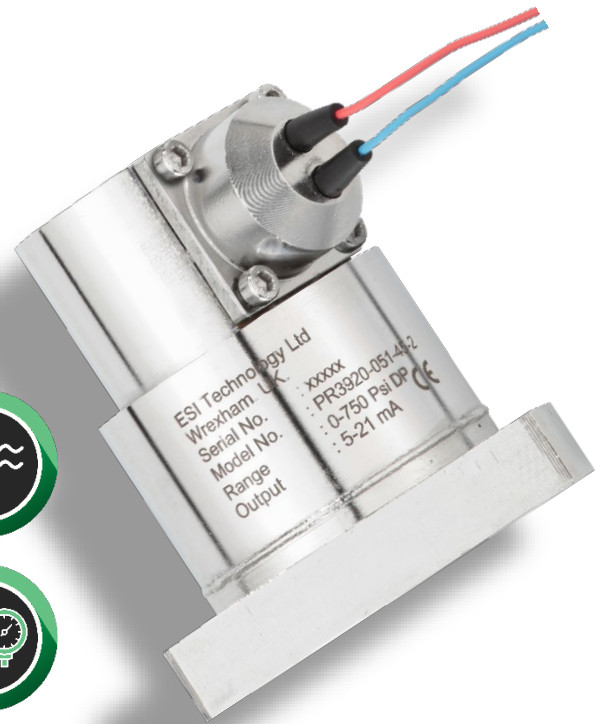


# esi

## PROTRAN® PR3920

### Subsea Differential Pressure Transmitter

- Standard sensing range 0-50 bar DP (other ranges available)
- Up to 1,200 bar secondary containment
- Silicon-on-Sapphire sensor technology for outstanding performance
- Submersible to 3,000 meters sea level
- Hyperbaric testing and Environmental Stress Screening (ESS)
- NACE corrosion resistance
- ATEX/IECEx option 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 long-term stability

## Specifications

The **PROTRAN© PR3920** differential pressure transmitter provides very accurate low pressure wet-wet differential pressure measurement on extremely high line pressure sources. Designed for permanent installation in very demanding subsea applications the housing is completely sealed to resist 300 bar external pressure. Intended for submersion in pressurised dielectric oil with seawater for monitoring of subsea well control valves or hydraulic pressure measurement.

It provides surface mounting with a stainless steel mounting plate and dual redundant o-ring face seals. Both the high and low pressure ports can withstand 1,000bar overpressure with no damage or loss of performance. The titanium alloy wetted parts provide conformance to NACE corrosion resistance requirements.

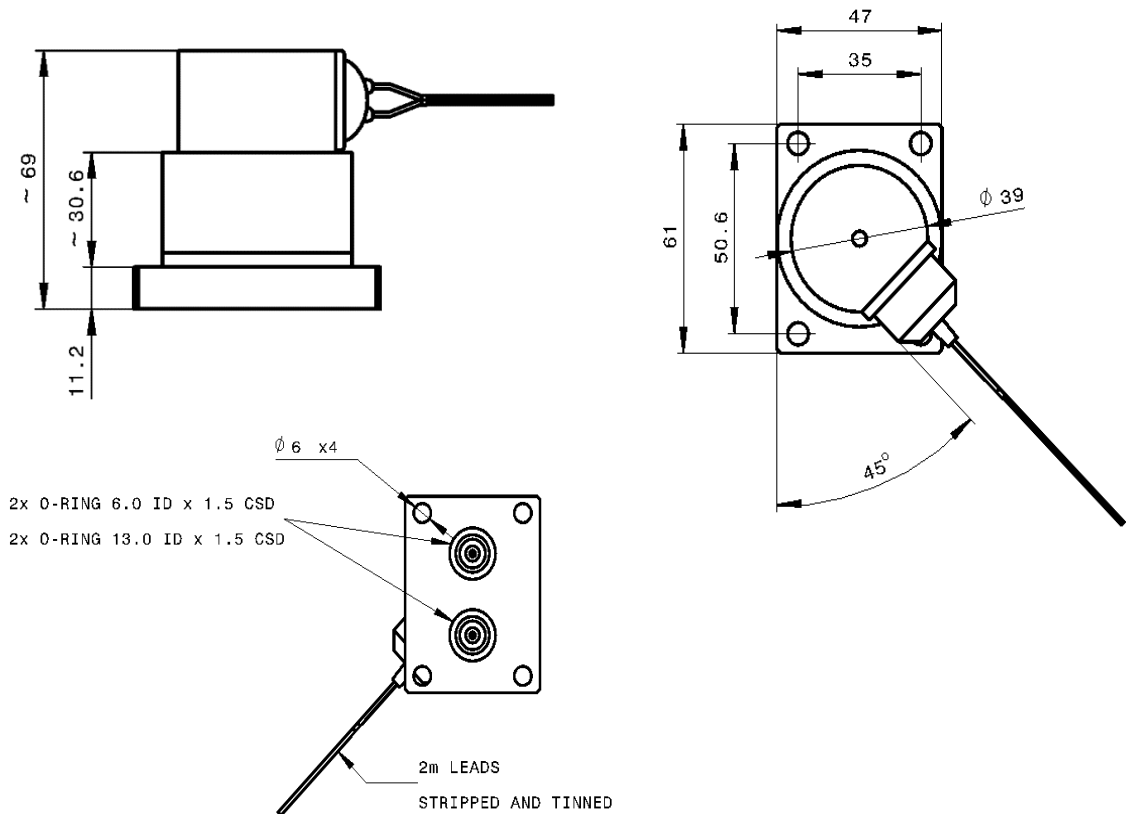
An optional ATEX and IECEx approved version of this product is available for explosion protection for flammable gases (zone 0) and dusts (zone 20).

### Typical applications include:

- Control of chemical injection for sub-sea wells for oil and gas extraction



## Dimensions (in mm)



## Electrical Connection

| Colour | Function          |
|--------|-------------------|
| 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.

## Technical Data

| Type                            | PR3920   |
|---------------------------------|--|
| Sensor Technology:              | Silicon-on-Sapphire (SoS)  |
| Output Signal:                  | 4-20 mA (2 wire)   |
| Supply Voltage:                 | 10-36 VDC  |
| Pressure Reference:             | Differential Sealed Gauge  |
| Protection of Supply Voltage:   | Protected against supply voltage reversal up to 50 V   |
| Differential Pressure Range:    | 0-750psi (51 barDP) Other ranges available on request  |
| Line Pressure:                  | Typically 4 x pressure range   |
| Secondary Pressure Containment: | Up to 1200 bar max   |
| Load driving Capability:        | 4-20 mA : $RL < [UB-10V] / 20 \text{ mA}$ (e.g. with supply voltage (UB) of 36V max. load (RL) is 1300 $\Omega$ )  |
| Accuracy NLHR:                  | $\leq \pm 0.25 \%$ of span BFSL  |
| Zero Offset & Span Tolerance:   | $\pm 0.2 \text{ mA}$   |
| Operating Ambient Temperature:  | -10°C to +70°C (+14°F to +158°F)   |
| Operating Media Temperature:    | -10°C to +70°C (+14°F to +158°F)   |
| Storage Temperature:            | +5°C to +40°C (+14°F to +158°F)  |
| Temperature Effects:            | $\pm 3.0\%$ FS total error band for -20°C - +70°C. Typical thermal zero and span coefficients $\pm 0.05\%$ FS/°C   |
| ATEX/IECEx Approval Option:     | 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 Saftey Values:       | $U_i = 28 \text{ V} / L_i = 119 \text{ mA} / P_i = 0.65 \text{ W} / L_i = 0.1 \mu\text{H} / C_i = 74 \text{ nF}$ . Temperature Range = -20°C to +70°C. Max. cable length = 45m |
| Electromagnetic Compatibility:  | Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: CE/UKCA Marked   |
| Insulation Resistance:          | > 1G $\Omega$ @ 50 VDC   |
| Response time 10-90:            | 1mS  |
| Operating Environment:          | Sealed for immersion in pressureised dielectric fluid up to 300 bar and for short periods in seawater.   |
| Wetted Parts:                   | SAE 316 stainless steel with titanium alloy  |
| Pressure Media:                 | All fluids compatible with SAE 316 stainless steel titanium alloy  |
| Corrosion Resistance:           | NACE compliant materials   |
| Pressure Connection:            | Face sealing mounting plate with dual redundant elastomeric O ring seals on both pressure ports  |
| Electrical Connection:          | Raychem Wire (optional cable outlet orientation available on request)  |
| Net. Weight (Kg):               | Subject to specification   |