



Model KH18 Sensor Module

OUTLINE

This sensor module is composed of the pressure sensing portion and the pressure-to-electric-signal converting element using a semiconductor strain gauge. Because of a small and high performance pressure sensor, this pressure sensor is appropriate to customers apparatus including hydraulic and pneumatic devices. By applying the rated voltage to this sensor module, pressure values can be taken out as voltage values.

FEATURE

- Because of applying the pressure sensing portion using an evaporative-condensing-type semiconductor strain gauge, this pressure sensor module is durable and stable.
- This pressure sensor module is of high output type and is excellent for withstanding voltage.
- Because of this small and light sensor module, a compact apparatus can be designed.

SPECIFICATION

Fluid:

Gas or Liquid

Operating condition:

Under the normal condition, where there is no inflammable gas or liquid which cause the ignition or explosion.

Type:

Lead wire type (Standard / high corrosion-proof),
Pin type (Absolute pressure)*

Wetted parts material:

Diaphragm 630st.st. (17-4PH st.st.) or Co-Ni alloy
(High corrosion-proof)

Seal type:

O-ring type
*Over the range of 35MPa, please contact us.

Pressure range:

Lead wire type
0 ~ 0.3 → 0 ~ 100MPa (0 ~ 3 → 0 ~ 1000kgf/cm²)
-0.1 ~ 0.3 → -0.1 ~ 2MPa (-1 ~ 3 → -1 ~ 20kgf/cm²)

Pin type

0 ~ 0.3 → 0 ~ 20MPa abs.
(0 ~ 3 → 0 ~ 200kgf/cm² abs.)

Max. allowable pressure:

200% of rated pressure
*110 ~ 150% for range 35MPa or over (Depend on range)

Operating temperature:

-20 ~ 70°C

Power source:

5V DC

Output:

60±25mV DC, 70±25mV DC or 40±20mV DC
(Depend on range)

Input and output impedance:

3.5kΩ (typ.)

Zero point offset :

Less than ± 6 mV

Accuracy :

±0.25%F.S., ±0.5%F.S. or ±1.0%F.S.
(Depend on range)

Temperature coefficient:

| | | |
|------|---|--------------------------------------|
| Zero | } | ±0.025%F.S./°C (Accuracy ±0.25%F.S.) |
| | | ±0.05%F.S./°C (Accuracy ±0.5%F.S.) |
| Span | | ±0.1%F.S./°C (Accuracy ±1.0%F.S.) |

Natural frequency:

5 ~ 500kHz

Cable:

| | |
|----------------|-----------------------|
| Lead wire type | With lead wire 100 mm |
| Pin type | 0.45 DIA. Au gilt |

Case material :

| | |
|----------------|---------------------|
| Lead wire type | Stainless steel |
| Pin type | Iron / chrome alloy |

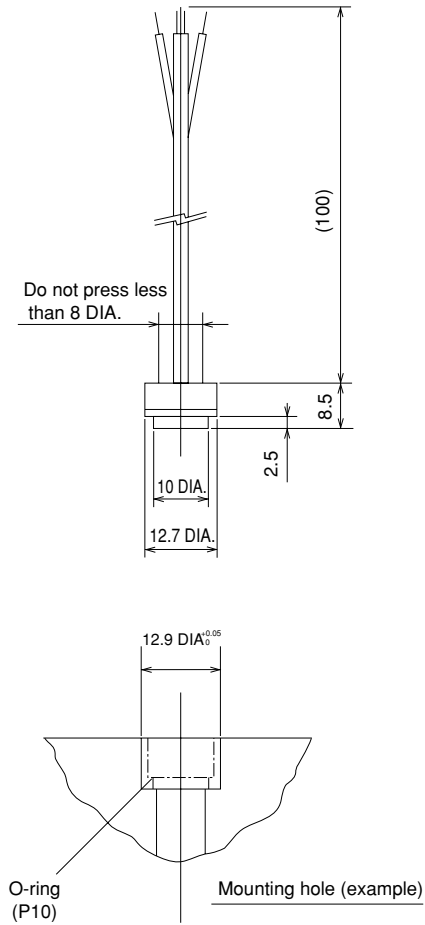
Weight:

Approx. 5 g

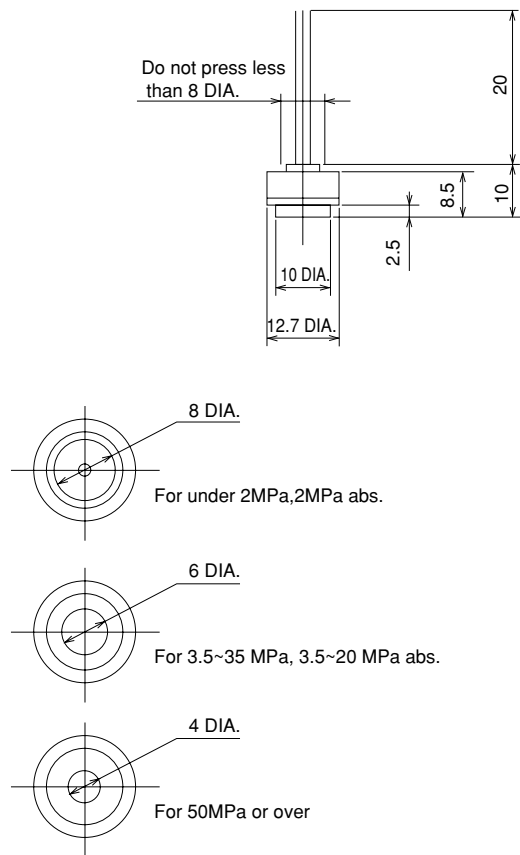
* Absolute pressure: This is one of the nomenclatures referring to pressure, meaning a pressure based on the condition where no medium exists (perfect vacuum). The gauge pressure is a pressure based on the atmospheric pressure. When an absolute pressure sensor is placed under the atmospheric pressure, the output is a pressure corresponding to the atmospheric pressure (approximately 1.033 kgf/cm²).

DIMENSIONS

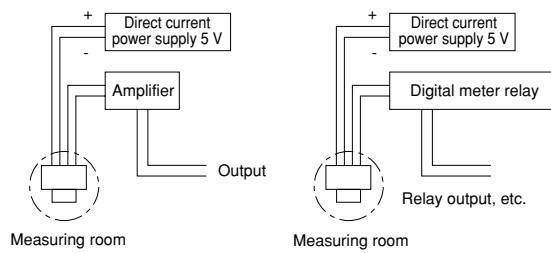
Lead wire type



Pin type

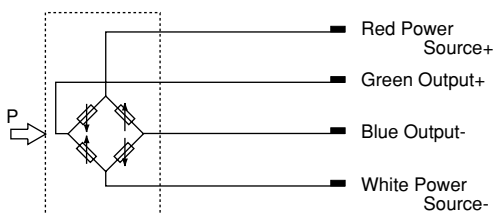


Reference circuitry example

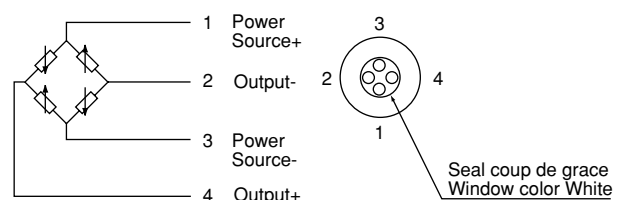


WIRING

Lead wire type



Pin type



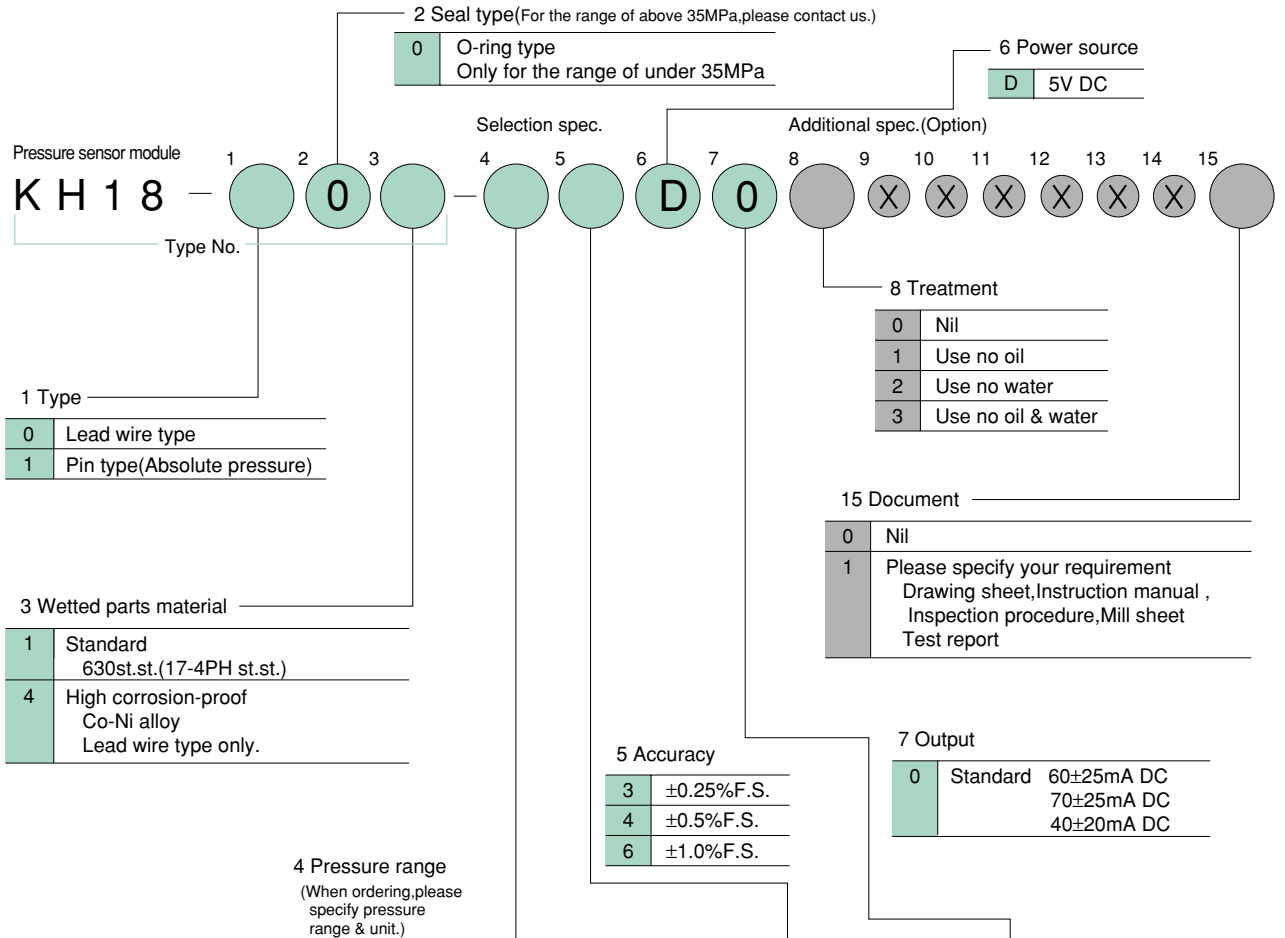
Note: Output stability is directly determined by the power supply stability. Use a power supply which is properly stabilized.

Type No. constitution

Please specify Type No., each specification and range, when ordering.

Note: For this Model, there is no applicable item for the figures X, but please specify X when ordering.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| K | H | 1 | 8 | 0 | 0 | 1 | Type: Lead wire type Wetted parts material: 630st.st.(17-4PH st.st.) |
| K | H | 1 | 8 | 0 | 0 | 4 | Type: Lead wire type Wetted parts material: Co-Ni alloy |
| K | H | 1 | 8 | 1 | 0 | 1 | Type: Pin type Wetted parts material: 630st.st.(17-4PH st.st.) |



| Type | Seal type | Wetted parts material | Pressure range MPa | Accuracy %F.S. | | | Output mV DC | | |
|---------------------|------------------|---|--------------------|----------------|------|------------------------|--------------|---|---|
| | | | | ±0.25 | ±0.5 | ±1.0 | | | |
| 0 Lead wire type | 0 O-ring type | 1 Standard 630st.st. (17-4PH st.st.) | 1 -0.1 ~ 0.3, 0.4 | — | — | ○ | 60±25 | | |
| | | | 2 -0.1 ~ 0.5 | — | ○ | ○ | | | |
| | | | 3 -0.1 ~ 1, 2 | — | ○ | ○ | | | |
| | | | 70±25 | | | 4 0 ~ 0.3, 0.4 | — | — | ○ |
| | | | | | | 5 0 ~ 0.5, 0.7 | — | ○ | ○ |
| | | | | | | 6 0 ~ 1, 1.4, 2 | — | ○ | ○ |
| | | | | | | 7 0 ~ 3.5, 5, 7, 10 | ○ | ○ | ○ |
| | | | | | | 8 0 ~ 14, 20 | ○ | ○ | ○ |
| | | | | | | 9 0 ~ 35, 50, 70, 100* | — | ○ | ○ |

| Type | Seal type | Wetted parts material | Pressure range MPa | Accuracy %F.S. | | | Output mV DC | | |
|---------------------|------------------|--|--------------------|----------------|------|------------------|--------------|---|---|
| | | | | ±0.25 | ±0.5 | ±1.0 | | | |
| 0 Lead wire type | 0 O-ring type | 4 High corrosion-proof Co-Ni alloy | 1 -0.1 ~ 0.3 | — | — | ○ | 40±20 | | |
| | | | 2 -0.1 ~ 0.5 | — | — | ○ | | | |
| | | | 3 -0.1 ~ 1, 2 | — | — | ○ | | | |
| | | | 70±25 | | | 4 0 ~ 0.3 | — | — | ○ |
| | | | | | | 5 0 ~ 0.5 | — | — | ○ |
| | | | | | | 6 0 ~ 1, 2 | — | — | ○ |
| | | | | | | 7 0 ~ 3.5, 5, 10 | — | ○ | ○ |
| | | | | | | 8 0 ~ 20 | — | ○ | ○ |
| | | | | | | 9 0 ~ 35, 50* | — | ○ | ○ |

| Type | Seal type | Wetted parts material | Pressure range MPa | Accuracy %F.S. | | | Output mV DC | | |
|--------------------------------------|------------------|---|--------------------|----------------|------|------------------|--------------|---|---|
| | | | | ±0.25 | ±0.5 | ±1.0 | | | |
| 1 Pin type (Absolute pressure) | 0 O-ring type | 1 Standard 630st.st. (17-4PH st.st.) | 4 0 ~ 0.3 | — | — | ○ | 60±25 | | |
| | | | 5 0 ~ 0.5 | — | — | ○ | | | |
| | | | 70±25 | | | 6 0 ~ 1, 2 | — | ○ | ○ |
| | | | | | | 7 0 ~ 3.5, 5, 10 | — | ○ | ○ |
| 8 0 ~ 20 | — | ○ | ○ | | | | | | |

*35MPa range is different in seal type as things mentioned above.