



# Protran PR3860

High Temperature  
Pressure Transmitter



- High operating temperatures of up to 250 °C
- Easy clean flush membrane to prevent clogging
- Thick film sensor technology for long service life
- Pressure ranges to 400 bar
- Good chemical compatibility for a range of applications
- Integral O-ring seal option to ensure flush pressure seal
- ATEX/IECEX option available (includes M1 for mining applications)



## Description

The PR3860 high temperature 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, the PR3860 pressure transmitter permits accurate pressure measurement at elevated temperatures. Output options include 0-5 Vdc, 0-10 Vdc and 4-20 mA. This transmitter is suitable for use at media temperature up to 250 °C. Typical applications include food processing, pharmaceutical and petrochemical. The flush membrane can be easily cleaned for long term reliability and outstanding performance. The PR3860 offers a stable and

accurate output signal of 4-20 mA with options for 0-5 Vdc, 0-10 Vdc and other output signals. Electrical connection is via a detachable DIN connector allowing easy access to zero and span adjustment. Pressure ranges available from 0-10 bar to 0-400 bar.

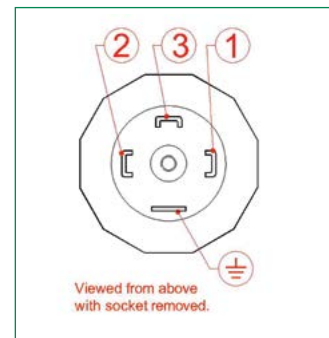
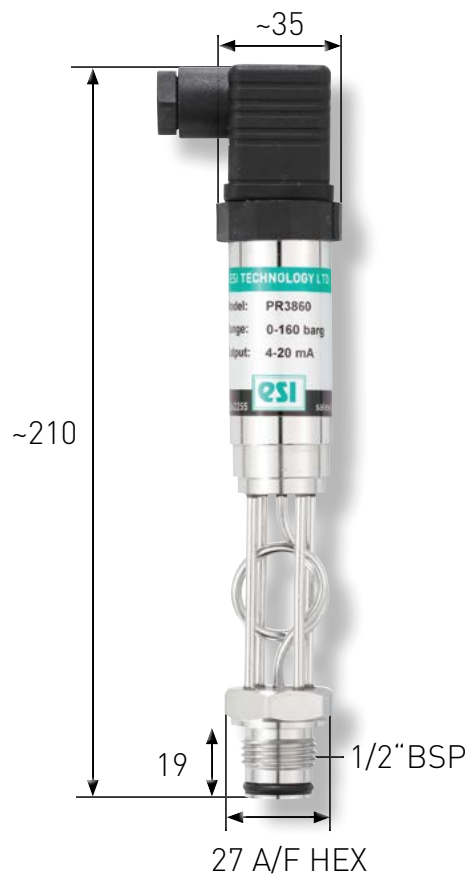
Optional weldable boss is available to ensure flush-face installation of transmitter to tanks and pipe-work.

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

| ELECTRICAL CONNECTION (Vdc) |               |               |
|-----------------------------|---------------|---------------|
| <b>Pin No.</b>              | <b>4 wire</b> | <b>3 wire</b> |
| 1                           | -supply       | common        |
| 2                           | +supply       | +supply       |
| 3                           | +output       | +output       |
| ⊥                           | to case       |               |



## Technical Data

| Type:   | 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) |
| Supply Voltage:                                   | 13 – 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 – 10 bar; 0 – 25 bar; 0 – 60 bar; 0 – 100 bar; 0 – 250 bar; 0 – 400 bar (other options available)  |                  |                   |
| Standard Pressure Ranges (psi):                   | 0-150 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: $RL < [UB - 13 V] / 20 \text{ mA}$ (e.g. with supply voltage (UB) of 36V, max. load (RL) is 1150 $\Omega$ ); 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:                   | $\pm 1.0 \%$ 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:                      | 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 to +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)<br>Ex II 1 D Ex ia IIIC T135 °C Da (zone 20)<br>Ex I M 1 Ex ia I Ma (group 1 M1)  | n/a              | n/a               |
| ATEX/IECEX Safety Values:                         | $U_i = 28 \text{ V}$<br>$I_i = 119 \text{ mA}$<br>$P_i = 0.65 \text{ W}$<br>$L_i = 0.1 \mu\text{H}$<br>$C_i = 62 \text{ nF}$<br>Temperature Range = -20 °C to +70 °C<br>Max. cable length = 105 m  | n/a              | n/a               |
| Electromagnetic Compatibility:                    | Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certification: CE Marked  |                  |                   |
| Insulation Resistance:                            | $> 100 \text{ M}\Omega @ 50 \text{ VDC}$   |                  |                   |
| 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 (FKM) o-ring seal and flush SAE 316L stainless steel diaphragm.<br>O-ring seal is for service temperature up to max. 205 °C. An alternative o-ring material can be provided for service up to 250 °C (charged accessory) |                  |                   |
| Electrical Connection:                            | Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)  |                  |                   |
| Net. Weight (Kg):                                 | 0.8 kg   |                  |                   |

## Order Matrix

| Output  | Wires | Type   | Electrical Connection/Options | Pressure Range | Process Connection | Options |
|---|-------|--------|-------------------------------|----------------|--------------------|---------|
| 4-20 mA   | 2     | PR3860 |                               |                |                    |         |
| 0-5 V   | 4     | PR3861 |                               |                |                    |         |
| 0-10 V  | 4     | PR3862 |                               |                |                    |         |
|   |       |        |                               |                |                    |         |
| <b>Electrical Connection/Options</b>                    |       |        |                               |                |                    |         |
| 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                            |                |                    |         |
| <b>Pressure Range in bar</b>                            |       |        |                               |                |                    |         |
| 0-10 bar  |       |        |                               | 0010           |                    |         |
| 0-25 bar  |       |        |                               | 0025           |                    |         |
| 0-60 bar  |       |        |                               | 0060           |                    |         |
| 0-100 bar   |       |        |                               | 0100           |                    |         |
| 0-250 bar   |       |        |                               | 0250           |                    |         |
| 0-400 bar   |       |        |                               | 0400           |                    |         |
| <b>Process Connection</b>                               |       |        |                               |                |                    |         |
| 1/2" BSP flush diaphragm male                           |       |        |                               |                |                    | BA      |
| <b>Options</b>  |       |        |                               |                |                    |         |
| 250°C rated o-ring, fitted                              |       |        |                               |                |                    | HT      |
| <b>Order Number Example</b>                             |       |        | PR3860-0400BA                 |                |                    |         |

For options not listed please contact the sales team

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