Force Transducer
BKA-30AV-30kg-2.S70

VELOMAT
MESSELEKTRONIK GmbH

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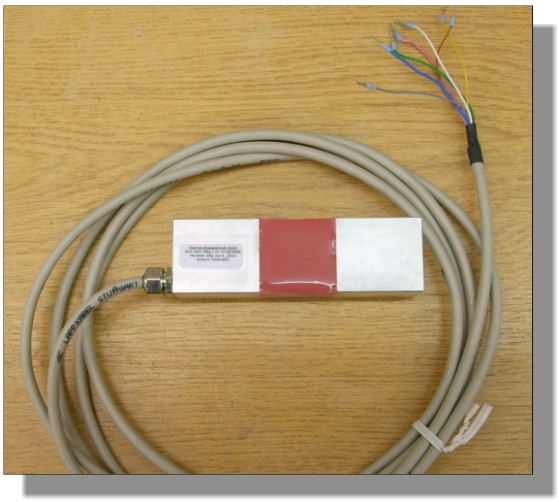

description

The force transducer works according to the principle of the bending stress measurement crossways to the longitudinal axis and forces can be measured in two right-angled axes at the same time.

The BKA-30AV was developed especially for the measuring of small forces in cartesian robotics and cutting edge technology. It finds also its application in medical and orthopedics machines to the diagnostics.

It is carried out with one metering point. The force introduction is evident from the application sketch.

The strain gauges applied in the bending zone are poured with a highly elastic mass and are protected thus against mechanical and chemical damages.

The strain gauges full bridge measures the deformation which is caused of bending forces on the beam.

Two integrated amplifiers supplies the measuring signal of 4 - 20 mA per force direction. The zero point is 12 mA to differentiate between tractive and compressive force.

In the unloaded state can by add-ons of the calibrating checking signal (software calibration) the nominal output current be produced. A check of the load cell with the amplifier and the following measuring facilities is possible with that.

The BKA-30AV is planned for the direct connection with an automatic control or a controlling switch.

The shield of the cable connected with the surface of the force transducer.

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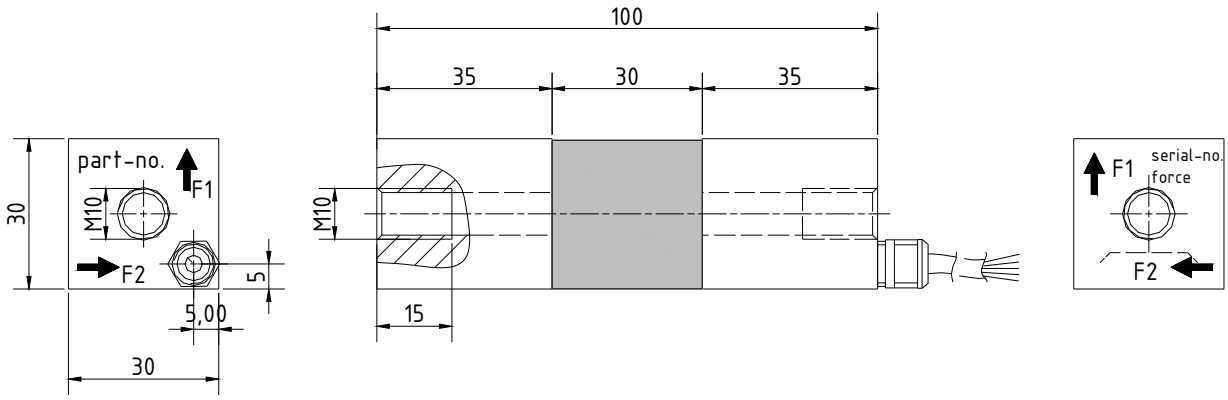
specification



mechanical execution

diameter, force transmission and mounting see assembly drawing

weight	approx. 0,3 kg
material	aluminium
degree of protection	IP 67
BKA	**30AV-30kg**
nominal force / nominal load	30 kg (bi-radial)
max. overload range / force limit	150 % of nominal force
breaking force	400 % of nominal force

electrical execution

measuring signal (output)	4...12(zero point)...20 mA (per channel)
operating voltage	24 V DC ±35 %
current consumption	max. 90 mA
calibration tolerance	< 0,50 % of final value*
non-linearity	< 0,25 % of final value*
hysteresis	< 0,15 % of final value*
temperature coefficient:	
of zero signal	≤ 0,04 % of final value / K
of the sensitivity	≤ 0,04 % of set point / K
insulation resistance	> 5.000 MΩ
nominal temperature range	-15 °C to +70 °C
operating temperature range	-25 °C to +80 °C**

cable and connection

cable length / cable type	2,5 m LiYCY 6 x 0,14 mm²	
cable end	wire-end-sleeve	
wiring connections	brown	operating voltage U_B
	green	ground / earth GND
	yellow	measuring signal output Im channel 1
	grey	measuring singal output Im channel 2
	white	calibration signal (low activ) CC*** channel 1
	pink	calibration signal (low activ) CC*** channel 2
	blue	shielding (only in the case of a shielded cable)

* These details are depending on the fit, the resistance moment and the installation length. They are reached with favorable values.
** only for the case that the cable is laid with fastening (depending on cable type)
*** This cable should be connected at the operating voltage unless the calibration signal is used. (only applicable to executions with amplifier)