



# ZT DIGITAL LOAD CELL

Smart - Rugged - Accurate

*Technical Specification*

## BENEFITS

**Smart diagnostics** – The active alarm messaging feature monitors the system to identify a fault and provides a faster turnaround for service. With the added 'Ghosting' feature, the system can be kept up and running, even when one sensor fails (non-trade approved mode only).

**Faster installation, simplified calibration** – Each ZT Digital Load Cell is factory calibrated and supplied with ready-assembled load buttons resulting in quick and simple installation. The Amphenol LTW® X-LOK connectors make the interconnection of the ZT Digital Load Cells a faster, flexible and error-free operation.

**Built to last** – The 2.35 mm thick hermetic stainless steel wall protects the internal elements while the two-stage TVS help to neutralise the effects of lightning. The industry leading data cables have a tough polyurethane sheath and dual-screen system for maximum abrasion resistance and EMI immunity.

**Enhanced weighing applications** – 6 million internal divisions and the smart communication protocol assure precision, reliability and system customization to meet any weighing application needs, including: multiscale, load balancing and anti-fraud measures.

**Intelligent system management** – The ZT Digital Load Cells are directly interconnected to a secure digital backbone network. This solution allows the Avery Weigh-Tronix ZM510/615 Indicators to manage up to 32 cells over two separate networks without the need for a junction box or termination plug.

## DESCRIPTION

The ZT Digital Load Cell is a high accuracy, hermetically sealed to IP68/69K canister cell, which connects to a smart network without the need for a junction box.

Each ZT Digital Load Cell is factory tested and calibrated to supply outstanding weighing performance even in the world's most extreme operating conditions.

## AVAILABLE CAPACITIES

- › 30 tonnes
- › 45 tonnes

OIML R60 approved for accuracy class C6

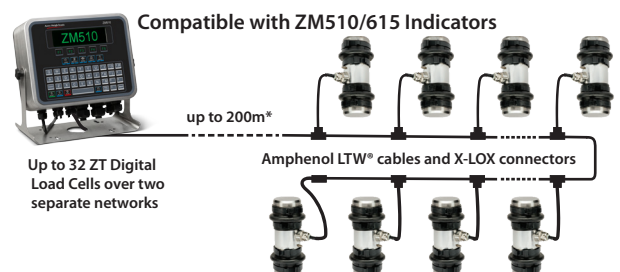
## INDUSTRY APPLICATIONS

Due to its industry standard height and conversion kits, the ZT Digital Load Cell is used in a wide variety of heavy-capacity applications: vehicle, railway and vessel weighing.

The ZT Digital Load Cell technology helps you to maximise performance and profitability while meeting the strictest legislative requirements.

## SPECIAL FEATURES

- › IP68 submersible cell and connector
- › IP69K sealed cell-cable entry (certified)
- › Amphenol LTW® quick push-lock connections
- › 100% aircraft alloy steel construction
- › Factory calibrated and pre-linearised
- › Continuous self-diagnostics
- › No junction box or termination connector required
- › Integral lightning protection (Class 4 certified)
- › Anti-fraud digital bus protocol
- › Configurable for multiscale systems
- › Pre-assembled, anti-rotation load buttons



\*Maximum length of the home run cable is subject to the number of cells connected

## SPECIFICATIONS

### GENERAL

<b>Trade Name</b>	ZT Digital Load Cell
<b>Model Name</b>	T301X
<b>Load Cell Type</b>	Column compression, digital weight processor
<b>Rated Capacity (R.C.)</b>	30 t / 45 t
<b>Sensitivity</b>	6,000,000 divisions (internal at R.C.)
<b>Communication</b>	Linear Bus Network - RS485 multi drop protocol with anti-fraud and self-diagnostic features
<b>Communication Rate</b>	115.2K bps
<b>System Update Rate</b>	50 Hz (automatically adjusted)
<b>Asset Management</b>	Up to 32 logically addressed and serial number traceable ZT Digital Load Cells. Two separate networks can each support maximum of 16 load cells.

### WEIGHING PERFORMANCE

<b>Temperature Range</b>	<i>Compensated (OIML): -10 °C to +40 °C</i> <i>Operating: -40 °C to +65 °C</i> <i>Safe Storage: -50 °C to +85 °C</i>
<b>Warm-Up Time</b>	15 minutes
<b>Tilt Angle</b>	±3° from axis of gravity, top and bottom rocker-column suspensions
<b>Accuracy Class, n<sub>max</sub></b>	C6, 6000
<b>Non-Repeatability</b>	<±50 ppm R.C.
<b>Zero Return (+30 min)</b>	<±80 ppm R.C.
<b>Creep (10 s to 30 min)</b>	<±120 ppm R.C.
<b>Temperature Effect (range -10 to +40°C)</b>	<i>On Zero Balance: &lt;±15 ppm R.C./°C</i> <i>On Span: &lt;±6 ppm R.C./°C</i> <i>Metrology Combined Error: &lt;150 ppm R.C.</i>

### DIAGNOSTICS

<b>Load Cell</b>	Communication status, overload counter and peak weight, temperature, cell live weight
<b>Error Log</b>	Scale over/under load, ZT Cell over load, Scale-ZT Cell communication status, Ghosting activation (if enabled)
<b>Notification Systems</b>	On-screen alerts and event logger, web and email (programmable)
<b>Corrective Measures</b>	Weighbridge Balance Check, Ghosting feature (for non-trade approved mode only)

### METROLOGICAL APPROVALS

<b>Standard</b>	OIML, Certificate No. R60/2000-A-GB1-21.01
<b>Class n<sub>LC</sub></b>	C6, 6000 verification intervals
<b>Additional Marking</b>	CH (Hermetic seal)
<b>Fraction p<sub>LC</sub></b>	0.8
<b>min Dead Load</b>	0 kg

### ELECTRICAL

<b>Supply Voltage</b>	±12 VDC, internally regulated
<b>A/D Conversion</b>	Four pairs of load-measuring gauges to a 24-bit sigma-delta (Σ-Δ) analog-to-digital modulator
<b>EMC and Surge Immunity</b>	Certified to IEC 61000-4-5, Level 4: for severe environments (test reports on file)
<b>Lightning Protection</b>	Integral (all lines), two-stage surge suppressors
<b>Insulation R (strain gauge circuit)</b>	≥5000 MΩ at 50 VDC
<b>Cell-Cable Entry</b>	Sealed by Glass-to-Metal header, hermetic to IP69K with integral 1 m long Amphenol LTW® polyurethane jacketed data cable: 6.7 mm, 4 core+drain, pair twisted with dual metal screen system and X-LOK T-connector (included)
<b>Connectors</b>	Amphenol LTW® X-LOK connectors, IP68 (1m - 7 days, tested). Conform to EIA364-09/21C/23C/20D: Durability, Insulation/Contact Resistance and Withstanding Voltage test
<b>Cable, Cell to Cell</b>	4 or 9 m long, extendable Amphenol LTW® polyurethane jacketed data cable: 6.7 mm, 4 core+drain, pair twisted with dual metal screen system and X-LOK connectors. Optional stainless steel braid outer cover.
<b>Cable, Home Run</b>	15 m long, extendable Amphenol LTW® polyurethane jacketed data cable: 6.7 mm, 4 core+drain, pair twisted with dual metal screen system, X-LOK connector and stripped ends. Optional stainless steel braid outer cover.

## MECHANICAL

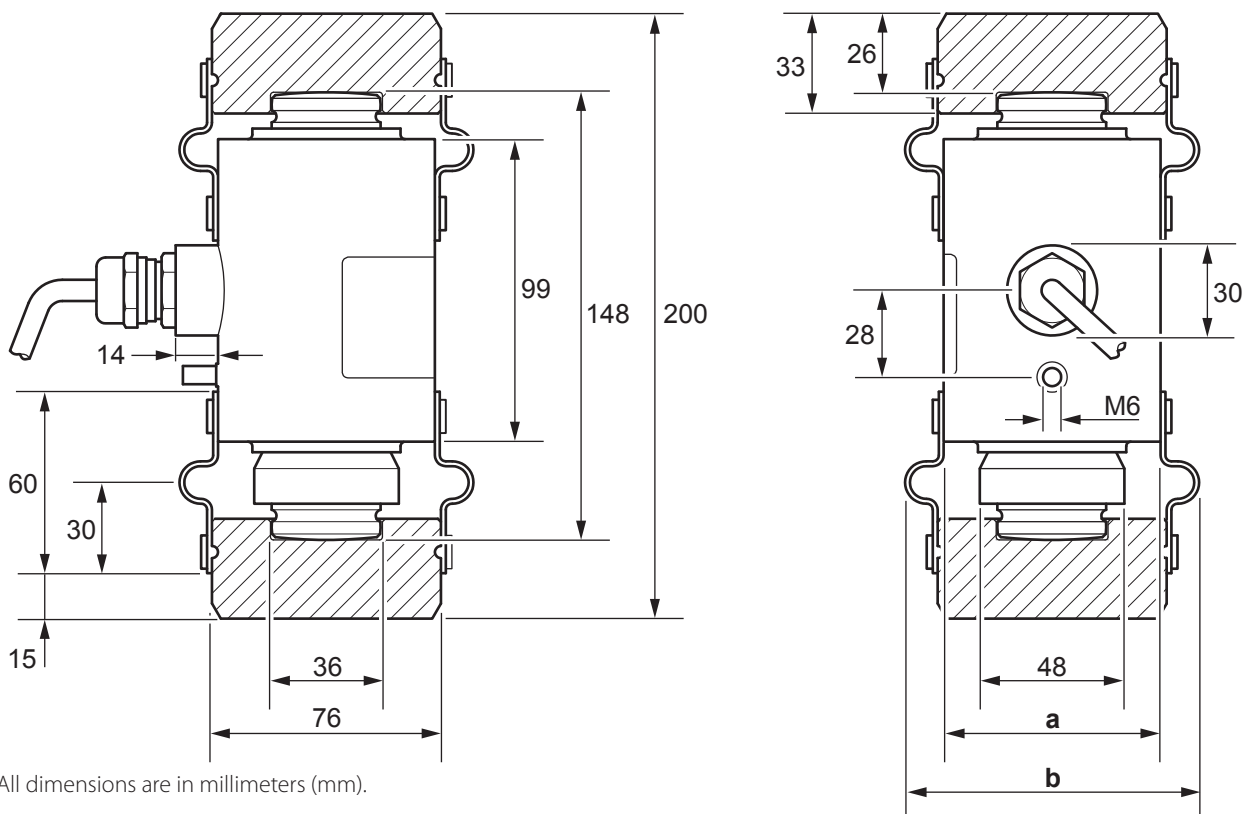
<b>Material, Cell</b>	<i>Enclosure:</i> 2.35 mm thick, 304 2B finish stainless steel outer wall <i>Spring Element:</i> Aircraft quality, 15-5 and 17-4 PH stainless steel (magnetic) <i>Load Buttons:</i> EN24 high strength steel alloy, hardened and tempered
<b>Type of Protection</b>	<i>Cell Casing:</i> Hermetic (submersible) <i>Connectors:</i> Hermetic, flammability (UL94V-0), UV exposure (UL-f1) and salt spray corrosion (EIA364-26B)
<b>IP Rating (IEC 60529)</b>	<i>Cell and Connectors:</i> IP68, 1 m - 7 days submersion (tested) <i>Cell-Cable Entry:</i> IP69K, hermetic seal (test reports on file)
<b>Load Limit, Compression</b>	<i>Safe:</i> 150% R.C. <i>Ultimate:</i> 230% R.C. <i>Fatigue Life at R.C.:</i> 1,000,000 cycles
<b>Anti-Rotation Measures</b>	External, dual rapid clamping/releasing 304 stainless steel cam lock system to secure the low-friction and grease-sealed load buttons Integral, double-camber load bearing surfaces with specially designed end radiuses Top and bottom rubber gaiter bellows as standard. Optional conversion kits for using existing base plates

## PACKAGING

<b>Shipping Weight</b>	30 t: 5.4 kg 45 t: 5.9 kg Includes load buttons and Amphenol LTW® X-LOK T-connector
<b>Packaging Dimension (H x W x L)</b>	250 mm x 250 mm x 190 mm

## DIMENSIONS

ZT Digital Load Cell with pre-assembled load buttons and integral Amphenol LTW® data cable entry.  
 Amphenol LTW® X-LOK connectors not shown.



**Avery Weigh-Tronix**

[www.averyweigh-tronix.com](http://www.averyweigh-tronix.com)

**Avery Weigh-Tronix is an ITW company**

