

# C18

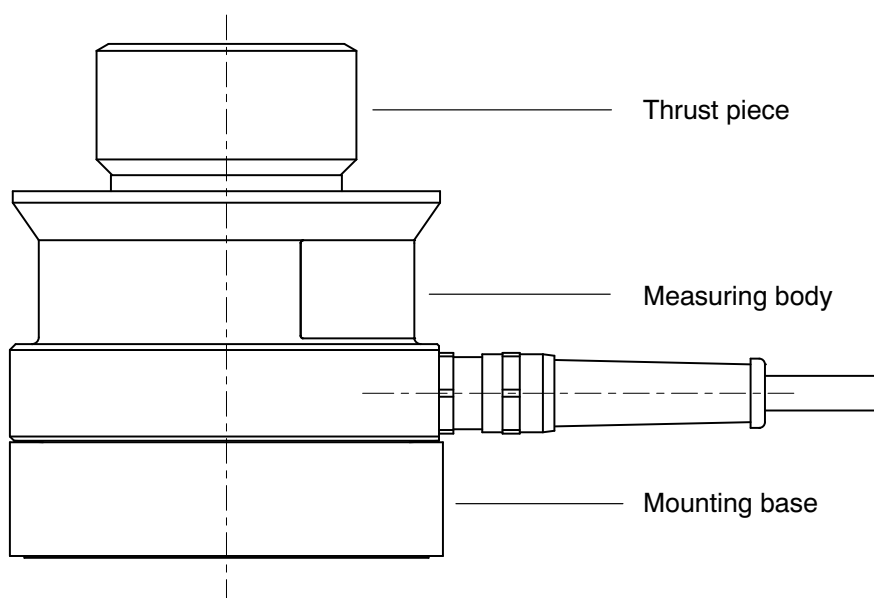
## Force Transducer



### Special features

- Compressive force transducer
- Nominal (rated) forces  
10 kN to 5 MN
- Compact dimensions
- Low weight
- Delivery includes force  
application parts
- Classification option with DKD  
calibration certificate to  
ISO 376: Class 0.5

### C18 force transducer concept



# Specifications

Type	C18						
Data per VDI 2638							
Nominal (rated) force	$F_{nom}$	kN	10 – 200	300	500 – 1000	2000 – 3000	5000
Class to ISO 376 (0.2 $F_{nom}$ to $F_{nom}$ ) <sup>1)</sup>			0.5				
Nominal (rated) sensitivity	$C_{nom}$	mV/V	2				
Rel. sensitivity error (compression)	$d_C$	%	0.1				
Relative zero signal error	$d_{s,0}$	%	1				
Relative zero error (zero signal return) <sup>1)</sup>	$f_0$	%	0.012	0.024			
Hysteresis error (0.2 $F_{nom}$ to $F_{nom}$ ) <sup>1)</sup>	$u$	%	0.08				
Relative reproducibility and repeatability errors (0.2 $F_{nom}$ to $F_{nom}$ ) for: a constant mounting position <sup>1)</sup> varying mounting positions <sup>1)</sup>	$b_l$	%	0.04				
	$b$	%	0.08				
Non-linearity	$d_{lin}$	%	0.05				
Effect of temperature on sensitivity, per 10 K related to nominal (rated) sensitivity	$TK_C$	%	0.01				
Effect of temperature on zero signal, per 10 K related to nominal (rated) sensitivity	$TK_0$	%	0.01				
Effect of lateral forces (lateral force 10% $F_{nom}$ ) <sup>2)</sup>	$d_Q$	%	0.035	0.1	0.15		
Effect of eccentricity per mm	$d_E$	%	0.02				
Relative creep over 30 min	$d_{crF+E}$	%	0.03				
Input resistance	$R_i$	$\Omega$	4450 $\pm$ 100				
Output resistance	$R_o$	$\Omega$	4010 $\pm$ 2				
Insulation resistance	$R_{is}$	$\Omega$	> 50 x 10 <sup>9</sup>				
Reference excitation voltage	$U_{ref}$	V	5				
Operating range of excitation voltage	$B_{U,G,T}$	V	5 to 30				
Carrier frequency of excitation voltage		Hz	$\leq$ 600				
Nominal (rated) temperature range	$B_{t,nom}$	$^{\circ}C$	+10 to +40				
Operating temperature range	$B_{t,G}$	$^{\circ}C$	-30 to +80				
Storage temperature range	$B_{t,S}$	$^{\circ}C$	-50 to +85				
Reference temperature	$t_{ref}$	$^{\circ}C$	+22				
Max. operating force	( $F_G$ )	%	170		150	135	
Limit force	( $F_L$ )	%	170		150	135	
Breaking force	( $F_B$ )	%	400		320	290	
Static lateral limit force <sup>2)</sup>	( $F_Q$ )	%	0.27 · $F_{nom}$ ; (to $F_z \leq 0.5 \cdot F_{nom}$ ) 0.45 · ( $F_{nom} - 0.8 \cdot F_z$ ); (for $F_z > 0.5 \cdot F_{nom}$ ) ( $F_z$ = force in direction of measurement)				

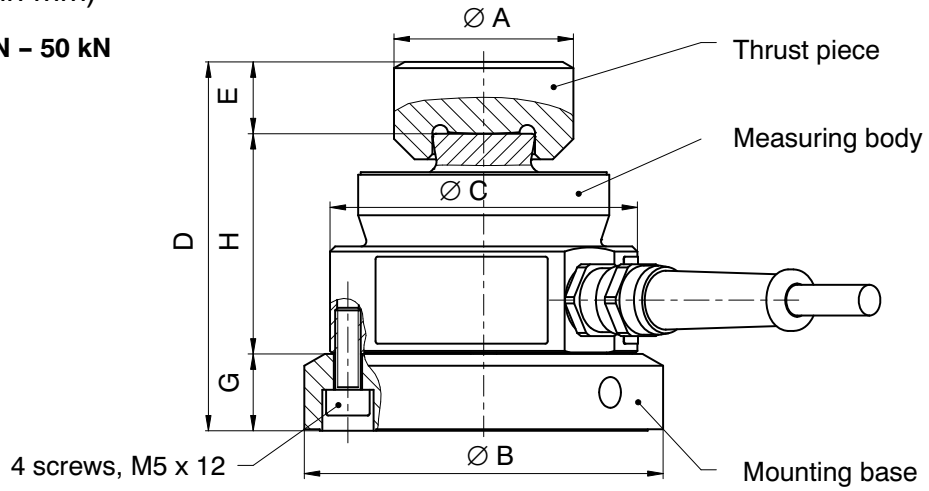
<sup>1)</sup> Class 0.5 to ISO 376, classification only guaranteed in conjunction with a DKD calibration certificate to ISO 376.

<sup>2)</sup> Relative to a force application point on the force application surface of the measuring body.

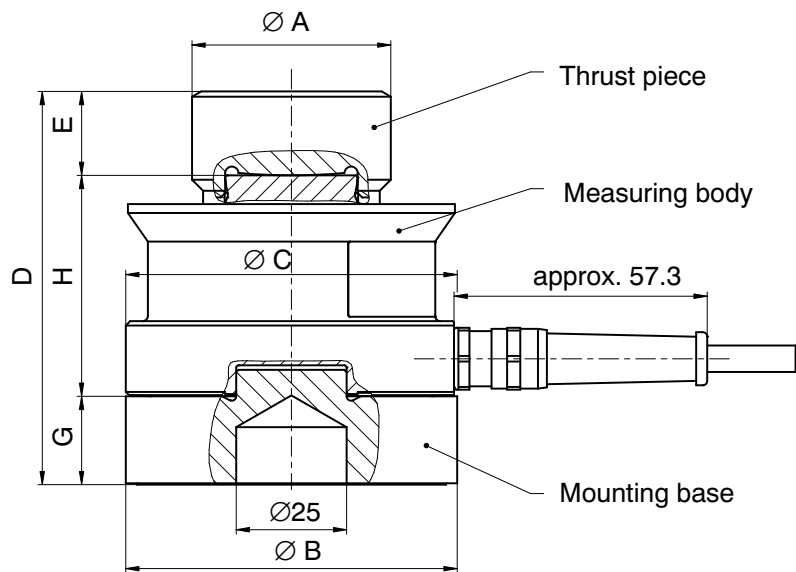
Nominal (rated) force	$F_{nom}$	kN	10	20	50	100	200	300	500	1000	2000	3000	5000
Nominal (rated) displacement	$S_{nom}$	mm	0.13	0.11	0.13	0.17	0.19	0.23	0.26	0.45	0.62	0.79	1.08
Total weight		kg	1.2	1.2	1.2	2.3	2.3	3.9	10.4	15.3	45.6	52.6	90.4
Rel. permissible vibrational stress	$F_{rb}$	%	70										
Degree of protection per EN 60529			IP68 (test conditions 1 m water column / 100 h)										
Cable length, four-wire configuration		m	5										
Measuring body material			stainless steel										

Dimensions (in mm)

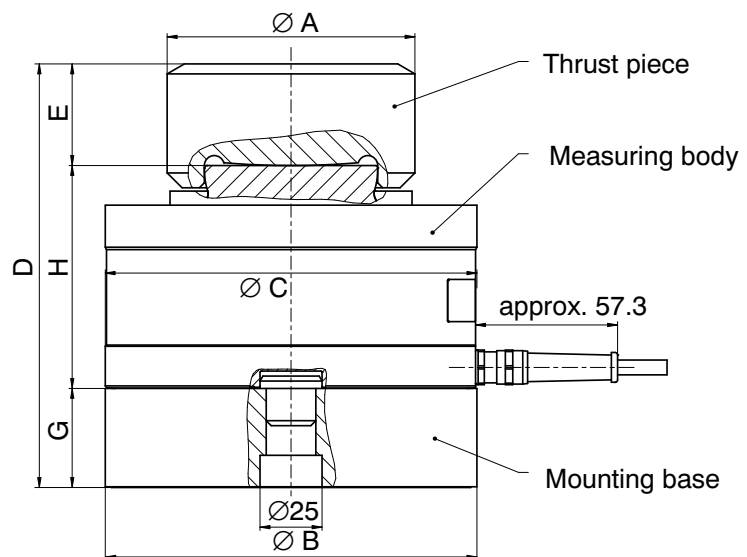
10 kN – 50 kN



100 kN – 500 kN



1 MN – 5 MN



Type	Ø A	Ø B	Ø C	D	E	G	H
C18 / 10 kN – 50 kN	35	70	60	72	14	15	43
C18 / 100 kN – 200 kN	45	75	75	89	19	20	50
C18 / 300 kN	58	95	95	112	27	20	65
C18 / 500 kN	85	130	130	157	35	37	85
C18 / 1 MN	100	150	150	171	41	40	90
C18 / 2 MN	135	230	225	239	59	50	130
C18 / 3 MN	135	230	225	254	59	50	145
C18 / 5 MN	160	275	270	303	73	60	170

## Pin assignment



## Scope of supply:

- C18 measuring body
- Thrust piece
- Mounting base
- Mounting instructions
- Manufacturing certificate

Modifications reserved.

All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability and do not constitute any liability whatsoever.

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