



Protran® PR3100

Standard Industrial Pressure Transmitter



- Suitable for the majority of industrial applications
- Pressure ranges available from 0-2.5 bar to 0-1,000 bar
- Reliable pressure measurement
- Long service life
- Robust yet compact designs
- ATEX/IECEX option available, including M1 for mining applications





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Description

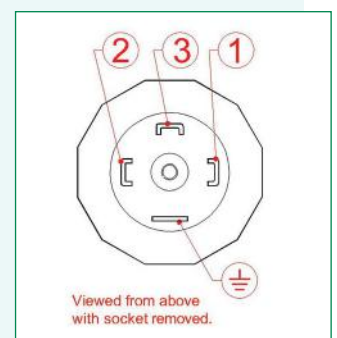
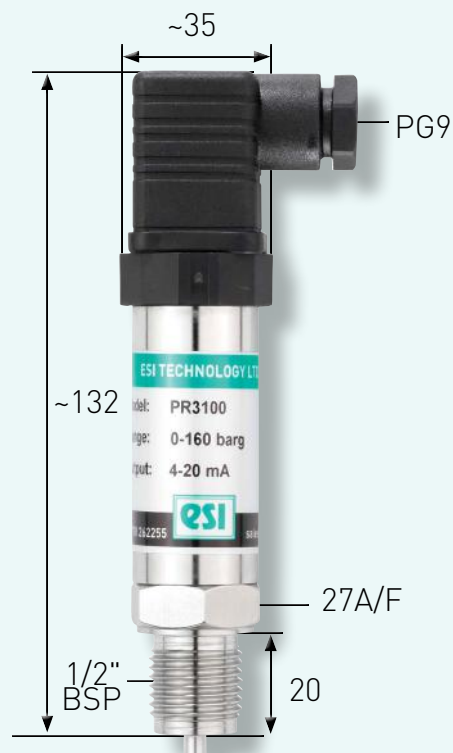
The PR3100 series pressure transmitters have been designed to meet the requirements of the majority of industrial applications of pressure measurement requiring an output of 4-20 mA.

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. Output options include 2 mV/V, 0-20 mA, 0-5 Vdc and 0-10 Vdc. Electrical connection is via a detachable DIN connector allowing easy access to zero and span adjustment. Standard pressure connection is 1/2" BSP. Optional 1/4" BSP, 1/4" BSPT, 1/2" BSPT, 1/4" NPT, 1/2" NPT are also available on request. In addition PR3100 is available in corrosion resistant materials e.g. Hastalloy C, Inconel etc. Pressure ranges available from 0-1 bar to 0-1,000 bar.

Typical applications for this series of standard transmitters includes, mechanical and civil engineering installations, process plant, production test facilities, water resources, power generation and any application on fluid or gas requiring a stable repeatable and accurate output signal of 4-20 mA.

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 MI).

Dimensions (in mm)



Viewed from above with socket removed.

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
⊥	-output	to case



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Technical Data

Type:	PR3100	PR3101	PR3102	PR3103
Sensor Technology:	Thick Film or Bonded Foil Strain Gauge			
Output signal:	4 - 20 mA (2 wire)	2 mV/V typical (4 wire)	0 - 5 V (4 wire)	0 - 10 V (4 wire)
Supply Voltage:	13 - 36 VDC	10 VDC (5 - 15V)	13 - 30 VDC	13 - 30 VDC
Pressure Reference:	Gauge or Absolute			
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V (amplified versions)			
Standard Pressure Ranges (bar):	0-1 bar Vac; 0-2.5 bar; 0-10 bar; 0-100 bar; 0-250 bar; 0-600 bar; 0-1,000 bar (other ranges available)			
Standard Pressure Ranges (psi):	0-30 in Hg; 0-30 psi; 0-150 psi; 0-1,500 psi; 0-3,000 psi; 0-10,000 psi; 0-15,000 psi (other ranges available)			
Overpressure Safety:	2x for ranges 1 bar to 400 bar; 1.5x for 600 bar range; 1.2x 1,000 bar range			
Load Driving Capability:	4-20 mA: $RL < [UB - 13 V] / 20 \text{ mA}$ (e.g. with supply voltage (UB) of 36V, max. load (RL) is 1150 Ω); 2mV/V: n/a; 0-5 V: max load $RL > 5 \text{ K}\Omega$; 0-10 V: max load $RL > 10 \text{ K}\Omega$			
Accuracy NLHR:	$\leq \pm 0.3 \%$ of span BFSL			
Zero Offset and Span Tolerance:	$\pm 0.5 \%$ FS at room temperature (PR3101: $\pm 0.2 \text{ mV}$); 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:	$\pm 1.5 \%$ FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients $\pm 0.015 \%$ FS/°C			
ATEX/IECEX Approval (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)	n/a	n/a	n/a
ATEX/IECEX Safety Values:	$U_i = 28 \text{ V}$ $I_i = 119 \text{ mA}$ $P_i = 0.65 \text{ W}$ $L_i = 0.1 \mu\text{H}$ $C_i = 74 \text{ nF}$ Temperature Range = -20°C to +70°C Max. cable length = 45 m	n/a	n/a	n/a
Electromagnetic Capability:	Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: CE Marked			
Insulation Resistance:	$> 100 \text{ M}\Omega @ 50 \text{ VDC}$			
Response time 10-90 %:	1 mS			
Wetted Parts:	SAE 316 stainless steel, alumina and nitrile (NBR) seal for ranges up to 20 bar, and 17/4PH and SAE 316 stainless steel for ranges above 20 bar			
Pressure Media:	All fluids compatible with SAE 316 stainless steel, alumina and nitrile (NBR) seal for ranges up to 20 bar, and 17/4PH stainless steel for ranges above 20 bar			
Pressure Connection:	1/4" BSP male (G1/4); 1/4" NPT male; 1/4" BSP male (G1/2); 1/2" NPT male (other options available)			



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Order Matrix

Output	Wires	Type	Electrical Connector	Pressure Range	Process Connection
4-20 mA	2	PR3100			
2 mV/V	4	PR3101			
0-5 V	4	PR3102			
0-10 V	4	PR3103			
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	
0-2.5 bar				02.5	
0-10 bar				0010	
0-100 bar				0100	
0-250 bar				0250	
0-600 bar				0600	
0-1,000 bar				1000	
Process Connection					
1/4" BSP male (G1/4)					AB
1/4" NPT male					AM
1/2" BSP male (G1/2)					AC
1/2" NPT male					AN

Order Number Example

PR3100-0100AC

For options not listed please contact 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 with traceability to international standards.



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