

## KM50z 100kN

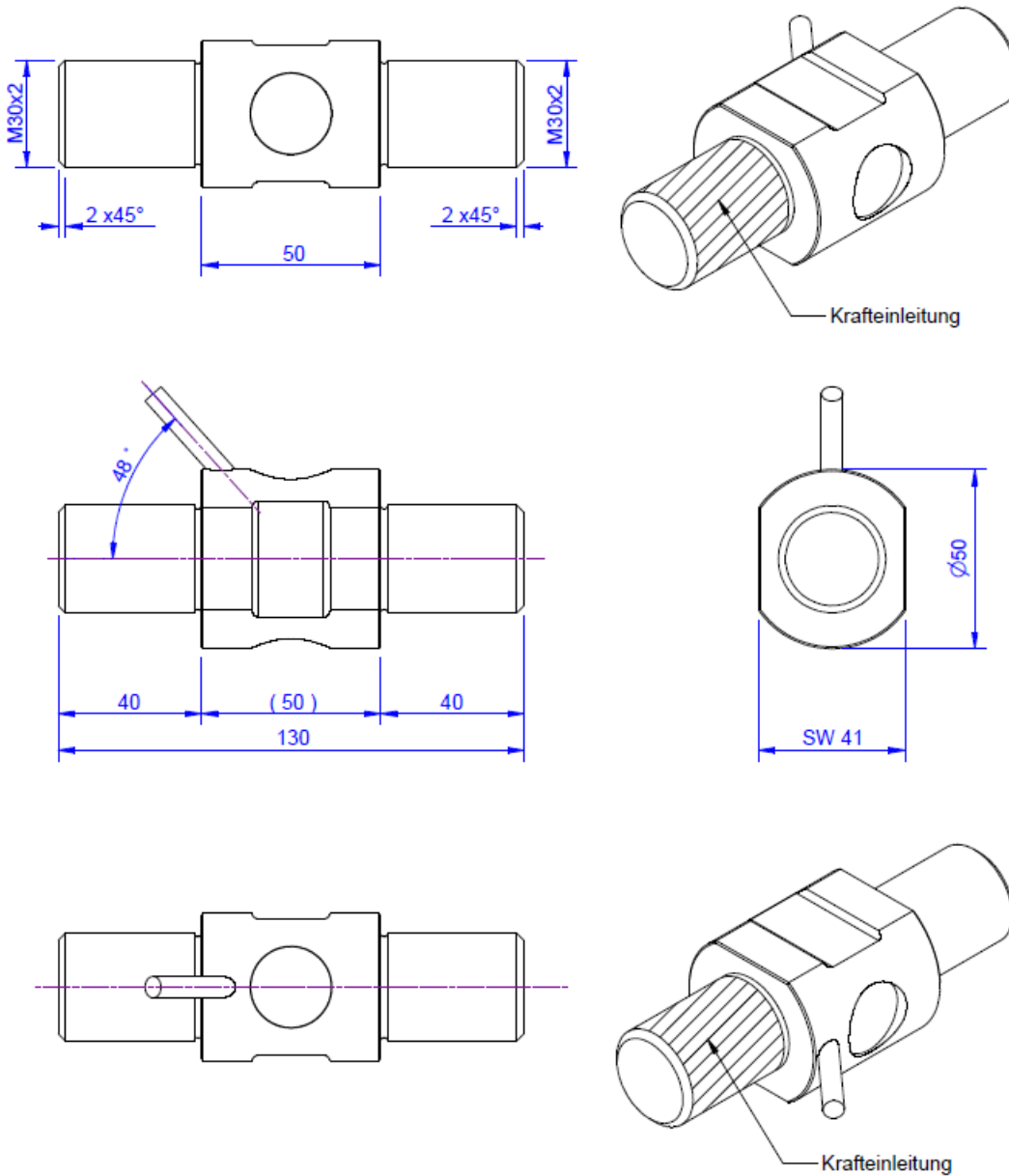


### Description

The KM50z force sensor is a compact tension/compression force sensor. Two M30 coarse-feeding threads are provided for application of force.

The protection class is IP 67.

## Dimensions



## Technical Data

### Force sensor

|                            |                       |
|----------------------------|-----------------------|
| Type                       | Force sensor          |
| Force direction            | Tension / Compression |
| Rated force F <sub>x</sub> | 100 kN                |
| Force introduction         | Außengewinde          |
| Dimension 1                | M30x2                 |
| Sensor Fastening           | Außengewinde          |
| Dimension 2                | M30x2                 |
| Operating force            | 200 %FS               |
| Rated displacement         | 0.04 mm               |
| Lateral force limit        | 10 %FS                |
| Material                   | Stainless steel       |
| Natural frequency          | 10 kHz                |
| Height                     | 130 mm                |
| Length or Diameter         | 50 mm                 |
| Torque limit               | 100 Nm                |
| Bending moment limit       | 100 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 data

|                                            |            |
|--------------------------------------------|------------|
| 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        | 4 conductor open            |
| Name of the connection | Unitronic FD CP Plus 4x0,14 |
| Cable length           | 5 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 | brown       |
| -Us    | negative bridge supply | white       |
| +Ud    | positive bridge output | green       |
| -Ud    | negative bridge output | yellow      |

*Pressure load: positive output signal.*

*Shield: transparent.*

## Mounting

When assembling attachment parts, hold the sensor in place on the installation side / do not load any fastening torque through the sensor.

The load can be inserted on the end faces.

Calibration is carried out with force via the thread, not via the end faces. When loading the sensor on the end faces, the calibration can vary by a few percent compared to the calibration with a force via the thread.

## accessories

|                                                                                   | Description                         | Description                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Calibration<br>Certificate kn/400/5 | Factory calibration certificate for force to 400 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          |