

K3D40 $\pm 2\text{N}$, $\pm 10\text{N}$, $\pm 20\text{N}$, $\pm 50\text{N}$



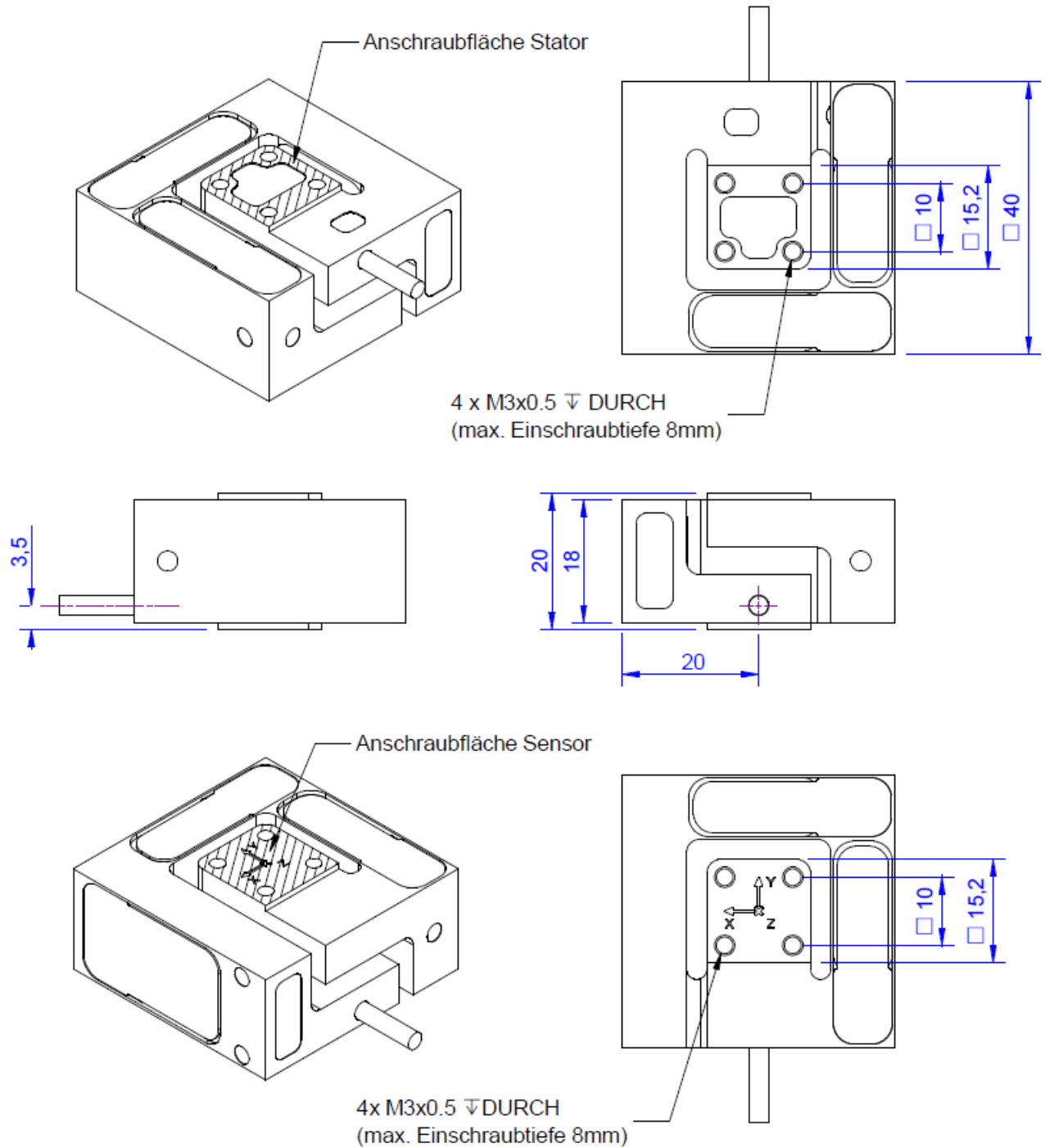
Description

The 3-axis sensor K3D40 is suitable for measuring force on three mutually perpendicular axes.

It is available for $\pm 2\text{ N}$ or $\pm 10\text{ N}$ in all three axes, and can optionally be manufactured for other measurement ranges.

This model stands out for its particularly compact size with a footprint of only 40 mm x 40 mm and a low overall height of only 20 mm.

Dimensions



Technical Data

Force sensor

Type	3-axis force sensor
Force direction	Tension / Compression
Force introduction	Inner thread
Dimension 1	M3x0,5
Sensor Fastening	Inner thread
Dimension 2	M3x0,5
Operating force	200 %FS
Rated displacement	0.15 mm
Material	Aluminium alloy
Height	20 mm
Length or Diameter	40 mm
Torque limit	5 Nm
Bending moment limit	5 Nm
Breaking force	600 %

Precision

Accuracy class	0,5%
Relative linearity error	0.2 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.05 %FS/K
Temperature effect on characteristic value	0.05 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	12 conductor open
Name of the connection	MESC-12x0061-PUR
Cable length	3 m

Eccentricity and Crosstalk

Influence of eccentric load to FS	0.5 %FS / 2Nm
Crosstalk from x to y at rated load	0.5 %FS
Crosstalk from y to x at rated load	0.5 %FS
Crosstalk from z to x/y at rated load	1 %FS
Crosstalk from x/y to z at rated load	1

Temperature

Rated temperature range f	-20 ... 60 °C
Operating temperature range f	-20 ... 70 °C
Storage temperature range f	-20 ... 70 °C
Environmental protection	IP65

Electrical Data




Rated output x-axis	0.5 mV/V / FS
Rated output y-axis	0.5 mV/V / FS
Rated output z-axis	0.5 mV/V / FS
Zero signal	0.1 mV/V
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Input resistance x-axis	350 Ohm
Output resistance x-axis	350 Ohm
Input resistance y-axis	350 Ohm
Output resistance y-axis	350 Ohm
Input resistance z-axis	350 Ohm
Output resistance z-axis	350 Ohm
Insulation resistance	5 GOhm
Tolerance input resistance	5 Ohm
Tolerance output resistance	5 Ohm

¹⁾ The exact nominal sensitivity is indicated in the test report.

Pin Configuration

Channel	Symbol	Description	Wire colour
1	+Us	positive bridge supply	brown
	-Us	negative bridge supply	white
	+Ud	positive bridge output	green
	-Ud	negative bridge output	yellow
2	+Us	positive bridge supply	pink
	-Us	negative bridge supply	grey
	+Ud	positive bridge output	blue
	-Ud	negative bridge output	red
3	+Us	positive bridge supply	purple
	-Us	negative bridge supply	black
	+Ud	positive bridge output	orange
	-Ud	negative bridge output	transparent

accessories

Description	Description
	Calibration Certificate kn/20/5/K3D Factory calibration certificate for force to 20 kN in accordance with DIN EN ISO / IEC 17025 for test materials monitoring according to DIN ISO 9001: 2008 with 5 load levels and 3 series of measurements.
	GSV-1A4 SubD37/2 4-channel strain gauge measuring amplifier for sensors with strain gauges. Adaptation of the sensor via Sub-D-37 connector . Output $\pm 10V$ and 4 ... 20mA via 15-pin SUB-D (female); Input sensitivity 2mV/V;
	GSV-4USB SubD37 4-channel strain measurement amplifier with USB port with configurable input for strain gauges, temperature sensors, active sensors, displacement sensors and other sensors. Sensor connection via 1 piece Sub D37 connector