Cab Control Touch
CCT400 & CCT500

Operators Manual

DIGI★STAR
Ft. Atkinson, Wisconsin USA

DIGI★STAR
Panningen, the Netherlands
www.digi-star.com

D4034-EN Rev A

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Table of Contents

1.0 PURPOSE & TECNICAL SPECIFICATIONS 4
1.1 Purpose 4
1.2 Technical Specifications 4
1.3 Physical Specifications 5
2.0 SAFETY DURING USE 6
2.1 Exposure to Radio Frequency 6
2.2 Prior to Operation 6
2.3 Check System Before Use 6
3.0 OVERVIEW CCT-400 & CCT-500 7
3.1 Hard Keys 7
3.2 Soft Keys 8
3.2.1 Keys on the CCT-400 & CCT-500 8
3.2.2 Advanced Function Keys on CCT-500 9
4.0 CCT-400 & CCT-500 BASIC OPERATION 10
4.1 Turning Indicator ON & OFF 10
4.2 Zero Balance the Indicator 10
4.3 Loading Weights Using Tare and Net/Gross 11
4.4 Hold Function 12
4.5 Print Function 12
4.6 Ingredient Advance 12
4.7 Select a Ration on CCT-500 13
5.0 INDICATOR SETUP & CONNECTIONS 14
5.1 Setting Mixer & CCT Radio Channel(s) for use with non-WiFi ERM Modules 14
5.2 Mixer Indicator Radio Channel Selection 14
5.3 Mixer Indicators without Numeric Keypads and Internal Radios 14
5.4 Mixer Indicators without Numeric Keypads and External (ERM) Radios 15
5.5 Mixer Indicators with Numeric Keypads and Internal Radios 15
5.6 Mixer Indicators with Numeric Keypads and External (ERM) Radios 15
5.7 Setting up Radio Channels on the CCT & ERM 16
5.7.1 Enter Setup Menu 16
6.0 CONNECTION & MOUNTS 19
6.1 Power Connections in Loader 19
6.2 Mounting 20

D4034-EN CCT400/CCT500 Operator Manual Rev A LAC

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Electro-Magnetic Compatibility (EMC)

This product complies with Council Directive 2004/108/EC when installed and used in accordance with the relevant instructions.

Service and Technical Support- contact Digi-Star Technical Support 1-920-563-9700

Our policy is one of continuous improvement and the information in this document is subject to change without notice.

Check that the software reference matches that displayed by the instrument.

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1.0 PURPOSE & TECNICAL SPECIFICATIONS

1.1 Purpose

The Digi-Star Cab Control Touch (CCT) is a device designed to be mounted in the cab of a wheel loader, tractor loader, telescopic loader, or skid steer loader. The CCT 400 & 500 are designed to communicate via Digi-Star's ERM (external radio modules) with a Digi-Star EZ or TMR series scale indicator mounted on a feed mixer that are equipped with a compatible internal or external radio. The CCT 400 will also communicate with other Digi-Star Indicators such as the GT400.

The CCT400 will also communicate with any ERM to a TST7600 equipped with the same ERM unit. The CCT500 will not work with TST7600, however. The advanced functions of the CCT500 will only work with the EZ3400, EZ3600V, EZ4600, TMR3610, and TMR4610.

The CCT displays the same information that is displayed on the scale indicator that the CCT is communicating with. In addition the CCT will remotely control a number of the most common scale indicator functions. This manual details the information that is displayed and the control functions.

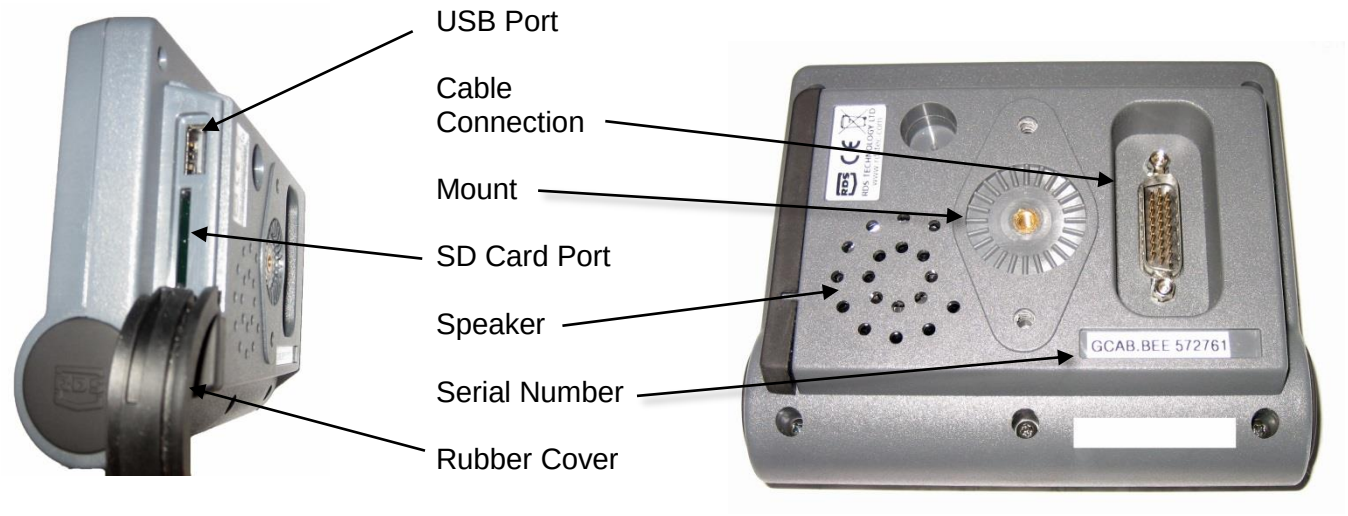
Communication via radio limited in range by a number of factors including the type of radio that the CCT is paired with, position and placement of the antennas, interference by electronic "noise", and physical barriers such as buildings and walls. Communication requires a clear "line-of-sight" between the two radios. The user of the CCT should be able to see the scale indicator on the feed mixer that he or she is attempting to communicate with.

Both the CCT-400 & CCT-500 share the same display unit. It is possible to convert a CCT-400 to a CCT-500. Contact Digi-Star for details at: www.digi-star.com

1.2 Technical Specifications

Power supply:	10 - 30 Volts DC
Current consumption:	500mA
Display:	High brightness (400mcd) colour, 4.3" widescreen format (480 x 272) LCD with resistive touch-screen
Front panel switches:	4 backlit physical keys for application specific functions
Processor:	MIPS32 M4K running at 80MHz
Memory:	128kB RAM 512kB Flash 2MB on-board non-volatile memory SD card reader and USB 2.0 host for pen drive
Communication Ports:	Two CAN 2.0B ports (J1939/ISO 11783) Two uncommitted RS232 ports
Inputs:	Eight - can be configured as analogue or digital
Outputs:	Three - 1 amp each
Speaker:	1.5 Watt for alarms etc
Protection:	Reverse polarity protection
Enclosure:	Custom ABS Enclosure (front and rear cover)
Mounting:	Free-standing
EMC:	2004/108/EC ISO 14982
Temperature:	-20°C to +70°C operating temperature
Vibration:	5G @ 10 to 500Hz
Shock:	50G
Sealing:	IP65
Dimensions:	W: 133mm x H: 113mm x D: 50mm

1.3 Physical Specifications



CCT Side

CCT Back

2.0 SAFETY DURING USE

Danger: Indicates a imminently hazardous situation that, if not avoided, could result in death or very serious injury.

Warning: Indicates a potential hazardous situation that, if not avoided, may result in death or very serious injury.

Caution: Indicates a potential hazardous situation that, if not avoided, may result in a minor injury.

2.1 Exposure to Radio Frequency

Exposure to energy from radio frequencies is an important safety issue. As this product uses the WiFi and Cellular system of a smartphone or tables please consult with the safety information provided with the device that the App operates with.

2.2 Prior to Operation

Read and understand this manual and learn all controls before you use the equipment.
Check that the area is clear of people, animals, and obstacles before starting any work.
Identify possible hazards.

2.3 Check System Before Use

Before using the App with the Digi-Star weighing system read the Operator's Manual for the scale indicator and the WiFi system. Follow all instructions.

Digi-Star cannot be held responsible for deviations and problems arising from incorrect use of the scale indicator, incorrect calibration, or settings. Furthermore Digi-Star cannot be held responsible for deviations and problems arising from technical problems to the system.

3.0 OVERVIEW CCT-400 & CCT-500

CCT400 Front

CCT500 Front

3.1 Hard Keys

Hard keys are located under the screen and are pressed to operate. A click will be felt when button is depressed and the unit will make a “beep” noise when volume is turned on.

- HOME Return to the Main Operating Screen from any other screen
- SETUP Select the Setup Menu for radio channel and other system settings
- ESCAPE Return to the previous screen
- ENTER Confirm or Store a setting

3.2 Soft Keys

Soft keys are located on the display of the unit and are operated by tapping or touching the screen gently. It is possible to operate the soft keys while wearing gloves.

NOTE! DO NOT use a sharp-pointed object when touching the screen - the screen may be damaged beyond repair!

3.2.1 Keys on the CCT-400 & CCT-500

1.

- Zero balance the scale indicator

2.

- Toggle between Net and Gross weights

3.

- Temporarily Zero the scale indicator [Net mode]

4. – Hold or Freeze temporarily the displayed Weight

5. – Manually advance to next Ingredient

6. – Register or Print the displayed Weight

7.

- Mixer Radio Channel (number above mixer changes with channel selected)

8. - Radio with Good Connection

➢ - Radio with No Connection

➢ - No Radio connected to CCT

3.2.2 Advanced Function Keys on CCT-500

The advanced function keys of a CCT-500 work when the CCT-500 is connected to Digi-Star EZ & TMR 3600 and higher series, non-touchscreen, Indicators. The additional keys on the main screen are shown below. See section 5.0 – CCT-500 OPERATION for additional details on CCT-500 operation.

1.

- Direction Control Keys to move Cursor and Enter
2. - Choose Recipe
3.

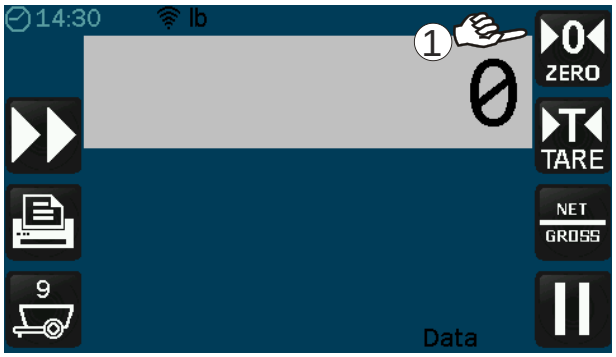
- Change Quantity

4.0 CCT-400 & CCT-500 BASIC OPERATION

4.1 Turning Indicator ON & OFF

Press and release the ON/OFF button which is enclosed in the rubber button on the lower left side of the device. Press on the left side where “RDS” is moulded into the rubber.

4.2 Zero Balance the Indicator

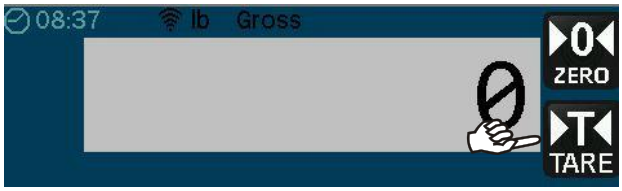


1. Press and hold 0 ZERO for 3 seconds to zero balance the weighing indicator.

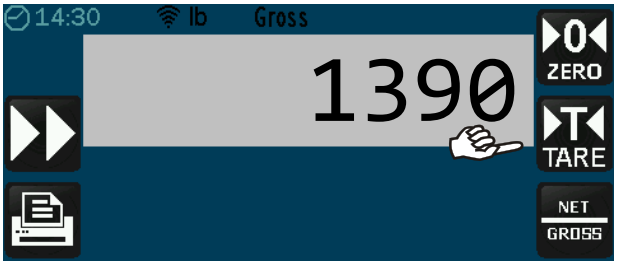
2. ZERO will flash on the screen and the displayed weight will change to 0.

4.3 Loading Weights Using Tare and Net/Gross

When weighing it is important to keep note of whether the scale is in Gross or Net weight mode. At the top of the display screen the weighing mode, Gross or Net, will flash.



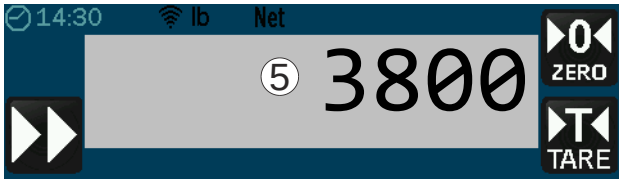
1. After loading the first ingredient into the mixer press TARE key to set a temporary zero.



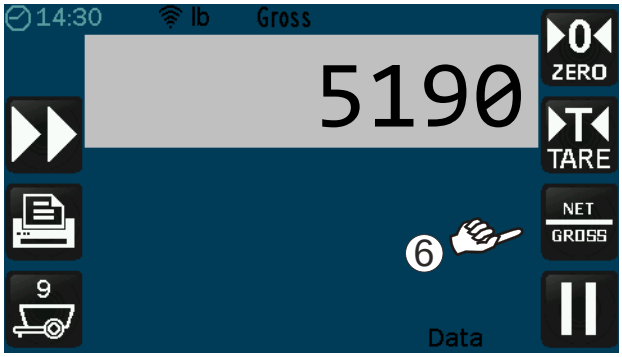
2. Load the first amount (in this example 1390 lbs). “Gross” will be flashing.

3. Press TARE to set the weighing indicator temporarily to zero.

4. The value 0 is displayed and “Net” will flash in the header.



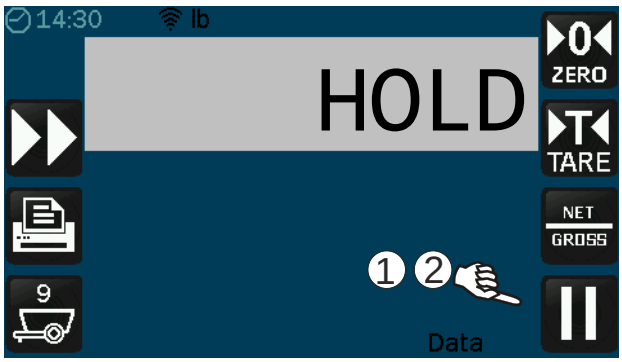
5. Add the next amount to be loaded (in this example 3800 lbs). “Net” will continue to flash.



6. Press NET GROSS to display the total amount loaded. In this example: 1390 + 3800 = 5190 lbs in total weight has been added to the Mixer. “Gross” will flash at the top of the display.

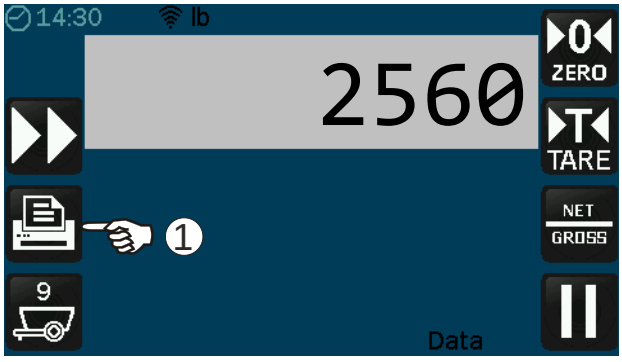
4.4 Hold Function

The Hold mode is utilized while operating the mixing or when moving the Mixer to “Hold” the weight from the time before the mixer was moved. Utilizing the Hold function can increase the accuracy of the loading and unloading process for users looking to increase the precision of their operation.



1. Press ⏸ to hold the displayed weight. The word “HOLD” will be displayed.
2. Press ⏸ again to return to normal weighing mode. The weight will once again be displayed

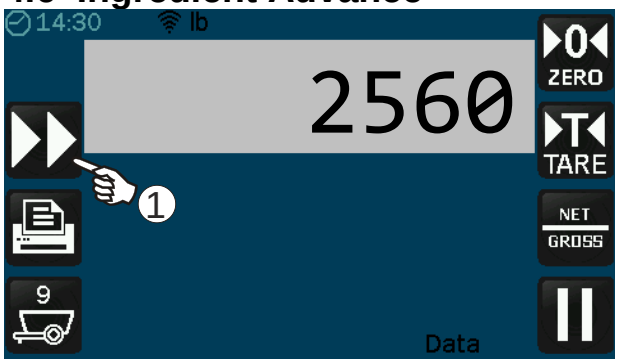
4.5 Print Function



Note: For print functionality an optional serial (printer) port on the scale indicator on the mixer is required.

1. Press the Print key to activate the print function on the scale indicator. The functionality depends on the type and settings of the scale indicator.

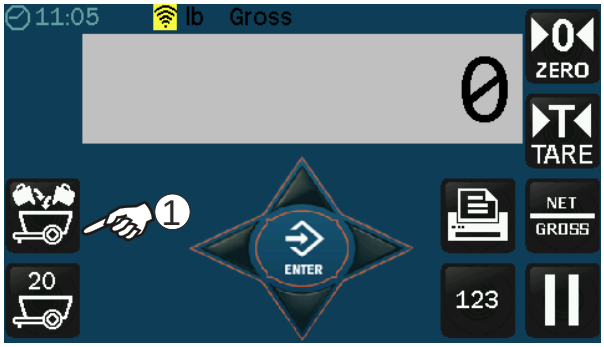
4.6 Ingredient Advance



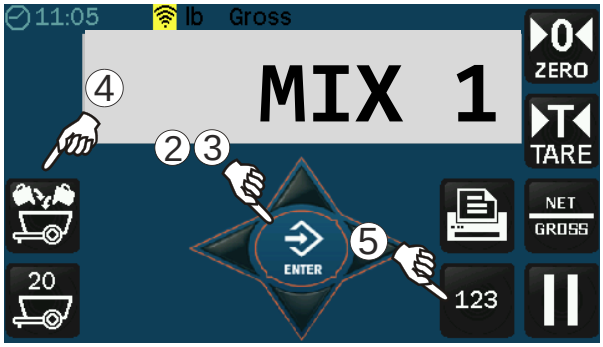
Note: Ingredient advance is used to jump to the next ingredient when using a batching indicator.

1. Press the Advance key to manually advance to next ingredient.

4.7 Select a Ration on CCT-500



1. Press to view the 1st ration in the list. Repeatedly press to scroll through the list of available rations. Or press the down arrow to scroll through the list.



2. Press to select the current ration displayed.
3. If Resize is turned off, press again to start the ration.
4. Pressing will also start the ration.

5. If resize is turned on, press 123 to go to the number keypad screen. From this screen, resize the ration.

6. Press Select to switch between the number of animals and amount per pen or load. Use the numbers to either change the head count or change the amount for each pen or load. As soon as you begin typing it will overwrite the current entry.
7. To accept the change, press .
8. Press to go back to the main screen.
9. Repeat steps 1-8 for all other rations.

5.0 INDICATOR SETUP & CONNECTIONS

5.1 Setting Mixer & CCT Radio Channel(s) for use with non-WiFi ERM Modules

The CCT must be connected with a Digi-Star ERM 2.4, 2.4X, or 900 radio module and the scale indicator on the mixer must be equipped with a matching internal or external radio. ERM radios require Digi-Star EZIII indicators equipped with a J905 serial port and version 9.B software or newer. See Digi-Star manual D3986 ERM 2.4 – 2.4X – 900 User Manual for details on the installation of the ERM Radio Module.

In order to communicate with the scale Indicator on the mixer the radios on the mixer Indicator and the CCT must be on the same channel. Twenty four channels are available and it is possible for one CCT to communicate with up to 24 different mixers equipped with scale Indicators.

5.2 Mixer Indicator Radio Channel Selection

It is recommended that the mixer indicator(s) be setup first. For best performance on systems with six (6) or less radios, use channels 1 – 6. No two mixer Indicators operate on the same channel, or scale number. Each mixer indicator must be set to a unique channel.

If after setting up the radio channels degraded performance is encountered, it is most likely due to interference from other radio systems. Try using other channels between 1 and 6 before trying channels 7 to 24.

5.3 Mixer Indicators without Numeric Keypads and Internal Radios

In order for the Internal Radio to function REMOTE must be set to ON, and the Mixer Indicator Radio Channel (SCL NO) must be set between 1 and 24. NOTE - This process is performed on the Indicator front panel.

1. Enter Setup by pressing and holding [Net-Gross] and then pressing and holding [On] for three seconds
2. Press [Net/Gross] or [Select] to advance to {MENU 2}
3. Press [On] to advance to {REMOTE}
4. Press [Net/Gross] or [Select] to set to {ON}
5. Press [On] to save setting and advance to {SCL NO}
6. Press [Net/Gross] or [Select] to set desired radio Channel {1 to 24}
7. Hold [Tare] and press [On/Off] to return to indicator operation.
8. Press [On] to save setting and advance to end of menu.

5.4 Mixer Indicators without Numeric Keypads and External (ERM) Radios

In order for the External Radio to function both the REMOTE and External Radio (EXTRAD) must be set to ON, and the Mixer Indicator Radio Channel (SCL NO) must be set between 1 and 24. NOTE - This process is performed on the indicator front panel.

1. Enter Setup by pressing and holding [Net-Gross] and then pressing and holding [On] for three seconds
2. Press [Net/Gross] or [Select] to advance to {MENU 2}
3. Press [On] to advance to {REMOTE}
4. Press [Net/Gross] or [Select] to set to {ON}
5. Press [On] to advance to {EXTRAD}
6. Press [Net/Gross] or [Select] to set to {ON}
7. Press [On] to save setting and advance to {SCL NO}
8. Press [Net/Gross] or [Select] to set desired radio Channel {1 to 24}
9. Hold [Tare] and press [On/Off] to return to indicator operation.
10. Press [On] to save setting and advance to end of menu.

5.5 Mixer Indicators with Numeric Keypads and Internal Radios

In order for the Internal Radio to function REMOTE must be set to ON, and the Mixer Indicator Radio Channel (SCL NO) must be set between 1 and 24. NOTE - This process is performed on the indicator front panel.

1. To activate the Remote output feature, with the Indicator in the normal weighing mode, set REMOTE (D.A.N. 218) to {ON}
2. To set the Radio Channel, with the Indicator in the normal weighing mode, set SCL NO (D.A.N. 231) to {1 – 24} by

5.6 Mixer Indicators with Numeric Keypads and External (ERM) Radios

In order for the External Radio to function both the REMOTE and External Radio (EXTRAD) must be set to ON, and the Mixer Indicator Radio Channel (SCL NO) must be set between 1 and 24. NOTE - This process is performed on the Indicator front panel.

1. To activate the Remote output feature, with the Indicator in the normal weighing mode, set REMOTE (D.A.N. 218) to {ON}
2. To activate the External Radio feature, with the Indicator in the normal weighing mode, set EXTRAD (D.A.N. 229) to {ON}
3. To set the Radio Channel, with the Indicator in the normal weighing mode, set SCL NO (D.A.N. 231) to {1 – 24}

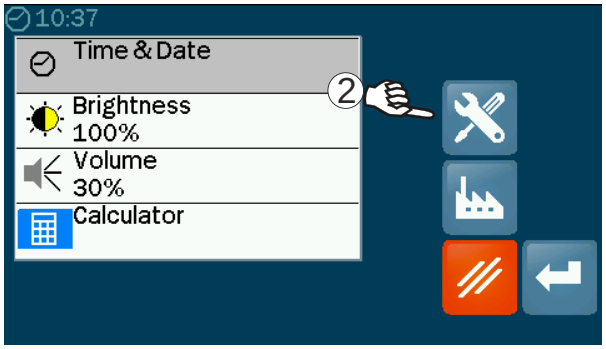
5.7 Setting up Radio Channels on the CCT & ERM

The CCT combination must be setup to match the radio channel(s) setup in the steps above. The CCT in the loader can be setup to communicate with between 1 and 24 mixers equipped with Digi-Star indicators with radio.

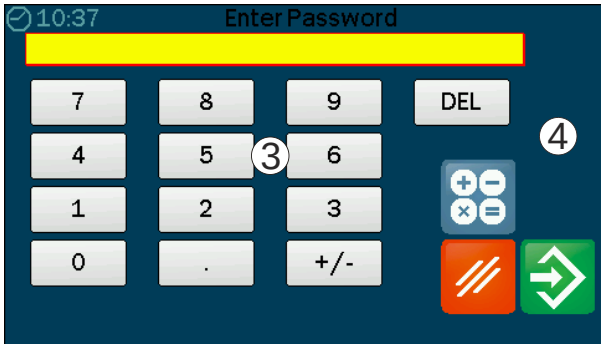
When the CCT is used with multiple mixers the CCT is pre-programmed to the match the radio channels in use. The CCT can then be easily switched between different mixers with just a few quick screen presses.

5.7.1 Enter Setup Menu

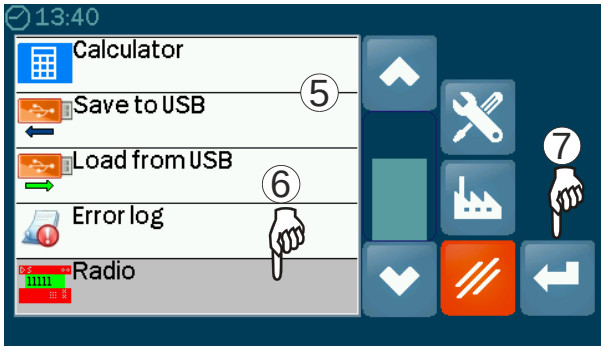
1. Press brings up the Setup menu.



2. The Menu screen at left is displayed. To access the RADIO menu press

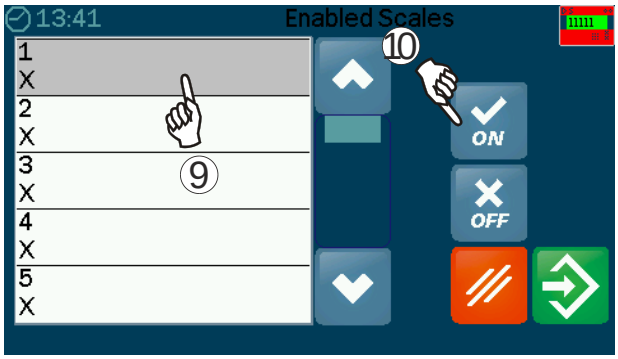


3. Enter the Technician Password of 1234 by pressing the 1 thru 4 keys.
4. Press the Enter key



5. An expanded Menu as shown at left will be displayed

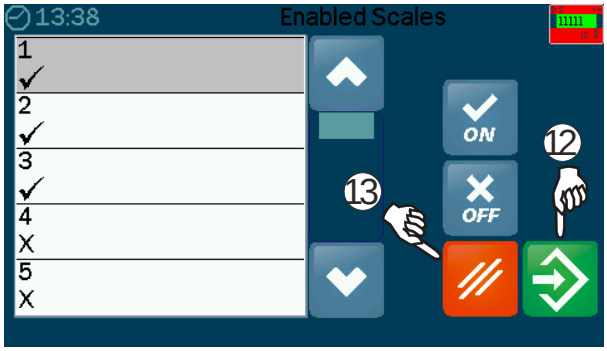
6. Touch the “Radio” line once to highlight
7. Press the Return key



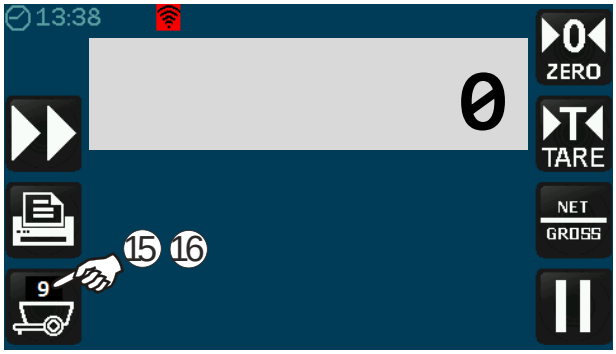
8. The Enabled Scales Radio Channel list will be displayed as shown at left. The “X” next to each channel signifies that this channel is turned off.

9. For each Radio Channel activated on the mixer(s) press the Channel line to highlight

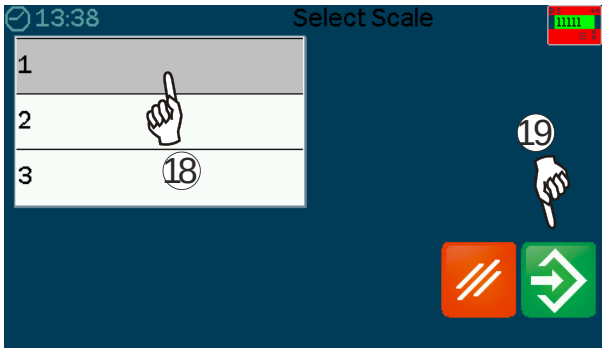
10. Press



11. The “X” will change to a “✓” signifying that that channel is now available. In the example at left channels 1 thru 3 are active and setup.
12. Press
13. Press
14. Press on front of indicator to exit and return to Main Screen.

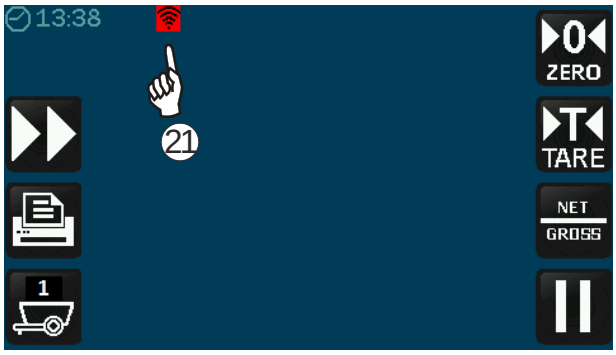


15. The number above indicates the channel and mixer that the CCT is tuned to communicate with.
16. Press (in this example) to change mixers.



17. The Select Scale Radio Channel screen as show at left will be displayed. Only the Radio Channels activated in the steps above will be shown.
18. Choose the Mixer Radio Channel desired by pressing the Channel Number.
19. Press the key to save the change and return to the Main Screen.

20. The Mixer Radio Channel selected will now be displayed over the Mixer Radio Channel key on the Main Screen.



21. Check the “RADIO” status icon. The color indicates the current radio status.

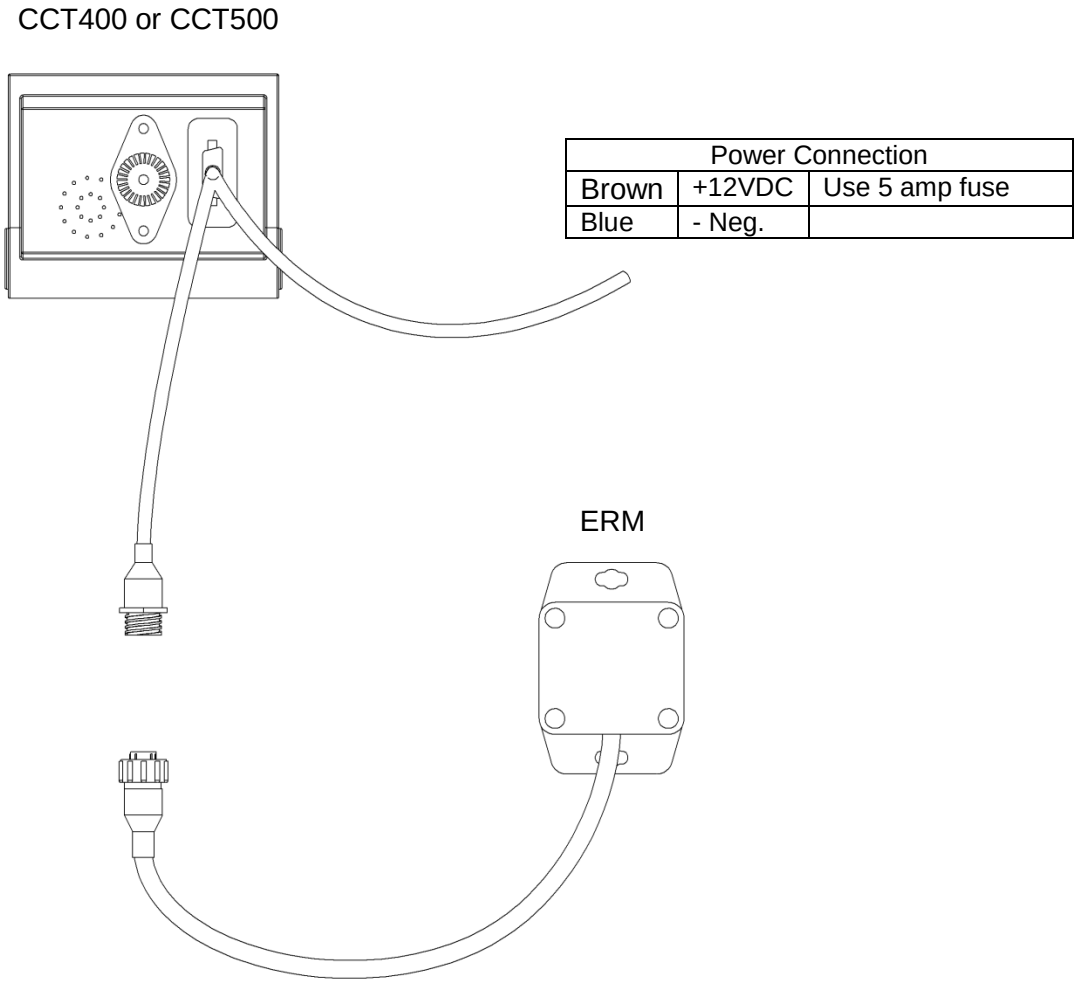
- Radio with Good Connection

- Radio with No Connection to Indicator

- No Radio connected to CCT

6.0 CONNECTION & MOUNTS

6.1 Power Connections in Loader



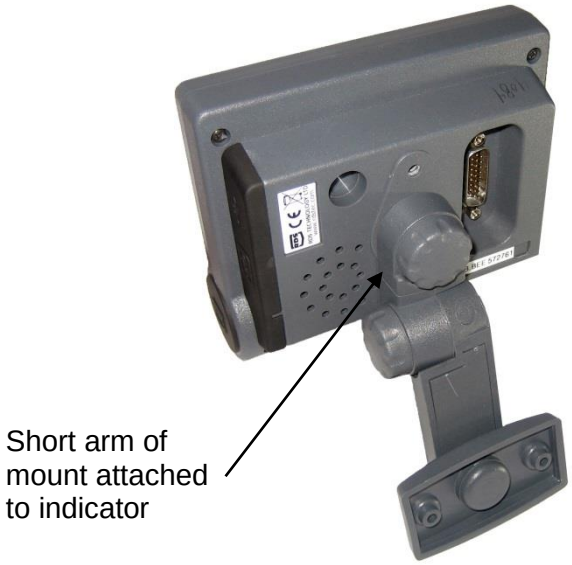
Power Connection		
Brown	+12VDC	Use 5 amp fuse
Blue	- Neg.	

6.2 Mounting

Standard Mount Kit (supplied with indicator)

NOTE!- Damage to the mount will occur if adjusting knobs are not loose before adjustment.

Warning Do not drill into a ROPS or FOPS frame.



Optional Suction Cup Ram Mount (Other ram mount types are available)