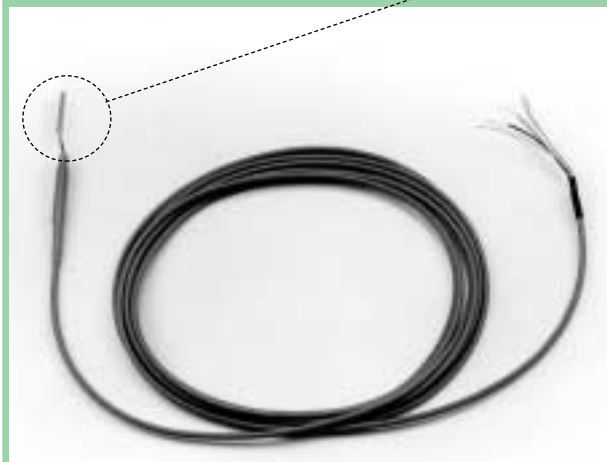
KCW 100°C

For use at room temperatures

Maximum temperature for the measurement of dynamic/ static strain **100°C**

KCW
Weldable waterproof foil strain gage



KCW-5-120-G10-11 G3M3S

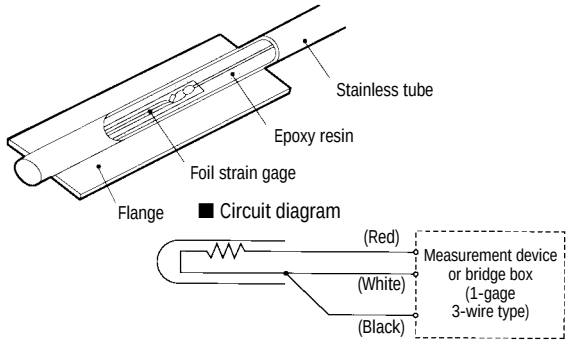
For measurement outdoors, in conditions involving water and high humidity

This gage comprises a sensing unit in which a foil strain gage is sealed in a stainless tube embedded in epoxy resin, and a crosslinked polyethylene-sheathed cable built into the sensing unit to provide an environmentally resistant structure. The sensing unit is fixed on the measurement material by spot welding. Its price is lower than that of the capsule gage for use at high temperatures (patent pending).

Specifications

Type	KCW-5-120-G10-11 G3M3S For common steel materials
Gage type	Uniaxial, 1-element (1-gage, 3-wire type)
Material of resistor element	Ni-Cr-based alloy foil
Sensing unit	Gage length: 5 m Both the sheath tube and flange are made of stainless steel
Resistance	Gage resistance: Approx. 120 Ω ;
Lead wire	Outer diameter: 3 mm; 3-wire crosslinked polyethylene-sheathed, 3 m Bear end (standard) Refer to "Extension of lead wire" for the length of the lead wires.
Max. operating temperature	Static strain: Approx. 100°C; dynamic strain: approx. 100°C
Applicable linear expansion coefficients	11 x 10^{-6}/°C
Gage factor	Approx. 2.2
Compensated temperature range	-20 to 100°C
Operating temperature range	0 to 100°C
Strain limit	9000 x 10^{-6} strain
Fatigue life	1 x 10^{6} (strain level: ±1000 x 10^{-6} strain)
Waterproof	Pressure resistance in water: Approx. 10 MPa (approx. 100 kgf/cm²), 24 hours
Drift	±100 x 10^{-6} strain/500 h (80°C, 90% RH or higher, 1000 hours) ±40 x 10^{-6} strain/500 h (by immersion, 1000 hours)
Allowable minimum radius of curvature for gage installation	20 mm
External dimensions	See the drawing of external dimensions.
Gage installation method	Spot welding, one line on each side (welding spot interval: 0.7 to 0.8 mm)
Quantity in each box	Two

Structure/circuit diagram



Standard accessories

Metal straps for fastening the lead wire (100 mm in length, 3 mm in width, two pieces), metal pieces for the welding test (30 mm in length, 4 mm in width), calibration sheet, operation manual

Optional accessories

- Bridge box: DB-120P, DB-120L (see p. 7 for their photographs)
  These are provided for formation of the Wheatstone bridge through connection of the gage.
  DB-120P Cable: Polyethylene, 5 m, connector plug edge (NDIS standard)
  External dimensions/weight: 86 mm x 54 mm x 35 mm, approx. 200 g (body only)
  DB-120L (compact plug-in type) Cable: Detachable connection cable, 5 m, connector plug edge (NDIS standard)
  External dimensions/weight: 60 mm x 20 mm x 20 mm, approx. 60 g (body only)
- Spot welder: See p. 13 for GW-3C.

Extension of lead wire

When placing an order, add the code name of the ordered lead wire to the type name, following a space.

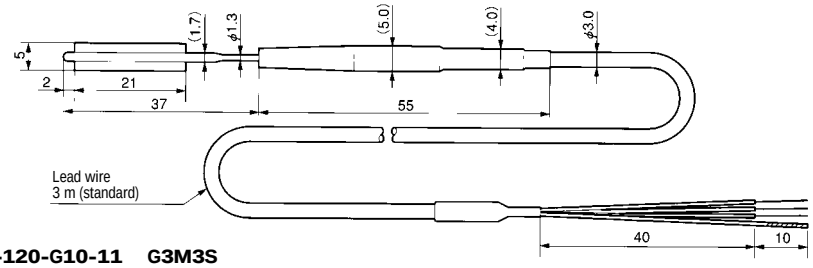
Example • If the 3-wire-type crosslinked polyethylene-sheathed wire is 5 m in length, KCW-5-120-G10-11 G5M3S

Length of the lead wire	Code name
30 cm	G30C3S
50 cm	G50C3S
1 m	G1M3S
2 m	G2M3S
3 m (standard)	G3M3S
4 m	G4M3S
5 m	G5M3S
6 m	G6M3S
8 m	G8M3S
10 m	G10M3S
15 m	G15M3S
20 m	G20M3S
30 m	G30M3S

Precautions

- Carefully read "Precautions" on p. 14 and "Measurement block diagram" on p. 15.

Drawing of external dimensions



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