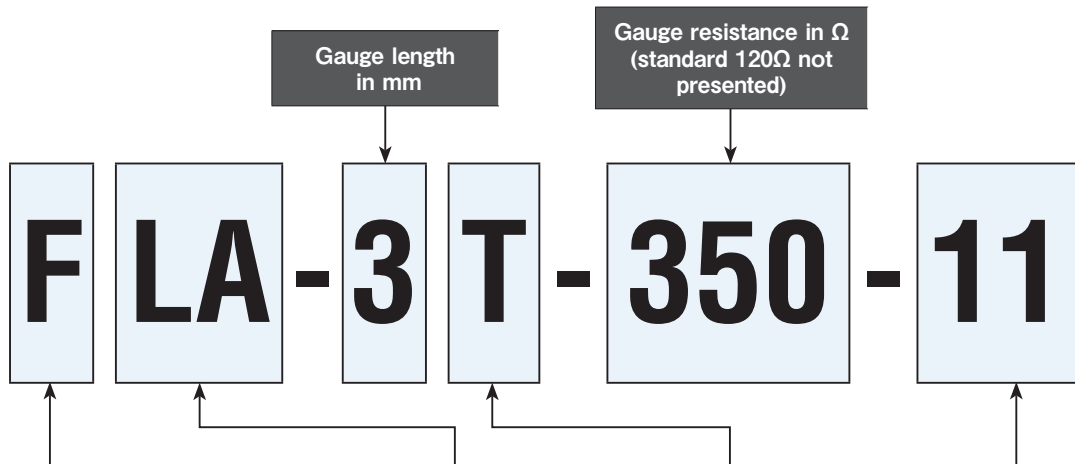




STRAIN GAUGE CODING SYSTEM



Gauge series	Applications	Pattern configuration (*1)		Functions (*2)	Applicable gauge
F	General purpose Residual stress, Stress concentration, Chain gauge	L/LA/LK/LX/LG/BX/BY LAB/LKB/LGB GOBIET	Single-axis	T Integrated with thermocouple	Applicable to most of strain gauges
WF	Waterproof construction	C/CA/LC/CS/CB	2-axis Rosette (0°/90°)	A Left 45°	QFLT
PF	Concrete use, Polyester foil gauge	CAB GOBIET	2-axis Rosette (0°/90°)	B Right 45°	QFLT
P	Concrete use, Polyester wire gauge	R/LR/RA/RAS/RS	3-axis Rosette (0°/45°/90°)	W Large width	FLAB, QFLAB, Some of 350Ω strain gauges
FLM/WFLM	Concrete use, Metal backing strain gauge	RAB GOBIET	3-axis Rosette (0°/45°/90°)	(*2) Not indicated for general strain gauges	
MF/QMF	Magnetic field use	XV/YV/BXV/BYV	5-element Single		
PMF	Concrete use, Embedment type strain gauge	CV	5-element Rosette (0°/90°)		
YEF/YF/YHF	Post-yield strain (Large strain) measurement	CT	Torque		
PMFLS	Asphalt use, Embedment type strain gauge	LT	45° Single-axis		
LF	Low elastic material use, Wood, Gypsum	(*1) Not always coded			
PFLW/PLW	Low elastic material use, Wood, Gypsum	0°/90° 2-axis			
GF	Low elastic material use, Plastics	0°/45°/90° 3-axis			
BF/UBF	Composite material use				
DSF	High endurance use, Fatigue test				
CF	Cryogenic temperature use				
CEF	Wide range temperature use				
QF/ZF/EF	High temperature use				
SFA	Stress measurement				
AW	Weldable strain gauge				
BTM	Bolt axial strain measurement				
DD	One-side gauge				
FAC	Crack detection gauge				
TF	Strain gauge type temperature measurement				
KM	Concrete/Asphalt embedment use, strain transducer				
FGMH	Frictional Strain Checker				
FGAH	Frictional Axial strain transducer				
FGDH	Frictional Torque Sensor System				

Compensation material ppm/° C (*3)			
3	Composite material	17	Stainless steel/Copper alloy
	Ceramic (Si ₃ N ₄)	2.6-3.3	SUS 304 16.2
	CFRP	3 - 5	SUS 310 15.8
5	Composite material		SUS 316 16
	Ceramic (SiC)	4.6	SUS 321 16.7
	CFRP	3 - 5	Copper 16.7
8	Composite material		Beryllium copper 16.6
	Glass	7.9	Brass 16.7
	Titanium	8.9	Bronze 17
	Titanium alloy (Ti-6Al-4V)	8.8	Constantan 14.9
11	Mild steel	23	Aluminium
	Mild steel (0.1-0.2C)	11.8	Aluminium 23.4
	Hard steel (0.4-0.5C)	11.2	Aluminium 2024-T4 23
	Cast iron	10.5	Lead and its alloy 29
	Hastelloy-276	11.2	Gypsum 25
	Inconel 600	13.3	Polyimide 20-30
	Inconel 750	12.1	28 Magnesium
	Monel	13.5	Magnesium alloy 27
	SUS 630 (17-4PH)	10.8	50 Plastics
	SUS 631 (17-7PH)	10.6	Epoxy (Cast) 45-65
	Concrete	7-13	70 Plastics
			Acrylics 70
			ABS 74
			Polyacetal (POM) 80
			Polycarbonate (PC) 66-70
			Polystyrene (PS) 60-80

(*3) Indicated only for self-temperature-compensated strain gauges. For other materials, contact TML or your local representative.

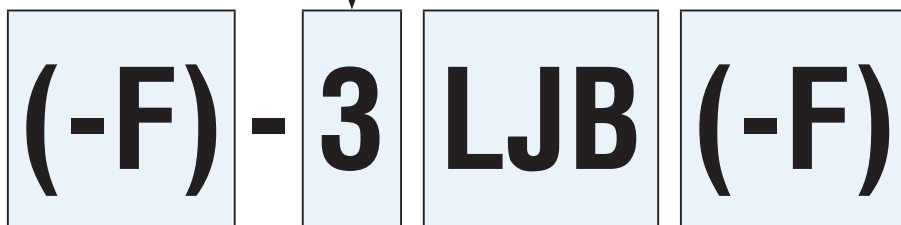
The following strain gauges are CE marked.

- For strain gauge without integral lead wire
- Strain gauge with "-F" appended to the type number
- Strain gauge indicated with "CE" mark in this catalog

Length of leadwire pre-attached (*4)	
with 2-wire	Standard length 1, 3, 5 m
with 3-wire	Standard length 3, 5 m

(*4) These strain gauges are available with integral leadwires attached. (made to order)

Option -F
The leadwire pre-attachment is available using lead-free solder. For the leadwire pre-attached strain gauges using lead-free solder, the option code "-F" is appended to the type number to discriminate them from conventional leadwire pre-attached strain gauges using leaded solder.



Option -F
Strain gauges using leaded solder as standard specifications are optionally available with lead-free solder used. The option code "-F" is appended to the type number of lead-free solder used gauges to discriminate them from conventional strain gauges using leaded solder. The option code "-F" is omitted for strain gauges with CE marking such as GOBLET series.

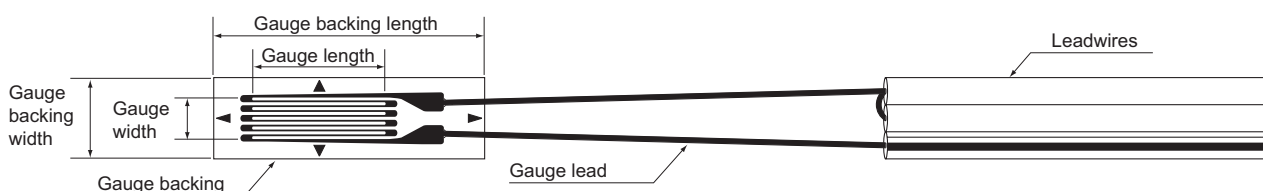
Suffix codes of pre-attached leadwires	Option -F for CE marking
LJB / LJB-F	0.08mm ² paralleled vinyl leadwire
LJBT / LJBT-F	0.08mm ² 3-wire parallel vinyl leadwire
LJC / LJC-F	0.11mm ² paralleled vinyl leadwire
LJCT / LJCT-F	0.11mm ² 3-wire paralleled vinyl leadwire
LJD	0.3mm ² paralleled vinyl leadwire
LJDT	0.3mm ² 3-wire paralleled vinyl leadwire
LH	0.02mm ² twisted vinyl leadwire
LHT	0.02mm ² 3-wire twisted vinyl leadwire
LS	3.2mm-dia. shielded vinyl leadwire
LTSA / LTSA-F	3mm-dia. shielded 3-wire vinyl leadwire
LTSB / LTSB-F	5mm-dia. shielded 3-wire vinyl leadwire
LQM / LQM-F	0.08mm ² polypropylene 4-wire paralleled leadwire with modular plug
LXT / LXT-F	3-wire parallel special vinyl leadwire
LJRA	2-wire twisted cross-linked vinyl leadwire
LJRTA	3-wire twisted cross-linked vinyl leadwire
LJQTA	3-wire twisted cross-linked polyethylene leadwire
TLJBT / TLJBT-F	Temperature-integrated 3-wire paralleled vinyl leadwire
TLQ	Temperature-integrated 4-wire paralleled vinyl leadwire
6FB□TLT / 6FB□TLT-F	Temperature-integrated 3-wire twisted fluorinated resin (FEP) single-core leadwire
LP / LP-F	0.14mm / 0.18mm polyurethane leadwire
LU / LU-F	0.14mm / 0.18mm polyester leadwire
LE / LE-F	0.14mm / 0.18mm polyimide leadwire
6FA□LT / 6FA□LT-F	3-wire twisted fluorinated resin (FEP) leadwire
6FAS□LT / 6FAS□LT-F	3-wire twisted fluorinated resin (FEP) leadwire (Surface treatment (tetra-etching) is not required)
6FB□LT / 6FB□LT-F	3-wire twisted fluorinated resin (FEP) single-core leadwire
6FC□LT / 6FC□LT-F	3-wire twisted fluorinated resin (FEP) leadwire
6FCS□LT / 6FCS□LT-F	3-wire twisted fluorinated resin (FEP) leadwire (Surface treatment (tetra-etching) is not required)
6FD□LTS	1.5mm-dia. 3-wire twisted fluorinated resin (FEP) leadwire with shield
4FA□LT / 4FA□LT-F	3-wire twisted fluorinated resin (PTFE) leadwire
4FB□LT / 4FB□LT-F	3-wire twisted fluorinated resin (PTFE) single-core leadwire

Color coding for test specimen

Most of our strain gauges are self-temperature-compensated. The backings of F, WF and CF series strain gauges are classified into three colors according to the objective material for measurement.

Objective material for measurement	Coefficient of linear thermal expansion	Backing color	Type number (example)
Mild steel	11×10 ⁻⁶ /°C	Red	FLAB-3-11
Stainless steel Copper alloy	17×10 ⁻⁶ /°C	Brown	FLAB-3-17
Aluminium	23×10 ⁻⁶ /°C	Green	FLAB-3-23

Name of each part of strain gauge



For further information on combination use with strain gauges, refer to pages 39~40.