

C18

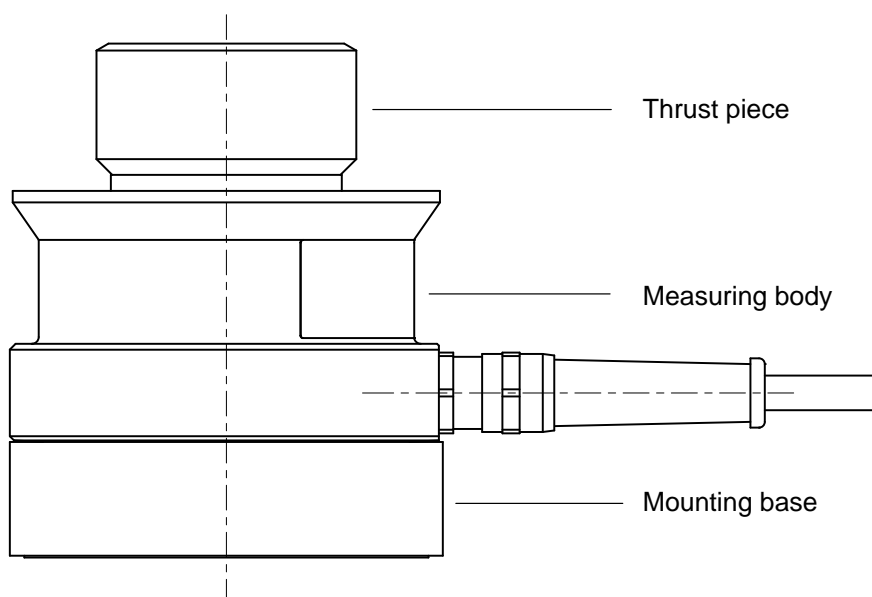
Force Transducer



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}) ¹⁾ | 0.5 | | | | | | |
| Nominal (rated) sensitivity | C_{nom} | mV/V | 2 | | | | |
| Rel. sensitivity error (compression) | d_C | % | 0.2 | | | | |
| Relative zero signal error | $d_{s,o}$ | % | 1 | | | | |
| Relative zero error (zero signal return) ¹⁾ | f_o | % | 0.012 | 0.024 | | | |
| Hysteresis error (0.2 F_{nom} to F_{nom}) ¹⁾ | u | % | 0.08 | | | | |
| Relative reproducibility and repeatability errors (0.2 F_{nom} to F_{nom}) for: | | | | | | | |
| a constant mounting position ¹⁾ | b_l | % | 0.04 | | | | |
| varying mounting positions ¹⁾ | 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}) ²⁾ | 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 | Ω | 4450 ± 100 | | | | |
| Output resistance | R_o | Ω | 4010 ± 2 | | | | |
| Insulation resistance | R_{is} | Ω | > 50 x 10 ⁹ | | | | |
| 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 | ≤ 600 | | | | |
| Nominal (rated) temperature range | $B_{t,nom}$ | °C | +10 to +40 | | | | |
| Operating temperature range | $B_{t,G}$ | °C | -30 to +80 | | | | |
| Storage temperature range | $B_{t,S}$ | °C | -50 to +85 | | | | |
| Reference temperature | t_{ref} | °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 ²⁾ | (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) | | | | |

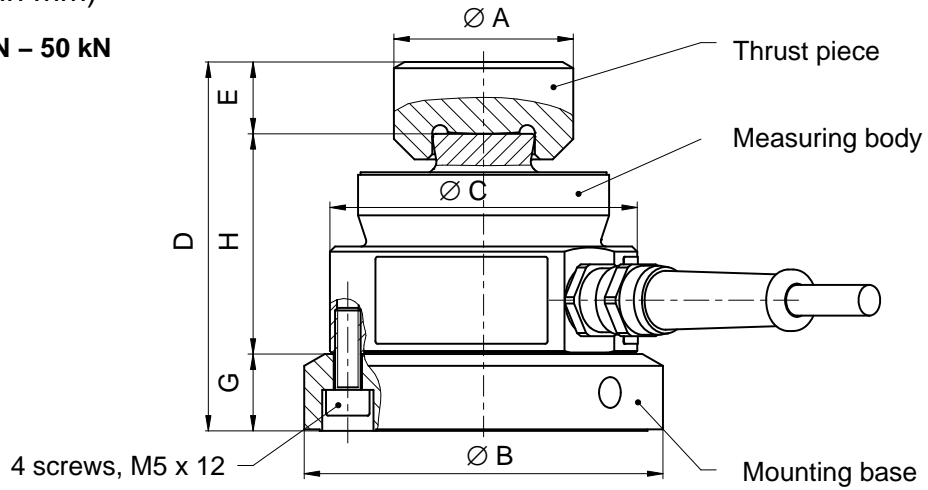
¹⁾ Class 0.5 to ISO 376, classification only guaranteed in conjunction with a DKD calibration certificate to ISO 376.

²⁾ Relative to a force application point on the force application surface of the measuring body.

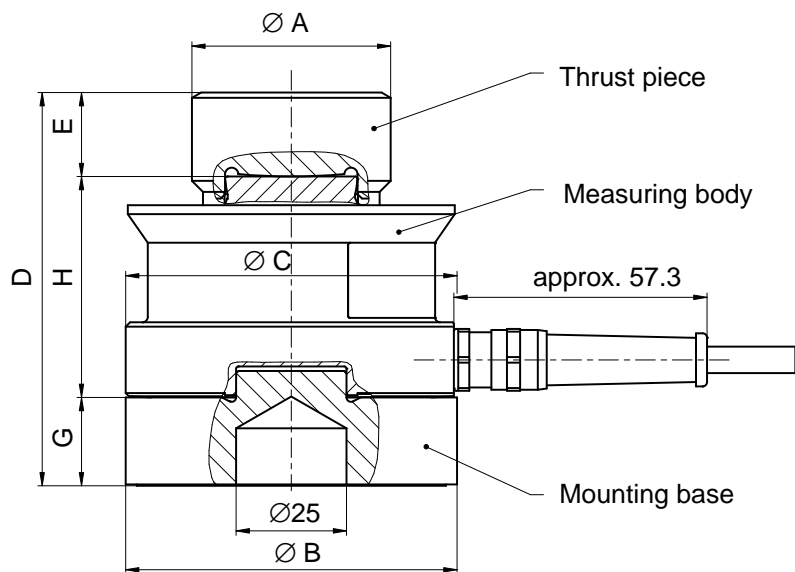
| | | | | | | | | | | | | | |
|---------------------------------------|-----------|----|---|------|------|------|------|------|------|------|------|------|------|
| Nominal (rated) force | F_{nom} | kN | 10 | 20 | 50 | 100 | 200 | 300 | 500 | 1000 | 2000 | 3000 | 5000 |
| Nominal (rated) displacement | 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)

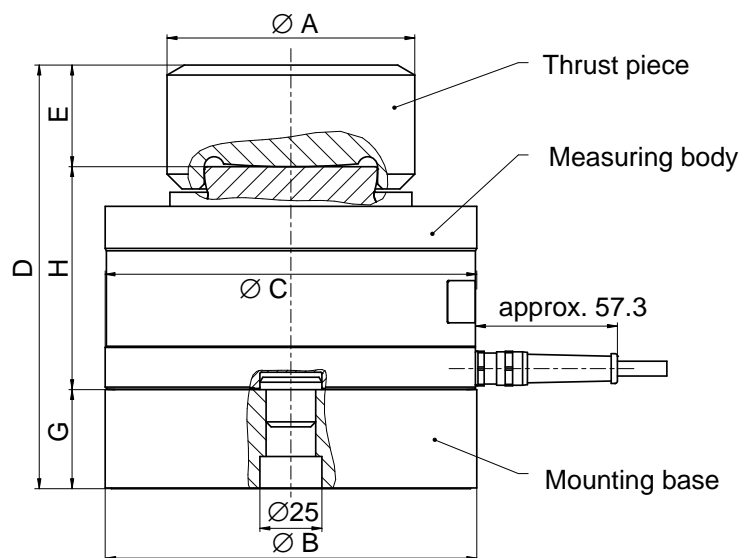
10 kN – 50 kN



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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