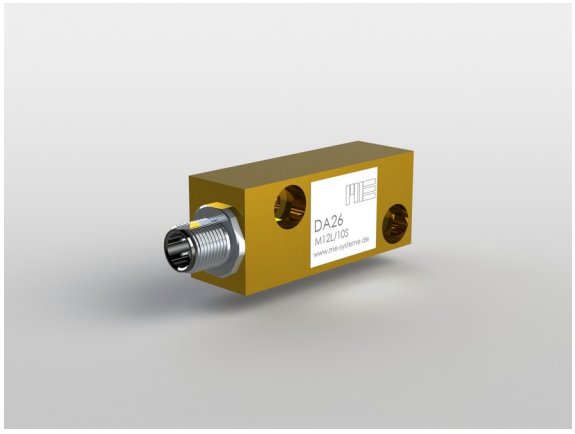
Strain Sensor DA26

Item number: 5110



The DA26 extension sensor is suitable for high-resolution detection of forces and deformations on massive components e.g. presses, hoists, containers, steel girders, bridges, connecting rods or frames of manufacturing machinery.

Subsequent installation makes these extensions sensors universal, retrofit sensors for force and load monitoring. These extension sensors are durable and resistant against oil and moisture.

The most efficient assembly is across the load direction. No force can be transferred thanks to the housing. However, assembly along the direction of compression is possible for strains of up to 100µm/m without limiting accuracy. The DA26 sensor is also available without countersink for assembly with superimposed threaded bolts.

With these extension sensors in a robust and easy-assemble aluminium housing, the same performance features are achieved as when applying strain gauges (DMS) directly. These features include a high resolution, very low drift effects and the options for both static and dynamic measurement.

The extension sensor includes a completely wired DMS that is pressed onto the component to be bonded by a specially formed pressing mechanism when screwing on the extension sensor. Thus the housing serves as a mounting frame for the DMS application.

The surface of the component must be sanded down and cleaned in the strain gauge area before screwing on the extension sensor. The DMS is protected permanently against moisture through a special oil-resistant seal.

The zero adjustment of the strain gauge is performed after assembling the extension sensor of the GSV-2 DMS measuring amplifier. Strains from 0,1µm/m can be displayed.

This corresponds to a mechanical tension of approx. 0,02N/mm^2 on the surface of a steel component. With the combination of extension sensor and GSV-2 measuring amplifier,

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switching thresholds from approx. 1µm/m (corresponds to 0,2N/mm^2)can be monitored if a zero adjustment is performed periodically.

For applications in weighing technology, an extension range of at least 30µm/m (6 N/mm^2) is recommended to achieve the lowest possible drift effects.

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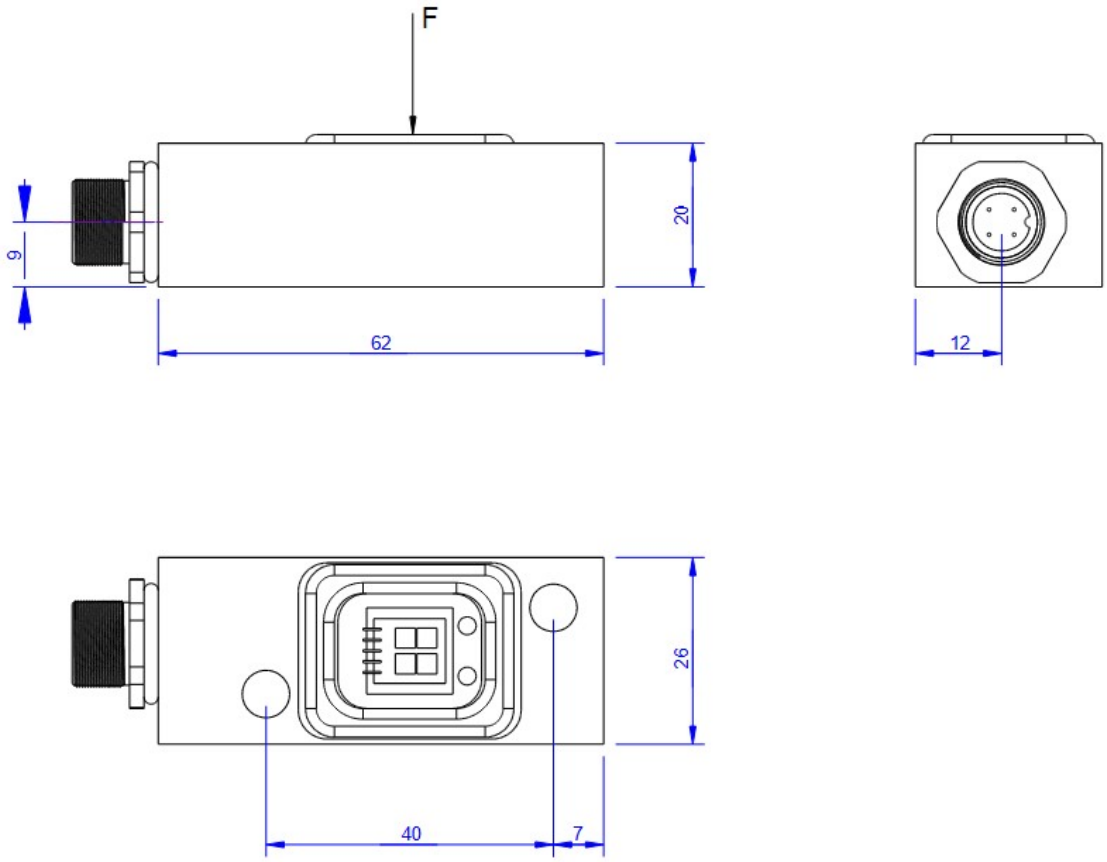
Technical Drawing



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Technical Data

Basic Data		Unit
Type	Dehnungsaufnehmer	
Nominal strain	1000	µm/m
Operating strain	150	%
Fastening	schrauben (M6)	
Material	alluminum-alloy	
Dimensions	62 mm x 26 mm x 20 mm	

Electrical Data		Unit
Input resistance	350	Ohm
Tolerance input resistance	7	Ohm
Output resistance	350	Ohm
Tolerance output resistance	7	Ohm
Insulation resistance	5	GOhm
Rated range of excitation voltage from	2.5	V
Rated range of excitation voltage to	5	V
Operating range of excitation voltage from	1	V
Operating range of excitation voltage to	10	V
Zero signal from	-2	mV/V
Zero signal to	2	mV/V
Rated output	1.3	mV/V

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Accuracy Data		Unit
Temperature effect on zero signal	0.005	mV/V/10K
Temperature effect on characteristic value	1	%v.S./10K

Environmental Data		Unit
Rated temperature range from	-10	°C
Rated temperature range to	65	°C
Operating temperature range from	-20	°C
Operating temperature range to	85	°C
Storage temperature range from	-20	°C
Storage temperature range to	85	°C
Environmental protection	IP65	

Strain gauge is used with k-factor = 2.

Pin assignment

Channel	Symbol	Description	Wire color	PIN
	+Us	positive bridge supply	brown	1
	-Us	negative bridge supply	white	2
	+Ud	positive bridge output	blue	3
	-Ud	negative bridge output	black	4

Compressive load: positive output signal. Shield connected to sensor housing.

Mounting

Whith compressive strain in the longitudinal axis, a negative output signal results.

The strain sensor may also be mounted transversely to the direction of the load. In this case, a positive output signal is obtained under compression.
By exchanging the lines + Ud and -Ud the sign of the output signal of the strain sensor can be inverted.

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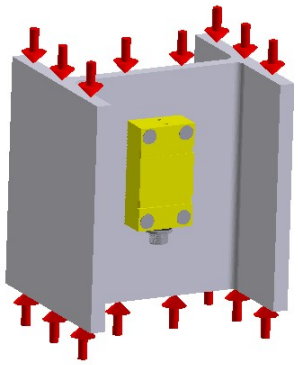

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