

Encapsulated Strain Gages

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Encapsulated strain gages are 2-element, temperature compensation gages applicable at high temperatures. The capsule has active and dummy gages embedded in a metal tube filled with insulation (MgO). The leadwire cable is composed of an MI cable and a soft cable, 3 conductors each, for easy handling. Also available is a bridge adapter which is connected directly to the terminal of the soft cable.

Extension of MI Cable/Soft Cable Extension of MI Cable

The MI cable can be extended to 0.5, 1, 1.5, 2 m and thereafter by every 1 m step to 30 m. Since the MI cable resistance of the KHCD gage is as high as approximately 40 /m reciprocated, its extension considerably reduces the gage factor. Thus, it is recommended to extend the soft cable.

Extension of Soft Cable

The soft cable can be extended up to 30 m by every 1 m step.

Bridge Adapter

The bridge adapter has the most suitable temperature compensation resistor for the operating temperature range mounted to the board. It is connected to the soft cable when delivered. It eliminates any possible erroneous wiring and ensures labor-saving. (excluding the KHCD gage).

When ordering, suffix the code for the lengths of MI cable and soft cable to the model number with a space in between.

Examples:

1) KHCS-10-120-G12-11 C6M10

The gage is delivered with MI cable 6 m long and soft cable 10 m long. (C6 denotes MI cable 6 m long and M10, soft cable 10 m long.)

2) KHCS-10-120-G12-11 C6M10V

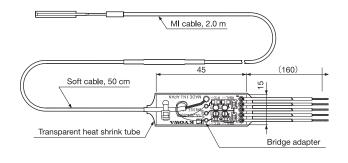
The gage is delivered with bridge adapter pre-attached (except for KHCD). (V after cable codes denotes bridge adapter pre-attached.)

3) KHCS-10-120-G12-11 C6M10F

The gage is delivered with compression fitting (cable extractor; except for KHCD). (F after cable codes denotes compression fitting pre-attached.)

4) KHCS-10-120-G12-11 C6M10FV

The gage is delivered with both bridge adapter and compression fitting pre-attached (except for KHCD).



Pattern, Gage Resistance, Gage Factor	Dimensions (mm)			
	Model	Grid Length Width	Base Length Width	Remarks
950°C (Static/dynamic)	Resistance : 120Ω, Gage factor (950°C)			'
●KHCX Encapsulated Gage	Installation Method and	Spot welding:	-196 to 950°C	
Jniaxial, 2-element, emperature-compensation type	Operating Temperature Range The following models with the standa with MI cable 2m long and soft cable			delivered
	KHCX-10-120-G13-11 C2MV KHCX-10-120-G13-13 C2MV	10 —	20 3	Minimum radia
B00°C (Dynamic) ■KHCV Encapsulated Gage	Resistance : 120Ω, Gage factor (800°C)	: Approx. 1.2, Ma	terial : Inconel 600	(NCF 600)
Uniaxial, 1-element active	Installation Method and Operatir Temperature Range	ng Spot welding	g: 25 to 800°C	
	The following models with the standa with MI cable 2m long and soft cable KHCV-5-120-G17 C2MV			Minimum radial
	KHCV-5-120-G17 G2MV	5 –	10 3	curvature of R15
750°C (Static/dynamic) • KHCR Encapsulated Gage Uniaxial, 2-element, semperature-compensation type	Resistance: 120Ω, Gage factor (750°C) Installation Method and Operatir Temperature Range The following models with the standard	ng Spot welding	g: 25 to 750°C e code C2M are	
	with MI cable 2m long and soft cable	e 0.5m long pre-a	attached	
	KHCR-5-120-G16-11 C2MV KHCR-5-120-G16-13 C2MV KHCR-5-120-G16-16 C2MV	5 –	10 3	Minimum radial curvature of R1
KHCS Series	Resistance : 120Ω, Gage factor (750°C)			,
Encapsulated Gages for Static Uniaxial, 2-element,	Installation Method and Operating The following models with the standard	Temperature Ra	nge Spot weldir e code C2M are	ng -196 to 750
●KHCS Series Encapsulated Gages for Static Uniaxial, 2-element,	Installation Method and Operating	Temperature Ra	nge Spot weldir e code C2M are	ng -196 to 750' delivered with Minimum radial
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C)	Temperature Rai ard leadwire cabl is m long pre-attact 10 – : Approx. 1.8 for	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr	ng -196 to 750' delivered with Minimum radial curvature of R20
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C KHCM Series Encapsulated Gages for Static Uniaxial, 2-element,	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa	Temperature Rai ard leadwire cabl is m long pre-attact 10 – : Approx. 1.8 for age length 5 mm, N Temperature Rai ard leadwire cabl	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are	ng -196 to 750 delivered with Minimum radial curvature of R20 nn, 00 (NCF 600) ng -196 to 650
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C KHCM Series Encapsulated Gages for Static Uniaxial, 2-element,	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5	Temperature Rai ard leadwire cable in long pre-attact 10 - : Approx. 1.8 for age length 5 mm, Notemperature Rai ard leadwire cable in long pre-attact	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are	n, consider the constraint of
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C KHCM Series Encapsulated Gages for Static Uniaxial, 2-element,	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa	Temperature Rai ard leadwire cabl in long pre-attact 10 — : Approx. 1.8 for age length 5 mm, Note the cabl in long pre-attact leadwire cabl in long pre-attact 10 m long pre-att	nge Spot weldinge code C2M are ched. 20 3 gage length 10 mm Material : Inconel 6 nge Spot weldinge code C2M are ched.	n, 00 (NCF 600) g —196 to 650 delivered with Minimum radial curvature of R20 n, 00 (NCF 600) g —196 to 650 delivered with Minimum radial curvature of R18 Minimum radial
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C KHCM Series Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type 550°C (Dynamic) 500°C(Static) KHC Encapsulated Gage	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCM-5-120-G15-(11, 13, 16) C2M KHCM-10-120-G15-(11, 13, 16) C2M	Temperature Rai ard leadwire cabl is m long pre-attact 10 - : Approx. 1.8 for age length 5 mm, No Temperature Rai ard leadwire cabl is m long pre-attact IV 5 - MV 10 -	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are ched. 10 3 20 3	ng –196 to 750 delivered with Minimum radial curvature of R20 n, 00 (NCF 600) ng –196 to 650 delivered with Minimum radial curvature of R18 Minimum radial curvature of R20
Encapsulated Gages for Static Uniaxial, 2-element, remperature-compensation type Oynamic Strain Measurement at 650°C OKHCM Series Encapsulated Gages for Static Uniaxial, 2-element, remperature-compensation type OKHC Encapsulated Gage Uniaxial, 2-element, temperature-compensation type OKHC Encapsulated Gage	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCM-5-120-G15-(11, 13, 16) C2M KHCM-10-120-G15-(11, 13, 16) C2M	Temperature Rai ard leadwire cabl is m long pre-attact in long pre-att	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are ched. 10 3 20 3	ng –196 to 750' delivered with Minimum radial curvature of R20 n, 00 (NCF 600) ng –196 to 650' delivered with Minimum radial curvature of R10 Minimum radial curvature of R20 Minimum radial curvature of R20
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C OKHCM Series Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type OKHC Encapsulated Gage Uniaxial, 2-element, temperature-compensation type OKHC Encapsulated Gage	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCM-10-120-G15-(11, 13, 16) C2M KHCM-10-120-G15-(11, 13, 16) C2M Installation Method and Operating Compensation type The following models with the standa MI cable 2 m long and soft cable 0.5 KHC-20-120-G8-11 C2MV KHC-20-120-G8-16 C2MV	Temperature Rai ard leadwire cabl is m long pre-attact in long pre-att	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are ched. 10 3 20 3	ng –196 to 750' delivered with Minimum radial curvature of R20 n, 00 (NCF 600) ng –196 to 650' delivered with Minimum radial curvature of R10 Minimum radial curvature of R10 Minimum radial curvature of R20 Minimum radial curvature of R20
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C OKHCM Series Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type OKHC Encapsulated Gage Uniaxial, 2-element, temperature-compensation type Topic Compensation type OKHC Encapsulated Gage Uniaxial, 2-element, temperature-compensation type Topic Compensation type	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCM-10-120-G15-(11, 13, 16) C2M KHCM-10-120-G15-(11, 13, 16) C2M Installation Method and Operating Compensation type The following models with the standa MI cable 2 m long and soft cable 0.5 KHC-20-120-G8-11 C2MV	Temperature Rai ard leadwire cable in long pre-attact	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are ched. 10 3 20 3	ng –196 to 750' delivered with Minimum radial curvature of R20 n, 000 (NCF 600) ng –196 to 650' delivered with Minimum radial curvature of R10 Minimum radial curvature of R20 delivered with
Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C KHCM Series Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Strain Measurement at 650°C KHCM Series Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCM-5-120-G15-(11, 13, 16) C2M KHCM-10-120-G15-(11, 13, 16) C2M Installation Method and Operating Compensation type The following models with the standa MI cable 2 m long and soft cable 0.5 KHC-20-120-G8-11 C2MV KHC-20-120-G8-16 C2MV KHC-10-120-G8-16 C2MV KHC-10-120-G8-16 C2MV	Temperature Rai ard leadwire cabl is m long pre-attace 10 — : Approx. 1.8 for age length 5 mm, N Temperature Rai ard leadwire cabl is m long pre-attace V 5 — MV 10 — Temperature Rai ard leadwire cabl is m long pre-attace v 20 —	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are ched. 10 3 20 3 nge Spot weldir e code C2M are ched. 30 4	ng –196 to 750 delivered with Minimum radial curvature of R20 n, 00 (NCF 600) ng –196 to 650 delivered with Minimum radial curvature of R10 Minimum radial curvature of R20 delivered with Minimum radial curvature of R20
●KHCS Series Encapsulated Gages for Static Uniaxial, 2-element, temperature-compensation type Dynamic Strain Measurement at 650°C ●KHCM Series	Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCS-10-120-G12-11 C2MV KHCS-10-120-G12-13 C2MV KHCS-10-120-G12-16 C2MV Resistance : 120Ω, Gage factor (650°C) Gage factor (650°C) : Approx. 1.4 for ga Installation Method and Operating The following models with the standa MI cable 2 m long and soft cable 0.5 KHCM-5-120-G15-(11, 13, 16) C2M KHCM-10-120-G15-(11, 13, 16) C2M Installation Method and Operating Compensation type The following models with the standa MI cable 2 m long and soft cable 0.5 KHC-20-120-G8-11 C2MV KHC-20-120-G8-16 C2MV KHC-10-120-G8-16 C2MV KHC-10-120-G8-16 C2MV	Temperature Rai ard leadwire cable in long pre-attact 10 — : Approx. 1.8 for age length 5 mm, Note that is a leadwire cable in long pre-attact 10 — Temperature Rai ard leadwire cable in long pre-attact 10 — Temperature Rai ard leadwire cable in long pre-attact 10 — ard leadwire cable in long pre-attact 10 — ard leadwire cable in long pre-attact 10 —	nge Spot weldir e code C2M are ched. 20 3 gage length 10 mr Material : Inconel 6 nge Spot weldir e code C2M are ched. 10 3 20 3 nge Spot weldir e code C2M are ched. 30 4 16.5 4	ng –196 to 750 delivered with Minimum radial curvature of R2 n, 00 (NCF 600) ng –196 to 650 delivered with Minimum radial curvature of R1 Minimum radial curvature of R2 delivered with Minimum radial curvature of R2 Minimum radial curvature of R2 Minimum radial curvature of R2

KHC-20-120-G9-16 C2MV KHC-10-120-G9-11 C2MV

KHC-10-120-G9-16 C2MV

10

Minimum radial curvature of R20

5

16.5