

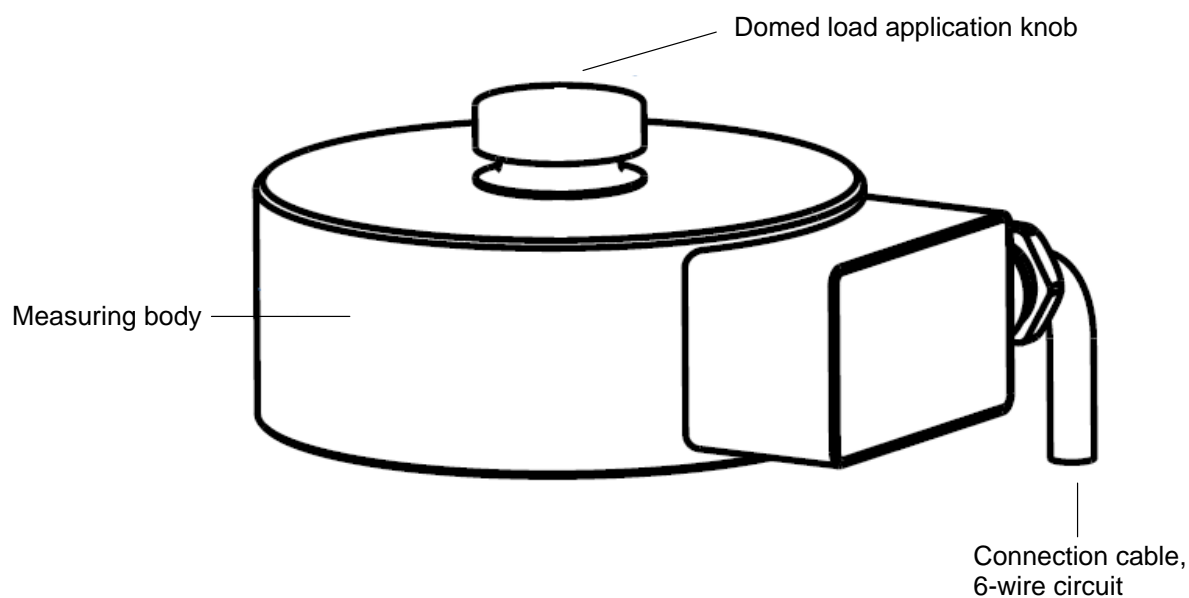
# C2

## Force Transducer

### Special features



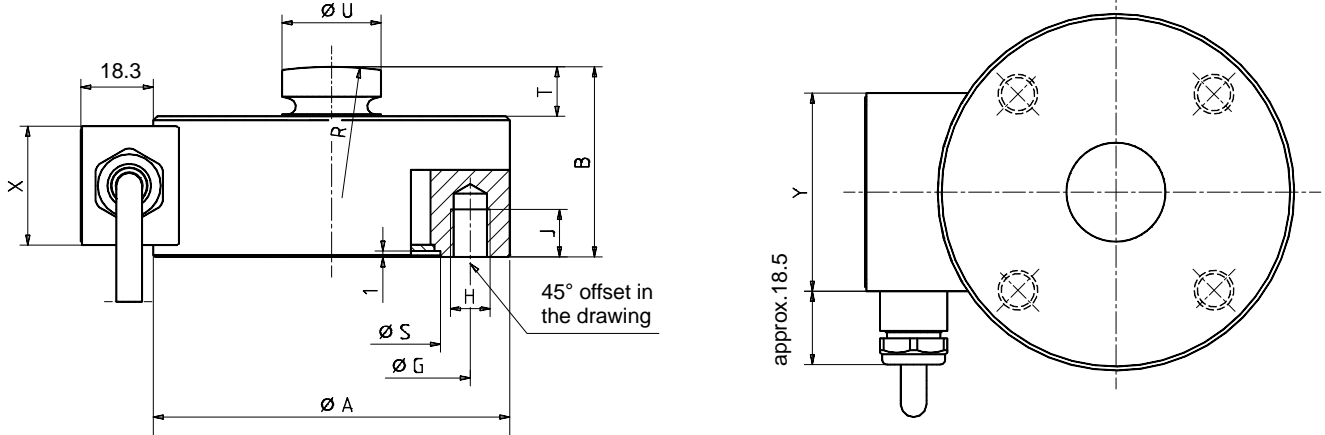
- Tensile/compressive force transducer
- Non-rusting, degree of protection IP67
- Can be configured with different cable lengths, plug fitting and TEDS on request
- Lateral force compensation
- Low overall height
- Nominal (rated) forces 500 N ... 200 kN
- Accuracy class 0.1



## Dimensions

Dimensions in mm (1 mm = 0.03937 inches)

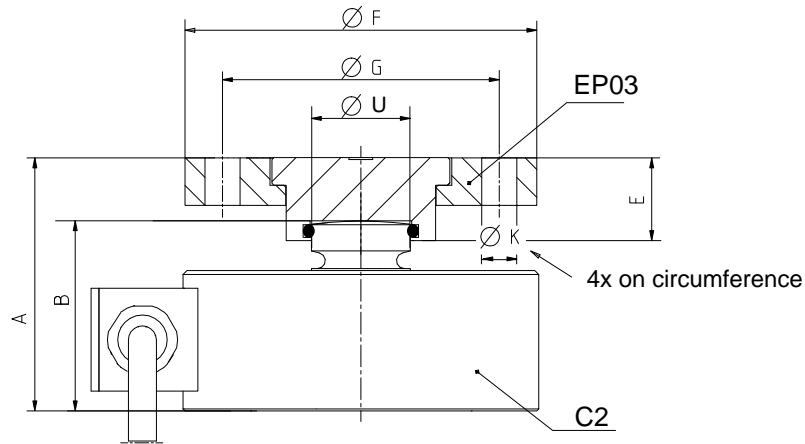
### C2 (nominal (rated) forces 500 N...200 kN)



| Nominal (rated) force | ØA-0.2 | B  | ØG | H     | J  | R   | ØS <sup>H8</sup> | T    | ØU | X  | Y  |
|-----------------------|--------|----|----|-------|----|-----|------------------|------|----|----|----|
| 500 N...10 kN         | 50     | 30 | 42 | 4xM5  | 7  | 60  | 34               | 7    | 13 | 20 | 35 |
| 20 kN, 50 kN          | 90     | 48 | 70 | 4xM10 | 12 | 100 | 55               | 12.5 | 25 | 30 | 50 |
| 100 kN, 200 kN        | 115    | 60 | 90 | 4xM12 | 16 | 160 | 68               | 12.5 | 32 | 30 | 50 |

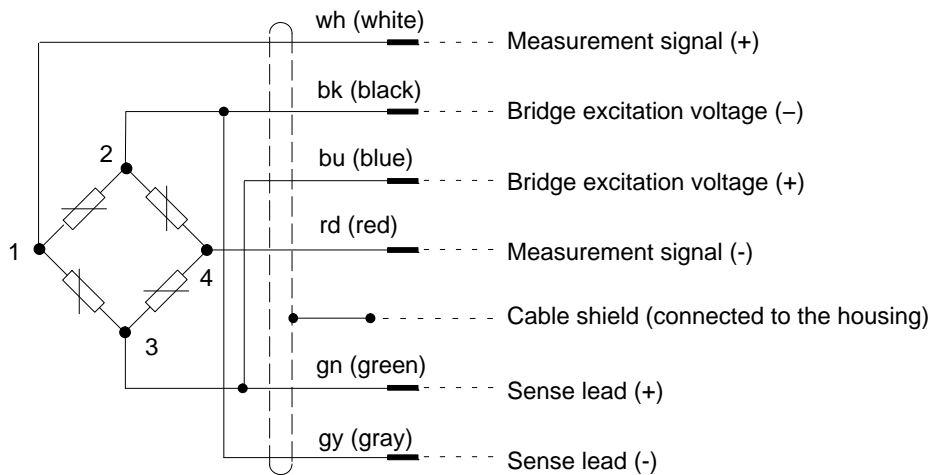
## Accessories, to be ordered separately: Thrust piece EPO3/EPO3R

Thrust piece EPO3/EPO3R mounting aid



| Nominal (rated) force | Thrust piece <sup>1)</sup> | A  | B  | E    | ØF  | ØG | ØU | ØK |
|-----------------------|----------------------------|----|----|------|-----|----|----|----|
| 500 N...10 kN         | 1-EPO3/200KG               | 46 | 30 | 21   | 89  | 70 | 13 | 9  |
| 20 kN, 50 kN          | 1-EPO3R/5T                 | 64 | 48 | 21   | 89  | 70 | 25 | 9  |
| 100 kN, 200 kN        | 1-EPO3R/20T                | 80 | 60 | 27.5 | 110 | 90 | 32 | 13 |

## Cable wiring assignment (6-wire circuit)



## C2 versions and ordering numbers

| Code | Measuring range | Ordering number | <p>The ordering numbers shown in gray are preferred types and can be delivered rapidly. All preferred types come with free ends and without TEDS transducer identification.</p> <p>The example below describes a C2 with a capacity of 50 kN, 12 m connection cable, fitted SUB-HD plug for connection to the QuantumX amplifier and TEDS transducer identification chip</p> |
|------|-----------------|-----------------|--|
| 500N | 500 N           | 1-C2/500N       |  |
| 001K | 1 kN            | 1-C2/1KN        |  |
| 002K | 2 kN            | 1-C2/2KN        |  |
| 005K | 5 kN            | 1-C2/5KN        |  |
| 010K | 10 kN           | 1-C2/10KN       |  |
| 020K | 20 kN           | 1-C2/20KN       |  |
| 050K | 50 kN           | 1-C2/50KN       |  |
| 100K | 100 kN          | 1-C2/100KN      |  |
| 200K | 200 kN          | 1-C2/200KN      |  |

| Cable length        | Plug version                   | Transducer identification |
|---------------------|--------------------------------|---------------------------|
| 3 m<br><b>03M0</b>  | Free ends<br><b>Y</b>          | With TEDS<br><b>T</b>     |
| 6 m<br><b>06M0</b>  | 15-pin Sub-D plug<br><b>F</b>  | Without TEDS<br><b>S</b>  |
| 12 m<br><b>12M0</b> | MS3106PEMV plug<br><b>N</b>    |                           |
| 20 m<br><b>20M0</b> | 15-pin Sub-HD plug<br><b>Q</b> |                           |
| 30 m<br><b>30M0</b> |                                |                           |

|       |       |      |   |   |
|-------|-------|------|---|---|
| K-C2- | 050K- | 12M0 | F | T |
|-------|-------|------|---|---|

## Scope of supply

C2 force transducer

Mounting instructions

Manufacturing certificate

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

| Description   | Ordering number |
|---|-----------------|
| Ground cable, 400 m   | 1-EEK4          |
| Ground cable, 600 m   | 1-EEK6          |
| Ground cable, 800 m   | 1-EEK8          |
| Thrust piece for nominal (rated) forces 500 N $\approx$ 10 kN   | 1-EPO3/200kg    |
| Thrust piece for nominal (rated) forces 20 kN $\approx$ 50 kN   | 1-EPO3R/5t      |
| Thrust piece for nominal (rated) forces 100 kN $\approx$ 200 kN | 1-EPO3R/20t     |

# Specifications as per DIN/VDE2638

| Type   |                    | C2                                 |             |       |       |       |      |       |       |      |      |  |
|--|--------------------|------------------------------------|-------------|-------|-------|-------|------|-------|-------|------|------|--|
| Nominal (rated) force  | F <sub>nom</sub>   | N                                  | 500         |       |       |       |      |       |       |      |      |  |
|  |                    | kN                                 |             | 1     | 2     | 5     | 10   | 20    | 50    | 100  | 200  |  |
| <b>Accuracy</b>  |                    |                                    |             |       |       |       |      |       |       |      |      |  |
| Accuracy class   |                    |                                    | 0.2         | 0.1   |       |       |      |       |       |      |      |  |
| Relative reproducibility and repeatability errors without rotation                     | b <sub>rg</sub>    | %                                  | 0.1         |       |       |       |      |       |       |      |      |  |
| Rel. reversibility error (0.5 * F <sub>nom</sub> )                                     | V <sub>0.5</sub>   |                                    | 0.2         | 0.15  |       |       |      |       |       |      |      |  |
| Non-linearity  | d <sub>lin</sub>   |                                    | 0.2         | 0.1   |       |       |      |       |       |      |      |  |
| Creep upon loading (30 min)  | d <sub>crF</sub>   |                                    | 0.06        |       |       |       |      |       |       |      |      |  |
| Effect of eccentricity <sup>1)</sup><br>(10% F <sub>nom</sub> * 10 mm)                 | d <sub>E</sub>     |                                    | 0.3         | 0.2   |       |       | 0.1  |       |       |      |      |  |
| Temperature effect on sensitivity  | TC <sub>S</sub>    | % / 10<br>K                        | 0.1         |       |       |       |      |       |       |      |      |  |
| Temperature effect on zero signal  | TC <sub>0</sub>    |                                    | 0.05        |       |       |       |      |       |       |      |      |  |
| <b>Characteristic electrical values</b>  |                    |                                    |             |       |       |       |      |       |       |      |      |  |
| Nominal (rated) sensitivity  | C <sub>nom</sub>   | mV/V                               | 2           |       |       |       |      |       |       |      |      |  |
| Rel. zero signal error   | D <sub>s,0</sub>   |                                    | 1           |       |       |       |      |       |       |      |      |  |
| Sensitivity error  | d <sub>c</sub>     | %                                  | 0.2         |       |       |       |      |       |       |      |      |  |
| Input resistance   | R <sub>i</sub>     | Ω                                  | > 340       |       |       |       |      |       |       |      |      |  |
| Output resistance  | R <sub>o</sub>     |                                    | 200 ... 400 |       |       |       |      |       |       |      |      |  |
| Insulation resistance  | R <sub>is</sub>    |                                    | > 2         |       |       |       |      |       |       |      |      |  |
| Operating range of the excitation voltage  | B <sub>U,G</sub>   | V                                  | 0.5 ... 12  |       |       |       |      |       |       |      |      |  |
| Reference excitation voltage   | U <sub>ref</sub>   |                                    | 5           |       |       |       |      |       |       |      |      |  |
| Connection   |                    | 6-wire circuit                     |             |       |       |       |      |       |       |      |      |  |
| <b>Temperature</b>   |                    |                                    |             |       |       |       |      |       |       |      |      |  |
| Reference temperature  | t <sub>ref</sub>   | °C                                 | +23         |       |       |       |      |       |       |      |      |  |
| Nominal (rated) temperature range  | B <sub>T,nom</sub> |                                    | -10 to +70  |       |       |       |      |       |       |      |      |  |
| Operating temperature range  | B <sub>T,G</sub>   |                                    | -30 to +85  |       |       |       |      |       |       |      |      |  |
| Storage temperature range  | B <sub>T,S</sub>   |                                    | -50 to +85  |       |       |       |      |       |       |      |      |  |
| <b>Mechanical quantities</b>   |                    |                                    |             |       |       |       |      |       |       |      |      |  |
| Maximum operating force  | F <sub>G</sub>     | % of<br>F <sub>nom</sub>           | 130         |       |       | 150   |      |       |       |      |      |  |
| Limit force  | F <sub>L</sub>     |                                    | 130         |       |       | 150   |      |       |       |      |      |  |
| Breaking force   | F <sub>B</sub>     |                                    | 300         |       |       |       |      |       |       |      |      |  |
| Static lateral limit force <sup>2)</sup><br>When loading with nominal<br>(rated) force | F <sub>Q</sub>     |                                    | 100         |       |       | 70    | 40   | 55    | 12    | 15   | 9    |  |
| Permissible eccentricity   | e <sub>G</sub>     | mm                                 | 5.4         | 5.3   | 5.2   | 4.8   | 4.2  | 8.0   | 2.0   | 1.5  | 1.5  |  |
| Nominal (rated) displacement ±15%  | S <sub>nom</sub>   |                                    | 0.049       | 0.053 | 0.047 | 0.048 | 0.04 | 0.069 | 0.074 | 0.08 | 0.10 |  |
| Fundamental frequency  | f <sub>G</sub>     | kHz                                | 4.4         | 8.7   | 9.7   | 18.5  | 19.3 | 13    | 14    | 13   | 14   |  |
| Relative permissible oscillatory stress  | F <sub>rb</sub>    | % of<br>F <sub>nom</sub>           | 100         |       |       |       |      |       |       |      |      |  |
| <b>General information</b>   |                    |                                    |             |       |       |       |      |       |       |      |      |  |
| Degree of protection per DIN EN 60529 <sup>3)</sup>                                    |                    | IP67                               |             |       |       |       |      |       |       |      |      |  |
| Spring element material  |                    | Non-rusting stainless steel        |             |       |       |       |      |       |       |      |      |  |
| SG protection  |                    | Hermetically-welded measuring body |             |       |       |       |      |       |       |      |      |  |
| Cable  |                    | 6-wire, polyethylene insulated     |             |       |       |       |      |       |       |      |      |  |
| Cable length   |                    | As requested by the customer       |             |       |       |       |      |       |       |      |      |  |
| Weight   |                    | kg                                 | 0.4         |       |       |       | 1.8  |       |       | 3    |      |  |

<sup>1)</sup> Lateral force effect application point

<sup>2)</sup> Permissible FQ application point

<sup>3)</sup> 1 m water column, 0.5 h

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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