



Protran PR3800/PR3820/ PR3850/PR3860

Flush Diaphragm Pressure Transmitter



- Easy clean flush membrane to prevent clogging
- Thick film sensor technology for long service life
- Pressure ranges to 400 bar
- Range of sanitary grade pressure fittings
- Up to 250 °C media temperature option
- Models available with integral O-ring seal option to ensure flush pressure seal
- ATEX/IECEX option available (includes M1 for mining applications)

DESCRIPTION

The range of flush diaphragm pressure transmitters have been designed to meet the requirements of the majority of industrial pressure measurement applications where a hygienic flush diaphragm or remote barrier seal connection is required.

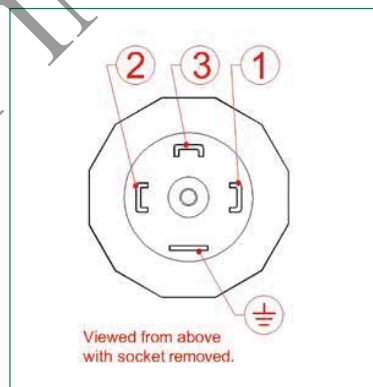
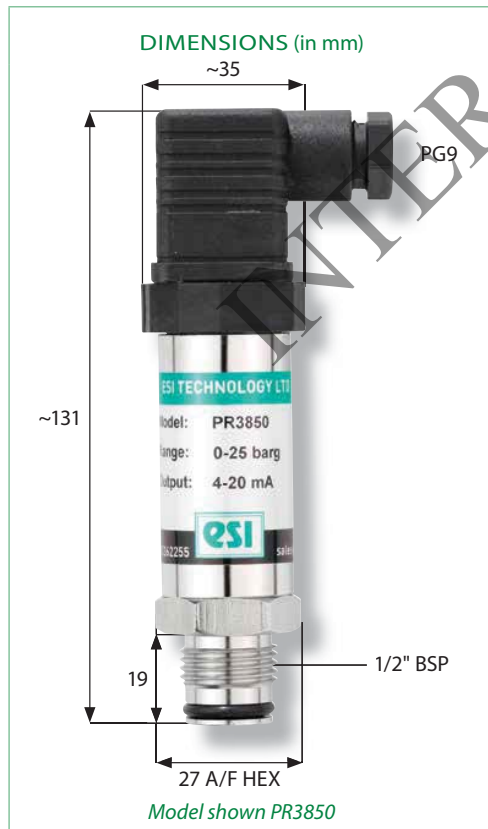
Robustly constructed from stainless steel, this range of pressure transmitters incorporates the latest strain gauge technology together with a custom IC amplifier offering excellent stability and accuracy over a long service life. The range offers a stable and accurate output signal of 4-20 mA with options 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 and PR3850 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.

For food processing, pharmaceutical and petrochemical applications the PR3860 is suitable for use at media temperature up to 250 °C. Pressure ranges available from 0-200 mbar to 0-400 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).

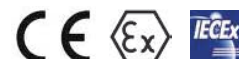


ELECTRICAL CONNECTION (mA)

Pin. No.	2 wire
1	+ supply
2	4-20 mA signal
3	N/C
⊥	to case

ELECTRICAL CONNECTION (V)

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





Protran PR3800/PR3820

Flush Diaphragm Pressure 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: $R_L < [U_B - 13 V] / 20 \text{ mA}$ (eg. with supply voltage (U_B) of 36V, max. load (R_L) is 1150 Ω)					
Accuracy NLHR:	$\pm 0.3\%$ of span BFLS					
Zero Offset and Span Tolerance:	$\pm 1.0\%$ FS at room temperature; $\pm 5\%$ 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:	$\pm 2.5\%$ FS total error band for -20°C - +70°C. Typical thermal zero and span coefficients $\pm 0.04\%$ 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:	$U_i = 28 \text{ V}$, $I_i = 119 \text{ mA}$, $P_i = 0.65 \text{ W}$, $L_i = 0.1 \mu\text{H}$, $C_i = 62 \text{ nF}$, Temperature Range = -20°C - +70°C, Max. cable length = 105 m					
Electromagnetic Capability:	Emissions: EN61000-6-4 Immunity: EN61000-6-2 Certification: CE Marked					
Insulation Resistance:	> 100 M Ω @ 50 VDC					
Response time 10-90 %:	Ranges < 6 bar 1mS; Ranges \geq 6 bar 10 mS					
Wetted Parts:	Ranges < 6 bar: SAE 316 stainless steel and nitrile (NBR); Ranges \geq 6 bar: SAE 316L stainless steel					
Pressure Media:	Ranges < 6 bar: all fluids compatible with SAE 316L stainless steel and nitrile (NBR); Ranges \geq 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 \geq 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)					

ORDER MATRIX

Output	Wires	Type	Electrical Connector	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 / Option								
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				0001				
0-2.5 bar				02.5				
0-10 bar				0010				
0-16 bar				0016				
0-25 bar				0025				
0-40 bar				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 sales team.



PR3800

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 with traceability to international standards.



Protran PR3850/PR3860

Flush Diaphragm Pressure Transmitter

TECHNICAL DATA

Type:	PR3850	PR3851	PR3852	PR3860	PR3861	PR3862
Sensor Technology:	Ceramic Thick Film					
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 - 4 bar; 0 - 10 bar; 0 - 25 bar; 0 - 100 bar; 0 - 250 bar; 0 - 400 bar (other options available)			0 - 10 bar; 0 - 25 bar; 0 - 60 bar; 0 - 100 bar; 0 - 250 bar; 0 - 400 bar (other options available)		
Standard Pressure Ranges (psi):	0-60 psi; 0-150 psi; 0-300 psi; 0-1,500 psi; 0-3,000 psi; 0-6,000 psi (other options available)			0-150 psi; 0-300 psi; 0-1,500 psi; 0-3,000 psi; 0-6,000 psi (other options available)		
Overpressure Safety:	1.5x for all ranges					
Load Driving Capability:	4-20 mA: $R_L < [U_B - 13 V] / 20 \text{ mA}$ (e.g. with supply voltage (U_B) of 36V, max. load (R_L) is 1150 Ω)					
Accuracy NLHR:	$\pm 0.3\%$ of span BFSL					
Zero Offset and Span Tolerance:	$\pm 1.0\%$ FS at room temperature; $\pm 5\%$ 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)			0 °C to +205 °C (+32 °F to 185 °F) with standard o-ring ; 0 °C to +250 °C (+32 °F to +482 °F) with optional o-ring (sensor and electronics thermally insulated from media temperature)		
Storage Temperature:	+5 °C to +40 °C (+41 °F to +104 °F) Recommended Best Practice					
Temperature Effects:	$\pm 2.5\%$ FS total error band for -20 °C - +70 °C. Typical thermal zero and span coefficients $\pm 0.04\%$ 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 IIC 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 - +70°C, Max. cable length = 105 m					
Electromagnetic Capability:	Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: CE Marked					
Insulation Resistance:	> 100 M Ω @ 50 VDC					
Response time 10-90 %:	10 mS					
Wetted Parts:	SAE 316L stainless steel					
Pressure Media:	All fluids compatible with SAE 316L stainless steel					
Pressure Connection:	1/2" BSP male (G1/2) with standard integral Viton o-ring seal and flush SAE 316L stainless steel diaphragm.					
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)					

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ORDER MATRIX

Output	Wires	Type	Electrical Connector	Pressure Range	Process Connection			
4-20 mA	2	PR3850						
	2	PR3860						
0-5 V	4	PR3851						
	4	PR3861						
0-10 V	4	PR3852						
	4	PR3862						
Electrical Connection / Option								
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								
0-4 bar (PR385x only)				0004				
0-10 bar				0010				
0-25 bar				0025				
0-100 bar				0100				
0-250 bar				0250				
0-400 bar				0400				
Process Connection								
1/2" BSP male with flush membrane					BA			
1" BSP male with flush membrane (PR385x only)					BC			
* Optional 250°C rated o-ring available on request (PR3860)								

Order Number Example PR3860-0250BA

For options not listed please contact sales team.

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PR3850



PR3860