



# Series "QF"

## High Temperature Strain Gauge



Compatible adhesive & Operational temperature  
 NP-50: -20~+200°C  
 C-1: -20~+200°C      CN: -20~+120°C

Operational temperature -20~+200°C  
 Temperature compensation range +10~+100°C

### HIGH TEMPERATURE USE

Gauge pattern	Type	Gauge size		Backing		Resistance in Ω	
		L	W	L	W		
<p>This gauge utilizes polyimide resin as a backing. Strain measurement in high temperature is easily realized by bonding the gauge with room temperature curing adhesive NP-50.</p> <p>•Single-element (G.F. 2.1 approx.)</p>		L : length		W : width (Unit : mm)			
 <b>QFLG-02</b>	General purpose	<b>QFLG-02-11</b>	0.2	1.4	3.5	2.5	120
 <b>QFLA-1</b>		<b>QFLA-1-11</b>	1	1.3	5.0	2.5	120
 <b>QFLA-3</b>		<b>QFLA-2-11</b>	2	1.5	6.5	3.0	120
 <b>QFLA-5</b>		<b>QFLA-3-11</b>	3	1.7	8.8	3.5	120
 <b>QFLA-6</b>		<b>QFLA-5-11</b>	5	1.5	10.0	3.0	120
 <b>QFLA-6</b>		<b>QFLA-6-11</b>	6	2.2	12.5	4.3	120
 <b>QFLA-5</b>	FLK-type with narrow gauge Width	<b>QFLK-1-11</b>	1	0.7	4.5	1.4	20
 <b>QFLK-1</b>		<b>QFLK-2-11</b>	2	0.9	5.5	1.5	120
 <b>QFLA-1-350</b>	For magnesium alloy	<b>QFLK-2-28</b>	2	0.9	5.5	1.5	120
 <b>QFLA-1-350</b>		<b>QFLA-1-350-11</b>	1	2.0	5.0	4.0	350
 <b>QFLA-2-350</b>		<b>QFLA-2-350-11</b>	2	1.9	6.1	3.5	350
 <b>QFLA-3-350</b>		<b>QFLA-3-350-11</b>	3	3.2	8.5	5.0	350
 <b>QFLA-6-350</b>		<b>QFLA-6-350-11</b>	6	2.6	12.5	4.5	350
 <b>QFLA-6-1000</b>		<b>QFLA-6-1000-11</b>	6	4.6	13.5	7.0	1000
 <b>QFCA-1</b>	90° 2-element Cross, Plane type	<b>QFCA-1-11</b>	1	1.3	7.2	7.2	120
 <b>QFCB-2</b>		<b>QFCA-3-11</b>	3	1.7	11.0	11.0	120
 <b>QFCB-2</b>		<b>QFCB-2-11</b>	2	1.5	8.2	8.0	120
 <b>QFRA-1</b>	45° /90° 3-element Rosette, Plane type	<b>QFRA-1-11</b>	1	1.3	7.2	7.2	120
		<b>QFRA-3-11</b>	3	1.7	11.0	11.0	120
 <b>QFLT-05A</b>	Single-element Shearing strain measurement	<b>QFLT-05A-11</b>	0.5	0.66	4.0	1.3	120
 <b>QFLT-05B</b>		<b>QFLT-05B-11</b>	0.5	0.66	4.0	1.3	120
 <b>QFLT-1A</b>		<b>QFLT-1A-11</b>	1	1.1	5.7	2.0	120
 <b>QFLT-1B</b>		<b>QFLT-1-350A-1</b>	1	1.1	5.7	2.0	350
		<b>QFLT-1B-11</b>	1	1.1	5.7	2.0	120
		<b>QFLT-1-350B-1</b>	1	1.1	5.7	2.0	350

(Not actual size shown) (x3)  
 Each package contains 10 gauges.

Gauge leads -002LE: Polyimide 2cm pre-attached



## STRESS CONCENTRATION MEASUREMENT

Gauge pattern	Type	Gauge size		Backing		Resistance in $\Omega$	
		L	W	L	W		
L : length W : width (Unit : mm)							
<ul style="list-style-type: none"> <li>•5-element Single-axis (G.F. 2.1 approx.) X and Y-axis</li> </ul>	5-element Single-axis [gauge pitch 2mm]	QFXV-1-11 -002LE QFYV-1-11	1	1.3	5.0	12.0	120
			1	1.4	5.0	12.0	120
	5-element Single-axis [gauge pitch 1mm]	QFBXV-04-11 -005LE QFBYV-06-11	0.4	1.3	5.4	7.4	120
			0.6	0.8	5.3	7.0	120
<ul style="list-style-type: none"> <li>•Single-element (G.F. 2.1 approx.) Single element cut away from Stress Concentration gauge</li> </ul>	Single- element	QFBX-04-11 -005LE QFBY-06-11	0.4	1.3	5.4	1.0	120
			0.6	0.8	5.3	1.0	120
		QFLX-1-11 -002LE	1	1.3	5.0	2.0	120
		Gauge leads	-002LE: Polyimide 2cm pre-attached				
			-005LE: Polyimide 5cm pre-attached				
Each package contains 10 gauges.							

## TORQUE MEASUREMENT

Gauge pattern	Type	Gauge size		Backing		Resistance in $\Omega$	
		L	W	L	W		
L : length W : width (Unit : mm)							
<ul style="list-style-type: none"> <li>•90°2-element Cross (G.F. 2.1 approx.)</li> </ul>	Torque measurement	QFCT-2-11 QFCT-2-350-11	2	1.5	8.7	6.5	120
			2	1.7	7.6	5.3	350
Each package contains 10 gauges.							

## Leadwire-integrated QF series (made-to-order)

Operational temperature range varies with different materials of lead wire outer sheath. Before use, be sure of temperature range for lead wire.

Lead wires	Operational temperature range	Gauge type exemplified	Colors of Lead wire
2-wire Parallel vinyl wire	-20~+80°C	L: QFLA-1-11-3LJC	Grey
3-wire Parallel vinyl wire	-20~+80°C	LT: QFLA-1-11-3LJCT	Blue stripe (Independent wire)
Crosslinked vinyl sheath wire	-10~+100°C	LJRTA: QFLA-1-11-3LJRTA	Red-Green-Black
3-wire strand FEP sheath wire	-269~+200°C	6F: QFLA-1-11-6FA-3LT	Red-Green-Blue (7-core 0.18mm-dia.)
		6F: QFLA-1-11-6FB-3LT	Red-Green-Blue (Single-core 0.2mm-dia.)

\* Red is independent wire.

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