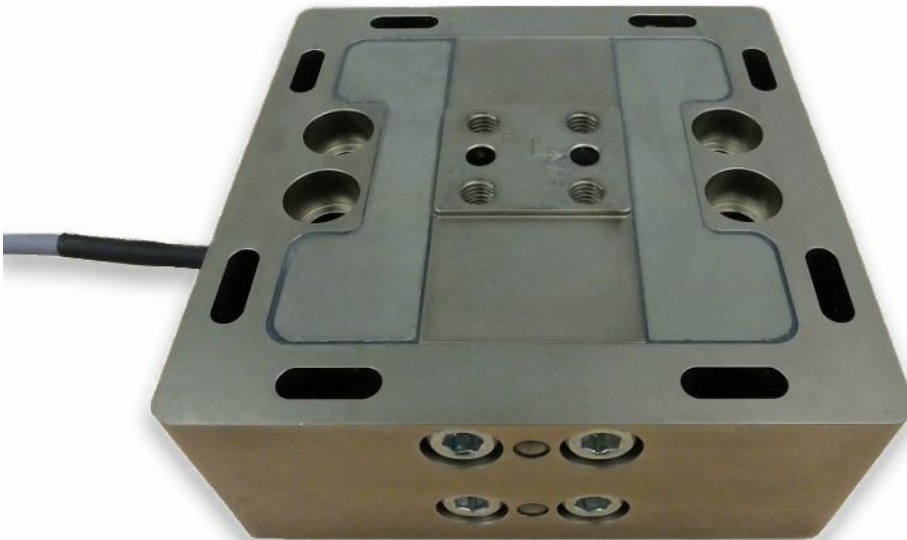


## K3D160 $\pm 2\text{kN}$ , $\pm 5\text{kN}$ , $\pm 10\text{kN}$ , $\pm 20\text{kN}$ , $\pm 50\text{kN}$



### Description

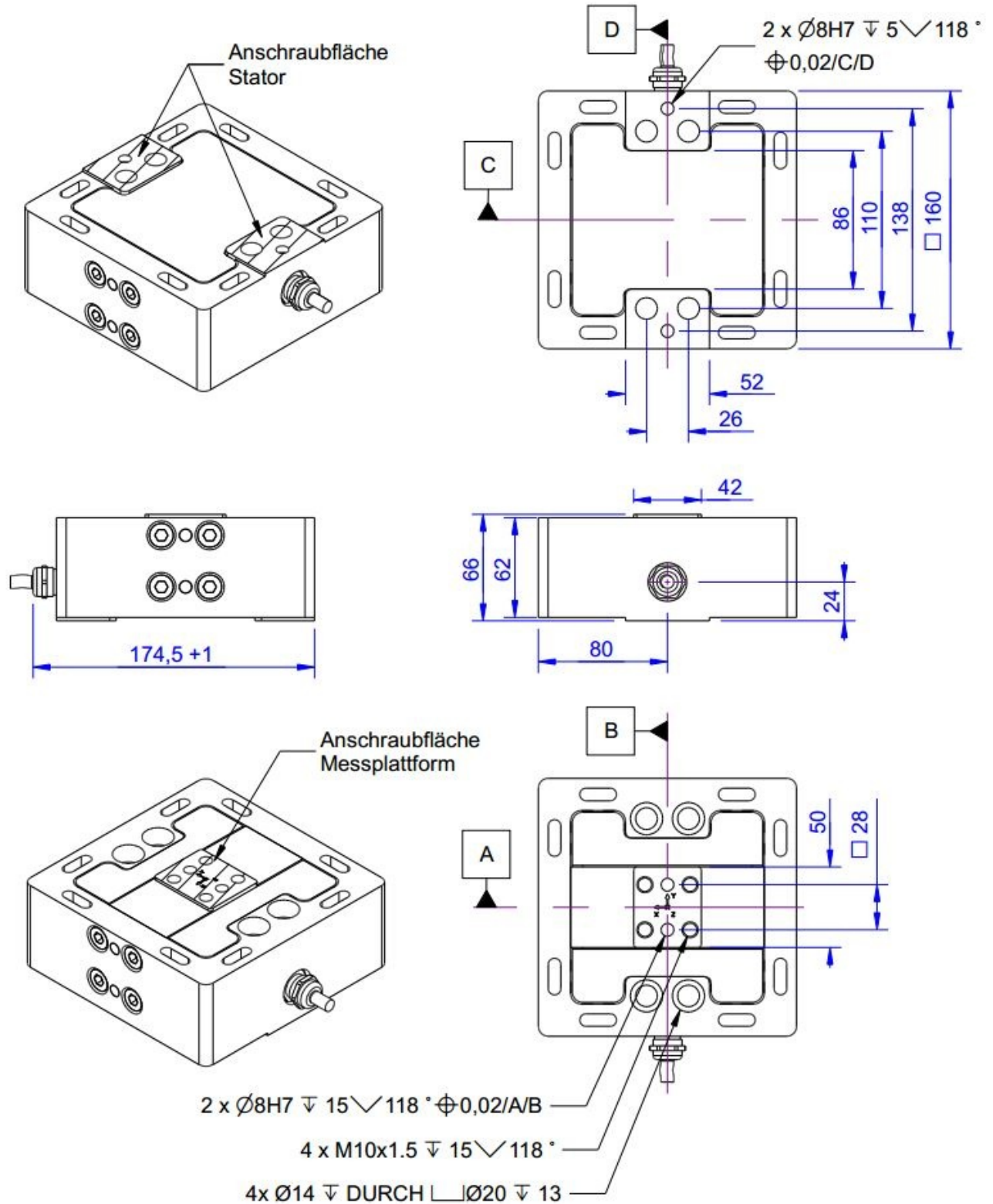
The 3-axis sensor **K3D160** is suitable for measuring force in three mutually perpendicular axes.

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

Areas of application are, for example, force measurement during production processes, force control in handling machines, force measurement during assembly processes, three-dimensional load measurement, measurement of friction forces.

## Dimensions



## Technical Data

### Kraftsensoren

Type	3-axis force sensor
Force direction	Tension / Compression
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
Torque limit	1 kNm
Bending moment limit	1 kNm

### 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	0.4 %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
Environmental protection	IP67	

### Exzentrizität und Übersprechen

Allowed torque according of eccentric load	1000	Nm
Influence of eccentric load to FS	1	%FS / 500Nm
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
Crosstalk from x/y to z at rated load	2	

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

*Pressure load: positive output signal.*

*Shield- transparent.*

## accessories

Description Description	
	<p>Calibration Certificate kn/200/5/K3D</p> <p>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.</p>
	<p>Calibration Certificate kn/20/5/K3D</p> <p>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.</p>
	<p>GSV-1A4 SubD37/2</p> <p>4-channel strain gauge measuring amplifier for sensors with strain gauges. Adaptation of the sensor via <u>Sub-D-37 connector</u>. Output <math>\pm 10V</math> and 4 ... 20mA via 15-pin SUB-D (female); Input sensitivity 2mV/V;</p>
	<p>GSV-4USB SubD37</p> <p>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</p>