

# S-Beam Tension and Compression Load Cell

## Model 8512

Code:	8512 EN
Delivery:	1 - 2 weeks
Warranty:	24 months

### Preliminary data sheet



- Measuring ranges from 0 ... 20 N to 0 ... 880 N
- Non-linearity < 0,1 % F.S.
- Many load cycles
- Protection class IP54
- Excellent price-performance ratio

### Application

Model 8512 bending beam load cells are designed for measuring tension and compression forces. Their high accuracy, low torque sensitivity and thanks to the very flat design make these sensors particularly suitable for use in weighing and dosing technology as well as for laboratory and production use. Extremely simple force application makes the sensor easy to handle. It offers a very favorable price/performance ratio and can be used universally for static and dynamic measurements.

Examples of application:

- ▶ Dosing system
- ▶ Automated tool testing
- ▶ Tension force measurement for wire or thread winders
- ▶ Test and analysis systems in the pharma industry
- ▶ Withdrawal force
- ▶ Measuring loads in cable systems

### Description

The measuring element of this load cell consists of a double bending beam with strain gauges, the resistance of which changes with the application of force. Upon applying a voltage to the strain gauge bridge, the change in the strain gauge resistance is converted into output voltage, which is directly proportional to the force. The strain gauges and the entire measuring element are protected from water spray by metal cover including sealing material.

The tensile or compressive load to be measured is applied to the sensor element through the M6 threaded hole located on each end face. The load can be applied easily, along the sensor axis. This serves to prevent falsification of the measured values. Overload protection can be realized with little effort using a mechanical stop.

## Technical Data

Order Code	Measuring range [N]
8512-5020	0 ... ± 20
8512-5050	0 ... ± 50
8512-5100	0 ... ± 100
8512-5220	0 ... ± 220
8512-5440	0 ... ± 440
8412-5880	0 ... ± 880

## Electrical Values

### Sensitivity:

Ranges up to 0 ... ±100 N	2 mV/V ±0.25 %, positive signal in compression direction
Ranges up to 0 ... ±880 N	3 mV/V, ±0.25 % positive signal in compression direction

Measurement direction: compression and tension direction, calibration in compression direction. The full scale output is likely to be different when used in the tension direction.

Bridge resistance: 350 Ω nominal (deviations are possible)

Excitation voltage: max. 10 V DC or AC

## Environmental Conditions

Temperature compensated: +10 °C ... +50 °C

Temperature operating: -40 °C ... +80 °C (moved -5 °C ... +70 °C)

Temperature effect zero: ≥ 0.03 % F.S./K

Temperature effect span: ≥ 0.05 % F.S./K

## Mechanical Values

Non-linearity: ±0.1 % F.S.

Relative non-linearity: ±0.25 % F.S.

Hysteresis error: < ±0.25 % F.S.

Deflection, full scale: approx. 200 μm

Static overload safe: 120 % of capacity

Overload burst: > 200 % of capacity

Dynamic performance: max. 70 % of capacity

Material: aluminium alloy

Protection class: acc. EN 60529 IP54

Central blind threaded hole at top and bottom: M6

Resonant frequency (without fitted attachments): > 2 kHz

Weight: 140 g

### Electrical termination

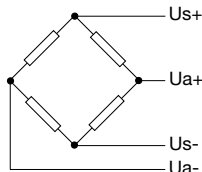
#### Cable specification:

1.7 m, shielded, highly flexible, flame-retardant, suitable for cable harnesses, bend radius 4 x d for fixed cable, 7.7 x d for moveable cable

Cable type: PVC 4 x 0.14, d = 4,8

#### Wiring code

yellow	supply voltage (Us+)	positive
brown	supply voltage (Us-)	negative
white	signal output (Ua+)	positive
green	signal output (Ua-)	negative



## Installation

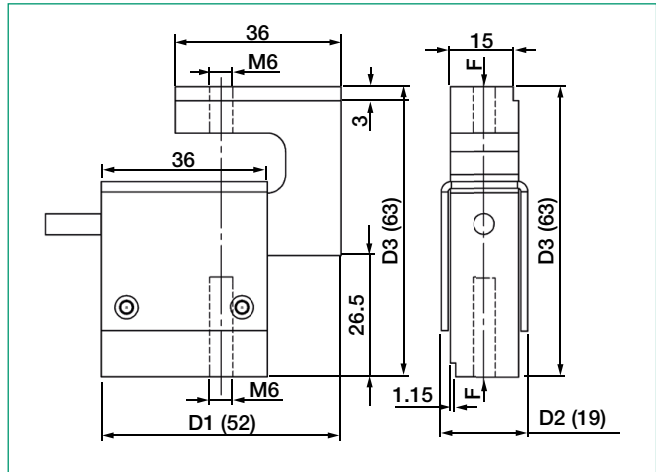
Intended mounting screws: M6

Mounting screws: strength 8.8 or higher

### Installation Instructions:

Smooth flat fixing surface required, load must be applied centrally.

## Dimensional drawing model 8512



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.

## Order Information

S-beam tension and compression load cell measuring range 20 N  
**Model 8512-5020**

## Accessories

Mating connector, 12 pins for burster desktop devices **Model 9941**

Mating connector, 9 pins for 9163-V3xxxx, 9235 and 9311

**Model 9900-V209**

Mounting of mating connector on sensor cable upon prevalent use of the load cell

in preferential direction (positive sensor signal in preferential direction)

**Order Code 99004**

opposite to preferential direction (positive sensor signal opposite preferential direction)

**Order Code 99007**

Analysis devices, amplifier and process controller like digital display model 9180, USB sensor interface model 9206, models 9250/9251, In-line amplifier model 9235 and modular amplifier model 9243

**refer to section 9 of the catalog.**

## Factory Calibration Certificate (WKS)

Calibration of a load cell separately as well as connected to an indicator. Standard is a certificate with 11 points, starting at zero, running up and down in 20% increments covering the complete measuring range for preferential direction. Special calibrations on request. Calculation of costs by base price plus additional costs per point.

**Order Code 85WKS-85...**