Protran® PR3200

Differential Pressure Transmitter

- Wide range of pressure ranges to 200 bar DP (3,000 psi)
- WET/WET or DRY/DRY operation
- Available for gauge reference or bi-directional measurement
- Durable designs for industrial and commercial installations
- R.F.I. shielded for protection against electromagnetic radiation
- ATEX/IECEx option available (includes M1 for mining applications)

RoHS 2011/65/EU

ESI SILICON-ON-SAPPHIRE TECHNOLOGY SOS

Protran® PR3200

Differential Pressure Transmitter

Description

The PR3200 differential pressure transmitter uses two titanium alloy pressure sensors, offering high stability and performance with true wet/wet operation, suitable for use with all liquids and gases compatible with stainless steel and titanium.

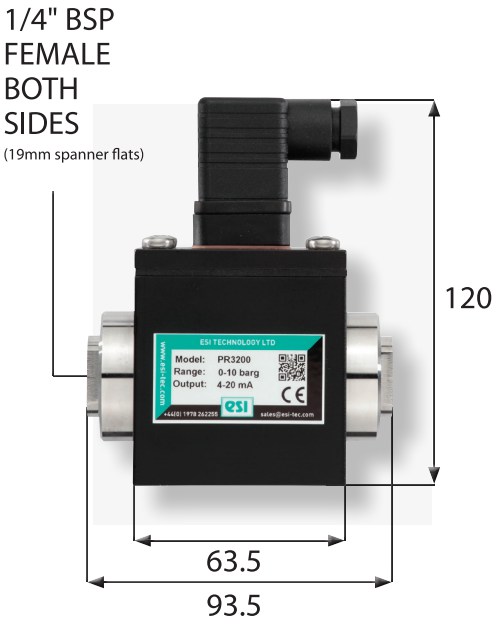
The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. The advanced sensor design consists of a piezoresistive silicon strain gauge circuit, which is epitaxially grown onto the surface of a sapphire diaphragm to form a single crystalline structure.The sapphire sensor element is then molecularly bonded to a titanium alloy sub-diaphragm. This enables the sensor to endure higher over- pressures and provides superb corrosion resistance. The completed sensor exhibits virtually no hysteresis and excellent long-term stability. With outstanding insulation properties, the sapphire substrate allows the sensor to operate over a very wide temperature range without loss of performance.

Applications include flow measurement with orifice plates and mass flow meters, plus static differential pressure measurement and control in combustion chambers, also condition monitoring and filter monitoring in high pressure hydraulic systems or any application on liquid or gas requiring reliable differential pressure measurement. Electrical connector is DIN plug and socket. Access to zero and span adjustment is by removing top plate for easy on-site adjustment. Pressure connection as standard is via two 1/4" BSP female connections. Mounting plate is available for bulkhead mounting. Ranges available from 0-500 mbarDP to 0-200 barDP

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

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Differential Pressure Transmitter

Technical Data

Type	PR3200	PR3210/PR3230	PR3220/PR3240
Sensor Technology:	Silicon-on-Sapphire (SoS)		
Output Signal:	4-20 mA (2 wire)	0-5 V (4 or 3 wire)	0-10 V (4 or 3 wire)
Supply Voltage:	10-36 VDC	10-36 VDC	13 – 30 VDC
Pressure Reference:	Differential		
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V		
Standard Pressure Ranges (bar):	0-0.5 bar; 0-1 bar; 0-10 bar; 0-20 bar; 0-40 bar; 0-100 bar; 0-200 bar (other options available)		
Standard Pressure Ranges (psi):	0-7.5 psi; 0-15 psi; 0-150 psi; 0-750 psi; 0-1,500 psi; 0-3,000 psi (other ranges available)		
Overpressure Safety:	1.5x maximum static line pressure for all ranges		
Common Mode (Static line pressure):	2.5 bar for 0-0.5 bar range; 4 bar for 0-1 bar range; 40 bar for 0-10 bar range; 60 bar for 0-20 bar range; 160 bar for 0-40 bar range; 400 bar for 0-100 bar range; 600 bar for 0-200 bar range		
Load Driving Capability:	4-20mA: RL < [UB - 10 V] / 20 mA (e.g. with supply voltage (UB) of 36V, max. load (RL) is 1300 Ω)		
Accuracy NLHR:	≤ ±0.3 % of span BFSL (Optional higher accuracy version of ≤ ±0.1 % of span BFSL available)		
Zero Offset and Span Tolerance:	±1.0% FS at room temperature ±5% FS (approx.) adjustment with easy access trimming potentiometers		
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:	±3.0% FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.05% FS/ °C		
ATEX/IECEx Approval Option (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 M 1 Ex ia I Ma (group 1 M1)	N/A	
ATEX/IECEx Safety Values:	Ui = 28 V Ii = 119 mA, Pi = 0.65 W Li = 0.1 µH, Ci = 74 nF Temperature Range = -20 °C to +70 °C Max. cable length = 45 m	N/A	
Electromagnetic Compatibility:	Emissions: EN61000-6-3; Immunity: EN61000-6-2; Certification: CE Marked		
Insulation Resistance:	> 100 MΩ @ 50 VDC		
Response time 10-90 %:	1 mS		
Wetted Parts:	SAE 304 stainless steel and titanium alloy		
Pressure Media:	All fluids compatible with SAE 304 stainless steel and titanium alloy		
Pressure Connection:	1/4" BSP female (other options available)		
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)		
Net. Weight (Kg):	1 Kg		

Order Matrix

Output	Wires	Type
4-20 mA	2	PR3200
0-5 V	4	PR3210
	3	PR3230
0-10 V	4	PR3220
	3	PR3240

Electrical Connection/Options	
DIN EN175301 plug and socket	-
ATEX/ IECEx certified	EX

Pressure Range in mbar/ bar		
0-500 mbar		0.05
0-1 bar	(0-15 psi)	0001
0-10 bar	(0-150 psi)	0010
0-50 bar	(0-750 psi)	0050
0-100 bar	(0-1,450 psi)	0100
0-200 bar	(0-2,900 psi)	0200

Process Connection	
1/4" BSP female	AR
1/4" NPT female	AS

Order Number Example	PR3200-0200AR

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.