



GT450i

Digital Scale

Operator Manual

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GT450i Digital Scale Operator Manual

Part Number 1072185-01
Revision A



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Preface

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NOTICE Please read the terms and conditions carefully.

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Manual Conventions

This manual uses the following conventions:

Convention	Description	Example
Bold	Menu, or drop-down menu selection	File > Exit (Select the File menu and select Exit)
	Name of a dialog box or screen	From the Connection screen...
	Button or key commands	Select Finish .
Mono	User supplied text or variable	Type <code>guest</code> , and select Enter .
<i>Italic</i>	Reference to another manual or help document	Refer to the <i>Topcon Reference Manual</i> .



TIP

Notification that one or more steps may be taken to reduce effort, time, and/or expense. Please read the terms and conditions carefully.



NOTE

Further information to note about system configuration, maintenance, or setup and conditions carefully.



NOTICE

Supplementary information that if disregarded can have an adverse effect on system operation, system performance, data integrity, or measurements.



CAUTION

Notification that an action has the potential to result in minor personal injury, system damage, loss of data, or loss of warranty.



WARNING

Notification that an action has the potential to result in personal injury or property damage.



DANGER

Notification that an action has the potential to result in severe personal injury or death.

Introduction

Thank you for the purchase of a GT450/GT450i scale indicator. Your indicator is the culmination of more than 40 years of agricultural weighing engineering and expertise. With proper operation and preventative maintenance this indicator will last for many years.

The GT450/GT450i is designed for use with weighing, tracking, storing, and transferring related data regarding the weight of agricultural grains, forages, and other commodities on mobile weigh wagons, grain carts, forage boxes, and other agricultural conveyances.

The data collected by, and transferred from, the indicator is designed primarily for use with the Harvest Tracker PC software. For maximum value from the GT450/GT450i indicator, Topcon recommends the Harvest Tracker PC software program be loaded on a computer. This program will allow the full initialization and personalization of the GT450/GT450i indicator for your operation. The manual for this software program is found within the program under the help tab.

The GT450/GT450i is not for use with applications for which it is not intended, or as outlined in this manual.

Use of the device outside of its intended purposes may result in inaccurate weight measurement or damage to the indicator.

Wi-Fi or Bluetooth connectivity can be used to connect to the Harvest Tracker Lite or Harvest Tracker mobile applications. The mobile applications connect to the Harvest Tracker PC and Harvest Tracker Online programs.

For more information regarding these systems, contact Topcon Professional Services.

Reference Documents:

D3908-EN AutoLog Installation Manual

Topcon Website: <https://www.topconpositioning.com/>

Topcon Professional Services: Toll Free 800-225-7695 (US & Canada); +1-920-563-9700

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Indicator Overview



Figure 1-1: User Interface

- 1 **ZERO/BALANCE** - Press and hold for 3 seconds to zero balance
- 2 **START/STOP** - Press to start and stop unloading. Indicator displays amount unloaded, stores to internal memory or prints to serial port when complete
- 3 **FIELD** - Press to edit name and display weight accumulation value
- 4 **ON/OFF** - Press to turn unit on. Press and hold to turn unit off.
- 5 **NET** - Arrow flashes in Net Mode
- 6 **PRINT** - Arrow flashes when printing or saving to internal memory
- 7 **GROSS** - Arrow flashes in Gross Mode
- 8 **UNLOAD** - Arrow flashes in Unload Mode

Symbol	Meaning	Where It Appears
	On Power Button Marking	Front Panel
	Off Power Button Marking	Front Panel
	DC power input/output	Compliance Label
 	Per WEEE Directive 2012/19/EU - Do not dispose with household waste. Use designated collection facilities.	Compliance Label
	Conformity with EU safety, health, EMC, and environmental protection requirements.	Product ID Label
	Japan Technical Conformity Mark	Compliance Label
 XXX-XXXXXX XXXXXXXXXX	Japan Radio and Terminal Equipment IDs	Compliance Label
	Regulatory Compliance Mark (RCM) Australia / New Zealand	Compliance Label

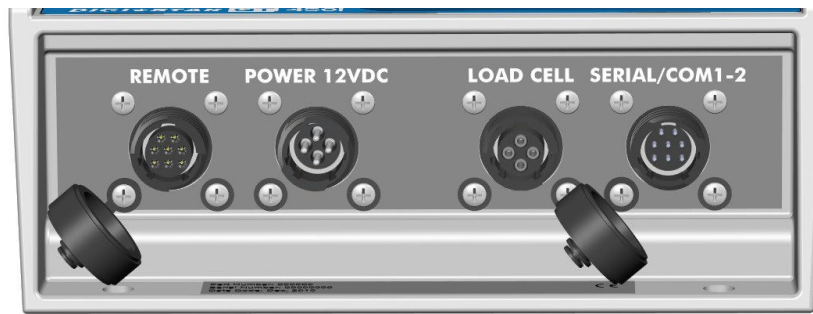


Figure 1-2: Connectors

- 9 **REMOTE** - Remote port for optional remote display, also used for connection to ISOBUS
- 10 **POWER** - Power cord connection + 12V_{DC} to + 24V_{DC}
- 11 **LOAD CELL** - Load cell connection, connect cable from J-Box. (See Page 5-4)
- 12 **SERIAL/COM 1-2** - Optional port to communicate with computer and other digital input/output devices

Pin	Remote Connector Signals
1	+12V _{DC}
2	CAN Hi
3	Remote Zero Input
4	Remote Data Out
5	Remote Clock Out
6	Remote Data In
7	Ground
8	CAN LO

Pin	Serial/Com 1-2 Connector Signals
1	VANO & 4-20mA Input
2	Com #1 Out (Tx1) - Computer
3	Com #1 In (Rx1) - Computer
4	Com #2 Out (Tx2) - Printer
5	+12V _{DC}
6	Gnd – Available for any Com device
7	Com #2 In (Rx2)
8	Analog output (V and 4-20mA)

Operation

Turn On Indicator

1. Press **ON/OFF** to turn the indicator on, (Figure 2-1).

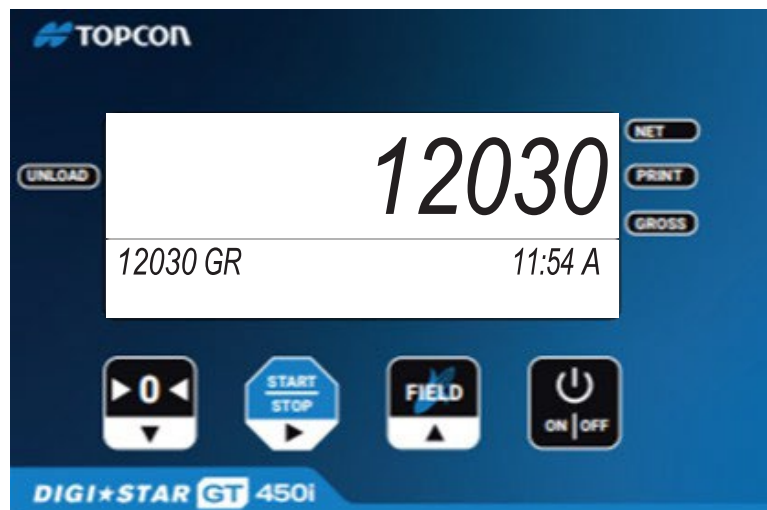


Figure 2-1: Turn On Indicator

Zero Balance Indicator

1. Press and hold **ZERO/BALANCE** for 3 seconds to zero balance indicator. (Figure 2-2).
2. Flashing arrow points to **GROSS** next to the display window, indicator is ready to weigh.

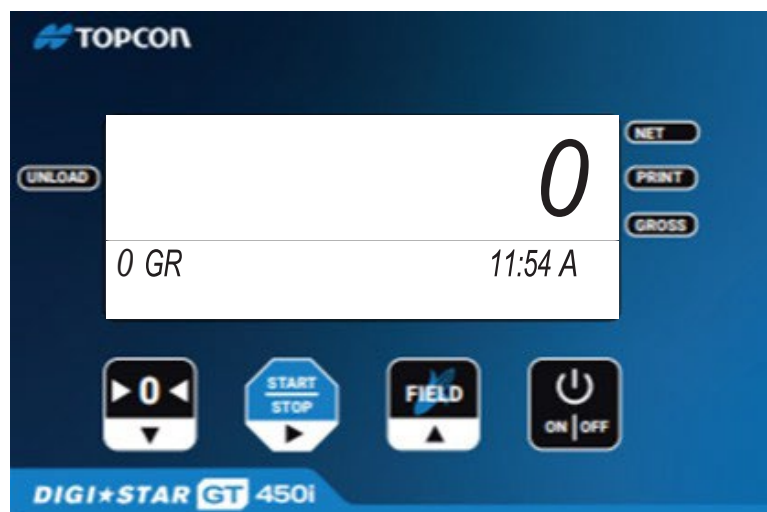


Figure 2-2: Zero Balance Indicator

Field ID/Accumulator

NOTE: THIS IS A 6 CHARACTER IDENTIFICATION VALUE STORED IN INTERNAL MEMORY OF INDICATOR TO IDENTIFY FIELD BEING UNLOADED, TRUCK BEING LOADED OR OTHER INFORMATION.

1. Press **FIELD**. **FIELD** is displayed and a flashing cursor or character is displayed in the first position.
2. Press **FIELD (up arrow)** to scroll available characters. Hold **FIELD (up arrow)** for 4 seconds to increase scroll rate. (Figure 2-3).



Figure 2-3: Field ID

3. Press **ZERO/BALANCE (down arrow)** to scroll backwards through available characters. Press **START/STOP (over arrow)** to move to the next character
4. Press **ON/OFF** to accept and save.
5. Next PRTACC (print accumulator) will be displayed followed by its current value.
6. Press and Hold **ZERO/BALANCE** to clear value or press **ON/OFF** to accept value and return to weighing mode.

Loading and Unloading

NOTE: FOR BEST ACCURACY PARK SCALE ON LEVEL SURFACE AND ALLOW WEIGHT READING TO STABILIZE BEFORE ZERO BALANCING THE SCALE AND BEFORE BEGINNING TO UNLOAD.

1. Load cart.
2. Press **START/STOP** or raise PTO RPM's (Autolog) to begin unloading. Display reads **ZERO**. Arrows point to **NET** and **UNLOAD** (Figure 2-4).

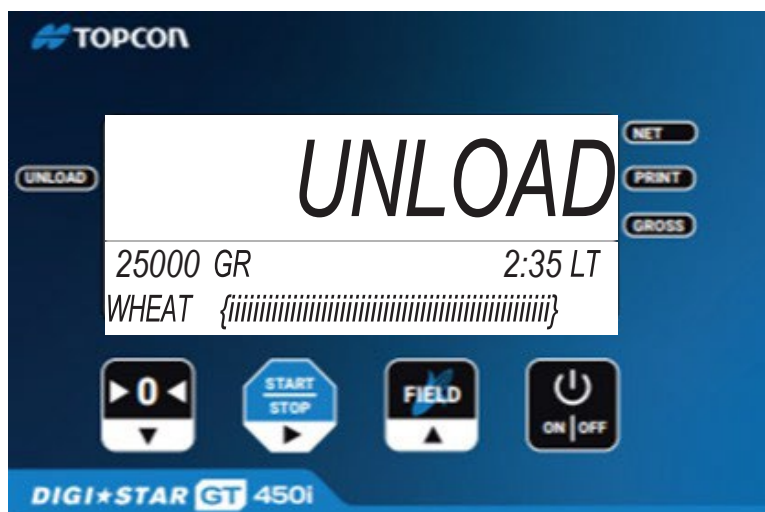


Figure 2-4: Unloading

3. Unload weight from cart. Display shows unloaded amount.
4. Press **START/STOP** or lower PTO PRMs (Autolog) after unloading is complete. Data is automatically added to accumulator and saved to internal memory, and sent to printer (see print format section); a flashing arrow will point to **PRINT** (Figure 2-5).



Figure 2-5: Data Saved to Memory/Printer

5. Indicator displays **GROSS** weight remaining on scale, indicator is ready to weigh (Figure 2-6).

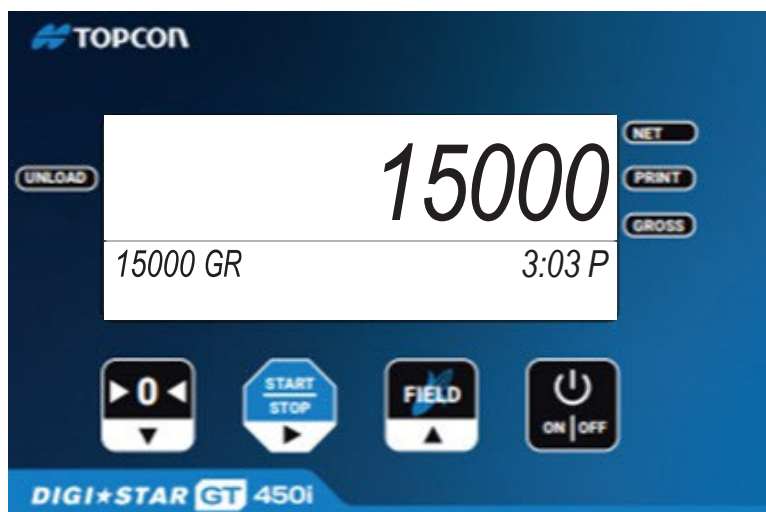


Figure 2-6: Gross Weight

Loading / Unloading Controls

There are multiple ways to capture your Load Record when unloading grain with this indicator. Manually, by pressing **START/STOP** or Automatically (AutoLog) which eliminates the need to press **START/STOP**, simplifying use and creating hands-free operation. Below is a breakdown of the Menu settings used to setup these different methods.

RPM Start/Stop Control (RSSCTL - Menu 6)

MANUAL – Manual method where the operator presses **START/STOP** to start the unloading process and again at the end of the unloading process to capture the Load Record.

RPM – Automatic “hands-free” method that uses the AutoLog RPM sensor on the PTO shaft. Starting the PTO shaft rotating to unload “Starts” the unloading process. Shutting off the PTO “Stops” the unloading process and captures the Load Record.

SWITCH – Automatic “hands-free” method that uses a mechanical switch (on a door or gate) to “Start” the unloading process when the door opens and then “Stops” the unloading process when the door closes. See FS POL (D.A.N 6411) for switch polarity. See RMINP1 or RMINP2 for setting of the input line for switch detection.

WEIGHT – Automatic “hands-free” method that uses weight changes while unloading to automatically “Start” and “Stop” the unloading process and capture the Load Record.

Additional settings needed for the WEIGHT AutoLog process setting to operate are below:

AutoLog Start Weight (ATSTWT – Menu 6)

Unloading this weight amount within the time duration setting Weight Start Delay (WTSTDY) will “Start” the unloading process. Set for the minimum weight change (ATSTWT) needed to trigger the “Start” of the unload process.

AutoLog Stop Weight (ATSPWT – Menu 6)

Reading this small weight change for the time duration Weight Stop Delay (WTSPDY) will “Stop” the unloading process and capture the Load Record. Set for the minimum weight change (ATSPWT) needed to “Stop” the unload process and capture the Load Record.

NOTE: The weight change used to “Stop” the unload event will be included in the load record data.

Weight Start Delay (WTSTDY – Menu 6)

Number of seconds to observe the weight change to determine this is an actual unloading event. The weight change of the AutoLog Start Weight (ALSTWT) setting needs to occur before this amount of time (Weight Start Delay setting) to activate an AutoLog process. Set for the minimum time required to determine weight changes are caused by actual unloading rather than moving of the implement.

Weight Stop Delay (WTSPDY – Menu 6)

Number of seconds to wait during minor weight changes to determine if unloading is actually finished. Waiting this amount of time after the weight change drops below the AutoLog Stop Weight (ATSPWT setting) determines when to “Stop” the unloading process and capture the Load Record. Set for the minimum time required to assist the scale to determine the unloading is completed.

NOTE: If ATSTWT is set to a large weight (1000 or more), also set the stop delay to a large number (10 seconds or more)

Bluetooth Name

NOTE: THIS IS A 6 CHARACTER IDENTIFICATION THAT WILL BE BROADCAST FOR CONNECTION TO MOBILE APPLICATIONS.

1. Press and hold **FIELD**, while holding **FIELD**, press and hold **ON** (for ~ 3 seconds) until a scrolling message is displayed. Press the **FIELD** key twice to select MENU 2.
2. Press **ON/OFF** to enter menu. Repeatedly press the **ON** key to step through the menu until **BTNAME** is reached. Press **FIELD (up arrow)** to scroll available characters. Hold **FIELD (up arrow)** for 4 seconds to increase scroll rate. (Figure 2-7).

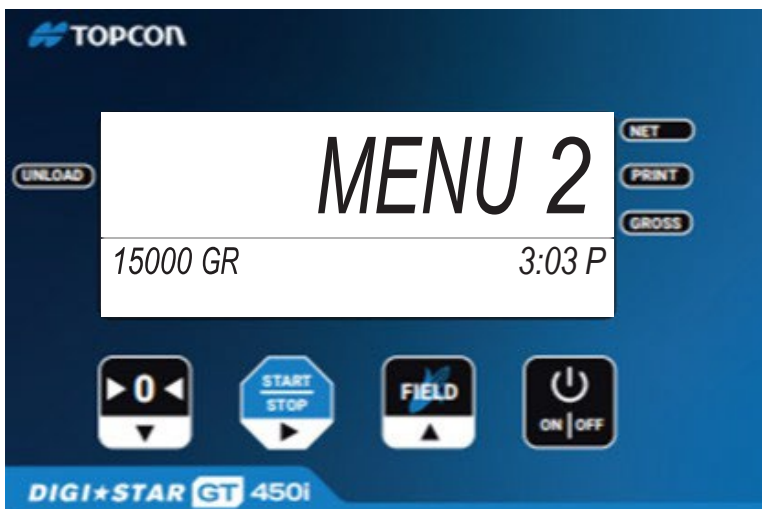


Figure 2-7: Unloading

3. Press **ZERO/BALANCE (down arrow)** to scroll backwards through available characters. Press **START/STOP (over arrow)** to move to the next character
4. Press **ON/OFF** (2x) times to accept and save. (Figure 2-8).



Figure 2-8: BT Name

Communications (Bluetooth and WIFI)

The GT450 is equipped with both Bluetooth and WIFI hardware designed to work with Topcon mobile applications and other Bluetooth or WIFI enabled devices.

Cab Control: Designed to act as a standalone display or complement an existing Bluetooth enabled indicator or converter, Topcon CabControl provides accurate and easy-to-use load monitoring for universal weighing application implements, such as planters, air seeders, grain carts or feed mixers/loaders.

Harvest Tracker Lite: Offers a seamless approach to display, record and control our indicators from your mobile device. View weight, capture load records and calibrate combines where desired, inside or outside the cab. Plus, easily transfer load records to Harvest Tracker PC or Harvest Tracker Online software, eliminating printed records, reducing inaccuracy and improving workflow efficiency. Compatible with UM410, GT400, GT450, UM510, GT460, UM520, GT560, and GT650 indicators.

Harvest Tracker: Same features as the Harvest Tracker Lite app, but the record transfer process differs. The Harvest Tracker app uses cellular signal to sync with Harvest Tracker Online, The Harvest Tracker Lite uses email to transfer the records to the Harvest Tracker PC program.

Bluetooth

1. BTNAME is used to identify specific scales when connecting to the mobile apps via Bluetooth. (See Bluetooth Name)
2. Enter menu 2 to modify the default BTNAME of "NEW EZ" to a unique string (6 char limit), that will be used for Bluetooth interfacing and connecting.

WIFI

1. SCALE NUMBER is used to identify specific scales when connecting to the mobile apps via WIFI.
2. Enter menu 2 to modify the SCALE NUMBER to a unique number, that will be used for WIFI interfacing and connecting.

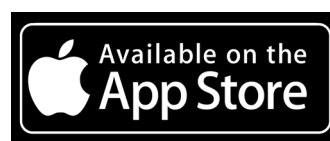
NOTE: See Cab Control or Harvest Tracker manuals for connection methods and related settings.

Visit the Topcon Agriculture App store to download and install CAB CONTROL or Harvest Tracker mobile apps.

Google:



Apple:



Data Collection

More than 30,000+ Load Records can be stored in the indicator and remain until manually erased by the operator. The Load Records are transferred to the Harvest Tracker PC program or Harvest Tracker Online web-based application with the Harvest Tracker or Harvest Tracker Lite mobile applications.

Harvest Tracker Lite – Mobile application designed to collect data from the indicator and sync to Harvest Tracker PC via email.

Harvest Tracker Mobile – Full featured mobile application designed to collect data from the indicator and sync to Harvest Tracker Online via a cellular or WIFI connection.

Both mobile applications can be found at the Google and iOS Play Stores:

Google Play:



Harvest Tracker Lite



Harvest Tracker

Apple App Store:



Harvest Tracker

The Harvest Tracker PC program is available at:



The Harvest Tracker Online web-based application is available at:



<https://harvest-tracker.topcon.com/>

Retrieving Load Records from the Indicator

The Load Records are transferred to the Harvest Tracker or Harvest Tracker Lite mobile applications by either having the Apps active and connected to the indicator while performing the unloading process or by using the “Retrieve All Records” feature on the apps.

In mobile application, Press Records > Extract All. The manual for the mobile app are in the HELP menu.

Clearing Load Records in the Indicator

The indicator can store more than 33,000 Load Records and can be manually cleared after collecting the data or at the beginning of the harvest season.

NOTE: Before erasing the load data records, ensure they have been safely transferred to the Harvest Tracker PC program or Harvest Tracker Online web-based application.

On the indicator, press and hold **FIELD**, while holding **FIELD**, press and hold **ON/OFF** (for ~ 3 seconds) until a scrolling message is displayed. Press the **FIELD** key twice to select MENU 2.

1. Press **ON/OFF** to enter menu. Repeatedly press the **ON/OFF** key to step through the menu until PRCLR is displayed. (this will be followed by a YES/NO prompt)
2. Change prompt to YES by pressing the **FIELD** key (up arrow).
3. Press the **ON/OFF** key to accept.
4. “PRINT MEMORY EMPTY” will be scrolled to indicate all records are cleared.
5. Keep pressing **ON/OFF** until menu is exited.

Print Formats

Three print formats are available to output PRTACC value and FIELD ID to internal memory, mobile applications, or a printer.

Includes following information:

- Scale ID/Field ID
- Weight
- Weight Tag (NE, GR, Load/Unload)
- Accumulated Weight
- Print Accumulator Tag
- Date and Time

PRTAC1: FIELD ID, 4856, GR, 274575, PA, 05FE08, 1:44P

PRTAC2: FIELD ID, 05FE25, 1:44P, 4856, GR, 274575, PA

PRTAC3: FIELD3, 5977, LB, GR, 309719, PA, 05FE25, 4:42P

PRTAC4: TRUCK1, 4856, GR, 274575, PA, 05FE25, 1:44P, FIELD NAME

PRTAC5: TRUCK1, 05FE25, 1:44P, 4856, GR, 274575, PA, FIELD NAME (Preferred Format for Harvest Tracker/Harvest Tracker Lite Mobile App)

PRTAC6: FIELD3, 5977, LB, GR, 309719, PA, 05FE25, 4:42P, FIELD NAME

See Menus and Calibration to change print format **PRTFMT**.

Saving/Printing Gross Weights

SERIAL FEATURE

1. Press and hold **START/STOP** for 3 seconds to send weight to serial port or mobile applications (Figure 2-9).

Each time a print function is performed, the value displayed is added to the **PRTACC** which is the accumulated weight. Weight is accumulated until cleared.



Figure 2-9: Saving and Printing Gross Weights

Turn Off Indicator

1. Press and hold **ON/OFF** until **OFF** is displayed, (Figure 2-10).

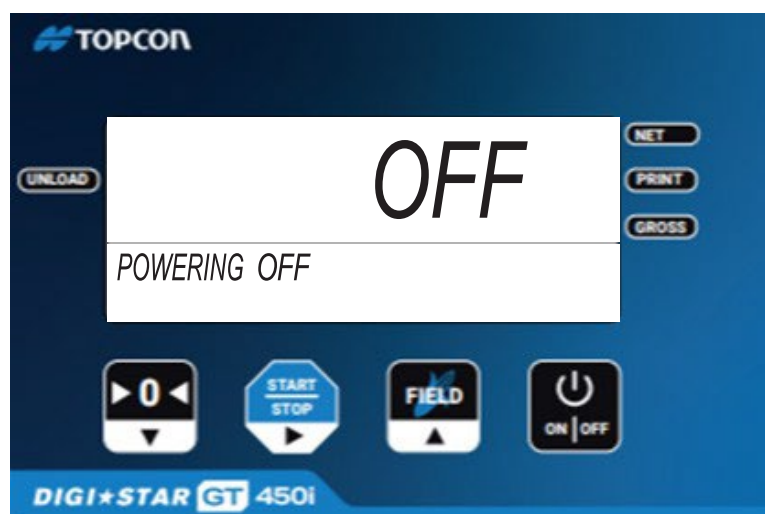


Figure 2-10: Turn Off Indicator

ISOBUS

The GT450i includes ISOBUS connectivity, an additional cable is needed (P/N ??????-01) to connect the indicator to the network.

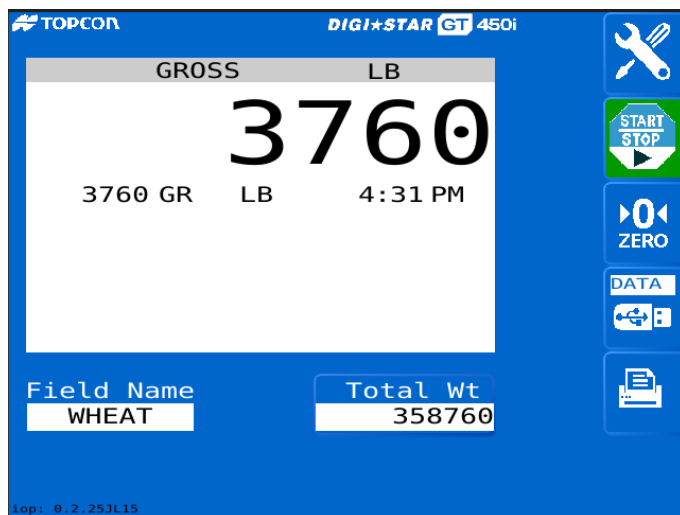


Figure 2-11: General Weighing

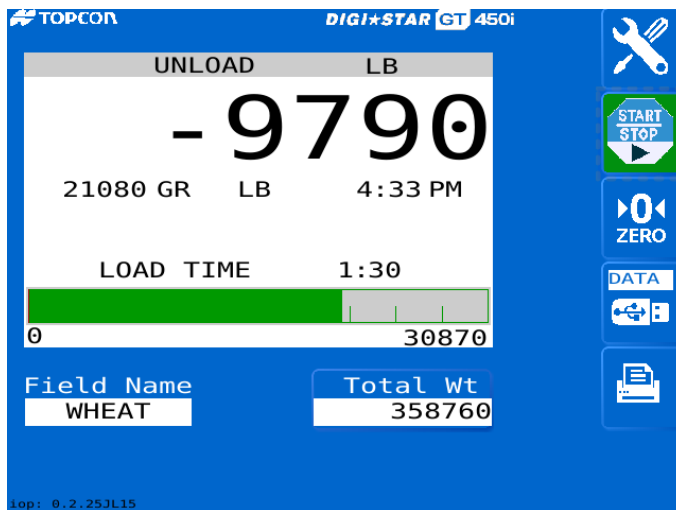


Figure 2-12: Active Load

1. **MAIN DISPLAY** – Shows current weight when in general weighing. The screen will be updated with the Load time and bar graph when in load/unload mode.
2. **FIELD NAME** – Displays current field name, click on FIELD NAME to edit. Field name can also be edited via the indicator. (See Field ID / Accumulator)
3. **TOTAL WT** – Displays Total accumulated weight for Field. To clear, press and hold Total WT for 3 seconds. Total WT can also be cleared via the indicator. (See Field ID / Accumulator)
4. **SCALE SETUP** – Enters screen that includes the most used settings.
5. **START/STOP** – Press to start and stop unloading. Indicator displays amount unloaded, stores or prints to serial port when complete
6. **ZERO** – Press and hold for 3 seconds to zero balance
7. **DATA** – Enters screen for data transfer (Load records and/or indicator settings)
8. **PRINT** – Send weight to serial port or mobile applications.

Scale Setup

DIGI★STAR

Bluetooth Name:

SETUP Number:

CAL Number:

Display Counts:

Weight Display Units
 MATCH UT ☐ LB ☒ KG ☐

Claimed Address:

VT Instance: 1

Figure 2-13: Scale Setup

1. **Bluetooth Name** – Displays current Bluetooth name. (Used to connect to mobile applications). Click on box to modify, Bluetooth name can also be edited via indicator. (See BTNAME)
2. **SETUP Number** – Displays Setup number. Click on box to modify, Setup Number can also be edited via the indicator. (See SETUP Number)
3. **CAL Number** – Displays Calibration number. Click on box to modify, Calibration number can also be edited via indicator. (See CAL Number)
4. **Display Counts** – Display current Display counts, click on box to modify. NOTE: Display Counts is also affected by the Setup Number, See 50 Series Technical manual for more information regarding the SETUP number.
5. **Weight Display Units** – Display current units setting. Click on LB, KG quickly change the indicators units. Match UT setting will follow the UNIT setting on the connected Universal Terminal.
6. **Claimed Address** – Allows the GT450i to claim a specific address. Upon being commanded to change addresses, the GT450i stores the new address, ends the use of the current address, and performs a new address claim starting at the new address. The default address is typically 144 (0x90).
7. **VT Instance** – Preferred virtual terminal instance to display mask on.
8. **Menu Screen** – The menu screen will allow entry to the indicators' menu system. (the same behavior can be performed on the scale). The scale keys or direction arrows can be used to navigate this screen. Press the HOME icon to return to the main weighing screen.

Data Screen

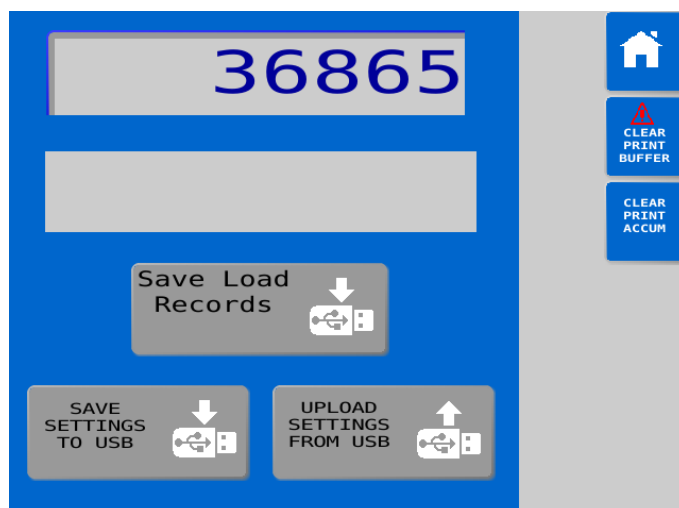


Figure 2-14: Data Screen

1. **WEIGH DISPLAY** – Shows the current gross weight.
2. **MESSAGE DISPLAY** – Displays status message when saving load records or saving/uploading indicator settings.
3. **SAVE LOAD RECORDS** – If the Universal Terminal supports file server, click on SAVE LOAD RECORDS button to download completed records to USB. The completed records can then be imported to the Harvest Tracker Program.
4. **SAVE SETTINGS TO USB** – Saves the current settings to XML files on the USB
5. **UPLOAD SETTING FROM USB** – Loads setting XML files into the GT450i's memory
6. **HOME BUTTON** – Press to return to main weighing screen.
7. **CLEAR PRINT BUFFER** – Clears all internal load records, press and hold key for 5 seconds to clear
8. **CLEAR PRINT ACCUMULATOR** – Clears the “Field total” (TOTAL WT on main display). Press and hold for 3 seconds to clear.

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Weighing Errors

Over-Capacity Limit

The display shows the message **OVRCAP** if the weight on the scale system exceeds the capacity limit. The capacity value is entered as part of the **SETUP** number to warn of overloading the scale system. Capacity can also be adjusted in Menu 3.

All Weighing Errors

If any load cell related error (over/under range, etc) is detected, the display will show the message **LOAD CELL WEIGHING ERROR**. This error cannot be cleared, and the issue will need to be corrected before the scale can be used again.

Low Battery Indication

If the supply voltage drops below the (5.5 Volts), the message **LO BAT** will be displayed. If the low power condition continues for over 2 minutes, **RECHARGE BATTERY - TURNING OFF** will periodically show on the display to alert the operator of the low battery condition. If not corrected, the indicator will automatically turn off.

Run Self Test

1. Press **ON/OFF** (2x) within 2 seconds to start the self test (Figure 3-1).

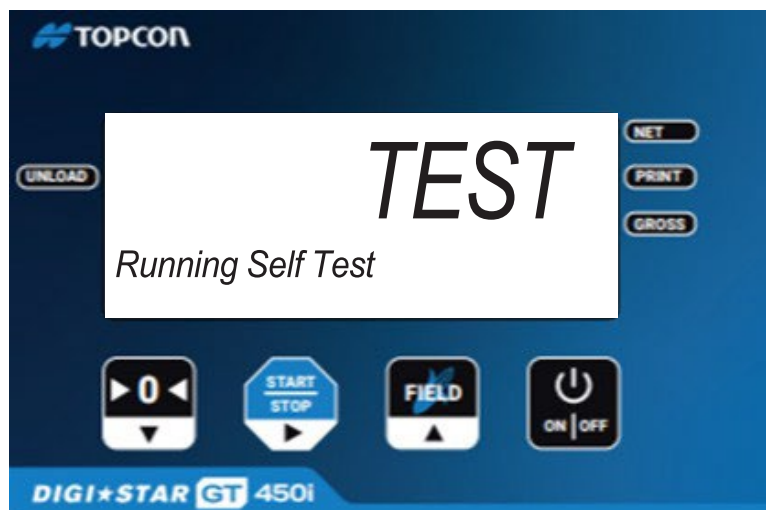


Figure 3-1: Run Self Test

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Menus and Calibration

The Indicator has optional settings that allow flexibility in the way that the scale is used and data is collected.

Changing Options Using Long Form Setup

1. Enter Long Form Setup by holding **FIELD** and **ON/OFF** for 3 seconds.
2. Press **FIELD** to advance to desired menu **1,2,3,4,5,6** or **WT CAL**.
3. Press **ON/OFF** to advance to desired setting.
4. Press **FIELD** to advance setting to desired option.
5. Press **ON/OFF** to save setting option and advance to next setting.
6. Hold **START/STOP** and press **ON/OFF** to return to normal indicator operation.

Default settings from the factory vary with options and due to customer preferences

Available Settings

- Default settings are followed by an asterisk (*).
- Display characters are shown in square brackets (like [THIS]).

Setting [DISPLAY]	Options	Description
MENU 1 - GENERAL SETTINGS		
LANGUAGE [LANGAG]	English [ENGLISH] Dutch [NEDERL] French [FRANCS] German [DEUTSH] Italian [ITAL] Portuguese [PORT] Spanish [ESPAN] Danish [DANSK] Hungarian [MAGYAR] Spanish [VESTA]	Select Language to be shown.
DISPLAY RATE [D RATE]	1, 2, 3 , 4	Update display times per second.
FIELD ID [FIELD]	NEW EZ	Identity of field location
ZERO TRACK [ZTRACK]	ON/OFF	If ON -zero track adjust balance for buildup of snow & mud
WEIGH METHOD [W MTHD]	1=General , 2=Fast, 3=Slow, 4=Lock-On	Select weigh method. Weigh methods controls the weight filtering and the speed to display the weight reading.

Setting [DISPLAY]	Options	Description
1 PRESS ZERO [1 ZERO]	ON/OFF	If ON -press and hold Zero key to Zero/Balance scale.
AUTO OFF [AUTOFF]	15, 30, 45, 60, OFF	Indicator automatically shut OFF after specified time of inactivity.
DISPLAY UNIT [LB-KG]	LB/KG	Display pounds -lb or kilograms -kg
AUTO OFF [AUTOON]	ON/OFF	Indicator automatically powers ON when power is applied.
SCROLL DELAY [SCROLL]	0,1,2,3, 4 ,5,6,7,8,9	Slow scroll rate for cold temperatures, 0=normal to 9=slowest.
SAVE TARE [SAVTAR]	ON/OFF	If ON – Indicator will save tare weight to non-volatile memory and prevent it being lost during a power cycle.
POWER LOSS MESSAGE [PWRLOS]	ON/OFF	If ON = stores time/date of power loss and displays data when power is restored.
TIME FORMAT [TIME F]	24 HR AM/PM	Select time format -AM/PM or 24 hour
TIME [TIME]	XX:XX:XX	Used to set current date: FIELD changes time START/STOP selects hh,:mm, or :ss
DATE FORMAT [DATE F]	1- mm-dd 2- mm/dd/yy 3- mm/dd/yyyy 4- dd-mm 5- dd/mm/yy 6- dd/mm/yyyy 7- ddmmyy 8- ddmmyyyy	Select date format:
DATE [DATE]	Enter XXXXXX	Used to set current date: FIELD changes date START/STOP moves to next field
DATE CHECK [DT CHK]	ON/OFF	If ON - Indicator verifies the real time clock has a valid date at power up.
REMOTE INPUT 1 [RMINP1]	OFF / PRESET / SWITCH / TARE / PRINT / HOLD / NET-GRS / M+ / ZERO / MIXCTR / TR HLD.	Set function of remote input line on power cord.

Setting [DISPLAY]	Options	Description
SETTINGS AVAILABLE IF RMINP1 = SWITCH		
REMOTE SWITCH MESSAGE [RI1MSG]		Message that is displayed for remote input switch condition.
REMOTE SWITCH STATE [R1STAT]	OPEN/ CLOSED	Set remote input line state that displays message and/or illuminates alarm lamp. Open / Closed
REMOTE SWITCH TIME [R1TIME]	0,1, 2 ,3,4,5,6,7,8,9	Set how often the remote switch message is displayed. Once every 1-9 seconds.
REMOTE INPUT 2 [RMINP2]	OFF / PRESET / SWITCH/ TARE / PRINT / HOLD / NETGRS / M+ / ZERO / TR HLD	Set function for remote port or T/R key
SETTINGS AVAILABLE IF RMINP2 = SWITCH		
REMOTE SWITCH MESSAGE [RI2MSG]		Message that is displayed for remote input switch condition.
REMOTE SWITCH STATE [R2STAT]	OPEN/ CLOSED	Set remote input line state that displays message and/or illuminates alarm lamp. Open / Closed
REMOTE SWITCH TIME [R2TIME]	0,1, 2 ,3,4,5,6,7,8,9	Set how often the remote switch message is displayed. Once every 1-9 seconds.
PROGRAM ID [PRG ID]		Display the indicator model and the program ID currently loaded.
ESTIMATED WEIGHT [EST WT]	0 ,1,2,3,4,5,6,7,8,9	Allows operator to adjust Gross weight of scale by changing the zero / balance.

Setting [DISPLAY]	Options	Description
MENU 2 - COMMUNICATIONS		
REMOTE [REMOTE]	ON/OFF	If ON – Indicator can communicate with a Cab Control Display.
SCALE NUMBER [SCL NO]	1-48	Select Scale Number for Cab Control communications.
EXTERNAL RADIO [EXTRAD]	ON/OFF	Enables external radio to be connected to the serial port.
EZ2 AUDIBLE COMMANDS [EZAUD]	ON/OFF	If ON – Enables an audible notification when an EZ2 command is sent.
RADIO HARDWARE [RADIHW]		Displays radio hardware information EXTRNL or INTRNL and hardware type.
SCOREBOARD MODE [SCOREM]	0,1,2,3,4,5,6,7,8,11,12,15,27,37,38,39	Select scoreboard output
ZERO OUTPUT [ZEROUT]		Allows zero/balance for SCOREM #11 serial gross weight.
FRONT PANEL ZEROUT [ZEROFB]	ON/OFF	Allows use of the zero key to zero/balance the serial gross weight.
SCOREBOARD MODE 2 [SCRM 2]	0,1,2,3,4,5,6,7,8,11,12,15,27,37,38,39	Select scoreboard output for scoreboard mode 2
OPERATION STATUS [OPSTAT]	0,2	Select operating data to be sent to a Remote Terminal
DYNAMIC VARIABLE ADJUST [-DVADJ]	ON/OFF	Causes negative sign to be left justified and numeric values right justified.
COM 1 BAUD RATE [C1 BD]	1200,2400, 4800, 9600 , 14400, 19200, 38400, 57600, 115200	Sets baud rate for com port #1
COM 1 PARITY [C1 PA]	NONE, ODD, EVEN	Sets parity for com port #1
COM 1 DATA BITS [C1DATA]	7,8	Sets data bits for com port #1
COM 1 DELAY [C1 DLY]	0, .10, .25, .50, .75, 1-5	Selects seconds to delay before advancing to next line.
COM 2 BAUD RATE [C2 BD]	1200,2400, 4800, 9600 , 14400, 19200, 38400, 57600, 115200	Sets baud rate for com port #2
COM 2 PARITY [C2 PA]	NONE, ODD, EVEN	Sets parity for com port #2
COM 2 DATA BITS [C2DATA]	7,8	Sets data bits for com port #2
COM 2 DELAY [C2 DLY]	0, .10, .25, .50, .75, 1-5	Selects seconds to delay before advancing to next line.

Setting [DISPLAY]	Options	Description
TARE AUTO PRINT [TAREAP]	ON/OFF	If ON -tare auto-prints displayed weight.
ONE LINE PRINT [1L PRT]	ON/OFF	If ON -indicator data prints on one line.
AUTO PRINT [APRINT]	ON/OFF	If ON -pressing keys auto-prints weight values.
PRINT FORMAT [PRTFMT]	AUTO / WTONLY / DOWNLD/ DT+TM / ID+TM / IDWTTM/ BATCH1 / BATCH3 / PRTAC1/ PRTAC2 / PRTAC3 /PRWTRC / WTRCTM/ 3200-A / 3200-B / SCLABC	Select alternate & comma (CSV) formats.
PRINT ACCUMULATION [PRTACC]		Shows a running total of weights printed.
PRINT BUFFER TO USB [PRUSB]		Sends internal print buffer to USB
PRINT BUFFER CLEAR [PRCLR]		Clears internal print buffer
PRINT BUFFER DAYS [PRDAY]	0 - 31	Number of days to export print data history - MIN = 0/ MAX = 31
REMOTE DISPLAY [RMDISP]	EZ2 / EZ3MUX / COG / NONE	Select type of remote display
REMOTE TERMINAL [RMTERM]	ON/OFF	If ON – Display data is sent to a Remote Terminal.
AUTO DETECT REMOTE DISPLAY [AUTDRD]	ON/OFF	When enabled, indicator will auto-detect connected remote display
BAR GRAPH MODE [BARGRP]	OFF / RIGHT / LEFT / MIDOUT / MID IN	Selects output for a bar graph display when used with an RD4000 Remote display
WEIGHT GRAPH [WTGRPH]	ON/OFF	Enables graph to be used with weight when used with a RD4000 Remote display.
BAR WEIGHT [BAR WT]	12000	Enter the full-scale gross weight for the bar graph display.
PRESET GRAPH [PRGRPH]	ON/OFF	Enables graph to be used with presets when used with an RD4000 Remote Display.
NON DISPLAY [NONDSR]	ON/OFF	Enables NON-display mode.

Setting [DISPLAY]	Options	Description
SWAP COLONS [SWAPCO]	ON/OFF	Swaps colon locations on remote displays when using the MARQUE feature
ISOBUS BASE ADDRESS [ISOADR]	128 – 239, 144	Assign starting base the ISOBUS gateway should 'address claim'.
ISOBUS VT INSTANCE NUMBER [ISOINT]	1-32	Preferred virtual terminal instance to display mask on.
WIFI NAME [WIFINM]		WIFI network SSID. Only editable from mobile app. (Max 32 characters)
WIFI PASSWORD [WIFIPS]		Password for WIFI network. Only editable from mobile app. (Max 32 characters)
WIFI CHANNEL [WIFICH]	AUTO , 1 – 11	Select WIFI channel number for Datalink and/or Cab Control communications.
WIFI POWER [WIFICC]	US	Select WIFI transmit power.
BLUETOOTH NAME [BTNAME]	NEW EZ	Display name of Bluetooth. (Used to connect to mobile applications)

Setting [DISPLAY]	Options	Description
MENU 3 - WEIGHT		
DISPLAY COUNT [COUNT]	.01, .02, .05, .1, .2, .5, 1, 2, 5, 10 , 20, 50, 100	Select display count size of weigh values
CAPACITY [CAP]	40000	Enter MAXIMUM weight measurable on scale
WM1 ADJUST 1 [WMA1-1]	2 – 100, 10	Increase this number to smooth weighing
WM1 ADJUST 2 [WMA1-2]	0 – 100, 4	0=off. Use value less than WMA1-1 for quick response weight.
WM1 ADJUST 3 [WMA1-3]	4000	Enter the weight to activate quick response weight Default-10% of scale capacity
WM2 ADJUST 1 [WMA2-1]	2 – 100, 30	Increase this number to smoothing weighing.
WM2 ADJUST 2 [WMA2-2]	0 – 100, 10	0=off. Use value less than WMA2-1 for quick response weight.
WM1 ADJUST 3 [WMA2-3]	4000	Enter the weight to activate quick response weight Default-10% of scale capacity.
MOTION [MOTION]	ON/OFF	ON = Motion arrow flashes with unstable weight. Prevents: Print, Zero, Tare, Advance.
MOTION WEIGHT [MOT WT]	0	Enter weight used to detect motion. 0=Standard detection.

Setting [DISPLAY]	Options	Description
MENU 4 - PRESET, ALARM AND TIMER		
PRE-ALARM METHOD [P MTHD]	WEIGHT , PERCENT	Select weight or percentage method for pre-alarm.
PRE-ALARM [P-ALM]	100	Enter value to activate early warning that scale is reaching the preset.
ALARM OUTPUT [AL OUT]	OFF, PRESET , TR	Select preset or TR to control relay, horn & lamp.
BUZZER [BUZZER]	OFF, ON , 1-10	ALARM BUZZER -allows user to turn off alarm horn when loading/unloading.
RELAY [RELAY]	OFF, PRESET , SETPNT	Selects the behavior of the +12VDC alarm output
PRESET DELAY [PRTDLY]	SET IN SECONDS	Set time to automatically advance/print entered preset
RELAY OUT [AL OUT]	SIG 12v /SIG 0v	Select the state of the relay when preset is reached. SIG12V or SIG 0V.
PRESET CLEAR ON PRINT [PRCLPT]	ON /OFF	If ON – Clears preset and preset ID when a print occurs.
KEY SOUND ENABLE [KEYSND]	ON /OFF	When enabled, pressing keys on the front panel will give an audible feedback.
GROSS SET PNT OUTPUT [SETOUT]	OVER /UNDER	Select when the +12VDC Alarm Output becomes active.
GROSS SET POINT CHNG [SETCHG]	500	Set required weight change to turn off +12VDC Alarm Output.
GROSS SET POINT DELAY [SETDEL]	SET IN SECONDS	Set time delay before the +12VDC Alarm Output can Turn On/Off.
GROSS SET POINT [SETPNT]	5000	Set a gross weight in long form that will activate +12VDC Alarm Output on Power cord.
SET POINT COUNT [SETCTR]		Counts how many times set point is activated.
SET POINT WEIGHT SOURCE [STWTSC]	SERIAL/ NORMAL	Sets weight source for use with set point feature.
TOLERANCE METHOD [T MTHD]	WEIGHT , PERCENT	Select weight or percentage method for preset tolerance.
TOLERANCE [TOLER]		Select tolerance weight or percentage to accept preset.
TOLERANCE OVERLOCK [OVERLK]	ON /OFF	Prevents auto-advancing if preset exceeds tolerance
DRIVE RATIO [DRATIO]	TIMER, COUNTER	Enter the number of input pulses that equal 1 mixer revolution.

Setting [DISPLAY]	Options	Description
MENU 5 - COM PORT SETUP		
REMOTE DISPLAY PORT [RMDPRT]	OFF, COM1, COM2, COM3	Sets serial remote display output
RADIO PORT [RADPRT]	OFF, COM1, COM2, COM3	Sets internal radio port
EXTERNAL RADIO PORT [EXRPRT]	OFF, COM1, COM2 , COM3	Sets external radio port
PRINTER PORT [PRPORT]	OFF, COM1, COM2 , COM3	Sets printer port
SCOREBOARD PORT [SCPORT]	OFF, COM1 , COM2, COM3	Sets scoreboard port
OPSTAT PORT [OPSTAT]	OFF, COM1 , COM2, COM3	Sets opstat port
20MA MIRROR PORT [20MAMR]	OFF, COM1 , COM2, COM3	Sets port for 20MA signal to mirror, (serial models)
SCOREBOARD 2 PORT [SC2PRT]	OFF, COM1, COM2 , COM3	Sets scoreboard port 2
DEBUG PORT [DBGPRT]	OFF , COM1, COM2, COM3	Sets internal debug port

Setting [DISPLAY]	Options	Description
MENU 6 - AUTOLOG		
RPM START/STOP CONTROL [RSSCTL]	RPM , WEIGHT, SWITCH, MANUAL	Selects control of the Start/Stop Feature
RPM STOP SPEED [RSSMIN]	300	Set to 20-50% of PTO operation RPMs. Stop is activated using this value.
RPM START TOL SPEED [RSSTOL]	100	Set to 10% of PTO operating RPMs. Start is activated using this value + RSSMIN.
RPM START DELAY [RSSTDY]	2.0	Start activated when RPMs above RSSMIN + RSSTOL for this time in seconds.
RPM STOP DELAY [RSSPDY]	2.0	Stop activated when RPMs below RSSMIN for this time is seconds.
RMT CC START STOP ENABLE [RMC EN]	ON	If ON – Enables Cab Control start/stop control.
FEEDBOX STRT/STP POLARITY [FSPOL]	CLOSE , OPEN	Select Open or Close to activate automatic Start/Stop.
SWITCH START DELAY [SWSTDY]	0	Sec to delay start after switch is enabled.
SWITCH STOP DELAY [SWSPDY]	0	Seconds to delay stop after switch is disabled.
AUTOLOG WEIGHT THRESHOLD [ATLGWT]	300	Minimum weight to consider a load has started
WEIGHT STOP DELAY [WTSPDY]	2	Seconds to delay stop after weight change has stopped.

NOTE: To enter menu 8 settings, a “password” is needed. Please contact Professional Services for assistance.

Setting [DISPLAY]	Options	Description
MENU 8 - SETUP AND CALIBRATION		
SIGNON SETTING [SIGNON]	ON/OFF	Enables continuous display of sign-on message.
SIGNON MESSAGE [SIGMSG]		Enables editing of the sign-on message.
MAINTENANCE MESSAGE [MANTMG]		Enables editing of the maintenance message.
MAINTENANCE MESS. TIME [MANTTM]		Time for maintenance message to be triggered.
MAINTENANCE MESS. CLEAR [MANCLR]		Allows for clearing of maintenance message time or entry of new time.
SPECIAL MESSAGE DATE [SPCDAT]		Edit date (MM/YY) to display message.
SPECIAL MESSAGE TEXT [SPCMSG]		Edit special message text.
MARQUE ACTIVATION [MARQUE]		Displays current time if weight is less than 2% capacity and not motion is detected.
DEAD WEIGHT CAL [WT CAL]	Follow instructions shown on LCD	Calibration method using weights.
CALIBRATION MATCH [CALMAT]	Follow instructions shown on LCD	Calibration method used for matching a known weight.
RPM RECORDING INTERVAL [RPMINT]	15	User entered recording interval in seconds between each record.
SAVE RPM/WEIGHT/DATA [RPMUSB]		Saves RPM, Weight, Date, and Time records in memory to USB.
DISPLAY CURRENT RPM [RPMDSP]		Displays the current RPM measured by the indicator.
MIX LOG START WT POINT [MXLGSW]	300	Change the minimum weight to consider a load has started or stopped.
RPM NUMBER OF LOADS [RPNMLD]		Display the total number of RPM loads recorded on the indicator.
RPM NUMBER OF RECORDS [RPMNRC]		Display the total number of records recorded on the indicator.
CLEAR RPM DATA MEMORY [RPMCLR]		Deletes all records from memory.
SAVE ALL RPM DATA TO USB [RPMDMP]		Advanced diag. tool - all binary data in the record database to the USB.

Setting [DISPLAY]	Options	Description
DISPLAY ALL PEAK WEIGHTS [DESPEK]		Display each peak weights recorded showing the date and gross weight.
SAVE PEAK WEIGHTS TO USB [SAVPEK]		Save the Weight, and Time/Date records to the USB.
SETUP NUMBER [SETUP]	146040	Quick entry method selects weigh method 1-4 lbs, 5-8 kg, gain 1-9, display counts 1-9 and capacity *1000
CALIBRATION NUMBER [CAL]	32640	Weight displayed at 0.4mV/V
SAVE CURRENT/REST. IMAGE [SAVMEN]		Saves the current and restore settings to XML files on the USB.
LOAD CURRENT/REST. IMAGE [LD MEN]		Loads any of the restore images from the USB and saves those settings in memory.
SAVE SETTINGS TO REST. IMAGE [ST SET]		Stores current settings into 1 of restore point images. (USER, OEM, FACTORY)
RESTORE SETTINGS TO REST. POINT [SW SET]		Restores a restore point to current settings. (USER, OEM, FACTORY)
ALL REST. POINT MEMORY TO USB [RESDMP]		Advanced diagnostics tool, downloads all restore images memory to USB.
KEYTEST [KEYTST]		Enables front panel key test.
KEY LOG DUMP [KEYDMP]		Downloads the last 680 pressed on the indicator.

Short Form Calibration

The Short Form Setup & Calibration procedure allows you to change SETUP and CAL numbers of indicator. Do not attempt to calibrate scale if indicator is not reading stable weights. Calibration procedure will not fix instability, inconsistencies, or flashing RANGE messages.

Obtain Current Setup and Calibration Number

Write down current SETUP and CAL numbers of your GT450 indicator. These numbers are displayed during Self Test.

SETUP # _____

CAL # _____

To run self test with indicator ON:

1. Double press **ON/OFF** twice to start self test.
2. Press **ON/OFF** to pause the self test while numbers are displayed.
3. Press **ON/OFF** again to allow self test to complete normally (Figure 4-1).

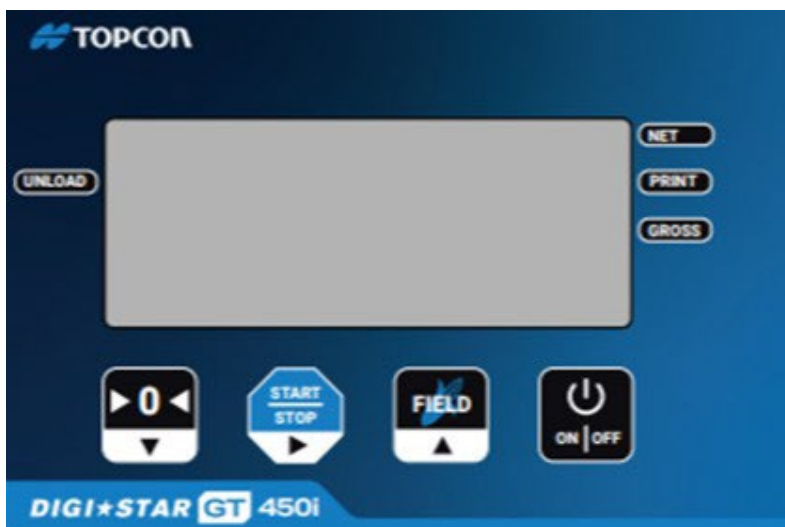


Figure 4-1: Obtain Current Setup Number

Setup Number

Following is a list of functions that are controlled by the SETUP number:

Weigh Method (W MTHD)
 Display Units (LB-KG)
 Scale Capacity
 Display Counts (COUNT)
 Gain

Calibration Number

The CAL number is adjusted to make scale read proper weight for different load cells and to make accuracy adjustments on a scale system. Systems should be checked with known weights and adjusted if necessary to insure accuracy. Both setup and calibration numbers are changed to convert a scale from lbs to kgs.

Calibrating Scale for Maximum Accuracy

Note: To accurately calibrate scale, you need a large amount of weight that has a known value. For best results you should have at least as much weight as largest load you plan to weigh.

Changing Scale Calibration to match another Scale

“Scale Matching” functionality allows the adjusting of the calibration number by inputting two weight values. The first weight value is the “display” weight (current indicator weight). The second weight value is the “actual” (or real) weight value. The calibration value will scale all weight values (including balance points).

Calibration = “actual weight” / “display weight”

Enter menu 8 to access CALMAT, indicator will display:
(To enter menu 8 settings, a “password” is needed. Please contact Professional Services for assistance)

ENTER DISPLAYED WEIGHT AND PRESS **ON/OFF**

Indicator will display the current weight on scale, press **ON/OFF** to accept value. Indicator will display:

ENTER THE ACTUAL WEIGHT AND PRESS **ON/OFF**

Enter weight from scale to match and press **ON/OFF**.

Indicator will display GOOD and return to weighing mode with entered number displayed.

Determining New Setup and Calibration Numbers

1. Press **ZERO/BALANCE** to zero-balance.
2. Put KNOWN WEIGHT on scale platform and write down DISPLAY WEIGHT. Follow the steps described in the “Enter a new Setup and Calibration number” to determine EXISTING CALIBRATION NUMBER. Perform the following equation to determine the new ACCURATE CALIBRATION NUMBER to be entered on the display.

KNOWN WEIGHT

DISPLAYED WEIGHT X EXISTING CALIBRATION NUMBER = ACCURATE CALIB. NUMBER

The SETUP number does not change.

Enter a New Setup and Calibration Number

1. Press and hold **ZERO/BALANCE** and **ON/OFF** for 3 seconds to enter short form calibration.
2. The display will flash SETUP and then display the 6-digit setup number with the right digit flashing.
3. Press **FIELD** several times to increment digit to the proper value (Figure 4-2).
4. Press **START/STOP** to advance the digit right. Repeat steps 3 and 4 for each digit as required.

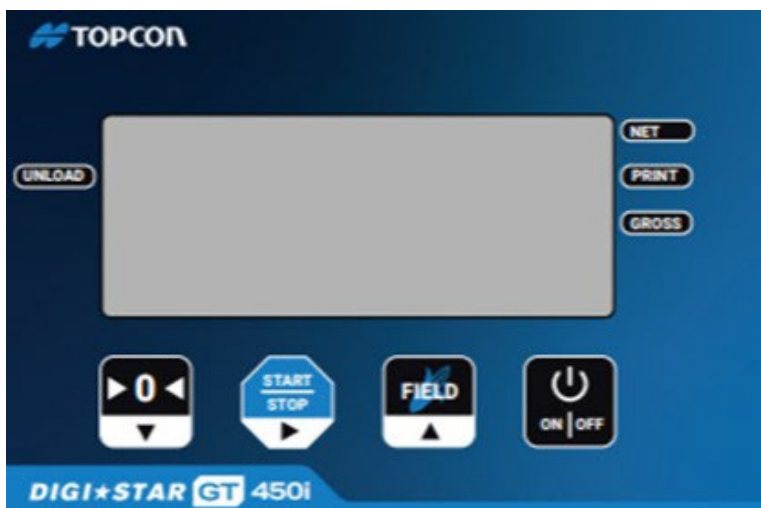


Figure 4-2: Enter New Setup Number

5. Press **ON/OFF** to enter new setup number and display calibration number. Repeat steps 3 and 4 to modify the calibration number.
6. Press **ON/OFF** to enter new calibration number and display will go back to normal (Figure 4-3).
7. Verify the accuracy of the scale.

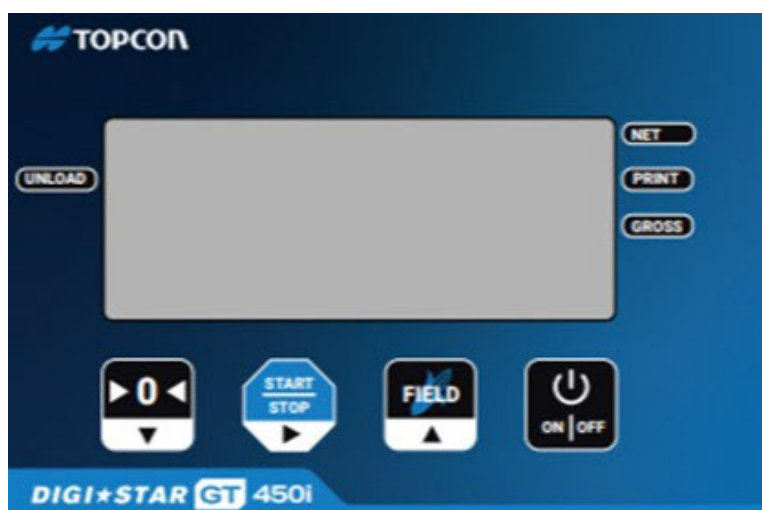


Figure 4-3: Enter New Setup Number

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Installation

Safety

Cleaning



CAUTION

Do not use running water (for example, high pressure cleaners or hoses) to clean the indicator. damage, loss of data, or loss of warranty.

Charging and Battery Welding

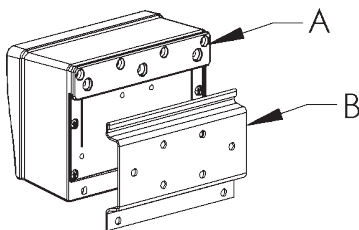


CAUTION

Disconnect all cables from the weighing indicator before charging the battery or welding on the machine. If cables are left connected, the weighing indicator and connected load cells could be damaged.

Indicator Mounting

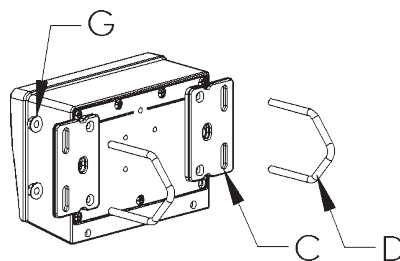
Rail Mount



A. BRACKET - STR TOP MOUNT (403769)

B. BRACKET - ROBO MOUNTING (403980)

Wing Mount

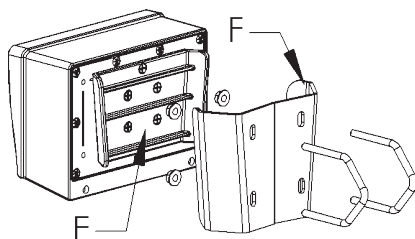


C. BRACKET - WING MOUNT (403770)

D. U-BOLT, 1/4-20 x 3.25 ZP (405069)

G. NUT, 1/4-20 TOP LOCKING FLANGE (405084)

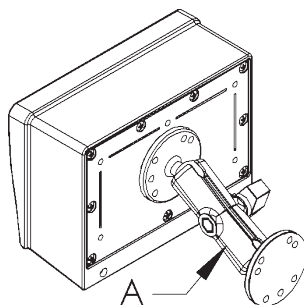
Wedge Mount Standard



E. BRACKET - MODIFIED PLASTIC WEDGE MOUNT (403771)

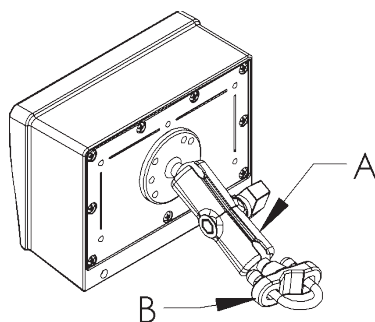
F. WEDGE MOUNT BRACKET, INCLUDES U-BOLTS & NUTS (405124)

Ram Mount Standard



A. RAM MOUNT (403180)

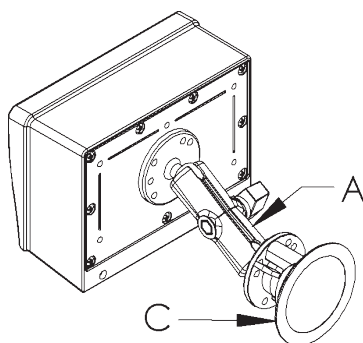
U-Bolt Base



A. RAM MOUNT (403180)

B. MOUNT BASE - 1" BALL U-BOLT (403179)

Twist Lock Suction Cup



A. RAM MOUNT (403180)

C. RAM SUCTION CUP W/TWIST LOCK (404230)

Cable Connection



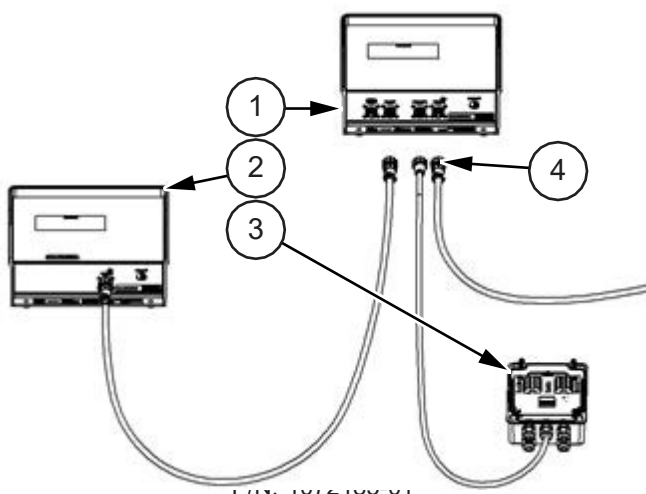
WARNING

The power cable connector is a disconnect device and must be easily accessible in all installation configurations.



WARNING

Supply power to device must include an in-line fuse. End user must determine proper fuse sizing for their specific application and installation. Current draw for this device is dependent on setup with a maximum of 6A.

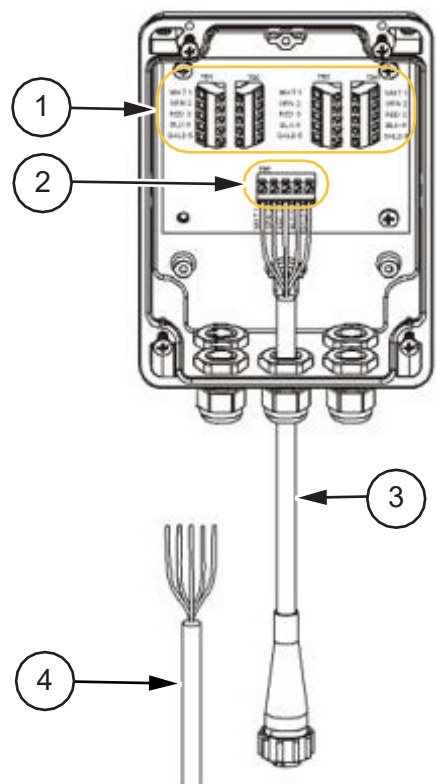


1. Scale Indicator
2. Remote indicator (optional)
3. Junction Box
4. Power Cord (See Table 5-1)

Table 5-1: Power Cord Pin and Wire Functions

Pin	Wire	Function
1	Red	+12V _{DC} to +24V _{DC}
2	Black	Ground
3	Orange	Alarm Out
4	Blue	Remote Input

Wiring Load Cells to Junction Box



Terminal blocks for up to four load cells

2. Terminal block for junction box cable
3. Junction box cable
4. Load cell cable

Figure 5-1: Junction Box Wiring Diagram



NOTE

See Table 5-2 for wire function.

Table 5-2: Load Cell Wire Functions

Wire	Function
White	Signal +
Green	Signal -
Red	Excitation +
Black	Excitation -
Shield	Shield

Load Cell Direction

When installing a load cell, observe the direction of the arrow on the label (for example, see Figure 5-2). Installing a load cell upside down will cause negative readings on the indicator.

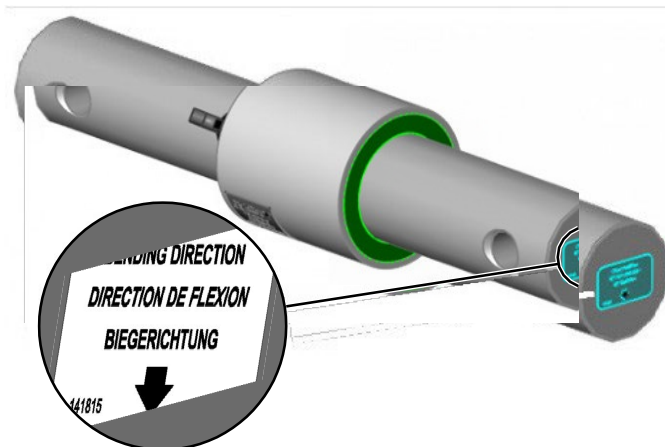


Figure 5-2: Load Cell Direction Label

Intentional Blank Page

Troubleshooting

Indicator Troubleshooting

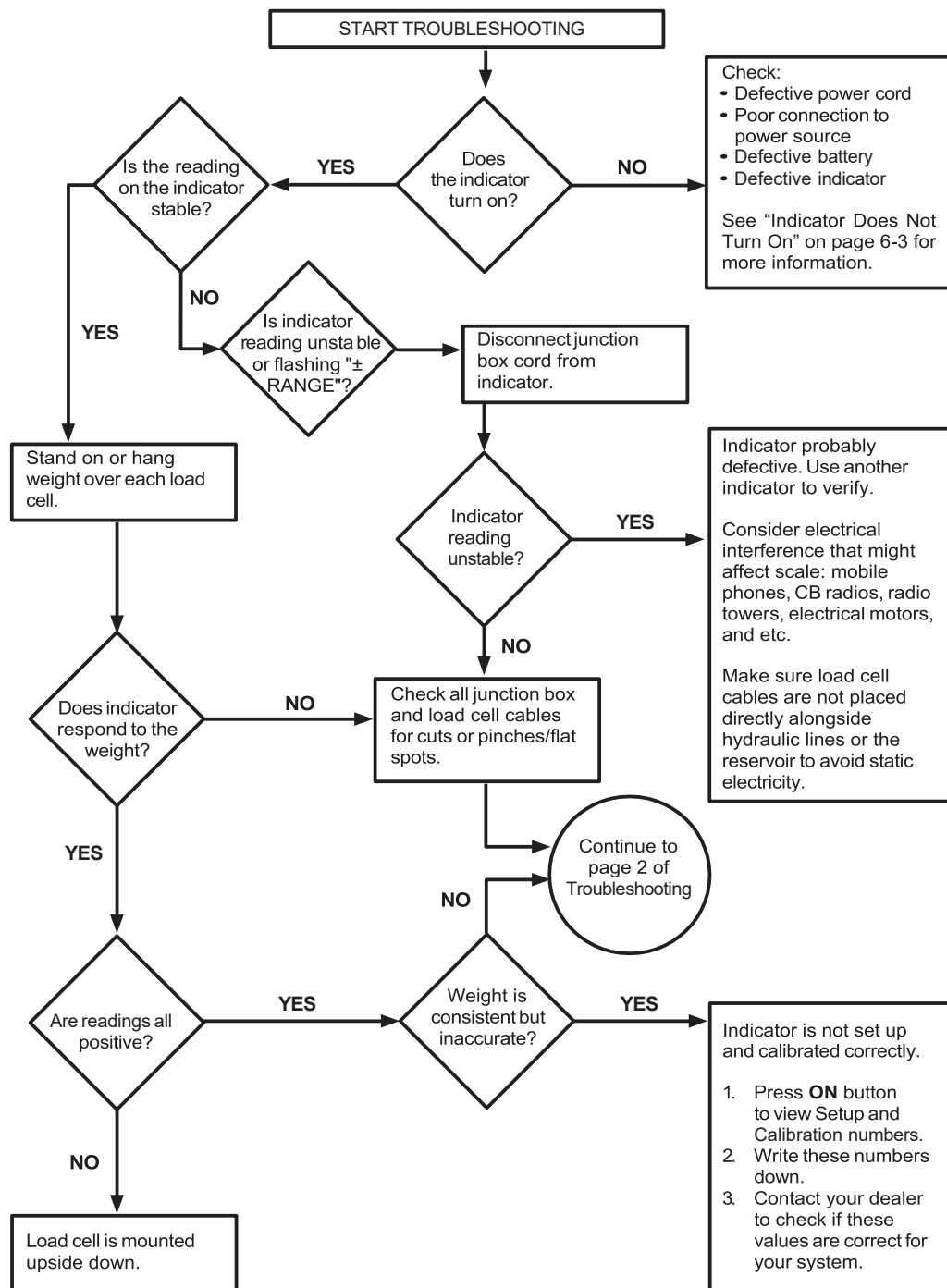


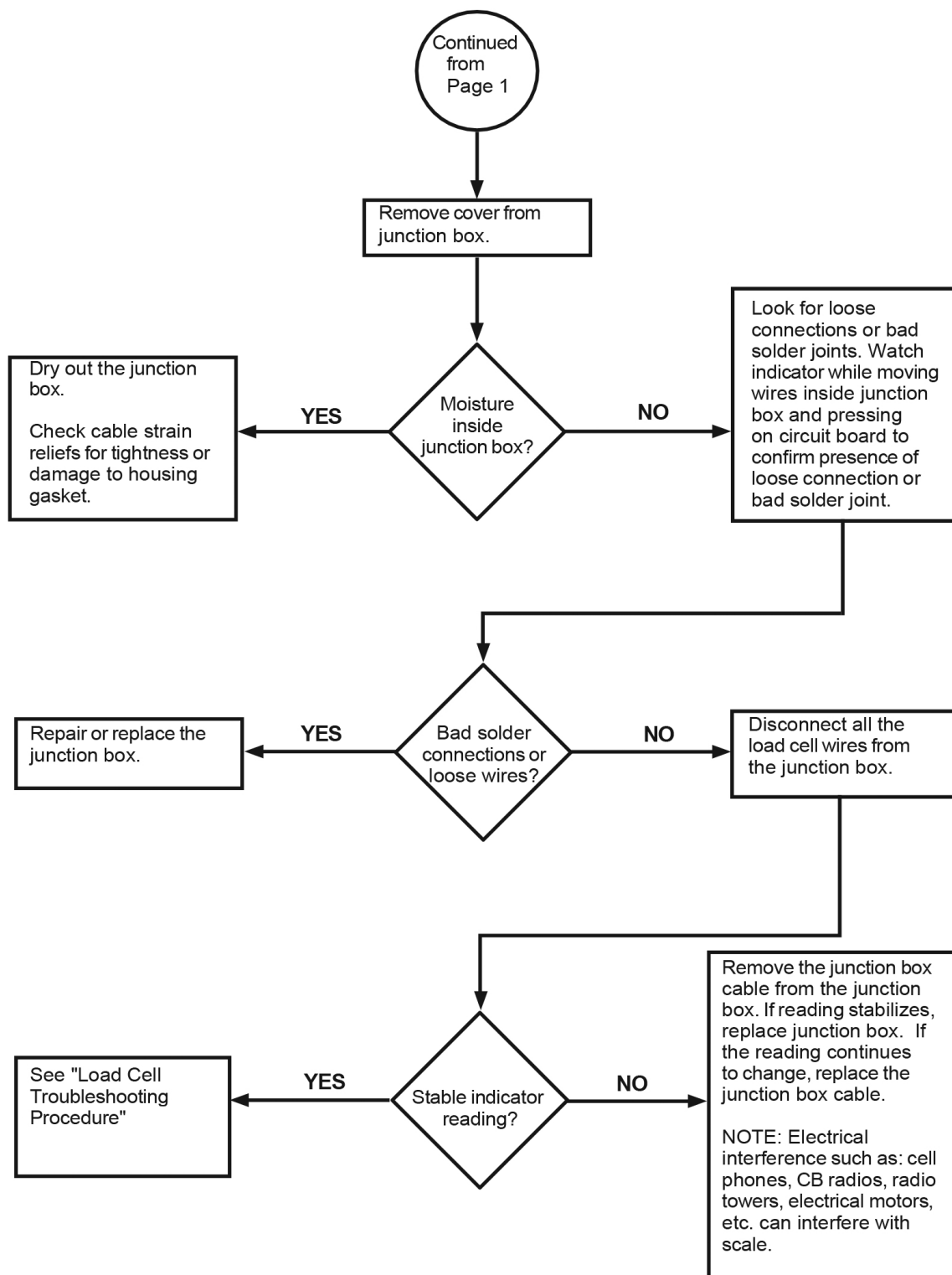
NOTE

Be aware of electrical interference that might affect your scale such as mobile phones, CB radios, radio towers, electrical motors, etc.

Also make sure load cell cables are not routed directly alongside hydraulic lines or reservoirs because of interference from static electricity

Complete the troubleshooting steps in the order indicated in the following flow chart.





Indicator Does Not Turn On

Table 6-1: Indicator Does Not Turn On

Possible Cause	Remedy
1. Defective power cord	A voltmeter can be used to check the power cord. Measure across pin 1 (Positive) and pin 2 (Negative). The meter should read between 10.5 and 14.5 volts DC. If the meter indicates a negative reading, then the wiring or the battery connection may be reversed.
2. Poor connection to power source	If the voltage to the indicator is too low, there may be a poor connection in the power cable. Make sure all wire connections to the power source are clean and tight. If possible, check the voltage to the indicator while the indicator is powered up. If the voltage drops below 10.5 volts DC when the indicator is turned on, there may be a connection problem.
3. Defective battery	Check the battery with a voltmeter while the indicator is powered up. If the voltage does not stay above 10.5 DC, the battery may be too weak to power the indicator
4. Defective indicator	If you suspect a bad indicator, check the fuse inside the housing. If your power cable supplies 12 volts DC to the indicator at all times and the fuse is good, then the indicator will need to be sent for repair.

Load Cell Troubleshooting

To test load cells to determine if they are working properly, disconnect each one from the junction box; then connect them one at a time and record their readings on the indicator.

Here are the troubleshooting steps in detail:

1. Disconnect all load cell wires from the junction box. (The indicator can remain powered on.)



NOTE

If the reading on the indicator is not stable, disconnect the junction box cable at the junction box.

- If this causes the reading to stabilize, replace the junction box
 - If the reading continues to change, replace the junction box cable
-

2. Zero balance the indicator. (See “Zero Balance Indicator”) The display should stay at 0.
3. Connect only one load cell back into the junction box.
4. Write down the indicator reading with the load cell connected, but without any weight applied.

The reading for a load cell depends on the size and type of load cell, and how much weight is applied to it. In general, the reading should be positive and stable, but may not match the other load cells.

5. Stand or hang a load with a known weight over the connected load cell, and write down how much the weight increased. (With only a single load cell connected, the weight readings will be heavier than actual.)
 6. Disconnect the load cell, and repeat steps 3 through 5 until all load cells have been tested. Remember to record the weight readings.
-



NOTE

- The weight readings for each load cell may be different. It is common for a load cell to have a reading that is hundreds or thousands different from the others, especially when one load cell has been carrying more weight.
 - A bad load cell will have a reading that is either unstable, shows a $\pm$ RANGE error, or is more than three times higher or lower than the average of the other load cells.
 - If just a single load cell is found to be bad, inspect its cable for damage. If no cable damage is found, replace the load cell entirely.
 - If all load cells are found to be bad, the junction box or the cable from the junction box to the indicator may be defective.
-

Technical Specifications

Physical Specifications

SIZE	7.33" long x 5.25" high x 3.38" wide (186mm x 133mm x 85mm)
WEIGHT	2 lb (.91 Kg)
ENVIRONMENTAL ENCLOSURE	IP56, IEC 60529
CONNECTORS	AMP plastic weather resistant circular connector. Gold contacts.
DISPLAY	6 Digit LCD 1" high

Operational Specifications

OPERATING TEMP	-20 to 140°F (-29 to 60 °C)
POWER REQUIREMENTS	9 to 36 VDC 160 mA nominal with four 350 ohm L.C. 6A Max Current draw
RELATIVE HUMIDITY	90% at 40° C increasing to 95% at 25° C
MAXIMUM ALTITUDE	3000 meters
ENVIRONMENTAL POLLUTION	Pollution Degree II
OVERVOLTAGE CATEGORY	Category 1
LOW BATTERY WARNING	Enabled at 10.5 V nominal
TRANSDUCER EXCITATION	8 VDC Nominal Capable of driving 16, 350 Ohm transducers Short circuit proof
TRANSDUCER SIGNAL	Compatible with transducers having full scale indicator transfer characteristics greater than 0.25 mv/v
SPAN ACCURACY	±0.1% + 0.005% °F (±0.1% + 0.009% °C) full scale ±1 output count
ZERO ACCURACY	0.005% °F (0.009% °C) full scale ±1 output count for 0.5 mv/v transducer
ATC	Auto Temperature Compensation of the internal circuitry for high accuracy weighing measurements
NON-VOLATILE MEMORY	FLASH for balance

NOTE: This device is capable of operation in wet locations.

Functional Specifications

SET UP AND CALIBRATION	Via front panel
GROSS RANGE	999,999 max display
HELP MESSAGES	Context sensitive help messages in 10 languages. Long messages are scrolled
AUTO RANGE	Selectable. To increase display counts at weight values of 300 and 600 display counts.
POUND/KILOGRAM	Selectable
DISPLAY RESOLUTION	0.01, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, 100
DISPLAY UPDATE RATE	Selectable: 1, 2, 3, 4 times/sec.
MAX. DISPLAY RESOLUTION	Adjustable to 40,000 counts max.
ZERO TRACKING	Selectable, On/Off
MOTION DETECTION	Selectable On/Off
WEIGH ALGORITHM	4 internally selectable digital filters to optimize performance (General, Slow, Fast, and Lock-on)

Regulatory Information and Safety Warnings

General Warnings

1. Read and become familiar with the machine manufacturer's operator's manual, including safety information, before installing or using Topcon components.
2. Use extreme caution on the job site. Working around heavy construction equipment can be dangerous.
3. DO NOT attach Topcon brackets, cables, or hose connections while the machine is running.
4. DO NOT allow any Topcon components to limit the visibility of the operator.
5. Use cable ties to keep hoses and cables secured, and away from possible wear or pinch points.
6. Use eye protection when welding, cutting, or grinding on the machine.
7. Protect yourself at all times, and wear protective clothing when working on or near hydraulic lines. Hydraulic lines can be under extreme pressure, even when the machine is turned off.



DANGER

Relieve all pressure in the hydraulic lines before disconnecting or removing any lines, fittings, or related components. If injury occurs, seek medical assistance immediately.



CAUTION

When welding, use appropriate precautions and practices. After welding, all affected areas should be painted with a rust inhibitor.



CAUTION

Disconnect all Topcon system electrical cables prior to welding on the machine.



DANGER

DO NOT weld near hydraulic lines or on any equipment when in operation.



CAUTION

All mounting bracket welds must be secure and strong to prevent the sensor equipment from vibrating excessively, or from detaching at the weld during operation.



CAUTION

This product should never be used:

- Without the operator thoroughly understanding the Operator's Manual and Quick Reference Guide.
- After disabling safety systems or altering the product.
- With unauthorized accessories

- Without proper safeguards at the job site.
- Contrary to applicable laws, rules and regulations.

**WARNING**

TPS products should never be used in dangerous environments. Use in rain or snow for a limited period is permitted.

**WARNING**

Tampering with the unit by the operator or non-factory authorized technicians will void the unit's warranty

- Do not attempt to open the unit and modify any of its internal components.
- Do not short circuit.

RF Radiation Hazard Warning

**CAUTION**

To ensure compliance with FCC and ISED Canada RF exposure requirements, this device must be installed in a location where the antennas of the device will have a minimum distance of at least 20 cm from all persons. Using higher gain antennas and types of antennas not certified for use with this product is not allowed. The device shall not be located with another transmitter.

Installez l'appareil en veillant à conserver une distance d'au moins 20 cm entre les éléments rayonnants et les personnes. Cet avertissement de sécurité est conforme aux limites d'exposition définies par la norme CNR102 at relative aux fréquences radio.

**CAUTION**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Regulatory Information

The following sections describe the FCC and ISED Canada statements.

FCC Statements

This equipment complies with FCC radiation exposure limits set forth for uncontrolled equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65. This equipment has very low levels of RF energy that it deemed to comply without maximum permissive exposure evaluation (MPE). But it is desirable that it should be installed and operated with at least 20 cm and more between the antenna and person's body (excluding extremities: hands, wrists, feet and ankles).

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Move the equipment away from the receiver.
- Plug the equipment into an outlet on a circuit different from that to which the receiver is powered.
- Consult the dealer or an experienced radio/television technician for additional suggestions

ISED Canada Statements

This Class A digital apparatus complies with Canadian ICES-003.

The term "IC:" before the radio certification number only signifies that ISED Canada technical specifications were met.

Under ISED Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication. This device complies with ISED Canada license exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Under ISED Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication.

Déclaration de conformité ISED Canada

CAN ICES-3(A)/NMB-3(A)

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Conformément à la réglementation d'ISED Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Ce matériel respecte les standards RSS exempt de licence d'ISED Canada. Son utilisation est soumise aux deux conditions suivantes: (1) l'appareil ne doit causer aucune interférence, et (2) l'appareil doit accepter toute interférence, quelle qu'elle soit, y compris les interférences susceptibles d'entraîner un fonctionnement non requis de l'appareil. Selon la réglementation d'ISED Canada, ce radio transmetteur ne peut utiliser qu'un seul type d'antenne et ne doit pas dépasser la limite de gain autorisée par ISED Canada pour les transmetteurs. Afin de réduire les interférences potentielles avec d'autres utilisateurs, le type d'antenne et son gain devront être définis de telle façon que la puissance isotrope rayonnante équivalente (PIRE) soit juste suffisante pour permettre une bonne communication.

Product Conformity

Hereby, (Topcon) declares that (GT450i) is in compliance with the essential requirements and other relevant provisions of Radio Equipment Directive 2014/53/EC.

EU Declaration of Conformity (Radio Equipment Directive 2014/53/EU).

Cesky [Czech]	(Topcon) prohlašuje, že (GT450i) jsou v souladu s požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/ES.
Dansk [Danish]	(Topcon) erklærer hermed, at (GT450i) er i overensstemmelse med kravene og andre relevante bestemmelser i direktiv 2014/53/EF.
Deutsch [German]	(Topcon) erklärt hiermit, dass (GT450i) mit den Anforderungen und anderen einschlägigen Bestimmungen der Richtlinie 2014/53/EG im Einklang stehen.

Eesti [Estonian]	(Topcon) deklareerib käesolevaga, et (GT450i) on kooskõlas direktiivi 2014/53/EÜ nõuete ja muude asjakohaste sätetega.
English	(Topcon) hereby declares that (GT450i) is in accordance with requirements and other relevant provisions of Directive 2014/53/EC.
Español [Spanish]	(Topcon) declara que (GT450i) están de acuerdo con los requisitos y otras disposiciones pertinentes de la Directiva 2014/53/CE.
Ελληνικά [Greek]	(Topcon) δια του παρούσα δηλώνει ότι (GT450i) είναι σύμφωνα με τις απαιτήσεις και άλλες σχετικές διατάξεις της οδηγίας 2014/53/EK.
Français [French]	(Topcon) déclare par la présente que (GT450i) sont conformes aux exigences et autres dispositions pertinentes de la directive 2014/53/EC.
Italiano [Italian]	(Topcon) dichiara che (GT450i) sono conformi ai requisiti e ad altre disposizioni pertinenti del direttivo 2014/53/CE.
Latviski [Latvian]	(Topcon) ar šo deklarē, ka (GT450i) ir saskaņā ar prasībām un citiem attiecīgiem direktīvas 2014/53/EK noteikumiem.
Lietuvi [Lithuanian]	(Topcon) pareiškia, kad (GT450i) atitinka Direktyvos 2014/53/EB reikalavimus ir kitas atitinkamas nuostatas.
Nederlands [Dutch]	(Topcon) verklaart hierbij dat (GT450i) in overeenstemming zijn met de eisen en andere relevante bepalingen van Richtlijn 2014/53/EG.
Malti [Maltese]	(Topcon) b' dan tiddikjara li (GT450i) huma skont ir-rekwi żiti u dispożizzjonijiet rilevanti oħra tad-Direttiva 2014/53/KE.
Magyar [Hungarian]	(Topcon) kijelenti, hogy (GT450i) összhangban van a 2014/53/EK irányelv követelményeivel és egyéb vonatkozó rendelkezéseivel.
Polski [Polish]	(Topcon) niniejszym oświadcza, że (GT450i) są zgodne z wymogami i innymi odpowiednimi przepisami dyrektywy 2014/53/WE.
Português [Portuguese]	(Topcon) declara que (GT450i) estão de acordo com os requisitos e outras disposições pertinentes da Diretiva 2014/53/CE.
Slovensko [Slovenian]	(Topcon) izjavlja, da so (GT450i) v skladu z zahtevami in drugimi ustreznimi določbami Direktive 2014/53/ES.
Slovenský [Slovak]	(TOPCON) týmto vyhlasuje, že (GT450i) sú v súlade s požiadavkami a inými relevantnými ustanoveniami smernice 2014/53/ES.
Suomi [Finnish]	(Topcon) vakuuttaa, että (GT450i) ovat direktiivin 2014/53/EY vaatimusten ja muiden asiaa koskevien säännösten mukaisia.
Svenska [Swedish]	(Topcon) förklarar härmed att (EZ2810) är i enlighet med krav och andra relevanta bestämmelser i direktiv 2014/53/EG.

TOPCON

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