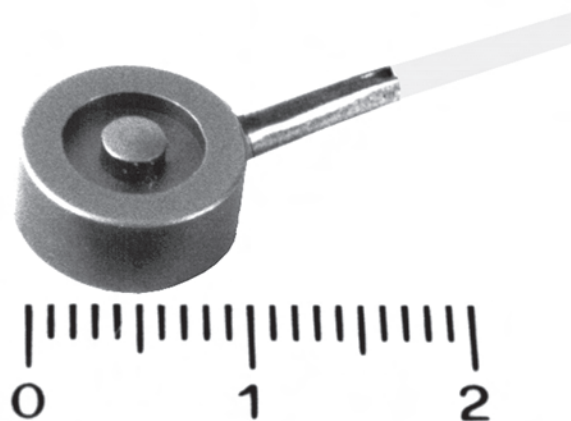


Ultra-Miniature Load Cell

Model 8416

Code:	8416 E
Manufacturer:	burster
Delivery:	ex stock/4 weeks
Warranty:	24 months

CAD data in 3D/2D available on
powerPARTS by web2CAD
Info: data sheet 80-CD-ROM-E



- Available ranges from 0 ... 100 N to 0 ... 5000 N
- Economical
- Extremely small dimensions
- Made of high-grade steel
- Optional standardization of the output characteristic

8416-E

Application

The extremely small dimensions of these compressive-force sensors allow them to be used for measuring static and dynamic compressive forces in spaces severely restricted by the presence of mounted structures.

The model 8416 is virtually predestined for use in micro-technology, though it is just as suitable for use in the research and development sectors.

Further applications of this ultra-miniature compressive-force sensor are found in:

- device construction
- production lines
- measurement and control systems
- testing systems
- manipulation systems
- universal testing machines, etc.

Description

The ultra-miniature compressive-force sensor model 8416 is designed as a flat, circular disc whose bottom is sealed with a cover. The load application knob for receiving compressive forces is an integral component of the sensor.

The sensor element inside the body carries a strain gage full bridge which outputs a voltage directly proportional to the measurement variable upon the application of a force.

The low-rated measurement path of the sensors provides a high degree of rigidity.

On request, the output characteristic can be standardized in the sensor connection cable. This allows a quick and easy interchange or parallel-connection of several sensors.

Technical Data

Order Code	Measuring range	Dimensions [mm]					Natural Frequency [kHz]
		ø D1	ø D2	ø D3	H1	H2	
8416-5100	0 ... 100 N	10.6	3	7.6	4.5	5	6
8416-5200	0 ... 200 N	10.6	3	7.6	4.5	5	20
8416-5500	0 ... 500 N	10.6	3	7.6	5.5	6	18
8416-6001	0 ... 1000 N	10.6	3	7.6	6.5	7	30
8416-6002	0 ... 2000 N	10.6	3	7.6	6.5	7	45
8416-6005	0 ... 5000 N	12.6	3	7.6	6.5	7.5	80

Electrical

Bridge resistance: Full bridge, foil-type strain gage 350 Ω, nominal*
 Excitation: max. 5 V DC
 Output: 1 mV/V, nominal*
 Insulation resistance: > 10 MΩ
 *Deviations from the stated value are possible.

Environmental

Temperature operating: 0 °C ... + 80 °C
 Temperature compensated: + 15 °C ... + 70 °C
 Temperature effect zero: ≤ ± 1.50 % F.S./50K
 Temperature effect span: ≤ + 1.50 % rdg./50K

Mechanical

Non-linearity: < 0.5 % F.S.
 Hysteresis: < 0.1 % F.S.
 Non-repeatability: < 0.1 % F.S.
 Deflection, full scale: approx. 60 μm
 Static overload safe: 50 % over capacity
 Dynamic performance:
 recommended 50 % of capacity
 maximum 70 % of capacity
 Casing 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
 Protection class: according to DIN 60529 IP 54
 Terminal assignment:
 White Excitation (positive)
 Brown Excitation (negative)
 Yellow Signal output (positive)
 Green Signal output (negative)
 Dimensions: See table and scale drawing
 Weight: approx. 10 g without cable

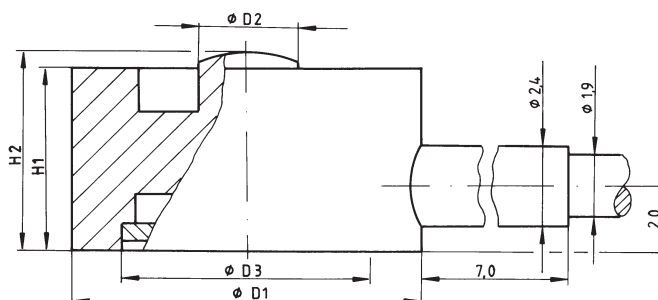
Mounting Instructions

The measurement force must be introduced centrally and without any transverse vectors. 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 subjected to excessively high tensile or lateral forces.

Scale Drawing



Sensor CAD drawing can be imported in 3D or 2D version from CD-ROM or downloaded from the Internet.

For more information on **POWERPARTS** by web2CAD please refer to the introduction of product section 8 in the catalog.

Order Information

Ultra-miniature compression load cell,
 measuring range 0 ... 200 N (see table). **Model 8416 - 5200**

Accessories

Mating connector
 12 pins, to all burster table housing **Model 9941**
 9 pins, to model 9235 and model 9310 **Order code: 9900-V209**

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

Amplifiers, sensor supplying instruments and process controllers as e.g. digital measuring indicator, series 9180, modular amplifier, model 9243 or DIGIFORCE® model 9306.

See section 9 of the catalog.

Option

Standardization of the sensitivity
 in the sensor connection cable
 to 1,0 mV/V ± 0.5 %

Order code: ...-V008

Special Calibration

Calibration of the load cell separately as well as connected to an indicator is available. Calculation with basic cost and additional cost per point. Please state the requested points. Standard is an 11-point-run in 20 %-increments up and down.

Order code: 84WKS-8416

DMS Simulator

Support accessories for creating strain gage
 source signals in order to adjust amplifiers
 and monitors.

Model 9405