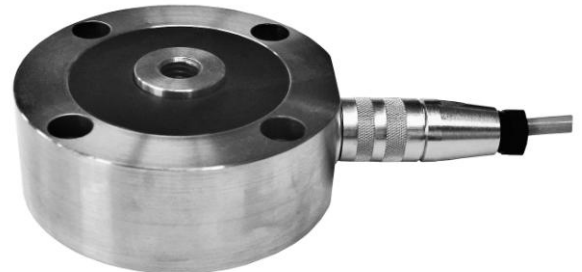


Tension-/compression force transducer for material testing, high dynamic

with electrical output



Description

These load cells are notable for high accuracy and low overall height. They can be used in harsh industrial environments, in laboratories or test bays, for static or dynamic measuring functions.

The load cells have a bore with internal thread leading through the centre, they are splash water protected and function reliably even under difficult service conditions.

The load cells are to be mounted on a level surface of at least the same size if the technical data listed on page 2 are to be maintained.

Note

In order to avoid overloading, it is advantageous to connect the load cell electrically during installation and to monitor the measured value.

The force to be measured must be applied concentrically and free of transverse force.
The load cells are to be mounted on a level surface.

Features

- For tension and compression force measurements
- Simple installation
- Low installation height
- Protection class IP 67
- Accuracy 0.05% or 0.2% of full scale value

Measuring ranges

- 0.5 kN ... 5000 kN

Applications

- Material test facilities
- Plant engineering
- Production lines
- Measurement and monitoring facilities
- Special equipment and machinery construction
- Test systems

Specific information

- Calibration control:
100% Signal (option)
- Load input elements available (option)

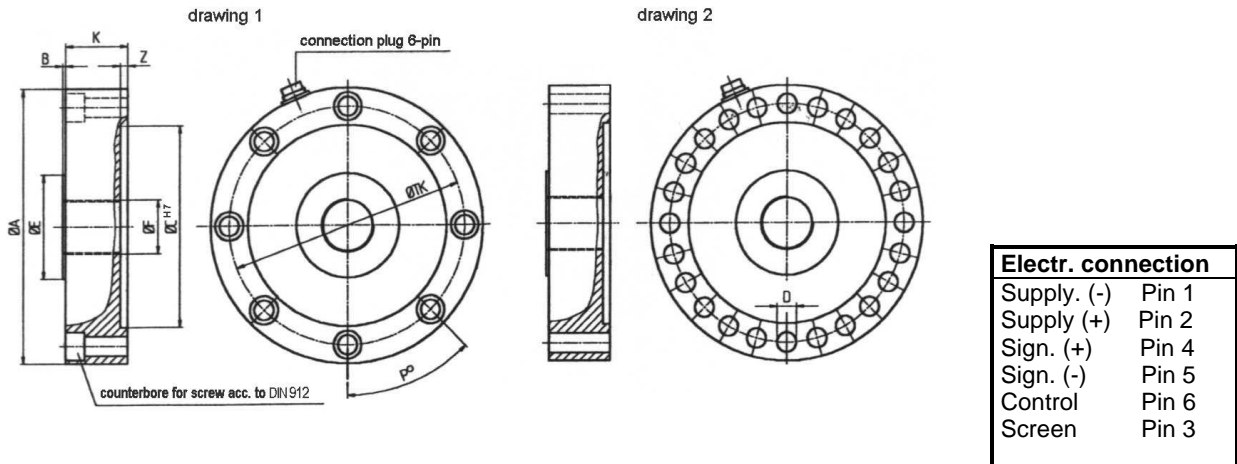
Model: F2210

Technical data

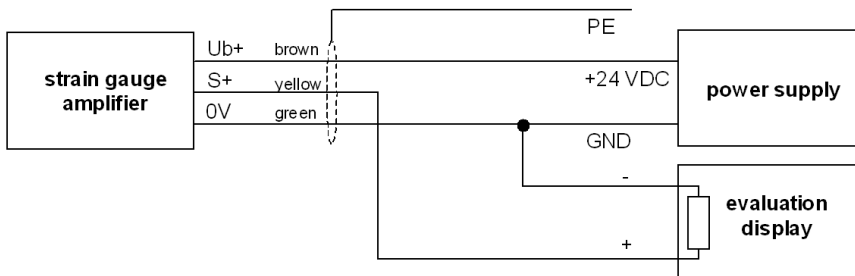
| Model | F2210 | Options |
|---|---|--|
| Nominal load F_{nom} | 0.5, 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000 kN | higher accuracy |
| Limit load | 150% F_{nom} | |
| Breaking load | >300% F_{nom} | |
| Combined error | $\leq \pm 0.15\%$ of F.S. (tension force) $\leq \pm 0.3\%$ of F.S. (tension and compression force) | $\leq \pm 0.05\%$ of F.S. $\leq \pm 0.10\%$ of F.S. |
| Max. dynamic load | $\pm 80\%$ F_{nom} acc. to DIN 50100 | |
| Creep, 30 min. at F_{nom} | $\leq \pm 0.08\%$ of F.S. | $\leq \pm 0.03\%$ of F.S. |
| Nominal deflection | <0.12 mm | |
| Nominal temperature range | -10 ... +55°C | |
| Service temperature range | -30 ... +65°C | |
| Storage temperature range | -50 ... +90°C | |
| Reference temperature | 23°C | |
| Temperature effect | -span -zero | $\leq \pm 0.07\%$ / 10K $\leq \pm 0.05\%$ / 10K |
| Protection type (acc. to EN 60 529/IEC 529) | IP 67 | |
| Insulation resistance | > 2 G Ω | |
| Non repeatability | 0.08% of F.S. | 0.03% of F.S. |
| Analogue output | | |
| - Output signal | 2 mV/V | |
| - Bridge resistance | 350 Ω | |
| - Option | Cable integrated amplifier 0 (4) ... 20 mA, 0 ... 10 V DC | |
| - Tolerance of span | $\leq \pm 0.1\%$ of F.S. | |
| - Excitation voltage | 2 ... 12 V (max. 15 V), 12 ... 28 V DC for cable integrated amplifier | |
| - Electrical connection | Plug, 6-pin (DIN 45 322) | |
| Calibration control | | 100% signal |
| Mounting equipment | see sep. data sheet | |
| Material of measuring device | Stainless steel | |
| Weight (kN) | | |
| - 0,5 - 2 | 1,0 kg | |
| - 5 - 10 | 1,1 kg | |
| - 20 - 50 | 3,4 kg | |
| - 100 | 5,5 kg | |
| - 200 | 6,0 kg | |
| - 500 | 15,0 kg | |
| - 1000 | 69,0 kg | |
| - 2000 | 70,0 kg | |

of F.S. = full scale value

Dimensions



| Nominal load [kN] | Dimensions in [mm] | | | | | | | | | | | Screw torque in [Nm] | |
|------------------------|--------------------|---|-----------------|-----------------|-----------------|-----------------|-----|------------------|----------|---------|---|-------------------------|---------|
| | $\varnothing A$ | B | $\varnothing C$ | $\varnothing D$ | $\varnothing E$ | $\varnothing F$ | K | $\varnothing TK$ | P | S | Z | | Picture |
| 0.5 / 1 / 2 / 5 / 10 | 90 | 2 | 60 | 6.6 | 25 | M 12 | 32 | 75 | 4 x 90° | for M6 | 2 | 1 | 0.8 |
| 20 / 50 | 150 | 2 | 105 | 11 | 55 | M 24 x 2 | 38 | 130 | 8 x 45° | for M10 | 2 | 1 | 40 |
| 100 / 200 | 185 | 2 | 135 | 13 | 70 | M 36 x 3 | 42 | 160 | 8 x 45° | for M12 | 2 | 1 | 70 |
| 500 | 240 | 2 | 160 | 17 | 90 | M 45 x 3 | 60 | 200 | 12 x 30° | for M16 | 2 | 1 | 160 |
| 1000 | 295 | 5 | 200 | 21 | 130 | M 80 x 4 | 95 | 250 | 12 x 30° | for M20 | 5 | 2 | 610 |
| 2000 | 390 | 3 | 270 | 26 | 190 | M 120 x 4 | 117 | 330 | 24 x 15° | for M24 | 3 | 2 | 1050 |



Pin assignment for cable integrated amplifier

Subject to technical changes