

Product Overview

For almost 20 years Delphi has been a reliable source of tension load cells and solutions. What is the secret to our success...

Safety: Delphi's range of Tension load cells are designed to meet stringent safety factors involved when lifting or winching using wire rope. Unlike the majority of load cells which typically have a 3:1 safety factor, Delphi's tension load cells have a **minimum** safety factor of 5:1 or higher.



Australian Made Quality: The 100 series range of Tension Load Cells are designed, machined, heat treated, constructed and calibrated in our Australia facility from quality sourced 630 Stainless Steel (100T series) or Aluminium (103T series).

Rugged: By using quality electrical connectors and sealing methods developed from making quality load cells over the past 20 years, our tension cells are capable of performing in the most hostile environments (all tension cells are IP67 rated minimum).



Design: Our Tension Cell construction allows for ease of installation using standard components such as Bow or Dee shackles. A variety of designs and sizes are available to suit.

Load indication/Alarm: Direct connection of the cell can be made to a large range of alarm modules, hand held, DIN rail, panel mount and large digit display instruments (see our display selection guide).

Portable Kits: To provide a portable range of solutions all Tension Cells are also available in kit form to make a wired or wireless portable weighting kit. Ideal for crane, and winch operators and inspectors checking unknown loads.

Backup: All products are backed with a 24 month warranty. Ongoing calibration and all levels of repair are supported from our manufacturing facility.



100T Series

Stainless Steel Tension Load Cell

The Delphi 100T series Stainless Steel (630PH) Tension Cell range are commonly used in cable lifting, strength testing, winching and towing equipment. Often referred to as "Plate" load cells - its rugged construction makes it ideal for harsh operating environments. Its design also allows for easy customisation to suit almost any tension application.

- Hardened 630 Stainless Steel
- Light single piece design (no bushings)
- IP67 rated load cell
- 6:1 safety factor
- Wired & Wireless portable kits available
- Custom variations available (100kg to 100t)
- Made In Australia



Specifications

Model No.	Range (t)	L (mm)	W (mm)	D (mm)	S (mm)	Ø (mm)
100T-2.5	2.5	220	78	20	150	23
100T-5	5.0	240	78	25	158	28
100T-10	10.0	260	78	25	158	42
100T-15	15.0	260	78	25	158	42
100T-20	20.0	260	78	25	158	42
100T-25	25.0	324	100	50	204	53
100T-35	35.0	324	110	60	204	60
100T-50	50.0	364	122	70	222	72

Accuracy* :- Better than 0.5% of range
Overload :- 200% (No damage), 600% (Ultimate)
Excitation :- <12V DC
Output :- 2.00mV/V
Thermal :- 0.005%/°C on output or zero shift
Temperature :- 10°C to +60°C (compensated), -10°C to +80°C (operating)

*Accuracy includes linearity, hysteresis and creep

103T Series

Aluminium Tension Load Cell

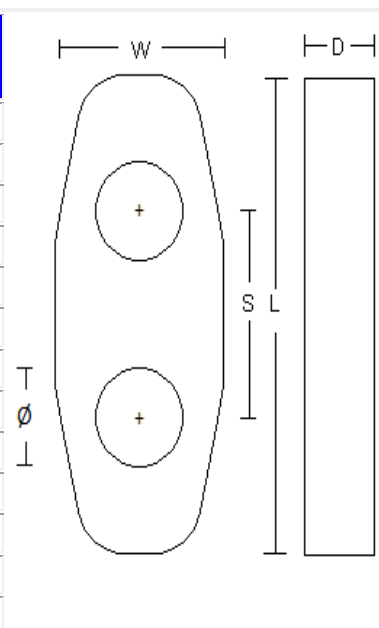
The Delphi 103T series Aluminium tension cell range are designed for a wide range of load monitoring, weighing, lifting, winching and towing applications. The thickness and hole diameter of the load cell is designed to match the standard sizes of Grade S Bow shackles.

- High strength aircraft grade aluminium
- Safety design features
- IP67 rated load cell
- 5:1 safety factor
- Portable & Wireless kits available
- Made In Australia



Specifications

Model No.	Range (t)	L (mm)	W (mm)	D (mm)	S (mm)	Ø (mm)	Weight (kg)
103T-2	2	248	92	25	180	24	4
103T-3.2	3.2	248	92	30	180	26	4
103T-6.5	6.5	278	100	35	200	28	5
103T-12	12	310	107	50	200	38	6
103T-17	17	310	113	58	200	44	7
103T-25	25	350	124	70	230	57	8
103T-35	35	400	130	78	260	62	11
#103T-50	50	450	150	77	292	74	15
103T-85	85	630	210	100	380	90	30
103T-120	120	630	230	135	380	100	35
103T-150	150^	688	250	148	388	118	40
103T-200	200^	890	290	173	510	130	80
103T-250	250^	890	295	198	555	145	90



Accuracy* :- < 0.5% of range
Overload :- 150% (No damage), 500% (Ultimate)
Excitation :- <12V DC
Output :- 1.00mV/V
Thermal :- 0.005%/°C on output or zero shift
Temperature :- 10°C to +60°C (compensated), -10°C to +80°C (operating)

50t unit can be used on 45t or 55t shackles

^ Above 150 tonne suit grade T shackles. All other ranges suit Grade S shackles.

* Accuracy includes linearity, hysteresis and creep. For optimum accuracy and safety, shackle size should match cell capacity.

103TWK Series

Wireless Aluminium Tension Load Cell Kits

The properties of Aluminium make it ideal for wireless transmission of tension load, especially useful where connection cables are not practical or where portability is required.

By using the 103T series load cell body and a wireless transmitter, the tension cell is transformed into a Model 103TW wireless load device capable of mating with a range of digital hand held indicators, USB receivers (for logging on a computer), alarm relays and displays.

The 103TW series is also available as a kit form – 103TWK – which includes a load cell with integral transmitter, hand held readout, battery charger and foam cut carry case to suit.

Load information can be read up to 200m from the load cell. To increase battery life, the wireless indicator (or USB device) can turn the load cell on and off or be set up to turn itself off automatically after a set time.

Multiple units are useable in the same location without interference. A single receiver has the capability of connecting with up to 20 wireless* load cell transmitters and indicate/log/print/store load readings.



103TWK (Tension Wireless Kit) selection

Kit Model No.	Range (t)	Carry Case	Case Size (cm)	Kit Weight (kg)
103TWK-2	2	Yes	30 x 23 x 12	5
103TWK-3.2	3.2	Yes	30 x 23 x 12	5
103TWK-6.5	6.5	Yes	30 x 23 x 12	6
103TWK-12	12	Yes	41 x 33 x 16	7
103TWK-17	17	Yes	41 x 33 x 16	8
103TWK-25	25	Yes	41 x 33 x 16	9
103TWK-35	35	Yes	49 x 37 x 19	12
#103TWK-50	50	Yes	49 x 37 x 19	17
103TWK-85	85	Opt.	(94 x 35 x 30)	35*
103TWK-120	120	Opt.	(94 x 35 x 30)	40*
103TWK-150	150^	No	N/A	41*
103TWK-200	200^	No	N/A	81*
103TWK-250	250^	No	N/A	91*

103TWK Series

(cont.)

- * Includes standard supply components only
- # 50t unit can be used on 45t or 55t shackles
- ^ Above 150 tonne suit grade T shackles. All other ranges suit Grade S shackles.

Accuracy* :- < 0.5% of range (typically +/-0.1%)
Resolution :- Up to 1/250,000 (18 Bit – sample rate dependant)
Overload :- 150% (No damage), 500% (Ultimate)
IP rating :- Tension Load Cell – IP67, Wireless readout and carry case (up to 50t) – IP65
Thermal :- 0.005%/°C on output or zero shift
Temperature:- -10°C to +50°C (operating), -40°C to +80° (storage)
Frequency :- 2.4GHz
Max Range :- 200m (line of site at height of 3 metres above ground)
Sample rate :- Up to 200 sample per second (note:- higher sample rate – shorter battery life)

Battery	Load cell	Wireless readout
Type	Li Ion batteries (<7Wh) **	2 x standard AA Batteries
Life	Continuous > 40 hours (before recharge) Typical usage - >3 month Standby > 6 month	40 hours continuous use Typical usage - >3 months Standby > 1.5 years

- * Accuracy includes linearity, hysteresis and creep. For optimum accuracy and safety, shackle size should match cell capacity.
- ** All kits include AC battery charger to suit variety sockets

Optional accessories

250T24-HA Portable readout capable of reading up to 12 wireless load cells
103TW-XX Tension Load Cell with wireless transmitter only (XX load in t)
Bow shackles Grade S to suit (Calibrated to load cell if order with kit)
250T24-BSu USB base station & logging software (computer interface)
250T24-BSue High range (200m) USB base station & logging software
255-RM1 Wireless relay module

Additional to the standard options a variety of other industrial accessories including printers, enclosures, digital output modules, antenna's and range extenders are also available upon request.

Please feel free to discuss your wireless requirements.

Our wireless systems are also available in other sensor formats including pressure, flow, temperature, counter, encoder and potentiometer. Please refer to our Wireless data sheet or website for further information.

100/103THK Series

Wired SS/Al Tension Load Cell Kits



For applications where wireless is not critical our Tension Load Cell are also available in a "wired" kit format. The 100THK (630PH SS) or 103THK (Aluminium) series wired kit combines a hand held LCD indicator with a 6m cable and connectors to suit (ranges 25t and over are supplied with a 10m cable), foam cut carry case and battery chargers to suit. The kit is supplied calibrated (NATA traceable) and ready to use.

Ideal for tension load measurements in crane and lifting applications, winch load, cable tension testing and installation.

Load ranges available match those of the 100T and 103T series load cells.

