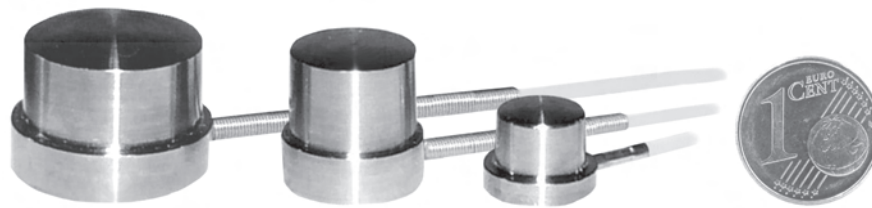


# Miniature Load Cell

Model 8402

Code:	8402 E
Manufacturer:	burster
Delivery:	ex stock
Warranty:	24 months



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

- Available ranges from 0 ... 1 kN up to 0 ... 100 kN
- Accuracy  $\leq 0.5$  % F.S. (typ.)
- Made of stainless steel
- With installed plug
- Small dimensions
- With standardized output signal

## Application

Due to their measuring range, their reliability and the various possibilities of use these miniature load cells can not only be used in the industry but in the laboratories as well. They are very well suited for compression measurements in very restricted structures. The load cells are of a compact construction and made of superrefined steel and can therefore be used in many fields of industry, like i. e.

- press-in force measurements at longitudinal and transversal connections
- compression force measurements at punch and roller appliances
- spring tension measurements at shock absorbers for cars
- contact pressure determination in a push rod
- compression force measurements at toggle lever press

## Description

The force to be measured is led central centric and transversal force-free across the rounded top - in form of a little hat - into the load cell.

Strain gages arranged in a full bridge circuit are applied on the generated surface of the sensor. By applying force to the strain gage bridge the resistance change of the gages is transformed into an output voltage which is directly proportional to the measured quantity.

The load cells have to be mounted on a smooth, plane parallel surface. They can be fixed on it with contact adhesive. To receive a measurement accuracy neither transversal nor lateral forces have to penetrate the load cell.

Clamp forces acting laterally on the load cell have to be avoided. During the installation or the mounting you have to take care that the cable outlet and the cable of the load cell are not stressed by tension and bending forces.

The output signal of the connecting plug is 1.5 mV/V, so that a parallel connection or an exchange can easily be done.

8402-E

**Technical Data**

Order Code	Ranges [%F.S.]	Accuracy* [%F.S.]	Non-Repeatability [%F.S.]	Dimensions [mm]									Weight o. Cable [g]
				ø D1	ø D2	F	A	H	G	ø C	ø K	M	
8402-6001	0 ... 1 kN	≤ ± 0.75	≤ ± 0.4	6.4	12.7	3.05	14.9	9.6	0.25	1.9	2.8	1.6	4
8402-6002	0 ... 2 kN	≤ ± 0.5	≤ ± 0.25	6.8	12.7	3.05	14.9	9.6	0.25	1.9	2.8	1.6	4
8402-6005	0 ... 5 kN	≤ ± 0.5	≤ ± 0.25	7.7	12.7	3.05	14.9	9.6	0.25	1.9	2.8	1.6	5
8402-6010	0 ... 10 kN	≤ ± 0.5	≤ ± 0.25	10.0	12.7	3.05	14.9	9.6	0.25	1.9	2.8	1.6	7
8402-6020	0 ... 20 kN	≤ ± 0.5	≤ ± 0.25	14.0	15.9	6.0	16.5	16.0	0.25	1.9	2.8	3.1	19
8402-6050	0 ... 50 kN	≤ ± 0.5	≤ ± 0.25	19.7	22.4	6.0	19.7	16.0	0.25	1.9	2.8	3.1	40
8402-6100	0 ... 100 kN	≤ ± 0.5	≤ ± 0.25	26.5	44.0	15.0	35.0	38.0	0.5	3.0	7.0	7.5	260

\* The figures specified are the combined values for non-linearity, hysteresis and non-repeatability.

**Electrical Values**

Bridge resistance: 350 Ω, nominal<sup>1)</sup>  
 full bridge circuit of foil strain gages  
 Excitation: recommended 3 V DC or AC  
 max. 5 V DC or AC  
 Output, (standardized in the cable) standard type: 1.5 mV/V, ± 0.5 %  
 Insulation resistance: > 10 MΩ

<sup>1)</sup> Deviation from stated value is possible

**Environmental Conditions**

Temperature operating: - 30 °C ... 100 °C  
 Temperature compensated: 15 °C ... 70 °C  
 Temperature effect on zero: ± 0.05 % F.S./K  
 Temperature effect on span: + 0.05 % Rdg./K

**Mechanical Values**

Deflection: ≤ 50 μm  
 Overload safe: 50 % over capacity  
 Dynamic performance: recommended 70 % of capacity  
 Material: stainless steel 1.4542  
 Resonance frequency: all ranges > 20 kHz  
 Electrical connection:  
 4-wire, shielded, TPE coated cable length approx. 2 m  
 measuring range 0 ... 100 kN additionally with anti-kink coil,  
 length approx. 35 mm, ø 3.5 mm  
 Bending radius: measuring range ≤ 0 ... 50 kN ≥ 20 mm  
 measuring range 0 ... 100 kN ≥ 30 mm  
 Protection class according to DIN 60529: IP 54  
 Wiring code: white excitation (positive)  
 brown excitation (negative)  
 yellow signal output (positive)  
 green signal output (negative)  
 Weight: see table

**Accessories**

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

Mounting of mating connector to conductor cable. **Order code: 9904**

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.**

**DMS Simulator**

Support accessories for creating strain gage source signals in order to adjust amplifiers and monitors. **Model 9405**

**Order Information**

Miniature load cell, measuring range 0 ... 2 kN.

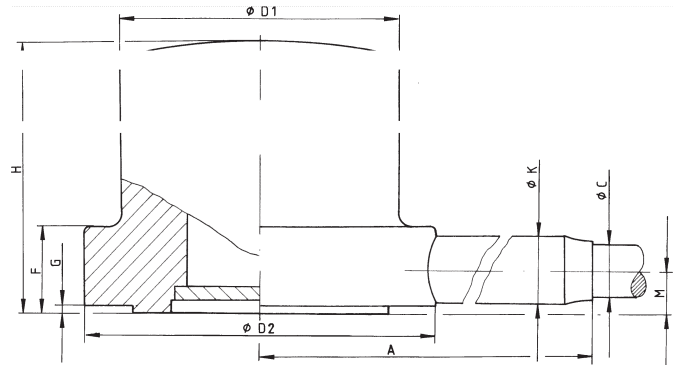
**Model 8402-6002**  
 (Order code see table above.)

**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-8402**

**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.

**Application Example**

The load cell can be fastened either with wax or silicone to its lateral surface. An attachment is most appropriate by means of pre-loading (spring). The two the cell affecting surfaces must be evenly, polished, at any time right-angled to the cells axle and through-hardened (HRC 60).

