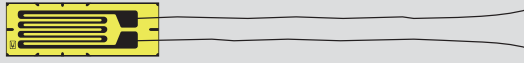


Gages for General Stress Measurement **KFRB**

RoHS



Foil Strain Gages

The KFRB series foil strain gages are durable and easy-to-use high-grade strain gages. The gage element is sandwiched between a heat-resistant polyimide base and cover, thereby letting it exhibit high performance in a wide temperature range.

● Gage Factor	Approx. 1.9, 2.0
● Applicable Linear Expansion Coefficients ($\times 10^{-6}/^{\circ}\text{C}$)	11, 16, 23
● 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-340: -55 to 150°C
 PC-600: -196 to 150°C

- Highly heat-resistant polyimide resin is used to make them durable.
- A wide compensated temperature range of 0 to 150°C makes them usable under diversified operating conditions.
- The resistive element is made of NiCr alloy foil, thereby ensuring minimal drift under high temperatures and excellent weather and moisture resistances.
- Suitable for incorporation into transducers

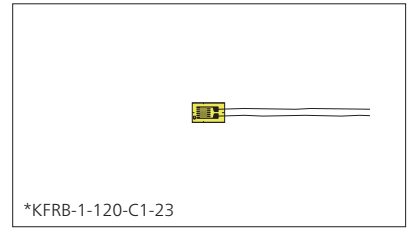
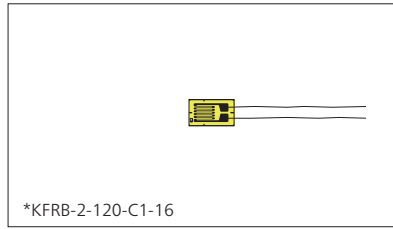
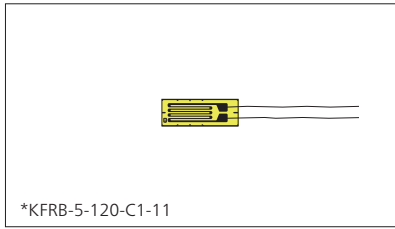
Types, lengths and codes of lead-wire cables pre-attached to KFRB gages

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, D25	C1, D25	C1	D25	C1	D25	C1, D25	C1, D25
Length	C1, D25	C1, D25	C1	D25	C1	D25	C1, D25	C1, D25
15 cm	N15C2	N15C3	L15C2R	L15C2S	L15C3R	L15C3S	R15C2	R15C3
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	
Remarks	Twisted for ≥ 50		L-6 L-9 for ≥ 6 m		L-7 L-10 for ≥ 6 m		L-11*	L-12*

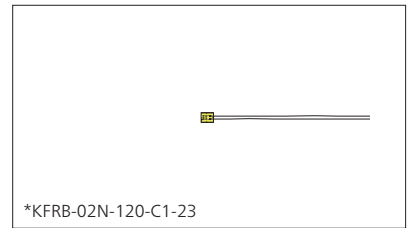
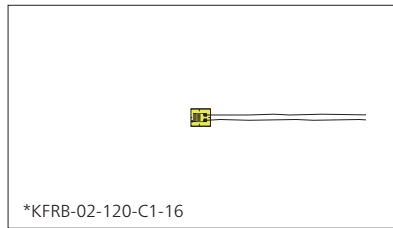
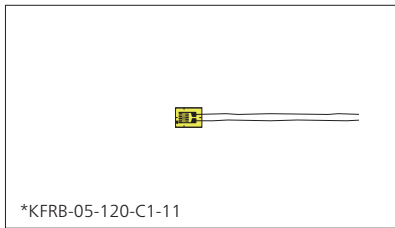
* For type R of lead-wire cable with glass-cloth tape, see page 23.

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

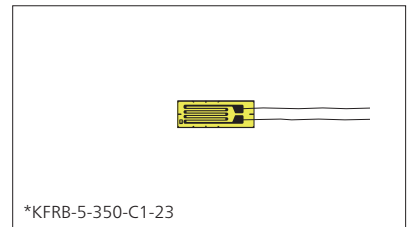
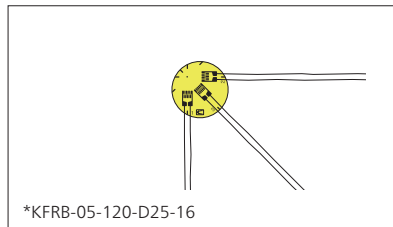
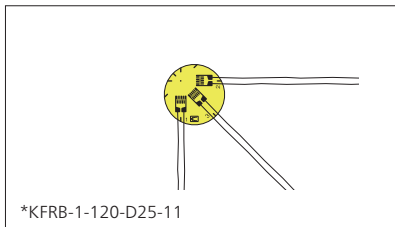
KFRB ● Uniaxial, Triaxial



Models	KFRB-5-120-C1-	11 16 23	KFRB-2-120-C1-	11 16 23	KFRB-1-120-C1-	11 16 23
Pattern	Uniaxial		Uniaxial		Uniaxial	
Gage Factor	Approx. 2.0		Approx. 2.0		Approx. 2.0	
Base	10 × 3.7 mm		6 × 3.7 mm		4 × 2.7 mm	
Gage (Grid)	5 × 2.5 mm		2 × 2.5 mm		1 × 1.5 mm	
Resistance	120 Ω		120 Ω		120 Ω	
Pieces per Pack	10		10		10	

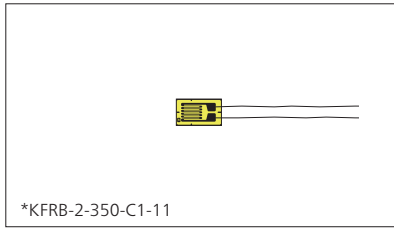


Models	KFRB-05-120-C1-	11 16 23	KFRB-02-120-C1-	11 16 23	KFRB-02N-120-C1-	11 16 23
Pattern	Uniaxial		Uniaxial		Uniaxial	
Gage Factor	Approx. 2.0		Approx. 2.0		Approx. 1.9	
Base	3.3 × 2.7 mm		2.5 × 2.2 mm		1.6 × 1.2 mm	
Gage (Grid)	0.5 × 1.4 mm		0.2 × 1 mm		0.2 × 0.9 mm	
Resistance	120 Ω		120 Ω		120 Ω	
Pieces per Pack	10		10		10	

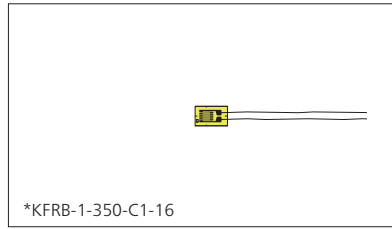


Models	KFRB-1-120-D25-	11 16 23	KFRB-05-120-D25-	11 16 23	KFRB-5-350-C1-	11 16 23
Pattern	Triaxial, 0°/90°/45°		Triaxial, 0°/90°/45°		Uniaxial	
Gage Factor	Approx. 2.0		Approx. 2.0		Approx. 2.0	
Base	φ8		φ7.5		10 × 3.7 mm	
Gage (Grid)	1 × 1.5 mm		0.5 × 1.4 mm		5 × 2.4 mm	
Resistance	120 Ω		120 Ω		350 Ω	
Pieces per Pack	5		5		10	

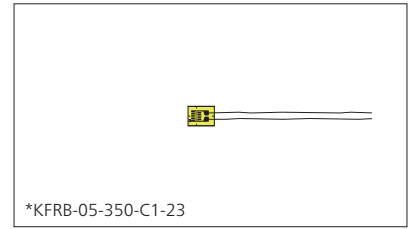
KFRB ● Uniaxial, Triaxial



*KFRB-2-350-C1-11

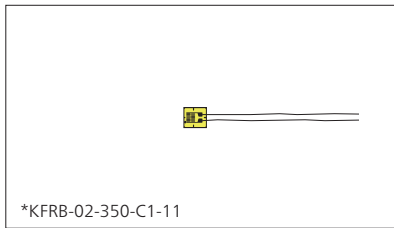


*KFRB-1-350-C1-16

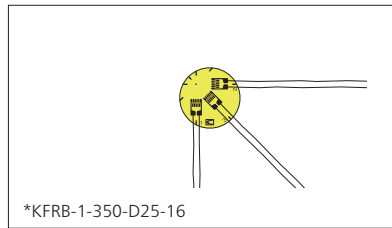


*KFRB-05-350-C1-23

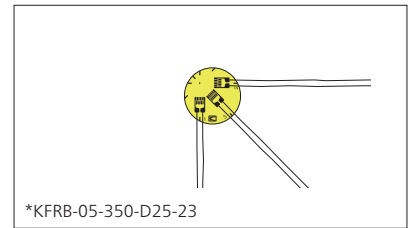
Models	KFRB-2-350-C1-	11 16 23	KFRB-1-350-C1-	11 16 23	KFRB-05-350-C1-	11 16 23
Pattern	Uniaxial		Uniaxial		Uniaxial	
Gage Factor	Approx. 2.0		Approx. 2.0		Approx. 2.0	
Base	6 × 3.7 mm		4 × 2.7 mm		3.5 × 2.7 mm	
Gage (Grid)	2 × 2.4 mm		1 × 1.5 mm		0.5 × 1.5 mm	
Resistance	350 Ω		350 Ω		350 Ω	
Pieces per Pack	10		10		10	



*KFRB-02-350-C1-11



*KFRB-1-350-D25-16



*KFRB-05-350-D25-23

Models	KFRB-02-350-C1-	11 16 23	KFRB-1-350-D25-	11 16 23	KFRB-05-350-D25-	11 16 23
Pattern	Uniaxial		Triaxial, 0°/90°/45°		Triaxial, 0°/90°/45°	
Gage Factor	Approx. 2.0		Approx. 2.0		Approx. 2.0	
Base	3 × 2.7 mm		φ8		φ7.5	
Gage (Grid)	0.2 × 1.5 mm		1 × 1.5 mm		0.5 × 1.5 mm	
Resistance	350 Ω		350 Ω		350 Ω	
Pieces per Pack	10		5		5	

When ordering, specify the model number as follows.

KFRB-□-□-□-□ **Lead-wire Cable Code**

e.g.

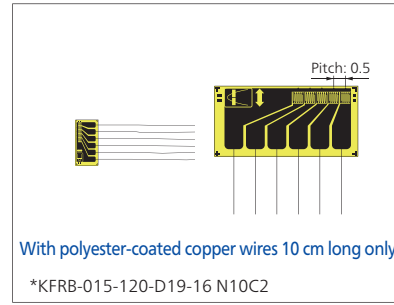
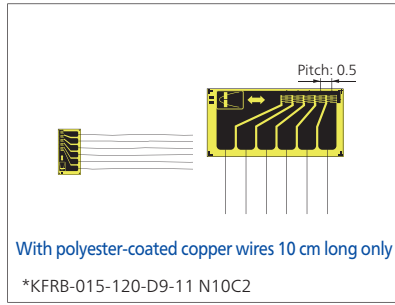
KFRB-5-120-C1-11 L1M3R

*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
3 polyester-coated copper wires 	-196 to 150°C	30 cm	N30C3
		50 cm, 1 m	N50C3
		1 m	N1M3
2 polyester-coated copper wires 	-196 to 150°C	10 cm	N10C2
		30 cm	N30C2
		50 cm, 1 m	N50C2
Silver-covered copper wires 	-196 to 150°C	25 mm	N1M2


*Gage (Grid): Length × Width

KFRB ● Uniaxial, Triaxial



Models	KFRB-015-120-D9- 11 N10C2 16 23
Pattern	Uniaxial 5-element, for concentrated stress measurement
Gage Factor	Approx. 2.0
Base	6 × 3 mm
Gage (Grid)	0.15 × 0.34 mm
Resistance	120 Ω
Pieces per Pack	5

Models	KFRB-015-120-D19- 11 N10C2 16 23
Pattern	Uniaxial 5-element, for concentrated stress measurement
Gage Factor	Approx. 2.0
Base	6 × 3 mm
Gage (Grid)	0.15 × 0.45 mm
Resistance	120 Ω
Pieces per Pack	5

Lead-wire Cable Type and Shape	Oprg. Temp.	Length
2 polyester-coated copper wires  10 cm	-196 to 150°C	10 cm

*Gage (Grid): Length × Width