

Force Transducer PBB-10A-5/10/20-1.XX



description

The force transducer works according to the strength measuring principle on a transverse basis to the longitudinal axis.

Got to the PBB-10A special for measuring small strengths (quality control, weight and filling level determination, ...) to robot, handling and medical engineering develops.

It is executed as a beam with a chamber. The beam shape and two boreholes with 3,2 mm of diameters permit an assembly suitable for mechanical engineerings. The strength introduction is carried out via further borehole with 4,3 mm of diameters.

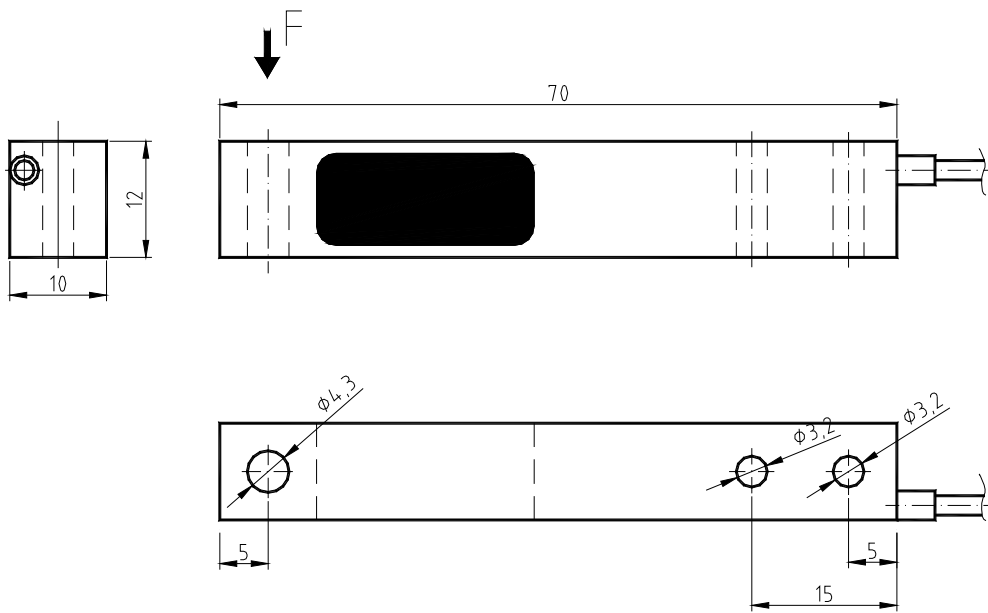
The applizierte strain gauge in the chamber is spilled with a very elastic mass and protected so from mechanical and chemical damages.

The strain gauge bridges measure the deformation caused by bend strengths on the beam. Executions with strap output or amplifier with a measuring signal of 1 - 9 mA or 4 - 20 mA are possible for it.

By application of an amplifier the nominal output current can be produced in the unloaded state by add-ons of the calibrating checking signal (software calibration). A check of the force transducer with the amplifier and the following measuring facilities is possible with that.

The PBB-10A is planned according to execution for the direct connection with an amplifier or a control.

specification



mechanical execution

weight	approx. 25 g		
mounting	2 x boreholes \varnothing 3,2 mm 1 x borehole \varnothing 4,3 mm		
material	aluminium		
environmental protection	IP 67		
PBB	10A-5	10A-10	10A-20
nominal force	0,5 kg	1 kg	2 kg
max. use force	150 % o.t.n.f.	150 % o.t.n.f.	150 % of the nominal force
rupture force	400 % o.t.n.f.	400 % o.t.n.f.	400 % of the nominal force

electrical execution

operating voltage	when strap with 350 Ω : max. 12 V AC / DC when amplifier: 9 - 30 V DC
current consumption	max. 35 mA / 45 mA (according to execution)
output / measuring signal	350 Ω / 1 - 9 mA / 4 - 20 mA (options)
calibration in	N / kg
calibration tolerance	< 0,50 % of the final value*
nonlinearity	< 0,25 % of the final value*
hysteresis	< 0,15 % of the final value*
temperature coeff.	
zp.	\leq 0,05 % of the final value / K
rec.	\leq 0,06 % of the set point / K
operating condition	-25 $^{\circ}$ C to +80 $^{\circ}$ C**

connection

cable type	1,5 m LiYCY 4 x 0,14 mm ² (example)
electrical connections	when strap / amplifier
	brown strap voltage U_{s+} / operating voltage
	green strap voltage U_{s-} / GND (ground)
	yellow strap signal U_{d+} / measuring signal output
	white strap signal U_{d-} / calibration signal (low activ)***
	blue protection

* These details are depending on the fit, the resistance moment and the installation length. They are reached with favorable values.

** in case the laid cable is fixed

*** If the calibration signal is not used, then this cable should be clamped together with the brown wire at the operating voltage.