Force Transducer
SKL-30-70-39.60

VELOMAT
MESSELEKTRONIK GmbH

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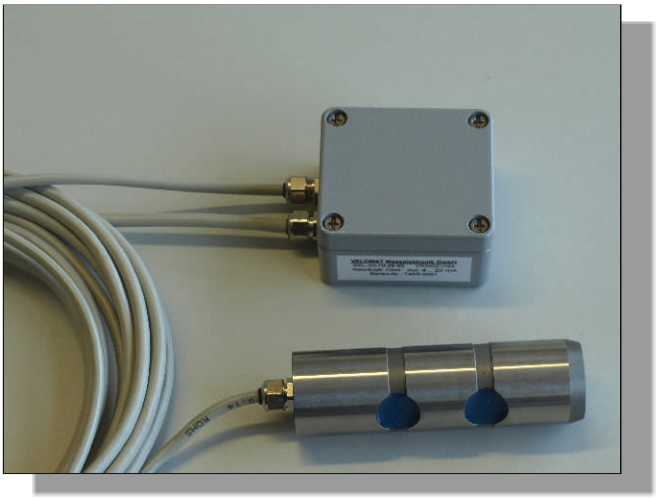

description

The force transducer is designed for measuring shear forces normally to the longitudinal axis.

It was developed especially for use on hydraulic cylinders of work platforms, in cranes and conveyor technics.

Its construction is cylindrical with two measurement chambers. For mounting a notch with 4,5 mm width and 4 mm depth is milled into the pin.

The strain gauges are protected against mechanical and chemical damages by sealing the application room with a highly elastic compound.

Strain gauges full bridges measure the deformation caused by shear forces on the bolt in the measuring chamber. An external amplifier delivers the measuring signal of 4 – 20 mA.

In the unloaded state the nominal output current can be produced by applying the calibration check signal (software calibration). This enables a check of the force transducer, amplifier and the following measuring device.

The SKL-30 is provided for the direct coupling to a control system or a comparator switch.

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

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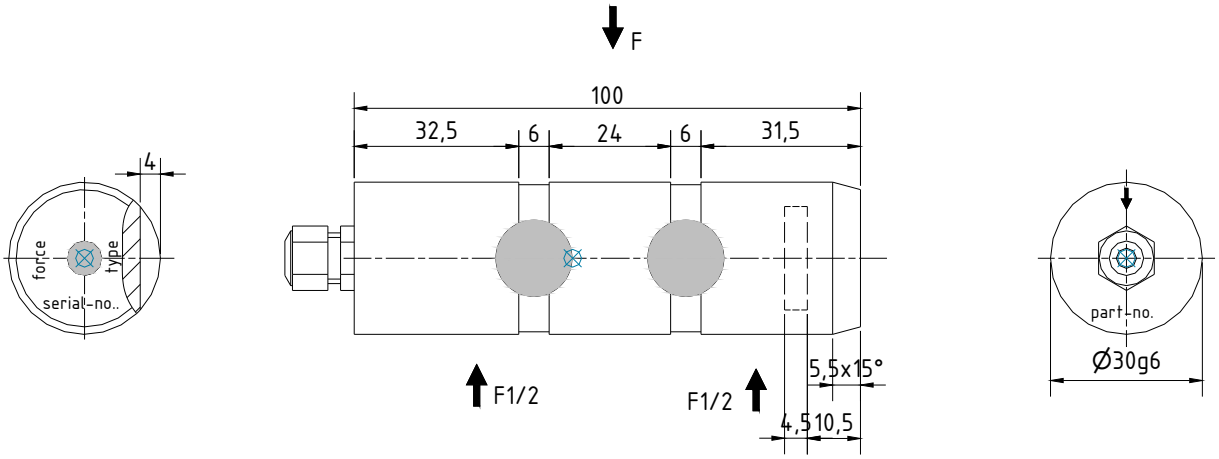
specification



mechanical execution

diameter, force transmission and mounting see assembly drawing

weight	approx. 0,90 kg
material	stainless steel
degree of protection	IP 67
SKL	**30-70**
nominal force / nominal load	70 kN
max. overload range / force limit	150 % of nominal force
breaking force	400 % of nominal force

electrical execution

measuring signal (output)	4 - 20 mA
operating voltage	12 - 24 V DC ±20 %
current consumption	max. 45 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:		
sensor - amplifier	1 m LiYCY 4 x 0,14 mm²	
amplifier - cable end	4 m LiYCY 4 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
	white	calibration signal (low activ) CC***
	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)