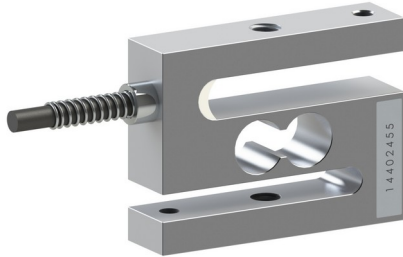


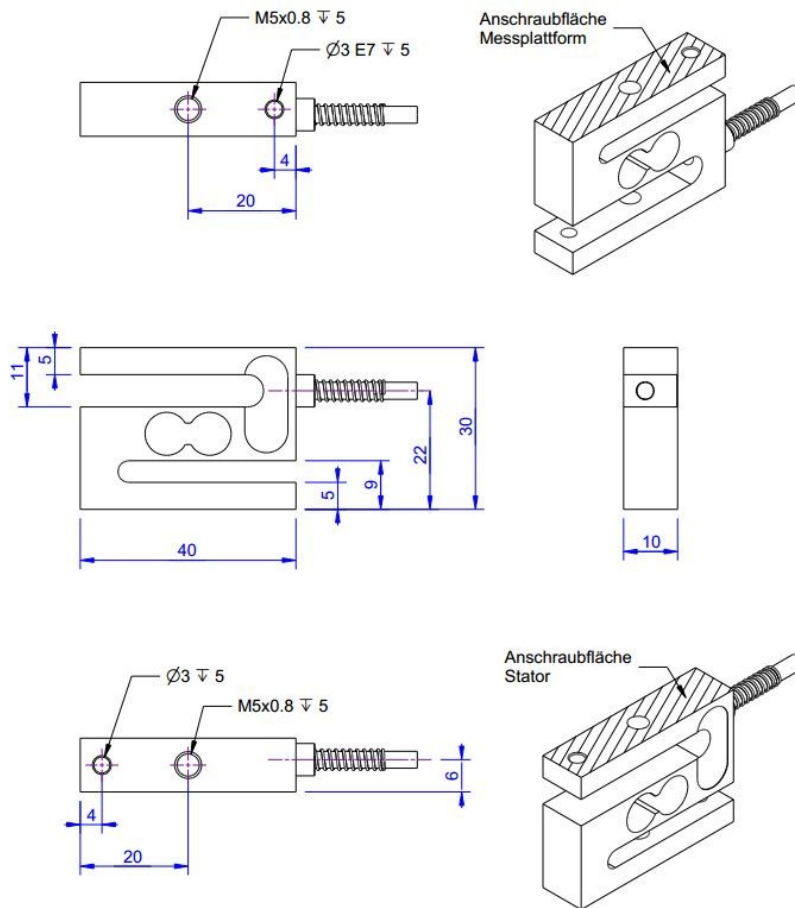
## Force Sensor KD40s 20N

Item number: 619



The force sensor KD40S is very well suited for testing tasks in quality assurance as well as in materials testing due to its compact construction. Inward and outward force transmission are arranged centrally. The force sensors KD40S up to 100N are constructed as multi-range sensors. The accuracy of 0.1% is already reached at an rated output of 0.5 mV/V. This means that the zero-point stability is 4 times higher than in a sensor with the nominal output of 2 mV/V. The force sensor KD40S can be used up to an output signal of 2 mV/V or four times the specified nominal force. The force sensor KD40S (up to 100 N) should be installed in such way that the outgoing cables are assigned to the immobile side of the measuring construction. Thus forces from the connecting cable do not have an influence on measurement results. From 500N upwards the force sensors KD40s have a nominal rated output of 1.0mV/V. They can safely be overloaded up to 1.5x their nominal force. The cable output can be found in the middle of the two force transmission beams. For force transfer there exists one thread M5 (up to 100N) and M6 (from 500N) in the top and bottom side of the force sensor. Additionally there is a thread M6 (from 500N) that can be used as anti-twist protection. The force sensor from a nominal force of 1000N has a height of 34 mm.

## Technical Drawing



## Technical Data

| Basic Data                       |                          | Unit |
|----------------------------------|--------------------------|------|
| Type                             | Kraftsensor              |      |
| Force direction                  | Tension/Compression      |      |
| Rated force F <sub>x</sub>       | 20                       | N    |
| Force introduction               | Internal thread          |      |
| Dimension 1                      | M5x0,8                   |      |
| Sensor Fastening                 | Internal thread          |      |
| Dimension 2                      | M5x0,8                   |      |
| Operating force                  | 400                      | %FS  |
| Rated displacement               | 0.2                      | mm   |
| Lateral force limit              | 100                      | %FS  |
| Material                         | aluminum-alloy           |      |
| Natural frequency f <sub>x</sub> | 1200                     | Hz   |
| Dimensions                       | 30... 34mm x 40mm x 10mm |      |
| Height                           | 30                       | mm   |
| Length or Diameter               | 40                       | mm   |
| Torque limit                     | 2                        | Nm   |
| Bending moment limit             | 2                        | Nm   |
| Variants                         | 2N... 5kN                |      |

| Electrical Data                            |      | Unit      |
|--|------|-----------|
| Input resistance                           | 390  | Ohm       |
| Tolerance input resistance                 | 40   | Ohm       |
| Output resistance                          | 350  | Ohm       |
| Tolerance output resistance                | 5    | Ohm       |
| Insulation resistance                      | 2    | GOhm      |
| Rated range of excitation voltage from     | 2.5  | V         |
| Rated range of excitation voltage to       | 5    | V         |
| Operating range of excitation voltage from | 1    | V         |
| Operating range of excitation voltage to   | 10   | V         |
| Zero signal                                | 0.05 | mV/V      |
| Rated output                               | 0.5  | mV/V / FS |

| Accuracy Data                              |      | Unit  |
|--|------|-------|
| Accuracy class                             | 0,1  |       |
| Relative linearity error                   | 0.02 | %FS   |
| Relative zero signal hysteresis            | 0.02 | %FS   |
| Temperature effect on zero signal          | 0.02 | %FS/K |
| Temperature effect on characteristic value | 0.01 | %RD/K |
| Relative creep                             | 0.1  | %FS   |

| Environmental Data               |      | Unit |
|----------------------------------|------|------|
| Rated temperature range from     | -10  | °C   |
| Rated temperature range to       | 70   | °C   |
| Operating temperature range from | -10  | °C   |
| Operating temperature range to   | 85   | °C   |
| Storage temperature range from   | -10  | °C   |
| Storage temperature range to     | 85   | °C   |
| Environmental protection         | IP65 |      |

Abbreviation: RD: „Reading“; FS: „Full Scale“;  
The exact sensitivity is indicated in the test report;

## Pin Assignment

| Channel | Symbol | Description            | Wire color | PIN |
|---------|--------|------------------------|------------|-----|
|         | +Us    | positive bridge supply | brown      |     |
|         | -Us    | negative bridge supply | white      |     |
|         | +Ud    | positive bridge output | green      |     |
|         | -Ud    | negative bridge output | yellow     |     |

Screen - transparent. Compressive load : positive output signal