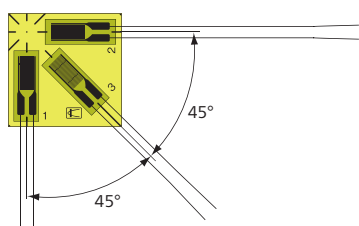


Gages for Composite Materials & Plastic (KFRPB & KFRS)

Patterns, Gage Resistance, Gage Factor	Models	Dimensions (mm)				Remarks																																																								
		Gage (Grid)		Base																																																										
		Length	Width	Length	Width																																																									
Triaxial, 0°/90°/45° plane arrangement																																																														
Resistance: 350 Ω Gage factor: Approx. 2.1																																																														
																																																														
Each of 3 axis may be given a different linear expansion coefficient if requested.																																																														
<table border="1"> <tr><td>KFRPB-5-350-D22-1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>KFRPB-5-350-D22-3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>KFRPB-5-350-D22-6</td><td>5</td><td>1.5</td><td>19</td><td>19</td><td></td><td></td></tr> <tr><td>KFRPB-5-350-D22-9</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>KFRPB-2-350-D22-1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>KFRPB-2-350-D22-3</td><td>2</td><td>2.2</td><td>15</td><td>15</td><td></td><td></td></tr> <tr><td>KFRPB-2-350-D22-6</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>KFRPB-2-350-D22-9</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>							KFRPB-5-350-D22-1							KFRPB-5-350-D22-3							KFRPB-5-350-D22-6	5	1.5	19	19			KFRPB-5-350-D22-9							KFRPB-2-350-D22-1							KFRPB-2-350-D22-3	2	2.2	15	15			KFRPB-2-350-D22-6							KFRPB-2-350-D22-9						
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Patterns, Gage Resistance, Gage Factor	Models	Dimensions (mm)				Remarks
		Gage (Grid)		Base		
		Length	Width	Length	Width	

●KFRS Series Foil Strain Gages for Printed Boards

RoHS

When ordering, suffix the lead-wire cable code (see table below) to the model number with a space in between.

E.g.

For the gage with 3 polyester-coated copper wires 10-cm long pre-attached

→ [KFRS-02-120-C1-13 N10C3](#)

For the gage with a vinyl-coated flat 3-wire cable 5 m long pre-attached

→ [KFRS-05-120-D35-13 L5M3S](#)

PCB are used for varieties of products including cellular phones, car navigation systems and digital cameras. The gages are the self-temperature-compensation gages (SELCOM gages) for evaluating them.

- Dimensions of gage base (bondable space to mounted components and narrow parts) 1.2 mm long by 1.1 mm wide (uniaxial), 2.5 mm long by 2.5 mm wide (Biaxial or triaxial)
- Linear expansion coefficient of $13 \times 10^{-6}/^{\circ}\text{C}$, suitable for component-mounted board
- Self-temperature-compensation range is made as wide as -30 to 120°C to satisfy thermal cyclic tests of PCB.

Applicable Adhesives

	Operating Temp. after Curing the Adhesive
CC-33A	-196 to 120°C
CC-36	-30 to 100°C
PC-600	-196 to 150°C

■Types, lengths and codes of lead-wire cables pre-attached to KFRS gages

Type	2 polyester-coated copper wires	3 polyester-coated copper wires	Vinyl-coated flat 2-wire cable		Vinyl-coated flat 3-wire cable		Mid-temperature 2-wire cable	Mid-temperature 3-wire cable
	C1, D34, and D35		C1	D34, D35	C1	D34, D35	C1, D34, and D35	
Length	C1, D34, and D35		C1	D34, D35	C1	D34, D35	C1, D34, and D35	
10 cm	N10C2	N10C3	—	—	—	—	—	—
30 cm	N30C2	N30C3	L30C2R	L30C2S	L30C3R	L30C3S	R30C2	R30C3
1 m	N1M2	N1M3	L1M2R	L1M2S	L1M3R	L1M3S	R1M2	R1M3
3 m	—	—	L3M2R	L3M2S	L3M3R	L3M3S	R3M2	R3M3
5 m	—	—	L5M2R	L5M2S	L5M3R	L5M3S	R5M2	R5M3
Operating temp.	-196 to 150°C		-10 to 80°C				-100 to 150°C	
Remark	Twisted for ≥ 50 cm		L-6		L-7		L-11	L-12

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

Uniaxial

Resistance: 120 Ω
Gage factor: Approx. 2.0

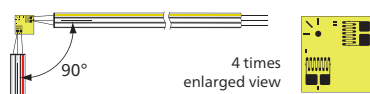


The following models are delivered with a vinyl-coated flat 3-wire cable 1 m long pre-attached.

KFRS-1-120-C1-13 L1M3R	1	0.65	4	1.4
KFRS-02-120-C1-13 L1M3R	0.2	0.8	1.2	1.1

Biaxial, 0°/90° plane arrangement

Resistance: 120 Ω
Gage factor: Approx. 2.0

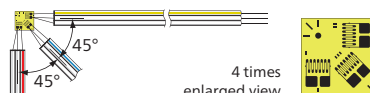


The following model is delivered with a vinyl-coated flat 3-wire cable 1 m long pre-attached.

KFRS-02-120-D34-13 L1M3S	0.2	0.8	2.5	2.5	5 gages/ pkg
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Triaxial, 0°/90°/45° plane arrangement

Resistance: 120 Ω
Gage factor: Approx. 2.0



The following model is delivered with a vinyl-coated flat 3-wire cable 1 m long pre-attached.

KFRS-02-120-D35-13 L1M3S	0.2	0.8	2.5	2.5	5 gages/ pkg
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10 gages/ pkg unless otherwise specified.



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