



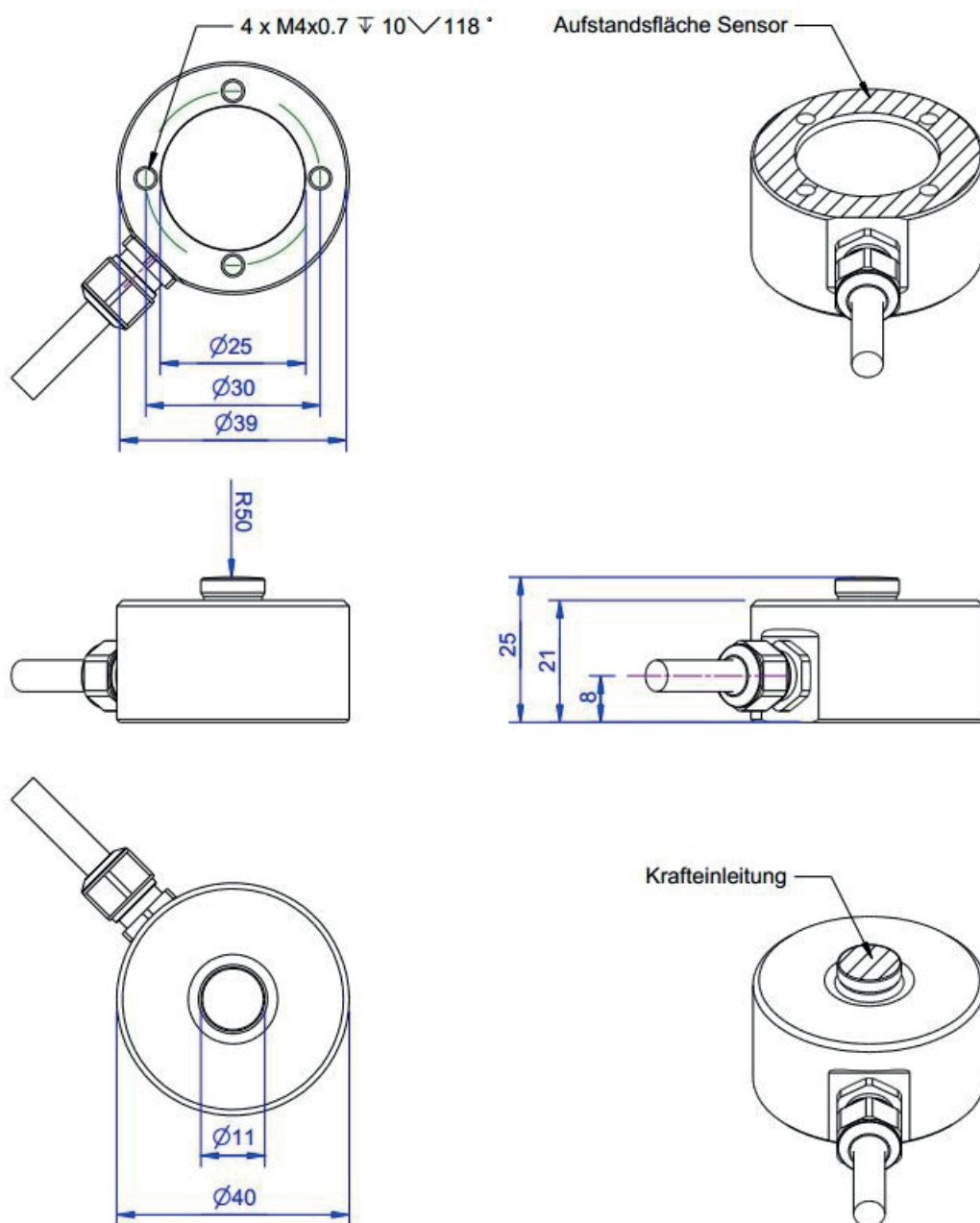
### Description

The force sensor KM40e is a precision force sensor in membrane construction with integrated miniature electronics 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 of series KD, KDs and LC the lateral forces from about 5% of the nominal load can lead to a measurement error greater than 1%. Therefore, the force transmission must be centric.

## Dimensions



## Technical Data

### Force sensor

Type	Load cell
Force direction	Compression
Rated force F <sub>x</sub>	500 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	5 kHz
Height	25 mm
Length or Diameter	40 mm

### Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 ±
Output resistance	350 Ohm
Tolerance output resistance	1 ±
Insulation resistance	2x10 <sup>9</sup> Ohm
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	6 conductor open
Name of the connection	Unitronic FD CP Plus / 3x2x0,14
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 nominal sensitivity is indicated in the test report;

## Pin Configuration

Symbol	Description	Wire colour
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	blue
	Shield	transparent

## accessories

Description	Description
 Calibration Certificate kn/20/5	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.
 GSV-1H	Measuring amplifier in top-hat rail housing for sensors with straingages. Analogue output -10V...+10V, limiting frequency 250Hz, 4 input sensitivities from 2.0mV/V.
 GSV-2TSD-DI	Measuring amplifier in desktop-housing for sensors with straingages. Serial port RS232, USB port, analogue output -5V...+5V, limiting frequency 260Hz, input sensitivity 3.5mV/V.
 GSV-3USB	Measuring amplifier in aluminum housing (IP54) for sensors with straingages. Limiting frequency 1250Hz, input sensitivity 2 / 3,5 / 10 mV/V.
 GSV-6K	Analogue measuring amplifier in plug housing for sensors with strain gauges. Analogue output configurable, TEDS, sampling frequency 10Hz ... 25kHz, input sensitivity configurable 0.1mV/V ... 8mV/V
 Configuration amplifier	As a free service, we offer the setting of calibration factors in the memory of the measuring amplifier
 High Accuracy Calibration/1D	