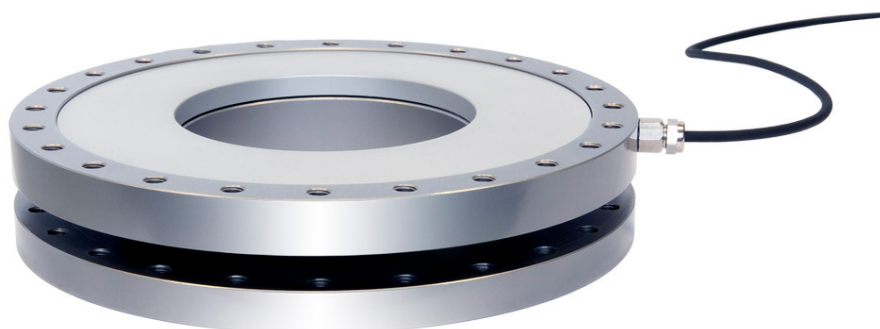


## Compression and Tension Force Sensor K-2698 with Rated Force from 100 to 700 kN

 TEDS

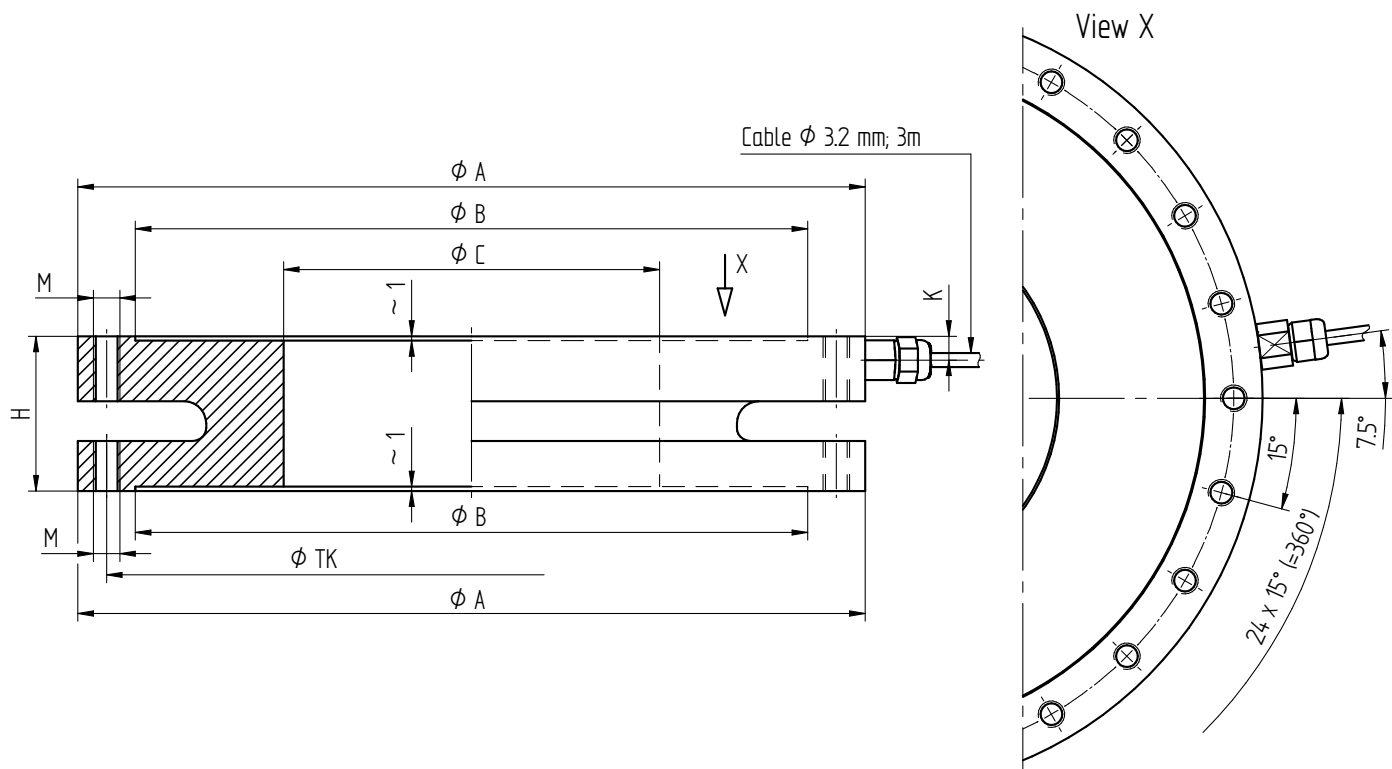
### Performance Features

- Measuring of compression and tension force
- TEDS (Transducer Electronic Data Sheet)  
Standard IEEE 1451.4 (optional)
- Stainless steel
- Level of protection IP60
- Long-term stability
- Simple handling and assembly
- Special versions on request

### Application

- Equipment engineering
- Automotive industry
- Measuring and control devices
- Fully automated machining centres
- Tool engineering
- Special mechanical engineering

## Dimensions in mm



| Article-No. | Rated Force [kN] | Dimensions [mm] |     |     |    |      |     |      | Weight [kg] |
|-------------|------------------|-----------------|-----|-----|----|------|-----|------|-------------|
|             |                  | Ø A             | Ø B | Ø C | H  | K    | M   | Ø TK |             |
| 111308      | 100              | 178             | 152 | 85  | 35 | 5.4  | M6  | 165  | 3.6         |
| 111591      | 200              | 196             | 170 | 120 | 35 | 7    | M8  | 182  | 3.6         |
| 112102      | 300              | 258             | 226 | 180 | 35 | 8    | M10 | 242  | 4.8         |
| 113833      | 400              | 258             | 226 | 170 | 45 | 8    | M12 | 242  | 7.4         |
| 113030      | 600              | 320             | 266 | 205 | 60 | 12.5 | M16 | 290  | 15.1        |
| 119165      | 700              | 320             | 266 | 190 | 60 | 12.5 | M16 | 290  | 17          |

## Connection Assignment

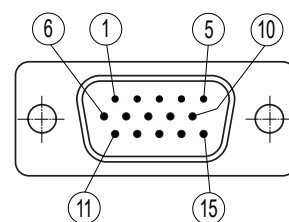
### Electrical Connection

|                         |        |   |
|-------------------------|--------|---|
| Excitation (-)          | Green  | ● |
| Excitation (+)          | Brown  | ● |
| Signal (+)              | Yellow | ● |
| Signal (-)              | White  | ○ |
| Control signal (option) | Gray   | ● |
| Shielding               | Shield | ⊕ |

### Electrical Connection only for Version with TEDS (option)

|                |                          |
|----------------|--------------------------|
| Excitation (-) | Pin 2                    |
| Excitation (+) | Pin 3                    |
| Signal (+)     | Pin 5                    |
| Signal (-)     | Pin 10                   |
| TEDS (GND)     | Pin 6                    |
| TEDS (Data+)   | Pin 1                    |
| Sensing (+)    | Pin 8 bridged with Pin 3 |
| Sensing (-)    | Pin 7 bridged with Pin 2 |
| -              | Pin 4 bridged with Pin 9 |
| Shielding      | Housing                  |
| NC             | Pin 11 - 15              |

### View on connector side



## Technical Data acc. to VDI/VDE/DKD 2638

### Compression and Tension Force Sensor K-2698 with Through Hole

| Rated force $F_{nom}$  | kN                         | 100                                | 200 | 300 | 400 | 600 | 700 |
|--|----------------------------|------------------------------------|-----|-----|-----|-----|-----|
| Accuracy class compression force or tension force                | % $F_{nom}$                | 0.5                                |     |     |     |     |     |
| Accuracy class compression force and tension force               | % $F_{nom}$                | 1.0                                |     |     |     |     |     |
| Rel. repeatability error in unchanged mounting position $b_{rg}$ | % $F_{nom}$                | 0.1                                |     |     |     |     |     |
| Relative creep   | % $F_{nom}/30 \text{ min}$ | < $\pm$ 0.1                        |     |     |     |     |     |
| Rated characteristic value $C_{nom}$                             | mV/V                       | 1.00 $\pm$ 20 %                    |     |     |     |     |     |
| Input/output resistance $R_e/R_a$                                | $\Omega$                   | 700                                |     |     |     |     |     |
| Insulation resistance $R_{is}$                                   | $\Omega$                   | >2*10 <sup>9</sup>                 |     |     |     |     |     |
| Rated range of excitation voltage $B_{U, nom}$                   | VDC                        | 2 ... 12                           |     |     |     |     |     |
| Electrical connection  |                            | Cable, PURS, 3 m with free strands |     |     |     |     |     |
| Reference temperature $T_{ref}$                                  | $^{\circ}\text{C}$         | 23                                 |     |     |     |     |     |
| Rated temperature range $B_{T, nom}$                             | $^{\circ}\text{C}$         | -10 ... 70                         |     |     |     |     |     |
| Operating temperature range $B_{T, G}$                           | $^{\circ}\text{C}$         | -30 ... 80                         |     |     |     |     |     |
| Storage temperature range $B_{T, S}$                             | $^{\circ}\text{C}$         | -50 ... 95                         |     |     |     |     |     |
| Temperature effect on zero signal $TK_0$                         | % $F_{nom}/10 \text{ K}$   | $\pm$ 0.2                          |     |     |     |     |     |
| Temperature effect on characteristic value $TK_C$                | % $F_{nom}/10 \text{ K}$   | $\pm$ 0.2                          |     |     |     |     |     |
| Maximum operating force $F_G$                                    | % $F_{nom}$                | 130                                |     |     |     |     |     |
| Force limit $F_L$  | % $F_{nom}$                | 150                                |     |     |     |     |     |
| Breaking force $F_B$   | % $F_{nom}$                | >300                               |     |     |     |     |     |
| Permissible oscillation stress $F_{rb}$                          | % $F_{nom}$                | 70                                 |     |     |     |     |     |
| Rated displacement $S_{nom}$                                     | mm                         | <0.15                              |     |     |     |     |     |
| Preferential direction   |                            | Compression direction              |     |     |     |     |     |
| Material housing body  |                            | Stainless steel                    |     |     |     |     |     |
| Material cover plate   |                            | Aluminum                           |     |     |     |     |     |
| Level of protection  |                            | IP60                               |     |     |     |     |     |

## Options

| Article-No. | Description   |   |
|-------------|---|---|
| 100218      | Control signal                                      | 100 % $F_{nom}$                                   |
| 100739      | Control signal                                      | 80 % $M_{nom}$                                    |
| 106154      | Control signal                                      | 50 % $M_{nom}$                                    |
| 10464       | XS-KSSH15/HBM, QuantumX + TEDS-Standard IEEE 1451.4 |   |
| 100896      | Rated sensitivity adjustment                        |   |
| 42828       | Extended temperature range                          | -30 $^{\circ}\text{C}$ ... 100 $^{\circ}\text{C}$ |
| 42829       | Extended temperature range                          | -30 $^{\circ}\text{C}$ ... 120 $^{\circ}\text{C}$ |
| 42830       | Extended temperature range                          | -40 $^{\circ}\text{C}$ ... 150 $^{\circ}\text{C}$ |
| 103954      | Calibration in kg or t                              |   |
| 107592      | 6-wire connection                                   |   |

## Calibrations

| Article-No. | Description  |            |
|-------------|--|------------|
| 400628      | Linearity diagram in accordance to factory standard                | 25 % steps |
| 400170      | Linearity diagram in accordance to factory standard                | 10 % steps |
| 400960      | Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3 | 3 steps    |
| 400652      | Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3 | 5 steps    |
| 400640      | Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3 | 8 steps    |
|             | DAkkS-Calibration/Standard on request                              |            |

## Accessories

### Electrical Connection

| Article-No. | Description   |
|-------------|---|
| 10323       | Cable connector KS6 (6-pin series 581) incl. sensor mounting                          |
| 10320       | Cable connector KSSH15 (15-pin) incl. sensor mounting                                 |
| 43418       | Input connector ZA9612FS (ALMEMO) incl. sensor mounting and connector calibration     |
| 49205       | Input connector ZKD712FS (ALMEMO 202) incl. sensor mounting and connector calibration |

### Amplifiers

Examples of suitable amplifiers for the compression and tension force sensor K-2698:

| LCV  | SI-USB  | GM 40   | GM 80  | GM 80-PA  |
|--|---|---|--|---|
|  |  |  |  |  |

Further suitable amplifiers you can find on our homepage under <https://www.lorenz-messtechnik.de/english/products/>