# Force Sensor KR34 22/10/50kN

Item number: 16994



## Highlights

- Hardness HRC 62...64
- ground contact surfaces
- rated force 50 kN
- inner diameter 10.3 mm
- outer diameter 22 mm

The KR34 ring force sensors are suitable for measuring prestressing forces in cables, e.g., for applications measuring force in prestressed concrete.

The contact surfaces are ground flat and parallel, and the material 1.2379 (X153CrMoV12) is hardened to HRC 62-64. The sensor is characterized by a very small outer diameter. Therefore, a Kevlar-sheathed flat ribbon cable is used as the connecting cable, which is tangentially bonded to the sensor body and covered with heat-shrink tubing. The M12 circular connector allows the connecting cable to be extended to the desired length using a standard sensor-actuator cable from the "M12" series.

The GSV-6T3 M12/CAN three-channel measuring amplifiers, which connect via M12 sockets, are particularly suitable for connection. By connecting multiple measuring amplifiers in a line configuration via the CAN bus, a cost-effective and robust multi-channel measuring system for the construction site can be implemented. Software such as GSVmulti or GSVgrid is used for data acquisition.

## Optional special version

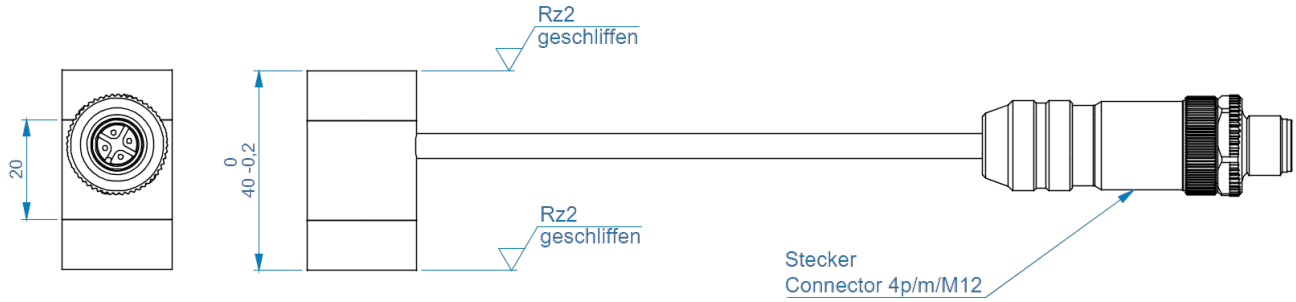
- Pressure range up to 8 bar

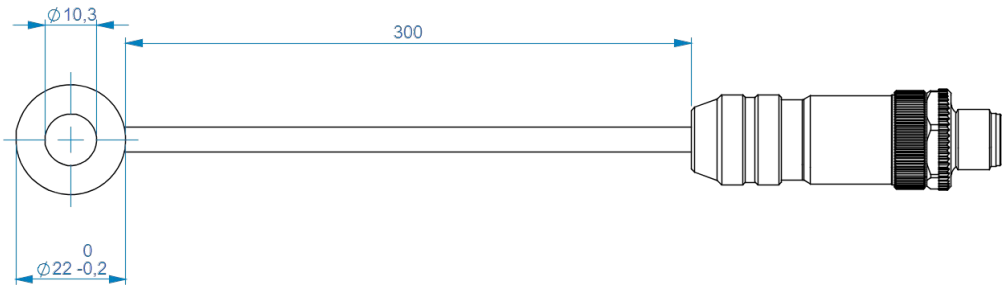
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Stand: 30.08.2026

## Technical Drawing




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## Technical Data

| Basic Data | | Unit |
|---|---|---|
| Type | Kraftsensor | |
| Force direction | Compression | |
| Rated force Fx | 50 | kN |
| Force introduction | Fläche | |
| Dimension 1 | Ø22x6 | |
| Sensor Fastening | Ringfläche | |
| Operating force | 150 | %FS |
| Rated displacement | 0.05 | mm |
| Material | tool steel | |
| Natural frequency fx | 10 | kHz |
| Dimensions | Ø22 x 40... Ø39 x 40 | mm² |
| Height | 40 | mm |
| Length or Diameter | 22 | mm |
| Variants | 50 kN ... 250 kN | |

| Electrical Data | | Unit |
|---|---|---|
| Input resistance | 700 | Ohm |
| Tolerance input resistance | 10 | Ohm |
| Output resistance | 700 | Ohm |
| Tolerance output resistance | 10 | 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 tolerance | 0.05 | mV/V |
| Characteristic value range from | 2.5 | mV/V |
| Characteristic value range to | 3.5 | mV/V |

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| Accuracy Data | | Unit |
|---|---|---|
| Accuracy class | 1 | |
| Relative linearity error | 0.2 | %FS |
| Relative zero signal hysteresis | 0.1 | %FS |
| Temperature effect on zero signal | 0.02 | %FS/K |
| Temperature effect on characteristic value | 0.02 | %RD/K |
| Relative creep | 0.1 | %FS |
| **Environmental Data** | | **Unit** |
| Rated temperature range from | -5 | °C |
| Rated temperature range to | 70 | °C |
| Operating temperature range from | -20 | °C |
| Operating temperature range to | 85 | °C |
| Environmental protection | IP66 | |

Abbreviation: RD: „Reading“; FS: „Full Scale“;
1) The exact nominal sensitivity is indicated in the test report;
2) Temperature range information refers to cables in the moving state. Possible with cable at rest down to -30°C.

## Pin Assignment

| Channel | Symbol | Description | Wire color | PIN |
|---|---|---|---|---|
| | +Us | positive bridge supply | brown | 1 |
| | -Us | negative bridge supply | white | 2 |
| | +Ud | positive bridge signal | green | 3 |
| | -Ud | negative bridge signal | yellow | 4 |

Compressive load: positive output signal. Shield connected to sensor housing.

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