

# High Precision Compression Load Cell

Model 8527

Code:	8527 EN
Delivery:	ex stock
Warranty:	24 months

CAD data 2D/3D for this sensor:  
Download directly at [www.traceparts.com](http://www.traceparts.com)  
Info: refer to data sheet 80-CAD-EN



Low range



High range

- Measuring ranges from 0 ... 500 N to 0 ... 100 kN
- Very high linearity < 0.05 % F.S.
- Static and dynamic measurements
- Protection class IP65
- Made of high quality stainless steel
- With standardized output signal
- WKS (Factory Calibration Certificate) or DKD (German Calibration Service) calibration optional
- Simplest mounting

## Application

High quality sensors are required due to the constantly rising demand in accuracy and reliability in almost all technical fields. In addition to particularly small linearity errors, measuring applications often call for improved reversal errors, longtime stability and temperature constancy.

This highly precise load cell in combination with qualitatively adequate evaluation electronics can solve many ambitious force measurement tasks. Its area of application is also extended to include today's various needs of exact reference systems for quality control.

Examples of application:

- ▶ Reference sensor for adjustment and control of force measurement facilities in production and in laboratories
- ▶ Material testing
- ▶ Spring fame force measurements
- ▶ Press-in operating
- ▶ Weighing technology

## Description

The high precision load cell model for compression forces consists of a circular body, in which a load button is integrated. The load to be measured is transferred via its convex surface to the measuring element where it is converted into an electrical voltage by a strain gauge full bridge. The output voltage is proportional to the measuring force.

The measuring element is located between two stabilizing membranes protecting the central part from lateral displacement when subjected to lateral force. A high level of measurement accuracy requires force application using a flat and hard stamp or plate while the load cell is mounted on a plane surface. The surface should be polished or even lapped and hardened. Its thickness should correspond to the forces in order to prevent bending.

The force should be applied axially and centrally. Even if smaller angle errors influence the measuring signal, they are minimized by the convex and plane surface of the load application button.

Two laterally located M8 threaded holes support the handling and transport of the sensor.

**Technical Data**

Dim tolerance acc. ISO 2768-f

Order Code	Measuring Range	Dimensions [mm]													Mass [kg]
		øB	øD1	øD3	øD4	øG	H	H1	K	R	V	W	øX	øY	
8527-5500	0 ... 500 N	21	79	59	58.6	68	20	22	7.5	50	4.6	15.4	4.5	8	0.5
8527-6001	0 ... 1 kN	42	79	59	58.6	68	20	22	7.5	50	4.6	15.4	4.5	8	0.5
8527-6002	0 ... 2 kN	42	79	59	58.6	68	25	27	7.5	50	4.6	20.4	4.5	8	0.6
8527-6005	0 ... 5 kN	43	119	94	92.6	105	30	33	9	150	6.8	23.2	6.6	11	1.6
8527-6010	0 ... 10 kN	43	119	94	92.6	105	45	48	9	150	6.8	38.2	6.6	11	2.4
8527-6020	0 ... 20 kN	43	119	94	92.6	105	60	63	9	150	6.8	53.2	6.6	11	3.2
8527-6050	0 ... 50 kN	59	155	109	107	129	60	63	25	200	13	47	13.5	20	6.5
8527-6100	0 ... 100 kN	59	155	109	107	129	75	78	25	200	13	62	13.5	20	8.0

**Electrical values**

Bridge resistance (full bridge): foil-model strain gauge 350 Ω  
 Excitation: max. 10 V DC or AC  
 Sensitivity: 1.5 mV/V, ± 0.2 %  
 Calibration resistor (burster model 1148-6080): 80 kΩ; 0.1 %  
 The bridge output voltage resulting from a shunt of this value is stated in the calibration certificate.

**Environmental conditions**

Temperature compensated: 15 °C ... 70 °C  
 Temperature operating: - 30 °C ... 80 °C  
 Temperature effect zero: ≤ 0.01 % F.S./K  
 Temperature effect span: ≤ 0.01 % v.S./K

**Mechanical values**

Non-linearity: ≤ ± 0.05 % F.S.  
 Kind of measurement: compression force  
 Deflection, full scale: < 80 µm  
 Overload safe: 120 % of capacity  
 Overload burst: > 200 % of capacity

Dynamic performance:  
 permitted 70 % of capacity  
 maximum 100 % of capacity  
 Material: high-grade stainless steel 1.4542  
 Protection class EN 60529: IP65

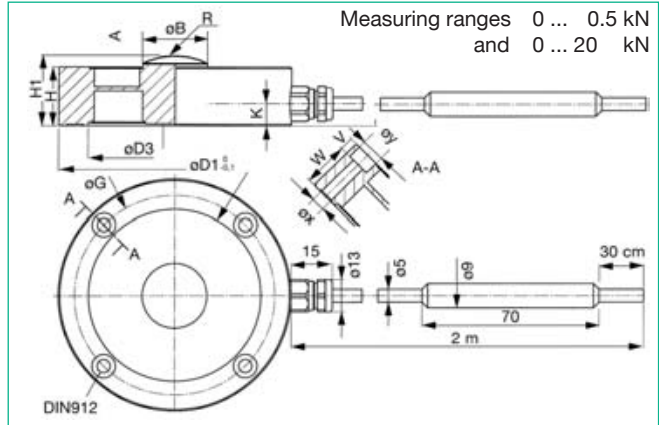
Electrical termination: shielded, flexible PVC cable, with bare ends for soldering, length 2 m  
 Ranges 0 ... 500 N to 0 ... 20 kN: cable diameter 5 mm, bending radius at least 30 mm, cable output radial, high-strength cable gland, standardized in cable  
 Range 0 ... 50 kN and 0 ... 100 kN: cable diameter 5 mm, bending radius at least 30 mm, cable output tangential, high-strength cable gland, flange bracket

Wiring code:  
 white excitation positive  
 pink + sense wire  
 brown excitation negative  
 grey - sense wire  
 yellow signal output positive  
 green signal output negative  
 Mass: 0.5 ... 8.5 kg (see table)

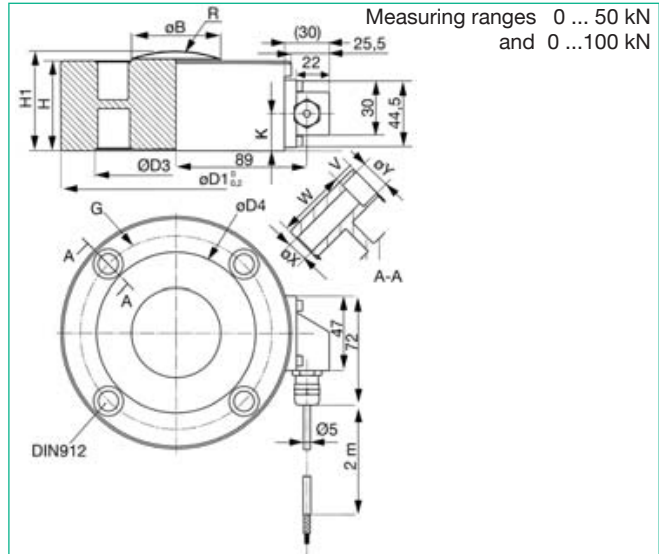
Mounting:  
 4 through-holes (see dimensions drawing)  
 The complete bearing face of the load cell must be seated on a through hardened (60 HRC), plane, grinded or better lapped mounting surface. Countersinks according DIN 74-km, for hexagon socket screw according to DIN 912.

**The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system.**  
 Download via [www.burster.com](http://www.burster.com) or directly at [www.traceparts.com](http://www.traceparts.com).  
 For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

**Dimensional drawing 1**



**Dimensional drawing 2**



**Order Information**

Load cell, range 0 ... 20 kN **Model 8527-6020**

**Accessories**

**Mating connector**, 12 pins, for burster desktop units except for 9163 **Model 9941**

**Mating connector**, 9 pins, for 9163-V3, 9235 and 9310 **Model 9900-V209**

Mounting of mating connector on sensor cable **Order Code 99004**

**Signal conditioning**

Amplifier, such as model 9243, digital indicators e.g. model 9181, sensor profibus module model 9221 or DIGIFORCE® models 9306/9310 refer to section 9 of the catalog.

**Manufacturer Calibration Certificate (WKS)**

Load cell without/with measuring instrument  
 Calibration in 20 % steps up and down at installation position.