Delivery: 6 weeks | Warranty: 24 months

2-Axis Load Cell XY

Tensile/compressive force measurement in the X and Y directions simultaneous

MODEL **8561**

Highlights

- Measuring ranges:
  0 ... 4448 N / 0 ... 2224 N (0 ... 1000 lbs / 0 ... 500 lbs)
  0 ... 8896 N / 0 ... 4448 N (0 ... 2000 lbs / 0 ... 1000 lbs)
- Further measuring ranges on request
- Non-linearity < 0.1 % F.S.
- Low cross talk < 0.75 % F.S.
- High dimensional accuracy, because sensor is made from one part
- Excellent price/performance ratio

Options

- Standardized output signal
- Dual-range model
- 0-10 V / 4-20 mA
- Various fieldbuses e.g. Profinet

Applications

- Tire uniformity testing machine
- Rotation tests

Top view

Detail view connector

With instrumentation amplifier 9250/9251

Product description

Inside the multi-component force transducer are two webs, each offset by 90°, each with a strain gage full bridge, which convert the radially acting X / Y forces on the guide bush into an electrical signal.

Due to the sensor body made from a block with its special structure, the sensor has a very high degree of dimensional accuracy and low crosstalk between the two forces.

Due to the special design, the sensor has excellent linearity properties and is designed for a long service life in dynamic applications.

The two independent signal connections allow flexible adaptation and further processing.

Technical Data

8561	–	1000-0500	2000-1000
Measuring range calibrated in N and kN from 0 …		X = ±4448 N; Y = ±2224 N	X = ±8896 N; Y = ±4448 N
		(X = ±1000 lbs; Y = ±500 lbs)	(X = ±2000 lbs; Y = ±1000 lbs)
Accuracy			
Relative non-linearity*		≤ ±0.1 % F.S.	
Characteristic curve deviation*		≤ ±0.15 % F.S.	
Cross talk		< 0.75 % F.S.	
Relative hysteresis		0.1 % F.S.	
Temperature effect on zero output		≤ ±0.005 % F.S./K	
Temperature effect on nominal sensitivity		≤ ±0.015 % F.S./K	
Electrical values			
Sensitivity nominal		2.0 mV/V	
Measurement direction		pos. output signal for pressure force in the direction of the marked X- / Y-axis	
Standardization**		option 2.0 mV/V (±0.25 %)	
Bridge resistance		350 Ω nominal (deviations are possible)	
Excitation		5 V DC or AC (max. 10 V DC or AC)	
Insulation resistance		> 30 MΩ at 45 V	
Environmental conditions			
Nominal temperature range		+15 °C … +70 °C	
Operating temperature range		0 °C … +80 °C	
Mechanical values			
Deflection full scale		< 200 µm	
Maximum operating force		150 % of capacity	
Overload burst		200 % of capacity	
Dynamic performance		recommended: 50 %	
Protection class (EN 60529)		IP30	
Installation			
Intended mounting screws		4 x M10	
Tightening torque mounting screws		60 Nm	
Mounting screws		resistance 10.9 or higher	
Other			
Material		stainless steel 1.4542	
Natural frequency	[Hz]	200	280
Mass	[kg]	3.3	

* 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)

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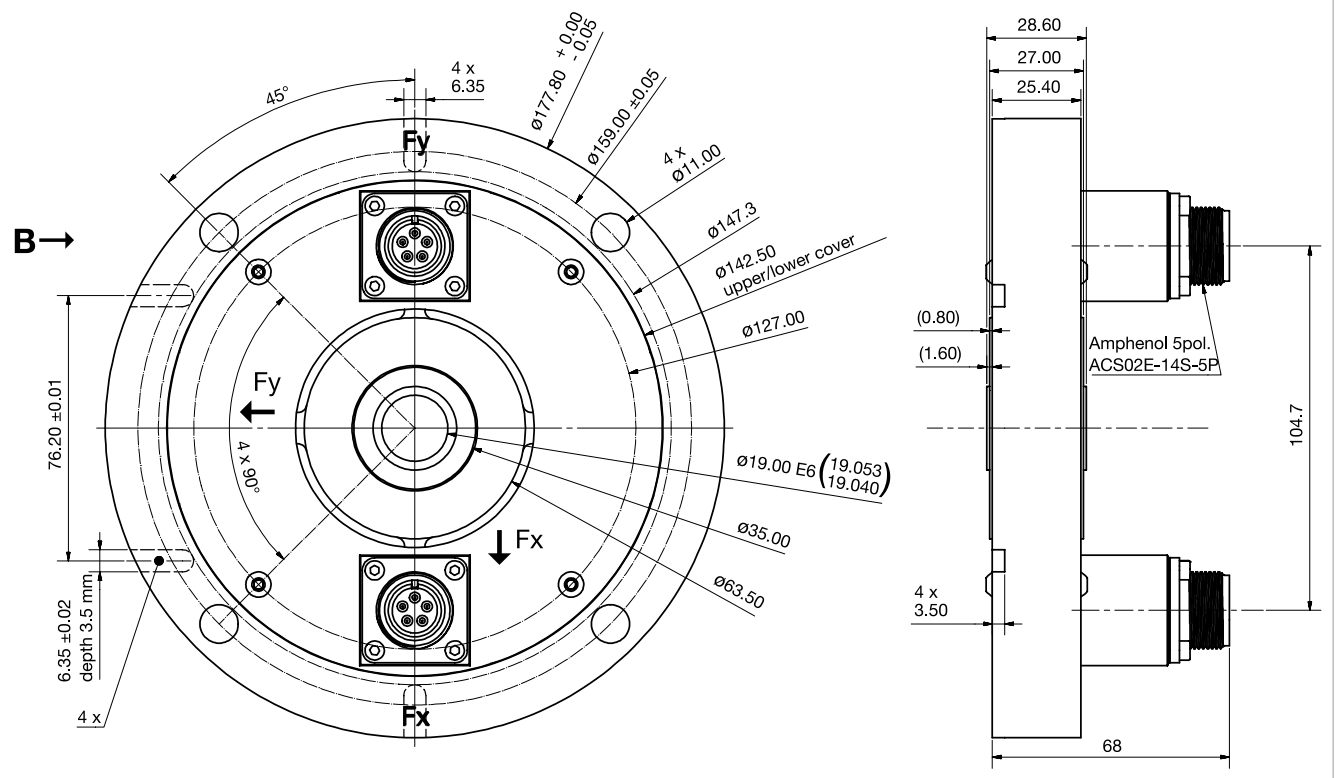
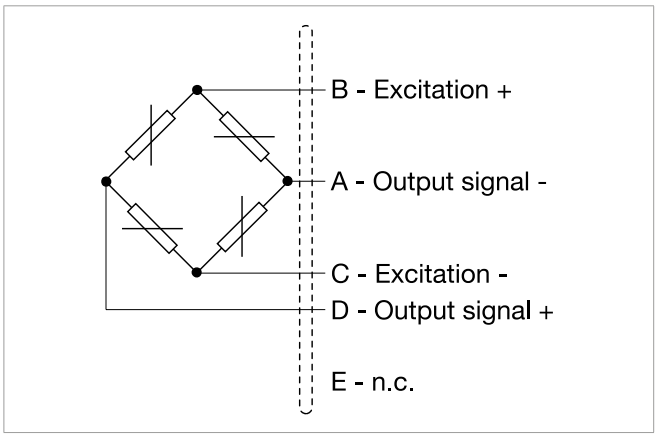
Dimensional drawing



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.



8561	-	1000-0500	2000-1000
Measuring range from 0 ...		X = ±4448 N; Y = ±2224 N	X = ±8896 N; Y = ±4448 N
		X = ±1000 lbs; Y = ±500 lbs	X = ±2000 lbs; Y = ±1000 lbs
Electrical termination			
Connectors		Connectors Model Amphenol 5 pin ACS02E-14S-5P	

Accessories

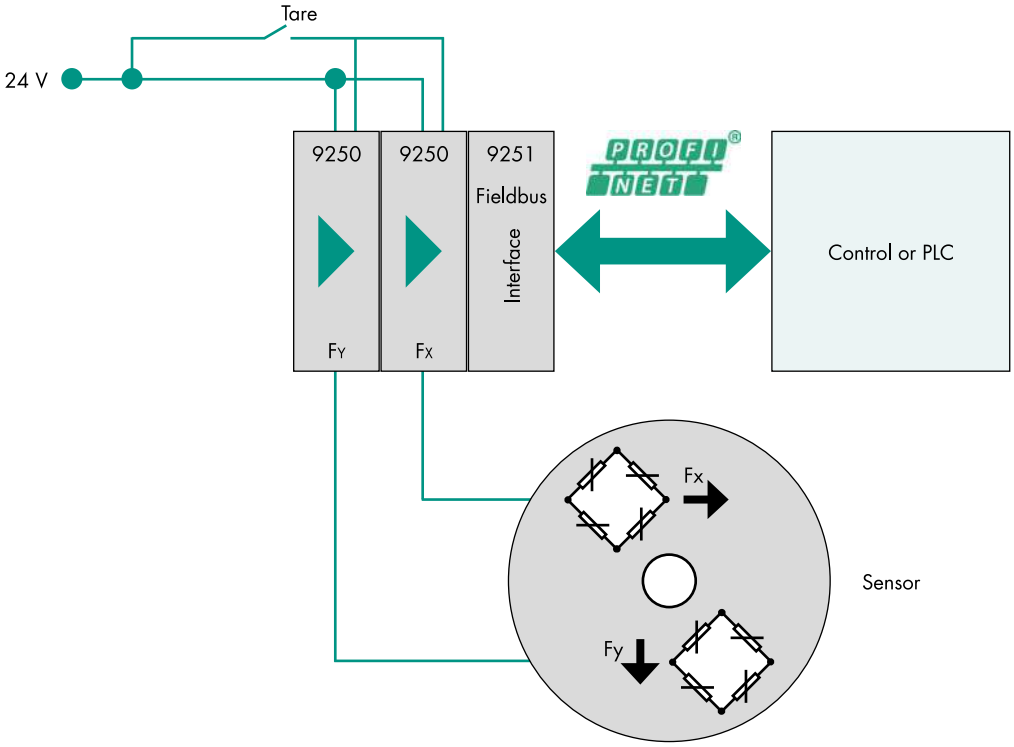
Connectors and cable

Order Code		
Connectors		
9900-V647		Coupling socket 90° angled (in scope of delivery)
Cable		
99547-000B-0160030		Connection cable 3 m with open end 6-wire

Application example

Typical application: Uniformity measurement of wheels

A common application is, for example, the detection of the radial and lateral forces on rolling wheels. The sensor, which is suitable for dynamic applications, can be easily integrated into automated test systems and the uniformity of car tires, for example, can be checked and evaluated.



With the use of the new generation of instrumentation amplifiers 9250/9251, the sensor can be easily connected to any Profinet-capable system. You can find more information on our data sheets at **www.burster.com**.

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NEW optionally

Dual-range

Dual-range model		
Optionally available		As an optional extra, an additional calibration certificate is available for a second measuring range that is smaller by one step. For example, for the measuring range 4448 N ... 2224 N also a calibration certificate for 2224 N ... 1112 N. Depending on the measuring range, this results in a dual range ratio of 1:2.
Measuring range		**Spreading**
4448 N ... 2224 N 1000 lbs ... 0500 lbs		2224 N ... 1112 N 500 lbs ... 0250 lbs
8896 N ... 4448 N 2000 lbs ... 1000 lbs		4448 N ... 2224 N 1000 lbs ... 0500 lbs

Technical data – changing values for the spreading measuring range		
Temperature effect on zero output		≤ ±0.015 % F.S./K
Sensitivity nominal		1.0 mV/V

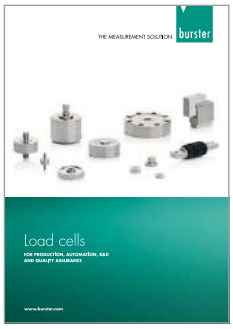
Order Code

Measuring range	Code								Measuring range
X: 0 ... ±4448 N Y: 0 ... ±2224 N	1	0	0	0	0	5	0	0	X: 0 ... ±1000 lbs Y: 0 ... ±500 lbs
X: 0 ... ±8896 N Y: 0 ... ±4448 N	2	0	0	0	1	0	0	0	X: 0 ... ±2000 lbs Y: 0 ... ±1000 lbs

8	**5**	**6**	**1**	**–**									**–**			**0**

■ Nominal sensitivity/not standardized	N	
■ Standardization at 2.0 mV/V	F	
■ Standard		0
■ Calibration 1:2 / Dual-range model		Z

Note



- **Brochure**
  Our brochure **„Load cells for production, automation, R&D and quality assurance“** is available for download on our website. It conatains 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**

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