

# HIGH TEMPERATURE series QF STRAIN GAUGES

Suffix code for temperature compensation materials

-11: Mild steel -17: Stainless steel -23: Aluminium -28: Magnesium

Applicable adhesives

Backing colors are all the same with different materials For ordering, the above suffix code should be added to the basic gauge type.

Operating temperature range




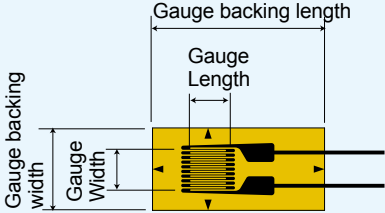





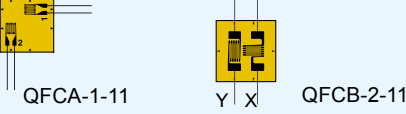
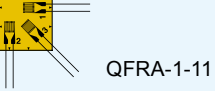
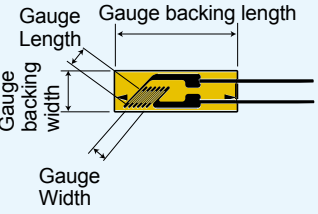




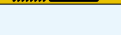
-20°C  +200°C



Temperature compensation range

+10°C  +100°C

CN	-20 ~ +120°C
NP-50B	-20 ~ +200°C
C-1/EB-2	-20 ~ +200°C

## GENERAL PURPOSE/SHEARING STRESS MEASUREMENT

Gauge pattern	Basic type	Gauge size L W	Backing L W T	Resistance $\Omega$
<p>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.</p> <p></p> <p> </p>				
Single element : QFLG/QFLA/QFLK				
Each package contains 10 gauges.				
 <p>General purpose </p> <p></p>	QFLG-02-11	0.2 1.4	3.5 2.5	120
	QFLA-1-11	1 1.3	5 2.5	120
	QFLA-2-11	2 1.5	6.5 3	120
	QFLA-3-11	3 1.7	7.7 3.5	120
	QFLA-5-11	5 1.5	10 3	120
	QFLA-6-11	6 2.2	11 4.3	120
<p>FLK type with narrow gauge base </p>	QFLK-1-11	1 0.7	4.5 1.4	120
	QFLK-2-11	2 0.9	5.5 1.5	120
for Magnesium	QFLK-2-28	2 0.9	5.5 1.5	120
<p>High gauge resistance </p> <p></p>	QFLA-1-350-11	1 1.6	4.5 3	350
	QFLA-2-350-11	2 1.9	6 3.5	350
	QFLA-3-350-11	3 1.6	7.2 3	350
	QFLA-6-350-11	6 2.6	10.8 4.5	350
	QFLA-6-1000-11	6 4.6	11 7	1000
0°/90° 2-element plane Rosette QFCA				
Each package contains 10 gauges.				
	QFCA-1-11	1 1.3	7.2 7.2	120
	QFCA-3-11	3 1.7	11 11	120
	QFCB-2-11	X and Y axes 2 1.5	8.2 8	120
0°/45°/90° 3-element plane Rosette QFRA				
Each package contains 10 gauges.				
	QFRA-1-11	1 1.3	7.2 7.2	120
	QFRA-3-11	3 1.7	11 11	120
Single element Shearing strain measurement				
Each package contains 10 gauges.				
 <p>(x 3) </p> <p>(x 3) </p> <p>(x 3) </p> <p>(x 3) </p> <p>(x 3) </p>	QFLT-05A-11-002LE	0.5 0.66	4 1.3	120
	QFLT-05B-11-002LE	0.5 0.66	4 1.3	120
	QFLT-1A-11-002LE	1.2 1.1	5.7 2	120
	QFLT-1-350A-11-002LE	1.2 1.1	5.7 2	350
	QFLT-1B-11-002LE	1.2 1.1	5.7 2	120
	QFLT-1-350B-11-002LE	1.2 1.1	5.7 2	350
N.B. -002LE: Polyimide leadwire of 2-cm pre-attached				

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

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## HIGH TEMPERATURE STRAIN GAUGES series QF

Applicable adhesives

CN	-20 ~ +120°C
NP-50B	-20 ~ +200°C
C-1/EB-2	-20 ~ +200°C

### STRESS CONCENTRATION MEASUREMENT


Gauge pattern	Basic type	Gauge size		Backing			Resistance $\Omega$
		L	W	L	W	T	
<div>CE</div> <div>5-element single-axis : QFXV/QFYV/QFBXV/QFBYV</div> <div>Each package contains 10 gauges.</div>							
<div>QFXV-1-11-002LE</div> <div>Gauge pitch</div> <div></div> <div>X-axis magnified</div> <div></div>	<div>QFYV-1-11-002LE</div> <div>Gauge pitch 2mm</div> <div></div> <div>Y-axis magnified</div> <div></div>	QFXV-1-11-002LE	1	1.3	5	12	120
		QFYV-1-11-002LE	1	1.4	5	12	120
N.B. -002LE: Polyimide insulated gauge lead of 2-cm pre-attached							
<div>QFBXV-04</div> <div></div> <div>magnified</div> <div></div>	<div>QFBYV-06</div> <div>Gauge pitch 1mm</div> <div></div> <div>magnified</div> <div></div>	QFBXV-04-11-005LE	0.4	1.3	5.4	7.4	120
		QFBYV-06-11-005LE	0.6	0.8	5.3	7	120
N.B. -005LE: Polyimide leadwire of 5-cm pre-attached							
<div>Single element : QFBX/QFBY/QFLX</div> <div>Single element cut away from the above Stress Concentration gauge.</div> <div>Each package contains 10 gauges.</div>							
<div>QFBX-04</div> <div></div> <div>(x 3)</div>	<div>QFBY-06</div> <div></div> <div>(x 3)</div>	QFBX-04-11-005LE	0.4	1.3	5.4	1	120
		QFBY-06-11-005LE	0.6	0.8	5.3	1	120
<div>QFLX-1</div> <div></div> <div>(x 3)</div>		QFLX-1-11-002LE	1	1.3	5	2	120
N.B. -005LE: Polyimide leadwire of 5-cm pre-attached							
N.B. -002LE: Polyimide leadwire of 2-cm pre-attached							
<div>Torque measurement : QFCT</div> <div>Each package contains 10 gauges.</div>							
<div>QFCT-2-11</div> <div></div>	<div>QFCT-2-350-11</div> <div></div>	QFCT-2-11	2	1.5	8.7	6.5	120
		QFCT-2-350-11	2	1.7	7.6	5.3	350
Recommendable integral leadwire for QF series							

Recommendable integral leadwire for QF series

Application	Leadwires	Operating temperature (°C)	Leadwire code exemplified
High temperature	3-wire twisted fluorinated resin (FEP) 6FA_LT-F (No Tetra-Etch required for surface preparation) 3-wire twisted fluorinated resin (FEP) 6FB_LT-F	-269 ~ +200	QFLA-1-11-6FA3LT-F QFLA-1-11-6FB3LT-F

Example of type number designation.

QFLA-5 -11 -3LJC-F/-3LJCT-F (2-wire/3-wire)

  
 Length in meter and type of integral leadwire(\*1) CE compliant  
 Self-temperature-compensation number (\*2)  
 Basic strain gauge type

\*1: Not mentioned for gauges without integral leadwire.

\*2: QF-series gauges are available for self-temperature-compensation with -11 (Mild steel of 11ppm/°C)

For the following numbers, contact TML or your local representative.

-17: Stainless steel, Copper alloy (17ppm/°C)  
 -23: Aluminium (23ppm/°C)