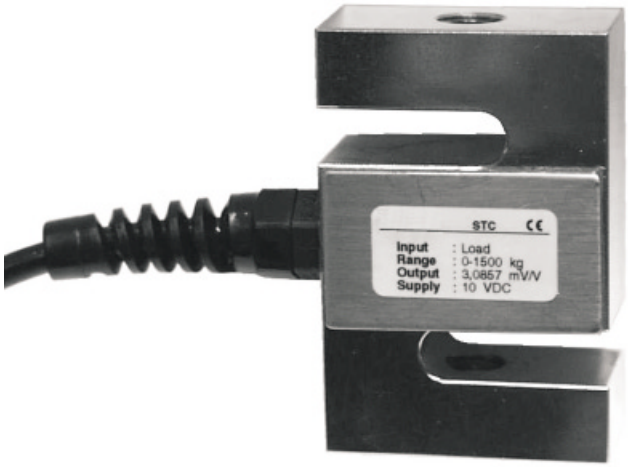
Tension load cell

Resistance strain gauge sensor element
S-shaped, for force and pressure measurement

Characteristics

- **Standard capacity from 100 kg (250 lb) to 5000 kg (20 K lb)**
- **S-shaped tension load cell for simple mounting**
- **High alloy tool steel, nickel plated or stainless steel design**
- **Particularly suitable for parallel connection**
- **Optimal cost-performance ratio**
- **Degree of protection IP 66**
- **Accuracy 0,02 % of end-scale value**

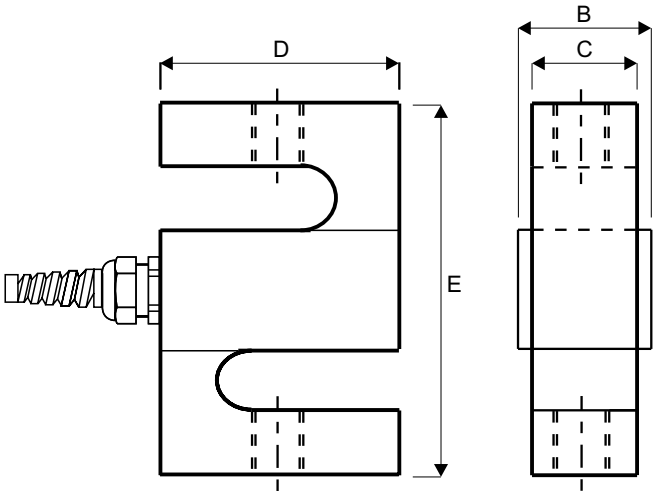


Description

The tension load cell is intended for measurement of force and pressure in both directions. The tension load cell is made either of high alloy tool steel or of stainless steel, for maximum resistance to shock and overload. The tension load cell has full environmental protection, including positive sealing gland at cable entrance, full potting in the gaging area and silicone rubber sealing between the side plate and the cell body. The electroless nickel plating provides a rust-resistant surface and a glossy appearance.

Different mechanical connecting aids, such as knuckle eyes and extension pieces are optionally available. The tension load cell is available at a very competetive price and is particularly siutable for use in the following areas: conversion from mechanical to electrical force measurement in wire cables, rods, container weighing machines, platform weighing machines and weigh-bridges and for load monitoring in theatre technics.

A TÜV-approved load monitoring system can be constructed in connection with the digital load measuring system amplifier. This system complies with the AK 4 requirements in the area concerning safety regulations, and it can be used for example as an overload safety device or as a load moment safety device.



Technical data

Input

Standard capacity:	0 - 100, 250, 500, 750, 1000, 1500, 2000, 2500 and 5000 kg or 250, 500, 750, 1K, 1,5K, 2K, 2,5K, 3K,5K, 7,5K, 10K, 15K and 20K lb.
Input resistance:	385 Ohm +/- 3 Ohm
Insulation resistance:	> 2000 MOhm
Deflection at rated load:	< 0,3 mm
Overload:	Safe overload max. 150 % of end-scale value Limit overload max. 200 % of end-scale value Ultimate overload max. 300 % of end-scale value

Output

Output:	3 mV/V +/-10% or 2 mV/V +/-10% - optionally nominal output
Output resistance:	350 Ohm +/- 3 Ohm

Accuracy

Combined error:	+/- 0,02 % of end-scale value
Non-repeatability:	+/- 0,01 % of end-scale value
Non-repeatability of zero point:	+/- 0,03 % of end-scale value
Thermal sensitivity shift:	+/- 0,015 % / 10 °C
Thermal zero shift:	+/- 0,026 % / 10 °C
Zero point error:	+/- 0,03 % of end-scale value

Ambient conditions

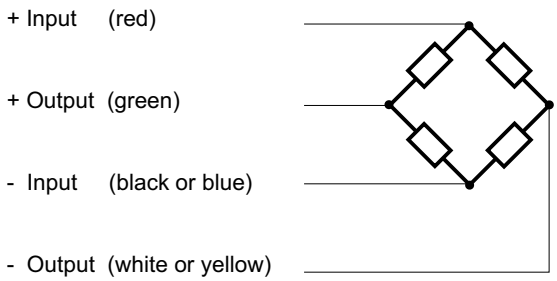
Compensated temperature range:	- 10 to + 40 °C
Operating temperature range:	- 40 to + 65 °C

Dimensions

Material of case:	High alloy tool steel, nickel plated - optionally stainless steel
System of protection:	IP 66
Weight:	100/250/500/750 kg (250/500/750/1K/1,5K lb) : 0,4 kg 1000/1500 kg (2K/2,5K/3K lb) : 0,6 kg 2000/2500/5000 kg (5K/7,5K/10K lb) : 0,8 kg
Terminals:	6 m (20 ft) terminal cable, with polyurethane drain wire + Input (red) / - Input (black) / + Output (green) / - Output (white)

Operating, adjustment instructions

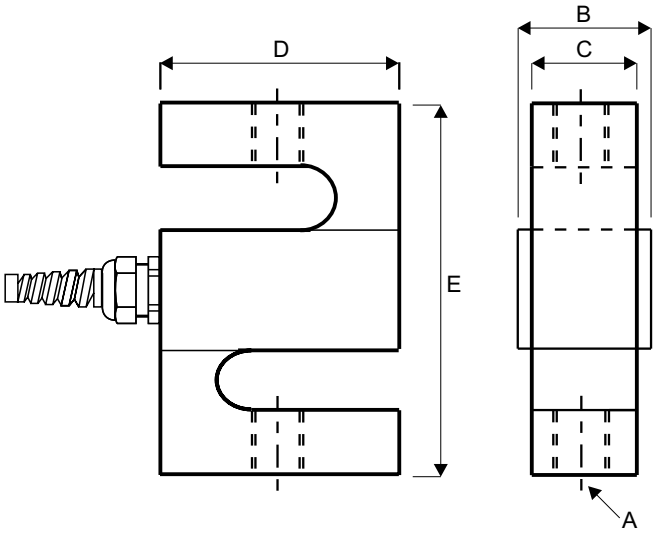
Terminals



Cable specification

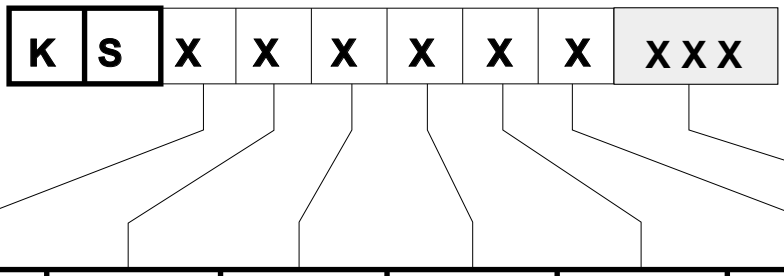
4 conductor with drain wire, No. 22 gauge braided shield and polyurethane jacket, ends stripped and tinned.
Standard cable length: 6 m (20 ft).

Dimensions



Capacity	Dimensions				
	A	B	C	D	E
100 kg 250 lb	(mm) M 10 x 1,50 (inch) 3/8-24UNF-2B	25,4 0,75	19,0 0,50	50,8 2,00	76,2 3,00
250/500/750 kg 500/750/1 K/1,5 K lb	(mm) M 12 x 1,75 (inch) 1/2-20UNF-2B	25,4 1,00	19,0 0,75	50,8 2,00	76,2 3,00
1000/1500 kg 2K/2,5K/3K lb	(mm) M 12 x 1,75 (inch) 1/2-20UNF-2B	31,8 1,25	25,4 1,00	50,8 2,00	76,2 3,00
2000/2500/5000 kg 5K/7,5K/10K lb	(mm) M 18 x 1,50 (inch) 3/4-16UNF-2B	31,8 1,25	25,4 1,00	76,2 3,00	108 4,25
15K lb	(inch) 1-14UNS-2B	1,50	1,25	3,94	5,50
20K lb	(inch) 1 1/4-12UNF-2B	2,00	1,94	4,94	7,00

Ordering code



No.	Material	Output	Capacity (kg)	Capacity (lb)	Capacity (lb)		
0	High alloy tool steel	3 mV/V +/- 10%	0	0	0		
1	Stainless steel	3 mV/V nominal output	100 kg	250 lb	7,5 K lb		
2		2 mV/V +/- 10%	250 kg	500 lb	10 K lb		
3		2 mV/V nominal output	500 kg	750 lb	15 K lb		
4			750 kg	1 K lb	20 K lb		
5			1000 kg	1,5 K lb			
6			1500 kg	2 K lb			
7			2000 kg	2,5 K lb			
8			2500 kg	3 K lb			
9			5000 kg	5 K lb			