



Strain Gage

Load Cell

Pressure Sensor

Acceleration Sensor

Torque Sensor

Displacement Sensor

Component Force Sensor

Automotive Sensor

Civil Engineering Sensor

# KFWB

## Waterproof Foil Strain Gages

These strain gages are covered with a special resin and have a waterproof structure. They are attached simply by applying adhesive, and can be used outdoors or underwater. The resin is extremely flexible, making it easy to attach even to curved surfaces.

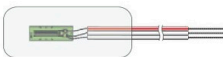
\*Insulation resistance barely drops even after 100 hours at approximately 10 MPa underwater.

RoHS

### Operating Temperature

| Operating Temperature | Applicable Adhesives |
|-----------------------|----------------------|
| -10 to 80°C           | CC-33A               |
| -10 to 80°C           | CC-36                |
| -10 to 80°C           | EP-340               |

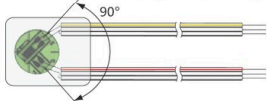
### Models

| Patterns,<br>Gage Resistance, Gage Factor                                                                                                          | Model            | Dimensions (mm) |       |                  |       | Remarks      |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------|------------------|-------|--------------|
|                                                                                                                                                    |                  | Gage (Grid)     |       | Waterproof Resin |       |              |
|                                                                                                                                                    |                  | Length          | Width | Length           | Width |              |
| <b>Uniaxial</b><br>Resistance: 120 Ω Gage factor: Approx. 2.1<br> | KFWB-5-120-C1-11 | 5               | 1.4   | 30               | 12    | 10 gages/pkg |
|                                                                                                                                                    | KFWB-5-120-C1-16 | 5               | 1.4   | 30               | 12    |              |
|                                                                                                                                                    | KFWB-5-120-C1-23 | 5               | 1.4   | 30               | 12    |              |
|                                                                                                                                                    | KFWB-2-120-C1-11 | 2               | 1.2   | 30               | 12    | 10 gages/pkg |
|                                                                                                                                                    | KFWB-2-120-C1-16 | 2               | 1.2   | 30               | 12    |              |
|                                                                                                                                                    | KFWB-2-120-C1-23 | 2               | 1.2   | 30               | 12    |              |

\*The above picture is KFWB-5-120-C1-23.

### Biaxial, stacked rosette

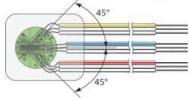
Resistance: 120 Ω Gage factor: Approx. 2.1



\*The above picture is KFWB-5-120-D16-23.

### Triaxial, stacked rosette

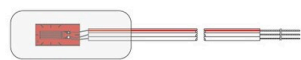
Resistance: 120 Ω Gage factor: Approx. 2.1



\*The above picture is KFWB-5-120-D17-23.

### Uniaxial, 350 Ω

Resistance: 350 Ω Gage factor: Approx. 2.1



\*The above picture is KFWB-5-350-C1-11.

### Biaxial, stacked rosette 350 Ω

Resistance: 350 Ω Gage factor: Approx. 2.1



\*The above picture is KFWB-5-350-D16-11.

### Triaxial, stacked rosette 350 Ω

Resistance: 350 Ω Gage factor: Approx. 2.1



\*The above picture is KFWB-5-350-D17-16.

|                   |   |     |    |    |             |
|-------------------|---|-----|----|----|-------------|
| KFWB-5-120-D16-11 | 5 | 1.4 | 21 | 18 | 5 gages/pkg |
| KFWB-5-120-D16-16 | 5 | 1.4 | 21 | 18 |             |
| KFWB-5-120-D16-23 | 5 | 1.4 | 21 | 18 |             |
| KFWB-2-120-D16-11 | 2 | 1.2 | 21 | 18 | 5 gages/pkg |
| KFWB-2-120-D16-16 | 2 | 1.2 | 21 | 18 |             |
| KFWB-2-120-D16-23 | 2 | 1.2 | 21 | 18 |             |

|                   |   |     |    |    |             |
|-------------------|---|-----|----|----|-------------|
| KFWB-5-120-D17-11 | 5 | 1.4 | 21 | 18 | 5 gages/pkg |
| KFWB-5-120-D17-16 | 5 | 1.4 | 21 | 18 |             |
| KFWB-5-120-D17-23 | 5 | 1.4 | 21 | 18 |             |
| KFWB-2-120-D17-11 | 2 | 1.2 | 21 | 18 | 5 gages/pkg |
| KFWB-2-120-D17-16 | 2 | 1.2 | 21 | 18 |             |
| KFWB-2-120-D17-23 | 2 | 1.2 | 21 | 18 |             |

|                  |   |   |    |    |              |
|------------------|---|---|----|----|--------------|
| KFWB-5-350-C1-11 | 5 | 2 | 30 | 12 | 10 gages/pkg |
| KFWB-5-350-C1-16 | 5 | 2 | 30 | 12 |              |
| KFWB-5-350-C1-23 | 5 | 2 | 30 | 12 |              |
| KFWB-2-350-C1-11 | 2 | 2 | 30 | 12 | 10 gages/pkg |
| KFWB-2-350-C1-16 | 2 | 2 | 30 | 12 |              |
| KFWB-2-350-C1-23 | 2 | 2 | 30 | 12 |              |

|                   |   |   |    |    |             |
|-------------------|---|---|----|----|-------------|
| KFWB-5-350-D16-11 | 5 | 2 | 21 | 18 | 5 gages/pkg |
| KFWB-5-350-D16-16 | 5 | 2 | 21 | 18 |             |
| KFWB-5-350-D16-23 | 5 | 2 | 21 | 18 |             |
| KFWB-2-350-D16-11 | 2 | 2 | 21 | 18 | 5 gages/pkg |
| KFWB-2-350-D16-16 | 2 | 2 | 21 | 18 |             |
| KFWB-2-350-D16-23 | 2 | 2 | 21 | 18 |             |

|                   |   |   |    |    |             |
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| KFWB-5-350-D17-11 | 5 | 2 | 21 | 18 | 5 gages/pkg |
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| KFWB-5-350-D17-23 | 5 | 2 | 21 | 18 |             |
| KFWB-2-350-D17-11 | 2 | 2 | 21 | 18 | 5 gages/pkg |
| KFWB-2-350-D17-16 | 2 | 2 | 21 | 18 |             |
| KFWB-2-350-D17-23 | 2 | 2 | 21 | 18 |             |

#### ■Types, lengths and codes of lead-wire cables pre-attached to KFWB

|                       | Vinyl-coated flat<br>2-wire cables |         | Vinyl-coated flat<br>3-wire cables |         |
|-----------------------|------------------------------------|---------|------------------------------------|---------|
|                       | C1                                 | D16,D17 | C1                                 | D16,D17 |
| 15 cm                 | L15C2R                             | L15C2S  | L15C3R                             | L15C3S  |
| 30 cm                 | L30C2R                             | L30C2S  | L30C3R                             | L30C3S  |
| 1 m                   | L1M2R                              | L1M2S   | L1M3R                              | L1M3S   |
| 2 m                   | L2M2R                              | L2M2S   | L2M3R                              | L2M3S   |
| 5 m                   | L5M2R                              | L5M2S   | L5M3R                              | L5M3S   |
| Operating Temperature | -10 to 80°C                        |         |                                    |         |
| Remarks               | L-6, L-9 for ≥ 6 m                 |         | L-7, L-10 for ≥ 6 m                |         |

\*For other lead-wire cable lengths, contact us.

\*Notes on pre-attached lead-wire cables

- Standard color of the 2-wire cable pre-attached to uniaxial gages is red (R). If desired, allows a white, green, yellow or black cable to be pre-attached.
- Standard 3-wire cable pre-attached to uniaxial gages has red stripes (R). If desired, allows the red stripes to be changed to blue or yellow stripes.
- In the case of a biaxial gage and triaxial gage, 2-wire cables are color-coded with red, white and green stripes for 0°, 90° and 45°, respectively and 3-wire cables, with red, yellow and blue stripes for 0°, 90° and 45°, respectively. The letter code is S in common.

#### ■How to order

When ordering, specify the model of the strain gage and the code of the lead-wire cable with a space in between.

E.g. KFWB-5-120-C1-11 with a vinyl-coated flat 2-wire cable 2 m long→ **KFWB-5-120-C1-11 L2M2R**

KFWB-5-120-D17-11 with a vinyl-coated flat 3-wire cable 5 m long→ **KFWB-5-120-D17-11 L5M3S**

1  
-36

Sensor



Strain Gage

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Sensor