

Strain Gages for Composite Materials and Plastics

KFRPB

● Gage Factor	Approx. 2.0
● Applicable Linear Expansion Coefficients ($\times 10^{-6}/^{\circ}\text{C}$)	1, 3, 6, 9
● Self-temperature-compensation Range	0 to 150°C

Applicable Adhesives and Operating Temperature Ranges

CC-33A:	-196 to 120°C
CC-35:	-30 to 120°C
CC-36:	-30 to 100°C
EP-34B:	-55 to 200°C

■ Foil Strain Gages for Composite Materials RoHS

The KFRPB series foil strain gages are self-temperature-compensation gages (SELCOM gages) suitable for strain measurement of composite materials such as CFRP and GFRP. The special gage pattern minimizes the effect of self-heating due to gage current and the effect of reinforcement of low-elasticity materials.

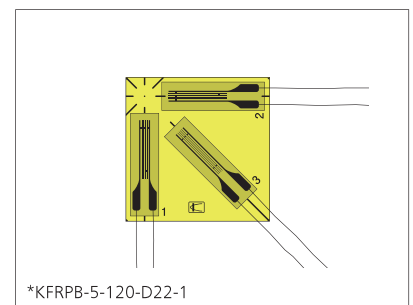
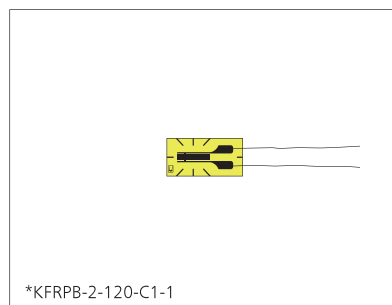
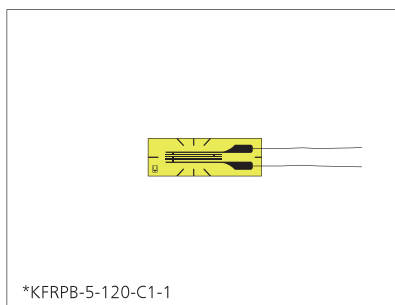
■ Types, lengths and codes of lead-wire cables pre-attached to KFRPB gages

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	Fluoroplastic coated high/low-temp. 3-wire cable
	C1, D22	C1, D22	C1	D22	C1	D22	C1, D22	C1, D22	C1, D22
Length									
15 cm	N15C2	N15C3	L15C2R	L15C2S	L15C3R	L15C3S	R15C2	R15C3	F15C3
30 cm	N30C2	N30C3	L30C2R	L30C2S	L30C3R	L30C3S	R30C2	R30C3	F30C3
1 m	N1M2	N1M3	L1M2R	L1M2S	L1M3R	L1M3S	R1M2	R1M3	F1M3
3 m	—	—	L3M2R	L3M2S	L3M3R	L3M3S	R3M2	R3M3	F3M3
5 m	—	—	L5M2R	L5M2S	L5M3R	L5M3S	R5M2	R5M3	F5M3
Operating temp.	-196 to 150°C		-10 to 80°C				-100 to 150°C		-196 to 200°C
Remarks	Twisted for ≥ 50 cm		L-6 L-9 for ≥ 6 m		L-7 L-10 for ≥ 6 m		L-11*	L-12*	L-3*

* For type R and type F of lead-wire cable with glass-cloth tape, see page 23.

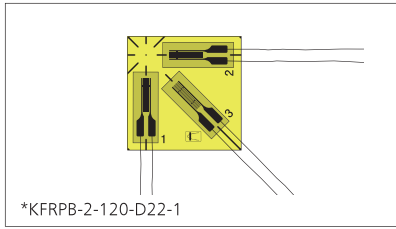
** For other lead-wire cable lengths, contact us.

KFRPB ● Uniaxial, Triaxial

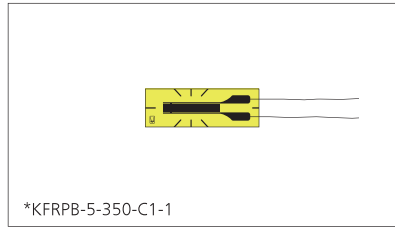


Models	KFRPB-5-120-C1-	1 3 6 9	KFRPB-2-120-C1-	1 3 6 9	KFRPB-5-120-D22-	1 3 6 9
Pattern	Uniaxial		Uniaxial		Triaxial, 0°/90°/45°	
Base	15 × 5 mm		10 × 5 mm		19 × 19 mm	
Gage (Grid)	5 × 1.4 mm		2 × 1.2 mm		5 × 1.4 mm	
Resistance	120 Ω		120 Ω		120 Ω	
Pieces per Pack	10		10		10	

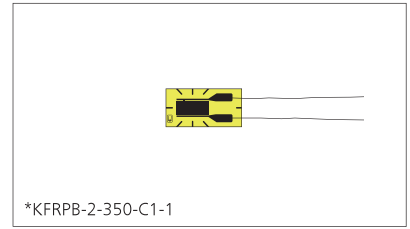
KFRPB ● Uniaxial, Triaxial



*KFRPB-2-120-D22-1

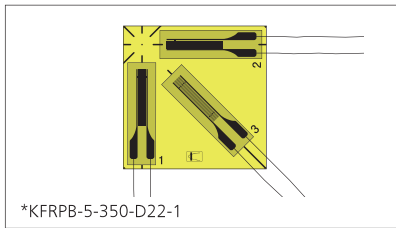


*KFRPB-5-350-C1-1

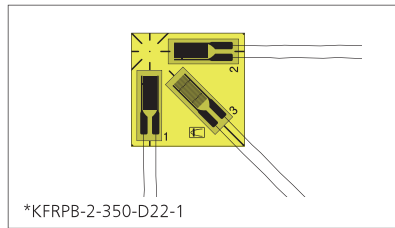


*KFRPB-2-350-C1-1

Models	KFRPB-2-120-D22-	1 3 6 9	KFRPB-5-350-C1-	1 3 6 9	KFRPB-2-350-C1-	1 3 6 9
Pattern	Triaxial, 0°/90°/45° plane arrangement		Uniaxial		Uniaxial	
Base	15 × 15 mm		15 × 5 mm		10 × 5 mm	
Gage (Grid)	2 × 1.2 mm		5 × 1.5 mm		2 × 2.2 mm	
Resistance	120 Ω		350 Ω		350 Ω	
Pieces per Pack	10		10		10	



*KFRPB-5-350-D22-1



*KFRPB-2-350-D22-1

Models	KFRPB-5-350-D22-	1 3 6 9	KFRPB-2-350-D22-	1 3 6 9
Pattern	Triaxial, 0°/90°/45° plane arrangement		Triaxial, 0°/90°/45° plane arrangement	
Base	19 × 19 mm		15 × 15 mm	
Gage (Grid)	5 × 1.5 mm		2 × 2.2 mm	
Resistance	350 Ω		350 Ω	
Pieces per Pack	10		10	

When ordering, specify the model number as follows.

KFRPB-□-□-□-□ **Lead-wire Cable Code**

e.g.

KFRPB-5-120-C1-1 L1M3R

*Values in □ and lead-wire cable code cannot be arbitrarily combined.

Lead-wire Cable Type and Shape	Oprg. Temp.	Length	Code
Vinyl-coated flat 3-wire cable L-7 (L-10 for 6 m or longer)	-10 to 80°C	1 m	L1M3R:L1M3S
		3 m	L3M3R:L3M3S
		5 m	L5M3R:L5M3S
Vinyl-coated flat 2-wire cable L-6 (L-9 for 6 m or longer)	-10 to 80°C	1 m	L1M2R:L1M2S
		3 m	L3M2R:L3M2S
		5 m	L5M2R:L5M2S
Mid-temperature 3-wire cable L-12	-100 to 150°C	1 m	R1M3
		3 m	R3M3
		5 m	R5M3
Mid-temperature 2-wire cable L-11	-100 to 150°C	1 m	R1M2
		3 m	R3M2
		5 m	R5M2
Fluoroplastic-coated high/low-temp. 3-wire cable L-3	-196 to 200°C	1 m	F1M3
		3 m	F3M3
		5 m	F5M3
3 polyester-coated copper wires	-196 to 150°C	30 cm	N30C3
		50 cm	N50C3
		1 m	N1M3
2 polyester-coated copper wires	-196 to 150°C	30 cm	N30C2
		50 cm	N50C2
		1 m	N1M2
Silver-covered copper wires	-196 to 200°C	25 mm	

*Gage (Grid): Length × Width