

Strain transducer, standard to 1,000 $\mu\epsilon$

Model F9846

WIKA-data sheet FO 54.17

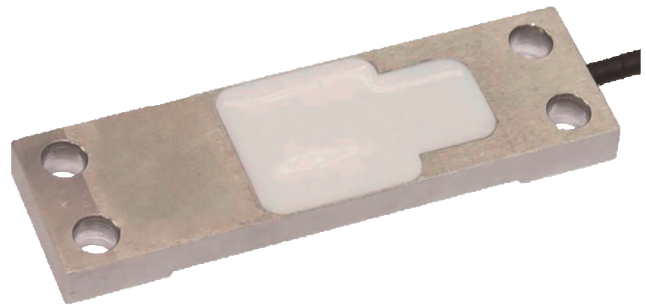
EAC

Applications

- Silo weighing
- Injection moulding machinery
- Pressing, punching, embossing machinery
- Steel construction
- Vessel supports and tanks

Special features

- Strain of 0 ... 250 $\mu\epsilon$ to max. 0 ... 1,000 $\mu\epsilon$
- Can be retrofitted, easy installation with M6-screws
- Total error < 1 % F_{nom}
- Electrical connection as cable, with plug-in radio module, display or junction box.



Strain transducer, model F9846

Description

Strain transducers have been designed for applications in which there is a need to measure the deformation due to external forces acting on existing components. The transducer is simply screwed to the component. After the adjustment, the unit has the features of a force transducer.

The strain transducer is fastened with four screws to an area of the structure where the relevant strain occurs. Combined strain transducers can be connected directly to a junction box that contains an amplifier for system control.

Specifications per VDI/VDE/DKD 2638

Model F9846	
Strain	0 ... ±250 µε, 0 ... ±500 µε, 0 ... ±1,000 µε
Total error ¹⁾	≤ ±1 % F _{nom}
Relative linearity error of the zero signal d _{S, 0}	≤ ±2 % F _{nom}
Temperature effect on zero signal TK ₀	0.5 %/10 K
Temperature effect on characteristic value TK _C	0.5 %/10 K
Force limit F _L	120 %
Breaking force F _B	150 %
Rated temperature range B _{T, nom}	-10 ... +40 °C
Operating temperature range B _{T, G}	-20 ... +80 °C
Output signal (rated characteristic value) C _{nom}	1.0 ±15 % mV/V
Input resistance R _e	1,000 ±10 Ω
Output resistance R _a	1,000 ±3 Ω
Insulation resistance R _{is}	≥2,000 MΩ / DC 50 V
Electrical connection	
■ Standard	Cable outlet, free stranded wires
■ Option	Circular connector M12 x 1, 4-pin
Cable length	0.6 m
Mounting	
■ Standard	4 x Ø6.6 mm bores
■ Option	2 x Ø6.6 mm bores
Supply voltage	DC 5 ... 10 V (max. 15 V)
Ingress protection (per IEC/EN 60529)	IP65
Weight	0.1 kg

¹⁾ Including non-linearity, hysteresis and repeatability



Working principle

If a mechanical construction is subjected to a load, its shape changed up to a certain extent. By fixing an appropriate area of the strain transducer, it experiences the same deformations as the component. Conversely, the determined strain allow conclusions on the state of tension. In this way, the force acting on the component can be measured.

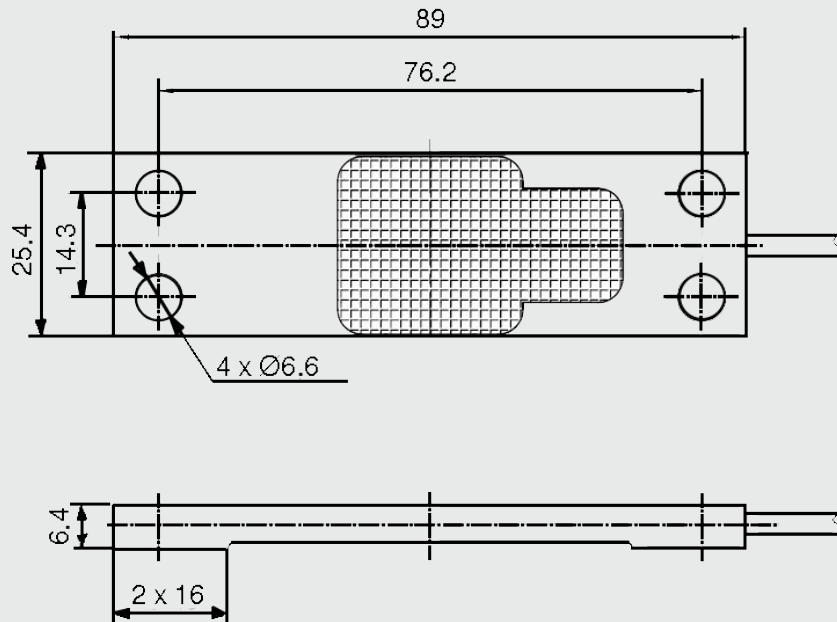
After mounting the strain transducer, the assembled unit still has to be calibrated. Zero point and span are set individually for this.

Special requirements such as adjustment of the temperature coefficient (TC) of the output signal to the applied component or setting of the limit frequency for factory programming is possible with model F9302.

Approvals

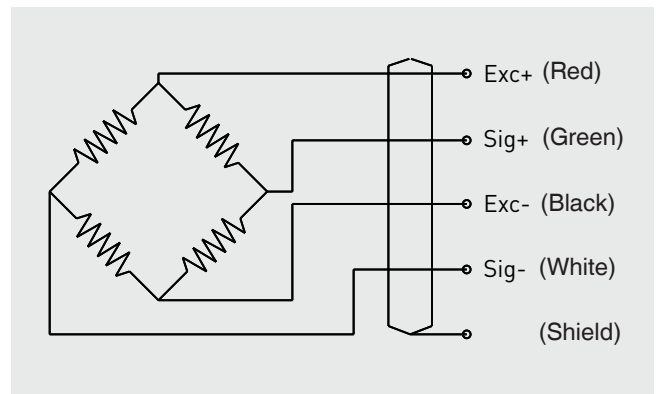
Logo	Description	Country
	EU declaration of conformity ■ RoHS directive	European Union
	EAC (option) ■ EMC directive	Eurasian Economic Community

Dimensions in mm



Pin assignment

Electrical connection	
Supply (UB+)	Red
Supply (UB-)	Black
Signal (+)	Green
Signal (-)	White
Shield ⊕	Shield



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