

T203

super-precision beam cell



Description

General

A high precision single bridge strain gauge shear beam force transducer designed for use in low profile platform scales and load cell conversions of mechanical scales.

These robust transducers are protected against the ingress of dust and water for the toughest environments.

Construction

Anodised aluminium alloy, with extra high corrosion resistant hard anodised finish available as an option on 4000 division models.

Capacities

125 kg, 250 kg, 500 kg.

Accuracy

4000d & 6000d OIML R60.

Approvals

OIML R60 Certificate No.

R60/1991-GB.95.12

Accuracy class C4/C6.

$V_{\min} = E_{\max}/12500$

Examples of Use

- Low profile platform scales.
- Load cell in con-rod conversions of mechanical scales.
- Hoppers, tanks and silos.
- Overhead track scales.
- Dynamometers.

Special Features

- Exceptional accuracies.
- Low profile.
- Simple to install.
- Insensitive to side loads.
- Excellent repeatability.
- Small creep and hysteresis errors.
- Environmentally protected.
- Output matched during calibration.
- Hard anodised to BS 5599 for exceptional corrosion resistance.

- Special version, approved for use in hazardous areas to CENELEC standards.

Specification

Resistance to Dirt & Moisture

Totally sealed to BS EN 60529:1992 classification IP65 & IP67, i.e. protection against total immersion in water for 30 minutes at a pressure corresponding to 1 m head of water.

Enclosure

Strain gauges encapsulated in butyl rubber and sealed with a neoprene gaiter.

Specification

	4000d (C4)	6000d (C6)
Electrical Excitation (Recommended)	10V AC or DC	10V AC or DC
Electrical Excitation (Maximum)	15V AC or DC	15V AC or DC
Terminal Resistance (Input at 20°C)	410 Ω Nominal	410 Ω Nominal
Terminal Resistance (Output at 20°C)	350 Ω Nominal	350 Ω Nominal
Rated Output (125 kg Beam) (250 kg, 500 kg Beams)	1.4mV/V ± 0.1% 1.7mV/V ± 0.1%	1.4mV/V ± 0.1% 1.7mV/V ± 0.1%
Zero Balance	± 1.0% Rated Output	± 1.0% Rated Output
* Combined Error	± 0.012% Rated Output	± 0.008% Rated Output
Repeatability	0.01% Rated Output	± 0.007% Rated Output
30 min Creep and Zero Return (OIML R60)	± 0.0125% Rated Output	± 0.008% Rated Output
Temperature Effect on Rated Output (-10°C to 40°C)	± 0.001%/°C	± 0.0006%/°C
Temperature Effect on Zero Balance (-10°C to 40°C)	± 0.0025%/°C Rated Output	± 0.0011%/°C Rated Output
Overload Rating without affecting Performance	150% Rated Output	150% Rated Output
Maximum Permissible Side Load	50% Rated Output	50% Rated Output
Insulation Resistance (Minimum)	5,000 megohms	5,000 megohms
Deflection at Rated Output	0.4 mm Nominal	0.4 mm Nominal

* The combined error is the maximum deviation from the true value (straight line drawn from zero to full load) when either applying or removing the load.

Electrical Termination

6 core standard lengths 1.7 m and 10.0 m.

Input: black -ve, green +ve
 Output: red -ve, white +ve
 Reference: blue -ve, brown +ve

Note:

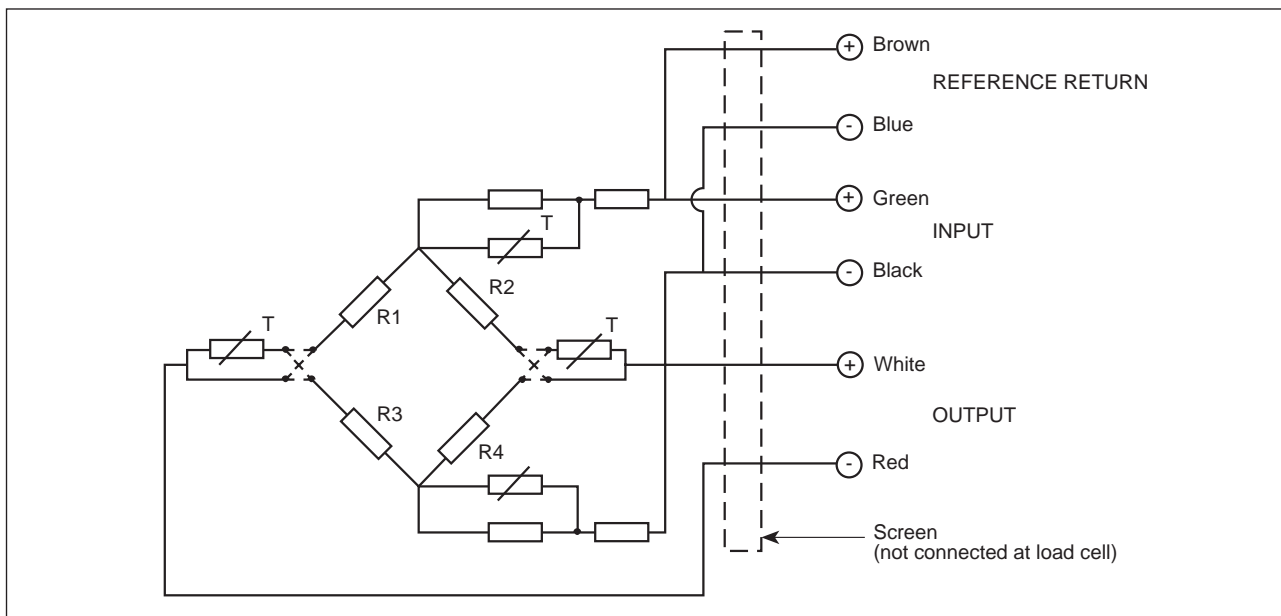
6 core cables may be shortened without affecting performance.

Hazardous Area Version

Special version approved for use in hazardous areas to CENELEC standards.

DEMKO certificate 95D.118761.
 EEx ia IIC T6.
 (1.7 m cable only).

U_{max in} 24 V
 I_{max in} 400 mA
 W_{max in} 1.3 W
 L_{eq} 0
 C_{eq} 0



Circuit Diagram.

Applications

Mountings

The transducer should be mounted using high tensile socket head cap screws tightened to 35Nm.

Loading

This transducer is designed to operate with the load applied to the free end of the beam only.

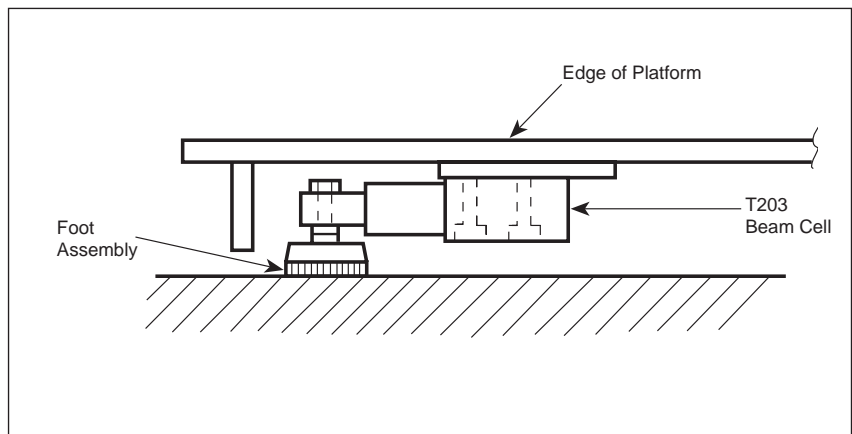
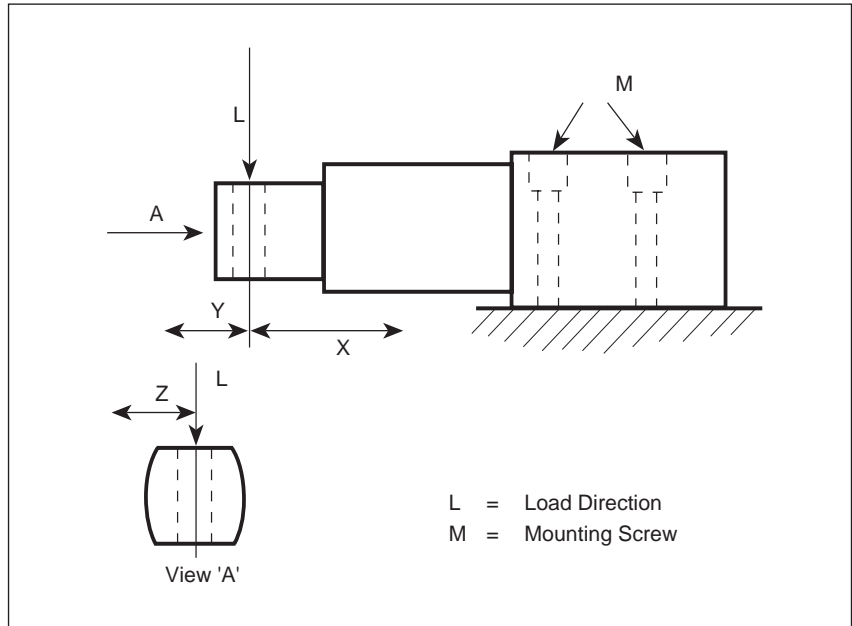
If loads in excess of the rated capacity are envisaged, then suitable adjustable overload stops should be provided and adjusted to operate between 100% and 150% of rated capacity.

Off-Centre Loading

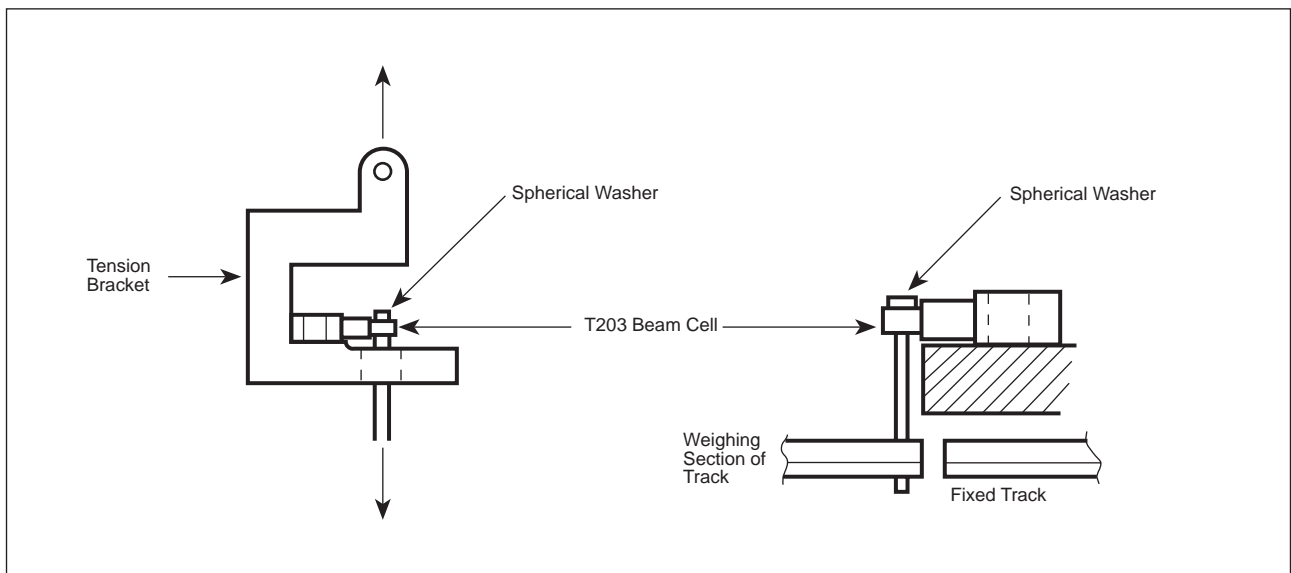
The transducer can also be used in this manner but the sensitivity can only be guaranteed to $\pm 0.2\%$. The maximum permissible off-centre loadings are:

- x = 50 mm at rated capacity
- y = 10 mm at rated capacity
- z = 10 mm at 80% of rated capacity.

Loading Examples



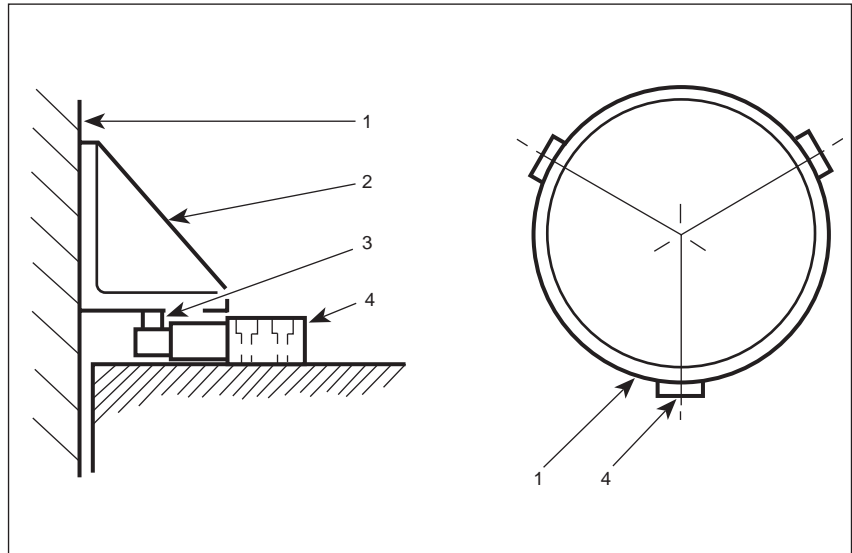
Low Profile Platform Scale.



Overhead Track Scale.

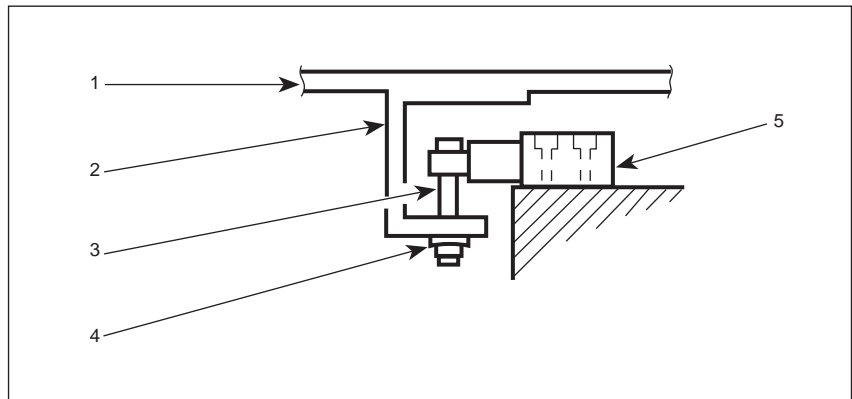
Tank or Hopper Weigher - Compression

1. Tank or Hopper.
2. Tank Support Bracket.
3. Load Button Insert.
4. T203 Beam Cell.

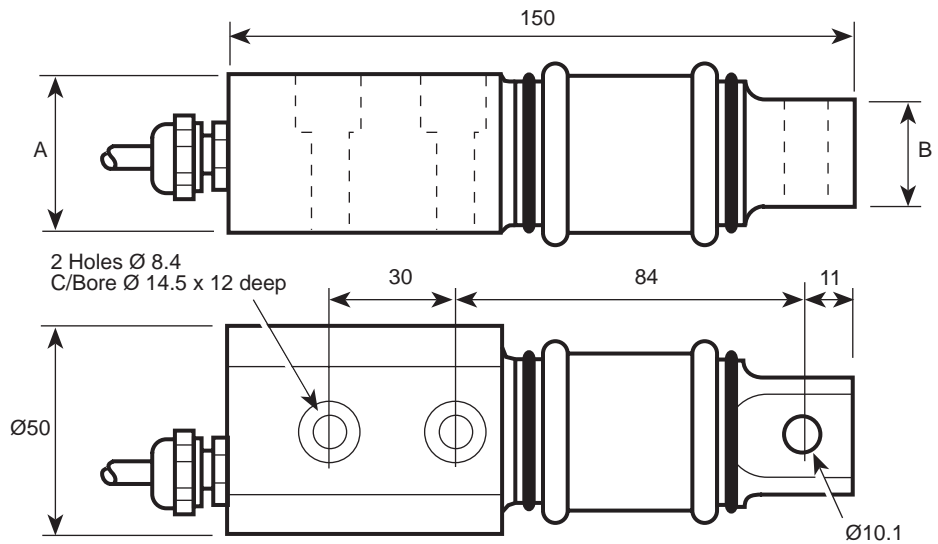


Platform or Tank Weigher - Tension

1. Platform or Container Base.
2. Loading Bracket.
3. Tension Link.
4. Spherical Washer.
5. T203 Beam Cell.



Dimensions



	125, 250 kg	500 kg
A	38	42
B	24	30

A/Flats

This brochure contains a general guide only of the product and shall not form part of any contract unless specifically agreed by Avery Berkel in writing in each case on the Order Acknowledgement. The specification of the products described herein may vary from time to time and may be altered without notice.

Your local distributor:



FM 01255

E mail: info@averyberkel.com
 Internet: <http://www.averyberkel.com>



Foundry Lane, Smethwick,
 West Midlands, England B66 2LP.
 Tel: +44 (0)870 90 34343 Fax: +44 (0)121-555 6062