Force Sensor KM90i 20kN/010

Item number: 16893



The force sensor KM90i 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 KM90i is a membrane-type force sensor for measurement of compressive forces. The integrated electronic GSV-6L provides an output signal 0...10 Volt or 4-20mA proportional to the applied force on the constructional element. The electronic GSV-6L offers a digital input for automatic zero adjustment, a digital input for autoscale and a digital output as threshold switch.

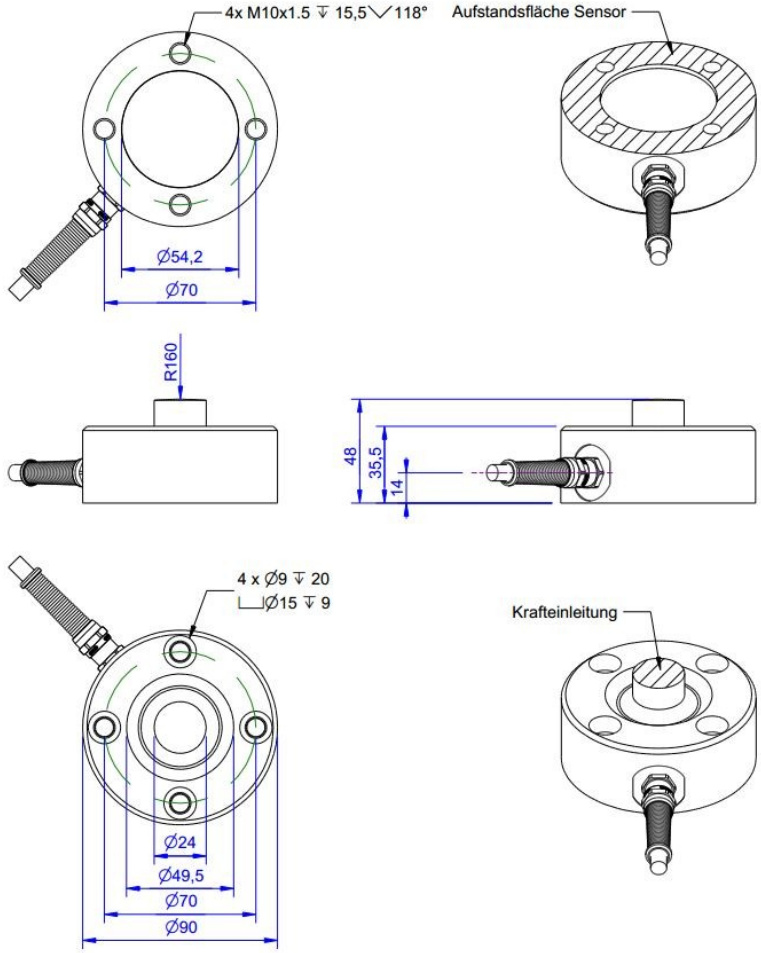
Environmental protection is IP 67.

ME-Meßsysteme GmbH
Eduard-Maurer-Str. 9
DE-16761 Hennigsdorf

Tel: +49 (0)3302 8982 4 10
Mail: vertrieb@me-systeme.de
Web: www.me-systeme.de

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	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	Ø90 mm x 48 mm	
Height	48	mm
Length or Diameter	90	mm
Variants	20kN...50kN	

Electrical Data		Unit
Input resistance	390	Ohm
Tolerance input resistance	40	Ohm
Output resistance	350	Ohm
Tolerance output resistance	1	Ohm
Insulation resistance	2	GOhm
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

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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

Analog Output		Unit
Voltage output from	0	V
Voltage output to	10	V
Zero adjustment to	0	V

Supply		Unit
Supply voltage from	14	V
Supply voltage to	30	V
Current consumption from	15	mA

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
	Ub	Supply voltage (depends on variant)	brown	
	GND	Ground power supply	white	
	Ua (Out)	Output signal 4... 20mA / 0... 10V / 0... 5V	green	
	Tara (Ta)	Control input for zero balance	yellow	
	Scale (Sc)	Control input for amplification factor	grey	
	GND	Ground, signal	pink	
		Shield	transparent	

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