

KFW, KFWS Waterproof Strain Gages

INSTRUCTION MANUAL

1. Application

KFW and KFWS are foil strain gages and come with special plastic coatings on the surfaces. The gages thus successfully eliminate the need for moisture-proofing preparation even for outdoor applications.

The gages can also serve underwater if it is for a short time. Exposure to an underwater pressure of 9.8MPa (Reference value: 100kgf/cm²) does not deteriorate the gages' insulation resistance.

Both KFW and KFWS gages operate in a temperature range from -10 to 80°C. (The self-temperature compensation is achievable in a range from +10 to 80°C.)

To bond the KFW or KFWS gages, use CC-33A adhesive. (EP-18 adhesive can also be used.)

2. Surface preparation

- (1) Remove rust, paint, etc., from the bonding surface of a measuring object, then finish the surface flat and smooth, using sandpaper (#300 to 600 or thereabouts).
- (2) Clean the surface, using acetone or isopropanol.

3. Bonding procedures

- (1) Using a generous amount of CC-33A, form a coating on the back of the gage backing.
- (2) Set the gage in place, cover its surface with the polyethylene film (attached to the gage), and with the tip of a finger, apply pressure to the gage installation from on the film, thereby ensuring close adhesion of the gage.
- (3) Keep the pressure for about 30 to 60 seconds, remove the film, then cure the gage installation at room temperature for about 4 hours, and the gage will be ready for measure-

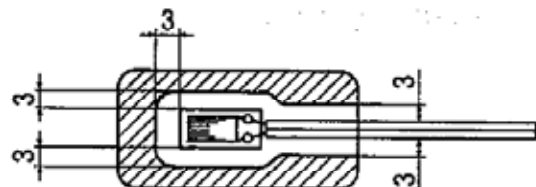
ment. To use the gage under water, curing should continue for over 24 hours.

4. Connection

- (1) KFW or KFWS gage comes with lead wires so that the user can connect the gage directly to a strain amplifier or a switch box.
- (2) If extension of the lead wires is required, apply soldering to the lead wire connections. In order to ensure efficient moisture-proofing on the connections, take a proper measure such as winding insulation tape round.
- (3) Using CC-33A or adhesive tape, fix the lead wires to the measuring object so that the gage will be free from adverse pulling force which may occur.

5. Other precautions

- (1) KFWS gage can be bonded to curved surfaces of 10mm in diameter. In this case, however, the gage resistance varies to some extent (about 0.5% in the case of uni-axial gage).
- (2) In case a measuring time is to be longer than 2 weeks, apply a coating of Hamatite R-923T, etc. to the surface of the waterproof gage which was bonded. (The thickness of the coating will be about 0.5mm.) This coating should cover the entire area of the CC-33A adhesive layer which overflowed the gage backing.
- (3) To bond KFW gage in a limited space, the gage backing may be trimmed as illustrated by the figure below. (KFWS gage cannot be trimmed.)



Oblique-lined area can be trimmed.

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