



Force sensor Gantrisch



Datasheet KB-011-0300



Amplified force sensor bracket

Benefits & characteristics

- Integrated signal amplifier to minimize electromagnetic noise
- Can be attached to a component with M2.5 screw
- Measuring range (full scale): 0 - 110 N
- Custom-specific adjustment of the full scale or gain factor
- Integrated voltage stabilizer

Illustration

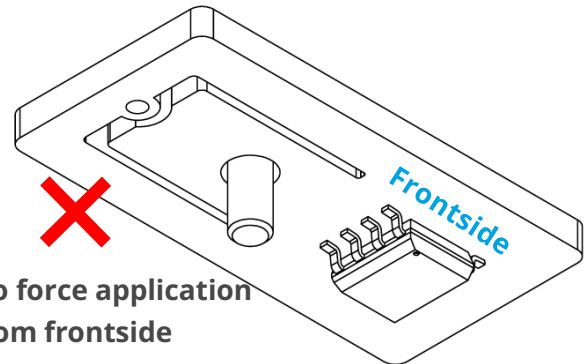
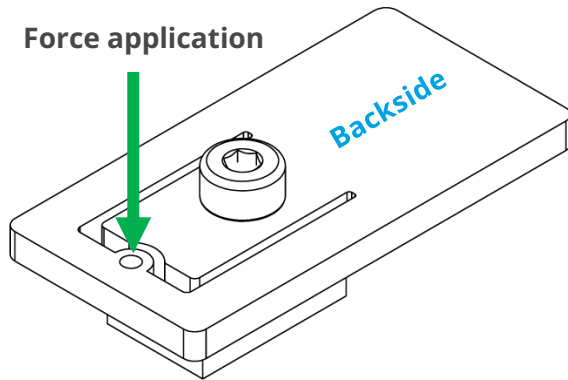


Applications

- Medical devices
- Process control
- Textile industry

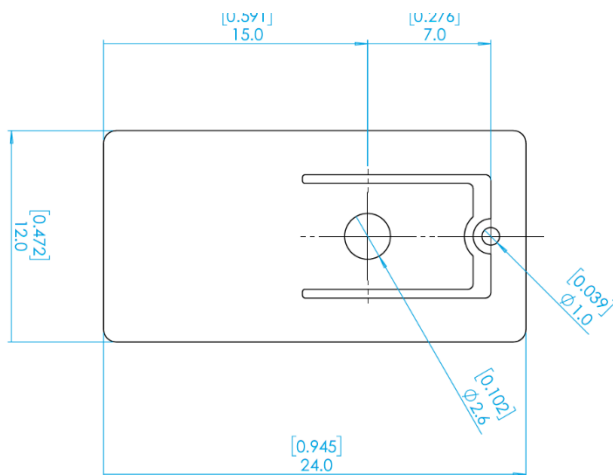
Dimensions and integration

All dimensions in millimeters / (inches)



No force application from frontside

Overload protection: Mechanically limit displacement of the bracket



Technical specifications

Measuring principle	Thin film strain gauge (full Wheatstone bridge) with integrated amplifier		
Measuring parameter	Force [N]		
Electrical contacting	Solder points, stranded wires, or cable (3-wire):	Brown:	Supply voltage + (VCC)
		Black:	Supply voltage - (GND)
		Blue:	Signal voltage -/+
Mounting	Attach with M2.5 screw through central hole, amplifier on bottom		
Application of force	On the bracket with reproducible point of application		
Direction of force	Perpendicular to sensor plane from backside, see pictures above		
Shielding	Sensor substrate is connected to supply ground		
Signal	Amplified by instrumentation amplifier (factor of 250 to 1300, as needed), 0.2 V to 9 V		
Substrate material	Stainless Steel 1.4542 / X5CrNiCuNb16-4 / 17-4 PH®		

Environmental specifications

	Min	Typ	Max	Unit	Notes/Conditions
Temperature range					
- Operational	-20		+80	°C	
- Storage	-40		+80	°C	
Ambient humidity	0		95	%RH	Non-condensing

Operating specifications

	Min	Typ	Max	Unit	Notes/Conditions
Supply voltage	12		28	V	Supply of strain gauge is stabilized to 9 V
Supply current		5.5		mA	At > 12 V
Zero offset	0.2		1.2	V	Without load
Zero repeatability		±0.02		%FS	Variance between measurements (FS = Full Scale)
Sensitivity tolerance	-15		15	%	Variance of sensitivity between specimens
Full scale repeatability		±0.05		%FS	Variance between measurements (FS = Full Scale)
Linearity error		±0.3		%FS	
Thermal shift for zero	-0.02		0.02	%FS/°C	
Thermal shift for sensitivity	0.015		0.035	%/°C	

Order information

Force sensor Gantrisch

Basic sensor element

KB-011-0300 = Force sensor Gantrisch

Force range

Code	Full Scale Range	Full scale signal	Substrate thickness	Max. overload
2 N	0 N – 2 N	8.0V/9V	0.5 mm	3 N
7 N	0 N - 7 N	7.0V/9V	0.5 mm	10.5 N
30 N	0 N - 30 N	8.1V/9V	1.0 mm	45 N
75 N	0 N – 75 N	7.5V/9V	1.6mm	112.5 N
110 N	0 N – 110 N	7.7V/9V	2.0 mm	165 N

Connection

Code	Variant
K7	Multi-core cable, 0.2m

Sensitivity

Code	Variant
S007	70mV/9V/N
S010	100mV/9V/N
S027	270mV/9V/N
S100	1V/9V/N
S400	4V/9V/N

KB-011-03

XXXN-

Kx-

Sx-

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