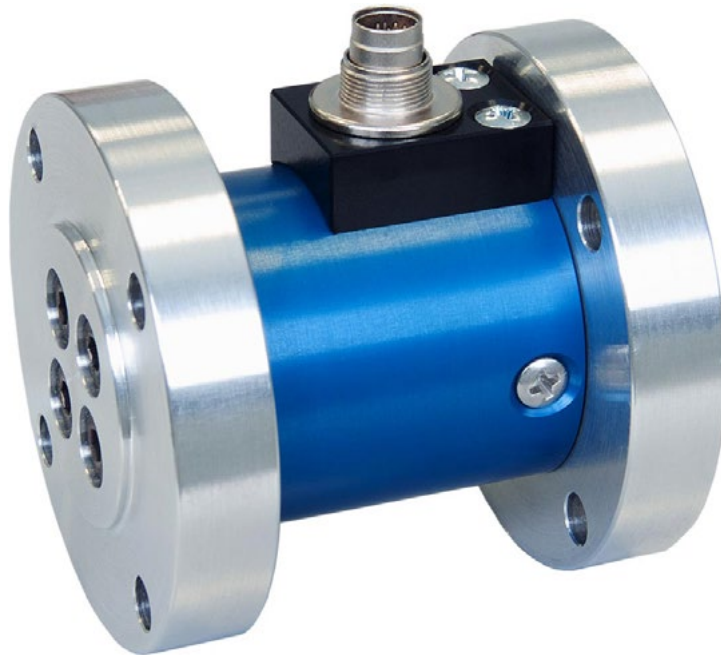


## Reactive Torque Measuring Flange D-2209 with Nominal Torque from 1 ... 5 N·m



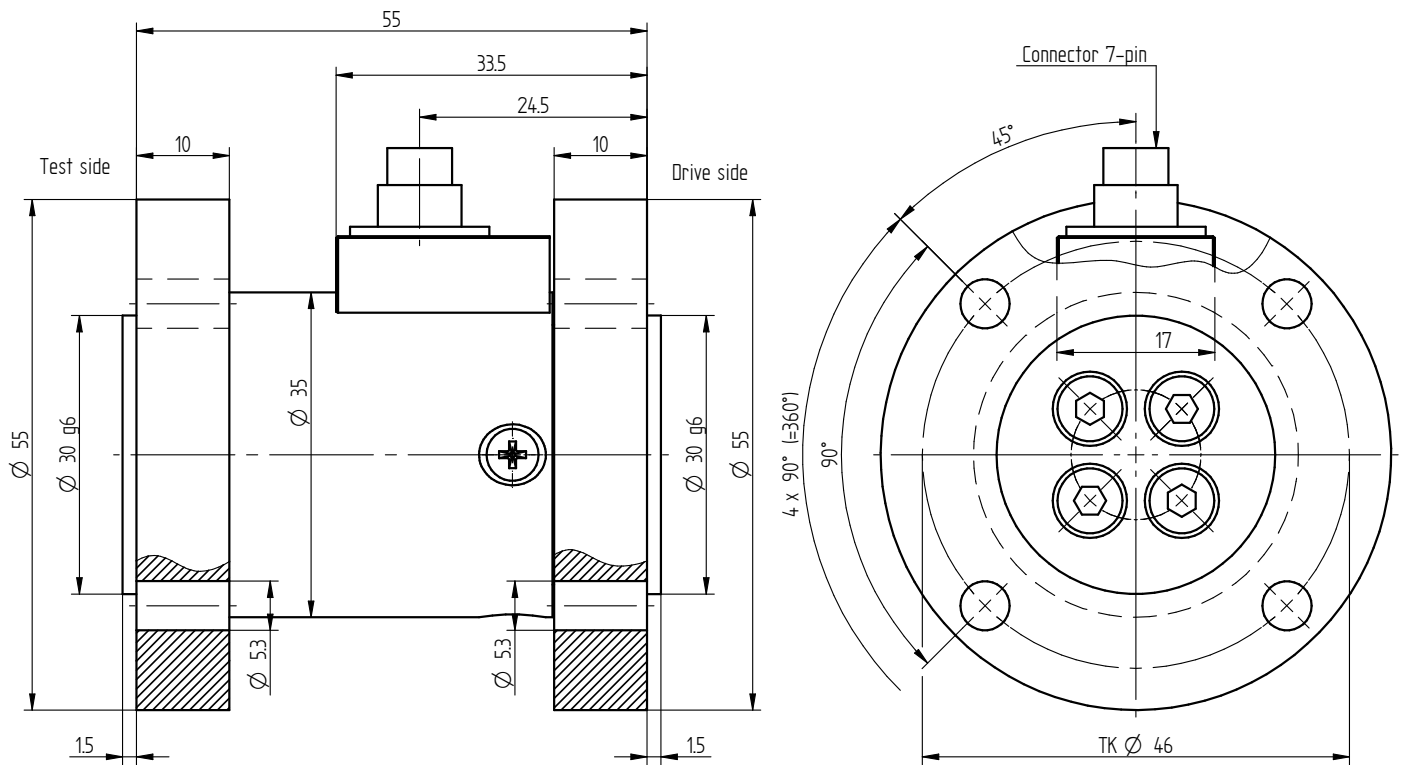
### Performance Features

- Torque measuring flange for e.g. measurement of torque reaction or torsion measurement
- Flange-flange-solution
- Fixing shoulder on both sides
- Very short axial length
- High torsional stiffness
- Simple handling and assembly
- Special versions on request

### Application

- Process measuring and control technology
- Fully automated machining centres
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

## Dimensions of D-2209 in mm



Nominal Torque [N·m]

1/2/5

Weight [kg]

0.2

## Connection Assignment

| 7-pin | D-2209                  | Series 712 |
|-------|-------------------------|------------|
| Pin 1 | Excitation (-)          |            |
| Pin 2 | Excitation (+)          |            |
| Pin 3 | Shield                  |            |
| Pin 4 | Signal (+)              |            |
| Pin 5 | Signal (-)              |            |
| Pin 6 | Control signal (option) |            |
| Pin 7 | NC                      |            |

## Technical Data acc. to VDI/VDE/DKD 2639

### Torque Measuring Flange D-2209

|  |                         |                               |
|--|-------------------------|-------------------------------|
| Nominal torque $M_{nom}$   | N·m                     | 1 / 2 / 5                     |
| Accuracy class   | % $M_{nom}$             | 0.2                           |
| Relative repeatability error in unchanged mounting position $b'$ | % $M_{nom}$             | $\pm 0.02$                    |
| Rated characteristic value $C_{nom}$                             | mV/V                    | $1 \pm 0.2\%$                 |
| Bridge resistance $R_{Br}$                                       | $\Omega$                | 350                           |
| Operating range of excitation voltage                            | VDC                     | 2 ... 12                      |
| Electrical connection  |                         | 7-pin series 712 <sup>1</sup> |
| Reference temperature $T_{ref}$                                  | $^{\circ}\text{C}$      | 23                            |
| Rated temperature range  | $^{\circ}\text{C}$      | -5 ... 45                     |
| Operating temperature range                                      | $^{\circ}\text{C}$      | -15 ... 55                    |
| Temperature effect on zero signal $TK_0$                         | % $M_{nom}/10\text{ K}$ | $\pm 0.2$                     |
| Temperature effect on characteristic value $TK_C$                | % $M_{nom}/10\text{ K}$ | $\pm 0.1$                     |
| Maximum operating torque $M_G$ (static)                          | % $M_{nom}$             | 150                           |
| Torque limit $M_{max}$ (static)                                  | % $M_{nom}$             | 200                           |
| Breaking torque $M_B$ (static)                                   | % $M_{nom}$             | >300                          |
| Permissible oscillation stress when subjected to torque $M_{df}$ | % $M_{nom}$             | 70 (peak-to-peak)             |
| Level of protection  |                         | IP50                          |

| Article-No. | Nominal Torque [N·m] | Springrate [N·m/rad] | Mass Moment of Inertia [kg·m <sup>2</sup> ] |           | Axial Force Limit [N] | Lateral Force Limit [N] |
|-------------|----------------------|----------------------|---|-----------|-----------------------|-------------------------|
|             |                      |                      | Drive Side                                  | Test Side |                       |                         |
| 106379      | 1                    | 247                  | 3.1E-05                                     | 2.6E-05   | 250                   | 14                      |
| 106380      | 2                    | 587                  | 3.1E-05                                     | 2.6E-05   | 510                   | 30                      |
| 102292      | 5                    | 1799                 | 3.1E-05                                     | 2.9E-05   | 1200                  | 75                      |

## Options

| Article-No. | Description                |   |
|-------------|----------------------------|---|
| 100218      | Control signal             | 100 % $M_{nom}$                                   |
| 42828       | Extended temperature range | -30 $^{\circ}\text{C}$ ... 100 $^{\circ}\text{C}$ |
| 42829       | Extended temperature range | -30 $^{\circ}\text{C}$ ... 120 $^{\circ}\text{C}$ |

## Calibrations

| Article-No. | Description   |            |
|-------------|---|------------|
| 400676      | Linearity diagram in accordance to factory standard | 25 % steps |
| 400664      | Linearity diagram in accordance to factory standard | 10% steps  |
| 400961      | Proprietary calibration acc. to VDI/VDE 2646        | 3 steps    |
| 400700      | Proprietary calibration acc. to VDI/VDE 2646        | 5 steps    |
| 400688      | Proprietary calibration acc. to VDI/VDE 2646        | 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 torque measuring flange D-2209:



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