

Load Cells

Model 8523, 8531

Code:	8523 E
Manufacturer:	burster
Delivery:	ex stock
Warranty:	12 months
Issue:	1.4.2003

CAD-Data by web2CAD
Info: Data sheet 80-CD-ROM-E



- Load ranges from 0 ... 20 N to 0 ... 5000 N
- Accuracy < 0.15 % F.S. resp. < 0.5 % F.S.
- For tension and compression measurements

Application

For users in industry, research, and technology load cells of the 8523 and 8531 models represent a useful and easy-to-handle instrument for measuring tension and compression. Owing to their compact and sturdy design they can be put to most varied use.

All load cells except 8523-20 and 8523-50 are provided with a standardized signal output. If required, the interchangeability is guaranteed without adjusting the instruments.

Typical fields of application are to be found in machine construction, in process engineering and in the weighing technique. The load cells stand out for best efficiency at a very low price. They are allround instruments for both static and dynamic measuring applications.

Description

The load cells operate by the approved strain gauge method. They are manufactured with great care.

The load cells have to be mounted on a smooth, plane parallel surface. The properties of the mounting surface and the mounting itself do not present any problem because of the three-point support.

The existing clearance holes serve to have the instrument fixed. The force to be measured must be centered. In case of compression for example, the load is directed via a load button. Any influence of lateral forces acting at an angle of up to $\pm 2.5^\circ$ onto the perpendicular line can be neglected. Even with variable force directions in this area the result will not exceed the specified accuracy.

Technical Data and Dimensions

Order Code	Load Range	Accuracy ¹⁾ [% F.S.]	Sensitivity [mV/V]	Sensitivity Tolerance [%]	øD [mm]	H [mm]	Natural Frequency [kHz.]
8523- 20	0 ... ± 20 N	≤ ± 0.5	1.0	nominal ²⁾	54.5	16	0.2
8523- 50	0 ... ± 50 N	≤ ± 0.5	1.0	nominal ²⁾	54.5	16	0.7
8523-100	0 ... ± 100 N	≤ ± 0.5	1.5	± 0.5	54.5	16	0.8
8523-250	0 ... ± 200 N	≤ ± 0.2	1.5	± 0.2	54.5	16	1.1
8523-500	0 ... ± 500 N	≤ ± 0.2	1.5	± 0.2	54.5	16	2.3

Model	Load Range	Accuracy ¹⁾ [% F.S.]	Sensitivity [mV/V]	Sensitivity Tolerance [%]	øD [mm]	H [mm]	Natural Frequency [kHz.]
8531-100	0 ... ± 1000 N	≤ ± 0.25	1.5	± 0.2	89.5	22	1.0
8531-200	0 ... ± 2000 N	≤ ± 0.15	1.5	± 0.2	99.5	30	1.8
8531-5000	0 ... ± 5000 N	≤ ± 0.15	1.5	± 0.2	99.5	30	3.0

¹⁾ The figures specified are the combined value for non-linearity, hysteresis and repeatability

²⁾ More or less deviation from stated value is possible

Electrical Values

Bridge resistance:

full bridge circuit of foil strain gauges 350 Ω, nominal²⁾

Excitation: range 20 N max. 5 V DC or AC
 range 50 N to 5000 N recommended 5 V DC or AC
 max. 10 V DC or AC

Output (Sensitivity): see table

Insulation resistance: > 10 MΩ

Calibration resistor: 80 kΩ ± 0.1 %
 The bridge output voltage resulting from a shunt of these values is shown in the calibration certificate. Model 8523 with ranges 20 N and 50 N are calibrated by shunt of 100 kΩ.

Environmental Conditions

Temperature operating: - 30 °C ... +80 °C

Temperature compensated: 15 °C ... +70 °C

Temperature effect: Zero model 8523 ≤ ± 0.010 % F.S./K
 Zero model 8531 ≤ ± 0.010 % F.S./K
 Span ≤ ± 0.02 % Rdg./K

Mechanical Values

Kind of measurement: tension or compression direction, calibrated in compression direction

Accuracy: see table

Deflection full scale: ≈ 80 μm

Overload safe: 130 % over capacity

Overload burst: 300 % over capacity

Dynamic performance: recommended 50 % over capacity (not suitable for large number of load cycles)

Casing material: high-grade aluminium, anodized

Degree of protection in acc. with DIN 40050: model 8523 IP 52
 model 8531 IP 64

Electrical termination: shielded highly flexible cable with bare ends for soldering length approx. 2m bending ≥ 20 mm

Wiring code connection (standard): white + excitation
 brown - excitation
 yellow + signal output
 green - signal output

Dimensions: see table and technical drawings

Weight: model 8523 approx. 150 g
 model 8531 approx. 350 g

Special Calibration (WKS)

Special calibration 11 point run (6 up / 5 down) by 20% increments and together with instrumentation
Order code

85WKS-8523
85WKS-8531

Order Information

Load cell model **8523- ...N** (please state load range)

Load cell model **8531- ...N** (please state load range)

Technical changes reserved

Accessories

Mating connector (12 pins) to all burster instrumentations in table housing **Model 9941**

Mating connector 9-pole for 9310 **Model 9900-V209**

Mounting of mating connector to conductor cable **Model 99004**

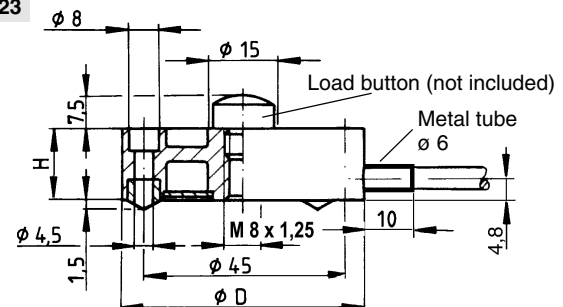
Load button for introduction of compressive forces stainless steel, HRC 60 **Model 8580-V008**

Pull plate for measuring tension and compression forces (Same material and dimensions as load cell, mounted on load cell, see drawing on data sheet 8524 page 4)
 - for 8523 **Model 8590-V002**
 - for 8531-1000N **Model 8590-V006**
 - for 8531-2000/5000N **Model 8590-V007**

Strain gauge simulator replaces load cell for checking or adjustment of amplifier or monitor **Model 9405**

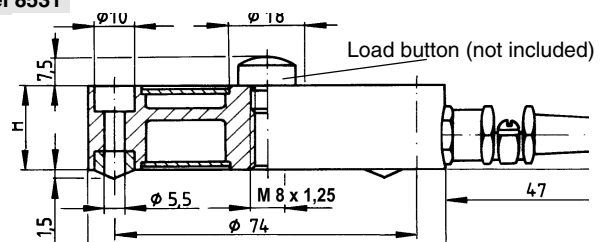
Supply devices, amplifiers and process monitoring units, such as the model 9243 module amplifier and model 9180 digital display. **see section 9 of the catalog.**

Model 8523



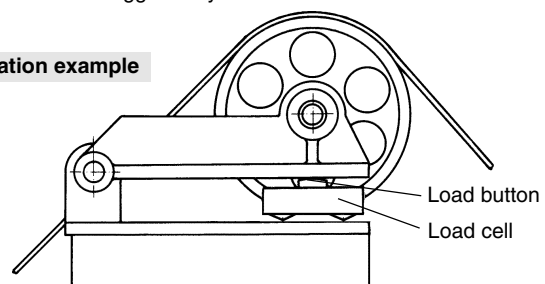
Fixing by means of 3 socket-head screws, quality factor 12.9
 3 clearance holes staggered by 120°

Model 8531



Fixing by means of 3 socket-head screws, quality factor 12.9
 3 clearance holes staggered by 120°

Application example



Sensor CAD drawing can be imported from CD-ROM or downloaded from the Internet. For more information on *POWERPARTS* please refer to the introduction of section 8 in the catalog.