in mm)**



**ELECTRICAL CONNECTIONS**

PIN No.	mA	VDC	
	2 wire	3 wire	4 wire
1	+supply	common	-supply
2	4-20mA	+supply	+supply
3	N/C	+output	+output
↓	to case	to case	-output



## TECHNICAL DATA

Type	AHP1000 / AHP1100	AHP1xx1	AHP1xx2	AHP1003 / AHP1103
Sensor Technology:	Silicon-on-Sapphire (SOS)			
Output Signal:	0-10 mV/V (4 wire)	0-5 V (4 or 3 wire)	0-10 V (4 or 3 wire)	4-20 mA (2 wire)
Supply Voltage:	10 VDC (5-15 V)	13-30 VDC	13-30 VDC	10-36 VDC
Pressure Reference:	Gauge			
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V (amplified versions)			
Standard Pressure Ranges (bar):	AHP10xx: 0-600 bar; 0-700 bar; 0-1,000 bar; 0-1,500 bar; 0-2,000 bar AHP11xx: 0 – 2,500 bar; 0 – 4,000 bar; 0 – 5,000 bar (other ranges available)			
Standard Pressure Ranges (psi):	0-10,000 psi; 0-15,000 psi; 0-20,000 psi; 0-30,000 psi; 0-40,000 psi; 0-60,000 psi; 0-72,000 psi (other ranges available)			
Overpressure Safety:	1.5x for ranges 0 – 1000 bar to 0 – 3,000 bar; 1.25x for 4,000 bar; 1.2x for 5,000 bar			
Load Driving Capacity:	4 – 20 mA: $RL < [UB - 10 V] / 20 \text{ mA}$ (e.g. with supply voltage (UB) of 36 V, max. load (RL) is 1300 $\Omega$ ) 10 mV/V: n/a; 0 – 5 V: max. load $RL > 5 \text{ K}\Omega$ ; 0 – 10 V: max. load $RL > 10 \text{ K}\Omega$			
Accuracy NLHR:	$\leq \pm 0.25 \%$ of span BFSL (Ranges above 3,000 bar: $\leq \pm 0.35 \%$ of span BFSL) (Optional higher accuracy version of $\leq \pm 0.1 \%$ of span BFSL available)			
Zero Offset and Span Tolerance:	$\pm 0.5 \%$ FS at room temperature (GS4201: $\pm 1 \text{ mV}$ ); $\pm 5 \%$ FS (approx.) adjustment with easy access trimming potentiometers on amplified versions only			
Operating Temperatures:	<b>Ambient:</b> -40 °C to +85 °C (-40 °F to +185 °F) <b>Media:</b> -50 °C to +125 °C (-58 °F to +257 °F)			
Storage Temperature:	+5 °C to +40 °C (+41 °F to +104 °F) Recommended Best Practice			
Temperature Effects:	$\pm 1.5 \%$ FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients $\pm 0.015 \%$ FS / °C			
ATEX/IECEx Approval Option (4-20 mA version only):	n/a	n/a	n/a	Ex II 1 G Ex ia IIC T4 Ga (zone 0) Ex II 1 D Ex ia IIIC T135 °C Da (zone 20) Ex I M 1 Ex ia I Ma (group 1 M1)
ATEX/IECEx Safety Values:	n/a	n/a	n/a	Ui = 28 V Ii = 119 mA Pi = 0.65 W Li = 0.1 $\mu\text{H}$ Ci = 74 nF Temperature Range = -20 °C to +70 °C Max. cable length = 45 m
DNV-GL Approval:	Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)			
Electromagnetic Compatibility:	Emissions: EN61000-6-3; Immunity: EN61000-6-2; Certification: CE Marked			
Insulation Resistance:	$> 100 \text{ M}\Omega @ 50 \text{ VDC}$			
Response Time 10-90%:	1 mS			
Wetted Parts:	Titanium alloy machined from a single piece (other options available)			
Pressure Media:	All fluids compatible with Titanium alloy (other options available)			
Pressure Connection:	F250-C Autoclave fitting; thread type 9/16-18UNF-2B female or M16 x 1.5 female cone seal			
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)			
Net Weight:	0.2 Kg			



## TECHNICAL DATA

Output			Wires	Type	Options	Pressure Range	Process Connection
10 mV/V	Model to 2,000 bar (incl. 30,000 psi)		4	AHP1000			
	Model above 2,000 bar		4	AHP1100			
0-5 V	Model to 2,000 bar (incl. 30,000 psi)		4	AHP1001			
	Model above 2,000 bar		4	AHP1101			
	Model to 2,000 bar (incl. 30,000 psi)		3	AHP1011			
	Model above 2,000 bar		3	AHP1111			
0-10 V	Model to 2,000 bar (incl. 30,000 psi)		4	AHP1002			
	Model above 2,000 bar		4	AHP1102			
	Model to 2,000 bar (incl. 30,000 psi)		3	AHP1012			
	Model above 2,000 bar		3	AHP1112			
4-20 mA	Model to 2,000 bar (incl. 30,000 psi)		2	AHP1003			
	Model above 2,000 bar		2	AHP1103			
Options							
DIN EN175301 plug and socket					-		
Cable outlet 1m screened					A		
M12 connector					B		
Cable outlet 1m screened IP67 protection					C		
ATEX/IECEX certified with DIN EN175301 plus and socket					EX		
DNV GL approval					M		
DNV GL approval plus ATEX/IECEX certified					EXM		
Pressure Range							
0-600 bar							0600
0-1000 bar							1000
0-1500 bar							1500
0-2000 bar							2000
0-3000 bar							3000
0-4000 bar							4000
0-5000 bar							5000
Process Connection							
Autoclave F-250-C female							DE
M16 x 1.5 female cone seal							FK
Order Number Example			AHP1100A1000DE				
For options not listed please contact the sales team							

**DISCLAIMER:** We reserve the right to change specifications without prior notice. specifications without prior notice. All manufactured products are calibrated with precision calibration equipment that is traceable to national measurement standards.