

# Z30A

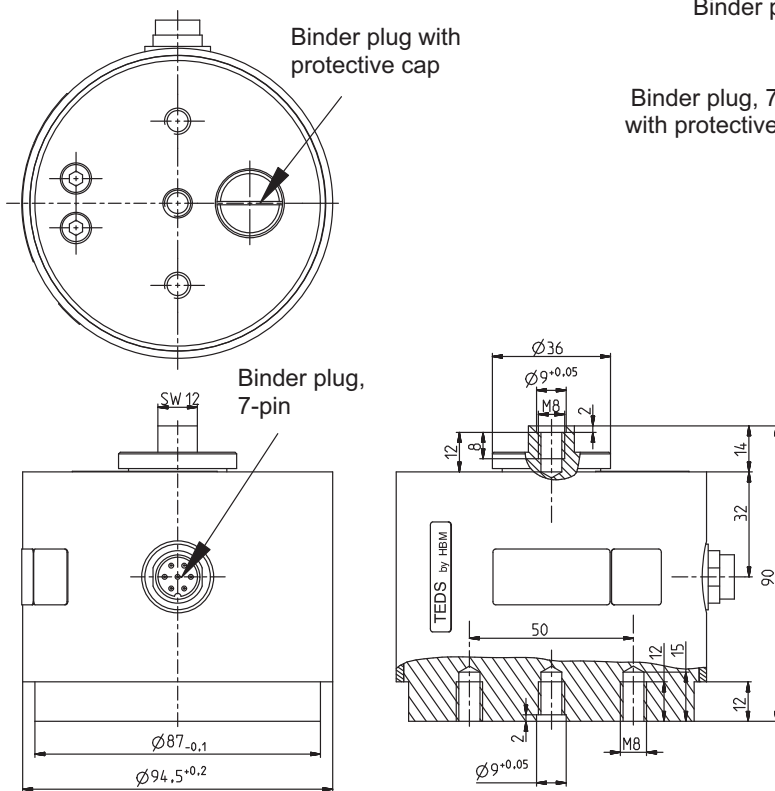
## Force transducers

### Special features

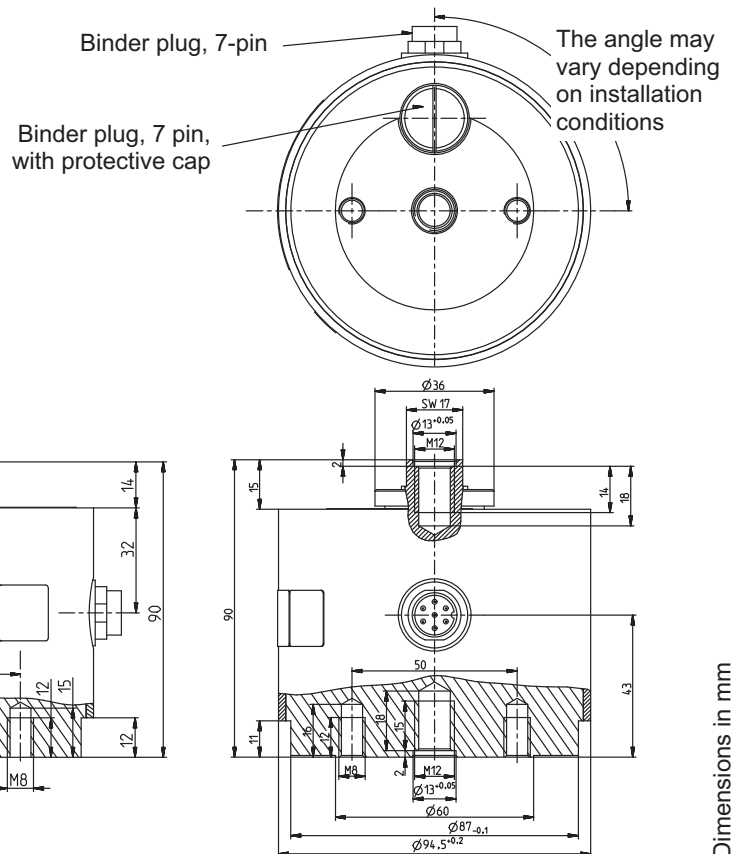
- Tensile/compressive force transducer with maximum accuracy
- Nominal (rated) forces 50 N... 10 kN
- Class 00 with DKD calibration certificate to ISO 376
- High long-term stability
- Overload protection at nominal (rated) force  $\leq 1000$  N
- TEDS (Transducer Electronic Data Sheet)



#### Z30A/50 N ... 1000 N



#### Z30A/2 kN ... 10 kN



# Specifications

Nominal (rated) force	$F_{nom}$	N	50	100	200	500	1000			
		kN						2	5	10
<b>Accuracy values per ISO376</b>										
Accuracy information in accordance with ISO376 in the force range of 20 % to 100 %			00 <sup>1)</sup>							
Rel. reproducibility and repeatability errors (0.2 $F_{nom}$ to $F_{nom}$ ) For a constant mounting position	b'	%	<±0.02							
For a changing mounting position	b		<±0.04							
Rel. deviation from the fitting curve (0.2 $F_{nom}$ to $F_{nom}$ )	$f_c$		<±0.02							
Rel. zero error (zero signal return)	$f_o$		<±0.008							
Rel. reversibility error (0.2 $F_{nom}$ to $F_{nom}$ )	v		<±0.06							
Rel. Non-linearity	$d_{lin}$		<±0.03							
Temperature coefficient of sensitivity	$TC_S$		% / 10K	<±0.02						
Temperature coefficient of zero signal	$TC_0$	<±0.02								
Rel. creep over 30 mins.	$d_{crF+E}$	%	<±0.03							
Effect of lateral forces (lateral force 10% $F_{nom}$ )	$d_Q$	%	<±0.03							
Effect of eccentricity per mm	$d_E$		< 0.03							
<b>Rated electrical output</b>										
Nominal (rated) output	$C_{nom}$	mV/V	2							
Rel. sensitivity error (pressure)	$d_c$	%	<±0.1							
Rel. rated output variation (tension/compression)	$d_{zd}$	%	<±0.1							
Rel. zero signal deviation	$d_{s,o}$	mV/V	<±0.2	<±0.1						
Input resistance	$R_e$	Ω	>345				>690			
Output resistance	$R_a$		300 ... 500			600 ... 800				
Insulation resistance	$R_{is}$		>5·10 <sup>9</sup>							
Reference excitation voltage	$U_{ref}$	V	5							
Operating range of the excitation voltage	$B_{U,G}$		0.5 ... 12							
<b>Temperature</b>										
Reference temperature	$t_{ref}$	°C	+22							
Nominal (rated) temperature range	$B_{t,nom}$		+10 ... +40							
Operating temperature range	$B_{t,G}$		-10 ... +70							
Storage temperature range	$B_{t,S}$		-25 ... +85							
<b>Characteristic mechanical quantities</b>										
Max. operating force	$F_G$	%	120				150			
Force limit	$F_L$		150							
Breaking force	$F_B$		250							
Static lateral force limit	$F_Q$		100	75	35	100	90	40		
Torque limit	$M_G$	N·m	1.5	3	5	5	5	80		
Nominal (rated) displacement	$S_{nom}$	mm	< 0.4				approx. 0.2			
Fundamental frequency	$f_G$	kHz	0.2	0.3	0.5	0.9	1.1	1.1	1.1	1.25
Rel. permissible oscillation stress	$F_{rb}$	%	70							
<b>General information</b>										
Degree of protection in accordance with EN 60529			IP50							
Plug connection, 6-wire configuration			Binder series 723, radial and axial housing plug							
Transducer identification			TEDS, per IEEE 1451.4							
Weight		kg	approx. 0.9				approx. 2.3			

<sup>1)</sup> Classification only guaranteed in conjunction with a DKD calibration certificate to ISO 376.

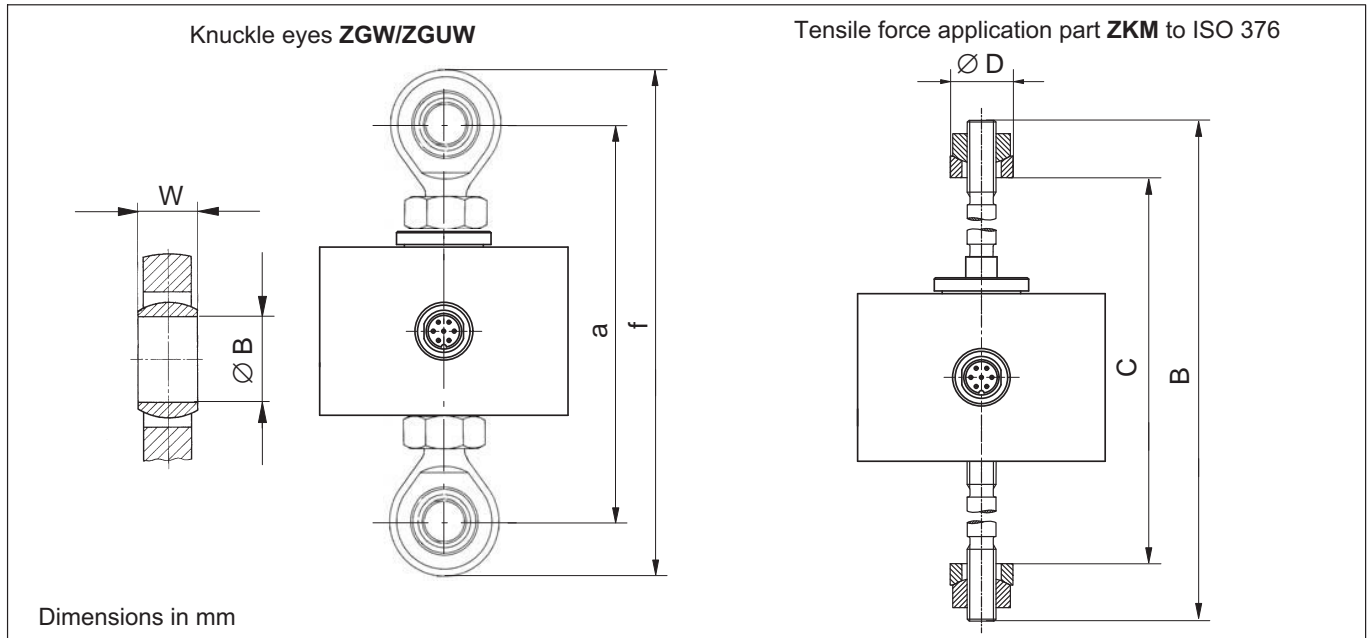
## Force transducer ordering numbers

Ordering code	Nominal (rated) force							Unit	
	1-Z30A/...	50	100	200	500	1000			
						2	5	10	kN

Ordering example: 1-Z30A/2kN

## Accessories (not included in the scope of supply)

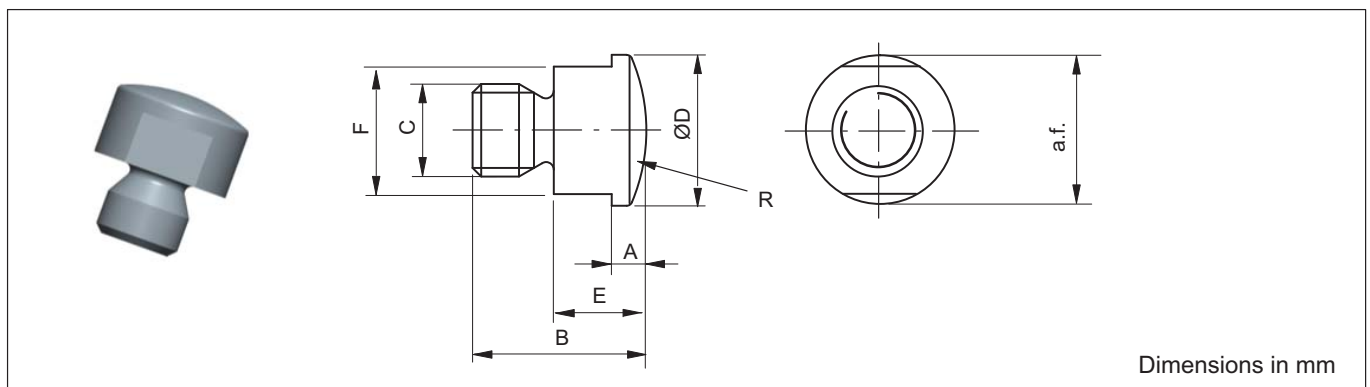
### Force application parts for tensile loading



Type	ZKM Ordering number	B	C		Ø D
			min	max	
Z30A/2kN-10kN	1-Z30/10kN/ZKM	229	250	312	35 <sup>-0.120.</sup> <sub>-0.280</sub>

Type	Upper/lower knuckle eye Ordering number	a	f	W	Ø B
Z30A/50N-1000N	1-U1R/200kg/ZGW	138	170	12	8 <sup>H7</sup>
Z30A/2kN-10kN	1-U2A/1t/ZGUW	169	201	16	12 <sup>H7</sup>

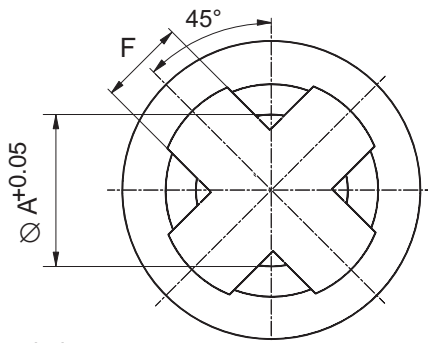
### Load button for compressive loading



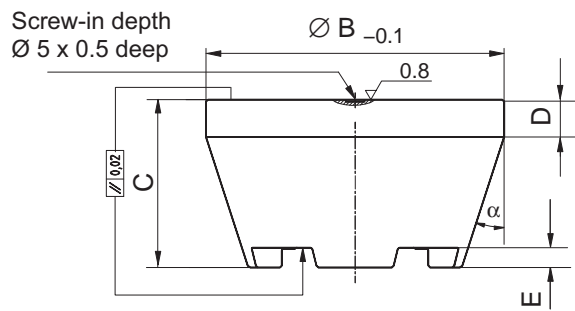
Type	Load button Ordering number	A	B	C	ØD <sup>-0.05.</sup> <sub>-0.10</sub>	E	F	R	a.f.
Z30A/50N-1000N	1-U1R/200kg/ZL	3	15	M8	13	8	11	16	11
Z30A/2kN-10kN	3-9202.0140	3	20	M12	20	9	17	40	17

### Thrust piece EDO4/EDO3 for precision measurements

always use together with the load button for compressive loads



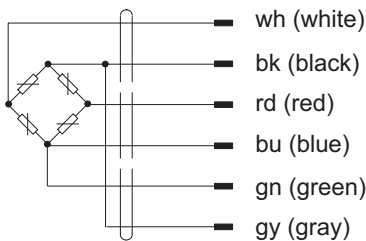
View from below



Dimensions in mm

Type	Thrust piece Ordering number	Weight (kg)	Ø A	Ø B	C	D	E	F	α
Z30A/50N-1000N	1-EDO3/1kN	approx. 0.2	13.2	37	22	6	3	8	18°
Z30A/2kN-10kN	1-EDO4/50kN	0.34	20.2	48	29	8	5	12	18°

### Pin assignment of plug and connection cable KAB139A-6



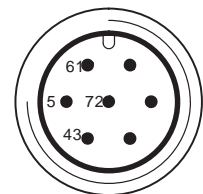
Cable shield connected to housing

- wh (white) Measurement signal (+)  $U_A$
- bk (black) Bridge excitation voltage (-)  $U_B$  (TEDS)
- rd (red) Measurement signal (-)  $U_A$
- bu (blue) Bridge excitation voltage (+)  $U_B$
- gn (green) Sense lead (+)
- gy (gray) Sense line (-) (TEDS)

#### PIN Binder plug

- 1
- 2
- 4
- 3
- 6
- 7
- 5 (not occupied)

#### Top view



Binder series 723



Shipping case for 4 Z30A force transducers and accessories, ordering number: 1-Z30/BOX

Dimensions: 440 x 320 x 147

### Cables/plugs

Ordering number	
1-KAB139A-6	Connection cable Kab139-A-6, 6 m, with binder female cable connector and free ends
K-CAB-F	Cable, configurable with different plugs and lengths

Subject to modifications.  
All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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