

# esi

## 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, cable for protection against ingress
- ATEX/IECEX option available (includes M1 for mining applications)
- DNV GL certification available



## Optional Approvals



### Hazardous Area

ATEX and IECEx approval for explosion protection; flammable gases (zone 0), dusts (zone 20) and mining areas (group I M1).



### Marine

DNV-GL marine approvals for marine use has been developed for shipping systems such as marine engines, cargo storage tanks, fuel gauging, fresh water storage, wastewater management, heating, cooling and ballast tank control.



## Specifications

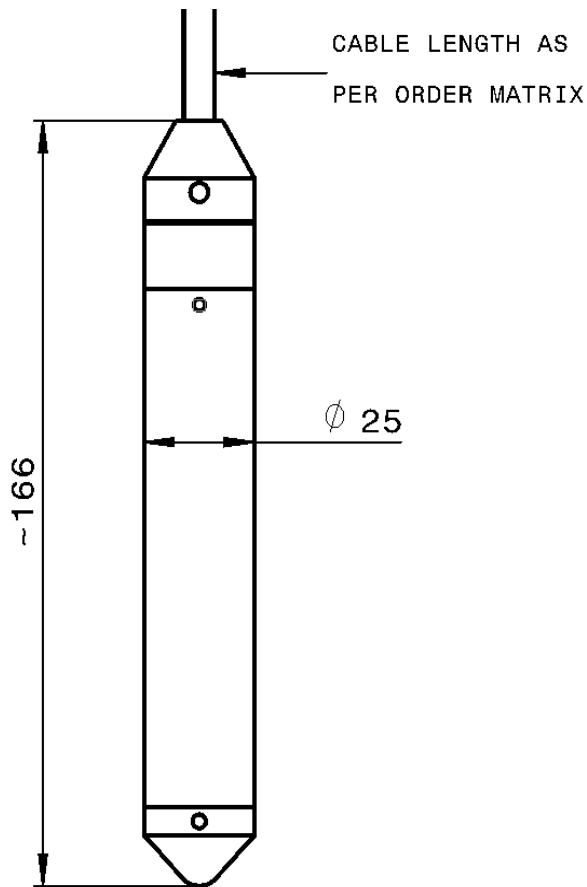
The **PROTRAN PR3441 submersible transmitter** has been designed for the accurate measurement of the depth and level of liquids in many applications. Standard output signal is 4-20 mA two wire with supply range 13-26 Vdc. Electrical connection is via a high strength polyurethane cable with integral tube 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. A magnetic nose cone is available on request. The PR3441 transmitter is suitable for depth and level measurement in boreholes 25 mm diameter or greater. Lightning Protection is available on request.

### Typical applications include:

- Borehole level and reservoir level monitoring
- Water mains pressure measurement in inspection chambers
- Power level and outlet pressure measurement on submersible pumps

## Dimensions (in mm)



## Electrical Connection

mA	
Red	+supply
Blue	4-20 mA signal
Screen	to case

## Technical Data

Type	PR3441	PR3445	PR3446
Sensor Technology:	Isolated Piezoresistive Silicon		
Output Signal:	4-20 mA (2 wire)	0-5 V (4 wire)	0-10 V (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		
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 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 KΩ; 0 – 10 V: max. load RL > 10 KΩ		
Accuracy NLHR:	±0.3 % of span BFSL (Optional higher accuracy version of ±0.15 % of span BFSL available)		
Zero Offset & Span Tolerance:	±0.5% FS at room temperature		
Operating Ambient Temp:	-20°C to +60°C (-4°F to +140°F)		
Operating Media Temperature:	Media must not freeze around the sensor		
Storage Temperature:	+5C to +40C (+41F to +104F) Recommended Best Practice		
Temperature Effects:	±2.0% FS total error band for -20°C to +60°C. Typical thermal zero and span coefficients ±0.03% FS/°C		
ATEX/IECEx Approval (4-20 mA 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 M1 Ex ia Ma (group 1 M1)		n/a
ATEX/IECEx Safety Values:	Ui = 28 V / Li = 119mA / Pi = 0.65 W / Li = 0.1 pH / Ci = 62 nF. Temperature Range = -20C to +70C. Max. cable length = 105m		n/a
DNV-GL Approval:	Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)		
Electromagnetic Compatibility:	Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: CE/UKCA Marked		
Insulation Resistance:	> 100 MΩ @ 50 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, 316 stainless steel, polyurethane and nitrile (NBR)		
Pressure Connection:	Stainless steel nose cone with radial pressure inlets. Magnetic nose cone available on request.		
Electrical Connection:	Submersible black polyurethane cable 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 (without cable)		

## Order Matrix

Output	Wires	Type	Electrical Connection/Options	Pressure Range	Process Connection	Cable Length
4-20 mA	2	PR3441				
0-5 V	4	PR3445				
0-10 V	4	PR3446				
<b>Electrical Connections/Options</b>						
No special options			-			
Higher accuracy option			HA			
ATEX/IECEX certified			EX			
DNV GL Approved			M			
DNV GL Approved plus ATEX/IECEX certified			EXM			
<b>Pressure Range in mWG</b>						
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		
<b>Process Connection</b>						
Protective nose cone					AX	
Magnetic nose cone					FZ	
1/4" BSP (G1/4)					AB	
<b>Cable Length</b>						
Cable length is specified by adding a 3 digit numeric code as a suffix to the part number e.g '010 = 10 meters. (Max cable length 500 maters).						
xxx						

### Order Number Example

PR3441-0010AX-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.