Protran® PR3800

Flush Diaphragm
Pressure Transmitter

- Easy clean flush membrane to prevent clogging
- Thick film sensor technology for long service life
- Pressure ranges to 40 bar
- Range of sanitary grade pressure fittings
- ATEX/IECEx option available (includes M1 for mining applications)

RoHS 2011/65/EU

Vers. 20/1/Eng

Description

The PR3800 series offer a range pressure transmitters with integrated or remote barrier seals for applications where direct media contact must be prevented.

Robustly constructed from stainless steel, this range of pressure transmitters incorporates the latest strain gauge technology together with a custom IC amplifier offering excellent stability and accuracy over a long service life. The range offers a stable and accurate output signal of 4-20 mA with options for 0-5 V and 0-10 V.

Typical applications include food processing, pharmaceutical, petrochemical, waste water and slurry handling. In these installations the process media may corrode the sensing diaphragm or clog the narrow pressure inlet on a standard transmitter. The flush membrane can be easily cleaned for long term reliability and outstanding performance. For hygienic applications the PR3800 series provides a sanitary grade pressure fitting. Seals are available in a variety of forms and materials for a wide range of applications and can be directly attached to the proposed connection or remotely via stainless steel capillary. Pressure ranges available from 0-200 mbar to 0-40 bar.

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

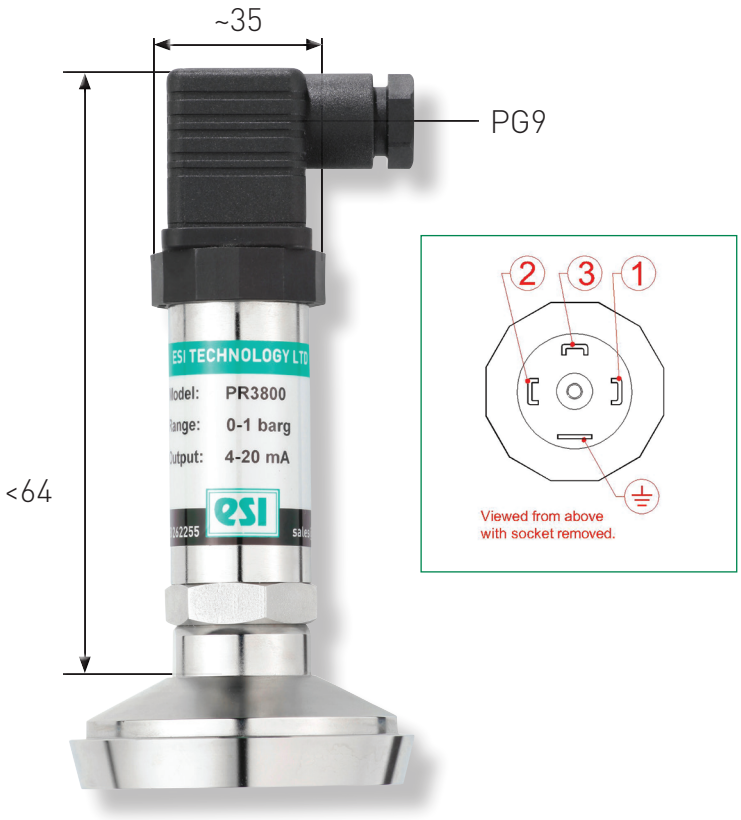
Dimensions
(in mm)

ELECTRICAL CONNECTION (mA)

Pin No.	2 wire
1	+supply
2	4-20mA signal
3	not fitted to case

ELECTRICAL CONNECTION (Vdc)

Pin No.	4 wire	3 wire
1	-supply	common
2	+supply	+supply
3	+output	+output



Protran® PR3800 Flush DiaphragmPressure Transmitter

Technical Data

Type	PR3800	PR3801	PR3802	PR3820	PR3821	PR3822
Sensor Technology:	Ceramic Thick Film or Isolated Piezoresistive Silicon					
Output Signal:	4-20 mA (2 wire)	0-5 V (4 wire)	0-10 V (4 wire)	4-20 mA (2 wire)	0-5 V (4 wire)	0-10 V (4 wire)
Supply Voltage:	13 to 36 VDC	13-30 VDC	13-30 VDC	13 to 36 VDC	13-30 VDC	13-30 VDC
Pressure Reference:	Gauge					
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V					
Standard Pressure Ranges (bar):	0-1 bar Vac; 0-200mbar, 0-1 bar; 0-2.5 bar; 0-6 bar; 0-10 bar; 0-16 bar; 0-25 bar; 0-40 bar (other options available)					
Standard Pressure Ranges (psi):	0-30 in Hg; 0-1.5psi; 0-15 psi; 0-30 psi; 0-100psi; 0-150 psi; 0-200 psi; 0-300 psi; 0-600 psi (other options available)					
Overpressure Safety:	1.5x for 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)					
Accuracy NLHR:	≤ ±0.3 % of span BFSL					
Zero Offset and Span Tolerance:	±1.0% FS at room temperature; ±5% FS (approx.) adjustment with easy access trimming potentiometers on amplified versions only					
Operating Ambient Temperature:	-20 °C to +85 °C (-4 °F to +185 °F)					
Operating Media Temperature:	-20 °C to +85 °C (-4 °F to +185 °F)					
Storage Temperature:	+5 °C to +40 °C (+41 °F to +104°F) Recommended Best Practice					
Temperature Effects:	±2.5% FS total error band for -20°C to +70°C. Typical thermal zero and span coefficients ±0.04% 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:	Ui = 28 V Ii = 119 mA Pi = 0.65 W Li = 0.1 µH Ci = 62 nF Temperature Range = -20°C to +70°C Max. cable length = 105 m					
Electromagnetic Compatibility:	Emissions: EN61000-6-3; Immunity: EN61000-6-2; Certification: CE Marked					
Insulation Resistance:	> 100 MΩ @ 50 VDC					
Response time 10-90 %:	Ranges < 6 bar 1mS; Ranges ≥ 6 bar 10 mS					
Wetted Parts:	Ranges <6 bar: SAE 316 stainless steel and nitrile (NBR); Ranges ≥ 6 bar: SAE 316L stainless steel					
Pressure Media:	Ranges <6 bar: all fluids compatible with SAE 316L stainless steel and nitrile (NBR); Ranges ≥ 6 bar: all fluids compatible with SAE 316L stainless steel					
Pressure Connection:	Pipe clamp (Tri-clover) 1.5" 316L Stainless steel (Other options available)			DIN 11851 female 316L Stainless steel (Other options available)		
	Ranges ≥0-6 bar; Flush diaphragm SAE 316L stainless steel hygienic diaphragm seal; Ranges <6 bar: Semi-flush SAE 316L diaphragm seal					
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)					
Net. Weight (Kg):	0.5 kg					

Order Matrix

Output	Wires	Type	Electrical Connection/ Options	Pressure Range	Process Connection
4-20 mA	2	PR3800			
	2	PR3820			
0-5 V	4	PR3801			
	4	PR3821			
0-10 V	4	PR3802			
	4	PR3822			

Electrical Connection/Options	
DIN EN175301 plug and socket	-
Cable outlet 1m screened	A
M12 connector	B
Cable outlet 1m screened IP67 protection	C
ATEX/ IECEx certified with DIN EN175301 plug and socket	EX

Pressure Range in bar	
0-1 bar vac	V001
0-1 bar (0-14 psi)	0001
0-2.5 bar (0-36 psi)	02.5
0-10 bar (0-145 psi)	0010
0-16 bar (0-200 psi)	0016
0-25 bar (0-300 psi)	0025
0-40 bar (0-580 psi)	0040

Process Connection	
Pipe clamp (Tri-clover) 1.5" 316L Stainless steel (PR3800 only)	BG
Pipe clamp (Tri-clover) 2" 316L Stainless steel (PR3800 only)	BH
RJT 38mm female 316L Stainless steel (PR3820 only)	BJ
DIN11851 female 32mm Stainless steel (PR3820 only)	BR
SMS 40mm female 316 Stainless steel (PR3820 only)	BV

Order Number Example	PR3800-0010BG

For options not listed please contact the sales team