

KM30z 1kN à 50kN

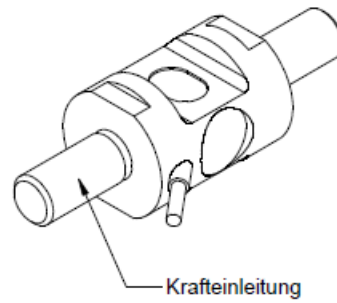
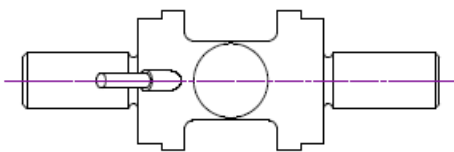
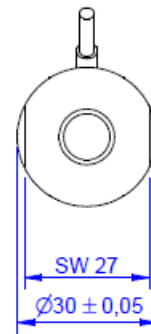
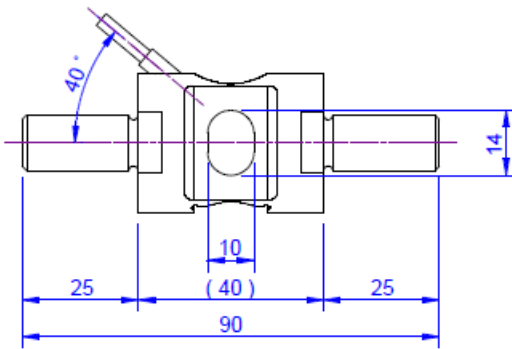
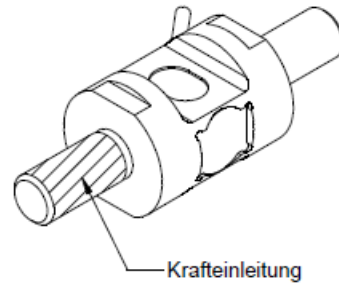
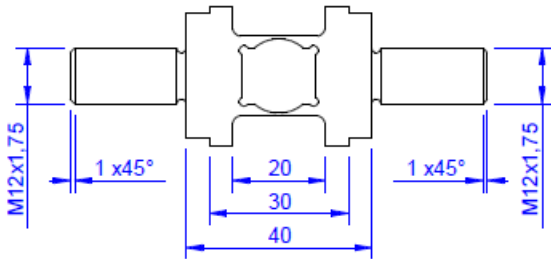


Description

The KM30z force sensor is a compact tension/pressure/force sensor. Two threads are provided for application of force: M12 coarse-feeding thread up to 10kN, M16 coarse-feeding thread for 20kN, M20 coarse-feeding thread to 50kN. The versions up to 2kN are made of aluminium alloy. Ring nuts are also available as accessories.

The protection class is IP67.

Dimensions



Technical Data - Version 1kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	1 kN
Force introduction	Außengewinde
Dimension 1	M12
Sensor Fastening	Außengewinde
Dimension 2	M12
Operating force	200 %FS
Rated displacement	0.04 mm
Lateral force limit	10 %FS
Material	Aluminium alloy
Natural frequency	10 kHz
Height	90 mm
Length or Diameter	30 mm
Torque limit	20 Nm
Bending moment limit	10 Nm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 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

Precision

Accuracy class	0,5%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.05 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.02 %RD/K
Relative creep	0.1 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	ME-SYSTEME.DE / 24-4 PUR
Cable length	3 m

Temperature

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

Technical Data - Version 2kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	2 kN
Force introduction	Außengewinde
Dimension 1	M12
Sensor Fastening	Außengewinde
Dimension 2	M12
Operating force	200 %FS
Rated displacement	0.04 mm
Lateral force limit	10 %FS
Material	Aluminium alloy
Natural frequency	10 kHz
Height	90 mm
Length or Diameter	30 mm
Torque limit	20 Nm
Bending moment limit	10 Nm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 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

Precision

Accuracy class	0,5%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.05 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.02 %RD/K
Relative creep	0.1 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	ME-SYSTEME.DE / 24-4 PUR
Cable length	3 m

Temperature

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

Technical Data - Version 5kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	5 kN
Force introduction	Außengewinde
Dimension 1	M12x1,75
Sensor Fastening	Außengewinde
Dimension 2	M12x1,75
Operating force	200 %FS
Rated displacement	0.04 mm
Lateral force limit	10 %FS
Material	Aluminium alloy
Natural frequency	10 kHz
Height	90 mm
Length or Diameter	30 mm
Torque limit	20 Nm
Bending moment limit	10 Nm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 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 / FS

Precision

Accuracy class	0,5%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.05 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.02 %RD/K
Relative creep	0.1 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	ME-SYSTEME.DE / 24-4 PUR
Cable length	3 m

Temperature

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

Technical Data

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	10 kN
Force introduction	Außengewinde
Dimension 1	M12
Sensor Fastening	Außengewinde
Dimension 2	M12
Operating force	200 %FS
Rated displacement	0.04 mm
Lateral force limit	10 %FS
Material	Stainless steel
Natural frequency	10 kHz
Height	90 mm
Length or Diameter	30 mm
Torque limit	50 Nm
Bending moment limit	20 Nm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 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

Precision

Accuracy class	0,5%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.05 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.02 %RD/K
Relative creep	0.1 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	ME-SYSTEME.DE / 24-4 PUR
Cable length	3 m

Temperature

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

Technical Data - Version 10kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	20 kN
Force introduction	Außengewinde
Dimension 1	M16
Sensor Fastening	Außengewinde
Dimension 2	M16
Operating force	200 %FS
Rated displacement	0.04 mm
Lateral force limit	10 %FS
Material	Stainless steel
Natural frequency	10 kHz
Height	90 mm
Length or Diameter	30 mm
Torque limit	50 Nm
Bending moment limit	20 Nm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 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

Precision

Accuracy class	0,5%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.05 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.02 %RD/K
Relative creep	0.1 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	ME-SYSTEME.DE / 24-4 PUR
Cable length	3 m

Temperature

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

Technical Data - Version 50kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	50 kN
Force introduction	Außengewinde
Dimension 1	M20
Sensor Fastening	Außengewinde
Dimension 2	M20
Operating force	150 %FS
Rated displacement	0.04 mm
Lateral force limit	10 %FS
Material	Stainless steel
Natural frequency	10 kHz
Height	90 mm
Length or Diameter	30 mm
Torque limit	50 Nm
Bending moment limit	20 Nm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 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

Precision

Accuracy class	0,5%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.05 %FS
Temperature effect on zero signal	0.02 %FS/K
Temperature effect on characteristic value	0.02 %RD/K
Relative creep	0.1 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	ME-SYSTEME.DE / 24-4 PUR
Cable length	3 m

Temperature

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



Storage temperature range f	-10 ... 85 °C
Environmental protection	IP67

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

1. The exact characteristic value is indicated in the test report.



Pin Configuration

Symbol	Description	Wire colour
+Us	positive bridge supply	brown
-Us	negative bridge supply	white
+Ud	positive bridge output	green
-Ud	negative bridge output	yellow

Screen - transparent.

Compressive load : positive output signal











Mounting

When assembling attachment parts, hold the sensor in place on the installation side / do not load any fastening torque through the sensor.

The load can be inserted on the end faces.

Calibration is carried out with force via the thread, not via the end faces. When loading the sensor on the end faces, the calibration can vary by a few percent compared to the calibration with a force via the thread.

accessories

Description	Description
	Elastomer Support for KD9363s, 0.25t..1.0t; Dimensions: 75mm x 40mm 150mm x 55mm; 1x Mx male thread, 1x Mx female thread;
	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.
	Factory calibration certificate for force 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.
	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.
	Measuring amplifier in desktop-housing for sensors with strain gauges. Serial port RS232, USB port, analogue output -5V...+5V, limiting frequency 260Hz, input sensitivity 3.5mV/V.
	Measuring amplifier in aluminum housing for sensors with strain gauges. Limiting frequency 1250Hz, input sensitivity 2 / 3,5 / 10 mV/V.
	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
	Ring nut for sensors with external thread KM16z, KM26z, KM30z
	Hexagon nuts rust-resistant A2 with M12, M16, M20 or M45 thread
	High Accuracy Calibration/1D