

KD68 $\pm 5\text{N}$ à $\pm 1\text{kN}$



Description

The force sensor KD68 has the geometry of a miniature load cell. It is fastened on one side using the threads M6.

The surfaces for mounting the sensor and for mounting the force introduction are offset by 1.5 mm so that the sensor can be mounted without additional spacers. Due to its very flat design, the sensor is also suitable for mounting between plates to build up a force measuring plate, for example to determine the center of pressure (COP).

There is a thread M6 for force transmission, which is displaced parallel under loading. The force sensor tolerates displacements of force transmission and lateral forces due to its design as a double-beam.

Technical Data - Version 5N - Aluminium

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	5 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Aluminium alloy
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

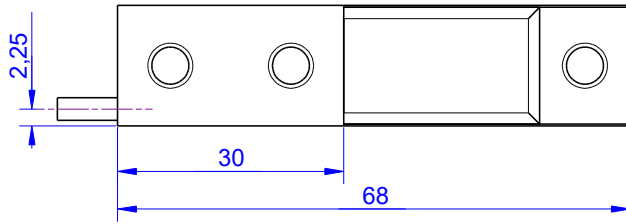
Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.1 %FS

Connection Data

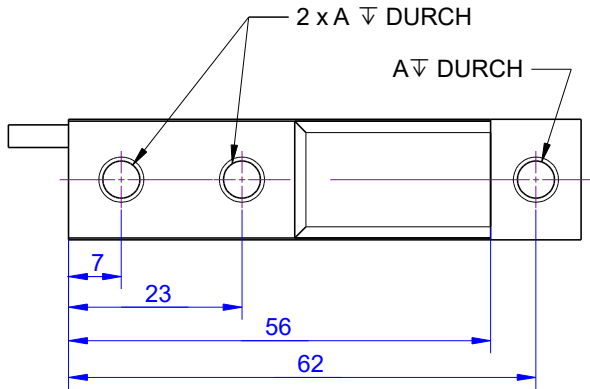
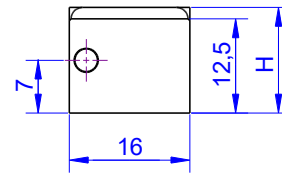
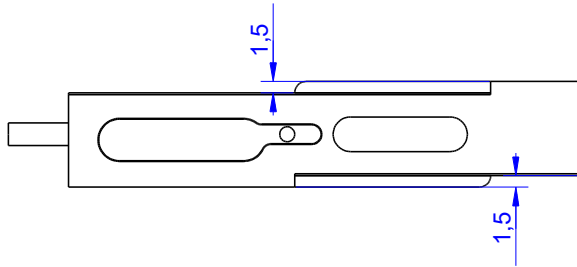
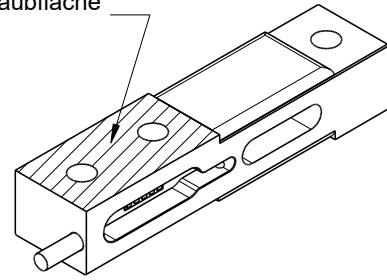
Connection type	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

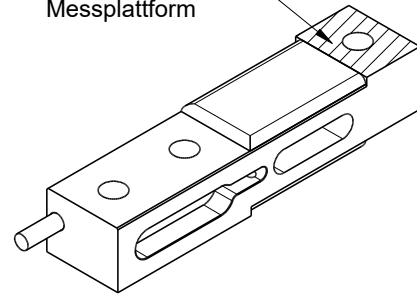
Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C



Anschraubfläche
Stator



Anschraubfläche
Messplattform



Nennlast	H in mm	A Gewindebohrung	Signal	Material
5N	10	M5x0.8	1 mV/V	3.4365
10N	10	M5x0.8	1 mV/V	3.4365
20N	10	M5x0.8	1 mV/V	3.4365
50N	10	M5x0.8	1 mV/V	3.4365
100 N	10	M5x0.8	1 mV/V	1.4542
200 N	10	M5x0.8	1 mV/V	1.4542
300 N	10	M5x0.8	1,29 mV/V	1.4542
500 N	12	M6x1	1 mV/V	1.4542
1000 N	14	M6x1	1 mV/V	1.4542

Kanten o. Maßangabe DIN 6784		Innenkanten ± 0.5		Außenkanten ± 0.3		Allgemeintoleranzen ISO 2768-mK		Maßstab: 1,25:1		Gewicht: -		ME-Art.: -	
Gewindesenkungen DIN 76 unter 90° bis 120° bis Gewindeaußendurchmesser		Oberfläche: DIN EN ISO 1302 ($\sqrt{Rz16}$)		Halbzeug: -		Material: s. Tabelle		Bauteilbenennung:		Zeichnungsnummer:		Blatt:-	
			Datum	Name		KD68 K-Modell		KD68_000_K(a)		-		-	
		Bearb.	08.08.19	Dommert									
		Gep.	09.08.19	Völker									
			Norm										
(a)	Tabelle hinzugefügt	01.02.2021	SD	ME-Meßsysteme GmbH		Tel.: +49 3302 7862060		www.me-systeme.de		-		-	
Zust.	Änderung	Datum	Name	Schutzvermerk DIN 34 beachten		Ersatz für: -		-		-		Format: A	

Technical Data - Version 10N - Aluminium

Force sensor	
Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	10 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Aluminium alloy
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data	
Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision	
Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature	
Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 20N - Aluminium

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	20 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Aluminium alloy
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 50N - Aluminium

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	50 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Aluminium alloy
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 100N - Acier inoxydable

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	100 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 200N - Acier inoxydable

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	200 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 300N - Acier inoxydable

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	300 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 500N - Acier inoxydable

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	500 N
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

Technical Data - Version 1kN - Acier inoxydable

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	1 kN
Force introduction	Inner thread
Dimension 1	1xM6x1
Sensor Fastening	Inner thread
Dimension 2	2xM6x1
Operating force	400 %FS
Rated displacement	0.1 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Dimensions	68 x 16 x 14 mm

Electrical Data

Input resistance	1200 Ohm
Tolerance input resistance	200 Ohm
Output resistance	1000 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	2 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V
relative error of characteristic value	0.1 %FS

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %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	4 conductor open
Name of the connection	STC-31V-4
Cable length	1 m

Temperature

Rated temperature range f	-10 ... 70 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C

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

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





Pin Configuration

Symbol	Description	Wire colour
+Us	positive bridge supply	red
-Us	negative bridge supply	black
+Ud	positive bridge output	green
-Ud	negative bridge output	white

Pressure load: positive output signal.

Shield- transparent.

accessories

	Description	Description
	Calibration Certificate kn/1000/5	Factory calibration certificate for force to 1 MN 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-1H	Measuring amplifier in top-hat rail housing for sensors with strain gauges. Analogue output -10V...+10V, limiting frequency 250Hz, 4 input sensitivities from 2.0mV/V.
	GSV-1A	Measuring amplifier in aluminum housing (IP66) for sensors with strain gauges. two round plugs M12, analogue output -10V...+10V, limiting frequency 250Hz, 4 input sensitivities from 2.0 mV/V.
	GSV-6K	Analogue measuring amplifier in plug housing for sensors with strain gauges. Analogue output configurable, TEDS, sampling frequency 1Hz ... 25kHz, input sensitivity configurable 0.1mV/V ... 8mV/V