



IMP

Industrial Pressure Transmitter

- Thick film ceramic sensor
- Accuracy: $<\pm 0.25\%$ FS BFSL (0.1% optional)
- Pressure ranges from 0.5 to 700 bar
- Gauge, Sealed Gauge or Absolute reference
- Variety of Outputs including mV, Volts and mA

The industrial pressure transmitter, IMP, has a piezo-resistive ceramic pressure sensor giving it excellent media compatibility. The housing is made from stainless steel with a choice of internal O ring seals to select to ensure the product is suitable for a wide range of applications. Every device is temperature compensated and calibrated and supplied with a traceable serial number and calibration certificate. The electronics incorporate a microprocessor based amplifier, this means there are no adjusting pots and therefore the electronics are very stable, especially in high vibration / shock applications.

There are many options available on the IMP pressure transmitter. These include the following :

- Pressure range and engineering units
- Pressure reference (G, SG or Abs)
- Output
- Accuracy (Non-linearity & hysteresis)
- Thermal accuracy
- Electrical connection
- Process connection
- Process connection material
- O ring seal material

Suitable for the following applications:

- Hydraulics
- Pneumatics
- Autoclave & Sterilisation
- Agricultural machinery
- Laboratory testing
- Mechanical engineering
- Environmental engineering
- Automotive testing
- Tank gauging
- Pumps & compressors
- HVAC

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Input Pressure Range

| | | | | | | | | | | | | | |
|---------------------------------|-----|-----|----------------------|----------------------|--------|--------|---------|---------|-----|-----|-----|-----|-----|
| Nominal pressure, Gauge | Bar | 0.5 | 1 | 2 | 5 | 10 | 20 | 50 | 100 | 250 | 400 | 600 | 700 |
| Nominal pressure, Absolute & SG | Bar | 0.5 | 1 | 2 | 5 | 10 | 20 | 50 | 100 | 250 | 400 | 600 | 700 |
| Compound Range | Bar | - | -1...0 ¹⁾ | -1...2 ¹⁾ | -1...5 | -1...9 | -1...19 | -1...29 | - | - | - | - | - |
| Permissible Overpressure | Bar | 1 | 2 | 4 | 10 | 20 | 40 | 100 | 200 | 400 | 650 | 880 | 880 |
| Burst Pressure | Bar | 2 | 4 | 5 | 12 | 25 | 50 | 120 | 250 | 500 | 650 | 880 | 880 |

¹⁾ <±0.1% / FS (BFSL) accuracy not possible in this range

Output Signal & Supply Voltage

| Wire system | Output | Supply Voltage |
|-------------|--------------------------------|----------------|
| 2-wire | 4 - 20mA | 9 – 32V dc |
| 3-wire | 0 – 5V dc | 9 – 32V dc |
| | 0 – 10V dc | 13 – 32V dc |
| | 1 – 5V dc | 9 – 32V dc |
| | 1 – 10V dc | 13 – 32V dc |
| | 1 – 6V dc | 9 – 32V dc |
| | 0 – 6V dc | 9 – 32V dc |
| | 0.5 to 4.5V dc | 5V dc |
| 4-wire | Passive mV/V (un-rationalised) | 2 – 30V dc |
| | 2mV/V (rationalised) | 2 – 30V dc |
| | 10mV/V (amplified) | 3 – 12V dc |

Performance

| | | |
|---------------------------------------|--|--|
| Accuracy (Non-linearity & hysteresis) | <±0.25% / FS (BFSL) <±0.1% / FS (BFSL) optional | |
| Setting Errors (offsets) | 2-wire 3-wire 4-wire | Zero & Full Scale, <±0.5% / FS Zero & Full Scale, <±0.5% / FS see table below |
| Permissible Load | 2-wire 3-wire 4-wire | R _{max} = [(V _S – V _{S min}) / 0.02] Ω R _{min} = 10 k Ω R _{min} = 11 k Ω |
| Influence Effects | Supply Load | mV/V & 0.5 to 4.5V – Ratiometric, other outputs - <0.005 % FS / 1V 0.05 % FSO / kΩ |

Permissible Temperatures & Thermal Effects

| | |
|-------------------------------|---|
| Media temperature | -20°C to +135°C (150°C with integrated cooling element) |
| Ambient temperature | -20° to +80°C |
| Storage temperature | -40°C to +125°C |
| Compensated temperature range | +20°C to +80°C |
| Thermal Zero Shift (TZS) | <±0.04% / FS / °C (option code 4) <±0.02% / FS / °C (option code 2) <±0.01% / FS / °C (option code 1) |
| Thermal Span Shift (TSS) | <-0.015% / °C |

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Electrical Protection

| | |
|------------------------------------|--------------------------------|
| Supply reverse polarity protection | No damage but also no function |
| Electromagnetic compatibility | CE Compliant |

Mechanical Stability

| | |
|-----------|---------------------------|
| Shock | 100 g / 11 ms |
| Vibration | 10 g RMS (20 ... 2000 Hz) |

Materials

| | |
|------------------------------|---|
| Housing & process connection | 303 Stainless Steel 316L Stainless Steel (optional) High Grade DUPLEX Stainless Steel UNS31803 (optional) |
| 'O' ring seals | Viton NBR, Nitrile (optional) EPDM (optional) Chemraz (optional) |
| Diaphragm | Ceramic Al ₂ O ₃ 96 % |
| Media wetted parts | Housing and process connection, 'O' ring seal, diaphragm |

Miscellaneous

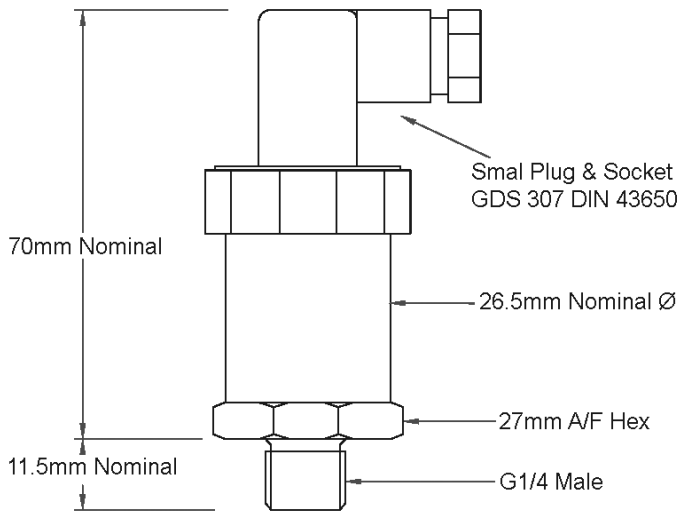
| | | |
|-----------------------|--------------------------------|---------------------------------------|
| Current consumption | 2-wire, 3-wire & 4-wire | Limits at 25mA, Typ. 6mA, Typ.2 – 5mA |
| Weight | Approx. 100g | |
| Installation position | Any | |
| Operation Life | > 100 x 10 ⁶ cycles | |
| Insulation Resistance | >500M Ω at 50V dc | |

Typical Passive mV/V Outputs

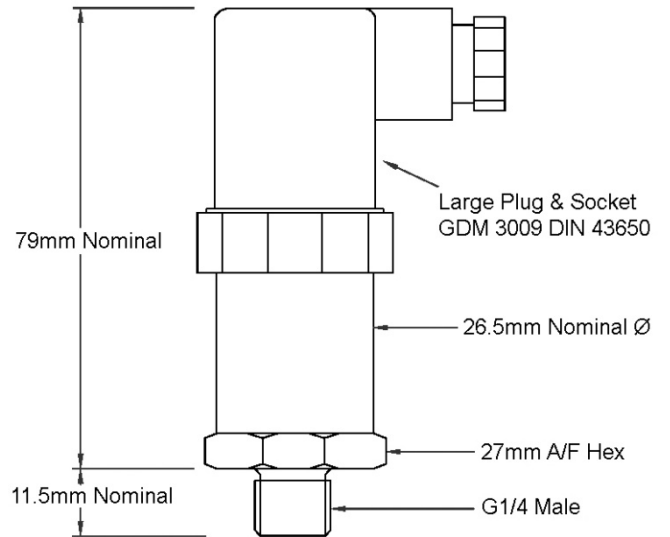
| Nominal pressure | Bar | 1 | 2 | 5 | 10 | 20 | 50 | 100 | 250 | 400 | 600 | 700 |
|--------------------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Output | mV/V | 2.0..3.5 | 2.0..4.0 | 2.4..4.5 | 3.6..6.0 | 2.5..4.0 | 4.0..6.5 | 3.1..4.8 | 3.1..4.8 | 3.1..4.8 | 3.7..5.7 | 4.3..6.7 |
| 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 |
| Span Setting Error | % | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

Wiring Designation

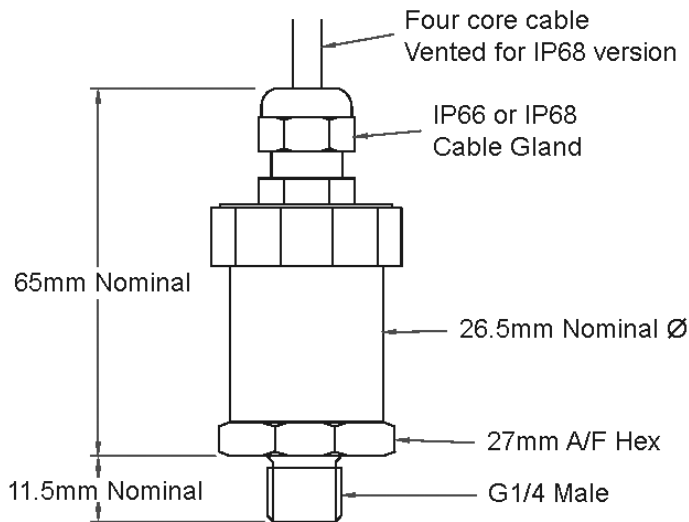
| | | Small Plug & Socket (Code A) | Large Plug & Socket (Code B) | IP66 Cable (Code C) | AMP 6-pin Bayonet (Code D) | IP68 Vented Cable (Code E) | Binder 6-pin connector (Code F) | M12x1, 4-pin connector (Code G) |
|--------|------------|------------------------------|------------------------------|---------------------|----------------------------|----------------------------|---------------------------------|---------------------------------|
| 2-wire | +ve Supply | Pin 1 | Pin 1 | Red | Pin 1 | Red | Pin 1 | Pin 1 |
| | -ve Supply | Pin 2 | Pin 2 | Blue | Pin 2 | Blue | Pin 2 | Pin 2 |
| | Ground | Earth Pin | Earth Pin | Green | Earth Pin | White | Pin 3 | Pin 3 |
| 3-wire | +ve Supply | Pin 1 | Pin 1 | Red | Pin 1 | Red | Pin 1 | Pin 1 |
| | -ve Supply | Pin 2 | Pin 2 | Blue | Pin 2 | Blue | Pin 2 | Pin 2 |
| | +ve Output | Pin 3 | Pin 3 | Green | Pin 3 | White | Pin 3 | Pin 3 |
| | Ground | Earth Pin | Earth Pin | Yellow | Earth Pin | Yellow | Pin 4 | Pin 4 |
| 4-wire | +ve Supply | Pin 1 | Pin 1 | Red | Pin 1 | Red | Pin 1 | Pin 1 |
| | -ve Supply | Pin 2 | Pin 2 | Blue | Pin 2 | Blue | Pin 2 | Pin 2 |
| | +ve Output | Pin 3 | Pin 3 | Green | Pin 3 | White | Pin 3 | Pin 3 |
| | -ve Output | Earth Pin | Earth Pin | Yellow | Pin 4 | Yellow | Pin 4 | Pin 4 |



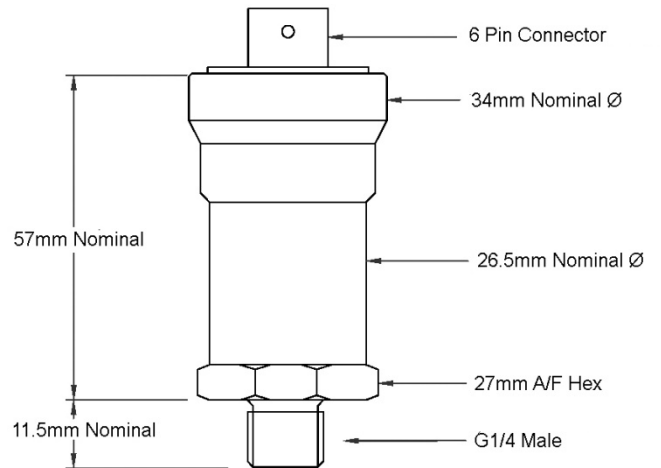
Small Plug & Socket
IP65, GDS 307 DIN 43650 Ø



Large Plug & Socket
IP65, GDM 3009 DIN 43650



Cable Gland Assembly
IP65 gland, screened PVC industrial cable



Amphenol Connector
6 pin, IP67, IP54 on gauge versions

Suggested Accessories



PA 430
in head display and switching device



SPS-24
Din rail power supply



dTrans
Signal conditioner and switching device

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