

AS Autosport Pressure Transmitter



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

DESCRIPTION

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.

Options Available

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

Suitable Applications

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



AS

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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 Temperature & Thermal Effects

Media temperature	-20°C to +135°C
Ambient temperature	-20° to +125°C
Storage temperature	-40°C to +135°C
Compensated temperature range	+20°C to +80°C
Humidity	5% to 95% RH non-condensing
Thermal Zero Shift (TZS)	$\pm 0.02\% / \text{SPAN} / ^\circ\text{C}$ (option code 2)
Thermal Span Shift (TSS)	$\pm 0.01\% / \text{SPAN} / ^\circ\text{C}$ (option code 1)
	$-0.015\% / ^\circ\text{C}$

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)

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Materials

Housing & process connection	303 Stainless Steel
'O' ring seals	Viton NBR, Nitrile (optional) EPDM (optional) Chemraz (optional)
Diaphragm	Aluminium Oxide Al ₂ O 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

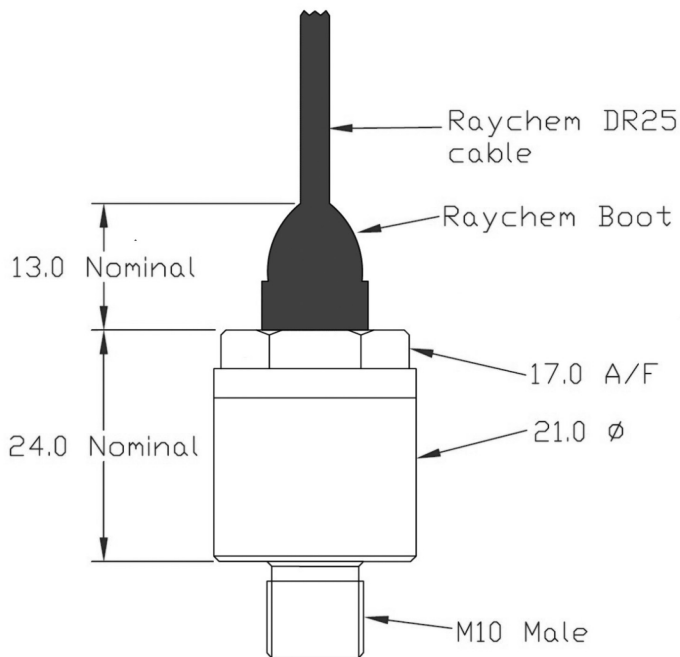
Nominal pressure	Bar	1	2	5	10	20	50	100	200	400	600
Output	mV	2.0...3.5	2.0...4.0	2.4...4.5	3.6...6.0	2.5...4.0	4.0...6.5	3.1...4.8	2.5...3.9	3.1...4.8	3.1...4.8
Zero Setting Error	mV/V	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1	-0.1±0.1

Wiring Designation

		Raychem Boot 1/8 th	M12x1, 4pin connector	Raychem Boot 3/16 th	Deutsch Connector
		(Code A)	(Code B)	(Code C)	(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

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Standard Configuration



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