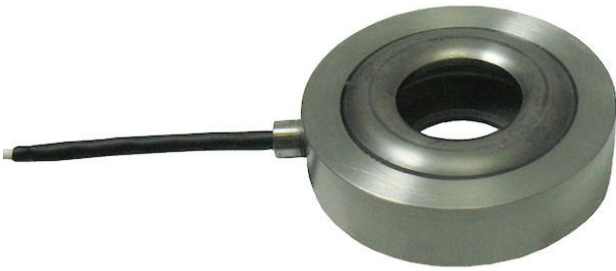


## KR20 5kN, 10kN, 20kN, 30kN, 40kN, 50kN, 60kN, 100kN, 200kN



### Description

The force measurement ring KR20 was developed especially for examining preload forces on screws.

Because of its very low construction height, the sensor is equipped with a Teflon cable with an outer diameter of just 1.8mm.

The force measurement ring is equipped with a strain gauge that covers the entire area. A high level of repeatability is thus achieved in various installation positions. The force measurement ring has a Sub-D-15 plug connection containing internal trimming resistors.

The force measurement ring is supplied with a detailed factory certificate (5 points, 3 measurement series in 3 installation positions).

## Technical Data

### Force sensor

Type	Force sensor
Force direction	Compression
Force introduction	Through bore
Dimension 1	Ø16
Sensor Fastening	Through bore
Dimension 2	Ø16
Operating force	150 %FS
Material	Stainless steel

### Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	50 ±
Output resistance	390 Ohm
Tolerance output resistance	50 ±
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	1%
Relative linearity error	0.5 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.05 %FS/K
Temperature effect on characteristic value	0.05 %RD/K
Relative creep	0.05 %FS

### Connection Data

Name of the connection	STC-32-T-4 und Adapterkabel Sub-D15
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	IP65

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

*Cable with Sub-D15 connector.*

*Pressure load: positive output signal.*

*Shield- transparent.*







Symbol	Description	Wire colour
+Us	positive bridge supply	brown
-Us	negative bridge supply	white
+Ud	positive bridge output	green
-Ud	negative bridge output	yellow

*Adapter cable with SubD-15 socket.*

*Pressure load: positive output signal.*

*Shield- transparent.*

## accessories

Description	Description
	Calibration Certificate kn/200/5 Factory calibration certificate for force to 200 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.
	KR20 Adapter cabel D-Sub15/1.5m Adapter cable for connection to sensor KR20
	GSV-1H 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.
	GSV-2TSD-DI 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.
	GSV-3USB Measuring amplifier in aluminum housing (IP54) for sensors with straingages. Limiting frequency 1250Hz, input sensitivity 2 / 3,5 / 10 mV/V.
	GSV-6K analog amplifler pcb for sensors with strain gauges. Analog output configurable; sampling frequency is 10Hz ... 25kHz, input sensitivity adjustable 0.1 mV / V ... 8 mV / V