PROTRAN© PR3900

Hazardous Area Pressure Transmitter

- ATEX and IECEx certified
- Designed for operating in zone 0, zone 20 and M1 mining
- NACE corrosion resistant materials
- Rugged, weatherproof design
- DNV GL certification available
- Silicon-on-Sapphire technology (SOS)

RoHS 2011/65/EU

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 long-term stability over wide temperature ranges.

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Specifications

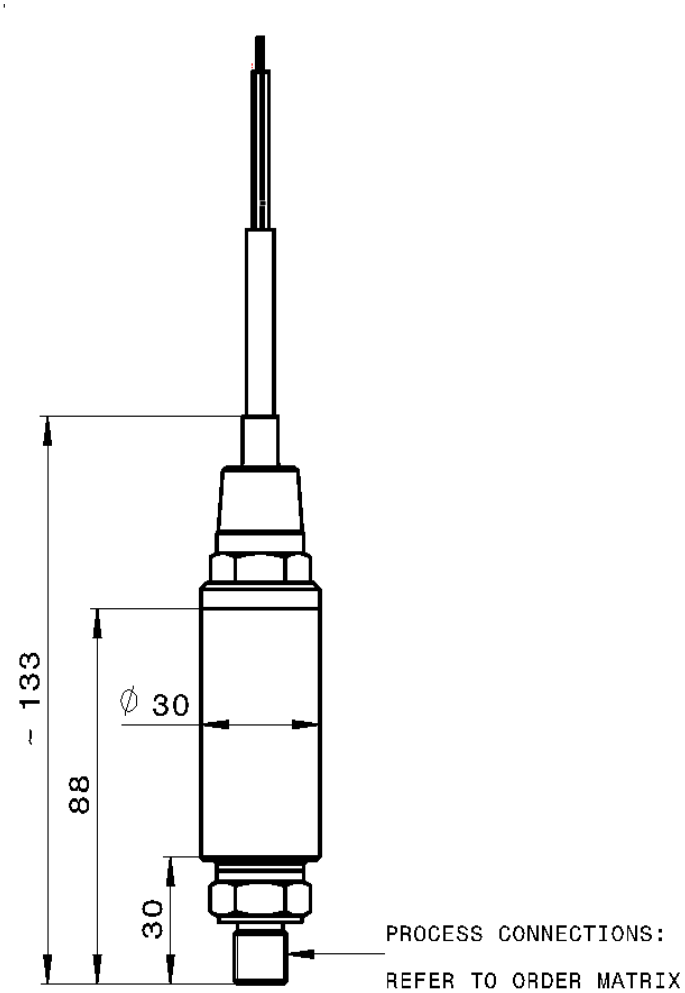
The PROTRAN© PR3900 pressure transmitter is designed to meet the majority of industrial pressure measurement applications where installation in an explosive and hazardous area is required. Designed and certified in accordance with the ATEX and IECEx approval this product is intended for installation and operation in potentially explosive atmospheres in zone 0 gas group IIC, temperature class T4 and zone 20 dust and M1 mining. The PR3900 provides a stable and accurate intrinsically safe two wire output signal of 4-20 mA when powered through a safety or isolating barrier such as MTL7706+, MTL5541 or other similar protection device.

DNV GL rules for classification of ships, high speed & light craft and DNV GL offshore standards.

Typical applications include:

- Any above ground explosive / hazardous environment installations
- Oil and gas industries
- Volatile chemical processing and storage.

Dimensions (in mm)



Electrical Connection

Colour code	Function
Red	Supply (13-36Vdc)
Blue	Signal (4-20mA)
Drain	Cable Screen

ESI Technology Limited
Sensor House, Wrexham LL13 7YP

+44(0)1978 262255
sales@esi-tec.com | esi-tec.com

Protran© PR3900 Hazardous Area Pressure Transmitter

Technical Data

Type	PR3900
Sensor Technology:	Silicon-on-Sapphire (SoS)
Output Signal:	4-20 mA (2 wire)
Supply Voltage:	10-36 VDC
Pressure Reference:	Gauge
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V
Standard Pressure Ranges (bar):	0 – 10 bar; 0 – 25 bar; 0 – 60 bar; 0 – 100 bar; 0 – 250 bar; 0 – 600 bar; 0 – 1000 bar; 0 – 1500 bar (other options available)
Standard Pressure Ranges (psi):	0-150 psi; 0-300 psi; 0-1000 psi; 0-1500 psi; 0-3000 psi; 0-8700 psi; 0-15000 psi; 0-20000 psi (other options available)
Overpressure Safety:	2x all ranges up to 600 bar; 1.5x for 1000 bar; 1.1x for 1500 bar
Load driving Capability:	4-20mA: RL <[UB-13V] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1150Ω)
Accuracy NLHR:	≤ ±0.3 % of span BFSL (Optional higher accuracy version ≤ ±0.15% of span BFSL available)
Zero Offset & Span Tolerance:	±0.5 %FS at room temperature
Operating Ambient Temperature:	-20°C to +85°C (-4°F + 185°F)
Operating Media Temperature:	-20°C to +85°C (-4°F + 185°F)
Storage Temperature:	+5C to +40°C (+41°F to +104°F) Recommended Best Practice
Temperature Effects:	±1.5 %FS total error band for -20°C to +70°C. Typical thermal zero and span coefficients ±0.015 %FS/°C
ATEX/IECEx Approval:	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 M1 Ex ia Ma (group 1 M1)
ATEX/IECEx Safety Values:	Ui = 28 V / Li = 119mA / Pi = 0.65 W / Li = 0.1 µH / Ci = 74 nF. Temperature Range = -20°C to '+70°C. Max. cable length = 45m
DNV GL Approval Class:	Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)
Ingress Protection:	Fully welded housing. Rated IP67 when correctly installed to conduit connection.
Electromagnetic Capability:	Emission: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked
Insulation Resistance:	> 100 MΩ @ 50 VDC
Response Time:	1 mS
Wetted Parts:	SAE 316 stainless steel with titanium alloy measurement cell
Pressure Media:	All fluids compatible with SAE 316 stainless steel titanium alloy
Pressure Connection:	1/4" BSP male (G1/4): 1/4" NPT male; 1/2" BSP male (G1/2) and 1/2" NPT male (other options available)
Net. Weight (Kg):	0.3 kg

Order Matrix

Output	Wires	Type	Electrical Connector/Options	Pressure Range	Process Connection
4-20 mA	2	PR3900			

Electrical Connections/Options	
1/2" NPT M conduit fitting with 1m submersible polyurethane cable with inegral screen	EX
DNV GL Approved plus ATEX/IECEx certified	EXM

Pressure Range in bar	
0-10 bar	0010
0-25 bar	0025
0-60 bar	0060
0-100 bar	0100
0-250 bar	0250
0-600 bar	0600
0-1,000 bar	1000
0-1,500 bar	1500

Process Connection	
1/2" NPT male	AS
1/4" NPT female	AB
1/4" BSP male (G1/4)	AM
1/4" NPT male	AC
1/2" BSP male (G1/2)	AN

Order Number Example	PR3900EXM1000AS

For options not listed please contact the sales team

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