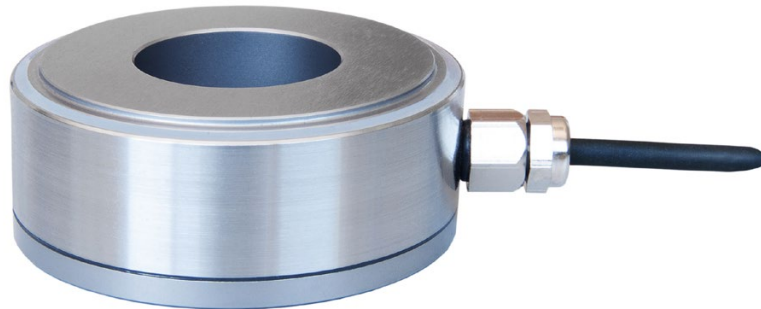


## Compression Ring Force Sensor K-181 with Rated Force from 15 ... 1500 kN



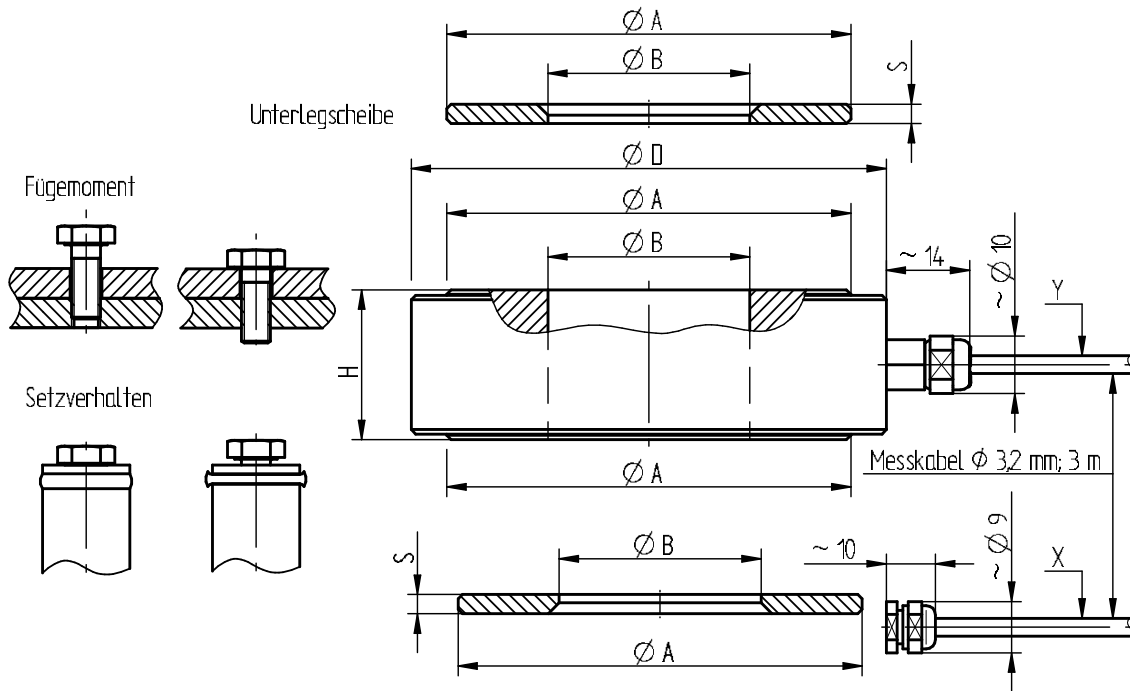
### Performance Features

- Compression Ring Force Sensor for Measurement of Clamping Forces
- Measuring washer
- Low measuring range, very high natural frequency
- Stainless steel
- Level of protection IP65
- Long-term stability
- Simple handling and assembly
- Special versions on request

### Application

- Equipment engineering
- Automotive industry
- Measuring and control devices
- Fully automated machining centres
- Tool engineering
- Special mechanical engineering

## Dimensions<sup>1</sup> of K-181 in mm



Article-No.	Rated Force [kN]	Dimensions [mm]								Weight [kg]
		For Screw	ØA	ØB	ØD	H	S	X	Y	
115715	15	M6	12	6.3	24	12	2	X	-	0.1
115716	30	M8	16	8.3	27	12	2	X	-	0.1
115717	60	M10	22	10.3	33	12	2	X	-	0.2
115718	80	M12	26	12.3	37	15	2.5	X	-	0.2
115719	120	M16	33	16.3	44	15	2.5	X	-	0.3
115720	160	M20	39	20.3	50	15	3	X	-	0.3
115770	350	M24	54	24.5	65	22	3	X	-	0.6
115771	500	M30	66	30.8	79	27	3	-	X	0.9
115772	600	M36	74	37	87	27	3.5	-	X	1.1
115773	720	M39	80	40	93	27	4	-	X	1.3
115774	1000	M42	93	43	106	30	4	-	X	1.9
115775	1200	M48	103	49	116	30	4.5	-	X	2.3
115776	1500	M52	114	53.5	127	35	4.5	-	X	3.1

## Connection Assignment

### Electrical Connection

Excitation (-)	green	●
Excitation (+)	brown	●
Signal (+)	yellow	●
Signal (-)	white	○
Control signal (option)	gray	●
Shield	shield	⊕

<sup>1</sup> 2 pieces hardened washers in scope of delivery

## Technical Data acc. to VDI/VDE/DKD 2638

### Compression Ring Force Sensor K-181

Rated force $F_{nom}$	kN	15 ... 1500
Accuracy class:		
- Unchanged installation position	% $F_{nom}$	1
- Changed installation position	% $F_{nom}$	3
Rel. repeatability error in unchanged mounting position $b_{rg}$	% $F_{nom}$	0.3
Relative creep	% $F_{nom}/30 \text{ min}$	<±1
Rated characteristic value $C_{nom}$	mV/V	1.00 ±20 %
Input/output resistance $R_e/R_a$	Ω	350
Insulation resistance $R_{is}$	Ω	>2*10 <sup>9</sup>
Rated range of excitation voltage $B_{U, nom}$	V	2 ... 6
Electrical connection		Cable, PURS, 3 m with free strands
Reference temperature $T_{ref}$	°C	23
Rated temperature range $B_{T, nom}$	°C	-10 ... 70
Operating temperature range $B_{T, G}$	°C	-30 ... 80
Storage temperature range $B_{T, S}$	°C	-50 ... 95
Temperature effect on zero signal $TK_0$	% $F_{nom}/10 \text{ K}$	±0.3
Temperature effect on characteristic value $TK_C$	% $F_{nom}/10 \text{ K}$	±0.3
Maximum operating force $F_G$	% $F_{nom}$	130
Force limit $F_L$	% $F_{nom}$	150
Breaking force $F_B$	% $F_{nom}$	>300
Permissible oscillation stress $F_{rb}$	% $F_{nom}$	70
Rated displacement $S_{nom}$	mm	<0.1
Material		Stainless steel
Level of protection		IP65

### Options

Article-No.	Description	
100218	Control signal	100 % $F_{nom}$
100896	Rated sensitivity adjustment	
42828	Extended temperature range	-30 °C ... 100 °C
42829	Extended temperature range	-30 °C ... 120 °C
42830	Extended temperature range	-40 °C ... 150 °C
103954	Calibration in kg or t	
107592	6-wire connection	

### Calibrations

Article-No.	Description	
400628	Linearity diagram in accordance to factory standard	25 % steps
400170	Linearity diagram in accordance to factory standard	10 % steps
400960	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	3 steps
400652	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	5 steps
400640	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	8 steps
	DAkkS-Calibration / Standard on request	

## Accessories

### Cable and input connector

Article-No.	Description
10323	Cable connector KS6 (6-pin series 581) incl. sensor mounting
10320	Cable connector KSSH15 (15-pin) incl. sensor mounting
43418	Input connector ZA9612FS (ALMEMO) incl. sensor mounting and connector calibration
49205	Input connector ZKD712FS (ALMEMO 202) incl. sensor mounting and connector calibration

### Amplifiers

Examples of suitable amplifiers for the compression ring force sensor K-181:

LCV	SI-USB	GM 40	GM 80	GM 80-PA
				

