Protran® PR3850

Flush Diaphragm Pressure Transmitter

- Easy clean flush membrane to prevent clogging
- Thick film sensor technology for long service life
- Pressure ranges to 400 bar (5,800 psi)
- Integral O-ring seal to ensure flush pressure seal
- ATEX/IECEx option available (includes M1 for mining applications)

RoHS 2011/65/EU

CE Ex IECEx

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Description

The PR3850 pressure transmitter has been designed to meet the requirements of the majority of industrial pressure measurement applications where a hygienic flush diaphragm 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.This transmitter is particularly suitable for use with high viscosity materials. Typical applications include food processing, pharmaceutical, petrochemical, waste water and slurry handling. The flush membrane can be easily cleaned for long term reliability and outstanding performance.

The PR3850 offers a stable and accurate output signal of 4-20 mA with options for 0-5 Vdc, 0-10 Vdc, 0-20 mA and other output signals. Electrical connection is via a detachable DIN connector allowing easy access to zero and span adjustment.In addition to the standard 1/2" BSP connection, optional 1" BSP and 1/2" NPT male flush diaphragm process connections are also available. Pressure ranges available from 0-4 bar to 0-400 bar.

Optional weldable boss is available to ensure flush-face installation of transmitter to tanks and pipe-work.

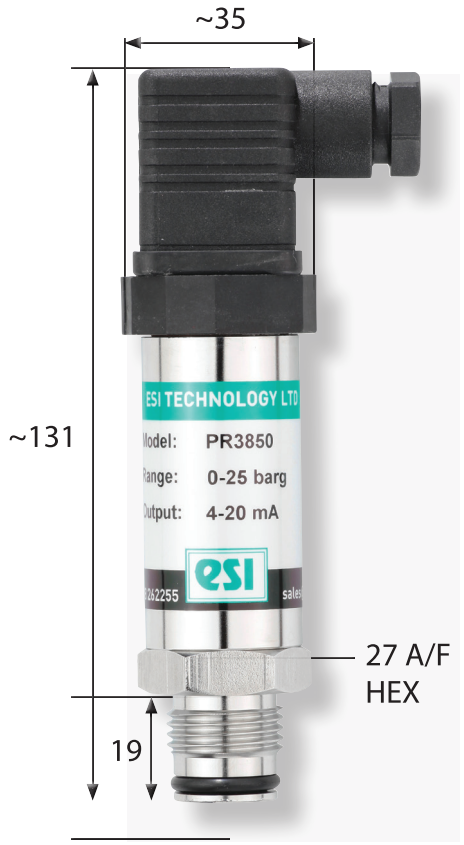
An optional ATEX and IECEx approved version of this product is available for explosion protection for flammable gases (zone 0), dusts (zone 20) and mining areas (group I M1).

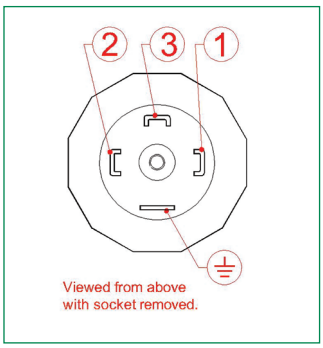
Dimensions

(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





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Flush DiaphragmPressure Transmitter

Technical Data

Type:	PR3850	PR3851	PR3852
Sensor Technology:	Ceramic Thick Film		
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	
Pressure Reference:	Gauge		
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V		
Standard Pressure Ranges (bar):	0-100 mbar; 0 – 4 bar; 0 – 10 bar; 0 – 25 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)		
Overpressure Safety:	1.5x 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); 0-5 V: max load RL > 5 KΩ; 0-10 V: max load RL > 10 KΩ		
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 %:	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 or 1" BSP male with semi-flush SAE 316L Stainless steel diaphragm (from 100 mbar up to 4 bar only)		
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)		
Net. Weight (Kg):	0.3 kg		

Order Matrix

Output	Wires	Type	Electrical Connection/ Options	Pressure Range	Process Connection
4-20 mA	2	PR3850			
0-5 V	4	PR3851			
0-10 V	4	PR3852			

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		
0-100 mbar		0.01
0-4 bar	(0-60 psi)	0004
0-10 bar	(0-145 psi)	0010
0-25 bar	(0-300 psi)	0025
0-100 bar	(0-1,500 psi)	0100
0-250 bar	(0-3,000 psi)	0250
0-400 bar	(0-6,000 psi)	0400

Process Connection	
1/2" BSP male with flush membrane	BA
1" BSP male with semi-flush membrane (PR385x only)	BC

Order Number Example	PR3860-0400BA-HT

For options not listed please contact the sales team