



CCSMT-3.0 & CCLGT-3.0

TELEMETRY COMPRESSIVE LOAD CELL USER MANUAL



REVISION HISTORY

Revision	Date	Changes
1.0	29.10.2019	Initial Release
2.0	16.12.2021	Trademark update

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1.0 OVERVIEW

This manual covers the **CCSMT-3.0** and the **CCLGT-3.0**. For the contents of the manual they will be referred to as **CCXT-3.0**.

The **CCXT-3.0 Telemetry Compressive Load Cell** is designed for use with the DLM TW-3.0 Telemetry Handheld and any other product within the d+ range.

The CCXT-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 CCXT-3.0 is “paired” with a receiving device and can be viewed simultaneously on as many receiving devices as required.

The CCXT-3.0 has a wireless range of 800m; therefore to avoid interference when multiple CCXT-3.0 devices paired with their own individual display (i.e. another load cell and handheld pair 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 **CCXXT-3.0 Telemetry Compressive Cells** 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 **CCXXT-3.0 Telemetry Compressive Cells** 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 **CCXXT-3.0 Telemetry Compressive Cells**.

The **TW-3.0** is set to operate on **network 1** and both **CCXXT-3.0 Telemetry Compressive Cells** 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 **CCXXT-3.0 Telemetry Compressive Cell**.

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 CCXXT-3.0 is paired on **channel 1**.



2.0 QUICK START

2.1 POWER

Power On:

To **power the CCXXT-3.0 on** for use follow the steps below:

1. Press and hold the **PAIR button** until the **LED** becomes solid.
2. The **LED** will flash once every **three seconds** if the CCXXT-3.0 is connected to a receiving device such as the TW-3.0 Handheld Display.
3. The **LED** will flash once per second if the CCXXT-3.0 is not connected to a receiving device.

Power Off:

To **power the CCXXT-3.0 off** follow the steps below:

1. Press and hold the **PAIR button**, the **LED** becomes solid and then after two seconds it turns off.



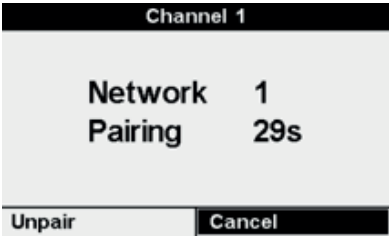
Low Power Mode:

When the **CCXXT-3.0** is powered but not connected to a receiving device, it will enter a **low power mode** which will look for signal once every 30 seconds. This is to conserve battery life when the receiving device is powered off, but it is not possible to reach the CCXXT-3.0 to power it off.

2.2 PAIRING

The **CCXST-3.0** needs to be paired with a receiving device, in order to establish communication with a new device such as the **TW-3.0 Handheld** follow the steps below:

- 1. Press the **MENU button** on the TW-3.0
- 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 TW-3.0 locate the **PAIRING** button
- 6. Ensure the device is **powered off**
- 7. Press and hold the **PAIR button** for eight seconds until the **LED** flashes twice per second
- 8. Press the **PAIR** function on the TW-3.0 Handheld
- 9. A 30 second count down timer will be initiated to search for the new device



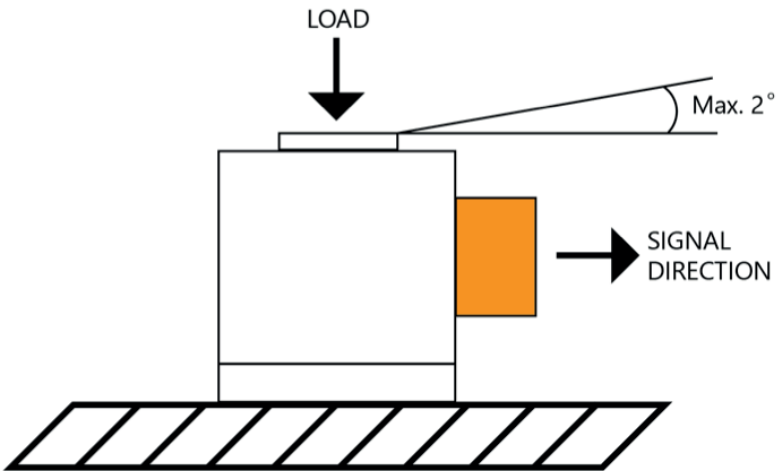
- 10. Once the device has been paired the **TW-3.0** will exit the pairing screen and the **LED** on the new device will blink at once per second briefly

This completes the pairing process; the new device will now be present on the paired channel.

2.3 SAFE USE

The **CCXXT-3.0 Telemetry Compressive Cell** should be used to measure loads lower than the specified WLL of the cell. It should be placed on flat, solid ground with a level load being applied.

This information below is of a general nature only covering the main points for the safe use of Compressive Cells. It may be necessary to supplement this information for specific applications.



General Advice:

- ☒ Always store and handle compressive cells correctly.
- ☒ Always inspect compressive cells before use and before placing into storage.
- ☒ Always select the correct size of compressive cell for the application.
- ☒ Always use spreader plates underneath the compressive cell if the ground is uneven.
- ☒ Always use a sacrificial plate if the test item is heavy and could be indented by the compressive cell.
- ☒ Always ensure the load acts through the centre line of the compressive cell by measuring before lowering.
- ☐ Never use the compressive cell above its WLL
- ☐ Never use a compressive cell with a damaged or jammed saddle.
- ☐ Never force, hammer or wedge compressive cells into position.
- ☐ Never use the compressive cell on soft ground (including tarmac).
- ☐ Never allow the applied load to tilt more than 2degrees off the compressive cell.
- ☐ Never try to move the compressive cell whilst a load is being lowered.
- ☐ Never shock load compressive cells.

2.4 CHARGING AND BATTERY LIFE

The CCXST-3.0 contains a single Li-Polymer battery pack which is charged via the USB port on the front of the CCXST-3.0. **WARNING! DO NOT CHARGE BELOW 0°C.**

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.



The time taken to fully charge the CCXST-3.0 will depend on the type of charger, a simple calculation is:

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

For example: 2000mAh battery capacity charging from a laptop at 500mA:

$2000 \div 500 = 4$ hours.

The battery life of the CCXST-3.0 depends on how it is being used, the lower the sample rate the longer the battery life will be. One example is:

One example is:

Sample rate	Ambient Temperature	Battery Life
1Hz	20°C	700Hours

WARNING! DO NOT CHARGE BELOW 0°C



USB Charging Port

3.0 TECHNICAL SPECIFICATIONS

3.1 SUMMARY

Load Cell Material	Body – 17-4PH H1150 + 1150 Stainless Steel Side Plate – Acetal (Polyoxymethylene Plastic)
Design	Pairing switch / Signal LED / Charging socket
Bridge Resistance	350Ω or 700Ω
Battery	3.7V Li-Po Rechargeable battery
Battery Life	700 hours continuous (2 years storage)
Charger	USB/5VDC
Operating Temperature	-20°C to +60°C
Handheld Display	One or more TW-3.0 displays
Frequency	2.4GHz
Range	Up to 800m line of sight
Calibration	Calibration and proof load to BS EN ISO 7500-1:2018 Class 1
Protection	IP67
Packaging	Rugged watertight case
Approvals	CE approved and FCC and IC compliant

3.2 BATTERY SPECIFICATION

	Minimum	Nominal	Maximum	Unit
Type	Battery pack			
Quantity	1			
Chemistry	Li-Po			
Voltage	3.4	3.6	3.9	V
Capacity	2000			mAh

3.3 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		

3.4 PHYSICAL SPECIFICATION

	Specification	Unit
	10T - 50T	
Dimensions	150 x 140	Overall H x D in mm
Weight	3.9	Kg
	100T □ 300T	
Dimensions	108 x 89	Overall H x D in mm
Weight	14.8	Kg

4.0 SERVICE AND REPAIR

The CCXXT-3.0 is supplied with a calibration certificate which is valid for 12 months. It is recommended that the CCXXT-3.0 is calibrated annually to ensure accuracy of readings.

The CCXXT-3.0 is a sealed device, in the event of damage the unit should be returned to an approved Dynamic Load Monitoring service centre for repair.

When used in lifting applications it is recommended that the load cell has a Report of Thorough Examination carried out on an annual basis to ensure it is safe to use.

If the CCXXT-3.0 is no longer required it should be disposed of correctly. The CCXXT-3.0 contains Lithium Polymer batteries.

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

6.0 STANDARDS AND DECLARATION OF CONFORMITY

6.1 CE MARK

Dynamic Load Monitoring (UK) Ltd tímto prohlašuje, že tento CCXXT-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 CCXXT-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 CCXXT-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 CCXXT-3.0 vastavust direktiivi 2014/53/EL põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Hereby, Dynamic Load Monitoring (UK) Ltd declares that CCXXT-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 CCXXT-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 CCXXT-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 CCXXT-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 CCXXT-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 CCXXT-3.0 atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiem ar to saistītajiem noteikumiem,
Šiuo Dynamic Load Monitoring (UK) Ltd deklaruoja, kad šis CCXXT-3.0 atitinka esminius reikalavimus ir kitas 2014/53/ES Direktyvos nuostatas.
Hierbij verklaart , Dynamic Load Monitoring (UK) Ltd dat het toestel CCXXT-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 CCXXT-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 CCXXT-3.0 megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.
Niniejszym Dynamic Load Monitoring (UK) Ltd oświadcza, że CCXXT-3.0 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/UE.
Dynamic Load Monitoring (UK) Ltd declara que este CCXXT-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 CCXXT-3.0 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.
Dynamic Load Monitoring (UK) Ltd týmto vyhlasuje, že CCXXT-3.0 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EÚ.
Dynamic Load Monitoring (UK) Ltd vakuuttaa täten että CCXXT-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 CCXXT-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 CCXXT-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 udstyret CCXXT-3.0 er i samsvarende med de grundlæggende krav og øvrige relevante krav i direktiv 2014/53/EU.
Noi, Dynamic Load Monitoring (UK) Ltd, declarăm pe propria noastră răspundere că produsul CCXXT-3.0 este în conformitate cu cerințele esențiale și 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

6.2 UKCA MARK

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

6.3 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.

6.4 IC

This radio transmitter module, IC: 25789 -TC-3.0, has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed in the tables in with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

Le présent émetteur radio, IC:24373-FM3N, a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Manufacturer	Part Number	Gain
Molex	47950-0011	2.6 dBi

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:

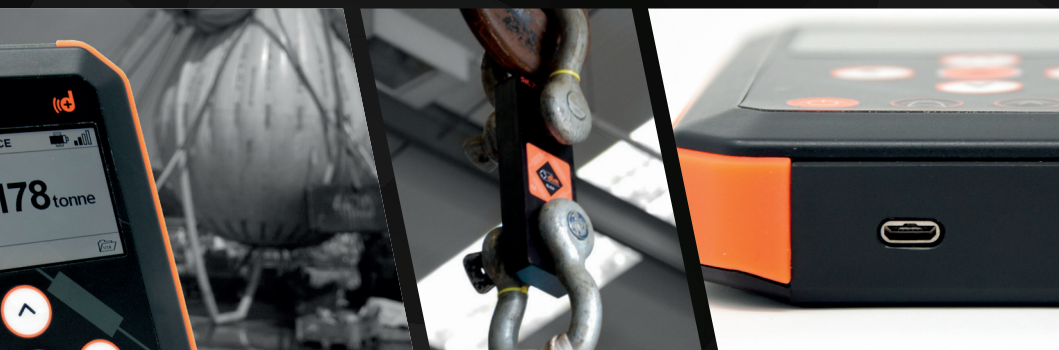
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device

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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