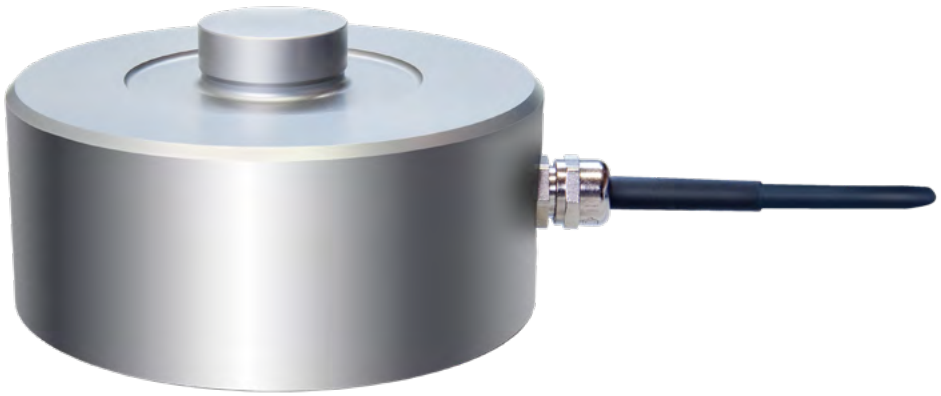
Lorenz® messtechnik gmbh

Universal Compression Force Sensor K-450 with Nominal Force from 1 … 1000 kN

Data sheet



Performance Features

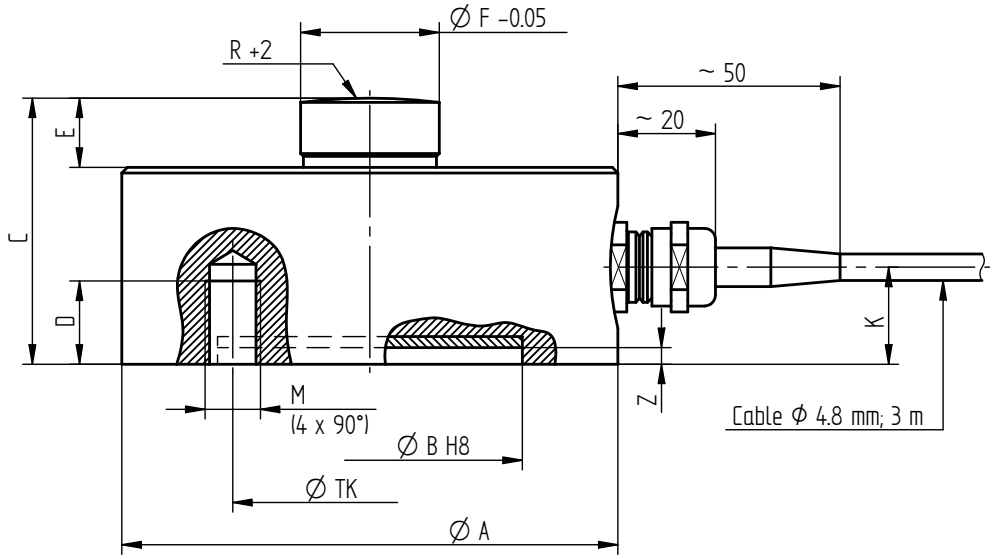
- Measurement of the static and dynamic forces
- Simple handling and assembly
- Stainless steel
- Level of protection IP67
- Long-term stability
- Special versions on request

Application

- Equipment engineering
- Fully automated machining centres
- Measuring and control devices
- Materials testing machines
- Tool engineering
- Special mechanical engineering

Lorenz Messtechnik GmbH Obere Schlossstrasse 127/129/131,
73553 Alfdorf Tel. +49 7172 93730-0, Fax +49 7172 93730-22
info@lorenz-messtechnik.de, www.lorenz-messtechnik.de

Dimensions of K-450 in mm



Article-No.	Nominal Force [kN]	Accuracy class % F_{nom}	Dimensions [mm]											Weight [kg]
			ØA	ØB	C	D	E	ØF	K	M	R	ØTK	Z	
100126	1	0.1	49.5	34	30	8	7	13	10	M5	60	42	1.5	0.4
100128	2													
100131	5													
100133	10													
100134	20		89.5	55	48	14	12.5	25	17.5	M10	100	70	3.0	1.4
100029	50													
100031	100		115	68	60	16	12.5	32	23	M12	180	90	2.0	3.2
100033	200													
100136	500		150	97	80	20	15	44	32	M16	270	125	5.0	6.9
100139	1000													7.3
100127	1	0.3	49.5	34	30	8	7	13	10	M5	60	42	1.5	0.4
100129	2													
100130	5													
100132	10													
100135	20		89.5	55	48	14	12.5	25	17.5	M10	100	70	3.0	1.4
100030	50													
100032	100		115	68	60	16	12.5	32	23	M12	180	90	2.0	3.2
100034	200													
100137	500		150	97	80	20	15	44	32	M16	270	125	5.0	6.9
100138	1000													7.3

Pin Connection

Electrical connection		
Excitation (-)	green	
Excitation (+)	brown	
Signal (+)	yellow	
Signal (-)	white	
Control signal (option)	grey	
Shield	shield	

Technical Data acc. to VDI/VDE/DKD 2638

Compression Force Sensor K-450			
Nominal force F_{nom}	kN	1 ... 1000	
Accuracy class	% F_{nom}	0.1	0.3
Rel. repeatability error in unchanged mounting position b_{rg}	% F_{nom}	0.03	0.05
Relative creep	% F_{nom}/30 min	<±0.06	<±0.08
Rated characteristic value C_{nom}	mV/V	2.00	
Relative error of characteristic value d_C	% F_{nom}	±0.1	±0.3 %
Input / output resistance R_e/R_a	Ω	350	
Insulation resistance R_{is}	Ω	>2*10^9	
Rated range of excitation voltage $B_{U, nom}$	V	2 ... 12	
Electrical connection		Cable, PVC, 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 K	0.05	0.06
Temperature effect on characteristic value TK_C	% F_{nom}/10 K	0.05	0.07
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	<0.15	
Material		Stainless steel	
Level of protection		IP67	

Options

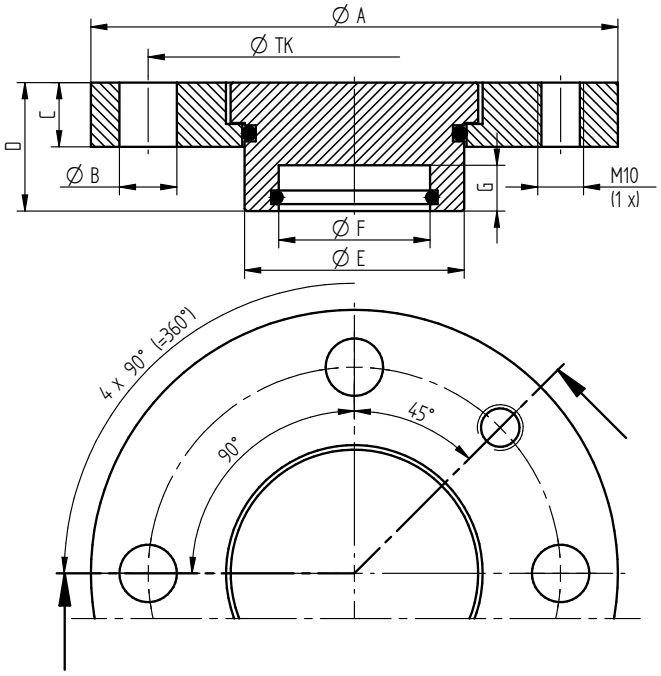
Article-No.	Description	
100218	Control signal	100 % F_{nom}
42828	Extended temperature range	-30 °C … 100 °C
42829	Extended temperature range	-30 °C … 120 °C
42830	Extended temperature range	-40 °C … 150 °C
103954	Calibration in kg or t	
107592	6-wire connection	

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

Dimensions of Thrust Piece and Mounting Flange EF42 in mm



Article-No.	Nominal Force [kN]	Dimensions [mm]								Weight [kg]
		ØA	ØB	C	D	ØE	FØ	G	ØTK	
42770	1/2/5/10	89	8.5	12	21	37.9	13.6	6	70	0.61
42771	20/50	89	8.5	12	21	37.9	25.7	10	70	0.58
40755	100/200	115	12.5	14	28	47.9	33	10	90	1.18
42772	500/1000	149	16.5	18	50	81.9	46	12	120	3.44

Please specify requested nominal force at order!

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 universal compression force sensor K-450:

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

Further suitable amplifiers you can find on our homepage under www.lorenz-messtechnik.de.