

KR55



Highlights

- compact dimensions diameter 55mm x 27 mm
- high accuracy 0,05%
- robust cable suitable for drag chains
- continuous thread M10 for the introduction of tension / compression



Description

Due to its compact design, the KR55 ring torsion force sensor is ideally suited for testing tasks in quality assurance and materials testing. With this force transducer, tensile and compressive forces in the range of 1kN up to 10kN can be measured.

Technical Data - Version 1kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	1 kN
Force introduction	Inner thread
Dimension 1	M10
Sensor Fastening	Inner thread
Dimension 2	M10
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	100 %FS
Material	Stainless steel
Natural frequency	5 kHz

Electrical Data

Input resistance	400 Ohm
Tolerance input resistance	50 Ohm
Output resistance	350 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
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	2 mV/V / FS

Precision

Accuracy class	0,05%
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	Unitronic FD CP TP Plus / 2x2x0,25
Cable length	2.1 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

Technical Data - Version 2kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	2 kN
Force introduction	Inner thread
Dimension 1	M10
Sensor Fastening	Inner thread
Dimension 2	M10
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	100 %FS
Material	Stainless steel
Natural frequency	5 kHz

Electrical Data

Input resistance	400 Ohm
Tolerance input resistance	50 Ohm
Output resistance	350 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
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	2 mV/V / FS

Precision

Accuracy class	0,05%
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	Unitronic FD CP TP Plus / 2x2x0,25
Cable length	2.1 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

Technical Data - Version 5 kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	5 kN
Force introduction	Inner thread
Dimension 1	M10
Sensor Fastening	Inner thread
Dimension 2	M10
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	100 %FS
Material	Stainless steel
Natural frequency	5 kHz

Electrical Data

Input resistance	400 Ohm
Tolerance input resistance	50 Ohm
Output resistance	350 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
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	2 mV/V / FS

Precision

Accuracy class	0,05%
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	Unitronic FD CP TP Plus / 2x2x0,25
Cable length	2.1 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

Technical Data - Version 10kN

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force F _x	10 kN
Force introduction	Inner thread
Dimension 1	M10
Sensor Fastening	Inner thread
Dimension 2	M10
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	100 %FS
Material	Stainless steel
Natural frequency	5 kHz

Electrical Data

Input resistance	400 Ohm
Tolerance input resistance	50 Ohm
Output resistance	350 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
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	2 mV/V / FS

Precision

Accuracy class	0,05%
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	Unitronic FD CP TP Plus / 2x2x0,25
Cable length	2.1 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








Pin Configuration

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

Screen - transparent.

accessories

	Description	Description
	Calibration Certificate kn/20/5	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. Compressive Force
	GSV-1H	Measuring amplifier in top-hat rail housing for sensors with strain gauges. 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 strain gauges. Serial port RS232, USB port, analogue output -5V...+5V, limiting frequency 260Hz, input sensitivity 3.5mV/V.
	GSV-3USB	Measuring amplifier in aluminum housing for sensors with strain gauges. Limiting frequency 1250Hz, input sensitivity 2 / 3,5 / 10 mV/V.
	GSV-6K	Analogue measuring amplifier in plug housing for sensors with strain gauges. Analogue output configurable, TEDS, sampling frequency 1Hz ... 25kHz, input sensitivity configurable 0.1mV/V ... 8mV/V