

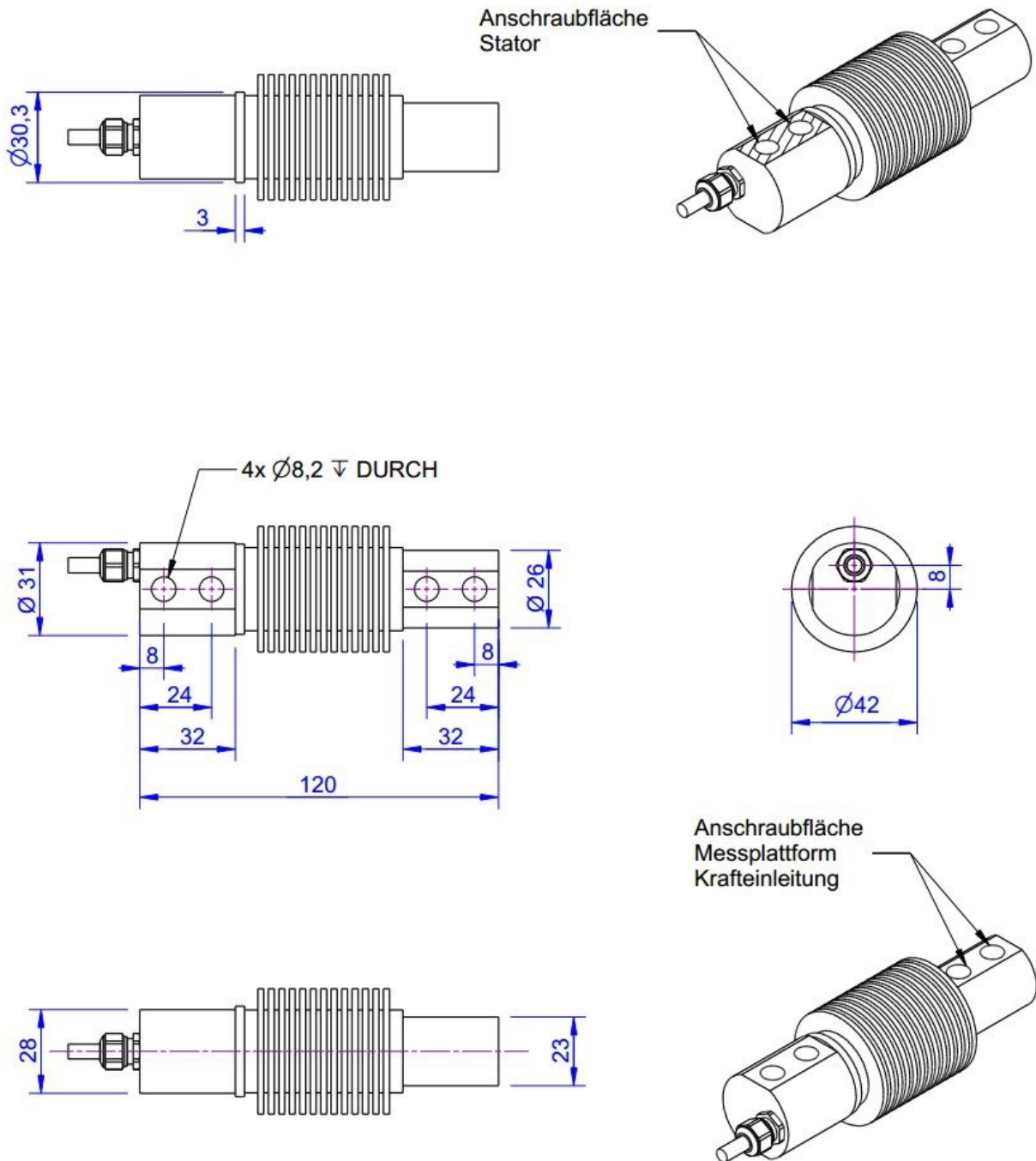
KD120 $\pm 100\text{N}$ à $\pm 2000\text{N}$



Description

The force sensor KD120 is made for a maximum operating temperature of 180°C. Force introduction at the cylindrical ends is either done by clamps or by 4 screws M8.

Dimensions



Technical Data - Version $\pm 100\text{N}$

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	100 N
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	5 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	IP67

Technical Data - Version ±200N

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	200 N
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	5 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	IP67

Technical Data - Version ±500N

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	500 N
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	5 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	IP67

Technical Data - Version $\pm 1\text{kN}$

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	1 kN
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5×10^9 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	5 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	IP67

Technical Data - Version $\pm 2\text{kN}$

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	2 kN
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5×10^9 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	5 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	IP67

Technical Data - Version $\pm 100\text{N}$ - Haute Température

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	100 N
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	E 2419 STK 6 6x0,25 PTFE
Cable length	5 m

Temperature

Rated temperature range f	-20 ... 150 °C
Operating temperature range f	-40 ... 180 °C
Storage temperature range f	-20 ... 85 °C
Environmental protection	IP67

Technical Data - Version $\pm 200\text{N}$ - Haute Température

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	200 N
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	E 2419 STK 6 6x0,25 PTFE
Cable length	5 m

Temperature

Rated temperature range f	-20 ... 150 °C
Operating temperature range f	-20 ... 180 °C
Storage temperature range f	-40 ... 85 °C
Environmental protection	IP67

Technical Data - Version $\pm 500\text{N}$ - Haute Température

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	500 N
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5×10^9 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	E 2419 STK 6 6x0,25 PTFE
Cable length	5 m

Temperature

Rated temperature range f	-20 ... 150 °C
Operating temperature range f	-40 ... 180 °C
Storage temperature range f	-20 ... 85 °C
Environmental protection	IP67

Technical Data - Version ±1kN - Haute Température

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	1 kN
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	E 2419 STK 6 6x0,25 PTFE
Cable length	5 m

Temperature

Rated temperature range f	-20 ... 150 °C
Operating temperature range f	-40 ... 180 °C
Storage temperature range f	-20 ... 85 °C
Environmental protection	IP67

Technical Data - Version $\pm 2\text{kN}$ - Haute Température

Force sensor

Type	Force sensor
Force direction	Tension / Compression
Rated force Fx	2 kN
Operating force	150 %FS
Rated displacement	0.2 mm
Lateral force limit	200 %FS
Material	Stainless steel
Natural frequency	2 kHz
Height	42 mm
Length or Diameter	120 mm

Electrical Data

Input resistance	390 Ohm
Tolerance input resistance	40 Ohm
Output resistance	350 Ohm
Tolerance output resistance	3 Ohm
Insulation resistance	5x10 ⁹ 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	1 mV/V / FS
characteristic value range min	0.8 mV/V
characteristic value range max	1.2 mV/V

Precision

Accuracy class	0,1%
Relative linearity error	0.02 %FS
Relative zero signal hysteresis	0.02 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	6 conductor open
Name of the connection	E 2419 STK 6 6x0,25 PTFE
Cable length	5 m

Temperature

Rated temperature range f	-20 ... 150 °C
Operating temperature range f	-40 ... 180 °C
Storage temperature range f	-20 ... 85 °C
Environmental protection	IP67

Pin Configuration - Version Haute Température

Symbol	Description	Wire colour
+Us	positive bridge supply	red
-Us	negative bridge supply	black
+Ud	positive bridge output	green
-Ud	negative bridge output	yellow
+Uf	positive sense lead	blau
-Uf	negative sense lead	weiß





Pressure load : positive output signal.
Shield - transparent.

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.

accessories

	Description	Description
	Calibration Certificate kn/20/5	Factory calibration certificate for force to 20 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.
	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-1A	Measuring amplifier in aluminum housing (IP66) for sensors with straingages. two round plugs M12, analogue output -10V...+10V, limiting frequency 250Hz, 4 input sensitivities from 2.0 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

Order options

Type	Description
KD120	stainless steel, temperature range -10 ... +70 °C (standard type)
KD120/HT	stainless steel, temperature range -20 ... +150°C