



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, submersible and hermetically sealed to IP69K 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

NTEP and OIML R60 approved for accuracy class C6

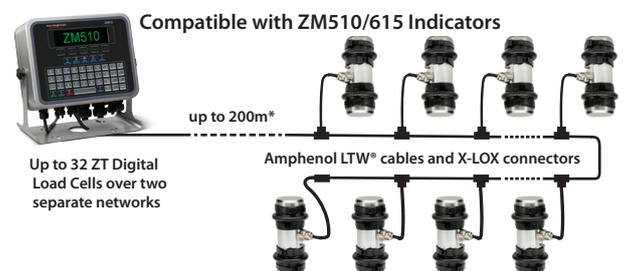
INDUSTRY APPLICATIONS

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

- › Fully submersible cell and connectors
- › IP69K sealed cell-cable entry (certified)
- › Amphenol LTW® quick push-lock connections
- › Aircraft-quality alloy stainless 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

Trade Name	ZT Digital Load Cell
Model Name	T301X
Load Cell Type	Column compression, digital weight processor
Rated Capacity (R.C.)	30 t / 45 t
Sensitivity	6,000,000 divisions (internal at R.C.)
Communication	Linear Bus Network - RS485 multi drop protocol with anti-fraud and self-diagnostic features
Communication Rate	115.2K bps
System Update Rate	50 Hz (automatically adjusted)
Asset Management	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

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

DIAGNOSTICS

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

METROLOGICAL APPROVALS

Standard	OIML, R60/2000-A-GB1-21.01, NTEP, # CC 21-086
Class n_{LC}	OIML C6 6,000 verification intervals, NTEP III L-M 10,000 verification intervals
Additional Marking	CH (Hermetic seal)
Fraction p_{LC}	0.8
min Dead Load	0 kg

ELECTRICAL

Supply Voltage	±12 VDC, internally regulated
A/D Conversion	Four pairs of load-measuring gauges to a 24-bit sigma-delta (Σ-Δ) analog-to-digital modulator
EMC and Surge Immunity	Certified to IEC 61000-4-5, Level 4: for severe environments (test reports on file)
Lightning Protection	Integral (all lines), two-stage surge suppressors
Insulation R (strain gauge circuit)	≥5000 MΩ at 50 VDC
Cell-Cable Entry	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)
Connectors	Amphenol LTW® X-LOK connectors, submersible (1m - 21 days, tested), IPX8 and EIA364-09/21C/23C/20D certified: Durability, Insulation/Contact Resistance and Withstanding Voltage test
Cable, Cell to Cell	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.
Cable, Home Run	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

Material, Cell	<p><i>Enclosure:</i> 2.35 mm thick, 304 2B finish stainless steel outer wall hermetically welded</p> <p><i>Spring Element:</i> Aircraft quality, 15-5 and 17-4 PH stainless steel (magnetic)</p> <p><i>Load Buttons:</i> EN24 high strength steel alloy, hardened and tempered</p>
Type of Protection	<p><i>Cell Casing:</i> Hermetic seal</p> <p><i>Connectors:</i> Hermetic, flammability (UL94V-0), UV exposure (UL-f1) and salt spray corrosion (EIA364-26B)</p>
IP Rating (IEC 60529)	<p><i>Cell and Connectors:</i> Fully submersible, 1 m - 21 days (tested)</p> <p><i>Cell-Cable Entry:</i> IP69K, high pressure-temperature water jets (test report on file)</p>
Load Limit, Compression	<p><i>Safe:</i> 150% R.C.</p> <p><i>Ultimate:</i> 230% R.C.</p> <p><i>Fatigue Life at R.C.:</i> 1,000,000 cycles</p>
Anti-Rotation Measures	<p>External, pin locking (bottom load button) and dual rapid clamping/releasing 304 stainless steel cam lock systems to secure the low-friction and grease-sealed load buttons</p> <p>Integral, double-camber load bearing surfaces with specially designed end radiuses</p> <p>Top and bottom rubber gaiter bellows as standard. Optional conversion kits for using existing base plates</p>

PACKAGING

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

APPROVALS

Agencies

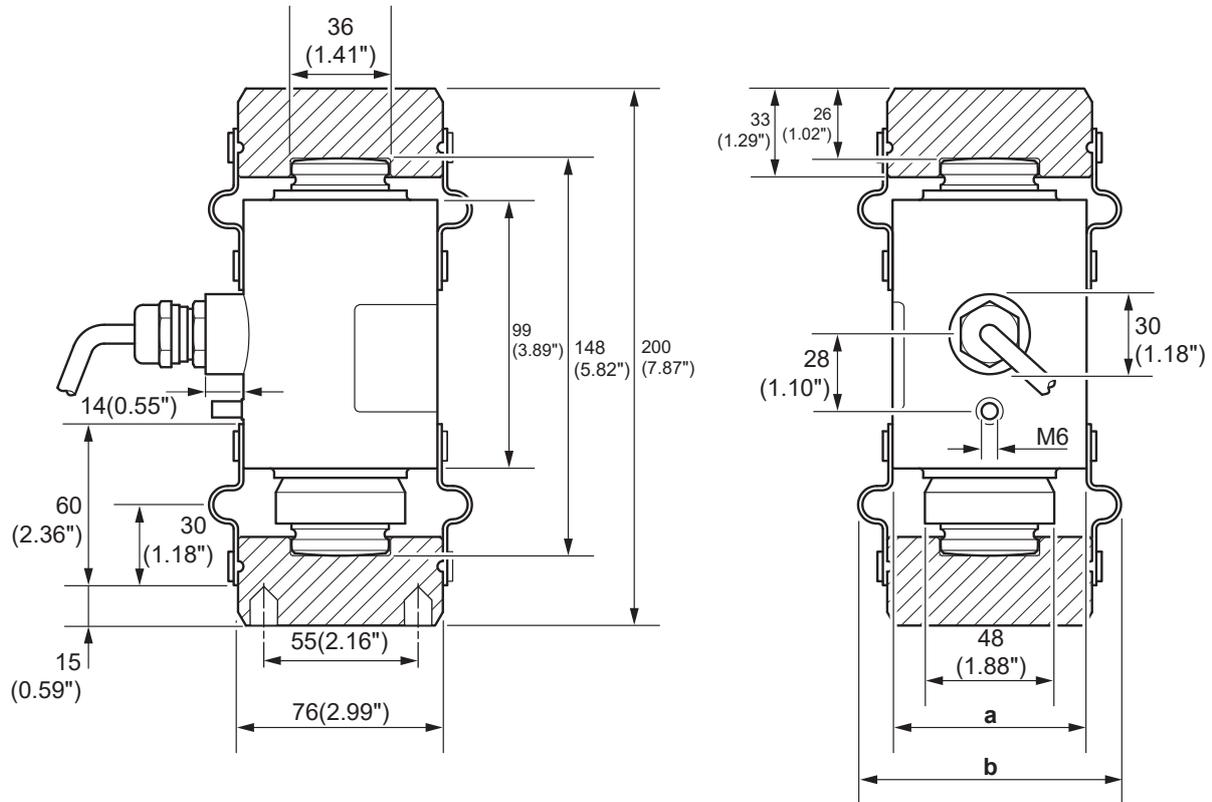
OIML R60 Class C6 6,000d
 NTEP (US) Class III L 10,000d Multiple Cell
 IP69K cell and Amphenol LTW connectors certified to IPX8



ZT DIGITAL LOAD CELL *Technical Specification*

DIMENSIONS

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



All dimensions are in millimeters (mm).

	30 t	45 t
a	72	100
b	97	120

a = cell body diameter

b = max rubber bellow diameter

Avery Weigh-Tronix

www.averyweigh-tronix.com

Avery Weigh-Tronix is an ITW company