

High Precision Compression Load Cell MODEL 8527



burster
TEDS

NEW
Non-linearity
0.035 % F.S.



High range



Low range

Highlights

- Measuring ranges from 0 ... 500 N up to 0 ... 100 kN, 0 ... 112.4 lbs up to 0 ... 22.4 klbs
- Non-linearity 0.035 % F.S.
- Highest manufacturing quality
- Also suitable for dynamic measurements

Options

- WKS (Factory Calibration Certificate) or DAkkS (German Accreditation Body) calibration
- burster TEDS

Applications

- Reference measurements
- Calibration facilities
- Test benches
- All areas of mechanical engineering

Product description

The model 8527 high-precision compression load cell is the ideal load cell for reference measurement chains where highly precise measurement results are required. Its very high production quality and extremely low non-linearity of just 0.035 % F.S. make it a dependable choice for comparative measurements and calibration tasks.

Designed for a dynamic stress of up to 100 % of the full scale value, the model 8527 load cell is also suitable for situations where a rapid signal change with high amplitude occurs and has to be measured.

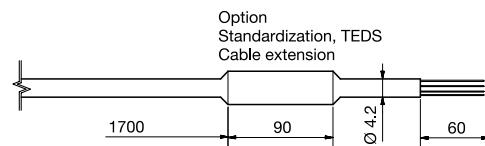
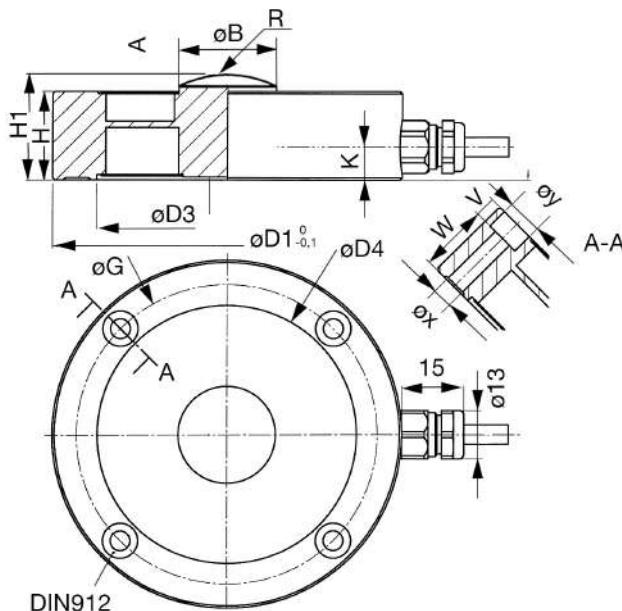
The model 8527 high-precision compression load cell has a domed load button on top, onto which the compressive load being measured is applied. Inside the load cell is an elastic membrane, on which strain gages generate a resistance change in the measuring bridge and an output signal proportional to the load. For the best possible measurement results, the force should be applied axially and centrally to the load button. The mounting surface should ideally be hardened (60 HRC) and should not bend under the applied load.

Technical Data

8527	-	5500	6001	6002	6005	6010	6020	6050	6100
Measuring range calibrated in N and kN from 0 ...		0.5 kN 112.4 lbs	1 kN 224.8 lbs	2 kN 449.6 lbs	5 kN 1.1 klbs	10 kN 2.2 klbs	20 kN 4.5 klbs	50 kN 11.2 klbs	100 kN 22.4 klbs
Accuracy									
Relative non-linearity*									$\leq \pm 0.035\% \text{ F.S.}$
Characteristic curve deviation*				$\leq \pm 0.05\% \text{ F.S.}$		$\leq \pm 0.075\% \text{ F.S.}$			$\leq \pm 0.1\% \text{ F.S.}$
Relative hysteresis						$\leq 0.1\% \text{ F.S.}$			$\leq 0.15\% \text{ F.S.}$
Temperature effect on zero output							$\leq \pm 0.1\% \text{ F.S./10 K}$		
Temperature effect on nominal sensitivity							$\leq \pm 0.1\% \text{ F.S./10 K}$		
Electrical values									
Sensitivity nominal									1.7 mV/V
Measurement direction									Compression direction
Standardization**									1.5 mV/V ($\pm 0.25\%$)
Bridge resistance									350 Ω nominal
Excitation									recommended 5 V DC or AC; max. 10 V DC or AC
Insulation resistance									$> 30 \text{ G}\Omega$ at 45 V
Environmental conditions									
Nominal temperature range									$+15^\circ\text{C} \dots +70^\circ\text{C}$
Operating temperature range									$-30^\circ\text{C} \dots +80^\circ\text{C}$
Mechanical values									
Deflection full scale									$< 80 \mu\text{m}$
Maximum operating force									120 % of capacity
Overload burst									$> 200\% \text{ of capacity}$
Dynamic performance									recommended: 70 %; maximum: 100 % (of capacity)
Protection class (EN 60529)									IP65
Installation									
Intended mounting screws			4 pieces M4			4 pieces M6			4 pieces M12
Tightening torque mounting screws	[N*m]								-
Installation instructions									The entire bearing area of the sensor must be mounted on a base which is hardened (60 HRC), flat, polished or better lapped Countersinks according DIN 74-km, for hexagon socket screw according to DIN 912.
Other									
Material									stainless steel 1.4542
Natural frequency	[kHz]	365	540	700	470	580	715	850	1000
Mass	[kg]	0.5		0.6	1.6	2.4	3.2	6.5	8

* The data in the area 20 % - 100 % of rated load F

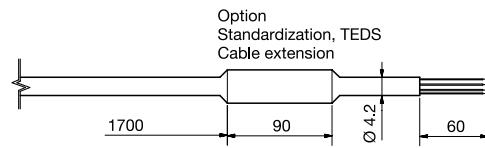
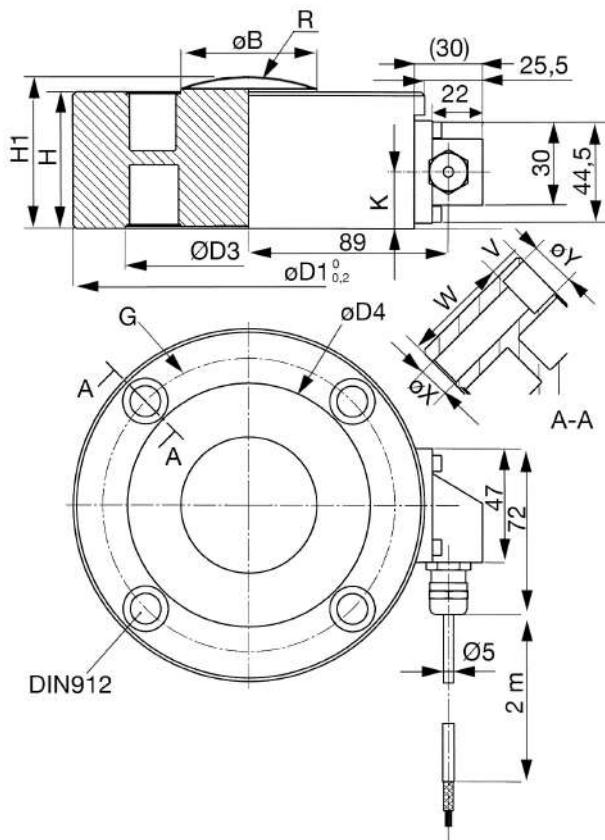
** Realized on board in connection cable, 1.7 m from sensor housing or 0.3 m from cable end (temperature range limited to 0 ... +60 °C)

Dimensional drawing 1 – **Measuring ranges from 0 ... 0.5 kN up to 0 ... 20 kN | from 0 ... 112.4 lbs up to 0 ... 4.5 klbs**

8527	-	5500	6001	6002	6005	6010	6020
Measuring range from 0 ...		0.5 kN	1 kN	2 kN	5 kN	10 kN	20 kN
Geometrie							
Ø B	[mm]	21.00			43.00		
Ø D1	[mm]	79.00			119.00		
Ø D3	[mm]	59.00			94.00		
Ø D4	[mm]	58.60			92.60		
Ø G	[mm]	68.00			105.00		
H	[mm]	20.00	25.00	30.00	45.00	60.00	
H1	[mm]	22.00	27.00	33.00	48.00	63.00	
K	[mm]	7.50			9.00		
R	[mm]	50.00			150.00		
V	[mm]	4.60			6.80		
W	[mm]	15.40	20.40	23.20	38.20	53.20	
Ø X	[mm]	4.50			6.60		
Ø Y	[mm]	8.00			11.00		



Dimensional drawing 1 – Measuring ranges from 0 ... 50 kN up to 0 ... 100 kN | from 0 ... 11.1 klbs up to 0 ... 22.4 klbs

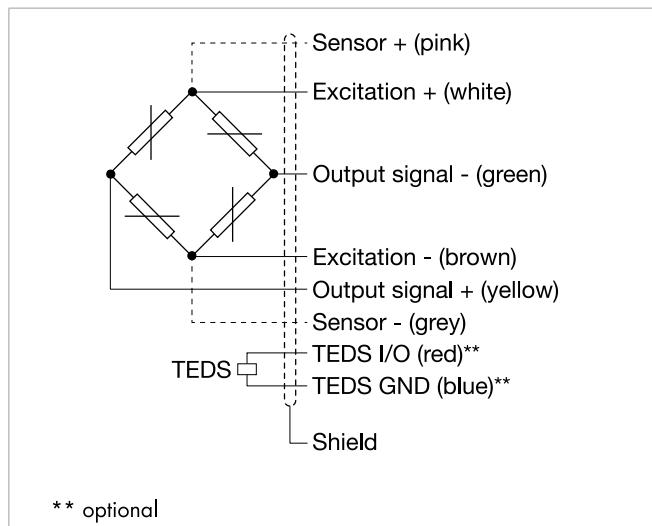


8527	-	6050	6100
Measuring range from 0 ...		50 kN	100 kN
Geometrie			
Ø B	[mm]	59.00	
Ø D1	[mm]	155.00	
Ø D3	[mm]	109.00	
Ø D4	[mm]	107.00	
Ø G	[mm]	129.00	
H	[mm]	60.00	75.00
H1	[mm]	63.00	78.00
K	[mm]	25.00	
R	[mm]	200.00	
V	[mm]	13.00	
W	[mm]	47.00	62.00
Ø X	[mm]	13.50	
Ø Y	[mm]	20.00	

Electrical termination

Output signal

burster load cells are based on a strain-gage Wheatstone bridge. This measurement principle means that the output voltage mV/V is highly dependent on the sensor supply voltage. Our website contains details of suitable instrumentation amplifiers, indicator and display devices and process instruments.



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Measuring range from 0 ...		0.5 kN	1 kN	2 kN	5 kN	10 kN	20 kN	50 kN	100 kN
Electrical termination									
Specifications	highly flexible, shielded, drag chains suitable. Bending radius three times the diameter for fixed cable, ten times the diameter for cable permanently moving								
Cable fastening	high-strength cable gland								
Bending protection	-								
Bending radius	Bending radius three times the diameter for fixed cable, ten times the diameter for cable permanently moving.								
Cable type	PUR, Ø = 5.0 mm								

Accessories

Connectors and units

Order Code

Connectors	
9941	Connectors 12 pin, suitable to all burster desktop units
9900-V209	Connectors 9 pin, suitable to SENSMASTER, DIGIFORCE® and TRANS CAL
9900-V229	Connectors 9 pin with TEDS
9900-V245	Connectors 8 pin, suitable to ForceMaster
Units	
7281-V0001	Mobile measuring device with strain gage simulator and sensor test (R_s , R_o , Shunt, R_{ISO})
refer to section 9	Sensor electronics, amplifier and process control units like digital indicator model 9180, model 9163, modular amplifier model 9250 or DIGIFORCE® model 9307

Calibration

Test and calibration certificate	
Included in scope of delivery of sensor	Amongst other data, includes figures for zero point, full-scale output and calibration offset
Standard factory calibration certificate for load cells or measurement chains (WKS)	
Optionally available	Our standard factory calibration certificate includes 11 measurement points, starting at zero, spread evenly in 20% steps over the full measuring range, for increasing and decreasing load under the same installation conditions.
Special factory calibration certificate for load cells or measurement chains (WKS)	
On request	We are happy to calibrate sensors and measurement chains to the customer's specification.
German-accredited DAkkS calibration certificate for sensors and measurement chains (DKD)	
Optionally available	Our DAkkS-certified calibration laboratory provides calibration certificates to DIN EN ISO 376. The calibration certificate includes 21 measurement points, starting at zero, spread evenly in 10% steps over the measuring range, for increasing and decreasing load under various installation conditions. DAkkS calibrations can be performed in the compression and/or tension direction depending on the sensor type.

Order Code

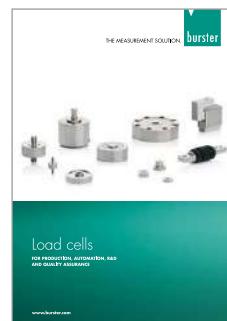
Measuring range		Code			Measuring range	
0 ... 0.5 kN	5	5	0	0	0 ... 112.4 lbs	
0 ... 1 kN	6	0	0	1	0 ... 224.8 lbs	
0 ... 2 kN	6	0	0	2	0 ... 449.6 lbs	
0 ... 5 kN	6	0	0	5	0 ... 1.1 klbs	
0 ... 10 kN	6	0	1	0	0 ... 2.2 klbs	
0 ... 20 kN	6	0	2	0	0 ... 4.5 klbs	
0 ... 50 kN	6	0	5	0	0 ... 11.2 klbs	
0 ... 100 kN	6	1	0	0	0 ... 22.4 klbs	

Delivery ex stock at short notice									
8	5	2	7	-	-	N	0	0	0
■ Nominal sensitivity/not standardized						N			
■ Standardization at 1.5 mV/V ***						S			
*** temperature range limited to 0 ... +60 °C									
■ Connection cable 1.7 m (Standardization 2 m)						0			
■ Connection cable 3 m						F			
■ Connection cable 5 m						G			
■ Connection cable 3 m extended *						L			
■ Connection cable 5 m extended * (with sens line)						M			
* shortened delivery time compared with cable length 3 m and 5 m in one piece									
■ Open cable ends + 6 cm single wires						0			
■ 9 pins Sub-D connector model 9900-V209						B			
■ 9 pins Sub-D connector model 9900-V209 for 9163-V3xxxx						E			
■ 12 pins round connector model 9941 for burster desktop devices						F			
■ 9 pins Sub-D connector with burster TEDS model 9900-V229 ***						T			
■ 8 pins coupling connector model 9900-V245 for 9110						H			
*** temperature range limited to 0 ... +60 °C									
■ Non-linearity 0.035 % F.S. **						S			
** The data in the area 20 % - 100 % of rated load F_{nom}									
■ Nominal temperature range +15 °C ... +70 °C						0			

Note

■ Brochure

Our brochure „**Load cells for production, automation, R&D and quality assurance**“ is available for download on our website. It contains numerous applications, detailed product specifications and overviews.



■ Product videos

Watch our **How-to-do video** at: www.youtube.com/bursterVideo



■ CAD data

Download via www.burster.com or directly at www.traceparts.com