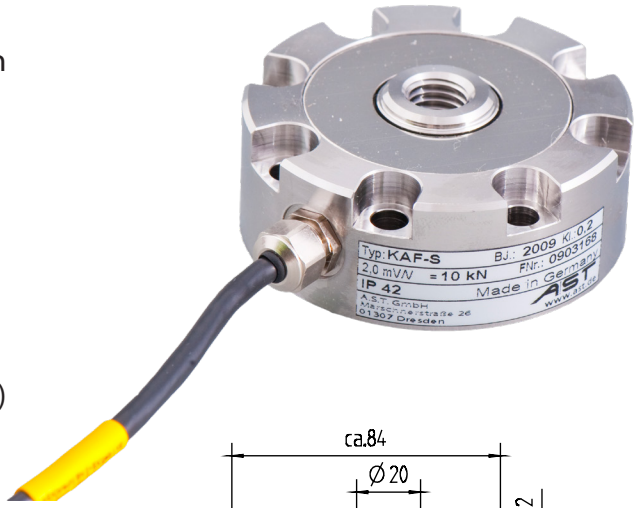
AST Gruppe
Angewandte System Technik

KAF-S
Force Transducer

Applications

- Measuring of tension and compression forces in machines and systems
- Material testing machines and test rigs
- Hydraulic cylinder

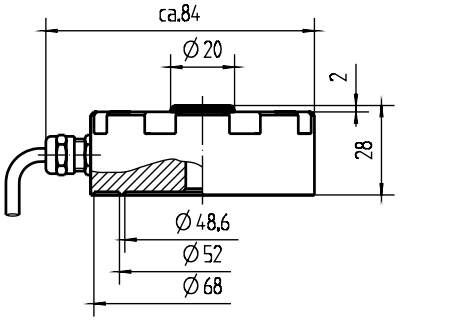


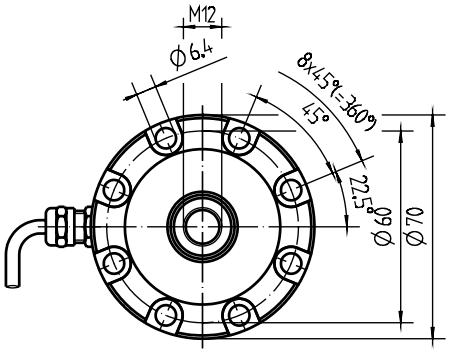
Features

- 100N up to 10kN
- Small overall dimensions
- Made from stainless steel or aluminium (<500N)
- Environmental protection IP 42

Dimensions (mm)

Rated Force	Rated Displacement (mm)	Tightening torque of fixing screws M6-10.9 (Nm)	Preload of the M12 central thread Tightening torque (Nm)	Weight (kg)
100N	0.058	9	5	0.25
200N	0.044	9	6.5	0.25
500N	0.075	12.5	12	0.5
1kN	0.061	12.5	15	0.5
2kN	0.048	12.5	20	0.5
5kN	0.048	12.5	25	0.5
10kN	0.045	12.5	30	0.5

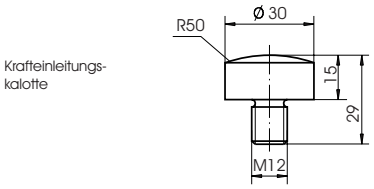


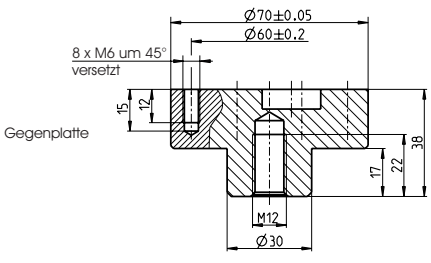


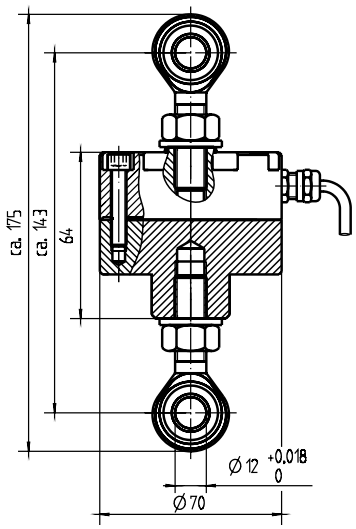
Preloading of the M12 central thread by means of tensile force

- Force transducer to 130% ... 150% nominal force
- Tighten lock nut by hand
- Relieve the force transducer

Appliances for Installation and Mounting

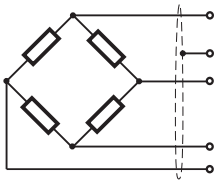






Wiring Code

Cable length 3.0m



excitation voltage +	(+EX)	brown
shield	(SHI)	black
signal +	(+SI)	green
excitation voltage -	(-EX)	yellow
signal -	(-SI)	white

Compressive load is a positive change of signal.
Shield to ground (housing)

Specifications

Accuracy Class	**% F_{nom}**	**0.1**	**0.2**
Rated force (F_{nom})	kN	0.1/ 0.2/ 0.5/ 1/ 2/ 5/ 10	
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	10	
Input resistance (R_e)	Ω	760 ± 60	
Output resistance (R_a)	Ω	704 ± 6	
Insulation resistance (R_{is})	Ω	> 5 x 10^9	
Relative linearity error (d_{lin})	%	0.1	0.2
Relative reversibility error (v)	%	0.1	0.2
Temperature effect on zero signal (TK_0)	%/10K	0.1	0.2
Temperature effect on charact. value (TK_C)	%/10K	0.1	0.2
Relative creep over 30 minutes ($d_{cr, F+E}$)	%	0.1	0.2
Reference temperature (T_{ref})	°C	+23	
Rated temperature range ($B_{T, nom}$)	°C	-20 ... +50	
Operating temperature range ($B_{T, G}$)	°C	-20 ... +50	
Storage temperature range ($B_{T, S}$)	°C	-30 ... +70	
Environmental protection (EN 60529)		IP 42	

All data according to VDI/VDE/DKD 2638

Order Example

Type Code	**Description**
KAF-S/1kN/0.2	Force transducer 1kN with 0.2% accuracy class
KAF-S	Model
1kN	Rated force
0.2	Accuracy class

Accessoires / Options

	Type Code	**Description**
Load button	XKM 019	K12-50 for KAF-S 100N up to 10kN
Base plate	XKM 033.03 XKM 033.04	for 100N up to 200N (aluminium) for 500N up to 10kN (stainless steel)
Road end bearing	GKA 12	male thread with locknut for 100N up to 10kN
Cable extension	XKC 042	cable extension (total length per unit: m)