

Force Sensor KD24S

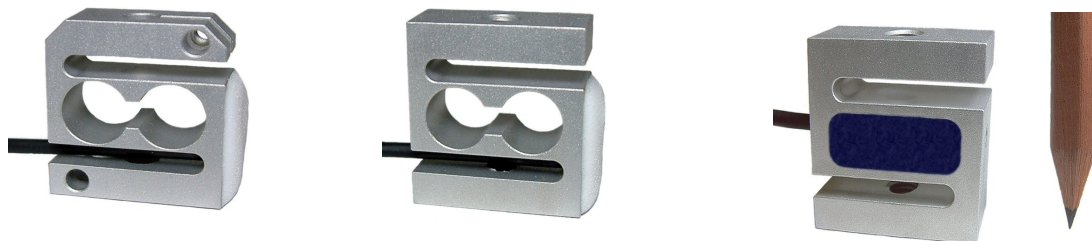
Nominal force ranges $\pm 2\text{N}$, $\pm 10\text{N}$, $\pm 20\text{N}$, $\pm 50\text{N}$, $\pm 100\text{N}$

The force sensor KD24S is the smallest s-shaped force sensor. It is excellently suited for testing tasks in quality assurance as well as in material testing. Inward and outward force transmission are arranged centrally. Under loading the force transmission brackets are moved parallel.

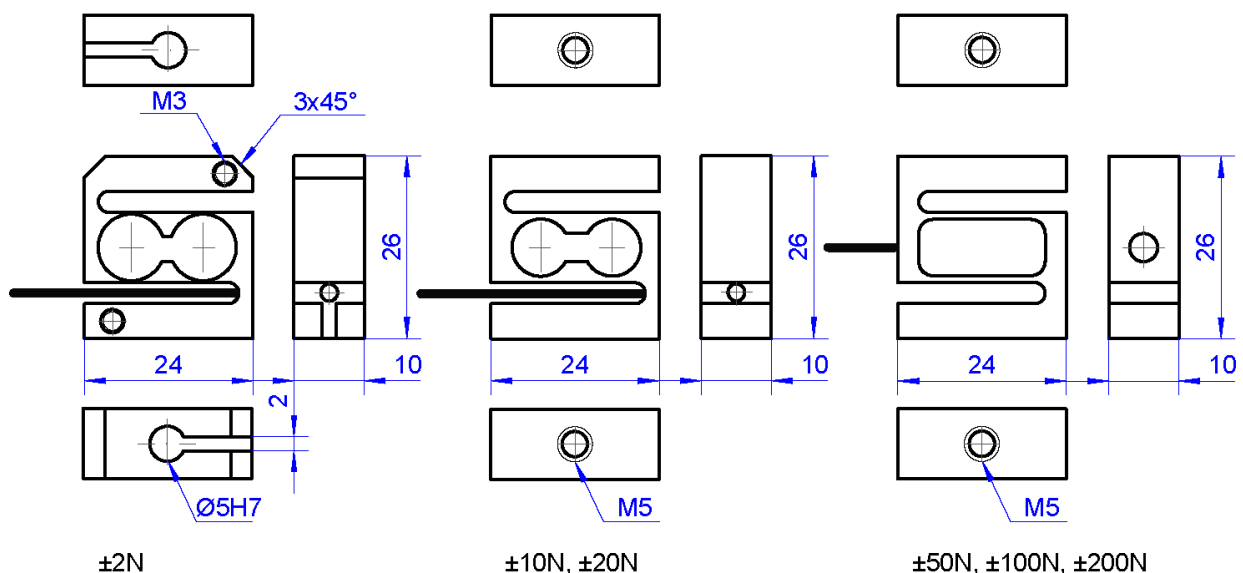
Like the KD40s the force sensor KD24S is constructed as a multi-range sensor. The accuracy of 0.1% is already reached at an output of 0.5 mV/V.

Sensors from 2 to 20N can be operated with 4 times and sensors from 50 to 100N with two times their nominal force range.

It is recommended to fix the sensor cable side (bottom side on picture) on the non-moving side of force transmission.



Dimensions





Force Sensor KD24S

Nominal force ranges $\pm 2\text{N}$ (8N), $\pm 10\text{N}$ (40N), $\pm 20\text{N}$ (80N), $\pm 50\text{N}$ (200N), $\pm 100\text{N}$ (200N)

Technical Data

| | | |
|-------------------------|-----------------------|--------------|
| Force sensor | Tension / compression | |
| Construction | Double bending beam | |
| Length × width × height | 24 × 26 × 10 | mm × mm × mm |
| Force transmission | M5 | mm |
| Fastening | M5 | mm |
| Material | aluminum | |
| Accuracy class | 0.1 | |

| | | | | | | |
|---------------------|------|------|------|------|------|----|
| Nominal force F_N | 2 | 10 | 20 | 50 | 100 | N |
| Nominal deflection | 0.05 | 0.05 | 0.05 | 0.06 | 0.1 | mm |
| Operating force | 8 | 40 | 80 | 100 | 200 | N |
| Breaking force | 20 | 100 | 200 | 500 | 1000 | N |

| | | |
|-----------------------------|------------|----|
| Nominal temperature range | +10...+60 | °C |
| Operating temperature range | - 20...+80 | °C |
| Storage temperature range | - 40...+80 | °C |

| | | |
|------------------------------|--------------------|---------|
| Nominal output (S_N) | $0.5 \pm 0.1\%$ 1) | mV/V |
| Zero signal tolerance | ± 10 | % F_N |
| Max. supply voltage | 10 | V |
| Input resistance | 390 ± 40 | Ohm |
| Output resistance | 350 ± 1.5 | Ohm |
| Insulation resistance | $> 5 \cdot 10^9$ | Ohm |
| Connection, 4-conductor open | 2 | m |

| | | |
|--|-----------------|------------|
| Linearity error | ≤ 0.1 | % S_N |
| Reversal error | ≤ 0.1 | % S_N |
| Temperature coeff. of the zero signal | $\leq \pm 0.02$ | % F_N /K |
| Temperature coeff. of the nominal output | $\leq \pm 0.01$ | % S_N /K |
| Zero point return error (30 min) | ≤ 0.1 | % S_N |
| Creep error (30 min) | ≤ 0.1 | % S_N |

1) The nominal output might differ from 0.5 mV/V. In that case the exact output will be given in a proof protocol.

Pin Configuration

| | | |
|------|------------------------|-------|
| +Us | positive bridge supply | red |
| - Us | negative bridge supply | black |
| +UD | positive bridge output | green |
| - UD | negative bridge output | white |