

Multi-axis force sensor K3D60a

Measuring ranges: $\pm 10\text{N}$, $\pm 20\text{N}$, $\pm 50\text{N}$, $\pm 100\text{N}$, $\pm 200\text{N}$, $\pm 500\text{N}$



Description

The K3D60a three-axis sensor is suitable for measuring force on three mutually perpendicular axes.

The new 3-axis sensor K3D60a is a further development of the series K3D60 and it is available in the measuring ranges $\pm 20\text{N}$ to $\pm 500\text{N}$.

Up to a rated load of $\pm 100\text{N}$, these sensors are made of aluminum, from a rated load of $\pm 200\text{N}$ these force sensors are made of stainless steel.

The sensor K3D60 (11/2009 ... 02/2016) 2016 was replaced by the improved implementation K3D60a.

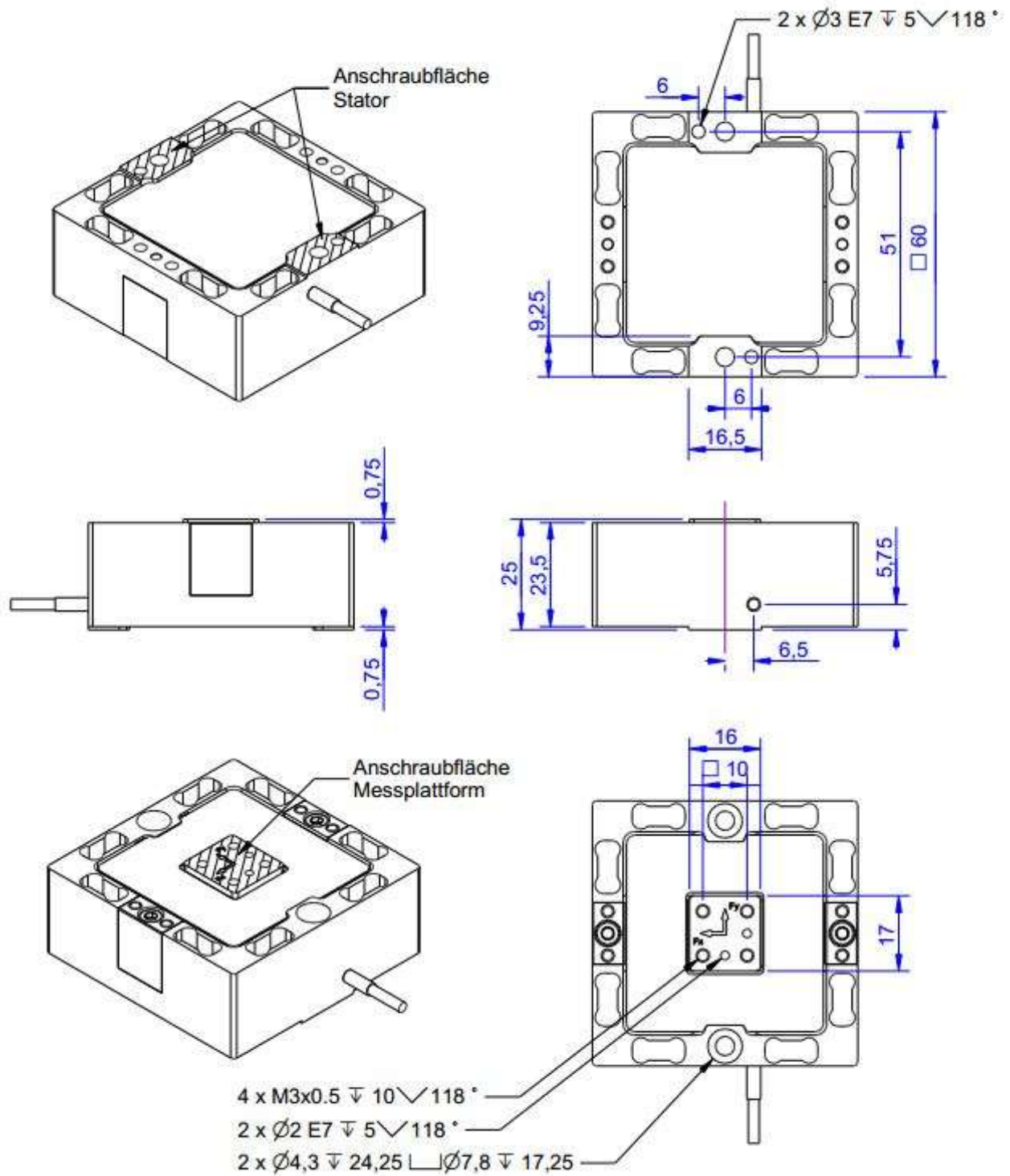
	K3D60	K3D60a
Fastening	2x M3	2x M4
Measuring Platform	14mm x 14mm, 2x M3 (8mm x 8mm)	16mm x 16mm 2x M3 (10mm x 10mm)
Nominal Force	$\pm 10\text{N}$, $\pm 100\text{N}$	$\pm 10\text{N}$, $\pm 500\text{N}$

The force is applied to the platform 16mm x 16mm.

The bottom of the sensor is fixed with 2 screws M4

The force sensor is characterized by a particularly compact design with a footprint of 60mm x 60mm and a low overall height of only 25mm.

Dimensions K3D60a



Technical Data

Design & Material		
Type		3-axis force sensor
Material		Aluminium $\pm 20\text{N} \dots \pm 100\text{N}$ stainless steel $\pm 200\text{N} \dots \pm 500\text{N}$
Length x wide x height	mm x mm x mm	60 x 60 x 25
Force transmission / fastening		4x female thread M3x0,5
Weight	g	110
Mechanical data		
Nominal force (FS). x-, y-, z-Axis	N	$\pm 10 \dots \pm 500$
Operating force	%FS	150
Breaking force	%FS	300
Elektrical Data		
Nominal output (FS) x-Axis	mV/V @ FS	0,5 ¹⁾
Nominal output (FS) y-Axis	mV/V @ FS	0,5 ¹⁾
Nominal output (FS) z-Axis	mV/V @ FS	0,5 ¹⁾
Zero signal tolerance	mV/V	$\pm 0,1$
Max. supply voltage	V	10
Input resistance x, y-Axis ²⁾	Ohm	710 ± 10
Output resistance x, y-Axis ²⁾	Ohm	710 ± 10
Input resistance z-Axis ²⁾	Ohm	710 ± 10
Output resistance z-Axis ²⁾	Ohm	710 ± 10
Insulation resistance	Ohm	$> 5 \cdot 10^9$
Connection cable teflon STC-32T-12	m	3
Precision		
Precision class	%	1
Linearity error	% FS	$\leq 0,2$
Backlash width	% FS	$\leq 0,02$
Temp. coeff. of the zero signal	%FS / K	$\pm 0,02$
Temp. coeff. of the nominal output	% RD / K	$\pm 0,02$
Creep error (30 min)	% FS	$\leq 0,1$
Eccentricity & Crosstalk		
Allowed torque according of eccentric load	Nm	5Nm (Al), 10Nm (VA)
Influence of eccentric load FS	% FS @ 50mm	1
Crosstalk from x to y at fullscale	% FS	< 2
Crosstalk from y to x at fullscale	% S	< 2
Crosstalk from z to x/y fullscale	% FS	< 2
Temperature		
Nominal temperature range	°C	-10...+70
Operating temperature range	°C	-10...+85
Storage temperature range	°C	-10...+85

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



- 1) The exact rated output is reported in the test report .
- 2) K3D60a with 370 and 390 Ohm input impedance and 350 ohm output resistance

Pin Configuration

Wire assignment		Description	Colour of wire
X-Axis	+ Us	Sensor supply	brown
	- Us	Sensor supply	white
	+ Ud	Bridge output	green
	-Ud	Bridge output	yellow
Y-Axis	+ Us	Sensor supply	pink
	- Us	Sensor supply	gray
	+ Ud	Bridge output	blue
	- Ud	Bridge output	red
Z-Axis	+ Us	Sensor supply	purple
	- Us	Sensor supply	black
	+ Ud	Bridge output	orange
	- Ud	Bridge output	transparent

Connecting cable: 3 m cable, 12-pin with teflon sheath and shield, diameter 2.0mm

Anhang

Dimensions K3D60

Year of manufacture 2009...2015

