

Piezoresistive Pressure
TransmitterModel TFP-40S
For General Industrial Applications

Features

- Measuring ranges from 100mbar to 600bar
- Absolute, gauge and sealed gauge
- Accuracy: $\pm 0.25\% \text{FSO}$ or $\pm 0.5\% \text{FSO}$
- Calibrated and temperature compensated
- Stainless steel construction
- Piezoresistive pressure sensor design
- Variety of Pressure & Electrical connections
- Output 4...20mA, 0...10V, 0...5V and others

Product Overview

TFP-40S is made from high-quality silicon piezoresistive sensor. The piezoresistive sensor is packaged in stainless steel housing. The TFP-40S is precision engineered to fit most industrial pressure measurement. The compact and rugged design makes these pressure transmitter suitable for applications including process control systems, hydraulic systems and valves, refrigeration and HVAC controls, level measurement and test equipment. A wide range of process connection and electrical connection options are available to meet almost requirement.

Applications

- Process control systems
- Refrigeration and HVAC controls
- Hydraulic systems and valve
- Machine building
- Pumps and compressors

Standard Pressure Ranges

| Nominal pressure | gauge | sealed gauge | absolute |
|------------------|-------|--------------|----------|
| -1...0bar | • | | |
| -0.35...0bar | • | | |
| -0.2...0bar | • | | |
| 0...0.1bar | • | | |
| 0...0.2bar | • | | |
| 0...0.35bar | • | | • |
| 0...0.7bar | • | | • |
| 0...1bar | • | | • |
| 0...1.6bar | • | | |
| 0...2.5bar | • | | • |
| 0...4bar | • | | • |
| 0...6bar | • | | • |
| 0...10bar | • | • | • |
| 0...16bar | • | • | • |
| 0...25bar | • | • | |
| 0...60bar | | • | |
| 0...100bar | | • | |
| 0...250bar | | • | |
| 0...400bar | | • | |
| 0...600bar | | • | |

Other pressure ranges available. Please consult the factory.

TFP-40S: Piezoresistive Pressure Transmitter

Performance Specifications

| Parameter | Value | Units | Notes |
|----------------|------------------------|-------|--------------|
| General | | | |
| Pressure Range | -1-0,...,0-0.1,...,600 | bar | 1bar=14.5psi |
| Overpressure | 1.5xFS | | |

| | | | |
|-------------------------------|--------------------|--------|------------------|
| Environmental | | | |
| Operating Temperature Range | -20 to +85 | °C | -4 °F to 185 °F |
| Compensated Temperature Range | -10 to +70 | °C | 14 °F to 158 °F |
| Storage Temperature Range | -40 to +125 | °C | -40 °F to 257 °F |
| Vibration | 10 | g | 20 to 2000Hz |
| Shock | 100 | g | 10ms |
| Cycles | 10x10 ⁶ | cycles | |

| | | | | | |
|--------------------------------|---|-------------|-------------|-------------|---------------------------|
| Electrical @ 25°C(77°F) | | | | | |
| Output Signal | 4...20mA | 0...5Vdc | 1...5Vdc | 0...10Vdc | 0.5...4.5Vdc(ratiometric) |
| Power Supply(Vs) | 12....36Vdc | 12....36Vdc | 12....36Vdc | 15....36Vdc | 5Vdc |
| Load Resistance | <(Vs-12)/0.02A (For current output), >10kΩ (For voltage output) | | | | |
| Insulation Resistance | 100MΩ @50Vdc | | | | |

| | |
|--------------------------------|--|
| Physical Specifications | |
| Media Compatibility | All media compatible with 316L stainless steel |
| Housing | 304 stainless steel |
| Diaphragm | 316L stainless steel |
| Seal Ring | Viton or NBR |
| Oil Filling | Silicone oil |
| Protection | IP65(Standard), IP66(only for cable outlet) |
| Net Weight | Approx.185g |

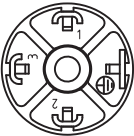
| Parameter | Minimum | Typical | Maximum | Units | Notes |
|---------------------|---------|---------|---------|-----------|-------|
| Performance | | | | | |
| Accuracy | 0.1 | 0.25 | 0.5 | %FSO | 1,2 |
| Temp Coeff - Zero | | ±0.75 | ±1.5 | %FSO | 3 |
| Temp Coeff - Span | | ±0.75 | ±1.5 | %FSO | 3 |
| Long-Term Stability | | ±0.2 | ±0.3 | %FSO/year | 1 |


Notes


1. All values measured at 25°C(77°F)
2. Including non-linearity, hysteresis and repeatability.
3. -10°C to 70°C(14°F to 158°F) with reference to 25°C(77°F).

The listed specifications and dimensions are subject to change without prior notice.

Connection Diagrams

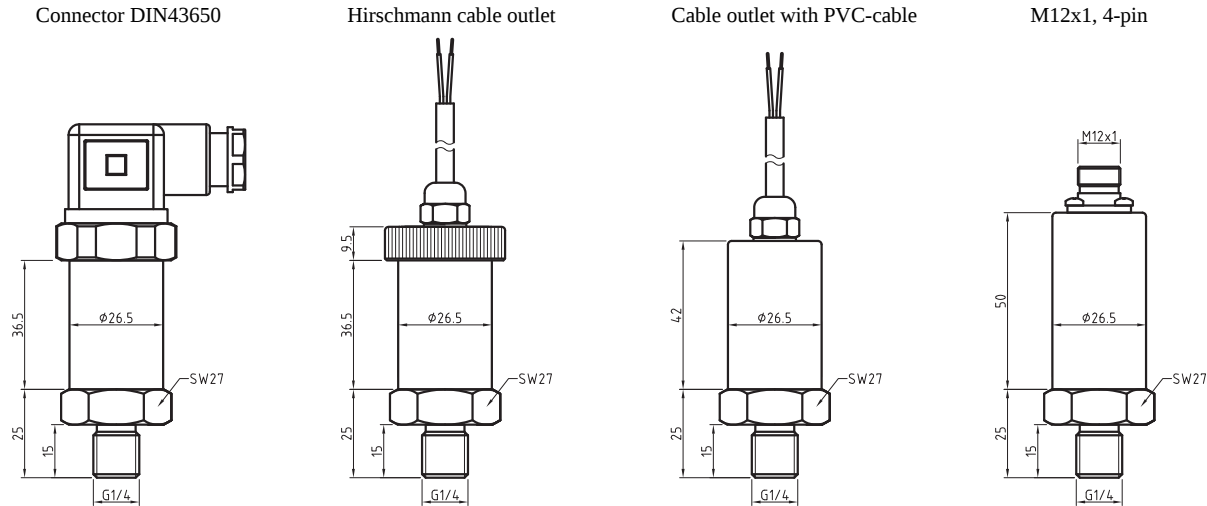
| Connector DIN43650 | |
|--|--|
|  | 2-wire(current) 3-wire(voltage) |
| | Supply+ 1 1 |
| | Signal+ 2 3 |
| | Gnd - 2 |

| Connector M12x1(4-pin) | |
|---|--|
|  | 2-wire(current) 3-wire(voltage) |
| | Supply+ 1 1 |
| | Signal+ 2 3 |
| | Gnd - 2 |

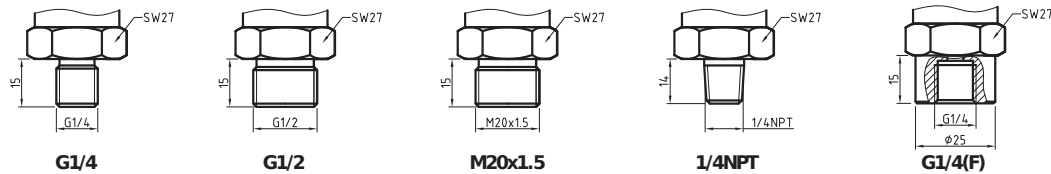
| Cable outlet | |
|---|--|
|  | 2-wire(current) 3-wire(voltage) |
| | Supply+ red red |
| | Signal+ black green |
| | Gnd - black |

TFP-40S: Piezoresistive Pressure Transmitter

Dimensions (in mm)



Mechanical Connection (in mm)



Ordering Information

| Option1: Model | | | | | | | |
|--------------------------------|-------------------------------------|---|--------------|------------|------|------------------|--|
| TFP-40S | Piezoresistive Pressure Transmitter | | | | | | |
| | Option2: Pressure Ranges | | | | | | |
| | N001 | -1...0bar | 0016 | 0...1.6bar | 0600 | 0...60bar | |
| | N002 | -0.35...0bar | 0025 | 0...2.5bar | 1000 | 0...100bar | |
| | N003 | -0.2...0bar | 0040 | 0...4bar | 2500 | 0...250bar | |
| | 0001 | 0...0.1bar | 0060 | 0...6bar | 4000 | 0...400bar | |
| | 0003 | 0...0.35bar | 0100 | 0...10bar | 6000 | 0...600bar | |
| | 0007 | 0...0.7bar | 0160 | 0...16bar | Cxxx | Customized range | |
| | 0010 | 0...1bar | 0250 | 0...25bar | | | |
| | Option3: Pressure Type | | | | | | |
| | G | gauge | | | | | |
| | A | absolute | | | | | |
| | S | sealed gauge | | | | | |
| | Option4: Output Signal | | | | | | |
| | 42 | 4...20mA | | | | | |
| | 05 | 0...5Vdc | | | | | |
| | 15 | 1...5Vdc | | | | | |
| | 10 | 0...10Vdc | | | | | |
| | 45 | 0.5...4.5 | | | | | |
| | Option5: Accuracy | | | | | | |
| | 02 | 0.25%FSO | | | | | |
| | 05 | 0.5%FSO | | | | | |
| | Option6: Electrical Connection | | | | | | |
| | D | Connector DIN43650 | | | | | |
| | H | Hirschmann cable outlet,length=1.5m | | | | | |
| | C | Cable outlet with PVC-cable,length=1.5m | | | | | |
| | M | M12x1, 4-pin | | | | | |
| Option7: Mechanical Connection | | | | | | | |
| M2 | M20x1.5(male) | N1 | 1/4NPT(male) | | | | |
| G4 | G1/4(male) | F4 | G1/4(female) | | | | |
| G2 | G1/2(male) | Nx | Customized | | | | |
| TFP-40S | 0010 | G | 42 | 02 | D | G4 | Examples of Ordering Code: TFP-40S-0010-G-42-02-D-G4 |

Specifications are subject to change without prior notice