

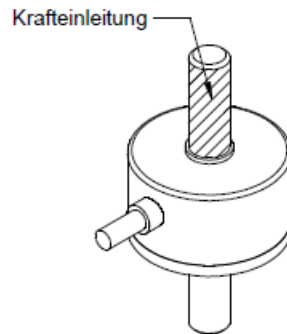
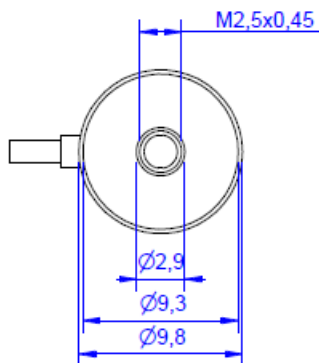
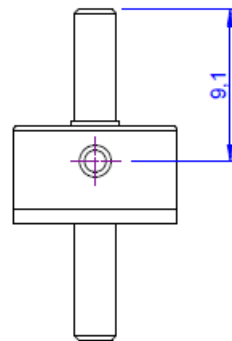
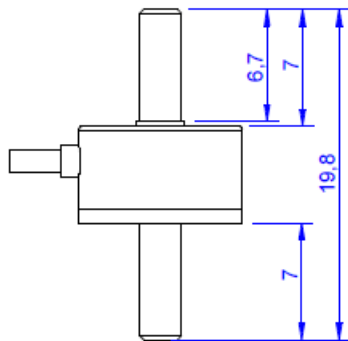
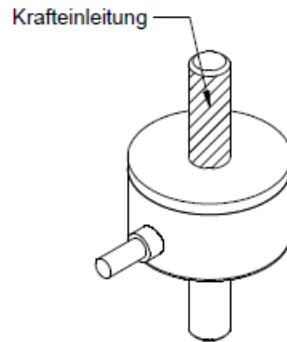
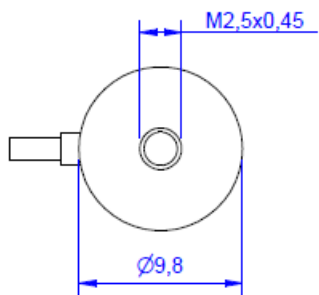
## KM10z 200N



### Description

The KM10z membrane force sensor is ultra-miniature sensor for force and pressure measurement. The force is applied on two M2.5 thread. In the application of force is necessary to ensure that no bending moments greater than 0.1 Nm be initiated.

## Dimensions



## Technical Data

### Force sensor

|                            |                       |
|----------------------------|-----------------------|
| Type                       | Load cell             |
| Force direction            | Tension / Compression |
| Rated force F <sub>x</sub> | 200 N                 |
| Force introduction         | Außengewinde          |
| Dimension 1                | M2,5x0,45             |
| Sensor Fastening           | Außengewinde          |
| Dimension 2                | M2,5x0,45             |
| Operating force            | 150 %FS               |
| Rated displacement         | 0.04 mm               |
| Lateral force limit        | 10 %FS                |
| Material                   | Stainless steel       |
| Natural frequency          | 5 kHz                 |
| Height                     | 19.8 mm               |
| Length or Diameter         | 9.8 mm                |
| Torque limit               | 5 Nm                  |
| Bending moment limit       | 0.2 Nm                |

### Electrical Data

|                                         |                       |
|-----------------------------------------|-----------------------|
| Input resistance                        | 390 Ohm               |
| Tolerance input resistance              | 40 ±                  |
| Output resistance                       | 350 Ohm               |
| Insulation resistance                   | 2x10 <sup>9</sup> Ohm |
| Rated range of excitation voltage f     | 2.5 ... 5 V           |
| Operating range of excitation voltage f | 1 ... 5 V             |
| Zero signal                             | 0.05 mV/V             |
| characteristic value range min          | 0.5 mV/V / FS         |
| characteristic value range max          | 1 mV/V / FS           |

### Precision data

|                                            |            |
|--------------------------------------------|------------|
| Accuracy class                             | 1%         |
| 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 | STC-36T-4        |
| Cable length           | 3 m              |

### Environmental data

|                           |               |
|---------------------------|---------------|
| 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.
2. Values in () for compression and tension fluctuating measurement values

## Pin Configuration

| Symbol | Description            | Wire colour |
|--------|------------------------|-------------|
| +Us    | positive bridge supply | red         |
| -Us    | negative bridge supply | black       |
| +Ud    | positive bridge output | green       |
| -Ud    | negative bridge output | white       |

Screen - transparent.

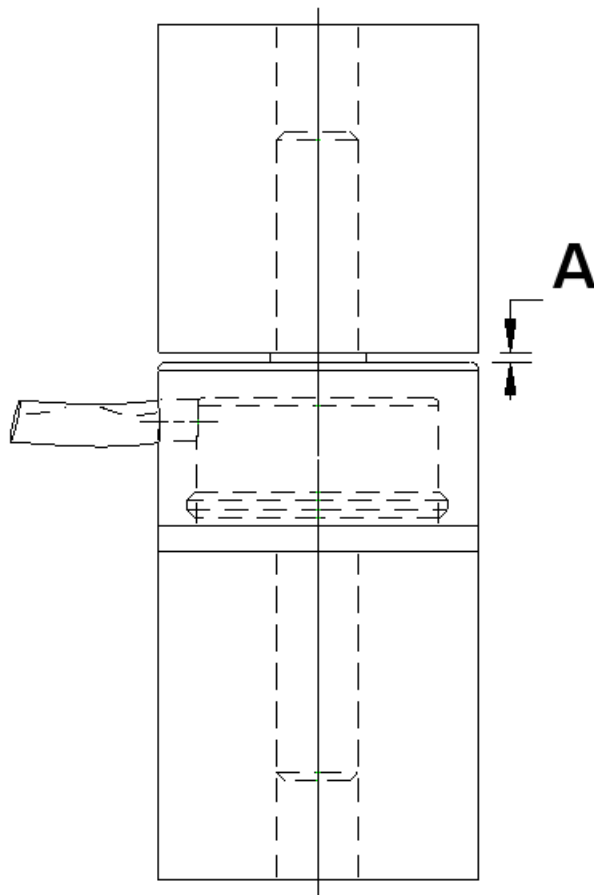
Pressure load : positive output signal

## Mounting

Installation instructions: When assembling attachment parts, hold the sensor in place on the installation side / do not guide any tensioning torque through the sensor. Attachment parts may be supported on adjustable feet on the end faces, if preferred

Note: We recommend that the sensor KM10z with rated load 500N to use only for pressure measurements! Thread the sensor only suitable for sensor mounting, not suitable for tension!

## Installation



Gap "A" may not be closed, is necessary for the function of the force sensor.

## accessories

|                                                                                   | Description                        | Description                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Calibration<br>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 strain gauges. 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 strain gauges. Serial port RS232, USB port, analogue output -5V...+5V, limiting frequency 260Hz, input sensitivity 3.5mV/V.                         |
|  | GSV-3USB                           | Measuring amplifier in aluminum housing for sensors with strain gauges. 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 1Hz ... 25kHz, input sensitivity configurable 0.1mV/V ... 8mV/V         |