

## Dual Range Compression and Tension Force Sensor K-1882 with Rated Force from 1/10 ... 15/150 kN



Data sheet



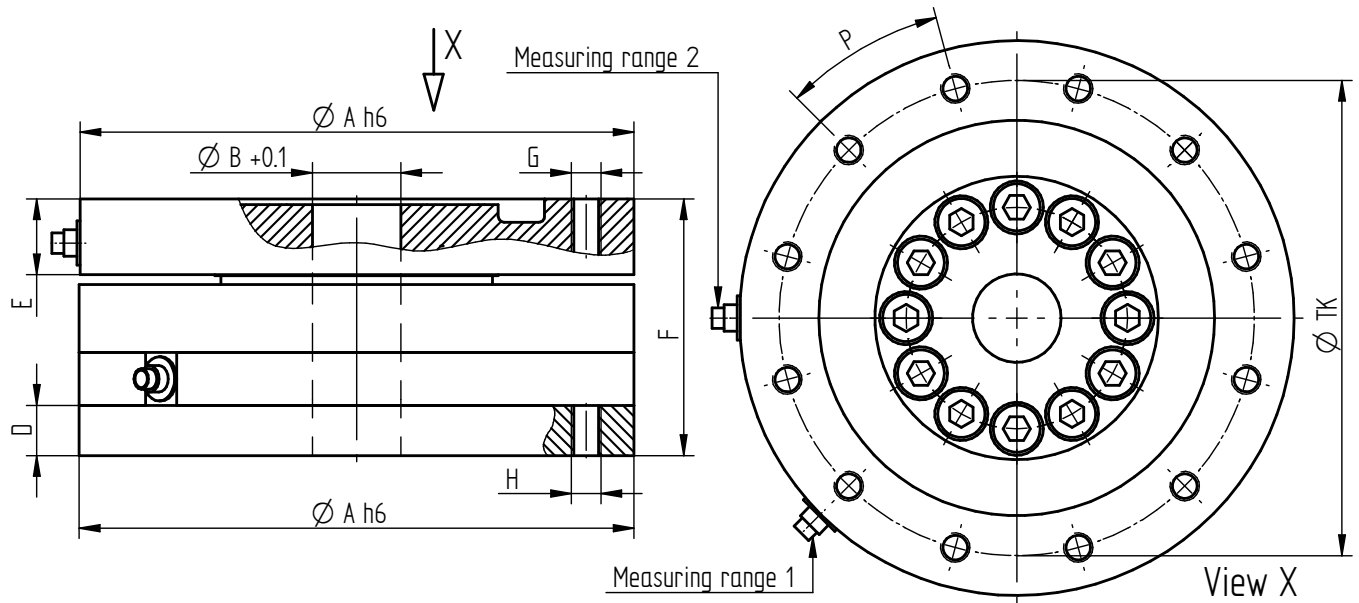
### Performance Features

- Dual Range Sensor for compression and tension force measurement
- TEDS (Transducer Electronic Data Sheet) Standard IEEE 1451.4 (optional)
- Simple handling and assembly
- Reliable and durable
- Long-term stability
- Level of protection IP60
- 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] |
|-------------|------------------|-----------------|-----------------|----|----|----|-----|--------------------|--------------------|------------------|-------------|
|             |                  | $\varnothing A$ | $\varnothing B$ | D  | E  | F  | P   | G                  | H                  | $\varnothing TK$ |             |
| 104877      | 1/10             | 130             | 30              | 10 | 14 | 52 | 60° | 6 x M6, 10 depth   | 6 x M6, 8 depth    | 114              | 3.9         |
| 100494      | 15/150           | 188             | 30              | 17 | 26 | 87 | 30° | 12 x M10, 18 depth | 12 x M10, 16 depth | 161              | 16.0        |

## Connection Assignment

| 7-pin | K-1882                          | Series 712 |
|-------|---------------------------------|------------|
| Pin 1 | Excitation (-)                  |            |
| Pin 2 | Excitation (+)                  |            |
| Pin 3 | Shield                          |            |
| Pin 4 | Signal (+)                      |            |
| Pin 5 | Signal (-)                      |            |
| Pin 6 | Control signal or TEDS (option) |            |
| Pin 7 | NC                              |            |

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

### Dual Range Compression and Tension Force Sensor K-1882

|                                                                               |                            |                               |            |
|-------------------------------------------------------------------------------|----------------------------|-------------------------------|------------|
| Rated force <b>F<sub>nom</sub></b>                                            | kN                         | 1/10                          | 15/150     |
| Measuring range 1                                                             | kN                         | 0 ... 1                       | 0 ... 15   |
| Measuring range 2                                                             | kN                         | 1 ... 10                      | 15 ... 150 |
| Accuracy class compression force or tension force                             | % F <sub>nom</sub>         | 0.2                           |            |
| Accuracy class compression force and tension force                            | % F <sub>nom</sub>         | 0.4                           |            |
| Rel. repeatability error in unchanged mounting position <b>b<sub>rg</sub></b> | % F <sub>nom</sub>         | 0.1                           |            |
| Relative creep                                                                | % F <sub>nom</sub> /30 min | <±0.1                         |            |
| Rated characteristic value <b>C<sub>nom</sub></b>                             | mV/V                       | 1.00 ±0.5 %                   |            |
| Input/output resistance <b>R<sub>e</sub>/R<sub>a</sub></b>                    | Ω                          | 350                           |            |
| Insulation resistance <b>R<sub>is</sub></b>                                   | Ω                          | >2*10 <sup>9</sup>            |            |
| Rated range of excitation voltage <b>B<sub>U, nom</sub></b>                   | VDC                        | 2 ... 12                      |            |
| Electrical connection                                                         |                            | 7-pin series 712 <sup>1</sup> |            |
| Reference temperature <b>T<sub>ref</sub></b>                                  | °C                         | 23                            |            |
| Rated temperature range <b>B<sub>T, nom</sub></b>                             | °C                         | -10 ... 70                    |            |
| Operating temperature range <b>B<sub>T, G</sub></b>                           | °C                         | -30 ... 80                    |            |
| Storage temperature range <b>B<sub>T, S</sub></b>                             | °C                         | -50 ... 95                    |            |
| Temperature effect on zero signal <b>TK<sub>0</sub></b>                       | % F <sub>nom</sub> /10 K   | ±0.2                          |            |
| Temperature effect on characteristic value <b>TK<sub>C</sub></b>              | % F <sub>nom</sub> /10 K   | ±0.2                          |            |
| Maximum operating force <b>F<sub>G</sub></b>                                  | kN                         | 10                            | 150        |
| Force limit <b>F<sub>L</sub></b>                                              | kN                         | 15                            | 170        |
| Breaking force <b>F<sub>B</sub></b>                                           | kN                         | >18                           | >250       |
| Permissible oscillation stress <b>F<sub>rb</sub></b>                          | % F <sub>nom</sub>         | 70                            |            |
| Rated displacement <b>S<sub>nom</sub></b>                                     | mm                         | <0.4                          |            |
| Preferential direction                                                        |                            | Compression direction         |            |
| Material                                                                      |                            | Stainless steel               |            |
| Level of protection                                                           |                            | IP60                          |            |

## Options

| Article-No. | Description               |                        |
|-------------|---------------------------|------------------------|
| 100218      | Control signal            | 100 % F <sub>nom</sub> |
| 100739      | Control signal            | 80 % M <sub>nom</sub>  |
| 106154      | Control signal            | 50 % M <sub>nom</sub>  |
| 113134      | TEDS-standard IEEE 1451.4 |                        |
| 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                              |            |

<sup>1</sup> Female cable connector in scope of delivery at first delivery

## Accessories

### Electrical Connection

| Article-No. | Description                                                                                  |
|-------------|----------------------------------------------------------------------------------------------|
| 10294       | Female cable connector 7-pin series 712                                                      |
| 10367       | Female angled connector 7-pin series 712                                                     |
| 10316       | Connection cable, 3 m, with 7-pin female cable connector series 712 and free strands         |
| 103348      | Connection cable angled, 3 m, with 7-pin female angled connector series 712 and free strands |

### Amplifiers

Examples of suitable amplifiers for the dual range compression and tension force sensor K-1882:

| LCV                                                                              | GM 78                                                                             | GM 40                                                                             | GM 80                                                                               | SI                                                                                  |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |

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