

KAF-I Force Transducer

Applications

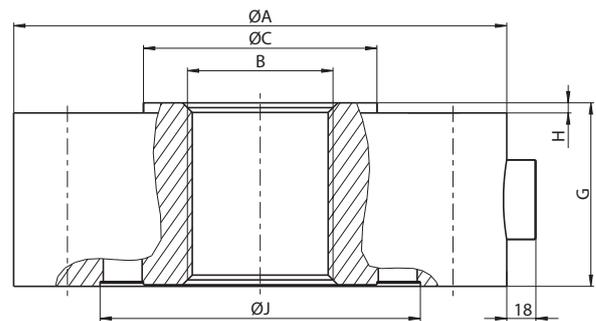
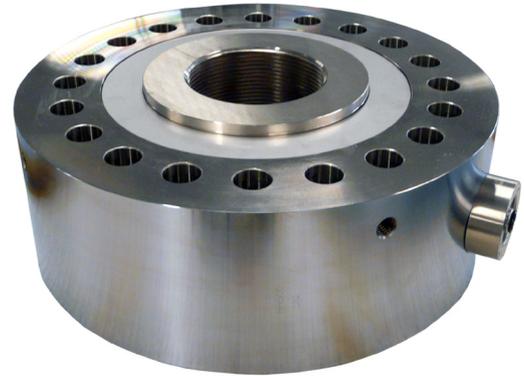
- Material testing
- For testing machines and systems
- For monitoring of forces at hydraulic cylinders

Features

- 500kN to 2.5MN
- High accuracy
- For measuring of tensile and compressive forces
- Made of tool steel
- Environmental protection IP 67

Options

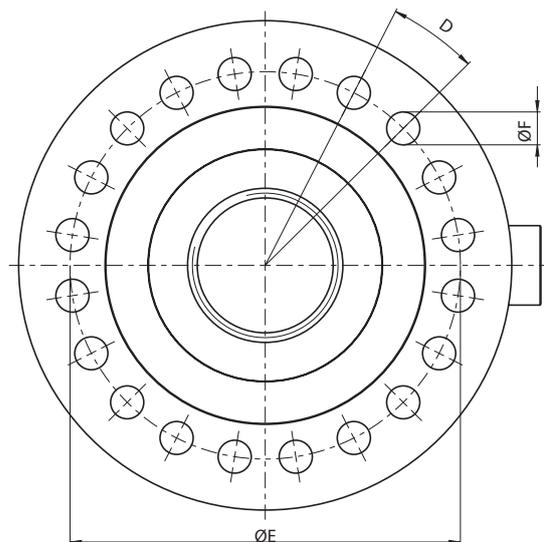
- Integrated amplifier with standard signal
- CANopen interface
- redundant system



Dimensions (mm)

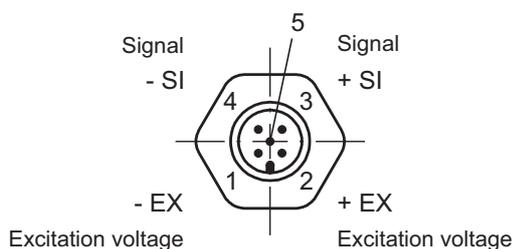
Tightening Torque of Fixing Screws

Rated Load	Size	Tightening Torque
500 kN	16 x M20x110-10.9 (DIN 912)	300 Nm
1MN	20 x M20x130-10.9 (DIN 912)	300 Nm
1.5 MN	24 x M24x160-10.9 (DIN 912)	410 Nm
2.5MN	28 x M27x190-10.9 (DIN 912)	630 Nm



Rated Load	A	B	C	D	E	F	G	H	J	Weight
500 kN	279	M72X2	122.2	16 x 22.5°	222.2	21	101.6	19	180	30 kg
1MN	304.8	M90x3	144.3	20 x 18°	241.3	20.5	114.3	6.3	198	45 kg
1.5MN	393.7	M120x4	196.3	24 x 15°	322.1	25	139.7	12.7	266	83 kg
2.5MN	520.7	M150x4	267.9	28 x 12.86°	419.1	28	158.8	6.4	360	176 kg

Wiring Code



XKC 046.02 / XKC 046.22

1	-EX	brown
2	+EX	white
3	+SI	blue
4	-SI	black
5	free	grey

Specifications

Accuracy Class	% F_{nom}	0.1*
Rated force (F_{nom})	kN MN	500 1/ 1.5/ 2.5
Maximum operating force (F_G)	% F_{nom}	150
Breaking force (F_B)	% F_{nom}	>300
Lateral force limit (F_Q)	% F_{nom}	10
Rated characteristic value (C_{nom})	mV/V	2.000 ± 0.005
Relative deviation of zero signal	%	≤ 3
Reference excitation voltage (U_{ref})	VDC	20
Input resistance (R_e)	Ω	380 ± 30
Output resistance (R_a)	Ω	$350 + 10$
Insulation resistance (R_{is})	Ω	$> 5 \times 10^9$
Relative linearity error (d_{lin})	%	0.1
Relative reversibility error (v)	%	0.1
Temperature effect on zero signal (TK_0)	%/10K	0.1
Temp. effect on characteristic value (TK_C)	%/10K	0.1
Relative creep over 30 minutes ($d_{cr, F+E}$)	%	0.1
Reference temperature (T_{ref})	$^{\circ}C$	+23
Rated temperature range ($B_{T, nom}$)	$^{\circ}C$	-20 ... +50
Operating temperature range ($B_{T, G}$)	$^{\circ}C$	-30 ... +70
Storage temperature range ($B_{T, S}$)	$^{\circ}C$	-30 ... +70
Environmental protection (EN 60529)		IP 67

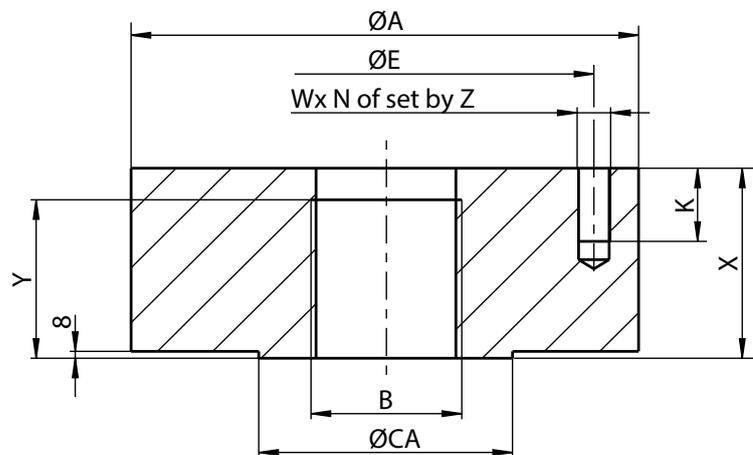
All data according to VDI/VDE/DKD 2638

* only in combination with a base-plate

Appliances for Installation and Mounting

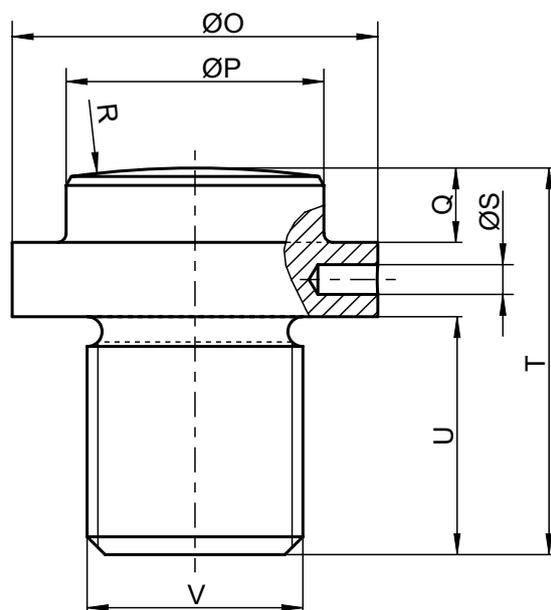
Dimensions (mm)

Base plate XKM 115 ... 118



Rated Load	Type Code	K	N	W	X	Y	Z	CA
500kN	XKM 115	30	M20	16	80	70	22.5°	114.3
1MN	XKM 116	30	M20	20	114.3	97	18°	152.4
1.5MN	XKM 117	36	M24	24	127	110	15°	196.4
2.5MN	XKM 118	40	M27	28	176	150	12.86°	267.9

Load button XKM 136 ... 141



Rated Load	Type Code	O	P	Q	R	S	T	U	V
500kN	XKM 136	Ø 122	Ø 86	25	300	Ø 10	130	80	M72x2
1MN	XKM 138	Ø 144	Ø 102	30	450	Ø 13	140	80	M90x3
1.5MN	XKM 139	Ø 190	Ø 120	40	800	Ø 13	200	120	M120x4
2.5MN	XKM 141	Ø 266	Ø 180	50	1200	M12 (3x)	230	130	M150x4

Order Example

Type Code	Description
KAF-I/1MN/0.1	Force transducer 1MN with 0.1% accuracy class
	Accuracy class
	Rated load
	Model

Accessoires/ Options

	Type Code	Description
Base plate	XKM 115	For KAF-I 500kN
	XKM 116	For KAF-I 1MN
	XKM 117	For KAF-I 1.5MN
	XKM 118	For KAF-I 2.5MN
Load button	XKM 136	For KAF-I 500kN
	XKM 138	For KAF-I 1MN
	XKM 139	For KAF-I 1.5MN
	XKM 141	For KAF-I 2.5MN
Connector male and cable	XKC 046.02	Connecting cable 5m, 5-pin, PUR
	XKC 046.22	Connecting cable 10m, 5-pin, PUR
CANopen interface	KAF-I-DI	For 500kN ... 2.5MN Please note data sheet „Force Transducer with CANopen Interface“!