TW-3.0 TELEMETRY HANDHELD
USER MANUAL

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REVISION HISTORY

Revision	Date	Changes
1.0	29.10.2018	Initial release
2.0	23.04.2019	Content update
3.0	16.12.2021	Trademark update

CONTENTS

1.0 OVERVIEW

The **TW-3.0 Telemetry Handheld** is designed for use with all products within the d+ range. It is a **multi-channel display** which can be used to display values from various load cells and load monitoring equipment.

The **TW-3.0** operates on a free band **2.4GHz frequency** and utilises a bespoke frequency hopping protocol which hops frequency 20 times per second to help reduce interference.

The **TW-3.0 is **paired** with transmitting devices and can be paired with 12 transmitters simultaneously, with each transmitter occupying a single channel on the network.

The **TW-3.0 Handheld** can be configured as a Master or a Slave, the Master is paired with the transmitters and the Slaves pick up any wireless data traffic on the network they are set to.

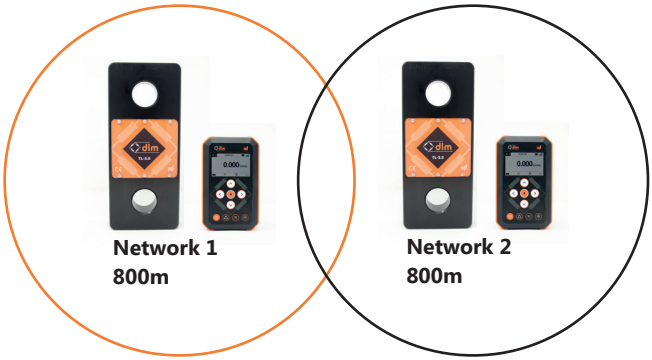
The **TW-3.0** has a wireless range of 800m, therefore to avoid interference when multiple Master TW-3.0 Handhelds are used within an 800m radius they should be configured on different networks.

Some network setup examples are shown overleaf to illustrate the operation.

1.1 NETWORK SETTING EXAMPLES

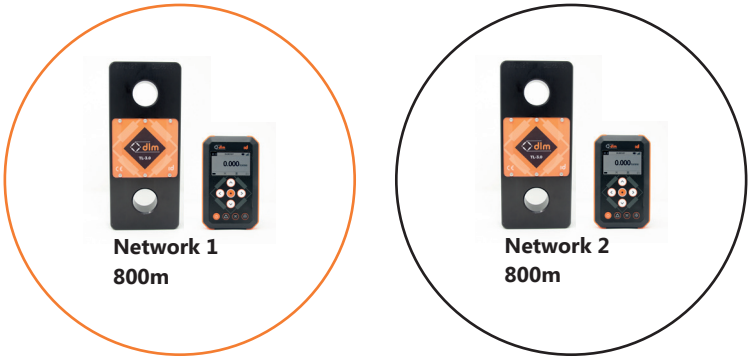
EXAMPLE 1: Using **two TW-3.0 Handheld devices** with **two TL-3.0 Telemetry Tensile links** within range of each other.

Pair 1 needs to be paired on a network, i.e. **Network 1**
Pair 2 needs to be paired on a different network, i.e. **Network 2**



EXAMPLE 2: Using **two TW-3.0 Handheld devices** with **two TL-3.0 Telemetry Tensile** links outside of the range of each other.

Both pairs can be paired on the same network as they are far enough apart that interference will not occur.



EXAMPLE 3: Using **one TW-3.0 Handheld device** with **two TL-3.0 Telemetry Tensile links.**

The TW-3.0 is set to operate on network 1 and both TL-3.0 Telemetry Tensile Links are paired, as channel 1 and channel 2 to the TW-3.0.

EXAMPLE 4: Using **two or more TW-3.0 Handheld devices** with **one TL-3.0 Telemetry Tensile link.**

One TW-3.0 is set to Master on network 1, the second TW-3.0 is set to a Slave on network 1 and the TL-3.0 is paired on channel 1.

2.0 QUICK START

Press the **power button** then the **Menu button** in quick succession to **lock** the bottom function keys. To unlock repeat the process.

Press the **power button** and the **right arrow key** to start **USB logging**, note: it must be configured correctly in the menu as per section 6.1.

Menu / OK

Press to turn on the **Tare function**, see page 13 for detailed description

Press and hold for 2 seconds to **power on/off**

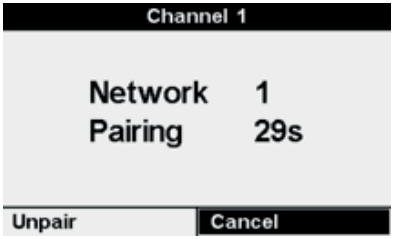
Press to cycle through different **units** of load

Press to turn on the **Peak Hold function**, see page 13 for detailed description

2.1 PAIRING

The TW-3.0 is capable of receiving readings from up to **12 load cells** simultaneously. In order to establish communication with a new load cell the two devices must be 'paired'. The TW-3.0 Handheld has **12 channels** each of which can pair to an individual device.

1. Press the **MENU button** on the TW3.0
2. Select the **CHANNELS menu**
3. Select the **CHANNEL** with which the new device is to be paired to
4. Scroll down to the **PAIR menu option**
5. On the device to be paired with the TW3.0 locate the **PAIRING button**
6. Ensure the device is powered off
7. Press and hold the **PAIRING button** for 8 seconds until the LED flashes twice per second
8. Press the **PAIR function** on the TW3.0 Handheld
9. A 30 second countdown timer will be initiated to search for the new device



10. Once the device has been paired the TW3.0 will exit the pairing screen and the LED on the new device will blink at once per second briefly **This completes the pairing process**, the new device will now be present on the paired channel.

2.2 CHARGING AND BATTERY LIFE

The **TW-3.0 Handheld** requires **3XAA batteries** to operate; these can be primary 'non-rechargeable' or secondary 'rechargeable' cells and can be alkaline or Ni-MH chemistry. **WARNING! DO NOT CHARGE BELOW 0°C**

The battery life of the TW-3.0 Handheld depends on the how it is being used and the fewer functions which are enabled the quicker the longer the battery life will be. Some usage examples are below:

Channels in use	Sample rate	Functions in use	Ambient Temperature	Battery Life
1	1Hz	None	20°C	300 Hours
1	1Hz	USB logging	20°C	50 Hours
1	1Hz	Serial output	20°C	35 Hours
4	1Hz	None	20°C	280 Hours
4	1Hz	USB logging	20°C	40 Hours
1	4Hz	None	20°C	270 Hours

When using secondary batteries they can be charged by connecting the USB charger to the port on the base of the handheld. The power source can be supplied from any PC/laptop or any mains to USB charger plug of suitable quality that provides a 5VDC output and 500mA current.

WARNING: Cheap charging devices often fail to meet the requirements of the Electrical Equipment Regulations Act 1994, as a minimum any charger plug must have a CE mark, shown below. It is the responsibility of the operator to ensure any charger plug is safe to use.

CE

The time taken to fully charge the **TW-3.0** will depend on the batteries in use and the type of charger, a simple calculation is:

Charge Time (hours) = Battery capacity (mAh) ÷ charging current (mA)

For example: 3x Ni-MH AA batteries with 2000mAh capacity charging from a laptop at 500mA:

6000 ÷ 500 = 12 hours

The charger will automatically detect the battery type, chemistry and capacity, this can take up to 2 minutes from when the charger is connected but it will ensure that all battery types are fully charged and that primary cells will not be charged and therefore will not become damaged by connecting the USB.

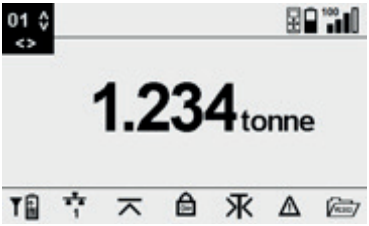
See section 3.0, for battery charging display indicators.

WARNING! DO NOT CHARGE BELOW 0°C

WARNING! DO NOT CHARGE NON-RECHARGABLE BATTERIES

3.0 DISPLAY

The display screen will show the status of all features of the TW-3.0. During normal operation, various icons will be present, see the table below for a description of each.



Icon	Description
01	Channel ID currently being displayed
	TW3.0 Handheld battery status
	Signal Strength to paired device and QoS between 0 and 100
	Battery status of paired device
	TW3.0 is currently set as a Master – a numerical network ID will be shown below
	TW3.0 is currently set as a Slave – a numerical network ID will be shown below
	The Peak Hold function is ON
	The function keys on the TW-3.0 are locked
	The Tare function is active
	There is an active overload alarm
USB	The USB data logging is running (advanced function)
RS232	The RS232 serial output is running (advanced function)
DAC	The analogue output is running (advanced function)

In the event of a **fault** or **warning condition** the display will display one of the following icons.

Icon	Description
	There is no signal to the paired device
	The paired device is exceeding it's WLL
	There is a fault with the paired device
	The mV output from the strain bridge is outside of the allowable limit
	A Slave TW3.0 cannot communicate with the Master
	The formula used in the Maths channel is invalid

During **battery charging** the following icons will be displayed

Icon	Description
	The TW3.0 is charging
	The TW3.0 is fully charged
	The paired device is charging
	The paired device is fully charged

4.0 MENU

The menu of the TW3.0 is accessed by pressing the **orange MENU key** on the front of the device. From within the menu all customisable features of the device can be configured.

After pressing the **MENU button** the screen to the right will be displayed.

Use the **UP** and **DOWN** arrows it is possible to scroll through the menu and use the **MENU button** to select an option.

Main Menu
Channels
Network Settings
Signal Check
Handset Settings
Logging
RS232 Output
Analogue Output

4.1 CHANNELS

The channels screen allows access to the configuration of all **12 wireless channels** and the f**our Maths channels.**

From this screen, click the **OK button** on the relevant channel to access the individual settings for that channel.

For each individual channel the settings below can be changed:

Channels	
Channel 1	Test channel
Channel 2	
Channel 3	
Channel 4	
Channel 5	
Channel 6	
Channel 7	

Channel 1	
Signal	100%
QoS	100%
Battery	80%
Channel	Enabled
Name	CH1
Pair	S/N 11000000
Rate	1s
Rolling Average	Medium
Alarm	25.000 tonne
Min WLL	5.000 tonne
Max WLL	50.000 tonne
Calibration Date	12 OCT 2018
Overload Count	0
Firmware	1.3.170

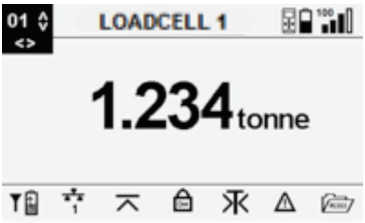
Signal
This is the current signal level as a percentage between the **TW-3.0 Handheld** and the **remote device.** The signal is how strong the wireless connection is.

QoS
This is the current Quality of Service as a percentage between the **TW-3.0 Handheld** and the **remote device.** The QoS is an indication of how many data packets are successfully being transmitted between the two wireless devices. The QoS is low where there is interference with the signal.

Battery
The battery indicator shows as a percentage how much battery is left on the remote device. Battery levels are an indication only and are affected by temperature so will drop faster in hot weather.

Channel
The channel will be either enabled or disabled; it **must** be enabled for the TW-3.0 Handheld to receive data from the device.

Name
The name parameter allows the user to set a 16 character alphanumeric name to the channel for easy identification. The name will then be displayed at the top of the screen on the main display. As shown with the name **"LOADCELL 1".**



Pair
The pair function is used to permanently create a wireless connection between the TW-3.0 Handheld and a remote device. The remote device must be set to pairing mode, see section 2.1.

Rate
This is the sample rate between the TW-3.0 Handheld and the remote device. The fastest is 4Hz (4 times per second) and the slowest is 0.1Hz (once every 10 seconds). The slower the sample rate the slower the display will update but the longer the battery will last.

Rolling Average
The rolling average function is used to average out display readings when they are subject to large and fast variations, such as a lifted load being moved by wind.

There are three options:

Fast – averages the last 16 readings
Medium – averages the last 8 readings
Slow – averages the last 4 readings

Alarm
The alarm set-point value is the numeric value at which the alarm will sound. It will always be in a default unit which the remote device was calibrated to. When the value on the display exceeds the set-point, the internal 70dB audible alarm will sound.

Min WLL
This is for indication only and shows the minimum Working Load Limit that the device can display too.

Max WLL
This is for indication only and shows the maximum Working Load Limit that the remote device should be used to.

Calibration Date
This is the date of the last re-calibration of the remote device.

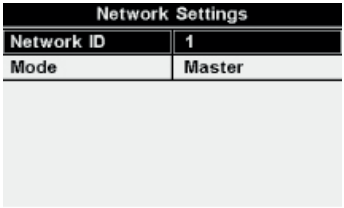
Overload Count
This is a counter of how many times the remote device has exceeded the Max WLL value. There is a hysteresis on the overload count of 10%. For example, if the WLL is 12.00T the overload counter will increment by 1 when the displayed load increases above 12.00T. However, the load will need to drop down to 10.80T (90%) and then increase above 12.00T again before the counter increments to 2.

The counter cannot be reset without re-calibration.

Firmware
This is for indication only and shows the current version of firmware installed on the remote device.

4.2 NETWORK SETTINGS

Accessed from the **Main Menu**, the **Network Settings** allows the user to change the network the TW3.0 will operate on (1 – 75) and also switch the TW3.0 between Master and Slave operation.



Only one master TW3.0 should be used on a network at a time, multiple masters on the same network will cause interference.

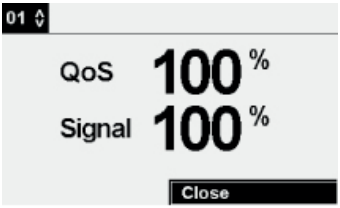
If a second display is required, set this to a Slave on the same network.

If a second TW3.0 connected to another remote unit is required within the same signal range, it should be connected on a different network ID. To do this, change the network ID and repeat the pairing process detailed in section 2.1.

4.3 SIGNAL CHECK

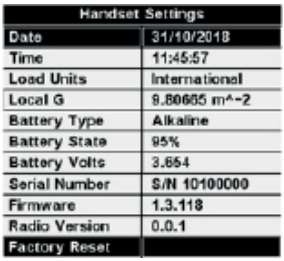
Accessed from the **Main Menu**, the **Signal Check** screen displays the QoS and the signal strength of each enabled channel. To check the status of each channel use the **UP** and **DOWN** arrows to scroll through.

The signal strength is a measure of how strong the connection between the TW3.0 and the remote device is. The QoS (Quality of Service) is a measure of how reliable the connection is, if QoS is low then there is interference with the TW3.0 signal.



4.4 HANDSET SETTINGS

Accessed from the **Main Menu,** this screen displays all the information for the TW3.0.



Item	Description	Operation
Date	Date in DD/MM/YYYY format	Input/ Output
Time	Time in HH:MM:SS format	Input/ Output
Load Units	Sets the displayed load units, when selecting US the additional units of USton and Kips are added.	Input/ Output
Local G	This is the local value for gravity in ms-2	Input/ Output
Battery Type	This indicates the type of battery chemistry currently in the TW3.0. Note, it will not update until a charger is connected.	Output
Battery State	Battery charge state as a percentage	Output
Battery Volts	Battery charge state in Volts	Output
Serial Number	This is the individual serial number of the TW3.0	Output
Firmware	This is the firmware version on the TW3.0	Output
Radio Version	This is the radio firmware version on the TW3.0	Output
Factory Reset	This is used to reset all settings on the TW3.0. NOTE: this will delete all paired devices and should be used with caution.	Input

5.0 STANDARD FUNCTIONS

5.1 PEAK HOLD

The Peak Hold function is turned on by pressing the **Peak Hold button** on the front of the TW3.0.

The Peak Hold function will store the highest value seen on the TW3.0 until the function is turned off.

5.2 TARE

The Tare function is turned on by pressing the button on the front of the TW3.0.

The Tare function will set the display to zero when it is turned on, and then reset back to raw input when turned off.

The Tare function will take into account any load applied to the load cell when displaying the Overload warning.

Example:
The load cell has an Overload warning set at 10.00T.

2.00T is applied to the load cell and then the tare button is pressed.

The display can now increase to 8.00T before the Overload warning will trigger.

5.3 LOAD UNITS

The TW-3.0 Handheld can display values in various units depending on the type of data being transmitted. You can cycle through the units using the unit button on the handheld.

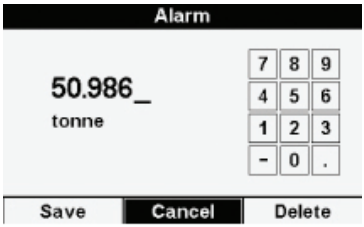
Within the Handset Settings menu (section 4.4) it is possible to change the available load units between International and US.

International	US
Tonne	Tonne
Kg	Kg
kN	kN
lbs	Lbs
	U.S. ton
	Kip

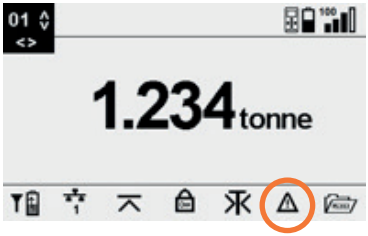
5.4 ALARM

There is an audible alarm which will trigger on each channel based upon the alarm set-point. The alarm set-point is configured within the Channel menu option.

Main Menu -> Channels -> Channel X -> Alarm

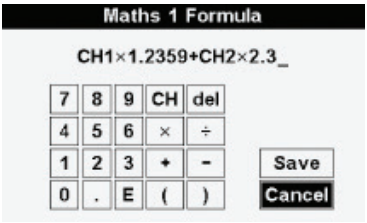


NOTE: If the alarm is active then the handheld cannot be turned off until the alarm goes off again by lowering the load below the alarm set-point.



5.5 MATHS CHANNELS

Accessed from the Maths channels section within the **CHANNELS** menu, the maths channel allows the user to carry out maths functions using all of the channel inputs as variables.



To type in a formula, use the Formula Editor and the on screen keypad to enter.

Now enable the maths channel, the value will now appear on the main display as an additional channel, accessed using the **UP** and **DOWN** arrows.

6.0 ADVANCED FUNCTIONS

When using the advanced version of the TW-3.0 handheld there are additional features which can be utilised. These are:

1. USB data logging
2. RS232 serial output
3. 0-5VDC analogue output

NOTE: the 0-5VDC analogue output requires an additional connector to be fitted to the TW-3.0 Handheld at the time of ordering.

6.1 USB DATA LOGGING

The **USB data logging function** is accessed from the Logging option in the **Main Menu** screen. This function enables the user to log the value of any channel to a USB stick via the USB port on the TW-3.0; all enabled channels can be logged to the USB stick which allows for **12** channels and **4** maths channels to be logged.

Logging	
Mode	Disabled
Channels To Log	Channels
Rate	1s
Delimiter	Comma
Units	Disabled
Terminator	CRLF

NOTE: in order to be able to enable a channel to be logged, it must first be an enabled radio channel, **see section 4.1.**

To start and stop the logging function, press the OK button when on the Mode item within the Logging Menu. Alternatively, a shortcut can be used when on the main display, press and hold the Power and Right button and the USB indicator will flash and then become solid when logging is active.

Comma
03/10/2018 12:48,1.12,tonne,Valid
Tab
03/10/2018 12:48 1.12 tonne Valid
Space
03/10/2018 12:48 1.12 tonne Valid

NOTE: To be able to view the log files in separate columns in Microsoft Excel it is best to select Comma.

Units

The two possible options for the Units parameter are enabled and disabled. When the parameter is set to enabled, the log file will contain the unit of the value being logged as a separate data item, when the parameter is set to disabled the unit will not be logged. For example, below shows the contents of the log file with the unit of tonnes enabled and disabled.

Enabled
03/10/2018 12:48,1.12,tonne,Valid
Disabled
03/10/2018 12:48,1.12,Valid

Terminator

The terminator parameter is used for when the data needs to be viewed in another software suite other than Microsoft Excel the terminator will affect how the data is displayed.

None
03/10/2018 12:48,1.12,Valid, 03/10/2018 12:48,1.12,Valid, 03/10/2018 12:48,1.12,Valid
LF Only
03/10/2018 12:48,1.12,Valid 03/10/2018 12:48,1.12,Valid 03/10/2018 12:48,1.12,Valid
CR Only
03/10/2018 12:48,1.12,Valid 03/10/2018 12:48,1.12,Valid 03/10/2018 12:48,1.12,Valid
CR and LF
03/10/2018 12:48,1.12,Valid, 03/10/2018 12:48,1.12,Valid, 03/10/2018 12:48,1.12,Valid

6.2 RS232 SERIAL OUTPUT

The RS232 serial output function is accessed from the RS232 Output option in the Main Menu screen. This function enables the user to output the value of any channel via the USB port on the base of the handheld, all enabled channels can be included in the output string which allows for 12 channels and 4 maths channel.

RS232 Output	
RS232 Output	Disabled
Output Channels	Channels
Rate	1s
Baud Rate	9600 bps
Header	
Channel ID	Enabled
Delimiter	Comma
Footer	
Terminator	CRLF

NOTE: in order to be able to enable a channel in the serial output, it must first be an enabled radio channel, see section 4.1.

SETUP PARAMETERS

Output Channels
The possible options for Output Channel are 1-16 channels, by clicking on the parameter the user can configure which channels are going to be included. NOTE: at least 1 channel must be enabled to allow the serial output to commence.

Rate
The possible options for the Rate parameter are a transmission rate between 4Hz 0.02Hz (4 times per second to once per hour). This is the output rate, irrespective of the baud rate, that the serial output will print the data string.

Baud Rate
The Baud Rate parameter can be set to either 9600, 19200, 38400 or 115200 and must be the same as the receiving device.

Header
The Header parameter is a user configurable, alphanumeric field which will be printed at the start of the serial string before any values. This can be used by third party software to identify the start of a string or to match a required header by the software.

The example string below has a header included of $ABC

Channel ID

The options for the Channel ID parameter are enabled or disabled. When the parameter is set to disabled no channel ID will be printed in the string. When the channel ID is set to enabled it will print the channel ID in the string. The channel IDs are fixed to a capital letter for each channel:

Channel 1	A	Channel 7	G	Maths 1	P
Channel 2	B	Channel 8	H	Maths 2	Q
Channel 3	C	Channel 9	J	Maths 3	R
Channel 4	D	Channel 10	K	Maths 4	S
Channel 5	E	Channel 11	L		
Channel 6	F	Channel 12	M		

The example string below shows a single channel with the channel ID parameter enabled.

Delimiter

The possible options for the delimiter are comma, space and tab. The user can select how each data field is separated in the string. An example of each type is shown below:

The example string below is using a comma delimiter:

The example string below is using a space delimiter:

The example string below is using a tab delimiter:

Footer

The Footer parameter is a user configurable, alphanumeric field which will be printed at the end of the serial string after all data values. This can be used by third party software to identify the end of a string or to match a required footer by the software.

The example below shows the serial string with a footer of '*'

Terminator

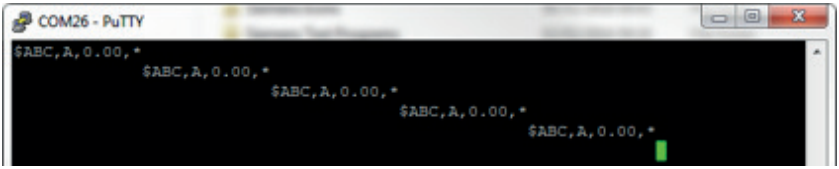
The terminator parameter is used to configure if any ASCII commands are printed at the end of the serial string. The options are:

CR Only

This will print a Carriage Return command at the end of each line and each set of new data will overwrite the previous, as shown below:

LF only

This will print a Line Feed command at the end of each line and each set of new data will be printed at the end of the previous line, as shown below:



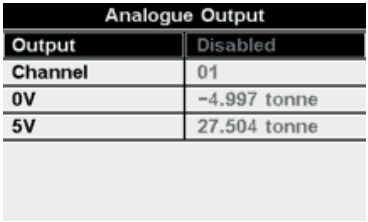
CR and LF

This will print a Carriage Return and Line Feed command at the end of each line; this means each set of new data will be printed on the beginning of a new line, as shown below:

NOTE: The TW-3.0 handheld has been tested and proven to work using Silicon Labs CP2103 converters.

6.3 0-5VDC ANALOGUE OUTPUT

The analogue output function is accessed from the Analogue Output option in the Main Menu screen. The analogue output function provides a 0-5VDC analogue output from an additional circular connector fitted to the TW-3.0 (not the USB) and works with a single channel at a time.



SETUP PARAMETERS

Output
The output parameter options are enabled or disabled. The parameter is changed by pressing the OK button on the handheld.

Channel
The channel parameter cycles through the enabled radio channels by pressing the OK button on the handheld.

0V
This parameter shows the value in the unit to which the 0VDC output signal relates.

5V
This parameter shows the value in the unit to which the 5VDC output signal relates.

7.0 TROUBLESHOOTING

Fault	Cause	Solution
The display keeps flicking between no signal and a display reading	The Loadcell is too far away and losing signal – check the signal strength see page 15	Move the handheld and load cell closer together
	There is radio interference and data is getting lost – check the QoS see page 15	Move the handheld to a different location or remove sources as interference
	There are multiple devices operating as a master on the same network – see page 5	Change the network the devices are set to – see page 14
The value shown on the display is not correct	The Tare function is enabled	Press the tare button to turn the tare function off – see page 4
The value shown on the display is stuck on one value	The Peak Hold function is enabled	Press the Peak Hold button to turn the Peak Hold function off – see page 4
The value on the display is taking a long time to update	The update rate is set to a slow rate	Change the update rate as per page 14
Cannot enable the USB Logging	No USB stick is inserted, the logging cannot be enabled without a valid USB stick present	Insert a valid USB stick
Cannot enable or configure the RS232 Serial output	The RS232 output cannot be configured without a valid USB -> Serial converter connected	Connect a USB ->Serial converter
The USB logging is enabled but not logging the correct channels	The desired channel is not enabled in the USB logging menu	Select the desired channel in the “Channels to Log” menu. See page 25
The RS232 Output is enabled but not printing the correct channels	The desired channel is not enabled in the RS232 output menu	Select the desired channel in the “Channels to Log” menu. See page 27
The RS232 output is working but the data is scrambled	The baud rate setting does not match the receiving device	Correct the baud rate to match the receiving device – see page 28

8.0 TECHNICAL SPECIFICATIONS

8.1 OVERVIEW

Enclosure	Slimline IP67 plastic enclosure
Keypad	Membrane with tactile dome switches
Display	400x240 Transflective LCD
Bridge Excitation	2.5VDC
Resolution	5 digits
Key Function	On/off / Tare / Peak hold / Units
Measuring Units	Kg / Metric Tonnes / US Tons / Kips / kN / lb
Protection	IP67
Battery type	3x AA
Battery life (constant use)	> 150 hours
Operating Temperature	-20 to +60°C
Range	800m (line of sight)
Frequency	2.4GHz
Measurement rate	4 to 0.03Hz (4 times per second to once per 30seconds)
Alarm	2.4GHz
Software	Data logging

8.2 BATTERY SPECIFICATION

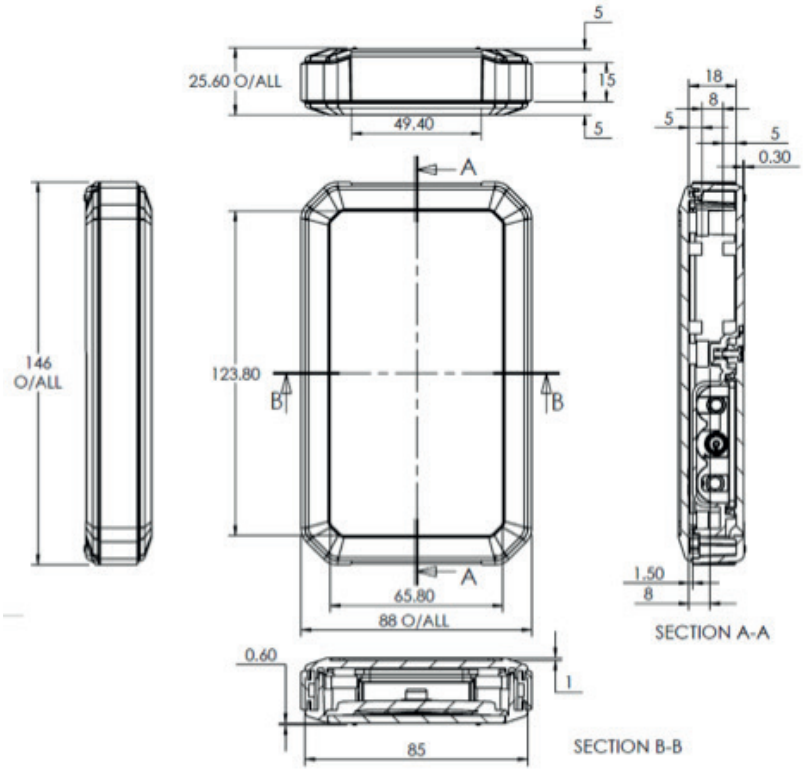
	Minimum	Nominal	Maximum	Unit
Type	AA			
Quantity	3			
Chemistry	Alkaline			
Voltage	1.0	1.5	1.6	V
Capacity	2500			mAh
Chemistry	Ni-MH			
Voltage	1.0	1.2	1.5	V
Capacity	2500			mAh

8.3 WIRELESS SPECIFICATION

	Minimum	Maximum	Unit
License	2.4GHz Licence Exempt		
Radio Type	Transceiver		
Modulation	FHSS		
Frequency	2.402	2.480	GHz
Power		<100	mW
Channels	79		

8.4 PHYSICAL SPECIFICATION

	Specification	Unit
Dimensions	146 x 88 x 25.60	HxWxD in mm
Weight	271	Grams
Material	ABS UL 94 - V0	



9.0 SERVICE AND REPAIR

The **TW-3.0 handheld requires 3XAA batteries** for operation. To replace the batteries follow the steps below.

- Turn the handset over so the screen is facing down
- Loosen the retaining screw and remove the battery cover
- Remove the old batteries and dispose of accordingly
- Insert new batteries
- Replace battery cover and tighten retaining screw.

Any dirt should be cleaned from the handset using a damp cloth.

The internal circuitry of the TW-3.0 is sealed, in the event of damage the unit should be returned to an approved Dynamic Load Monitoring service centre for repair. If the TW-3.0 is no longer required it should be disposed of correctly, batteries should not be thrown in general waste.

10.0 WARRANTY

Subject to the terms and conditions set out below, Dynamic Load Monitoring (UK) Ltd (hereinafter '***DLM***' or 'the company') warrants its products against defects in materials or workmanship for a period of one year from the date of original purchase.

Should a circumstance or condition be observed which might give rise to a claim under this warranty; the user should immediately take the unit out of operation. The item should then be returned carriage paid (including any and all taxes and duties) to ***DLM***. It is advisable to notify ***DLM***, by telephone or fax, of the details of the case prior to dispatch.

The extent of the company's liability under the terms of this warranty shall be the repair or replacement of the defective product, or defective part thereof, and the decision whether to repair or replace shall be made by ***DLM*** at its sole discretion.

After completion of any remedial work / replacement, the company will return the goods carriage paid.

Exclusions

Defects arising from the following circumstances are excluded from the benefit of this warranty:

- Unauthorised modification;
- Operation outside the environmental specifications of the product.
- Misuse, mishandling, abuse;
- Improper or inadequate maintenance;

11.0 STANDARDS AND DECLARATION OF CONFORMITY

11.1 CE MARK

Dynamic Load Monitoring (UK) Ltd tímto prohlašuje, že tento TW-3.0 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.
Undertegnede, Dynamic Load Monitoring (UK) Ltd erklærer herved, at følgende udstyr TW-3.0 overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.
Hiermit erklärt, Dynamic Load Monitoring (UK) Ltd dass sich das Gerät TW-3.0 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU befindet.
Käesolevaga kinnitab , Dynamic Load Monitoring (UK) Ltd seadme TW-3.0 vastavust direktiivi 2014/53/EL põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Hereby, Dynamic Load Monitoring (UK) Ltd declares that TW-3.0 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
Por medio de la presente Dynamic Load Monitoring (UK) Ltd declara que el TW-3.0 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/UE.
ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ, Dynamic Load Monitoring (UK) Ltd ΔΗΛΩΝΕΙ ΟΤΙ TW-3.0 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/ΕΕ.
Par la présente, Dynamic Load Monitoring (UK) Ltd déclare que l'appareil TW-3.0 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/UE.
Con la presente , Dynamic Load Monitoring (UK) Ltd dichiara che questo TW-3.0 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/UE.
Ar šo Dynamic Load Monitoring (UK) Ltd deklarē, ka TW-3.0 atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiem ar to saistītajiem noteikumiem,
Šiuo Dynamic Load Monitoring (UK) Ltd deklaruoja, kad šis Tw-3.0 atitinka esminius reikalavimus ir kitas 2014/53/ES Direktyvos nuostatas.
Hierbij verklaart , Dynamic Load Monitoring (UK) Ltd dat het toestel TW-3.0 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.
Hawnhekk, Dynamic Load Monitoring (UK) Ltd, jiddikjara li dan TW-3.0 jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/UE.

Alulírott, , Dynamic Load Monitoring (UK) Ltd nyilatkozom, hogy a TW-3.0 megfelel a vonatkozó alapvetõ követelményeknek és az 2014/53/EU irányelv egyéb elõírásainak.
Niniejszym Dynamic Load Monitoring (UK) Ltd oświadcza, że TW-3.0 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/UE.
Dynamic Load Monitoring (UK) Ltd declara que este TW-3.0 está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/UE.
Dynamic Load Monitoring (UK) Ltd izjavlja, da je ta TW-3.0 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.
Dynamic Load Monitoring (UK) Ltd týmto vyhlasuje, že TW-3.0 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EÚ.
Dynamic Load Monitoring (UK) Ltd vakuuttaa täten että TW-3.0 tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Härmed intygar Dynamic Load Monitoring (UK) Ltd att denna TW-3.0 står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.
Hér með lýsir Dynamic Load Monitoring (UK) Ltd yfir því að TW-3.0 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU.
Dynamic Load Monitoring (UK) Ltd erklærer herved at utstyret TW-3.0 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EU.
Noi, Dynamic Load Monitoring (UK) Ltd, declarăm pe propria noastră răspundere că produsul TW-3.0 este în conformitate cu cerinţele esenţiale şi celelalte prevederi aplicabile ale Directivei 2014/53/UE.

A copy of the signed Declaration of Conformity can be found here:

www.dlm-uk.com/downloads/certificates

11.2 UKCA MARK

Hereby, Dynamic Load Monitoring (UK) Ltd declares that TW-3.0 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

11.3 FCC

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device must accept any interference and

2. This device must accept any interference received including interference that may cause undesired operation

Changes or modifications not expressly approved by Dynamic Load Monitoring Ltd. could void the user's authority to operate the equipment.

11.4 IC

This device contains a licence-exempt transmitter that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS-247. Operation is subject to the following two conditions:

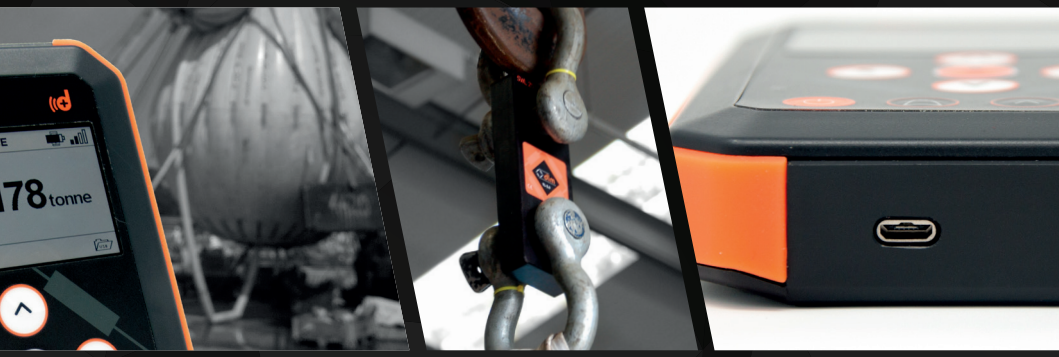
1. This device may not cause interference.

2. This device must accept any interference, including interference that may cause undesired operation of the device

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes

(**1**) l'appareil nedoit pas produire de brouillage, et
(**2**) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

The safe distance for human exposure to electromagnetic field is 20 cm.
La distance de sécurité pour l'exposition humaine au champ électromagnétique est de 20 cm.



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