








Strain Gage Selection Chart for Each Measurement Application.




Metal





General Stress Measurement

Measurement Environment	Model	See age
Under general environment	KFG  General-purpose foil strain gages	1-19
Max. elongation 5%	KFG  General-purpose foil strain gages	1-19
Usable at up to 150°C	KFR  Foil strain gages	1-27
Less coating treatment required	KFW  Waterproof foil strain gages	1-29
Less coating treatment required	KFWS  Small-sized waterproof foil strain gage	1-30
Simply waterproofed, long-term stability	KCW  Weldable waterproof foil strain gages	1-30
Simply waterproofed, rugged	KCH  Foil strain gages with protector	1-45


Applicable to Sensing Element of Transducers

Measurement Environment	Model	See age
Uniaxial, High-resistance 350/500/1000Ω	KFG  C1 General-purpose foil strain gages	1-24
Uniaxial, for shearing strain	KFG-C15,16  C15 General-purpose foil strain gages	1-23
Biaxial, torque measurement	KFG-D2,31  D2 General-purpose foil strain gages	1-21


Residual Stress Measurement

Measurement Environment	Model	See age
Installation by cutting method	KFG T-F7  General-purpose foil strain gages	1-26
Installation by boring method	KFG-D28  General-purpose foil strain gages	1-26

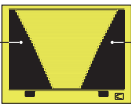
Measurement under hydrogen gas environment

Measurement Environment	Model	See age
Measurement under high-pressure hydrogen gas environment	KFV  Foil Strain Gage for Hydrogen Gas Environment	1-44




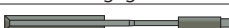

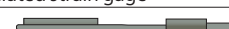



Internal Strain Measurement

Measurement Environment	Model	See age
Applicable where a strain gage cannot be bonded inside a box structure	KFF  Foil strain gages for bending strain measurement	1-44


Crack Gages

Measurement Environment	Model	See age
Measurement of the progress and propagation speed of crack	KV  Crack gages	1-46


Measurement at High-Temperatures

Measurement Environment	Model	See page
Up to 950°C	KHCX  Encapsulated strain gages	1-38
Up to 800°C	KHCV  Encapsulated strain gages	1-38
Up to 750°C	KHCR  Encapsulated strain gages	1-38
Up to 750°C	KHCS  Encapsulated strain gages	1-38
Up to 650°C	KHCM  Encapsulated strain gage	1-38
Up to 550°C	KHC  Encapsulated strain gages	1-38
Up to 350°C	KFU  High-temperature foil strain gages	1-39
Up to 350°C	KH  High-temperature foil strain gages	1-39
Up to 250°C	KFH  High-temperature foil strain gages	1-40




Measurement at Low-Temperature

Measurement Environment	Model	See page
Measurement at LHe temperature (-269°C)	KFL  Low-temperature foil strain gages	1-41

Measurement under High Electric Field


Measurement Environment	Model	See page
Measurement under high electric field accompanying induction noise	KFS  Shielded foil strain gages	1-43

Applicable to Ultra-Small Strain Measurement and Highly-Sensitive Element of Transducers

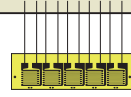
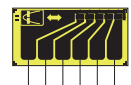
Measurement Environment	Model	See page
Measurement of <100µm/m under less temperature change environment	KSP  Semiconductor strain gages	1-36
Measurement of <100µm/m under less temperature change environment	KSN  Self-temperature-compensation semiconductor strain gages	1-36
Measurement of <100µm/m under less temperature change environment	KSPL  Ultra linear semiconductor gages	1-37






Impact Strain Measurement

Measurement Environment	Model	See page
Enable measurement with no amplifier used	KSPH  High-output semiconductor gages	1-37

Concentrated Stress Measurement







Measurement Environment	Model	See page
Measurement of stress distribution at 8mm to 12mm intervals	KFG-D9,19,39  Element to element 2mm or 3mm	1-23
Measurement of stress distribution at 2mm intervals	KFR-D9,19  Interval 0.5mm	1-28

Measurement under High Magnetic Field

Measurement Environment	Model	See page
Measurement under DC magnetic field at low temperature	KFL  Low-temperature foil strain gages	1-41
Measurement under DC magnetic field at middle temperature	KFR  Foil strain gages	1-28
Measurement under DC magnetic field at high temperature	KFH  High-temperature foil strain gages	1-40
Measurement under DC/AC magnetic field	KFN Non-inductive foil strain gages	1-43






Concrete, Mortar, etc.

General stress Measurement

Measurement Environment	Model	See page
Less coating treatment required	KFW  Waterproof foil strain gages	1-29
Less coating treatment required	KFWS  Small-sized waterproof foil strain gages	1-30
Surface strain meas. (small aggregate)	KFG  General-purpose foil gages 10 to 30-mm long	1-31
Surface strain meas. (large aggregate)	KC  Wire strain gages 60 ~ 120mm	1-31
Internal strain measurement	KM  Embedded strain gages	1-32
Self-shrinkage strain measurement	KMC  Concrete-embedded strain gages	1-32



Composite Materials-Printed Boards-Plastics

General Stress Measurement

Measurement Environment	Model	See page
Applicable linear expansion coefficient 1 to $9 \times 10^{-6}/^{\circ}\text{C}$	KFRP  Foil strain gages for composite materials	1-33
Applicable linear expansion coefficient $13 \times 10^{-6}/^{\circ}\text{C}$	KFRS  Foil strain gages for printed boards	1-34
Applicable linear expansion coefficient $65 \times 10^{-6}/^{\circ}\text{C}$	KFP  Foil strain gages for plastics	1-35
For polyurethane and rubber	KFML  Foil strain gage for low-elasticity materials	1-35
For strain measurement inside resin	KMP  Embedded gage	1-45


Metal-Plastics-Lumber and Rubber

High-Elongation Gages

Measurement Environment	Model	See page
Max. elongation approx. 20%-30%	KFEM  Ultra-high-elongation foil strain gages	1-42
Max. elongation approx. 15%	KFEL  High-elongation foil strain gages	1-42


Lumber, Plaster, Paper, etc.

General Stress Measurement

Measurement Environment	Model	See page
Lumber (applicable linear expansion coefficient $5 \times 10^{-2}/^{\circ}\text{C}$)	KFG  General-purpose foil strain gages	1-20

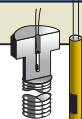
Various Materials

General Stress Measurement

Measurement Environment	Model	See page
Simultaneous measurement of strain and temperature	KFGT  Foil strain gages with temperature sensor	1-27

Metal Bolts

Measurement of Axial Tension of Bolts

Measurement Environment	Model	See page
Internal strain measurement	KFG-C20  General-purpose foil strain gages	1-26

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