

## KD34s $\pm 250\text{mN}$ , $\pm 500\text{mN}$ , $\pm 1\text{N}$ , $\pm 2\text{N}$ , $\pm 5\text{N}$ , $\pm 10\text{N}$



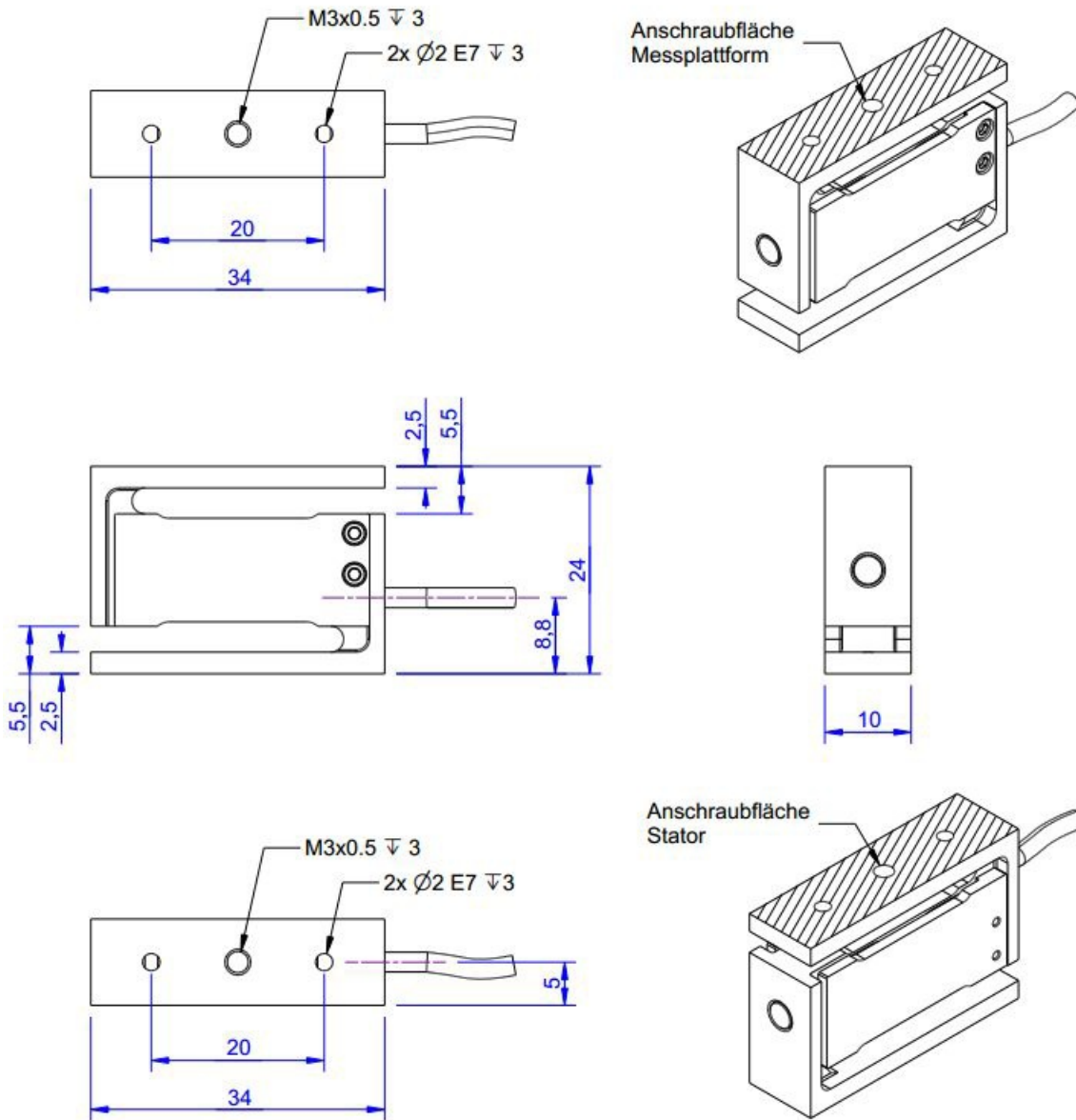
### Description

The force sensor KD34s was specially designed for measuring of the smallest forces. Due to integrated stop against overload is this sensor also in measuring range of 0,25 N and 0,5 N even safer to use. In the 0,5 N version special strain gauges of platinum-nickel alloy are used with higher input sensitivity by factor 2 to conventional strain gauges of constantan.

The measured displacement is therefore not more than 0,25mm at 0,5N.

In addition to M3 threads for the force transmission, force sensor also has boreholes diameter  $\varnothing 2$ , which are used for orientation of the force sensor or for mounting of adapters.

## Dimensions



## Technical Data

### Force sensor

|                     |                       |
|---------------------|-----------------------|
| Type                | Force sensor          |
| Force direction     | Tension / Compression |
| Force introduction  | Inner thread          |
| Dimension 1         | M3x0,5                |
| Sensor Fastening    | Inner thread          |
| Dimension 2         | M3x0,5                |
| Operating force     | 200 %FS               |
| Rated displacement  | 0.2 mm                |
| Lateral force limit | 100 %FS               |
| Material            | Aluminium alloy       |
| Natural frequency   | 1 kHz                 |
| Height              | 24 mm                 |
| Length or Diameter  | 34 mm                 |

### Electrical Data

|   |                       |
|---|-----------------------|
| Input resistance                        | 390 Ohm               |
| Tolerance input resistance              | 40 ±                  |
| Output resistance                       | 350 Ohm               |
| Tolerance output resistance             | 1.5 ±                 |
| Insulation resistance                   | 5x10 <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                            | 0.5 mV/V / FS         |

### Precision

|  |            |
|--|------------|
| 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    |

### Connection Data

|                        |                  |
|------------------------|------------------|
| Connection type        | 4 conductor open |
| Name of the connection | STC-31V-4        |
| Cable length           | 2 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      | IP65          |



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

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

*Pressure load: positive output signal*



## 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.*



## Manual

Recommended Amplifier Series for the measurements of low forces: GSV-2

accessories

| Description  | Description   |
|--|---|
|  <p>Calibration Certificate<br/>kn/20/5</p> | <p>Factory calibration certificate for force to 20 kN in accordance with DIN EN ISO / IEC 17025 and ISO 9000 for test materials monitoring according to DIN ISO 9001: 2008 with 5 load levels and 3 series of measurements.<br/>Compressive Force</p> |
|  <p>GSV-2TSD-DI</p>                         | <p>Measuring amplifier in desktop-housing for sensors with straingages. Serial port RS232, USB port, analogue output -5V...+5V, limiting frequency 260Hz, input sensitivity 3.5mV/V.</p>  |
|  <p>GSV-3USB</p>                            | <p>Measuring amplifier in aluminum housing (IP54) for sensors with straingages. Limiting frequency 1250Hz, input sensitivity 2 / 3,5 / 10 mV/V.</p>   |
|  <p>GSV-1H</p>                              | <p>Measuring amplifier in top-hat rail housing for sensors with straingages. Analogue output -10V...+10V, limiting frequency 250Hz, 4 input sensitivities from 2.0mV/V.</p>   |