



High Temperature Strain Gauges QF series

These are CE marked strain gauges (compliant to RoHS2 Directive) for high temperature use. They have joined to our well proven QF-series strain gauges with a new series name "GOBLET". These are foil strain gauges utilizing polyimide resin as the backing material. Measurement in high temperature is easily possible by using our room-temperature-curing adhesive NP-50B for bonding.

Operating temperature range -30~+200°C	Applicable adhesives NP-50B -30~+200°C
Temperature compensation range +10~+100°C	C-1/EB-2 -30~+200°C
	CN -30~+120°C

Please specify the type number as shown in the example below.

QFLAB -6 (-350) -11 -3LJC-F

Objective material for temperature compensation
(coefficient of linear thermal expansion $\times 10^{-6}/^{\circ}\text{C}$)
-11: Mild steel -17:Stainless steel -23:Aluminium -28:Magnesium

Note: The backing color of QF series gauges are the same for every material for temperature compensation.

Gauge pattern	Type	Gauge size(mm)		Backing size(mm)		Resistance Ω
		Length	Width	Length	Width	
 ● Single axis QFLGB-02 $Q(x\ 3)$ QFLAB-1 $Q(x\ 3)$	General purpose					
	QFLGB-02	0.2	1.4	3.5	2.5	120
	QFLAB-03	0.3	1.4	3	2	120
	QFLAB-1	1	1.1	4.7	2	120
	QFLAB-2	2	1.5	6.5	3	120
	QFLAB-3	3	1.7	7.7	3.5	120
	QFLAB-5	5	1.5	10	3	120
	QFLAB-6	6	2.2	11	4.3	120
	QFLAB-30	30	2	35	5	120
	FLK type with narrow backing					
for magnesium alloy						
gauge resistance 350 Ω	QFLKB-1	1	0.7	4.5	1.4	120
	QFLKB-2	2	0.9	5.5	1.5	120
	QFLKB-2-28	2	0.9	5.5	1.5	120
	QFLAB-1-350	1	1.6	4.5	3	350
	QFLAB-1W-350	1	2	4.7	3.6	350
	QFLAB-2-350	2	1.9	6	3.5	350
High gauge resistance 1000 Ω	QFLAB-3-350	3	1.6	7.2	3	350
	QFLAB-3W-350	3	3.2	8.5	5	350
	QFLAB-6-350	6	2.6	10.8	4.5	350
	QFLAB-6-1000	6	4.6	11	7	1000
 ● 0° /90° 2-axis Stacked type ● 0° /45° /90° 3-axis Stacked type	QFCAB-1	1	0.7	$\phi 4.5$		120
	QFCAB-3	3	1.7	$\phi 11$		120
	QFRAB-1	1	0.7	$\phi 4.5$		120
	QFRAB-3	3	1.7	$\phi 11$		120

Minimum order quantity is 10 strain gauges.

Dedicated leadwire recommended for QF series strain gauges (GOBLET) (made to order)

We supply various leadwires dedicated to strain gauges so as to meet our customers' requirements. Please refer to page 32 to 40 for the details of combination of a strain gauge and a leadwire. For CE marked GOBLET series strain gauges, only the leadwires using lead-free solder are available.

Type and designation of leadwires

Usage	Leadwire name	Operating temperature range of leadwire (°C)	Type number example
General purpose (without temperature change)	Parallel vinyl leadwire LJC-F	-20~+80	QFLAB-1-11-3LJC-F
General purpose	3-wire parallel vinyl leadwire LJCT-F	-20~+80	QFLAB-1-11-3LJCT-F
High temperature	3-wire twisted FEP leadwire 6FA □ LT-F	-269~+200	QFLAB-1-11-6FA3LT-F
	3-wire twisted FEP single-core leadwire 6FB □ LT-F		QFLAB-1-11-6FB3LT-F

NB: □ shows the lead wire length in meter



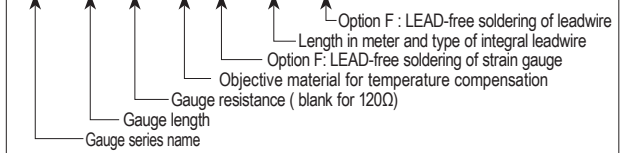
High Temperature Strain Gauges QF series

These are foil strain gauges having a polyimide resin backing, which exhibits excellent performance in high temperature up to 200°C. Stress concentration measurement gauges and shear stress measurement gauges are also available in this series. Integral leadwires using lead-free solder are available with option -F.

Operating temperature range	-20~+200°C	Applicable adhesives	
Temperature compensation range	+10~+100°C	NP-50B	-20~+200°C
		C-1/EB-2	-20~+200°C
		CN	-20~+120°C

Please specify the type number as shown in the example below.

QFCT -2 (-350) -11 (-F) -3LJC (-F)



Objective material for temperature compensation (coefficient of linear thermal expansion $\times 10^{-6}/^{\circ}\text{C}$)
 -11: Mild steel -17:Stainless steel -23:Aluminium -28:Magnesium

Note: The backing color of QF series gauges are the same for every material for temperature compensation.

Shearing • Torque • Plane

Gauge pattern	Type	Gauge size(mm)		Backing size(mm)		Resistance Ω
		Length	Width	Length	Width	
● Shearing strain measurement 	QFLT-05A-11-002LE QFLT-05B-11-002LE QFLT-1A-11-002LE QFLT-1-350A-11-002LE QFLT-1B-11-002LE QFLT-1-350B-11-002LE	0.55 0.55 1.2 1.2 1.2 1.2	0.66 0.66 1.1 1.1 1.1 1.1	4 4 5.7 5.7 5.7 5.7	1.3 1.3 2 2 2 2	120 120 120 350 120 350
● Torque measurement 	QFCT-2 QFCT-2-350	2 2	1.5 1.5	8.7 7.6	6.5 5.3	120 350
● 0° /90° 2-axis Plane type 	QFCB-2	2	1.5	X / Y axis 8.2	8	120

-002LE: Polyimide insulated gauge lead of 2-cm pre-attached

-005LE: Polyimide insulated gauge lead of 5-cm pre-attached

Minimum order quantity is 10 strain gauges.

Stress Concentration Measurement

Gauge pattern	Type	Gauge size(mm)		Backing size(mm)		Resistance Ω
		Length	Width	Length	Width	
● 5-element Single-axis 	Gauge pitch 2mm QFXV-1 QFYV-1 Gauge pitch 1mm QFBXV-04 QFBYV-06	1 1 0.4 0.6	1.3 1.4 1.3 0.8	5 5 5.4 5.3	12 12 7.4 7	120 120 120 120
● Single axis Single element cut away from the above Stress Concentration gauge 	Single axis QFBX-04 Q(x3) QFBY-06 Q(x3)	0.4 0.6 1	1.3 0.8 1.3	5.4 5.3 5	1 1 2	120 120 120

-002LE: Polyimide insulated gauge lead of 2-cm pre-attached

-005LE: Polyimide insulated gauge lead of 5-cm pre-attached

Minimum order quantity is 10 strain gauges.