PROTRAN© PR3913

Control Valve Pressure Transmitter

- Silicon-on-Sapphire sensor technology for outstanding performance
- 3,000 mtrs sea level
- Submersible to 3,000 mtrs sea level
- Pressure ranges available to 1,000 bar
- High accuracy option
- Suitable for ROV and deep sea testing equipment
- Comprehensive documentation package certification
- Hyperbaric testing to 3,000 mtrs depth
- Environmental Stress Screening (ESS Testing)
- ATEX/IECEx option available (includes M1 for mining application)

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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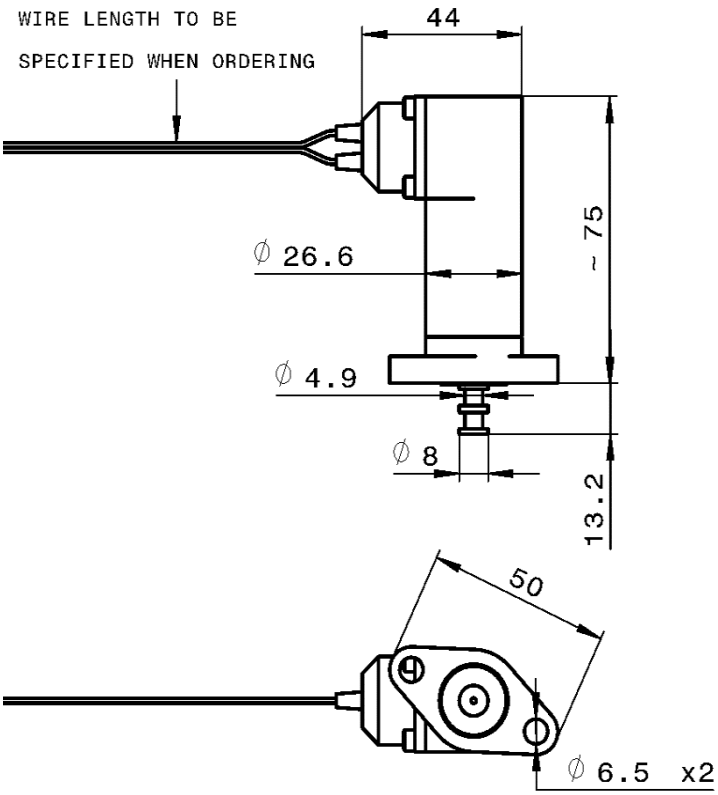
Specifications

The PROTRAN© PR3913 Valve-Mountable pressure transmitter has been designed to meet the requirements of the sub-sea oil industry and is configured to mount directly to the industry standard control valve flange arrangement. Housed in fully welded body with wetted parts conforming to the NACE recommendation for material corrosion resistance, this product will provide a durable solution for long term accurate pressure measurement even when permanently situated in extreme depth sub-sea environments.

Intended for permanent immersion in pressurised dielectic oil and protected from ingress with a high pressure glass-to-metal lead through the product can withstand external pressure up to 3,000 metres depth water and provides secondary pressure containment up to 1,650 bar. Units can be supplied with hyperbaric test certificates to 3,000 metres water submersion. Electrical connection is via strong PTFE Raychem Flexlite leads.

An optional ATEX and IECEx approved version of this product is available for explosion protection for flammable gases (zone 0), dusts (zone 20) and mining areas (group I M1).

Dimensions (in mm)



Electrical Connection

mA	
Red	Supply (10-36Vdc)
Blue	Signal (4-20mA)

DISCLAIMER: ESI Technology Ltd operates a policy of continuous product development. We reserve the right to change specification without prior notice. All products manufactured by ESI Technology Ltd are calibrated using precision calibration equipment, traceable to national measurement standards.

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Technical Data

Type	PR3913
Sensor Technology:	Silicon-on-Sapphire (SoS)
Output Signal:	4-20 mA (2 wire)
Supply Voltage:	10-36 VDC
Pressure Reference:	Sealed Guage
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V
Standard Pressure Ranges (bar):	0 – 228 bar; 0 – 379 bar; 0 – 569 bar; 0 – 759 bar; 0 – 1035 bar (other options available)
Standard Pressure Ranges (psi):	0-3000 psi; 0-5000 psi; 0-8000 psi; 0-15000 psi (other options available)
Overpressure Safety:	2x all ranges up to759 bar; 1.5x for 1035 bar
Load driving Capability:	**4-20mA:** RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1300Ω)
Accuracy NLHR:	< +0.25 % of span BFSL
Zero Offset & Span Tolerance:	±0.25 mA
Operating Ambient Temperature:	-20°C to +40°C (-4°F + 104°F)
Operating Media Temperature:	-20°C to +40°C (-4°F + 104°F)
Storage Temperature:	+5°C to +40°C (+41°F to +104°F) Recommended Best Practice
Temperature Effects:	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
Ingress Protection:	Fully welded housing
Electromagnetic Capability:	Emission: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked
Insluation Resistance:	> 500 MΩ @ 50 VDC
Response time 10-90%:	1 mS
Wetted Parts:	Inconel 625 with titanium alloy measurement cell
Pressure Media:	All fluids compatible with Inconel 625 and titanium alloy
Pressure Connection:	Mnay specialised pressure connection options available to suit individual requirements. Contact the sales team for more information
Electrical Connection:	Cable outlet or Subsea connector options available
Net. Weight (Kg):	Subject to specification