Force Sensor KM40 100N

Item number: 9781



The force sensor KM40 is a precision force sensor in membrane construction for the measurement of compressive forces. The force sensor is fastened to a flat surface with four screws M4. There is a spherical cap with a radius of 50 mm provided for the force transmission. The force is applied with a flat plate against the cap. The strength introduction occurs with a flat plate against the cap.

The hardness of the spherical cap is HRC 54.
A flattening of the spherical cap from a load of about 20kN is therefore possible.
Environmental protection rating is IP 67.

In contrast to the force sensors KD, KD's and LC series lateral forces from about 5% the original naming power can lead to a measurement error greater than 1%. Therefore, the force transmission must be centric.

Optional special version

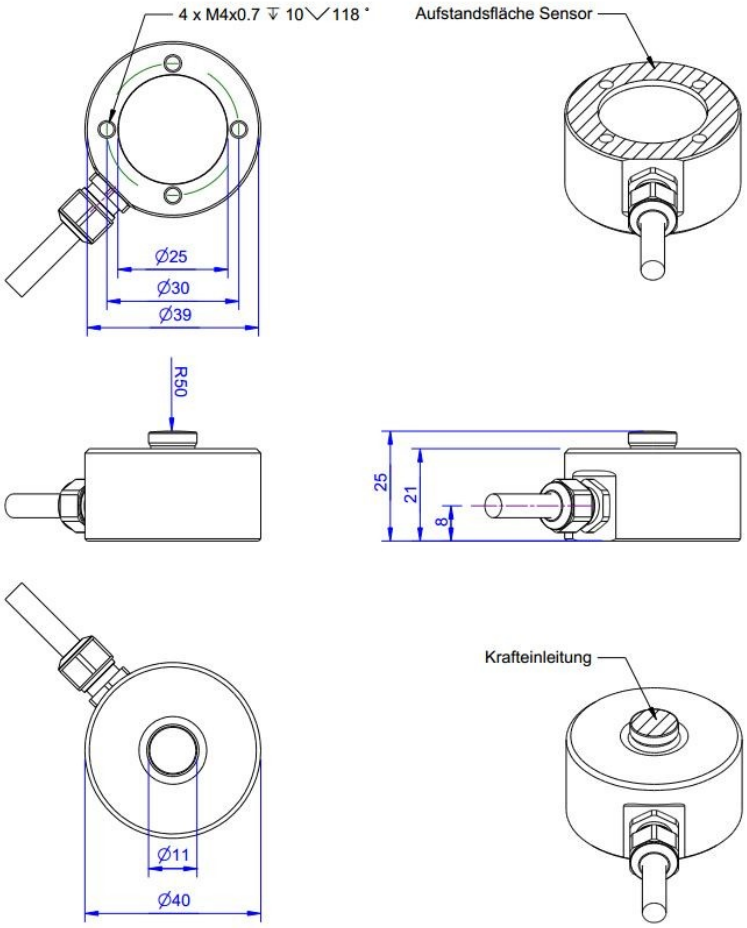
- Protection class IP68: from rated force 200 N
- Temperature range -40°C to 180°C
- Pressure range up to 8 bar
- Suitable for cleanrooms

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Stand: 04.11.2026

Technical Drawing



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Technical Data

Basic Data		Unit
Type	Force load cell	
Force direction	Compression	
Rated force Fx	100	N
Force introduction	Load button	
Dimension 1	Ø11x4	
Sensor Fastening	Circular ring	
Dimension 2	Ø40x7,5	
Operating force	150	%FS
Rated displacement	0.07	mm
Lateral force limit	50	%FS
Material	Stainless steel	
Natural frequency fx	5	kHz
Dimensions	Ø 40mm x 25mm	
Height	25	mm
Length or Diameter	40	mm
Variants	100N...50kN	

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Electrical Data		Unit
Input resistance	390	Ohm
Tolerance input resistance	40	±
Output resistance	350	Ohm
Tolerance output resistance	1	±
Insulation resistance	2x10^9	Ohm
Rated range of excitation voltage from	2.5	V
Rated range of excitation voltage to	5	V
Operating range of excitation voltage from	1	V
Operating range of excitation voltage to	10	V
Zero signal	0.05	mV/V
Rated output	1	mV/V / FS

Accuracy Data		Unit
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
Environmental Data		**Unit**
Rated temperature range from	-10	°C
Rated temperature range to	70	°C
Operating temperature range from	-10	°C
Operating temperature range to	85	°C
Storage temperature range from	-10	°C
Storage temperature range to	85	°C
Environmental protection	IP67	

Abbreviation: RD: „Reading“; FS: „Full Scale“;1) The exact nominal sensitivity is indicated in the test report;

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Pin Assignment

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

Pressure load: positive output signal.
Shield- transparent.

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