KFV-2-350-C1

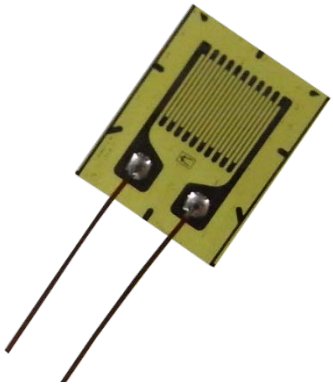
Foil Strain Gage for Hydrogen Gas Environment

Move into the future with reliable measurements

KYOWA

PRODUCT INFORMATION

The KFV can stably test strain under high-pressure in hydrogen gas



Features

NEW

Suitable strain measurement in hydrogen gas

Minimal gage-resistance change in hydrogen gas

The KFV is the achievement of joint research with NEDO (New Energy and Industrial Technology Development Organization).

Specifications

Gage Pattern	Uniaxial
Gage Length	2 mm
Gage Resistance	350±3.5 Ω *(Excitation Voltage: 2V or less)* *(Excitation Current: 5.7mA or less)*
Materials	Resistive Element: FeCr alloy foil Base: Polyimide resin Laminate Film: None
Gage Lead	Polyester-coated copper wire ϕ0.14 by 15 mm long.
Applicable Linear Expansion Coefficient	N/A
Operating Temperature Range	-30 to 80 °C
Applicable Adhesive	PC-600
Gage Factor	Approx. 2.5
Pressure Resistance under Hydrogen Gas	90 MPa or less
Package	2 pieces/pkg
Dimensions	See dimensions diagram right

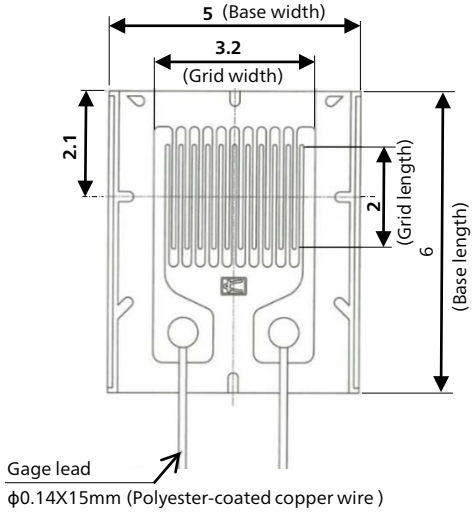
Optional Accessories

Gage Terminal	T-F25
Lead wire	SKW-1651-0.5M: 0.5m long SKW-1651-1M: 1m long (ϕ0.14 Polyester-coated copper wire)
Adhesive	PC-600

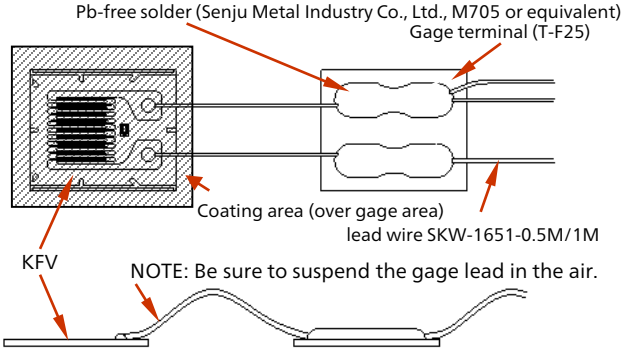
Note:

✓ For "Safety Precautions", see the overleaf, please.
✓ Before purchasing, be sure to check the " KFV Environment Check Sheet" and submit the " OUR CONSENT IN RELATION WITH THE USE OF PARTICULAR STRAIN GAGE" to KYOWA, please.

Dimensions



Wiring diagram



Safety Precautions

• Before using the product, be sure to read the "SAFETY PRECAUTIONS" and use the product properly.
• The KFV is not explosion-proof electrical apparatus (NOTE 1) (as of December 2013). The KFV cannot be used in environment where an explosion-proof electrical apparatus is required.
• The KFV cannot be used as an explosion-proof electrical apparatus when the measuring instrument is connected to the KFV via a Zener Barrier (commercially available).
• The "SAFETY PRECAUTIONS" describes safety precautions that should be taken.
• Improper operation of the system may result in death or severe injury of the operator or physical damage to the system.
*Physical damage: Enlarged damages including harm to a building, attached facilities, equipment and devices in the facilities.

NOTE 1: An apparatus to be used in the environment described in the Article 280 and Article 281 of the Ordinance on Industrial Safety and Health, Japan.

1. Although the KFV is designed to be used for hydrogen gas environment, special care should be taken when handling hydrogen gas due to its properties.
(1)Hydrogen gas is flammable gas based on the Ordinance on Industrial Safety and Health, related Laws and Regulations, Japan.
(2)Hydrogen gas can explode when mishandled.
(3)Hydrogen gas can leak out from a small gap of the container.
(4)Hydrogen gas has minimum ignition energy of extremely low. Since hydrogen gas burns with a nearly invisible flame, a hydrogen fire is difficult to detect.
(5)Hydrogen flame can easily carried by drafts. The flammable range of hydrogen is wide, at 4% to 75% in air by volume.
(6)Hydrogen gas can ignite by static electricity.
(7)Hydrogen gas can self ignite at 500°C.
(8)Hydrogen is lighter than air. Hydrogen tends to stay at roof level inside buildings.

2. When handling hydrogen gas, based on the Ordinance on Industrial Safety and Health, related Laws and Regulations (NOTE 2), following countermeasures are required.
*The followings are examples, but not limited to.
(1)Be sure to take measures, such as an antistatic mat, to prevent explosion and fire due to static electricity.
(2)Be sure to ventilate the room when using hydrogen gas inside buildings.
(3)Be sure to install an automatic alarm, to detect abnormal increase in hydrogen gas concentration, when using hydrogen gas inside buildings.
(4)Hot work is prohibited near the hydrogen gas tank.
(5)When handling liquid hydrogen, before injection including changing containers, make sure that all hose and joint connections are securely fastened.
(6)When you come upon a small hydrogen flame, you might seen an area ahead of you shimmer as you would see a mirage. Immediately stop supplying hydrogen gas.
(7)When using the KFV outside Japan, other than the countermeasures mentioned above, it must be handled in accordance with applied Laws and Regulations in that country or territory.

NOTE 2: Article 261 of the Ordinance on Industrial Safety and Health. For details, see "P.17 on the TIIS news No. 232 (2008), issued from the Technology Institution of Industrial Safety, Japan.

3. We recommend the following countermeasures when using the KFV.
(1)The ambient temperature should be 80°C or less when using the KFV.
(2)The bridge excitation should be 2 V or less when using the KFV and constant-voltage measuring instrument. The bridge current should be 5.7 mA or less when using the KFV and constant-current measuring instrument.

Specifications are subject to change without notice for improvement.

Safety precautions Be sure to observe the safety precautions given in the instruction manual in order to ensure correct and safe operation.

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