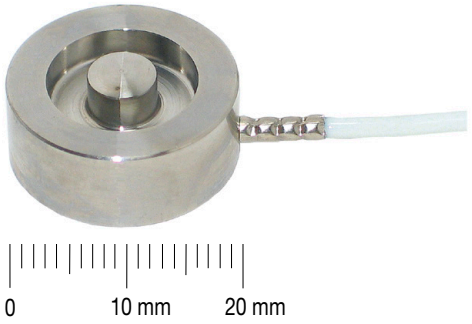
Miniature Load Cell

Model 8415

Code:	8415 EN
Delivery:	ex stock
Warranty:	24 months



- **Measuring ranges from 0 ... 200 N up to 0 ... 5000 N**
- **Smallest dimensions**
- **Inexpensive**
- **Made of stainless steel**

8415 EN

Application

Due to their small dimensions and sturdy construction, these miniature compression load cells made of stainless steel can be used in a wide range of industrial applications and in laboratories. This compression load cell is easy to handle and its installation is uncomplicated. Its small size makes it perfect for use in very restricted structures for both static and dynamic compression force measurements.

You can apply this miniature compression load cell as a measuring element in

- ► Fully automated production centers
- ► Measuring and controlling equipment
- ► Precision mechanics
- ► Tool manufacturing
- ► Equipment construction, etc.

Description

The miniature compression load cell model 8415 is a flat cylindrical disc, the bottom of which is closed with a cover. The load application button for receiving the compression forces is an integrated part of the sensor.
A strain gauge full bridge is applied in the gauging member of the measuring element. This produces bridge output voltage directly proportional to the measured force. The small diameter of the sensors results in high rigidity and a short measurement range. The measuring force has to be applied centrically and free from lateral forces. The sensor has to be mounted on a smooth and even surface.

Technical Data

Order Code	Measuring Range	Dimensions [mm]					Resonance Frequency [kHz]
		ø D1	ø D2	ø D3	H1	H2	
8415-5200	0 ... 200 N	20	6	16	5.5	7	2.0
8415-5500	0 ... 500 N	20	6	16	5.5	7	4.0
8415-6001	0 ... 1000 N	20	6	16	8	9	6.5
8415-6002	0 ... 2000 N	20	6	16	8	9	10.5
8415-6005	0 ... 5000 N	20	6	16	8	9	20.0

Electrical values

Bridge resistance (full bridge): foil strain gauge 350 Ω, nominal
Excitation: 5 V DC
Nominal sensitivity: 1 mV/V, nominal*
Insulation resistance: > 10 MΩ
Calibration resistor: 100 kΩ ± 0.1 %
The bridge output voltage, resulting from a shunt of this value, is shown in the calibration certificate.

*Deviations from the stated value are possible.

Environmental conditions

Operating temperature: 0 °C ... + 80 °C
Nominal temperature range: + 15 °C ... + 70 °C
Influence of temperature on zero: ≤ ± 1.50 % F.S./50 K
Influence of temperature on sensitivity: ≤ + 1.50 % Rdg./50 K

Mechanical values

Non-linearity:
measuring range ≤ 0 ... 2000 N < 0.5 % F.S.
measuring range 0 ... 5000 N < 0.75 % F.S.

Hysteresis:
measuring range ≤ 0 ... 2000 N < 0.25 % F.S.
measuring range 0 ... 5000 N < 0.5 % F.S.

Non-repeatability on unchanged mounting position: < 0.2 % F.S.
Deflection, full scale: approx. 30 µm
Static overload safe: 150 % of capacity
Dynamic performance:
recommended 50 % of capacity
maximum 70 % of capacity
Material: High-grade stainless steel 1.4542
Electrical connection:
shielded, TPE coated cable with bare ends for soldering, length approx. 2 m, bending radius ≥ 10 mm, drag chain qualified
Protection class: acc. to EN 60529 IP54
Wiring code:

white	excitation voltage	positive
brown	excitation voltage	negative
yellow	signal output	positive
green	signal output	negative

Dimensions: see table and scale drawing
General tolerances of dimensioning: acc. to ISO 2768-f
Weight: approx. 20 g

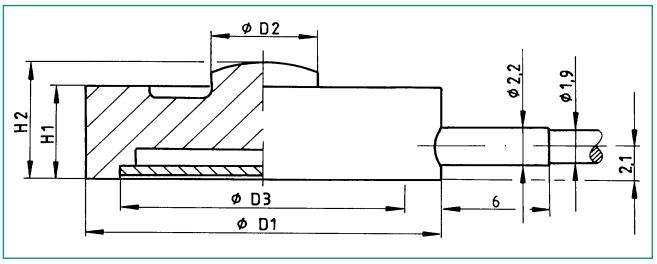
Mounting Instructions

The measurement force must be introduced centrically and without any lateral forces. To prevent contact at just a few points, ensure that the sensor is installed on a flat surface.

The sensor can be secured, for example, with silicon, wax or adhesive cement. Do not subject the sensor to lateral clamping forces as these would lead to measurement errors.

When handling and installing the sensor, ensure that the cable outlet and sensor cable are not subject to excessively high tensile or lateral forces. Strain relief may be necessary.

Dimensional drawing model 8415



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 Information

Miniature load cell, measuring range 0 ... 200 N **Model 8415-5200**

Accessories

Mating connector
12 pins, to all burster table housings **Model 9941**
9 pins, suitable to SENSORMASTER and DIGIFORCE® **Order code: 9900-V209**

Mounting of mating connector to conductor cable **Order Code: 99004**

Only for connection of 8415 to SENSORMASTER model 9163 desktop version **Order Code: 99002**

Amplifiers, sensor supplying instruments and process controllers as e.g. digital measuring indicator, series 9180, modular amplifier, model 9243 or DIGIFORCE® model 9307 **refer to section 9 of the catalog.**

Strain gauge simulator as supporting accessory for creating strain gauge source signals in order to adjust amplifiers and monitors **Model 9405**

Option

Standardization of the sensitivity in the sensor connection cable to 0.8 mV/V ± 0.5 % **Order Code ...-V008**

Order Information

Miniature load cell **Model 8415-5500-V008**
measuring range 0 ... 500 N
standardization of sensitivity to 0.8 mV/V

Factory Calibration Certificate (WKS)

Calibration of a load cell separately as well as connected to an indicator. Standard is a certificate with 11 points, starting at zero, running up and down in 20% increments covering the complete measuring range for preferential direction. Special calibrations on request. Calculation of costs by base price plus additional costs per point.
Order Code 84WKS-84...