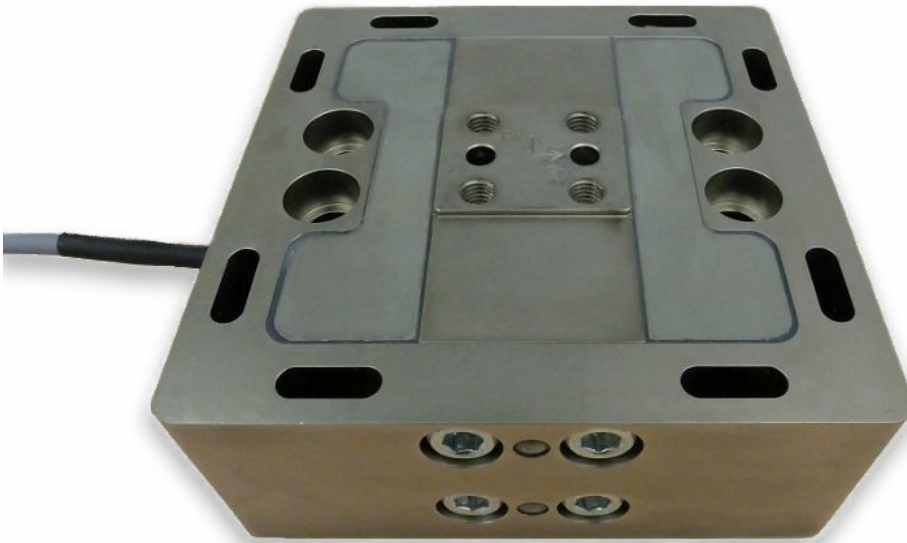


3-Axis Force Sensor K3D160

Variant: $\pm 2\text{kN}$, $\pm 5\text{kN}$, $\pm 10\text{kN}$, $\pm 20\text{kN}$, $\pm 50\text{kN}$



Description

The 3-axis sensor **K3D160** is suitable for measuring force in three mutually perpendicular axes.

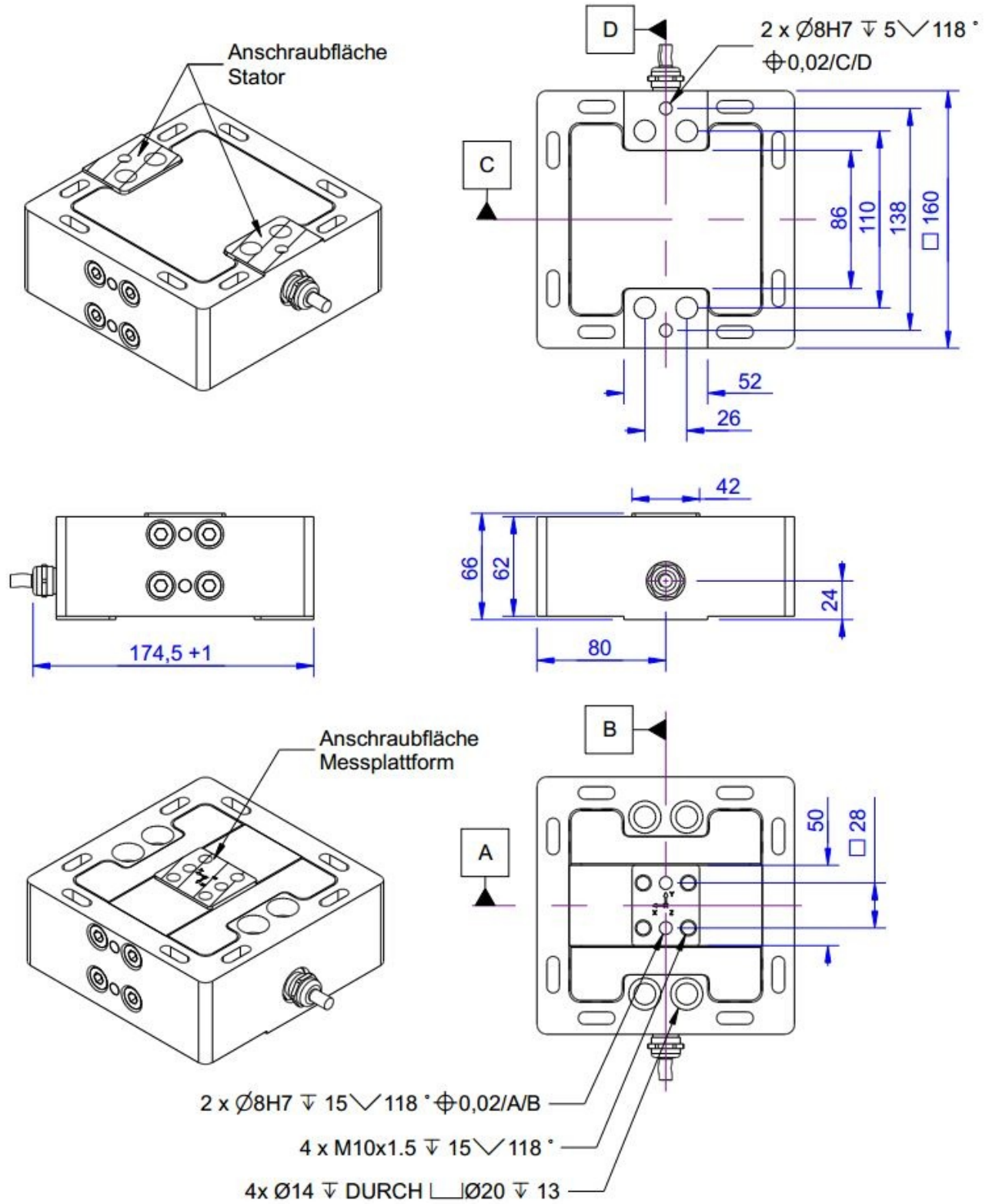
Force is applied from the 42mm x 50mm recess. A component can be installed on this surface with four M10 screws. The bottom of the sensor is fixed to the bottom with four M12 screws.

Application areas

The 3-axis force sensor K3D160 is used for various tasks in machine and vehicle construction. For example, the sensor is used to measure cutting forces in lathes – permanently establishing optimum cutting parameters and monitoring wear and tear on the machine.

The sensor is also used in towing channels, on assembly robots and in underwater locations.

Dimensions





Technical Data

Kraftsensoren

Type	3-axis force sensor
Force introduction	Inner thread
Dimension 1	4xM10
Sensor Fastening	Through bore
Dimension 2	4xØ14
Operating force	150 %FS
Rated displacement	0.08 mm
Material	Tool steel
Height	66 mm
Length or Diameter	160 mm

Elektrische Daten

Rated output x-axis	1 mV/V
Rated output y-axis	1 mV/V
Rated output z-axis	1 mV/V
Zero signal	0.05 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	740 Ohm
Output resistance x-axis	700 Ohm
Input resistance y-axis	740 Ohm
Output resistance y-axis	700 Ohm
Input resistance z-axis	740 Ohm
Output resistance z-axis	700 Ohm
Insulation resistance	5 GOhm
Tolerance input resistance	10 Ohm
Tolerance output resistance	5 Ohm

Precision

Accuracy class	1%
Relative linearity error	0.2 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.01 %RD/K



Relative creep 0.1 %FS

Connection Data

Connection type	12 conductor open
Name of the connection	Unitronic FD CP (TP) Plus 6 x 2 x 0,14
Cable length	5 m

Temperature

Rated temperature range f	-10 ... 50 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Exzentrizität und Übersprechen

Allowed torque according of eccentric load	1000 Nm
Influence of eccentric load to FS	1 %FS/1000Nm
Crosstalk from x to y at rated load	2 %FS
Crosstalk from y to x at rated load	2 %FS
Crosstalk from z to x/y at rated load	2 %FS

Abbreviation : RD: „Reading“; FS: „Full Scale“;

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



Pin Configuration

Channel	Symbol	Description	Wire colour	PIN
X-Axis	+Us	sensor supply	brown	2
	-Us	sensor supply	white	1
	+Ud	bridge output	green	3
	-Ud	bridge output	yellow	4
Y-Axis	+Us	sensor supply	pink	6
	-Us	sensor supply	grey	5
	+Ud	bridge output	blue	7
	-Ud	bridge output	red	8
Z-Axis	+Us	sensor supply	purple	10
	-Us	sensor supply	black	9
	+Ud	bridge output	grey / pink	11
	-Ud	bridge output	red / blue	12

accessories

Description Description



Calibration Certificate kn/200/5/K3D Factory calibration certificate for force from 21 kN to 200 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.



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



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
