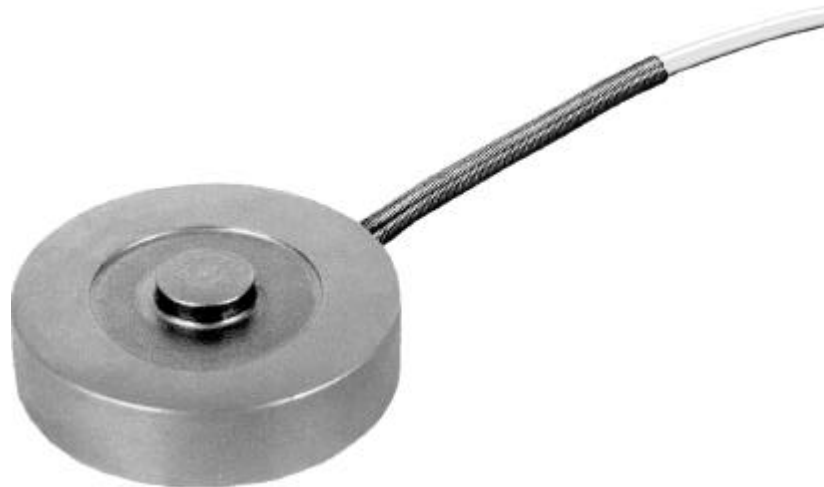




## Compressive-Force Load Cell



### 1. Application

A high price/performance ratio and robust design characterize the compressive-force load cell even in the high measuring ranges.

Their small dimensions allow these load cells to be used for measuring static and dynamic forces in restricted spaces.

Force sensors of this type have a hermetically sealed body, allowing it to be used even under dirty and corrosive industrial conditions.

These sensors are used as measuring elements mainly in

- device manufacture,
- production lines,
- measurement and control systems,
- manufacture of fixtures and special machines, and
- geological applications.

### 2. Description

This force sensor type is designed as a flat, circular disc. The load application knob for receiving compressive forces is an integral part of the sensor.

The measuring element inside the body carries a strain gauge full bridge which outputs a voltage directly proportional to the measurement variable on the application of a force.

The measurement force must be applied centrally and without any transverse vectors.

Ensure that the sensor is mounted on a smooth and level surface.

### 3. Special features

- Measuring ranges from 0 ... 100 N up to 0 ...200 kN
- Small dimensions and high measuring ranges
- For static and dynamic measurements
- Made of stainless steel
- Relative span range with unchanged mounting position < 0,1 % F.S. (typ.)
- Optional standardization of the rated characteristic

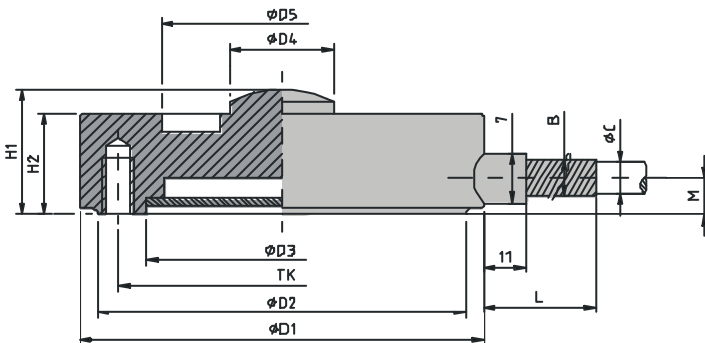
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**Compressive-Force  
Load Cell**

**10 8526/02**

## 4. Dimensions

Measuring range	Article-No.	Dimensions [mm]											Thread-size	Threads TK	
		ØD1	ØD2	ØD3	ØD4	ØD5	TKØ	H1	H2	ØB	ØC	L			M
0...100 N	12915	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...200 N	12967	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...500 N	12916	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...1 kN	12968	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...2 kN	12917	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...5 kN	12969	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...10 kN	12918	31,8	29,4	20,6	8,1	19,0	25,5	9,9	8,1	3	2	40	2,5	M2,5 x 0,45	3 x 120°
0...20 kN	12970	31,8	35,0	28,0	10,7	27,0	31,5	16,0	14,0	4,5	3	45	3	M2,5 x 0,45	3 x 120°
0...50 kN	12919	31,8	35,0	28,0	10,7	27,0	31,5	16,0	14,0	4,5	3	45	3	M2,5 x 0,45	3 x 120°
0...100 kN	12971	50,8	48,0	36,0	15,2	33,0	42,0	25,4	22,4	4,5	3	46	6	M4 x 0,7	3 x 120°
0...200 kN	12920	76,2	46,0	46,0	20,0	45,0	60,0	38,1	33,5	4,5	3	46	6	M4 x 0,7	3 x 120°



Relative span range with unchanged mounting position:

Meas. range =0 ...10 kN < 0,1 % v.E.

Meas. range =0 ...20 kN < 0,25 % v.E.

nominal meas. way: 10 µm ... 80 µm

max. applied force: 150% of rated power

Dynamic performance: recommended 50% der Nennkraft  
permitted 70% der Nennkraft

Material: High-grade stainless steel 1.4542

Weight: approx 0,04-1,2 kg

Protection class (according to DIN 40050): IP 54

Dimensions: see table and scale drawing

Mounting: via 3 thread holes on the bottom side of the sensor (3x120°)

## 5. Technical Data

### 5.1 Electrical specifications:

Bridge resistance:

Foil SG, full bridge 350 Ω, nominal\*

Excitation:

Meas. range = 0... 1000 N max. 5 V DC

Meas. range = 0... 2000 N max. 10 V DC

Output: 1,5 mV/V\*

Option 1: 1,0 mV/V

\*nominal, deviations from the stated value are possible

### 5.2 Environmental conditions:

Operating temperature range: -20°C...+100°C

Rated temperature range: +15°C...+70°C

Temperature influence:

on the zero signal:  $\pm 0,02$  F.S./K

on the characteristic:  $\pm 0,03$  Rdg./K

### 5.3 Mechanical specifications:

Non-linearity:

Meas. range = 0 ... 1 kN < 0,25 % F.S.

Meas. range = 0 ... 2 kN < 0,5 % F.S.

Hysteresis:

Meas. range = 0 ... 1 kN < 0,15 % F.S.

Meas. range = 0 ... 2 kN < 0,5 % F.S.

### 5.4 Electrical connection:

screened, teflon-insulated cable, 4-wire, length approx. 2m, with connection plug Tuchel, 6-pole,

bending radius: Meas. range =0...10 kN: =25 mm

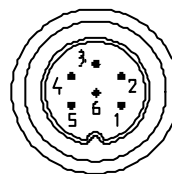
Meas. range =0...20 kN =30 mm

Meas. range =0...50 kN =30 mm

Meas. range =0...100 kN =30 mm

Meas. range 0...100 kN with Ø3,5 mm anti-kink coil (ca. 40 mm length,)

Pin connection:

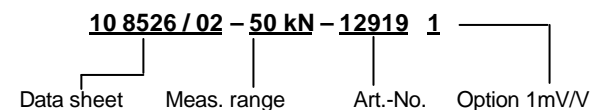


Top view connection plug

Pin	wire	signal	
1	brown	excitation	-
2	white	excitation	+
3	(blank)	shield	
4	yellow	signal output	+
5	green	signal output	-

## 6. Order Information

e.g Compressive-force load cell, 0...50 kN:



For signal amplifiers and display units please refer to the data sheets of product group 4 and 6.