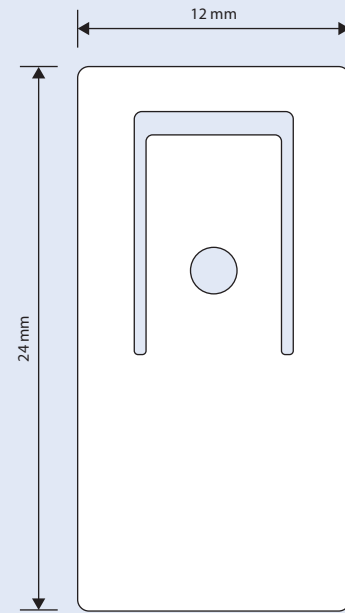
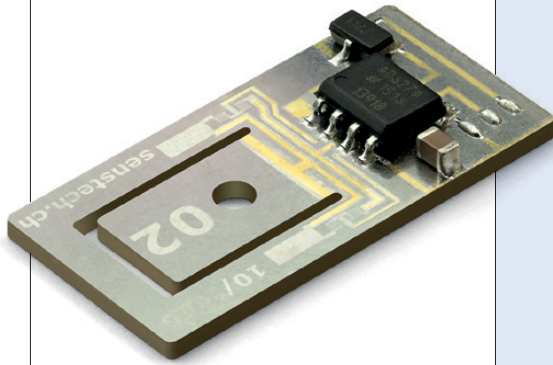


Sensor Type KB-011-0300

Dimensions and Integration

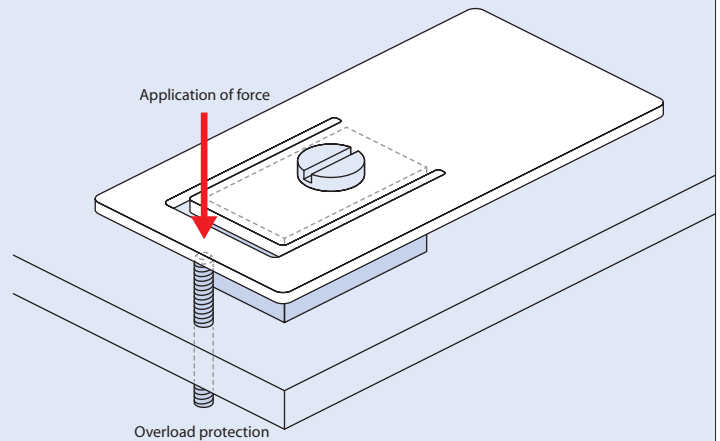
The force sensor yoke with amplified signal is suitable for a broad range of applications. It is attached to a surface with an M2 screw through its central hole. The displacement of the measuring yoke has to be mechanically limited.



Specifications

General Specifications for the Sensor Elements KB-011-0300

Measuring principle	Thin film strain gauges
Measuring parameter	Force (N) or displacement (µm)
Electrical contacting *	Solder points, stranded wires or cable (3-wire)
Mounting	Attach with M2 screw through central hole, amplifier on bottom
Application of force	On measuring yoke with reproducible point of application
Overload protection	Mechanically limit displacement of yoke
Direction of force *	Perpendicular onto back side (without components) of sensor
Supply voltage	12 V to 28 V (supply of strain gauge is stabilized to 9 V)
Signal *	Amplified by instrumentation amplifier (factor of 250 to 1300, as needed), 0.2 V to 9 V
Shielding *	Substrate is connected to supply ground
Temperature range *	-20 °C to +80 °C
Humidity range	up to 95% RH, non-condensing



Description	Force Sensor Yoke, Amplified				
Sensor Number	KB-011-0301-003N	KB-011-0302-035N	KB-011-0303-80N	KB-011-0304-120N	Tolerances
Measuring range (Full Scale FS)	3 N	35 N	80 N	120 N	
Allowable overload range	6 N	70 N	140 N	240 N	
Signal amplification approx. *	350 ×	350 ×	350 ×	350 ×	
Signal per force	2.7 V/N	0.2 V/N	0.1 V/N	0.065 V/N	+/- 15 % *
Signal per displacement	0.05 V/µm	0.017 V/µm	0.023 V/µm	0.028 V/µm	+/- 20 %
Reproduceability at FS	0.05 % FS	0.05 % FS	0.05 % FS	0.05 % FS	
Reproduceability of offset	0.02 % FS	0.02 % FS	0.02 % FS	0.02 % FS	
Linearity error	0 % FS	0 % FS	0 % FS	0 % FS	+/- 0.3 % FS
Temperature error of offset *	0 % FS/°C	0 % FS/°C	0 % FS/°C	0 % FS/°C	+/- 0.02 % FS/°C *
Temperature error of sensitivity	0.025 %/°C	0.025 %/°C	0.025 %/°C	0.025 %/°C	+/- 0.01 %/°C
Geometry Width	12 mm	12 mm	12 mm	12 mm	+/- 0.03 mm
Geometry Length	24 mm	24 mm	24 mm	24 mm	+/- 0.03 mm
Thickness of sheet / bending zone	1 mm/0.4 mm	1 mm/1 mm	1.6 mm/1.6 mm	2 mm/2 mm	+/- 0.03 mm
Supply current at 12 V (18 V)	5.5 mA (5.5)	5.5 mA (5.5)	5.5 mA (5.5)	5.5 mA (5.5)	+/- 15 %
Bridge offset (without load) *	0.7 V	0.7 V	0.7 V	0.7 V	+/- 0.5 V *

* Parameter can be customized in case of larger order quantities

Specifications are subject to change