

# T301

## OIML approved digital super-precision load cell

### Description

A hermetically sealed load bearing unit operating in compression to produce a digital output which is proportional to the applied load.

#### Construction

100% stainless steel, natural finish.

#### Capacity

30 tonne.

Maximum range of indication  
50 tonnes.

### Examples of Use

- Road weighbridges
- Rail weighbridges
- Tank weighing
- Hopper weighing
- Process control

### Special Features

- Approved in Europe to OIML R60 for 6000 divisions with  $V_{min} = 3.2$  kg.
- 100% stainless steel construction.
- Surge arresters fitted internally to provide protection against lightning damage (See application note on lightning protection).
- 6 pin hermetic waterproof socket (Meets Specification MIL C 26482 10-06).



- Continuous self-diagnostics.
- Communication via RS485.
- 15, 25, 50 and 200 metre cable lengths available (See Kits).
- Cable is attached to the cell by plug and socket to enable ease of installation and service.
- Supplied ready-assembled with gaiters and load buttons for simple installation.
- Unique, low torque, anti-rotation load button design.

### Specification

#### Environment

**Resistance to Dirt & Moisture**  
The load cell has been designed to exceed IP68 rating.

**Electrical Disturbance**  
Immune to electrical disturbance including RFI as detailed in EN45501:1992.

**Storage Temperature Range**  
- 30°C to + 85°C.

**Operating Temperature Range**  
- 20°C to + 60°C.

**Calibrated Temperature Range**  
- 10°C to + 40°C.

**Avery Berkel**

**Specification**

Electrical Supply (Minimum)	± 7.5v, DC
Electrical Supply (Maximum)	± 12v, DC
Communication	Balanced Pair RS485, 19200 Baud
Output Update Rate	10 Readings/sec
Internal Resolution	8 x 10 <sup>6</sup> Counts
Output Resolution	1.5 x 10 <sup>6</sup> Counts
Non-Linearity and Hysteresis (Combined Error)	± 150ppm (Maximum)
Repeatability	80ppm
30 min Creep (OIML R60)	± 120ppm (Maximum)
30 min Zero Return (OIML R60)	± 80ppm (Maximum)
Temperature Effect on Rated Output (-10°C to + 40°C)	± 6ppm/°C (Maximum)
Temperature Effect on Zero Balance (-10°C to + 40°C)	± 15ppm/°C of Rated Span (Maximum)
Calibrated Capacity (OIML)	30 tonnes
Maximum Range of Indication	50 tonnes
Overload Rating (without affecting Performance)	225% (67.5 tonnes) Rated Capacity
Overload Rating (Ultimate)	350% (105 tonnes) Rated Capacity

**Electrical Termination**

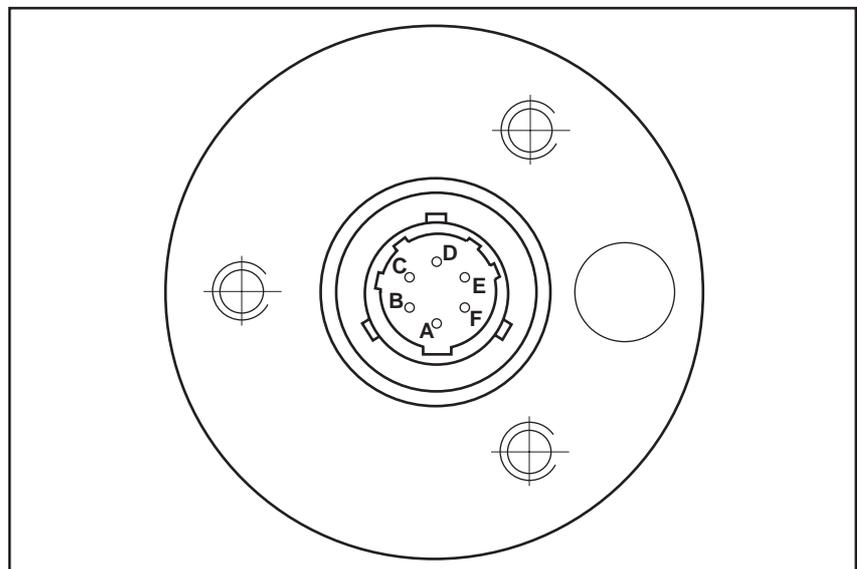
Load cell fitted with 6 pin socket to MIL C 26482 10-06.

Cable: Arctic PVC, 4 core 7 x 0.20 mm plus screen. Overall diameter 6 mm.  
Standard length 25 metres.

**Connections**

Function	Load Cell Pin Out	Load Cell Cable Colour
COMM7	A	RED
COMM6	B	WHITE
0 V	C	ORANGE (screen)
-ve supply	D	BLACK
+ve supply	E	GREEN

COMM6 & COMM7 relate to pin nos. 6 & 7 respectively on a type 75176 Differential Bus Transceiver device.



Pin Out Connections.

## Applications

This transducer is designed to operate with loads applied through the central axis of the cell. For high accuracy weighing applications the load cell is protected from side forces and/or off centre loads by mounting it as a double pendle (strut) unit. Tie bars or bumper stops will be required to restrict horizontal movement of the load platform. The cell can be mounted either way up.

### Typical Vehicle Weighing Applications

In the weighbridge application shown below, the strut unit provides the cell with the optimum loading conditions needed for high accuracy vehicle weighing.

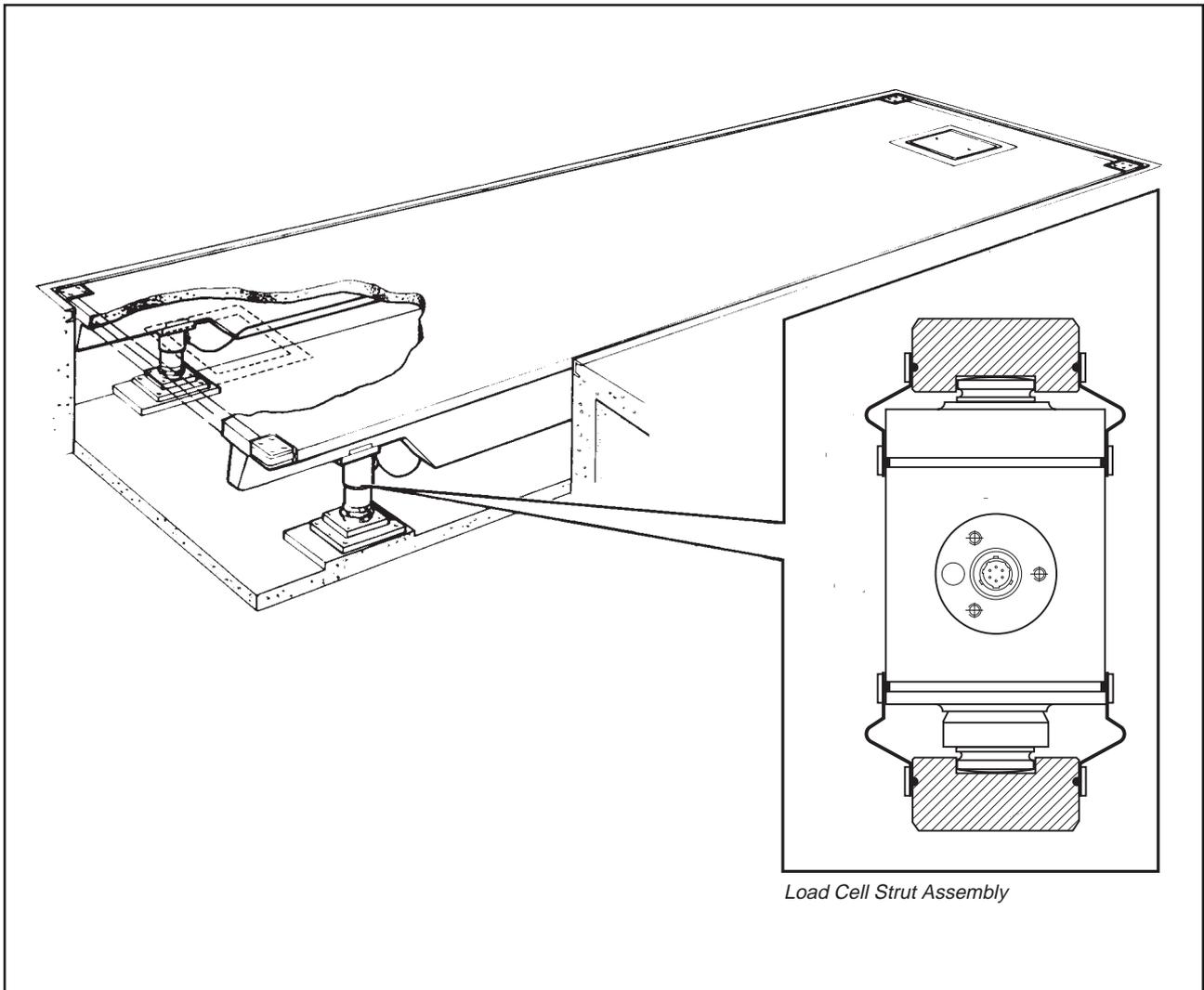
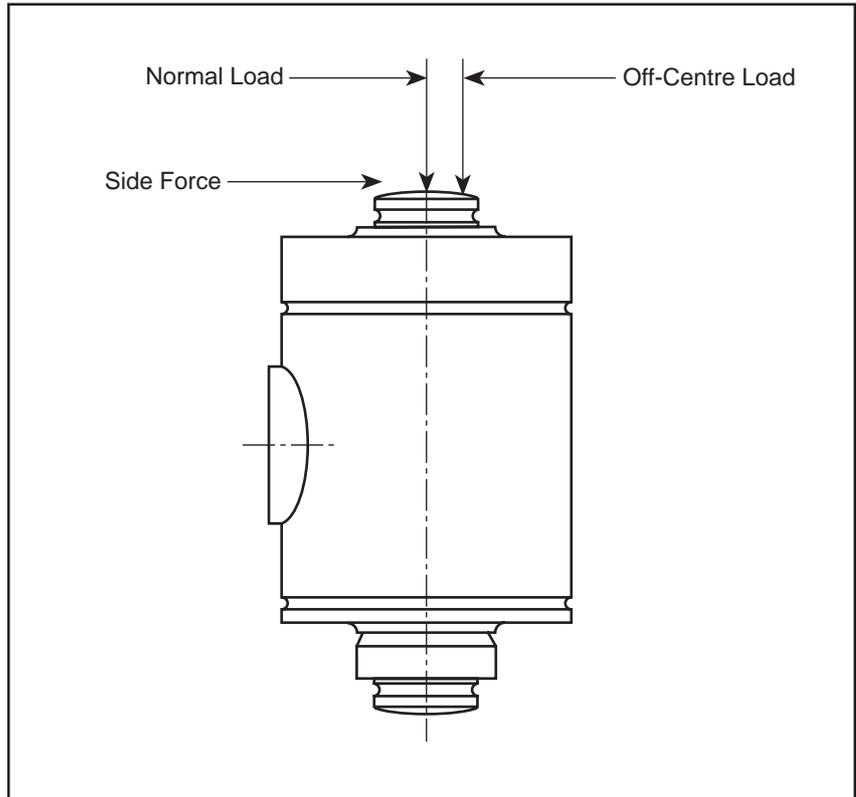
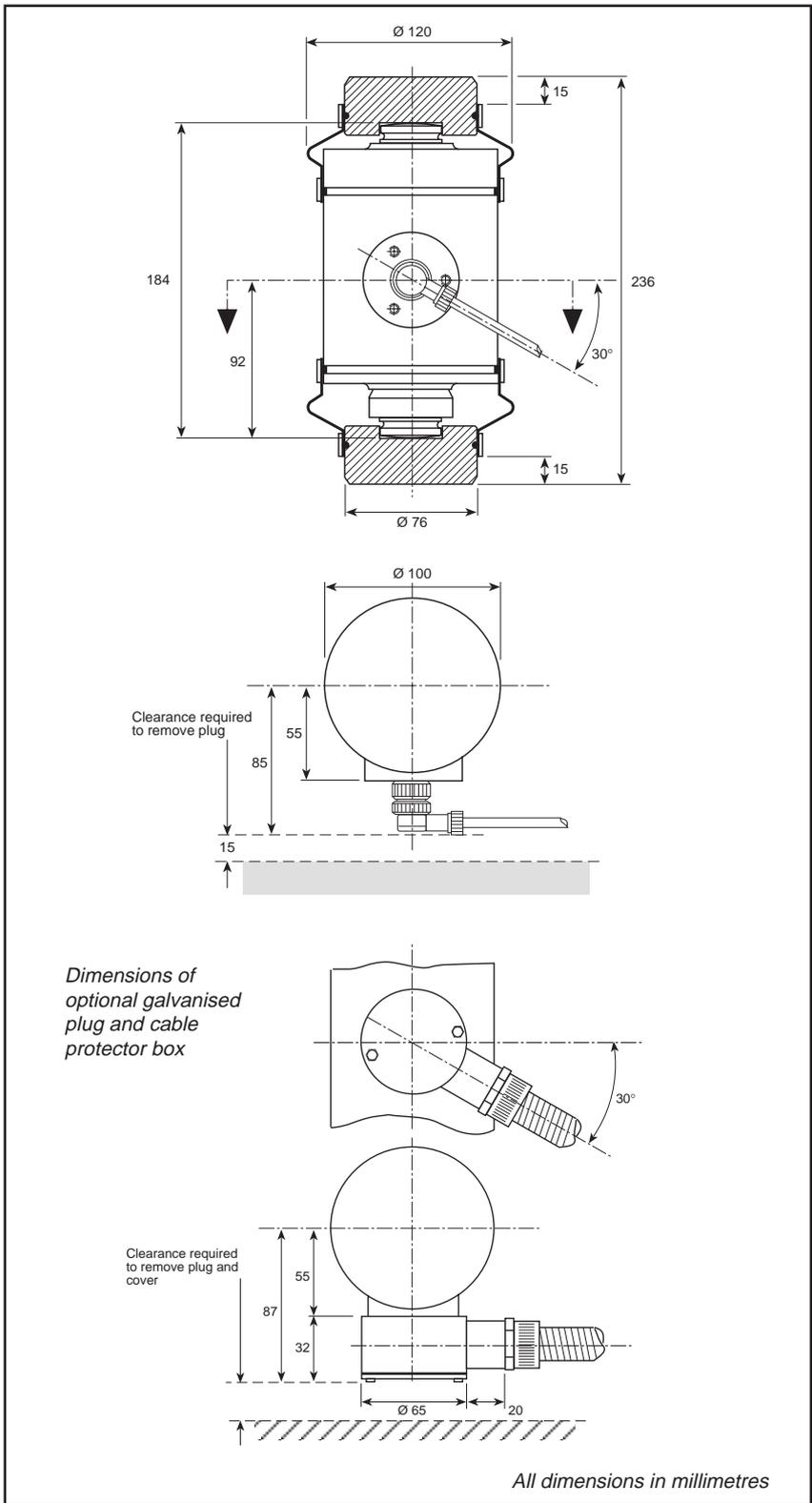


Illustration shows a typical Avery Berkel load cell concrete weighbridge.

**Kits**

1. Standard arctic PVC cable including load cell connector in lengths of 15, 25, 50 or 200 metres.
2. Harsh environment polyurethane cable including load cell connector in lengths of 25, 50 or 200 metres.
3. Galvanised plug and cable protector box (mounts on the load cell). Provided with 20 mm x 1.5 mm female thread for attachment of standard flexible conduit, e.g. Adaptoflex flexible steel conduit, RS part no. 227-5284, and associated fittings.

**Dimensions**



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:



E mail: [info@averyberkel.com](mailto: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