

Miniature Load Cell

Model 8402

Code:	8402 E
Manufacturer:	burster
Delivery:	ex stock
Warranty:	12 months
Issue:	1.9.2001



Original size (Range 0 ... 10 kN)

- Measuring ranges from 0 ... 1 kN up to 0 ... 100 kN
- Accuracy ≤ 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.

Technical Data

Order Code standard model	Range	Accuracy* [%F.S.]	Non-Repeatability [%F.S.]	Dimensions [mm]								
				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
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
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
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
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
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
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

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

Electrical Values

Bridge resistance: 350 Ω, nominal¹⁾
 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

¹⁾ Deviation from stated value is possible

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

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 40050: IP 54

Wiring code: white excitation (positive)
 brown excitation (negative)
 yellow signal output (positive)
 green signal output (negative)

Weight: according to the corresponding measuring range, approx. 4 ... 240 g

Accessories

Mating connector (12 pins) to all burster instrumentations in table housing. **Order code: 9941**

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® type 9306.

See section 9 of the catalog

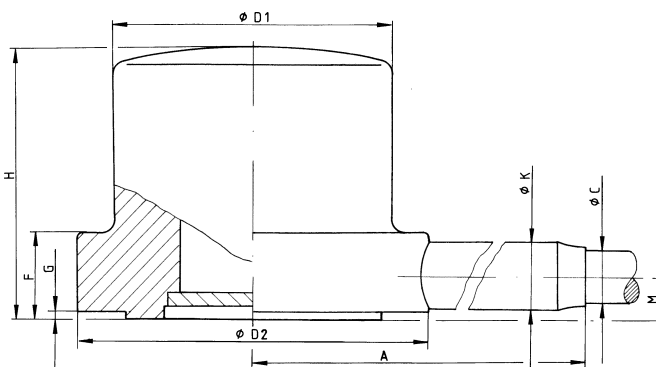
DMS Simulator

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.)

Scale Drawing



Application Example

The load cell is fixed with wax or silicone on a plane parallel surface. A force is acting on it through a plane, hardened stamp with a pre-stressed spring.

