

## KM70z 200KN 200kN

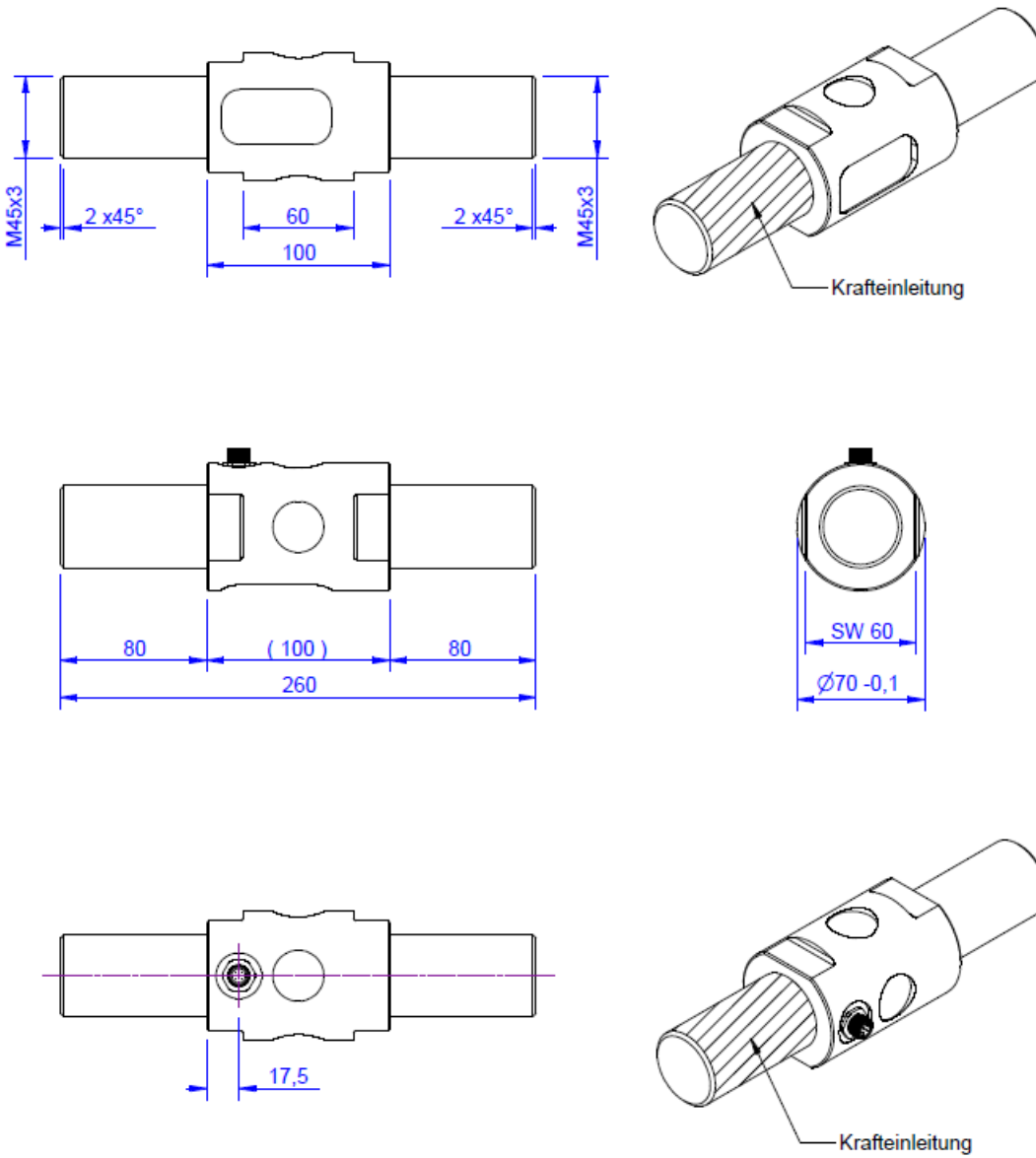


### Description

The KM70z force sensor is a tension/compression force sensor with compact dimensions. Two M45x3 coarse-feeding threads are provided for application of force.

The protection class is IP67. Connection is made with an M12 connector. 10m assembled connecting cable is included in scope of delivery.

### Dimensions



## Technical Data

### Force sensor

|                            |                       |
|----------------------------|-----------------------|
| Type                       | Force sensor          |
| Force direction            | Tension / Compression |
| Rated force F <sub>x</sub> | 200 kN                |
| Force introduction         | Außengewinde          |
| Dimension 1                | M45x3                 |
| Sensor Fastening           | Außengewinde          |
| Dimension 2                | M45x3                 |
| Operating force            | 200 %FS               |
| Rated displacement         | 0.04 mm               |
| Lateral force limit        | 10 %FS                |
| Material                   | Stainless steel       |
| Natural frequency          | 10 kHz                |
| Height                     | 260 mm                |
| Length or Diameter         | 70 mm                 |
| Torque limit               | 500 Nm                |
| Bending moment limit       | 500 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 ... 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        | Connector                              |
| Name of the connection | round plug connector M12, 4-pole, male |

### Temperature

|                               |               |
|-------------------------------|---------------|
| Rated temperature range f     | -10 ... 70 °C |
| Operating temperature range f | -10 ... 85 °C |
| Storage temperature range f   | -10 ... 85 °C |



*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 | PIN |
|--------|------------------------|-------------|-----|
| +Us    | positive bridge supply | brown       | 1   |
| -Us    | negative bridge supply | white       | 2   |
| +Ud    | positive bridge output | blue        | 3   |
| -Ud    | negative bridge output | black       | 4   |






*Compressive load: positive output signal.*



## Mounting

When assembling attachment parts, hold the sensor in place on the installation side / do not conduct any tensioning torque through the sensor. Attachment parts may be supported on the adjustable foot on the end faces, if preferred. The sensor is calibrated with application of force via the thread, not via the end faces. The calibration can deviate by a few percent when force is applied via the end faces.

## accessories

|   | Description                      | Description  |
|---|----------------------------------|--|
|  | Calibration Certificate kn/200/5 | Factory calibration certificate for force to 200 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 (IP54) for sensors with strain gauges. Limiting frequency 1250Hz, input sensitivity 2 / 3,5 / 10 mV/V.   |
|  | GSV-6K                           | analog amplifier pcb for sensors with strain gauges. Analog output configurable; sampling frequency is 10Hz ... 25kHz, input sensitivity adjustable 0.1 mV / V ... 8 mV / V                                  |