

# KAS Force Transducer

## Application

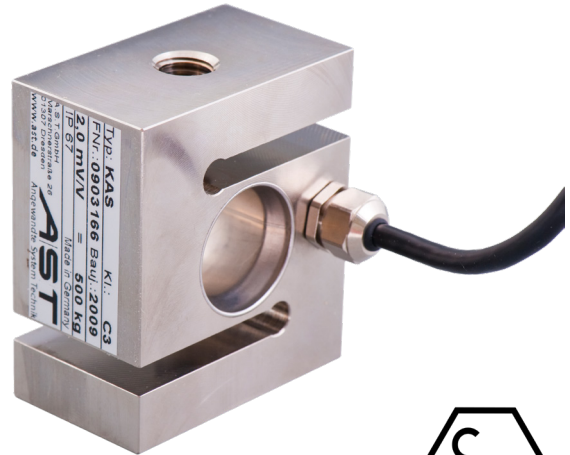
- Measuring of compression and tension forces
- Material testing machines und devices
- Test stands

## Features

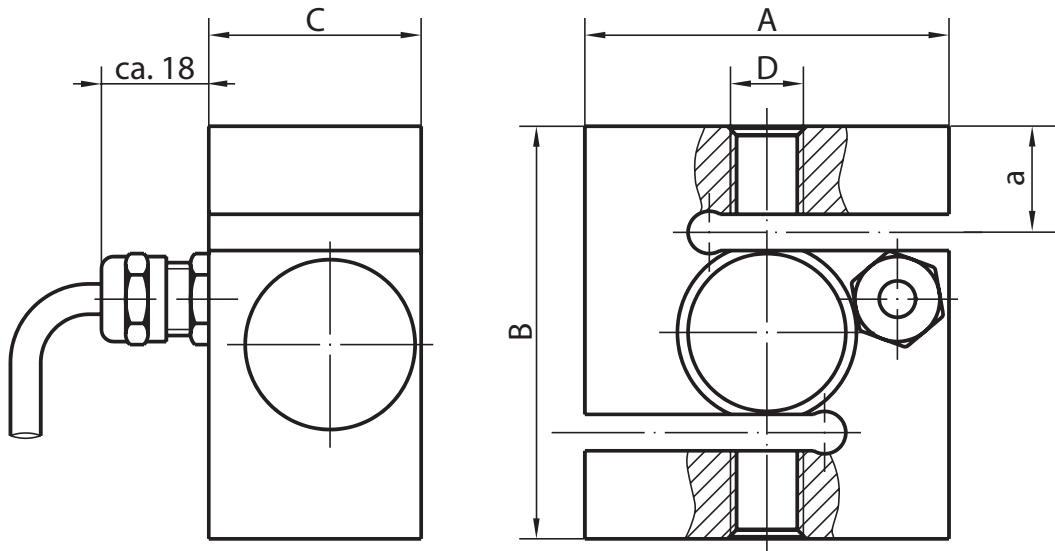
- 2kN up to 50kN
- Accuracy class 0.1% and 0.05%
- Made from stainless steel
- Hermetically sealed enclosure (IP 67)
- Appliances for easy mounting

## Options

- Integrated amplifier
- CANopen interface
- ATEX-Certificate (2kN up to 50kN)



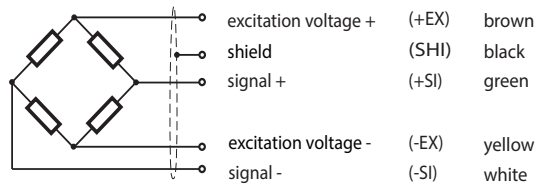
## Dimensions (mm)



Rated Force	a	A	B	C	D	I	K	Weight	Displacement at Rated Force
2/ 3kN	16.3	60	68	35	M12	12 <sup>+0,018</sup>	ca. 146	1 kg	0.12 mm
5kN	15.7	60	68	35	M12	12 <sup>+0,018</sup>	ca. 146	1 kg	0.12 mm
10kN	16.3	60	68	35	M12	12 <sup>+0,018</sup>	ca. 146	1 kg	0.20 mm
20kN	21.2	68	78	38	M20x1.5	20 <sup>+0,021</sup>	ca. 192	1.3 kg	0.25 mm
50kN	22.5	68	78	38	M24x2	25 <sup>+0,021</sup>	ca. 224	1.3 kg	0.55 mm

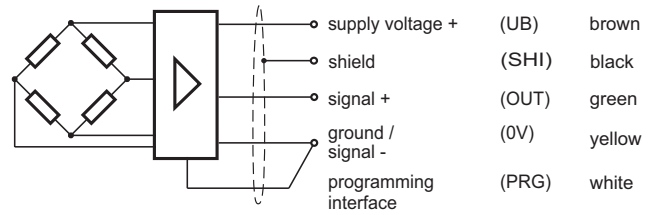
## Wiring Code

Cable length 3m



Compressive load is a positive change of signal.

with integrated amplifier



(0V and PRG to be connected by the customer)

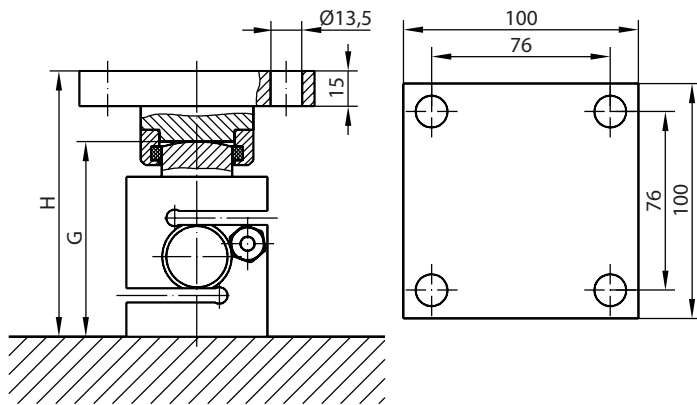
## Specification

Accuracy Class	% F <sub>nom</sub>	0.1	0.05	0.2 <sup>1)</sup> with Integrated Amplifier
Rated force (F <sub>nom</sub> )	kN	2/ 3/ 5/ 10/ 20/ 50		2/ 3/ 5/ 10/ 20/ 50
Maximum operating force (F <sub>G</sub> )	% F <sub>nom</sub>	150		150
Breaking force (F <sub>B</sub> ) of 100N	% F <sub>nom</sub>	>300		>300
Lateral force limit (F <sub>Q</sub> )	% F <sub>nom</sub>	10		10
Rated characteristic value (C <sub>nom</sub> )	mV/V	2.000 ± 0.002		
Relative deviation of zero signal	%	≤ 1		
Reference excitation voltage (U <sub>ref</sub> )	VDC	12		
Input resistance (R <sub>e</sub> )	Ω	380 ± 30		
Output resistance (R <sub>a</sub> )	Ω	352 ± 1.5		
Insulation resistance (R <sub>is</sub> )	Ω	> 5 x 10 <sup>9</sup>		
Relative linearity error (d <sub>lin</sub> )	%	≤ 0.1	≤ 0.05	0.1
Relative reversibility error (v) <sup>1)</sup>	%	≤ 0.1	≤ 0.05	
Temperature effect on zero signal (TK <sub>0</sub> )	%/10K	≤ 0.035	≤ 0.035	0.2
Temperature effect on charact. value (TK <sub>C</sub> )	%/10K	≤ 0.1	≤ 0.05	
Relative creep over 30 minutes (d <sub>cr, F+E</sub> )	%/10K	≤ 0.1	≤ 0.05	0.2
Tolerance of output signal	%			0.1
Tolerance of zero signal	%			≤ 1
Reference temperature (T <sub>ref</sub> )	°C	+23		+23
Rated temperature range (B <sub>T, nom</sub> )	°C	-20 ... +60		-20 ... +60
Operating temperature range (B <sub>T, G</sub> )	°C	-30 ... +70		-30 ... +70
Storage temperature range (B <sub>T, S</sub> )	°C	-40 ... +70		-40 ... +70
Environmental (EN 60529)		IP 67		IP 67
Excitation voltage	VDC			19 ... 28
Input current	mA			35( at 24V)
Output signal for tensile/compressive force (0 ... F <sub>N</sub> )				
Alternatively:				
- Voltage output (max. load: 5mA)	V			0 ... 10
- Current output	mA			4 ... 20
- Maximum resistance				300 Ω
Output signal for tensile/compressive force (-F <sub>N</sub> ... +F <sub>N</sub> )				
- Voltage output	V			-10 ... +10

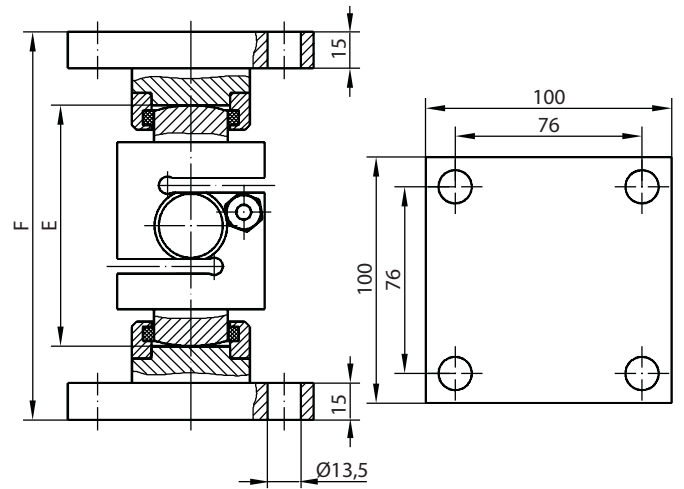
All data according to VDI/VDE/DKD 2638

1) Accuracy class 0.1 on request

## Appliances for Installation and Mounting (Dimensions in mm)

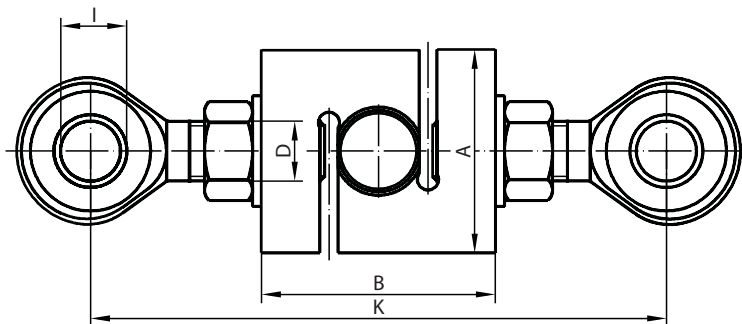


**KAS with top plate XKM 020**

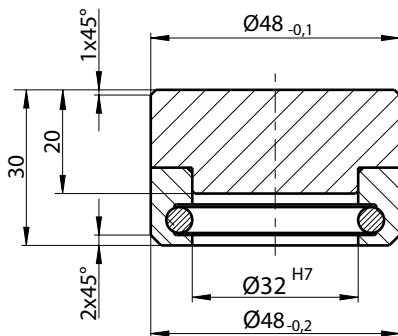


**KAS with top plate complete XKM 022**

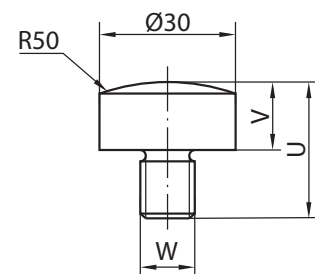
Rated Force	E	F	G	H	I	K
2kN up to 10kN	98	158	83	113	12 <sup>+0.018</sup>	appr. 146
20kN	122	182	100	130	20 <sup>+0.021</sup>	appr. 192
50kN	122	182	100	130	25 <sup>+0.021</sup>	appr. 224



**KAS with rod end bearings GKA**



**Pressure piece, complete XKM 126**



**Load button XKM**

Rated Force	XKM	U	V	W
2-10kN	XKM 019	29	15	M12
20kN	XKM 043	40	22	M20x1.5
50kN	XKM 044	42	22	M24x2

## Order Example

Type Code	Description
KAS-E/1kN/0.2/24V/0 ...10V	Force transducer 1kN with 0.2% accuracy class with integrated amplifier
	Output signal
	Supply voltage
	Accuracy class
	Rated force
	E = Integrated amplifier
	Model

## Accessoires/ Options

	Type Code	Description
Load button	XKM 019 XKM 043 XKM 044	K12-50 for 2kN up to 10kN K20-50 for 20kN K24-50 for 50kN
Hinged column	XKM 020.01 XKM 020.02 XKM 020.03 XKM 022.01 XKM 022.02 XKM 022.03	top plate incl. load button for 5kN up to 10kN top plate incl. load button for 20kN top plate incl. load button for 50kN top plate complete incl. load buttons for 5kN up to 10kN top plate complete incl. load buttons for 20kN top plate complete incl. load buttons for 50kN
Rod end bearing	GKA 12 GKA 20 GKA 25	male thread with jam nut for 2kN up to 10kN male thread with jam nut for 20kN male thread with jam nut for 50kN
Pressure piece,complete	XKM 126	for 2kN ... 50kN
Protective cable	XKC 024	for KAS
ATEX-Certificate	KAS-EX KAS-E-EX	for 2kN, 3kN, 5kN, 10kN, 20kN, 50kN. Please note ATEX data sheet! for 2kN, 3kN, 5kN, 10kN, 20kN, 50kN. Please note data sheet „ATEX with integrated amplifier“!
CANopen interface	KAS-DI	for 2kN ... 50kN. Please note data sheet „Force Transducer with CANopen Interface“!