

DATA SHEET

U series Strain gage for transducer manufacturers

SPECIAL FEATURES

- Extra rugged standard strain gage with high resistance to alternating load
- Suitable for transducers with high accuracy requirements
- Very low water absorption and sensitivity to moisture
- Many options and designs available
- Customized versions possible



SPECIFICATIONS

Type		Series U
Strain gage construction		Foil strain gage with embedded measuring grid
Measuring grid		
Material		Nickel-chrome special alloy (Modco)
Thickness	μm	5
Carrier		
Material		Modified PEEK
Thickness	μm	40 ±5
Covering agent		
Material		Modified PEEK
Thickness	μm	40 ±5
Connections		
Solder tabs		Integrated solder tabs, nickel-plated
Leads		Nickel-plated copper leads, approx. 30 mm long
Nominal (rated) resistance	Ω	175 ... 5,000 (depending on type of strain gage)
Resistance tolerance		
Strain gage with solder tabs	%	±0.3
Strain gage with leads	%	±0.35
Gage factor		approx. 2.2
Nominal value of gage factor		Data on request

Type		Series U
Gage factor tolerance		
With ≤ 1.5 mm measuring grid length	%	± 1.5
With > 1.5 mm measuring grid length	%	± 1
Reference temperature	$^{\circ}\text{C}$	23
Operating temperature range		
For static (zero-point related) measurements	$^{\circ}\text{C}$	-40 ... 140
For dynamic (non-zero point-related) measurements	$^{\circ}\text{C}$	-70 ... 200
Transverse sensitivity		Data on request
Temperature response		Data on request
Temperature response as required, adapted to coefficients of thermal expansion		
For ferritic steel	1/K	$10.8 \cdot 10^6$
For aluminum	1/K	$23 \cdot 10^6$
Tolerance of temperature response	1/K	$\pm 0.6 \cdot 10^6$
Adaptation of temperature response in the range	$^{\circ}\text{C}$	-10 ... +120
Maximum elongation at reference temperature when using Z70 adhesive on a type K-LU11E3/350_W strain gage		
Absolute strain value ϵ for positive direction	$\mu\text{m}/\text{m}$	10,000 ($\triangleq 1\%$)
Absolute strain value ϵ for negative direction	$\mu\text{m}/\text{m}$	35,000 ($\triangleq 3.5\%$)
Fatigue strength at reference temperature when using Z70 adhesive on a type K-LU11E3/350_W strain gage		
Achievable number of load cycles L_w with alternating strain $\epsilon_w = \pm 2,000 \mu\text{m}/\text{m}$		$>> 10^7$ (test was aborted at 10^7)
Variation of zero point $\epsilon_m \leq 300 \mu\text{m}/\text{m}$		$> 10^7$ (test was aborted at 10^7)
Variation of zero point $\epsilon_m \leq 100 \mu\text{m}/\text{m}$		
Minimum radius of curvature, longitudinal and transverse, at reference temperature		
Strain gage with solder tabs	mm	0.5
Strain gage with leads		
In the area of the measuring grid	mm	0.5
In the area of the solder tabs	mm	5
Recommended adhesive		P250, EP310N

Hottinger Brüel & Kjaer GmbH

Im Tiefen See 45 · 64293 Darmstadt · Germany
 Tel. +49 6151 803-0 · Fax +49 6151 803-9100
 www.hbkworld.com · info@hbkworl.com

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