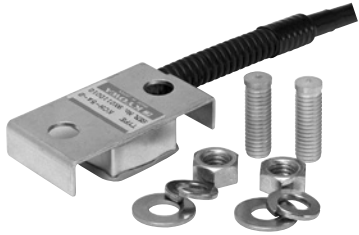
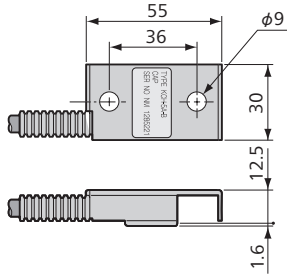


Gages with a Protector (KCH)

●KCH Series Foil Strain Gages with a Protector



The unique design simplifies gage bonding, wiring and moisture-proofing work in the field. In addition, the metal case protects the strain gage and significantly improves reliability compared with conventional gages. Using stud bolts and adhesive allows the gages to be mounted to the bottom or side plate of a tank for strain measurement, to a hopper or tank for weight measurement, to the shaft of a truck for tare weight measurement or any other similar applications where the gages need to be protected against moisture, water or small stones.



Applicable Adhesives

| | Operating Temp. after Curing the Adhesive |
|--------|---|
| EP-340 | -40 to 100°C |
| CC-33A | -40 to 100°C |

●Relay Cables (For KCH-5A-BJ/SJ) (Optional Accessories)

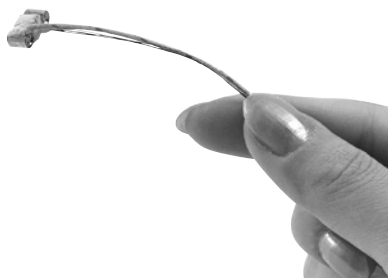
| Models | TN-29 | TN-30 | TN-31 | TN-32 | TN-33 |
|--------------------|---|-------|-------|-------|--------|
| Cable length | 2 m | 3 m | 7 m | 10 m | 12 m |
| Cable cover length | 1.5 m | 2.5 m | 6.5 m | 9.5 m | 11.5 m |
| Remarks | With waterproof connector jack (R04-J6-F6.8) Bared at the tip | | | | |

| Models | KCH-5A-B,KCH-5A-BJ | KCH-5A-S,KCH-5A-SJ | KCH-5A-1 | KCH-5A-2 | KCH-5A-3 |
|---------------|--|----------------------------|---|---|------------------------------------|
| Types | Full bridge | Full bridge (For shearing) | Uniaxial | Biaxial, 0/90° stacked rosette | Triaxial, 0/45/90° stacked rosette |
| Gage length | 2 mm | 2 mm | 5 mm | 5 mm | 5 mm |
| Resistance | 350 Ω | 350 Ω | 350 Ω | 350 Ω | 350 Ω |
| Gage patterns | | | | | |
| System | Full-bridge system | Full-bridge system | 3-wire system | 3-wire system | 2-wire system |
| Cables | KCH-5A-B and S come with special flexible vinyl-shielded 4-conductor (0.3 mm ²) cable, 6.3 mm diameter by 10 m long, bared at the tip. KCH-5A-BJ and SJ come with special flexible vinyl-shielded 4-conductor (0.3 mm ²) cable, 2 m long (cable cover 1.75 m long) by 6.3 mm diameter (10.2 mm including cable cover) and terminated with waterproof connector jack (R04-P6-M6.8). Relay cables (TN-29 to 33) are optional accessories. | | Special flexible vinyl-shielded 4-conductor (0.3 mm ²) cable, 6.3 mm diameter by 10 m long, bared at the tip. | Special flexible vinyl-shielded 6-conductor (0.3 mm ²) cable, 6.8 mm diameter by 10 m long, bared at the tip. | |

Embedded Gage (KMP)

●KMP Embedded Gage

Developed by Mitsubishi Electric Corp.
Commercialized by Kyowa Electronic Instruments Co., Ltd.



Embedded in resin, the KMP gage measures cure-shrinkage and internal strain. The compact design enables embedment in shaped resins and is suitable for internal stress measurement of products made by combining epoxy resin and metal.

| | |
|---------------------------|--|
| Model | KMP-8-H3-L100 |
| Gage Resistance | 120 Ω |
| Gage Factor | Approx. 2.0 |
| Length of Sensing Element | 1 mm |
| Apparent Young Modulus | Approx. 70 GPa (Approx. 7000 kgf/mm ²) |
| Operating Temperature | 20 to 150°C |
| Compensated Temperature | 20 to 120°C |
| Built-in Thermocouples | K (φ 0.1) |



Strain Gages

Outline

Lead-wire cable

General

Waterproof

Concrete

Composite material
PCB
Plastics

Ultra-small strain
High temp.
Low temp.

High elongation

Non-magneto
resistive

Hydrogen gas
Bending

With protector
Embedded

Crack

Adhesive
Coating agent

Custom-
designed