KD140 ±50N à ±1kN

KD140 ±50N à ±1kN

Description

The KD140 force sensor is particularly suitable for integration in assembly and testing devices due to the low installation height and the tolerance against displacements of the force introduction and against transverse forces. The mounting can be made either via through-holes Ø8,2mm, or through 4 threaded holes M6. Due to the design of the sensor as a double beam (parallelogram guide), the force introduction point shifts parallel by approx. 0.2 mm at 100% of the nominal force.

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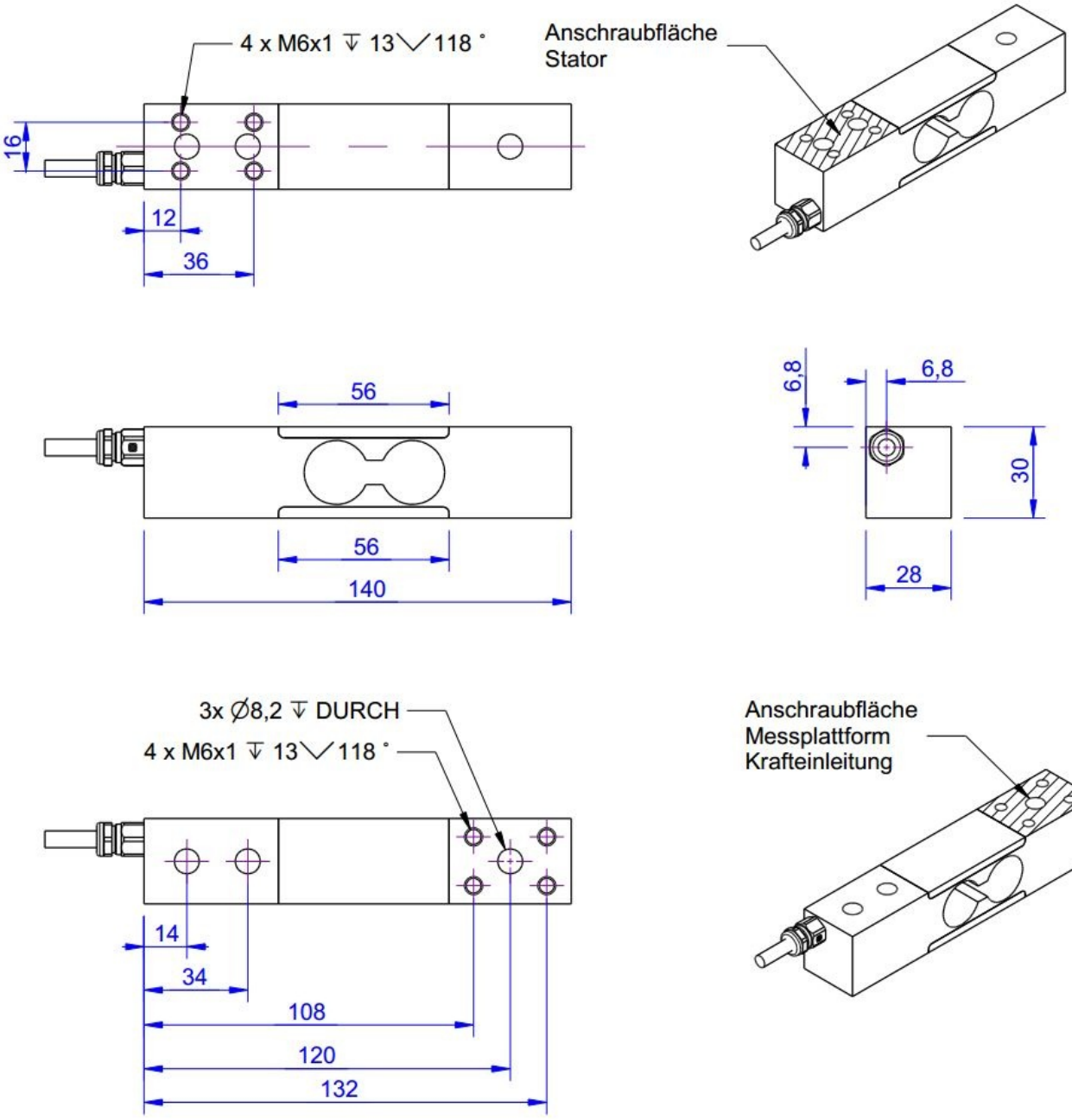
Dimensions



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KD140 ±50N à ±1kN

Technical Data - Version ±50N

Force sensor		
Type	Force sensor	
Force direction	Tension / Compression	
Rated force Fx	50	N
Force introduction	Inner thread	
Dimension 1	4xM6	
Sensor Fastening	Inner thread	
Dimension 2	4xM6	
Operating force	150	%FS
Rated displacement	0.2	mm
Lateral force limit	500	%FS
Material	Aluminium alloy	
Surface	anodised	
Natural frequency	1	kHz
Height	30	mm
Length or Diameter	140	mm
Bending moment limit	50	Nm

Electrical Data		
Input resistance	390	Ohm
Tolerance input resistance	40	Ohm
Output resistance	350	Ohm
Tolerance output resistance	3	Ohm
Insulation resistance	2x10^9	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	2	mV/V / FS
relative error of characteristic value	0.1	%

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	4 conductor open	
Name of the connection	Unitronic FD CP Plus / 4x0,14	
Cable length	3	m

Temperature

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KD140 ±50N à ±1kN

Technical Data - Version ±100N

Force sensor		
Type	Force sensor	
Force direction	Tension / Compression	
Rated force Fx	100	N
Force introduction	Inner thread	
Dimension 1	4xM6	
Sensor Fastening	Inner thread	
Dimension 2	4xM6	
Operating force	150	%FS
Rated displacement	0.2	mm
Lateral force limit	500	%FS
Material	Aluminium alloy	
Surface	anodised	
Natural frequency	1	kHz
Height	30	mm
Length or Diameter	140	mm
Bending moment limit	50	Nm

Electrical Data		
Input resistance	390	Ohm
Tolerance input resistance	40	Ohm
Output resistance	350	Ohm
Tolerance output resistance	3	Ohm
Insulation resistance	2x10^9	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	2	mV/V / FS
relative error of characteristic value	0.1	%

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	4 conductor open	
Name of the connection	Unitronic FD CP Plus / 4x0,14	
Cable length	3	m

Temperature

KD140 ±50N à ±1kN

Technical Data - Version ±200N

Force sensor		
Type	Force sensor	
Force direction	Tension / Compression	
Rated force Fx	200	N
Force introduction	Inner thread	
Dimension 1	4xM6	
Sensor Fastening	Inner thread	
Dimension 2	4xM6	
Operating force	150	%FS
Rated displacement	0.2	mm
Lateral force limit	500	%FS
Material	Aluminium alloy	
Surface	anodised	
Natural frequency	1	kHz
Height	30	mm
Length or Diameter	140	mm
Bending moment limit	50	Nm

Electrical Data		
Input resistance	390	Ohm
Tolerance input resistance	40	Ohm
Output resistance	350	Ohm
Tolerance output resistance	3	Ohm
Insulation resistance	2x10^9	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	2	mV/V / FS
relative error of characteristic value	0.1	%

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	4 conductor open	
Name of the connection	Unitronic FD CP Plus / 4x0,14	
Cable length	3	m

Temperature

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KD140 ±50N à ±1kN

Technical Data - Version ±500N

Force sensor		
Type	Force sensor	
Force direction	Tension / Compression	
Rated force Fx	500	N
Force introduction	Inner thread	
Dimension 1	4xM6	
Sensor Fastening	Inner thread	
Dimension 2	4xM6	
Operating force	150	%FS
Rated displacement	0.2	mm
Lateral force limit	500	%FS
Material	Aluminium alloy	
Surface	anodised	
Natural frequency	1	kHz
Height	30	mm
Length or Diameter	140	mm
Bending moment limit	50	Nm

Electrical Data		
Input resistance	390	Ohm
Tolerance input resistance	40	Ohm
Output resistance	350	Ohm
Tolerance output resistance	3	Ohm
Insulation resistance	2x10^9	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	2	mV/V / FS
relative error of characteristic value	0.1	%

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	4 conductor open	
Name of the connection	Unitronic FD CP Plus / 4x0,14	
Cable length	3	m

Temperature

KD140 ±50N à ±1kN

Technical Data - Version ±1kN

Force sensor		
Type	Force sensor	
Force direction	Tension / Compression	
Rated force Fx	1	kN
Force introduction	Inner thread	
Dimension 1	4xM6	
Sensor Fastening	Inner thread	
Dimension 2	4xM6	
Operating force	150	%FS
Rated displacement	0.2	mm
Lateral force limit	500	%FS
Material	Aluminium alloy	
Surface	anodised	
Natural frequency	1	kHz
Height	30	mm
Length or Diameter	140	mm
Bending moment limit	50	Nm

Electrical Data		
Input resistance	390	Ohm
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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	4 conductor open	
Name of the connection	Unitronic FD CP Plus / 4x0,14	
Cable length	3	m

Temperature

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Rated temperature range f	-10 ... 70	°C
Operating temperature range f	-10 ... 85	°C
Storage temperature range f	-10 ... 85	°C
Environmental protection	IP67	

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	brown
-Us	negative bridge supply	white
+Ud	positive bridge output	green
-Ud	negative bridge output	yellow

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