

KM18

Miniaturized Embedded Pressure Transmitter

Fluids and gases measurement
(Featuring stainless diaphragm)

Overview

Proven SS sensor designed for use on various industries is built-in.

Chemical Vapor-Deposited Semiconductor Strain Gauge formed on diaphragm contributes excellence in durability and stability.

Features

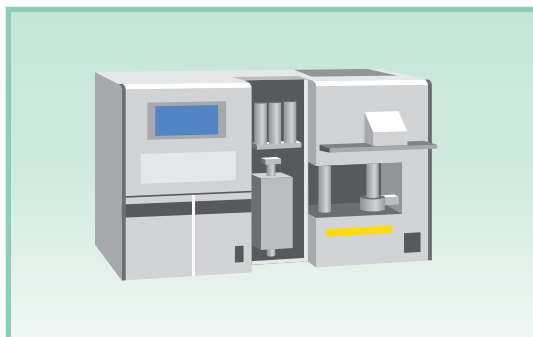
- Miniaturized pressure sensor with built-in amplifier
- Incorporates stainless diaphragm sensor (SUS630) to accommodate water and hydraulic pressure measurements.
- M8 connector
- 6 pressure ranges: -0.1 to 1.2MPa, 0 to 1.2·3.5·5MPa
- Power supply: 2.7 to 5.5V DC
Output: 0.5 to 4.5V DC (Radiometric at 5V DC power supply)



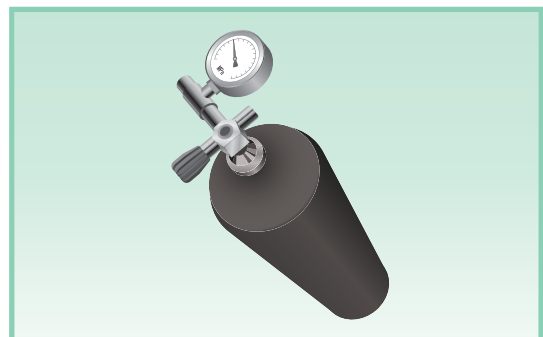
RoHS

Applications

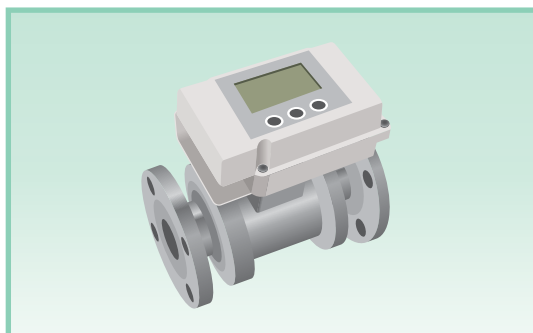
Analytical instruments, Laboratory instruments/
Pressure measurement



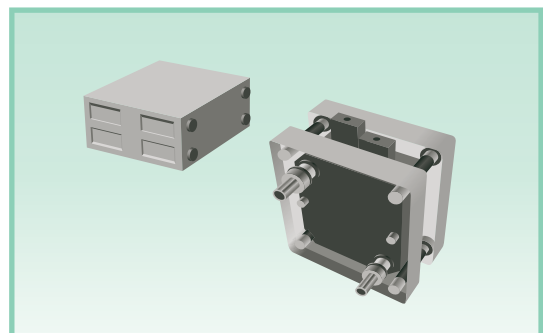
Gas cylinder pressure monitoring



Temperature/Pressure compensation for gas
flow measurement



Fuel cell related products



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Specifications

| Item | Description |
|----------------------------|--|
| Pressure range | -0.1 to 1MPa, -0.1 to 2MPa, 0 to 1MPa, 0 to 2MPa, 0 to 3.5MPa, 0 to 5MPa |
| Maximum allowable pressure | 200% of pressure range |
| Accuracy (at 1013hPa) | ±1.0% F.S. (Includes the effects of Linearity, Hysteresis and Repeatability at 23±2°C) ±3.0% F.S. (Includes the effects of Linearity, Hysteresis and Repeatability within temperature compensation range) |
| Output | 1/10Vs to 9/10Vs Ratiometric (Vs=5V DC 0.5 to 4.5V DC) 3 wire system |
| Power supply voltage (Vs) | Vs=2.7 to 5.5V DC |
| Maximum supply voltage | 6.0V DC or less |
| Consumption current | 10mA DC or less |
| Withstand voltage | 150V AC (1 minutes between case and all terminals tied) |
| Insulation resistance | Greater than 100MΩ (50V DC between case and all terminals tied) |
| Response time | 1ms and under |
| Load resistance | 10kΩ or more |
| Load capacity | 1,000pF or less |
| Compensated temp. range | -20 to 70°C |
| Operating temp. range | -20 to 70°C (Non freezing or condensing) |
| Storage temp. range | -30 to 80°C (Non freezing or condensing) |
| Shock resistance | 1,000m/s ² (6ms or less, X, Y, Z 3 times for each at room temp.) |
| Vibration proof | 200m/s ² (10 to 2000Hz, X: 4h, Y: 2h, Z: 2h at room temp.) |
| Durability | More than 10,000,000 times. (10 to 100%F.S.) |
| Protection rating | IP67 (Conforms to JIS C 0920 *2003 when connector is mated) |
| Wetted parts | Diaphragm: SUS630 (17-4PH) Fitting: SUS304 Case: SUS304 |
| Connection | R1/8 or 1/8NPT |
| Weight | Approx. 30g |

Features of sensor

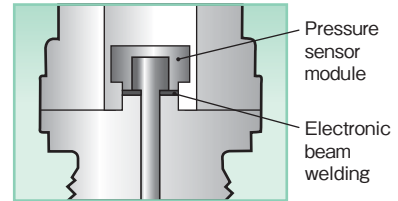
SS Sensor

Semiconductor Strain Gauge Sensor



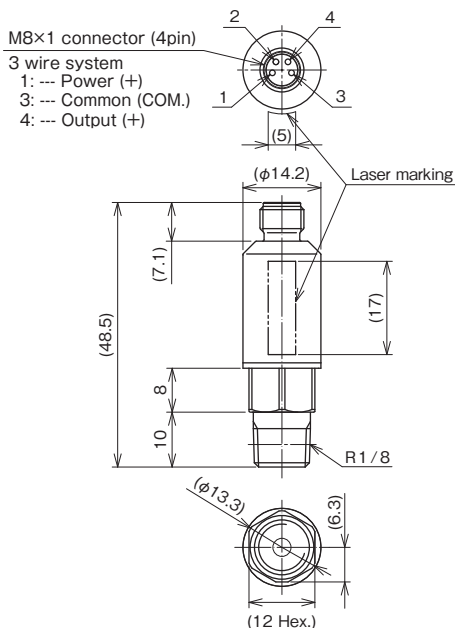
Proven Chemical Vapor-Deposited Semiconductor Strain Gauge with strain gauge on metal diaphragm formed by plasma CVD utilizes the change in resistance resulting from deforming the diaphragm due to pressure change.

Welding construction



Dimensions

Unit: mm



M8 Connector cable (Option)

| | |
|------------------------------------|--|
| Straight | |
| L type | |
| Material | ① Brass (Nickel plating) ② PBT ③ PVC |
| Cable length (L) | 2m |
| Conductor cross section | 0.2mm ² (AWG24) |
| Core diameter including insulation | 1mm |
| External cable diameter | 4mm |

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

K M 1 8 — **1** **A** — **7 9 Y** **0** **×** **×** **×** **×**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

Miniaturized Embedded Pressure Transmitter

| Model number | | Product specifications | Additional specifications (Optional) |
|------------------------|---|---|--------------------------------------|
| ① Type | 1 | Connector1 (M8×1) Sealed pressure type | |
| ② Connection | 6 | R1/8 | Maximum pressure range 5MPa |
| | J | 1/8NPT | Maximum pressure range 5MPa |
| ③ Specification | A | Standard (Withstand voltage 500V AC for 1 minute) | |
| ④ Pressure range (MPa) | 6 | -0.1 to 1 | |
| | 7 | -0.1 to 2 | |
| | G | 0 to 1 | |
| | J | 0 to 2 | |
| | K | 0 to 3.5 | |
| ⑤ Accuracy | 7 | Room temperature: ±1.0%F.S. (23±2°C) | |
| | | Total Error Band: ±3.0%F.S. (-20 to 70°C) | |
| ⑥ Supply voltage (Vs) | 9 | 2.7 to 5.5V DC | |
| ⑦ Output signal | Y | 1/10Vs to 9/10Vs Ratio metric 3 wire system | |
| ⑧ M8 Connector cable | 0 | Not required | |
| | 1 | Straight (2m in length of cable) | |
| | 2 | L type (2m in length of cable) | |
| ⑨ Throttle | 0 | Not required | |
| ⑩ Treatment | 0 | Not required | |
| | A | Use no oil | |
| | B | Use no water | |
| | 4 | Use no oil & water | |
| ⑮ Documents | 0 | Not required | |
| | 1 | Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Calibration test report (One-part one sheet) Inspection / Traceability certificate Strength calculation sheet | |

Please specify pressure range and unit of measure along with corresponding ordering code.

Treatment against wetted parts

■ Use no oil

Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

■ Use no water

Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

■ Use no oil & water

Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.

* Specify code "X" to refer N/A