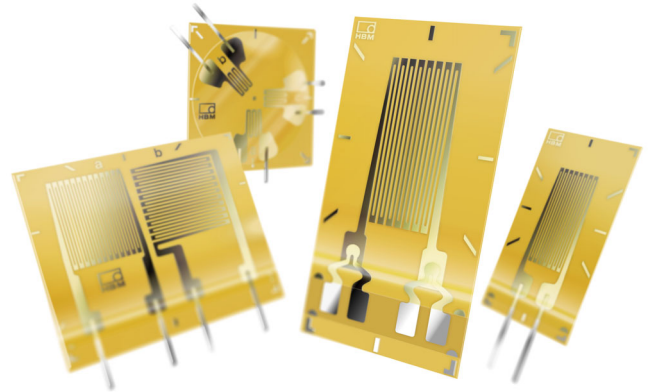


DATA SHEET

C series Strain gages for experimental stress analysis

SPECIAL FEATURES

- The specialist for extreme temperatures (-269 °C to +250 °C)
- With matched temperature response in the range -200 °C to +250 °C
- Flexible and therefore easy to handle



SPECIFICATIONS

Strain gage construction		Foil strain gage with embedded measuring grid
Measuring grid		
Material		CrNi special alloy
Thickness	µm	5
Carrier		
Material		Polyimide
Thickness	µm	45 ± 15
Covering agent		
Material		Polyimide
Connections		
With leads		Nickel-plated copper leads, approx. 30 mm long
Without leads		Solder tabs with strain relief, 4-wire, copper beryllium
Nominal (rated) resistance	Ω	120, 350 (depending on type of strain gage)
Resistance tolerance	%	±0.3 without leads; ±0.35 with leads
Gage factor		approx. 2.2
Nominal value of gage factor		Specified on each package
Gage factor tolerance	%	± 1
Temperature coefficient of gage factor		Specified on each package
Reference temperature	°C	23

Operating temperature range For static, i.e. zero-point related, measurements For dynamic, i.e. non zero-point related, measurements	°C	-200 ... +200 -269 ... +250	
Transverse sensitivity At reference temperature when using Z70 adhesive on strain gage type LC11-6/120	%	Specified on each package -0.15	
Temperature response		Specified on each package	
Temperature response matched to expansion coefficient α for ferritic steel α for aluminum	1/K 1/K	10.8 · 10 ⁻⁶ 23 · 10 ⁻⁶	
Tolerance of temperature response	1/K	±0.6 · 10 ⁻⁶	
Adaptation of temperature response in the range	°C	-200 ... +250	
Maximum elongation¹⁾ At reference temperature when using Z70 adhesive Absolute strain value ε for positive direction Absolute strain value ε for negative direction	 $\mu\text{m}/\text{m}$ $\mu\text{m}/\text{m}$	For strain gage types with leads, e.g. type LC11-6/120 20,000 ($\underline{\Delta}$ 2 %) 100,000 ($\underline{\Delta}$ 10 %)	For strain gage types without leads, e.g. type LC61-3/350 25,000 ($\underline{\Delta}$ 2.5 %) 50,000 ($\underline{\Delta}$ 5 %)
Fatigue strength¹⁾ At reference temperature when using Z70 adhesive on strain gage type LC11-6/120 Achievable number of load cycles L_w with alternating strain $\varepsilon_w = \pm 1,000 \mu\text{m}/\text{m}$ and variation of zero point $\varepsilon_m \Delta \leq 300 \mu\text{m}/\text{m}$ $\varepsilon_m \Delta \leq 30 \mu\text{m}/\text{m}$		>> 10 ⁷ (test was aborted at 10 ⁷) > 10 ⁷ (test was aborted at 10 ⁷)	
Minimum radius of curvature, longitudinal and transverse, at reference temperature In the area of the measuring grid In the area of the solder tabs	 mm mm	For strain gage types with leads 0.3 2	For strain gage types without leads 0.5 10
Suitable bonding material Cold curing adhesives Hot curing adhesives		CA80, X60, X280 P250, EP310N	

1) The data depend on the various parameters of the specific application and are therefore provided for representative examples only.