Force Sensor KM90 20kN

Item number: 933



The force sensor KM90 is a membrane-type force sensor for measurement of compressive forces. The force sensor is fixed with four M8 screws from above on a flat surface with M8 tapped holes. Alternatively, the sensor is attached from below with 4 M10 screws. For force transmission there exists a spherical cap with radius 100 mm.

The force sensor KM90e is a membrane-type force sensor for measurement of compressive forces. The integrated electronic GSV-15L provides an output signal 0...10 Volt or 4-20mA proportional to the applied force on the constructional element. The electronic GSV-15L offers a digital input for automatic zero adjustment, a digital input for autoscale and a digital output as threshold switch.

Environmental protection is IP 67.

Optional special version

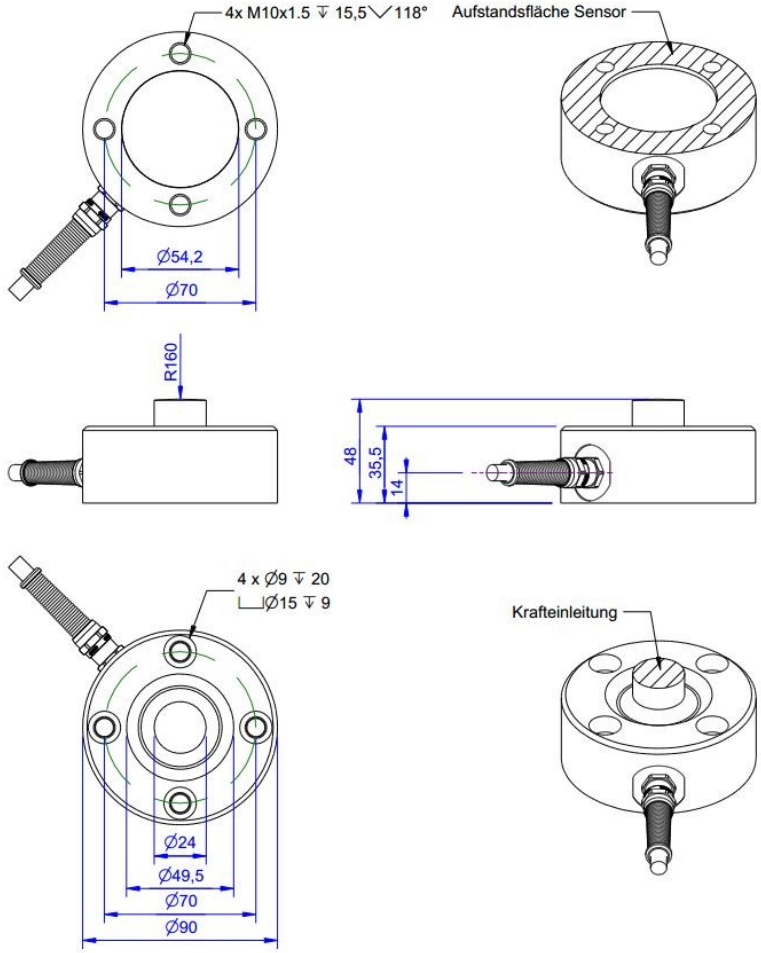
- Protection class IP68: from rated force 200 N
- Temperature range -40°C to 180°C
- Vacuum version > 10^{-5} mbar
- Pressure range up to 8 bar
- Suitable for cleanrooms

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Stand: 28.08.2026

Technical Drawing



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Technical Data

Basic Data		Unit
Type	Force load cell	
Force direction	Compression	
Rated force Fx	20	kN
Force introduction	Load button	
Dimension 1	Ø24x12,5	
Sensor Fastening	Circular ring	
Dimension 2	Ø90x35,8	
Operating force	150	%FS
Rated displacement	0.07	mm
Lateral force limit	50	%FS
Material	Stainless steel	
Natural frequency fx	5	kHz
Dimensions	Ø 90mm x 48mm	
Height	48	mm
Length or Diameter	90	mm
Variants	20kN... 50kN	

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Electrical Data		Unit
Input resistance	780	Ohm
Tolerance input resistance	80	±
Output resistance	700	Ohm
Tolerance output resistance	2	±
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	

Compressive load: positive output signal. Shield: transparent.

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