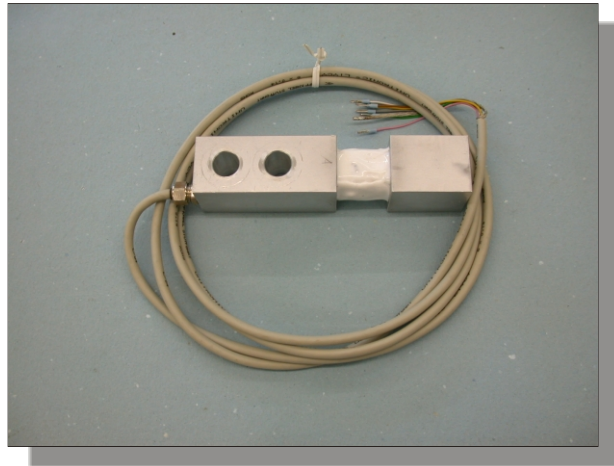


Force Transducer BKA-30AV-100kg-1.S00



article-no: VX34020162
serial-no: key 29T



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 beam form and two drillings with 13 mms of diameter permit an simple mounting appropriate for mechanical engineering. The force introduction follows about the thread M10.

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

DMS-full bridges measure by bending forces on the beam caused deformation.

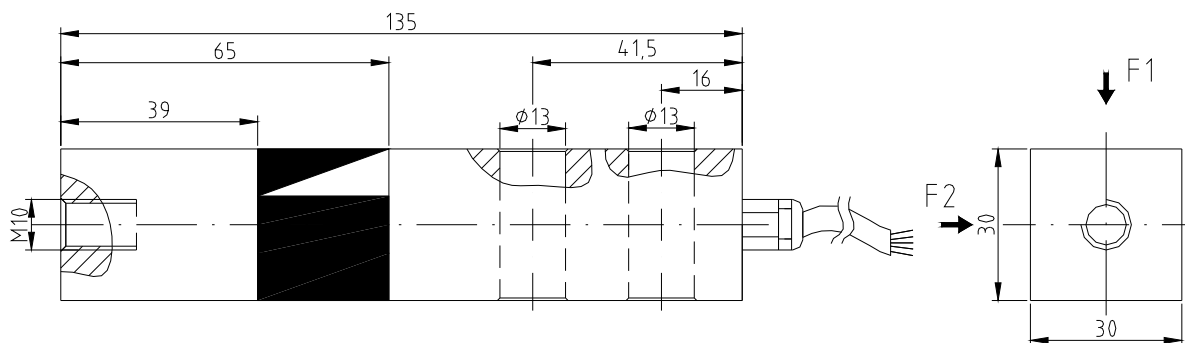
The strap balance is balanced in the unloaded state on approx. $\pm 0,01$ mV / V. About the 6-pole cable the bridges are supplied together and the measuring signal is taken apart per channel.

The BKA-30AV is planned for the connection with an amplifier. With it the straps output signals can be evaluated individually or also together, e.g., to the collection of the forces F1 and F2 as a sum or as a difference.

The shield of the cable is not connected basically with the surface of the force transducer.



specification



mechanical execution

diameter, force transmission and mounting see assembly drawing

weight approx. 0,3 kg
material aluminium
degree of protection IP 67

BA **30AV-100kg**
nominal force / nominal load 100 kg (bi-radial)
max. overload range / force limit 150 % of nominal force
breaking force 400 % of nominal force

electrical execution

measuring principle wheatstone full bridge of strain gauges
input resistance 350 Ω (per channel)
output resistance 175 Ω (2 straps with 350 Ω in parallel switched)
nominal sensitivity approx. 2,5 mV / V (accurate value: see type label / banderole)
excitation voltage max. 12 V AC / DC
current consumption max. 70 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 $\leq 0,04$ % of final value / K
 of the sensitivity $\leq 0,04$ % of set point / K
insulation resistance > 5.000 M Ω
nominal temperature range -15 °C to +70 °C
operating temperature range -25 °C to +80 °C**

cable and connection

cable length / cable type 1,5 m LiYCY 6 x 0,14 mm²
cable end wire-end-sleeve
wiring connections
 brown operating voltage US+ / B+
 green operating voltage US- / B-
 yellow strap output UD+ / US+ channel 1
 grey strap output UD- / US- channel 2
 white strap output UD- / US- channel 1
 pink strap output UD+ / US+ channel 2

* 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)