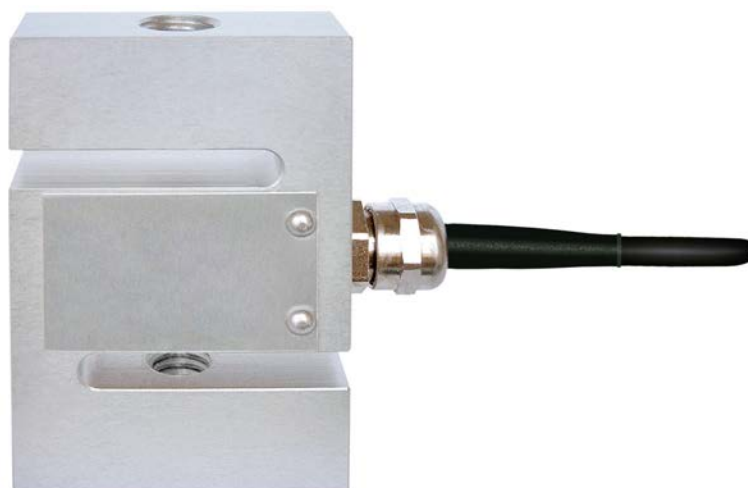


Tension and Compression Force Sensor K-25 with Rated Force from 0.02 ... 50 kN and Rated Load from 2 ... 5000 kg



Data sheet



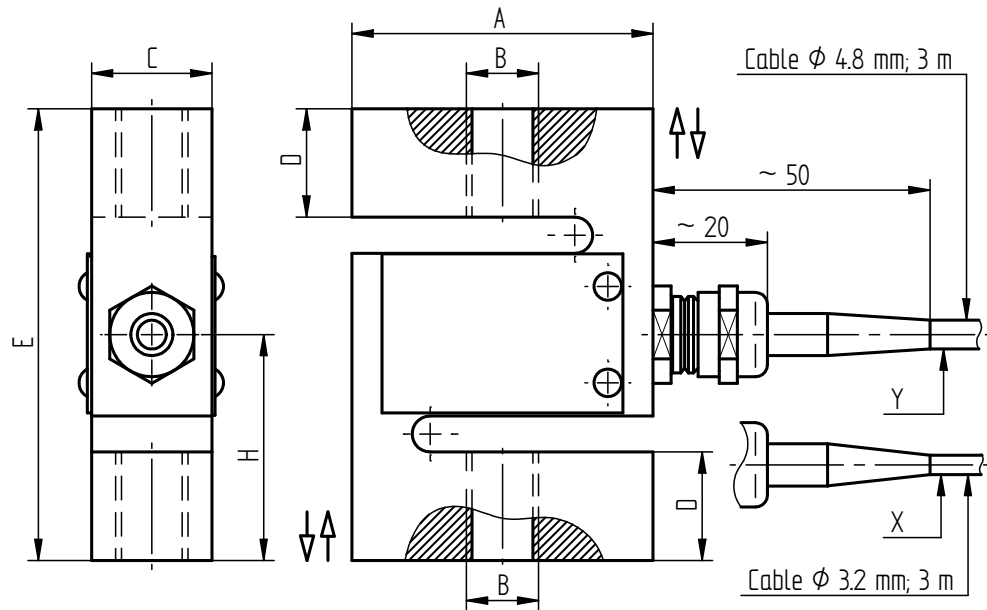
Performance Features

- Sensor for tension and compression force measurement
- TEDS (Transducer Electronic Data Sheet)
Standard IEEE 1451.4 (optional)
- Simple handling and assembly
- Reliable and durable
- Long-term stability
- Level of protection IP67 [≤ 1 kN, ≤ 100 kg; IP60]
- Special versions on request

Application

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

Dimensions in mm



Article-No.	Rated Force [kN]	Dimensions [mm]								Weight [kg]
		A	B	C	D	E	H	X	Y	
100041	0.02	50	M12	20	18	75	37.5	X	-	0.4
100042	0.05									
100043	0.1									
100044	0.2									
100045	0.5									
100046	1	50	M12	20	18	75	37.5	-	X	0.8
100148	2									
100047	5									
100048	10									
100050	20									
100049	50	65	M24x2	39.5	22	85	42.5	-	X	1.7

Article-No.	Rated Load [kg]	Dimensions [mm]								Weight [kg]
		A	B	C	D	E	H	X	Y	
100687	2	50	M12	20	18	75	37.5	X	-	0.4
100690	5									
100691	10									
100694	20									
100708	50									
100695	100	50	M12	20	18	75	37.5	-	X	0.8
100698	200									
100699	500									
100702	1000									
100703	2000									
100706	5000	65	M24x2	39.5	22	85	42.5	-	X	1.7

Connection Assignment

Electrical Connection

Excitation (-)	Green	●
Excitation (+)	Brown	●
Signal (+)	Yellow	●
Signal (-)	White	○
Control signal or TEDS (option)	Gray	●
Shielding	Shield	⊕

Technical Data acc. to VDI/VDE/DKD 2638

Tension and Compression Force Sensor K-25

Rated force F_{nom}	kN	0.02	0.05 ... 1	2 ... 50
Rated load F_{nom}	kg	2	5 ... 100	200 ... 5000
Accuracy class compression force or tension force	% F _{nom}	0.1		
Accuracy class compression force and tension force	% F _{nom}	0.2		
Rel. repeatability error in unchanged mounting position b_{rg}	% F _{nom}	0.08		
Relative creep	% F _{nom} /30 min	<±0.06		
Rated characteristic value C_{nom}	mV/V	1.00 ±0.1%	2.00 ±0.1 %	
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}	VDC	2 ... 12		
Electrical connection		Cable, PVC, 3 m with free strands		
Reference temperature T_{ref}	°C	23		
Rated temperature range B_{T, nom}	°C	0 ... 60		-10 ... 70
Operating temperature range B_{T, G}	°C	-10 ... 70		-30 ... 80
Storage temperature range B_{T, S}	°C	-30 ... 95		-50 ... 95
Temperature effect on zero signal TK₀	% F _{nom} /10 K	±0.04		
Temperature effect on characteristic value TK_C	% F _{nom} /10 K	±0.12		
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		
Lateral force resistance	% F _{nom}	50		
Rated displacement S_{nom}	mm	<0.25		
Preferential direction		Tension direction		
Material		Aluminum		Stainless steel
Level of protection		IP60		IP67

Options

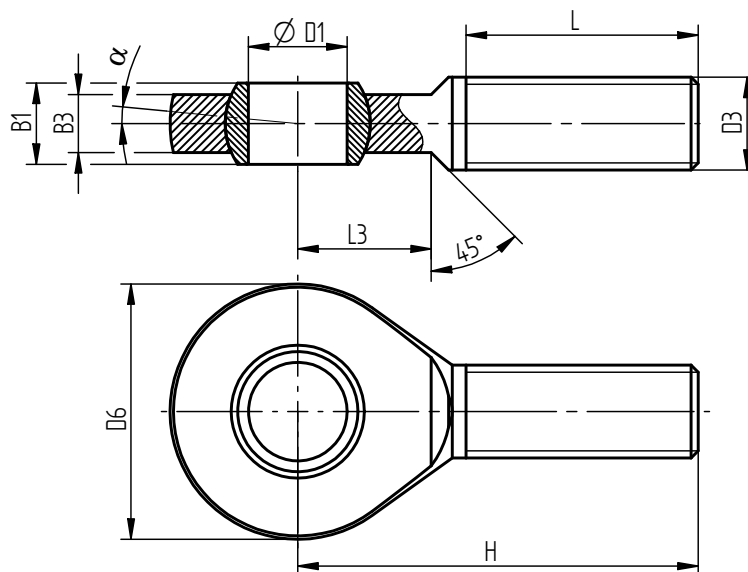
Article-No.	Description	
100218	Control signal	100 % F _{nom}
100739	Control signal	80 % M _{nom}
106154	Control signal	50 % M _{nom}
113134	TEDS-standard IEEE 1451.4	
42828	Extended temperature range	-30 °C ... 100 °C
42829	Extended temperature range	-30 °C ... 120 °C [≥2 kN; ≥200 kg]
42830	Extended temperature range	-40 °C ... 150 °C [≥2 kN; ≥200 kg]
107592	6-wire connection	
100767	Overload protection in tension direction	[≤10 kN, ≤1000 kg]
100883	Overload protection in compression direction	[≤10 kN, ≤1000 kg]

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 Joint Eye with Male Thread in mm



Article-No.	Type - EM	Dimensions [mm]									Weight [kg]	Load rating stat. C ₀ [N]
		B1	B3	ØD1	D3	D6	H	L	L3	α		
40183	EM 12	10	7	12	M12	32	54	33	15	5°	0.07	23000
40294	EM 25	20	16	25	M24x2	62	94	57	32	3.5°	0.51	119100

Tolerances for Type EM

ØD1		ΔD1		ΔB1		ΔH	
>	≤	Tolerance		Tolerance		Tolerance	
5	18	0	-0.008	0	-0.12	+1.2	-1.2
18	30	0	-0.010	0	-0.12	+1.7	-1.7

Electrical Connection

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 tension and compression force sensor K-25:

LCV	GM 78	GM 40	GM 80	SI
				

Further suitable amplifiers you can find on our homepage under <https://www.lorenz-messtechnik.de/english/products/>