

AS

Autosport Pressure Transmitter

- Miniature size with rugged design
- IP67 rated for harsh environments
- Dynamic piezo-resistive Ceramic Sensor
- Accuracy: $\leq \pm 0.25\%$ SPAN BFLS
- Pressure ranges from 1 bar to 600 Bar
- Selection of process & electrical connections
- Outputs include mV or Volts



The Autosport pressure transmitter, AS, has a piezo-resistive ceramic pressure sensor which is chemically inert and has very fast dynamic response. The housing is made from stainless steel with a choice of Internal O ring seals to select to ensure the product is suitable for the applications mentioned below. Every device is temperature compensated, calibrated, supplied with a traceable serial number and calibration certificate. The electronics incorporates a microprocessor based amplifier, this means there are no adjusting pots and therefore the electronics is very stable, especially in high vibration / shock applications.

There are many options available on the AS – Autosport pressure transmitter and include the following :

- Calibrated Pressure range
- Output
- Accuracy (Non-linearity & hysteresis)
- Thermal accuracy
- Electrical connection
- Process connection
- O ring seal material

Suitable for the following applications:

- Fuel pressure
- Oil pressure
- Air Pressure
- Coolant pressure
- Brake line pressure
- Water pressure
- Barometric pressure
- Automotive testing

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Input Pressure Range

| | | | | | | | | | | | |
|-----------------------------|-----|---|---|----|----|----|-----|-----|-----|-----|-----|
| Nominal pressure, SG or Abs | bar | 1 | 2 | 5 | 10 | 20 | 50 | 100 | 200 | 400 | 600 |
| Permissible Overpressure | bar | 2 | 4 | 10 | 20 | 40 | 100 | 200 | 400 | 650 | 880 |
| Burst Pressure | bar | 4 | 5 | 12 | 25 | 50 | 120 | 250 | 500 | 650 | 880 |

Output Signal & Supply Voltage

| Wire system | Output | Supply Voltage |
|-------------|--------------------------------|---------------------|
| 3-wire | 0.5 to 4.5V dc | 5V dc or 8 – 16V dc |
| | 0 – 5V dc | 8 – 16V dc |
| | 0.5 – 5V dc | 8 – 16V dc |
| | 1 – 5V dc | 8 – 16V dc |
| | 0.5 – 6V dc | 8 – 16V dc |
| | 1 – 6V dc | 8 – 16V dc |
| 4-wire | Passive mV/V (un-rationalised) | 2 – 30V dc |

Performance

| | | |
|---------------------------------------|--|---|
| Accuracy (Non-linearity & hysteresis) | $\pm 0.25\% / \text{SPAN}$ (BFSL) | |
| Setting Errors (offsets) | 3-wire | Zero & Span, $\pm 1\% / \text{Span}$ |
| | 4-wire | see table below |
| Permissible Load | 3-wire | Rmin = 10 k Ω |
| Output Resistance | 4-wire | 11k Ω nom. |

Permissible Temperatures & Thermal Effects

| | |
|-------------------------------|--|
| Media temperature | -20°C to +135°C |
| Ambient temperature | -20° to +80°C |
| Storage temperature | -40°C to +135°C |
| Compensated temperature range | +20°C to +80°C |
| Thermal Zero Shift (TZS) | $\pm 0.02\% / \text{SPAN} / ^\circ\text{C}$ (option code 2) |
| | $\pm 0.01\% / \text{SPAN} / ^\circ\text{C}$ (option code 1) |
| Thermal Span Shift (TSS) | $-0.015\% / ^\circ\text{C}$ |



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Electrical Protection

| | |
|------------------------------------|--|
| Supply reverse polarity protection | No damage but also no function |
| Electromagnetic compatibility | EN 50082-1 ($\pm 2\%$ errors) |

Mechanical Stability

| | |
|-----------|---------------------------|
| Shock | 1000 g / 1 ms |
| Vibration | 40 g RMS (20 ... 2500 Hz) |

Materials

| | |
|------------------------------|---|
| Housing & process connection | 303 Stainless Steel |
| 'O' ring seals | Viton NBR, Nitrile (optional) EPDM (optional) Chemraz (optional) |
| Diaphragm | Aluminium Oxide Al_2O_3 |
| Media wetted parts | Housing and process connection, 'O' ring seal, diaphragm |

Miscellaneous

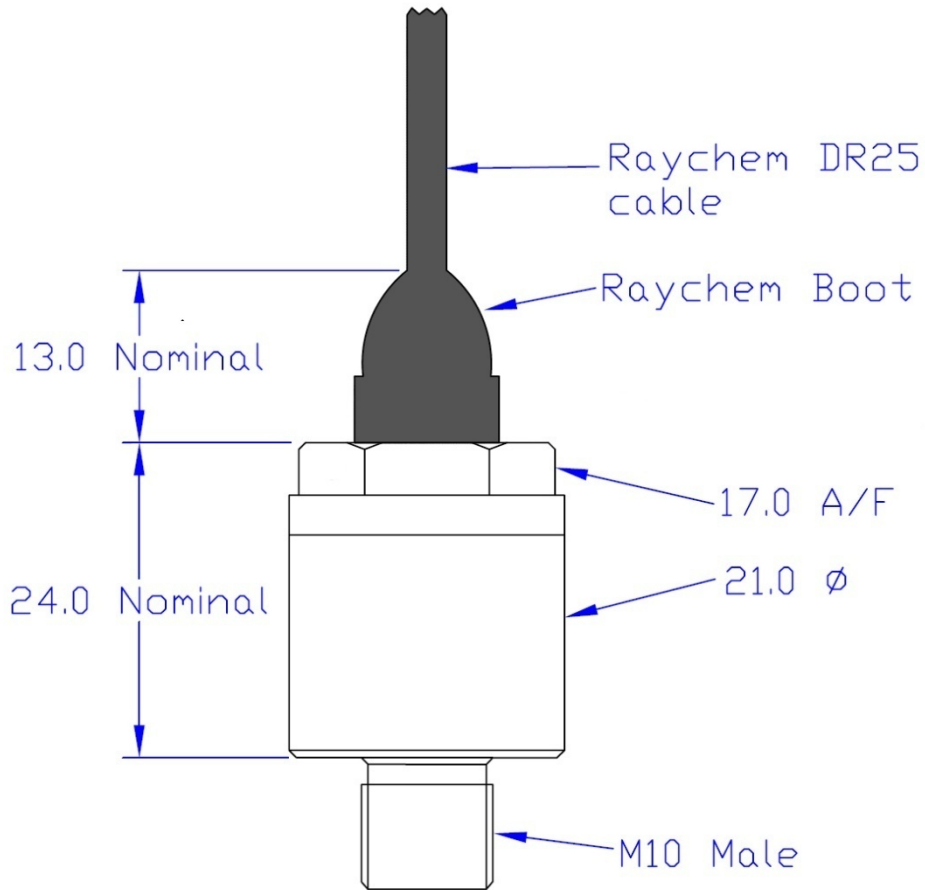
| | | |
|-----------------------|--------------------------------|-----------|
| Current consumption | 3-wire & 4-wire | Max. 10mA |
| Weight | Approx. 60g | |
| Installation position | Any | |
| Operation Life | > 100 x 10 ⁶ cycles | |
| Insulation Resistance | >500M Ω at 50V dc | |

Typical Passive mV/V Outputs

| Nominal pressure | Bar | 1 | 2 | 5 | 10 | 20 | 50 | 100 | 200 | 400 | 600 |
|--------------------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Output | mV | 2.0...3.5 | 2.0...4.0 | 2.4...4.5 | 3.6...6.0 | 2.5...4.0 | 4.0...6.5 | 3.1...4.8 | 2.5...3.9 | 3.1...4.8 | 3.1...4.8 |
| Zero Setting Error | mV/V | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 | -0.1 \pm 0.1 |

Wiring Designation

| | | Raychem Boot 1/8 th (Code A) | M12x1, 4-pin connector (Code B) | Raychem Boot 3/16 th (Code C) | Deutsch Connector (Code D) |
|--------|------------|--|------------------------------------|---|-------------------------------|
| 3-wire | +ve Supply | Red | Pin 1 | Red | Pin 1 |
| | -ve Supply | Blue | Pin 2 | Blue | Pin 2 |
| | +ve Output | Yellow | Pin 3 | Yellow | Pin 3 |
| | Ground | Screen | Pin 4 | Screen | Pin 4 |
| 4-wire | +ve Supply | Red | Pin 1 | Red | Pin 1 |
| | -ve Supply | Blue | Pin 2 | Blue | Pin 2 |
| | +ve Output | Green | Pin 3 | Green | Pin 3 |
| | -ve Output | Yellow | Pin 4 | Yellow | Pin 4 |



Optional Connections

Electrical Connections

- Raychem boot & Spec 55 cable, 1/8th DR25 heatshrink, 26 AWG cable
- M12 x 1, 4 pin Connector
- Raychem boot & Spec 55 cable, 3/16th DR25 heatshrink, 22 AWG cable
- Deutsch AS Micro HE Hermetic Welded Connector AS4H-06-5PN-HE-952K

Process Connections

- 3/8"-24 UNF cone 74° DASH-3
- 1/8" NPT male
- G 1/4" male
- M10 x 1 male
- 1/8-24 UNF



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