# PROTRAN© PR3914

Subsea Pressure Tranmsitter

- Suitable for ROV and deep sea test equipment
- Silicon-on-Sapphire sensor technology for outstanding performance
- Submersible to 3,000 meters sea level
- Hyperbaric testing to 3,300m depth
- Pressure ranges available to 1,000 bar
- Environmental Stress Screening (ESS Testing)
- Comprehensive documentation package and certification







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.





## **Specifications**

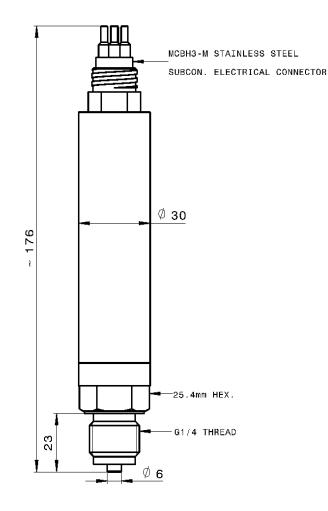
**The PROTRAN© PR3914** subsea pressure transmitter has been designed to meet the demanding requirements of pressure measurement at deep levels of immersion especially in oil industry applications and can be configured to suit a multitude of applications.

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 the product can withstand external pressures of up to 6,000 metres depth water. Versions with secondary containment are available providing high level product integrity in deep water operation.

Units can be supplied with hyperbaric test certificates to 3,000 metres water submersion. Electrical connection is via strong PTFE Raychem Flexlite leads.

#### **Dimensions (in mm)**



### **Electrical Connection**

Pin	mA (2 wire)
1	+supply
2	4-20mA signal
3	N/C

**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.

ESI Technology Limited Sensor House, Wrexham LL13 7YP





# **Technical Data**

Dutput 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:   Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:      Persting Ambient   20°C to +40°C (+4°F + 104°F)     Femperature:      Operating Multiant   -20°C to +40°C (+4°F + 104°F)     Recomparature:   +0.015 %F5 total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %F5/°C     Reperature Effects:   +0.015 %F5 total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %F5/°C     Response time 10-90%   Emissions: EN61000-6-4; immunity: EN61000-6-2; Certification: UKCA and CE Marked     Response time 10-90%   SAE 316 stainless steel housing with titanium alloy measurement cell     Pressure Connection:   Many specialised pressure connection options available to suit individual requirements. Contact the sales team of more more information nomore information <th>Туре</th> <th>PR3914</th>	Туре	PR3914
Accord of Workspeech   Content of Supply Voltage:     Pressure Reference:   Sealed Guage     Pressure Reference:   Sealed Guage     Pressure Reference:   Sealed Guage     Pressure Reference:   Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information     Standard Pressure Ranges:   Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Codd driving Capability:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:      Pressure Safety:   Contact the sales office for further information     Standard Pressure Safety:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:    4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Standard Pressure Safety:    4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Safe Safe Sapan    4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Safe Safe Sapan    4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1300	Sensor Technology:	Silicon-on-Sapphire (SoS)
Pressure Reference:   Sealed Guage     Protection of Supply voltage:   Protected against supply voltage reversal up to 50 V     Standard Pressure Ranges:   Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)     Accuracy NLHR:   < 4-015 KFS total error band for -20 to +40°C (4'F +104°F)     Repersture Effects:   Fulo 15 KFS total error band for -20 to +70°C. Typical the	Output Signal:	4-20 mA (2 wire)
Protection of Supply Voltage:   Protected against supply voltage reversal up to 50 V     Standard Pressure Ranges:   Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     Cond driving Capability:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 13000)	Supply Voltage:	10-36 VDC
Protected against supply Voltage reversal up to S0 V     Standard Pressure Ranges:   Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information     Overpressure Safety:   Contact the sales office for further information     coad driving Capability:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1300Ω)	Pressure Reference:	Sealed Guage
Overpressure Safety:   Contact the sales office for further information     coad driving Capability:   4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1300Q)     Accuracy NLHR:   <+0.25 % of span BFSL     tero Offset & Span   ±0.10 mA     Operating Ambient   -20°C to +40°C (-4°F +104°F)     Temperature:   -20°C to +40°C (-4°F +104°F)     Operating Media   -20°C to +40°C (-4°F +104°F)     remperature:   +0.15 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°C     remperature Effects:   +0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°C     remperature:   Encisions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE Marked     response time 10-90%:   Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE Marked     response time 10-90%:   SAE 316 stainless steel housing with titanium alloy measurement cell     ressure Media:   All fluids compatible with SAE 316 stainless steel and titanium alloy     ressure Connection:   Cable outlet or Subsea connector options available     ressure Connection:   Cable outlet or Subsea connector options available. Contact Sales for details	Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V
Accuracy NLHR:4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1300Ω)	Standard Pressure Ranges:	Typical ranges from 0-10 bar to 0-2000 bar. Contact the sales office for further information
Accuracy NLHR:Accuracy NLHR:Cero Offset & SpanDeperating Ambient Temperature:Temperature:Opperating Media Temperature:-20°C to +40°C (-4°F +104°F)Opperating 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 Practiceremperature:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°Cngress Protection:Femperature:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°Cngress Protection:Fully welded housingElectromagnetic Capability:Electromagnetic Capability:SAE 316 stainless steel for 10 MQ @ 50 VDCResponse time 10-90%:Pressure Media:Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationRelated Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Overpressure Safety:	Contact the sales office for further information
Zero Offset & Span±0.10 mAOperating Ambient Temperature:-20°C to +40°C (-4°F +104°F)Operating Media Temperature:-20°C to +40°C (-4°F +104°F)Operating Media Temperature:-20°C to +40°C (-4°F +104°F)Storage Temperature:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°CRemperature Effects:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°CIngress Protection:Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE MarkedInstallation Resistance: Response time 10-90%:> 100 MQ @ 50 VDCNetted Parts:SAE 316 stainless steel housing with titanium alloy measurement cellPressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationRelectrical Connection:PT100 temperature transducer PR3919 also available. Contact Sales for details	Load driving Capability:	4-20mA: RL <[UB-10] / 20 mA (e.g. with supply voltage (UB of 36V, max load (RL) is 1300 $\Omega$ )
Deparating Ambient remperature:-20°C to +40°C (-4°F +104°F)Deparating Media remperature:-20°C to +40°C (-4°F +104°F)Storage Temperature:+5°C to +40°C (+41°F to +104°F) Recommended Best Practiceremperature:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°Cremperature Effects:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°Cremperature Effects:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°Cress Protection:Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE Markedressponse time 10-90%:> 100 MΩ @ 50 VDCResponse time 10-90%:1 mSVetted Parts:SAE 316 stainless steel housing with titanium alloy measurement cellPressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationRelectrical Connection:Cable outlet or Subsea connector options availableRelated Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Accuracy NLHR:	< +0.25 % of span BFSL
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 PracticeTemperature Effects:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°CIngress Protection:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°CIngress Protection:Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE MarkedInstallation Resistance:> 100 MQ @ 50 VDCResponse time 10-90%:Immunity: SAE 316 stainless steel housing with titanium alloy measurement cellPressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Cable outlet or Subsea connector options availableRelated Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Zero Offset & Span	±0.10 mA
remperature:-20°C to +40°C (-4°F +104°F)Storage Temperature:+5°C to +40°C (+41°F to +104°F) Recommended Best Practiceremperature Effects:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°Cngress Protection:Electromagnetic Capability:Electromagnetic Capability:Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE Markednstallation Resistance:> 100 MΩ @ 50 VDCResponse time 10-90%:1 mSPressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationElectrical Connection:Cable outlet or Subsea connector options available.Related Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Operating Ambient Temperature:	-20°C to +40°C (-4°F +104°F)
Temperature Effects:+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°CIngress Protection:Fully welded housingElectromagnetic Capability:Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE MarkedInstallation Resistance:> 100 MΩ @ 50 VDCResponse time 10-90%:ImsWetted Parts:SAE 316 stainless steel housing with titanium alloy measurement cellPressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationElectrical Connection:Cable outlet or Subsea connector options availableRelated Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Operating Media Temperature:	-20°C to +40°C (-4°F +104°F)
Ingress Protection: Fully welded housing   Electromagnetic Capability: Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE Marked   Installation Resistance: > 100 MΩ @ 50 VDC   Response time 10-90%: 1 mS   Wetted Parts: SAE 316 stainless steel housing with titanium alloy measurement cell   Pressure Media: All fluids compatible with SAE 316 stainless steel and titanium alloy   Pressure Connection: Many 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.	Storage Temperature:	+5°C to +40°C (+41°F to +104°F) Recommended Best Practice
Electromagnetic Capability:Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: UKCA and CE Markednstallation Resistance:> 100 MΩ @ 50 VDCResponse time 10-90%:1 mSWetted Parts:SAE 316 stainless steel housing with titanium alloy measurement cellPressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationElectrical Connection:Cable outlet or Subsea connector options available.Related Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Temperature Effects:	+0.015 %FS total error band for -20 to +70°C. Typical thermal zero and span coefficients +0.005 %FS/°C
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Pressure Media:All fluids compatible with SAE 316 stainless steel and titanium alloyPressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationElectrical Connection:Cable outlet or Subsea connector options availableRelated Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Response time 10-90%:	1 mS
Pressure Connection:Many specialised pressure connection options available to suit individual requirements. Contact the sales team for more informationElectrical Connection:Cable outlet or Subsea connector options availableRelated Product:PT100 temperature transducer PR3919 also available. Contact Sales for details	Wetted Parts:	SAE 316 stainless steel housing with titanium alloy measurement cell
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Net, Weight (Kg): Subject to specification	Related Product:	PT100 temperature transducer PR3919 also available. Contact Sales for details
	Net. Weight (Kg):	Subject to specification

