

## KM38 1kN, 2kN, 5kN, 10kN, 20kN



### Description

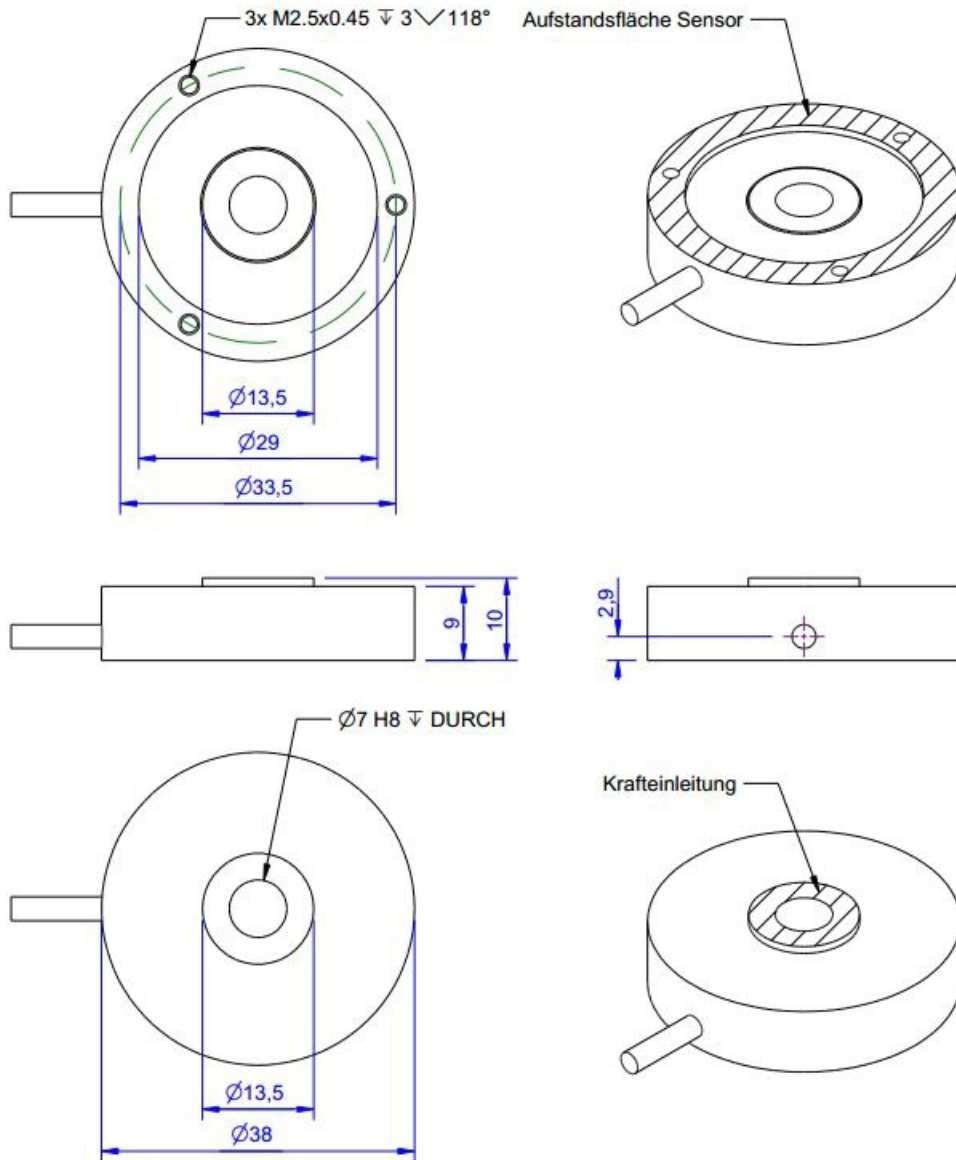
The miniature force sensor KM38 is exceptionally suitable for measuring preload of bolts on account of its flat construction and its through hole.

But the through hole 7mm is also suitable for introduction of a force transmission. With a spherical cap the force transmission can be centered and made free of lateral force .

Through the introduction of half liners or prisms these force sensors can be adapted to the measurement of rolling forces.

The three M2.5 thread holes on the bottom side permit the attachment of the sensor or the fitting of a prism.

## Dimensions



## Technical Data

### Electrical Data

|   |                   |           |
|---|-------------------|-----------|
| Input resistance                        | 780               | Ohm       |
| Tolerance input resistance              | 80                | ±         |
| Output resistance                       | 703               | Ohm       |
| Tolerance output resistance             | 5                 | ±         |
| 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                             | 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-31V-4        |
| 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      | IP66          |

### Force sensor

|                     |                 |
|---------------------|-----------------|
| Type                | Load cell       |
| Force direction     | Compression     |
| Force introduction  | Load button     |
| Dimension 1         | Ø13,5x1         |
| Sensor Fastening    | Circular ring   |
| Dimension 2         | Ø38x4,5         |
| Operating force     | 150 %FS         |
| Rated displacement  | 0.06 mm         |
| Lateral force limit | 50 %FS          |
| Material            | Stainless steel |
| Natural frequency   | 5 kHz           |
| Height              | 10 mm           |
| Length or Diameter  | 38 mm           |



*Abbreviation: RD: „Reading“; FS: „Full Scale“;*

*1) The exact nominal sensitivity is indicated in the test report;*









## 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       |

*Pressure load: positive output signal.  
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. |
|    | KM38 Calotte                    | Calotte for sensor KM38   |
|    | 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                          | 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        |