



Protran® PR3441

Submersible Depth/Level
Pressure Transmitter



- Piezoresistive sensor technology for excellent stability and repeatability
- Robust stainless steel construction
- Pressure ranges available from 0-1 mWG
- High strength, moulded cable for protection against ingress
- ATEX/IECEx option available (includes M1 for mining applications)
- DNV GL certification available



Vers. 20/1/Eng



Description

The PR3441 submersible transmitter has been designed for the accurate measurement of the depth and level of liquids in many applications.

Standard output signal is 4-20 mA two wire with supply range 13-36Vdc. Electrical connection is via a high strength moulded polyurethane cable with integral tube for excellent trouble-free venting to the surface atmosphere. The standard depth transmitter is fitted with a stainless steel nose cone with radial inlet holes to prevent sludge build-up. The PR3441 transmitter is suitable for depth and level measurement in boreholes 25 mm diameter or greater. Lightning Protection is available on request.

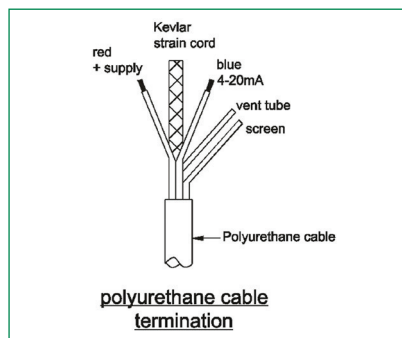
Applications include borehole level and reservoir level monitoring, water mains pressure measurement in inspection chambers, power level and outlet pressure measurement on submersible pumps.

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).

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

Dimensions (in mm)

ELECTRICAL CONNECTION (mA)	
Red	+supply
Blue	4-20mA signal
Screen	to case



Technical Data

Type:	PR3441	PR3445	PR3446
Sensor Technology:	Isolated Piezoresistive Silicon		
Output Signal:	4-20 mA (2 wire)	0-5 Vdc (4 wire)	0-10 Vdc (4 wire)
Supply Voltage:	13 -36 VDC	13 -30 VDC	13 -30 VDC
Pressure Reference:	Vented Gauge		
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V		
Lightening Protection	On Request		
Standard Pressure Ranges (mWG):	0-1 mWG; 0-10 mWG; 0-20 mWG; 0-50 mWG; 0-100 mWG; 0-250 mWG; 0-500 mWG (other options available)		
Standard Pressure Ranges (psi):	0-3 psi; 0-5 psi; 0-7.5 psi; 0-10 psi; 0-15 psi; 0-30 psi; 0-50 psi; 0-100 psi; 0-200 psi; 0-300 psi (other options available)		
Overpressure Safety:	2x all ranges		
Load Driving Capability:	4 – 20 mA: $RL < [UB - 13 V] / 20 \text{ mA}$; (e.g. with supply voltage (UB) of 36V, max. load (RL) is 1150 Ω; 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:	$\leq \pm 0.3 \%$ of span BFSL (Optional higher accuracy version of $\leq \pm 0.15 \%$ of span BFSL available)		
Zero Offset and Span Tolerance:	$\pm 0.5\%$ FS at room temperature		
Operating Ambient Temperature:	-20 °C – +60 °C (-4 °F to +140 °F)		
Operating Media Temperature:	Media must not freeze around the sensor		
Storage Temperature:	+5 °C to +40 °C (+41 °F to +104°F) Recommended Best Practice		
Temperature Effects:	$\pm 2.0\%$ FS total error band for -20 °C – +60 °C. Typical thermal zero and span coefficients $\pm 0.03\%$ FS/°C		
ATEX/IECEx Approval Option (4-20mA version only):	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:	$U_i = 28 \text{ V}$ $I_i = 119 \text{ mA}$ $P_i = 0.65 \text{ W}$ $L_i = 0.1 \mu\text{H}$ $C_i = 62 \text{ nF}$ Temperature Range = -20 °C to +70 °C Max. cable length = 105 m		
DNV GL Approval Class:	Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: D (contact sales for more information)		
Electromagnetic Compatibility:	Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: CE Marked		
Insulation Resistance:	$> 100 \text{ M}\Omega @ 50 \text{ VDC}$		
Wetted Parts:	SAE 316L stainless steel housing and diaphragm, polyurethane cable and nitrile (NBR) o-ring seal		
Pressure Media:	All fluids compatible with SAE 316L stainless steel, polyurethane and nitrile (NBR)		
Pressure Connection:	Stainless steel nose cone with radial pressure inlets		
Electrical Connection:	Submersible black polyurethane cable moulded to housing. With integral screen, Kevlar strain cord and vent tube. Conductor size 7/0.20 mm (24 AWG), resistance 8.9 Ω / 100 m (x2)		
Net. Weight (Kg):	0.4 Kg		

Order Matrix

Output	Wires	Type	Electrical Connector	Pressure Range	Process Connection	Cable Length
4-20mA	2	PR3441				
0-5 V	4	PR3445				
0-10 V	4	PR3446				
Electrical Connection/ Option						
No special option required			-			
ATEX/ IECEx certified			EX			
DNV GL Approval			M			
DNV GL Approval plus ATEX/IECEx certified			EXM			
Higher accuracy option			H			
Pressure Range in mWG (Metres Water Gauge)						
0-1 mWG				0001		
0-5 mWG				0005		
0-10 mWG				0010		
0-50 mWG				0050		
0-100 mWG				0100		
0-250 mWG				0250		
0-500 mWG				0500		
Process Connection						
Protective nose cone						AX
1/4" BSP (G1/4)						AB
Cable Length						
Cable length is specified by adding a 3 digit numeric code as a suffix to the part number. e.g. -010 = 10 metres. (Max cable length 500 metres)						xxx

Order Number Example PR3441H0010AX-010

For options not listed please contact the sales team

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.