Low-Cost Compressive Load Cell
With IN-LINE amplifier
Model 8532

Code: 8532 EN
Delivery: ex stock
Warranty: 24 months

Description
The body of the sensor is a flat, cylindrical disk, into which a domed force application knob is integrated. It is important that the force is applied axially to the center of the sensor. The domed form, however, minimizes the effect of a force that is not exactly axial.

A full-bridge strain gauge is used as the measuring element inside the sensor, by means of which the force to be measured is converted into a proportional electrical voltage. The in-line amplifier increases this voltage from 0 up to 10 V. The surface against which the sensor rests is important for the quality of the measurement. It should be ground. It must be sufficiently hard and thick and not deform under load.

Application
This force measurement chain was developed for applications where a low cost solution is more important than achieving high levels of accuracy. The sensors strain gauge technology allows the measurement of static and dynamic forces. The load cell is also designed for applications that provide only little space due to its compact design. These properties, together with the sensors dust protection, make the measuring chain suitable for a wide range of applications, such as:

► Industrial manufacture
► Manufacture of customized machinery
► Geological investigations
► Motor vehicle engineering
► Commercial agriculture
► Bridge building

Measuring ranges between 0 ... 500 N and 0 ... 20 kN
Measurement accuracy < 1% F.S.
Normalized output signal 0 ... 10 V
Stainless steel sensor
Compact design
Customer-specific versions possible from 20 pieces up
## Technical Data

### Electrical values
- **Excitation voltage:** 15 ... 30 V DC
- **Output voltage:** 0 ... 10 V
- **Output resistance:** 440 Ω, nominal
- **Limit frequency:** 1 kHz
- **Isolation resistance (sensor):** > 2000 MΩ
- **Bridge resistance (sensor):** 350 Ω, nominal
- **Power consumption:** max. 0.3 VA

### Environmental conditions
- **Sensor**
  - Range of operation temperature: -20 °C ... 80 °C
  - Range of nominal temperature: -10 °C ... 40 °C
  - Influence of temperature to zero signal: ≤ 0.02 % F.S./K
  - Influence of temperature to measurement signal: ≤ 0.02 % Rdg./K
- **IN-LINE amplifier**
  - Ambient temperature: 0 °C ... 60 °C
  - Temperature coefficient: < 0.1 % / 10 K

### Mechanical values
- **Measurement accuracy:** < 1 % F.S.
  - Combined value consisting of non-linearity, hysteresis and non-repeatability in constant installation position.
- **Maximum static operational force:** 120 % of nominal load
- **Dynamic forces:** up to 70 % of nominal load
- **Material:**
  - Sensor: stainless steel
  - Amplifier housing: aluminium natural anodized with 2 x PG 7
- **Protection class according to EN 60529:**
  - Sensor: IP60
  - IN-LINE amplifier: IP67
- **Weight:**
  - Sensor: approx. 250 g
  - IN-LINE amplifier: approx. 150 g
- **Mounting:**
  - Sensor: 4 threaded holes on reference cycle G, refer to table and dimensional drawing
  - IN-LINE amplifier: cable clip, in scope of delivery

### Electrical connection
- **Shielded PVC cable:** ø 5 mm, 4 wires
  - black coated
  - bending radius ≥ 30 mm
  - bend protection, length approx. 20 mm
- **Cable length between sensor and amplifier:** 2 m
- **Cable length between amplifier and open end:** 0.5 m
- **Wiring code of the IN-LINE amplifier:**
  - red: excitation positive
  - black: excitation negative
  - white: signal output positive
  - green: signal output negative
- **Wiring code of the load cell cable:**
  - red: excitation positive
  - black: excitation negative
  - white: measurement signal negative
  - green: measurement signal positive
- **Dimensions:**
  - sensor: refer to table
  - amplifier (L x Ø/D): 120 x 25 [mm]

### Caution!
Do NOT open the screw joint at the cable outlet!

### Order Information
- **Low-Cost load cell, measurement range 0 ... 5 kN**
  - with IN-LINE amplifier, output 0 ... 10 V
  - **Model 8532-6005**

### Signal processing
Supply units, amplifier and process control units like digital indicator model 9180 or sensor profibus module model 9221 refer to section 9 of the catalog.

### Dimensional drawing
The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system. Download via www.burster.com or directly at www.traceparts.com. For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

### Order Code | Measuring Range | Dimensions [mm] | A | B | øC | øD | E | F | øG | R
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<td>0 ... 500 N</td>
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