

KAF Force Transducer

Applications

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

Features

- 1 kN to 500 kN
- High accuracy
- For measuring of tensile and compressive forces
- Made of stainless steel
- Environmental protection IP 67

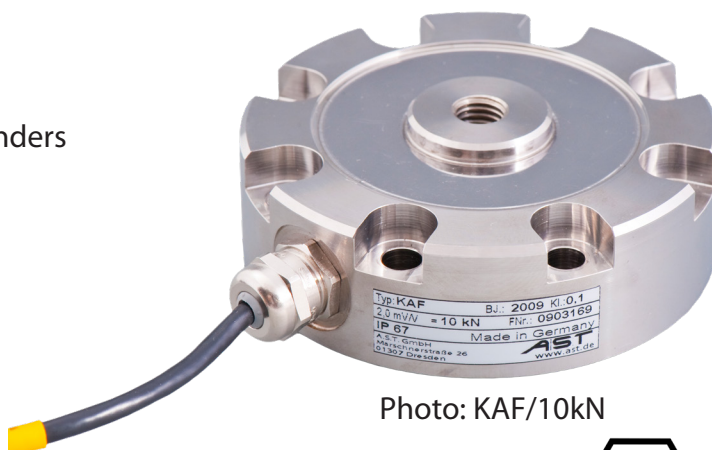


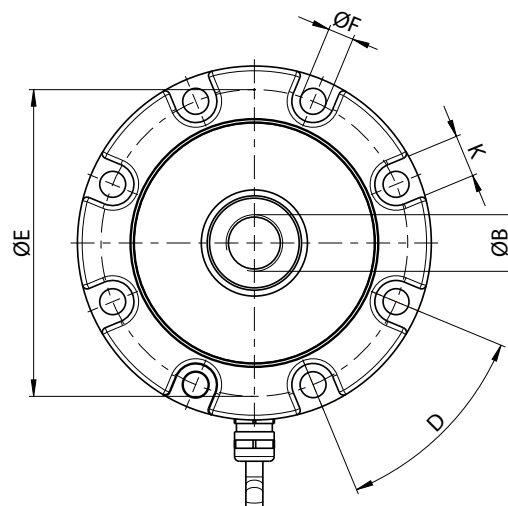
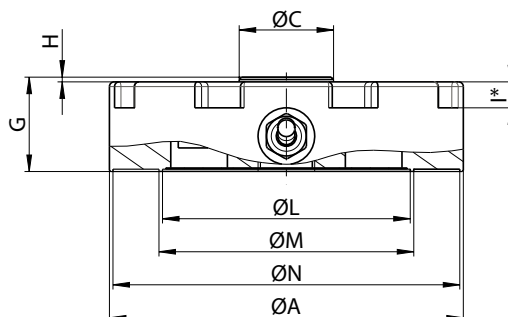
Photo: KAF/10kN



Option

- Integrated amplifier with standard signal for force transducer 20 kN ... 500 kN
- CANopen interface (20 kN ... 500 kN)
- redundant system
- ATEX-Certificate

Dimensions (mm)



Tightening Torque of Fixing Screws

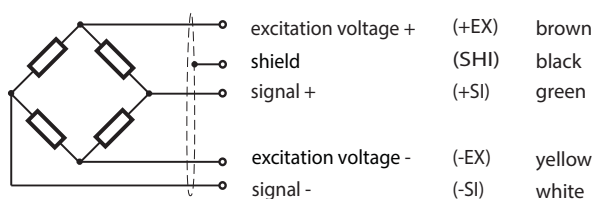
Rated Force (kN)	Size	Tightening Torque
1/ 2/ 5/ 10	8 x M8x35-10.9 (DIN 912)	30 Nm
20/ 50	8 x M10x40-10.9 (DIN 912)	60 Nm
100/ 200	8 x M12x40-10.9 (DIN 912)	100 Nm
250/ 300/ 500	16 x M12x80-10.9(DIN 912)	85 Nm

Rated Force kN)	A	B	C	D	E	F	G	H	I	K	L	M	N	Weight
1/ 2/ 5/ 10	105	M12	31.5	8 x 45°	89	8.4	35	3	9	15	73.5	77.5	101	1.3 kg
20/ 50	150	M24x2	40	8 x 45°	130	11	40	2	11	18	105	108	147	3.7 kg
100	165	M36x3	50	8 x 45°	145	13	42	2	13	20	127	132	161	4.9 kg
200	165	M36x3	50	8 x 45°	145	13	42	2	13	20	111	118	160	6.3 kg
250*/ 300*/ 500*	203	M45X3	94	16 x 22.5°	165	13	64	6.5	-	-	134	145.4	193	11.4 kg

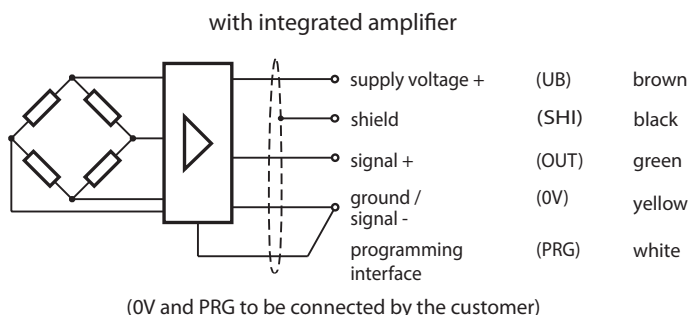
* without milled slots for screw heads

Wiring Code

Cable length 3m



Compressive load is positive change of signal.



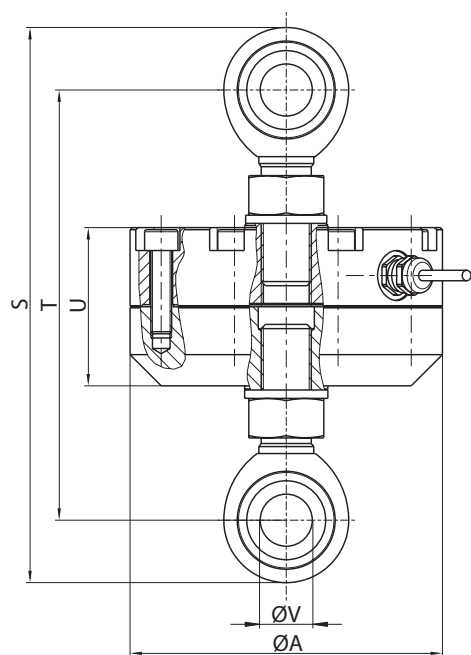
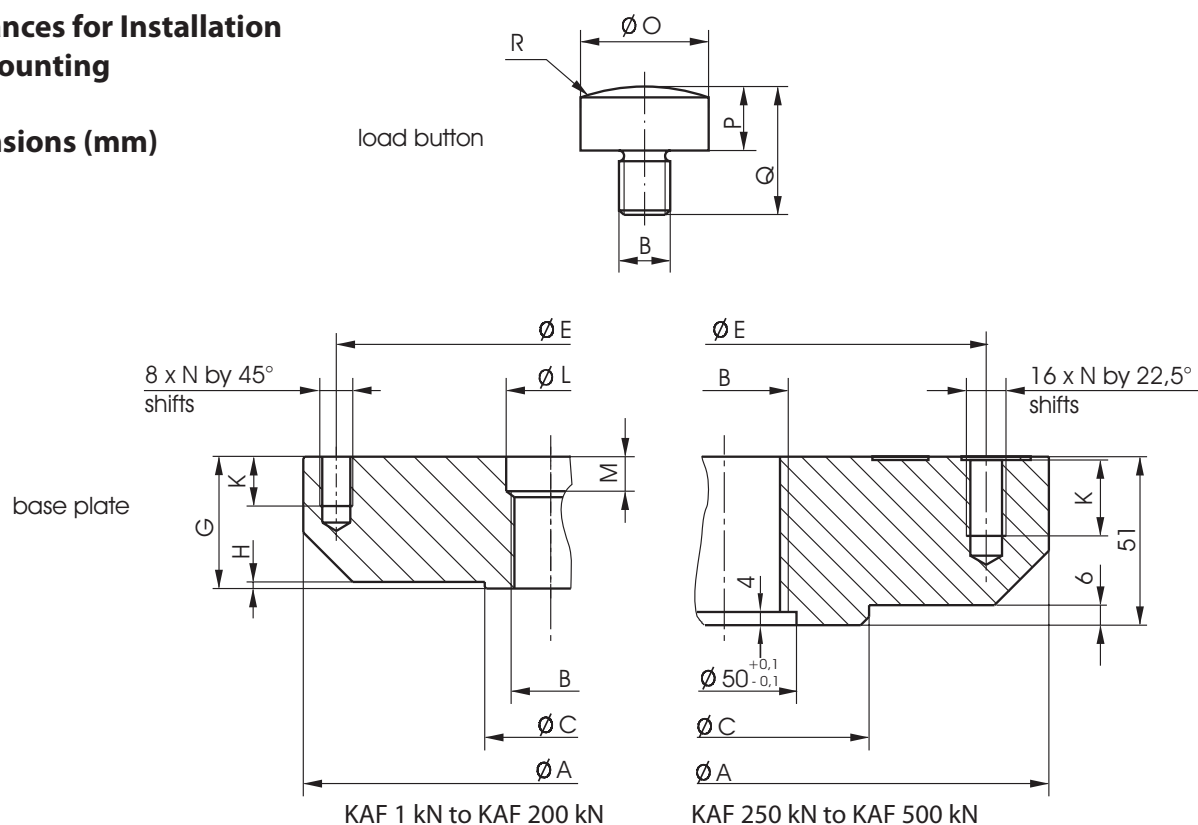
Specifications

Accuracy Class	% F_{nom}	0.1	0.2	0.5	0.2 with Integrated Amplifier
Rated force (F_{nom})	kN kN	1/2/5/10/ 20/50/100	200/ 250/ 300	500	20/50/100/200/250/500
Maximum operating force (F_G)	% F_{nom}		150		150
Breaking force (F_B)	% F_{nom}		>300		>300
Lateral force limit (F_Q)	% F_{nom}		10		10
Rated characteristic value (C_{nom})	mV/V	2.000 ± 0.005			
Relative deviation of zero signal	%	≤ 3			
Reference excitation voltage (U_{ref})	VDC	5			
Operating range of excitation voltage ($B_{U,G}$)	VDC	5 .. 20			
Input resistance (R_e)	Ω	770 ± 40			
Output resistance (R_a)	Ω	700 ± 10			
Insulation resistance (R_{is})	Ω	$> 5 \times 10^9$			
Relative linearity error (d_{lin})	%	0.1	0.2	0.5	0.2
Relative reversibility error (v)	%	0.1	0.2	0.5	
Temperature effect on zero signal (TK_0)	%/10K	0.1	0.1	0.1	0.1
Temp. effect on characteristic value (TK_C)	%/10K	0.1	0.1	0.1	
TK of output signal under load	%/10K				0.2
Relative creep over 30 minutes ($d_{cr, F+E}$)	%	0.1	0.1	0.1	0.2
Tolerance of output signal	%				0.1
Tolerance of zero signal	%				≤ 3
Reference temperature (T_{ref})	$^{\circ}\text{C}$	+23			+23
Rated temperature range ($B_{T,nom}$)	$^{\circ}\text{C}$	-20 ... +50			-20 ... +50
Operating temperature range ($B_{T,G}$)	$^{\circ}\text{C}$	-30 ... +70			-30 ... +70
Storage temperature range ($B_{T,s}$)	$^{\circ}\text{C}$	-30 ... +70			-30 ... +70
Environmental protection (EN 60529)		IP 67			IP 67
Supply voltage	VDC				19 ... 28
Input current	mA				35 (at 24V)
Output signal for compression load ($0 \dots F_N$)					
Alternatively:					
- Voltage output (max. load: 5mA)	V				0 ... 10
- Current output	mA				4 ... 20
- Maximum resistance	Ω				300

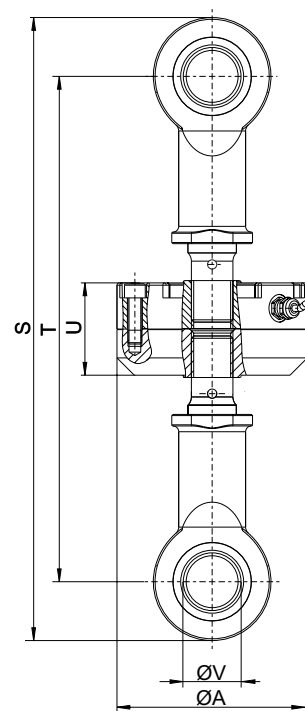
All data according to VDI/VDE/DKD 2638

Appliances for Installation and Mounting

Dimensions (mm)



KAF 1 kN ... KAF 100 kN and KAF 250 kN/ 300 kN
with base plate and rod end bearings



KAF 200 kN and KAF 500 kN
with base plate and rod end bearings

Rated Force	K	L	M	N	O	P	Q	R	S	T	U	V
1/ 2/ 5/ 10 kN	14	14	10,5	M8	30	15	29	R50	approx. 175	approx. 143	64	12 +0,018
20/ 50 kN	15	27	10,5	M10	30	22	42	R50	approx. 266	approx. 206	76	25 +0,021
100 kN	15	-	-	M12	50	21	58	R120	approx. 380	approx. 298	80	35 -0,012
200 kN	15	-	-	M12	50	21	58	R120	approx. 532	approx. 430	80	45 -0,012
250 kN/ 300 kN	24	-	-	M12	70	40	70	R120	approx. 513	approx. 401	102,5	50 -0,012
500 kN	24	-	-	M12	70	40	70	R120	approx. 671	approx. 536	102,5	60 -0,015

Order Example

Type Code	Description
KAF/10kN/0.1	Force transducer 10kN with 0.1% accuracy
	Accuracy class
	Rated force
	Model
KAF-E/100kN/0,2/24V/±10V	Force transducer 100kN with 0.2% accuracy and integrated amplifier
	Output signal
	Supply voltage
	Accuracy class
	Rated load
	E = Integrated amplifier
	Model

Accessoires/ Options

	Type Code	Description
Load button	XKM 019	K12-50 for KAF 1 kN to 10 kN
	XKM 044	K24-50 for KAF 20 kN and 50 kN
	XKM 045	K36-120 for KAF 100 kN and 200 kN
	XKM 046	K45-120 for KAF 250 kN to 500 kN
Base plate	XKM 037	For KAF 1 kN to 10 kN
	XKM 038	For KAF 20 kN and 50 kN
	XKM 035	For KAF 100 kN and 200 kN
	XKM 031	For KAF 250 kN to 500 kN
Rod end bearing	GKA 12	With locknut for KAF 1 kN to 10 kN
	GKA 25	With locknut for KAF 20 kN and 50 kN
	GKA 35	With locknut for KAF 100 kN
	GKA 45	With adapter for KAF 200 kN
	GKA 50	With locknut for KAF 250 kN and 300 kN
	GKA 60	With adapter for KAF 500 kN
Connector male and cable	XKC 041	Connector male instead of open cable ends, 6-pin
	XKC 044.01	Connector male, mounted to sensor body, 5-pin
	XKC 046.03	Connecting cable 5 m for XKC 044.01, 5-pin
	XKC 046.04	Connecting cable 10 m for XKC 044.01, 5-pin
	XKC 071	Plug connected to force transducer (TEDS), 6-pin
ATEX-Certificate	KAF-EX	For 1 kN ... 500 kN. Please note ATEX data sheet!
CANopen interface	KAF-DI	For 20 kN to 500 kN Please note data sheet „Force Transducer with CANopen Interface“!