FT-30M

On-board Weighing Indicator

Installation + Operation Manual

CE UKCA E11 10R-06 9362

flintec

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About this Manual

Copyright

Disclaimer

In order to improve design, performance and reliability, we reserve the right to make changes to the products contained in this manual. The information in this manual is believed to be accurate in all respects at the time of publication, but is subject to change without notice. Flintec AB, its subsidiaries or its distributors assume no responsibility for any consequences resulting from the use of the information provided herein.

Software Versions

All Flintec instrumentation is subject to continuous improvement and updates. This manual covers FT-30M on-board weighing indicator software version V0.7.0.10002. If your instrument is a previous version and you require an upgrade to the most current software, please visit the Flintec web site where the latest software update can be downloaded. Uploading software updates is explained in this manual. Please note, some options may require additional hardware to function properly.

Safety

This manual is intended for use by service technicians and operators responsible for installing and setting-up the Flintec FT-30M on board weighing indicator. Failure to follow these instructions could result in damage to the indicator or injury.

Symbol Definitions

Indicates a potentially hazardous situation that, if not avoided could result in minor or moderate injury, and includes hazards that are exposed when guards are removed. Indicates information about procedures that, if not observed, could result in damage to equipment.

warning

Indicates an important procedure that must be followed to ensure correct set-up and use.

important

Safety Precautions

Do not operate or work on this equipment unless you have read and understand the instructions and warnings in this manual. Health and safety is your responsibility. Do not use weighing indicator whilst driving.

Introduction

Product description

FT-30M is an on-board digital indicator with a clear and easy to read LED touch screen display. It is designed for industrial road vehicles, trailers and agricultural machines. It is modular plug & play, easy to install and use. It provides users with precise weight information where and when it's needed. It has two input channels for separate groups of load cells. The RS485 and RS232 communications ports allows it to integrate with PLC systems and devices such as printers.

Applications

The FT-30M is designed to work with a range of Flintec products and other makes of load cells and sensors.

It fits neatly into spare radio slots, on the dash, or can be panel-mounted.

FT-30M is a simple to use on-board vehicle weighing indicator. Its easy-to-read full colour LCD touch screen gives operators the power to control payloads, maximise profits and avoid dangerous overloads. Simple on-screen menus mean drivers can choose between Net, Gross, Percent, Collected or Delivered weights.

It's packed with standard features such as on-screen customer identification, printing and storing weighing transactions as well as high security anti-tamper pin code protection and on-screen diagnostics. It' s compatible with a range of accessory devices for maximum vehicle utilisation and payload efficiency. On screen calibration makes set-up simple.

Key Features

- Two overload alarm set-points
- On-screen customer identification
- Record collected or delivered loads
- Print bin weights with time & date
- Two channel mV input
- High resolution RGB touch screen
- Six languages. Kg or Lbs
- Anti-tamper pin code protection
- On-screen troubleshoot diagnostics
- Versatile mounting options

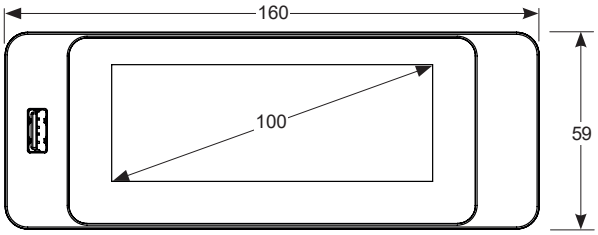
Applications

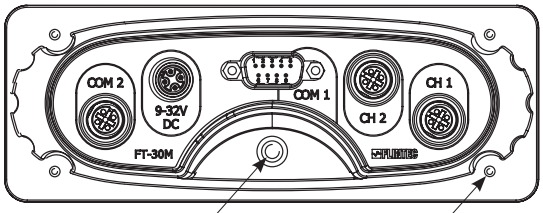
- Mines & Quarries
- Cranes & Skip truck
- Articulated
- Semi-trailer
- Dump truck
- Sweepers & Spreaders
- Tippers & Bulk
- Waste & Recycling
- Forestry & Logging
- Hook loader
- Agricultural
- Light commercial

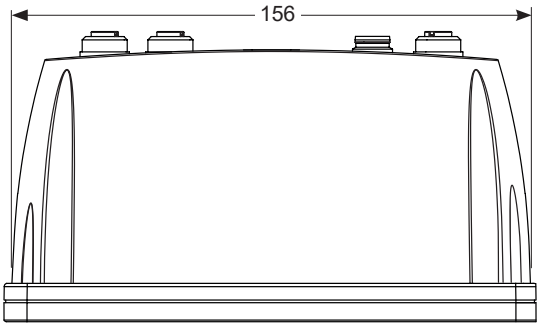
Dimensions and Mounting Options

Versatile Mounting Options

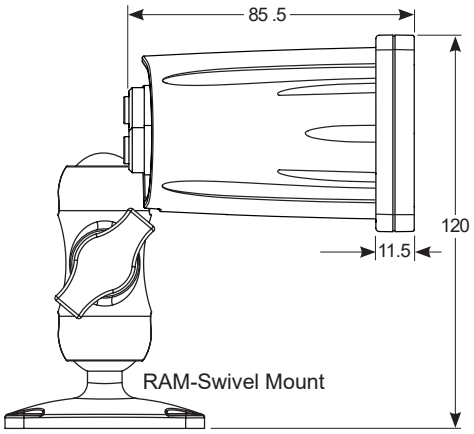
The indicator is sized to fit neatly into the spare radio DIN slot in vehicle cabs and be unobtrusive to the driver's field of vision. A RAM swivel-mount option allows the indicator to be positioned and adjusted to suit in-cab conditions and the position of the driver. A range of bracket accessories is available to adapt to any kind of installation. An IP68 enclosure option allows it to be fitted outside of the cab; e.g. on the side of the trailer.







NOT TO SCALE



Mounting Options

RAM Swivel Dash

Radio DIN Slot

IP68 Waterproof Enclosure

Panel Mounted

Installation

Radio DIN Mount Assembly

Industrial vehicles have spare radio slots for after market hardware devices. The FT-30M is sized to fit the DIN specification of a radio slot. A DIN radio kit comprises two ears, a zinc plated DIN cage, extraction keys and screws.

In the truck cab, locate a suitable spare DIN radio slot. Remove the existing cover plate. The DIN cage fits snugly into the opening right up to the lip of the DIN cage. Before you push it in, pull the wiring cables through the cage.

Once in place, use a small screwdriver or similar tool to pry down on the securing tabs around the perimeter of the cage so they grip the inside the opening. This will prevent the cage from slipping out or tilting from the weight of the FT-30M.

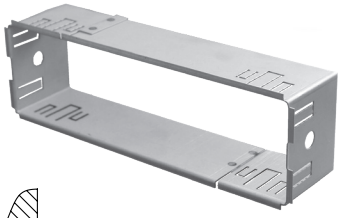
The DIN cage is symmetrical, either way, top and bottom, left and right. Some vehicles may already have an 'ISO Mounting', this means the DIN cage is not required, the FT-30M will fit snugly into the opening without the cage.

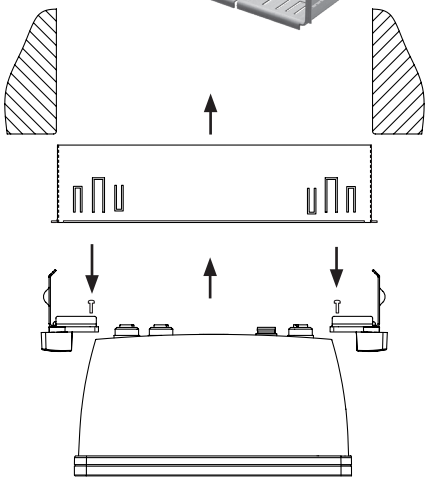
Connect the power and signal connectors to the back of the FT-30M.

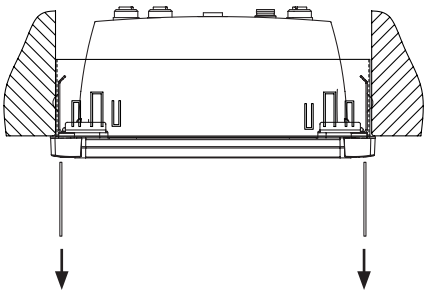
Screw the DIN mounting ears to the FT-30M using the Torx screws provided.

Push the indicator in to the DIN cage until it snaps into position.

Remove the FT-30M using the two extraction tools, place the keys into the slots located in either ear and press downwards so they grip inside the ears, gently pull on the keys and the indicator pulls out.

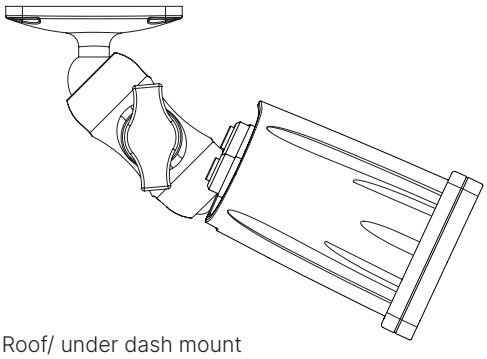






RAM-Swivel Mount

Locate the most convenient place for mounting the indicator. When attaching the RAM mount ensure sufficient headroom, bear in mind there will be cables wired into the back of the indicator, make sure to allocate enough space for them. Device support manufacturers such as RAM, Tallon and others supply an extensive range of RAM-Mount and Tallon accessories.



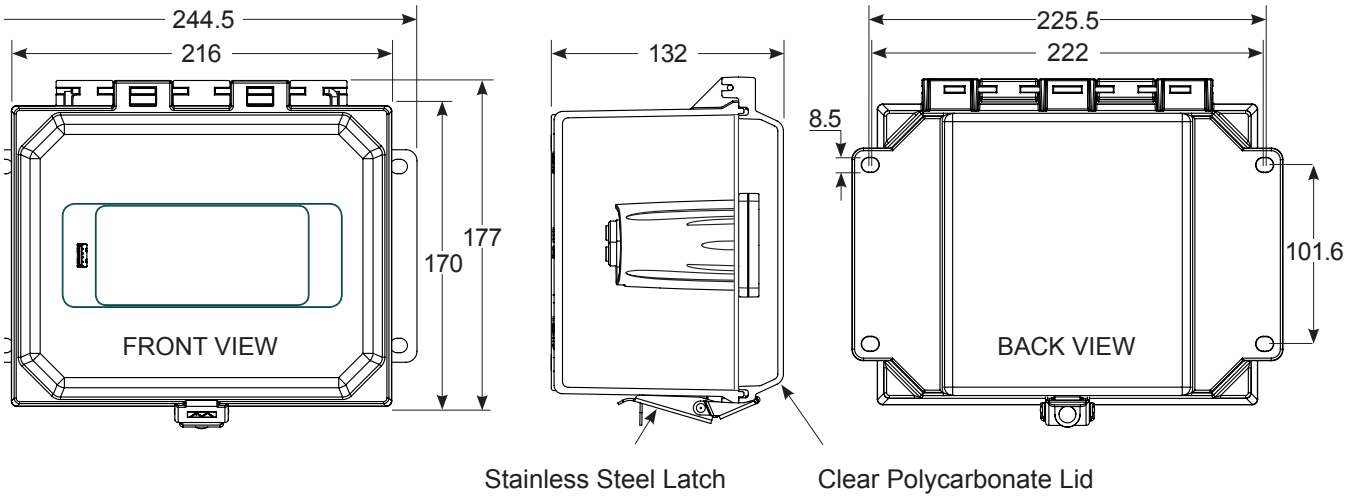
Roof/ under dash mount

RAM Mount for dashboard.
$^{1}/_{4}$ - 20 UNC Camera thread

Installation

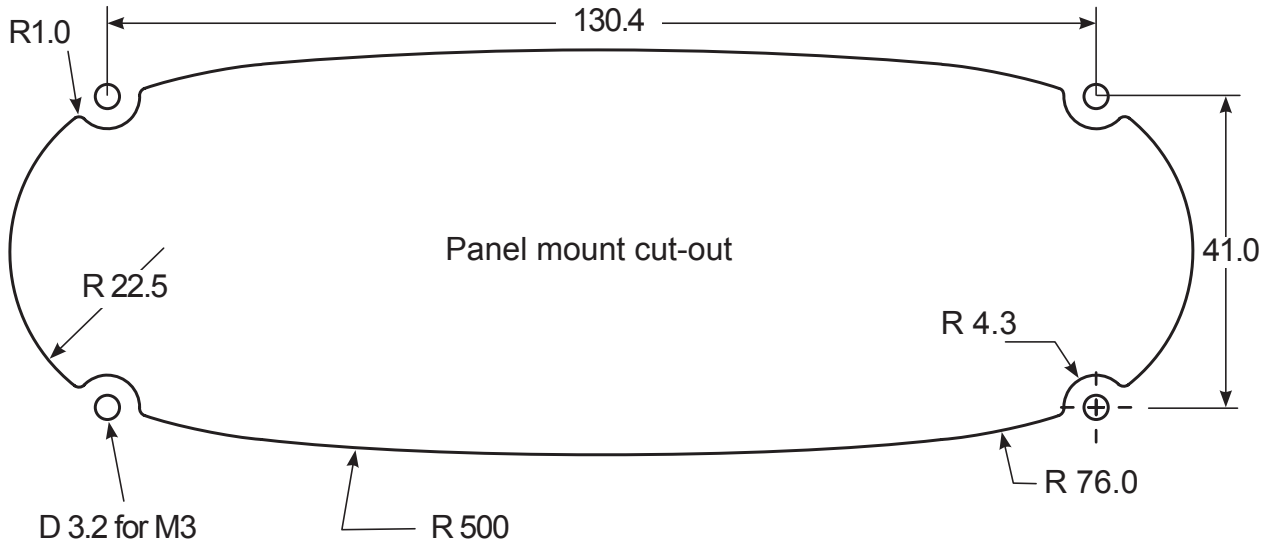
IP68 Waterproof Enclosure Mount

For externally mounted applications such as trailer-mounted or close to the loading area on the rear of the truck. The IP68 mount allows access to the functions of the indicator. The waterproof mount comprises an IP68 lockable enclosure with hinged clear lid and rear flanged mounts, a panel mount face plate and screws. Installers are required to fit cabling and drill cable entries to suit the application. Right angled connectors are required at the rear.



Panel Mount

Where installers require fitting into a panel, four M3 × 8 mm screws are required. The template below shows the panel mount profile.



Technical Specification

The FT-30M on-board indicator for industrial vehicles and agricultural machines is designed to be easy to fit and simple to operate, giving the driver precise weight information where and when it is needed. It incorporates a clear and easy to read colour touch screen display. It has two analogue input channels, an RS485 and RS232 input and output and two alarm set- points providing power to external audio-visual alarm devices. It is housed in an ABS injection moulded housing.

Power
Voltage input 9V to 32V DC
Consumption 100mA at 24V DC + external loads
Max input current 4 Amps

Display
RGB touch screen. Format 480×169 dots

Operating temperature -20° C to +50° C Brightness adjustable, high, medium or low

Analogue Inputs
2 independent channels
24 bit sigma-delta ADCs
Excitation 5V DC
Input 8 load cells per channel
8× 350 Ohms. 115 mA per channel
Max input signal: +/-19.0625mV
Input resistance: 120-1000Ohms
Sample Rate 10SPS
Resolution (ENB) 18 bits (19.5 bits)

Alarm Outputs
Alarm 1 supply voltage, high side switch only

Alarm 2 supply voltage, high side switch only

RS485 Serial
Baud Rate fixed at 9600, n, 8,1
Connector M12 - 4 pin (to be added)

RS232 Serial
Baud Rate fixed at 9600, n, 8,1 Options: Printer or Format protocol
Connector 9 way D connector

USB2

Enclosure
Housing material ABS
Total weight: 400 gr

Temperature Rating
-20° to +50° C

EMC classification
UN ECE R10.06

Internal Data Storage
65 Mb

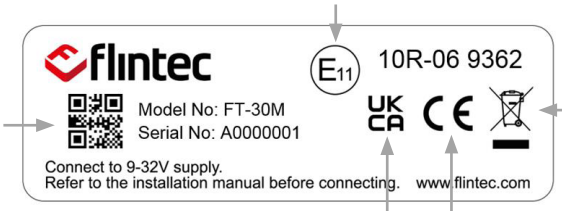
Languages

En, De, Fr, Es, It, Pt

United Nations Economic Commission for Europe (UNECE) Regulation 10 Electro Magnetic Compliance (EMC) mark and Flintec approval number.

Quick reference (QR) code

This allows the Flintec FT-30M service app to track software changes.



WEEE mark

CE Mark - laboratory tested and complies with EMC and environmental relevant regulations.

UKCA mark

Approvals & Regulations
The FT-30M is type approved by the UK Vehicle Certification Agency to UNECE Reg 10. This is a UN regulation recognised by over 50 countries which covers the electromagnetic compatibility of electrical systems used on vehicles.

FT-30M has been extensively environmentally tested for shock loads and vibration under severe conditions at a registered testing laboratory.

Electrical Connections

Connections & Junction Boxes

1. Input Channel ONE, Max +/-19.0625 millivolts
2. Input Channel TWO, Max +/-19.0625 millivolts
3. COM port 1 RS232 port for printers
4. Power Input 9-32 Volts DC & 2 Alarm power outputs
5. COM port 2 RS485 port for LDUs
6. Panel mount and radio DIN fixing screws M3
7. 1/4" - 20 UNC camera mount to attach RAM-Mount 1" ball
8. DIN radio mount ear brackets - two required

Reverse polarity and over-voltage protected. Input load cell and sensors should be in the 0-3.5mV/V range with typical impedance values of 120Ω-1000Ω. A variety of sensors comprising multiple pairs of load cells, extensometers, deflection sensors, air pressure sensors, encoders and fifth wheel load cells can be connected. The two channel input allows for applications comprising two separate bodied trucks or sensors with different inputs to be calibrated separately and independently (twin) or together (dual). The FT-30M MENU provides weighing data and user definable settings and SET-UP MODE, a password protected menu for service engineers and supervisors which includes alarm set points, calibrations and diagnostics.

M12 Electrical Connector

The modular M12 connector makes the electrical installation quick and easy. A range of versatile M12 accessories means that combinations of load cells and sensors to suit thousands of applications are easily connected. Power and signal connectors are key-wayed, gendered and thumb tightened. Junction boxes are internally wired in parallel for all analogue systems.

Male - Female Extension Cable

Junction Boxes

Extender Cables

Flintec DSB7 on-board weighing load cells have a 5 meter MALE M12 cable as standard. Extender cables for longer reach applications are available in 1, 3, 5, 7.5 and 10 metre lengths.

Electrical Connections

Wiring Connections - Rear of FT-30M

SIGNAL channel 1 & 2, M12 Female

Pin 1	BROWN	+ Excitation	5 Volts DC
Pin 2	WHITE	+ Signal	millivolts from junction box & load cells
Pin 3	BLUE	- Excitation	0 Volts
Pin 4	BLACK	- Signal	millivolts from junction box & load cells

RS232 input and output, Male 9 pin Sub D

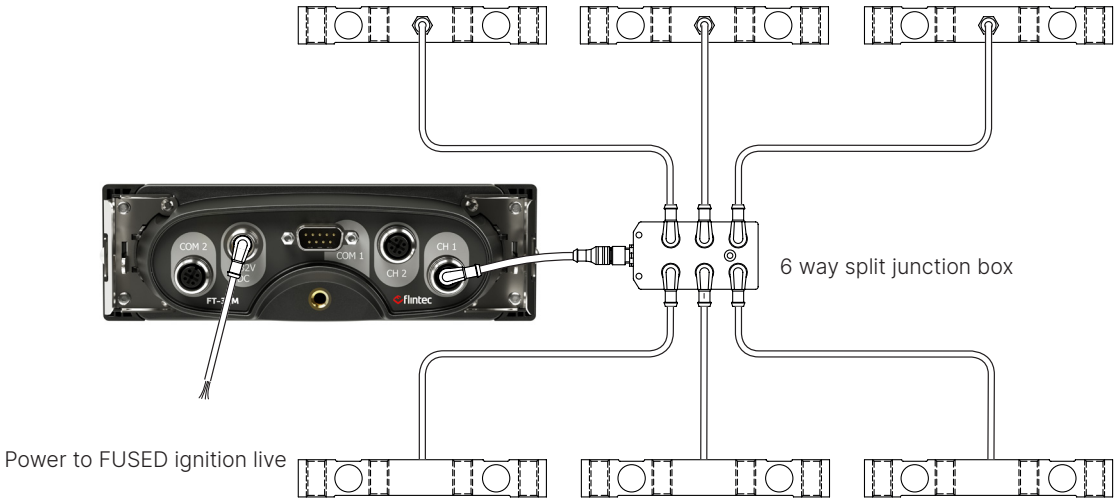
Pin 2	-	Tx	Transmit
Pin 3	-	Rx	Receive
Pin 5	-	GND	0 Volts Ground
Pin 9	-	Volts	12 Volts

POWER & ALARM, M12 Male

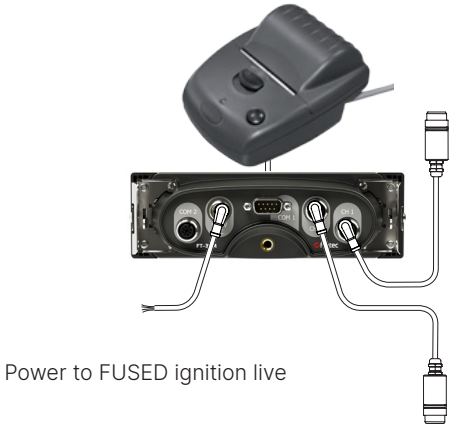
Pin 1	BROWN	Vehicle volts	12V (LCV) or 24V (MCV & HGV)
Pin 2	WHITE	Output 1	12V or 24V
Pin 3	BLUE	Ground	Ground 0 Volts (common)
Pin 4	BLACK	Output 2	12V or 24V
SHIELD		Ground	Connect cable shield to vehicle ground

RS485 input and output, M12 Female

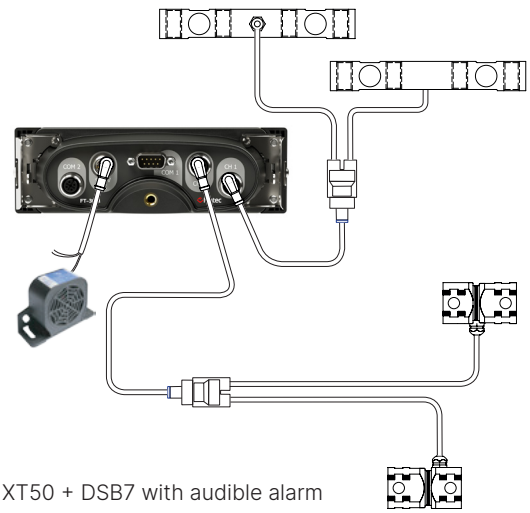
Pin 1	-	Volts	12V 0.5A max
Pin 2	-	D-	Half Duplex -
Pin 3	-	GND	0 Volts Ground
Pin 4	-	D+	Half Duplex +



Load cell wiring configuration. 2, 3, 4, 6 and 8 load cell or sensor combinations.



Air pressure transducer configuration with printer.



XT50 + DSB7 with audible alarm

Load Cells and Sensors

Load Cells and Sensors

FT-30M is compatible with any load cell or sensor with a strain gauge output including the new DSB7 range of high accuracy, high capacity truck load cells 7.5t, 15t & 25t. Each IP68 load cell is fitted with a 5 meter fully sealed M12 cable connector.
See www.flintec.com for more details.

Accessories and Options

To enhance weighing system utility for any application, FT-30M is compatible with a range of accessories and M12 cable-connector components. Contact Flintec for details.

SIX POINT JUNCTION BOX

- Easy to use
- Plug and play

Six point 'splitter' junction box connects six load cell into one input port. It has the effect of averaging the load cell signals.

FOUR POINT JUNCTION BOX

- Easy to use
- Plug and play

Four point 'splitter' junction box connects four load cell into one input port. It has the effect of averaging the load cell signals.

TWO WAY JUNCTION BOX

- Easy to use
- Plug and play

Two point 'splitter' junction box connects two load cell into one input port. It has the effect of averaging the load cell signals.

EXTENDER CABLE

- Easy to use
- Plug and play

Also known as home run cables, forms the connection between the junction box and indicator - also used for extending load cell cables. Available in different lengths.

Accuracy and Performance

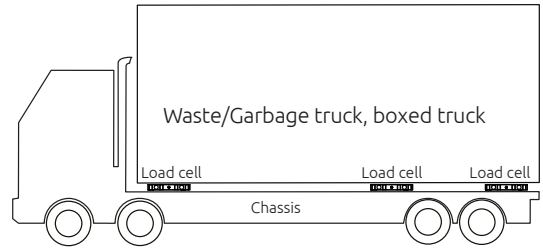
Accuracy and Performance

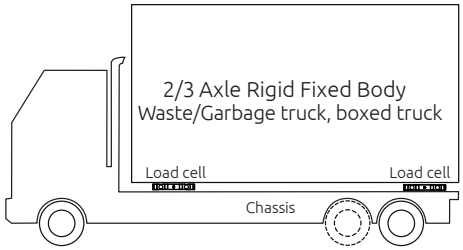
This manual is primarily concerned with the installation and use of the Flintec FT-30M on board weighing indicator. Accuracy and performance is dependent on the quality, type and installation quality of the load supporting load cells or sensors. The Flintec DSB7 range of vehicle weighing load cells are ideally suited. Please refer to the appropriate load cell installation manual for the load cells installed. Optimum on-board weighing performance is obtained when the load cells are installed between the load-carrying body (compactor body, tipper body, box, tank, flat-bed, etc.) and the vehicle chassis and carrying the entire weight of the superstructure and payload. No weight-supporting structure other than the load cells, such as braces or gussets should attach the superstructure to the chassis; this will result in an alternate load-path that will degrade weighing system accuracy. Typical applications include: waste trucks, tippers, tankers, flat-beds and van type structures mounted on either truck chassis or trailer frame.

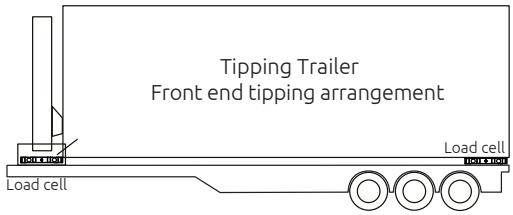
Truck bodies and payloads are supported above the chassis with load cells mounted directly to the truck frame (see example illustrations below). This is usually accomplished by separating the suspension subframe from the body frame and installing load cells between these structures. Air and fluid pressure sensors, extensometers and other forms of secondary sensor can be alternatively fitted to vehicles. The FT-30M is compatible with any sensor with an output range up to 3.5 mV/V.

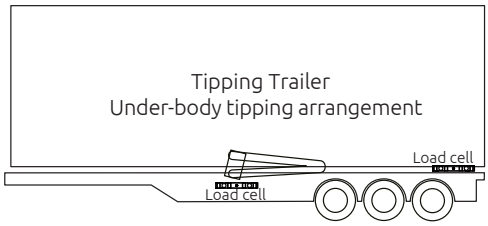
Applications

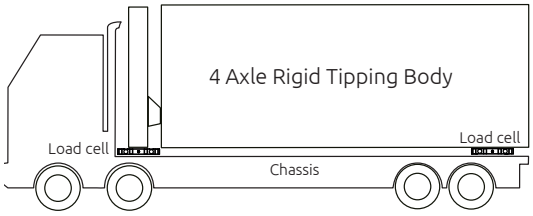
Installations are typically accomplished by separating the body frame from the chassis or trailer frame and installing load cells between these typical vehicle structures;

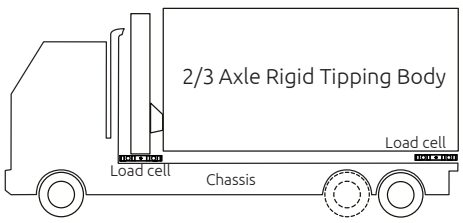


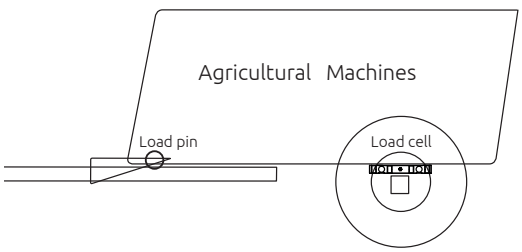


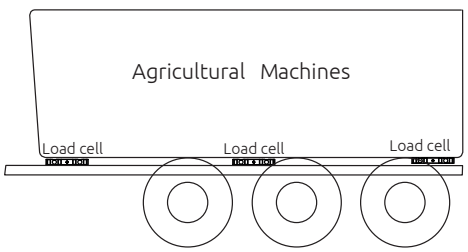








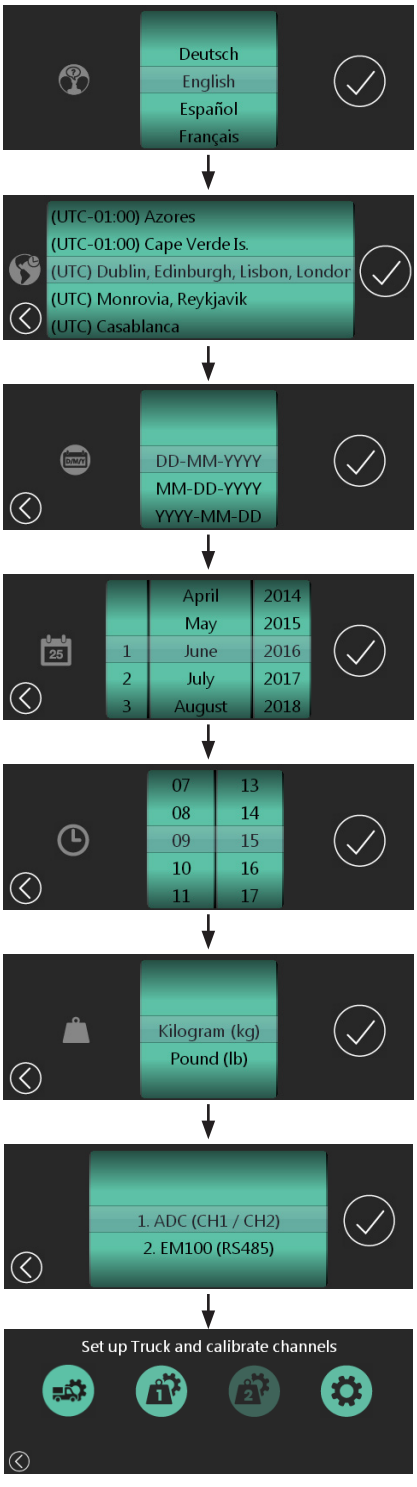




First Installation Set-up

Power-on and First Set-up

Settings are entered on initial set-up or any time later. All settings can be changed. Turn ignition on, you will be asked to follow this setup procedure. Access to a weighbridge is required. Calibration is performed by entering tare (unladen) weights whilst stationary and on flat ground. Calibration is completed by loading the vehicle to its legal maximum and weighing the vehicle to obtain the gross weight. If the FT-30M has been stored for an extended period, or if any problems are experienced with the clock functions, then it is advisable to leave the unit powered up for 6 hours or more before setting the time and date.



1. Language

Swipe up or down to select a language.

Press:

2. Time Zone

Swipe up or down to select a time zone.

Press:

3. Date Format

Swipe up or down to select a date format.

Press:

4. Date

Swipe up or down to select the date.

Press:

5. Time

Swipe up or down to select the time.

Press:

6. Weight Units

Swipe up or down to select a weight unit.

Press:

7. Select Input Mode

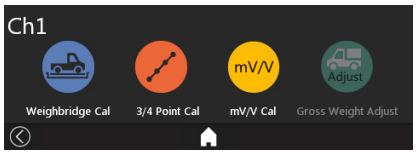
Press:

8. Single Channel Calibration

Begin Channel 1 calibration.

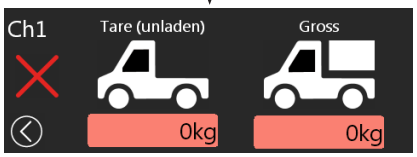
Press:

First Installation Set-up



9. Select Calibration Method

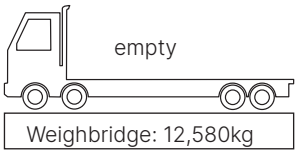
Press:



10. Tare

Weigh the unladen vehicle. (Tare weight)

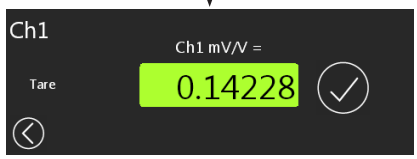
Press to enter the Tare weight.



11. Tare Weight

Input the Tare weight. (12, 580kg)

Press:

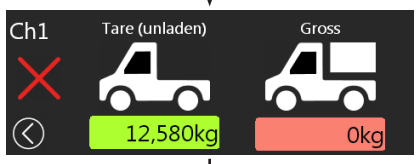


12. Tare mV/V

Confirm the Tare mV/V.

Press:

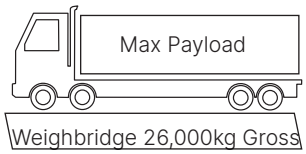
*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving.



13. Gross

Weigh the fully laden vehicle. (Gross weight)

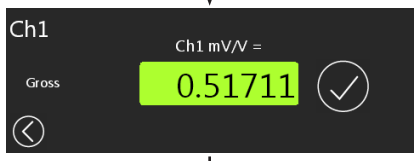
Press: enter the Gross weight.



14. Gross Weight

Input the Net weight. (26,000kg)

Press:

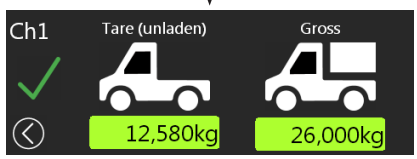


15. Gross mV/V

Confirm the Gross mV/V.

Press:

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving. Values are different from the Tare mV/V.



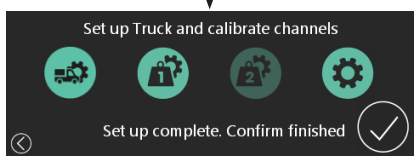
16. Calibration Done

The green tick confirms calibration.

Press:

*Tare + Net = Gross. (12,580 + 13,420kg = 26,000kg).

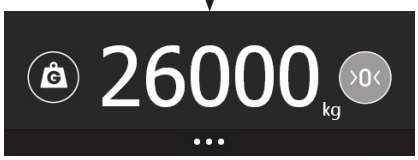
The gross weight is what's displayed on the home screen by default.



17. Set Up Complete

Single Channel calibration is complete.

Press:



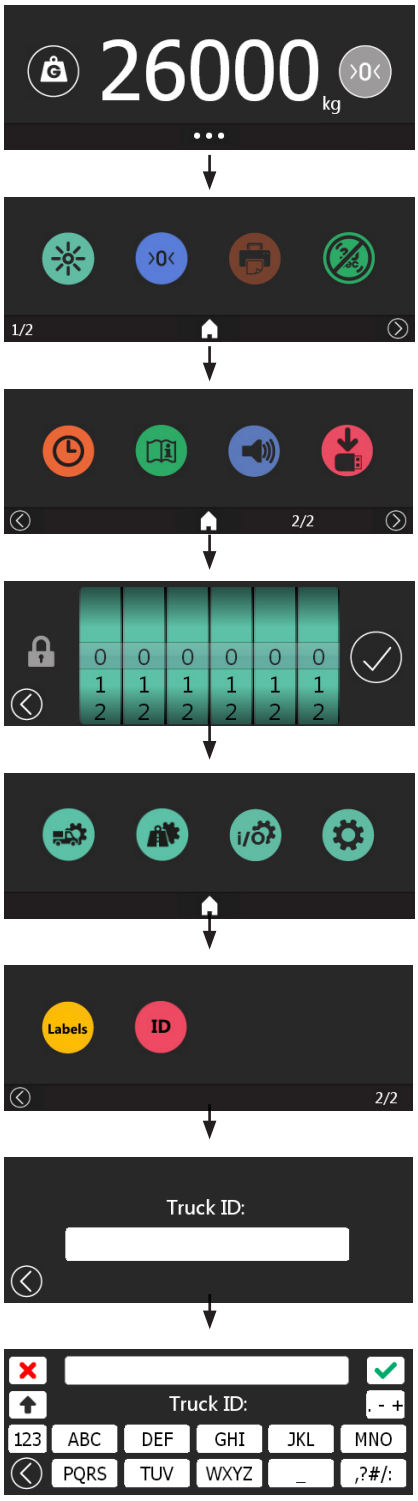
18. Home

Home screen displays Gross weight by default.

Press: to toggle the Net Payload to be displayed.

On-screen Keyboard function

An on-screen keyboard is available to allow editing of certain text fields. This function is activated in a similar way when the operator clicks on an editable field with text entry, such as for Labels or the Truck ID. Other menus using this include RS232 setup and data streaming. The following sequence is shown as a representative example:



1. Home

Navigate to the menu.

Press: •••

2. Menu

Navigate through the User Functions.

Press: ›

3. Settings

Enter the Settings menu. (Pin code protected)

Press: ›

4. Pin code

Swipe up or down to enter pin code.

Press: ✓

5. Set Up Menu

Enter the Weight Settings Menu.

Press: and: ›

6. Truck ID

Enter the Truck ID menu.

Press: ID

7. Truck ID

Touch the white field beloe Truck ID and the keyboard will be activated.

8. On Screen Keyboard

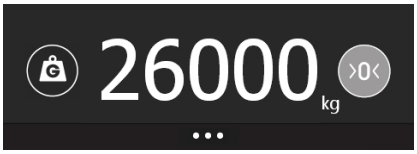
Use the buttons to enter and edit the Truck ID text field.

Press ✖ to cancel or ✓ to accept.

Truck Modes

Changing Modes

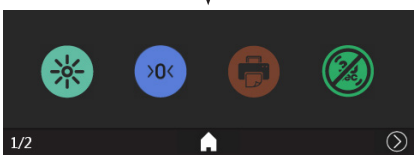
The truck mode can be changed in the menu by following the steps below. A choice between Single Channel, Dual Channel, Twin Channel, Pick-Up or Delivery is available. Choose the mode best suited for your application. More detailed calibration and set-up guides for each mode appear later in this manual.



1. Home

Navigate to the menu.

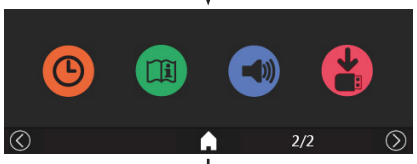
Press: •••



2. Menu

Navigate through the User Functions.

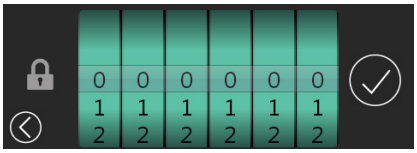
Press: >



3. Settings

Enter the Settings menu. (Pin code protected)

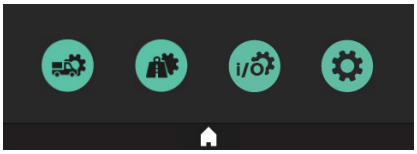
Press: >



4. Pin code

Swipe up or down to enter pin code.

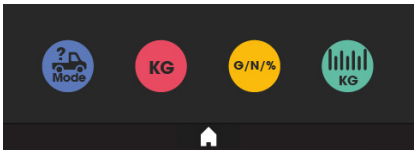
Press: ✓



5. Set Up Menu

Enter the Weight Settings Menu.

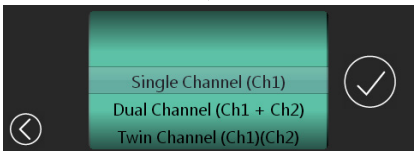
Press: 



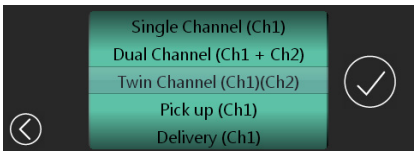
6. Truck Modes

Enter the Truck Modes menu.

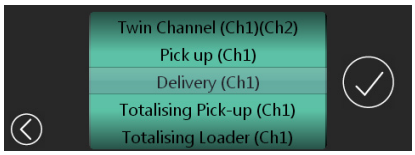
Press: 



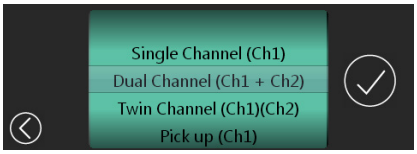
or



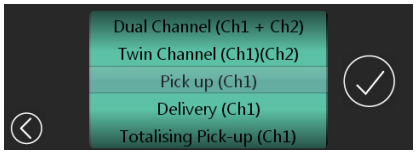
or



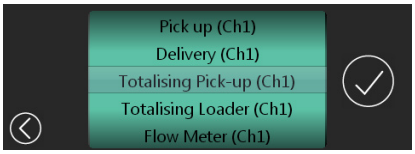
or

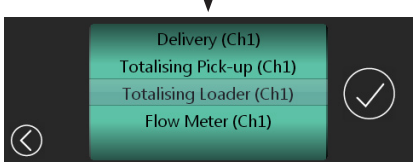


or

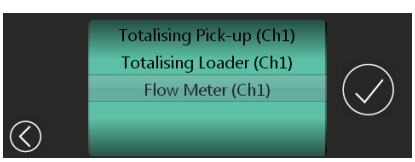


or





or



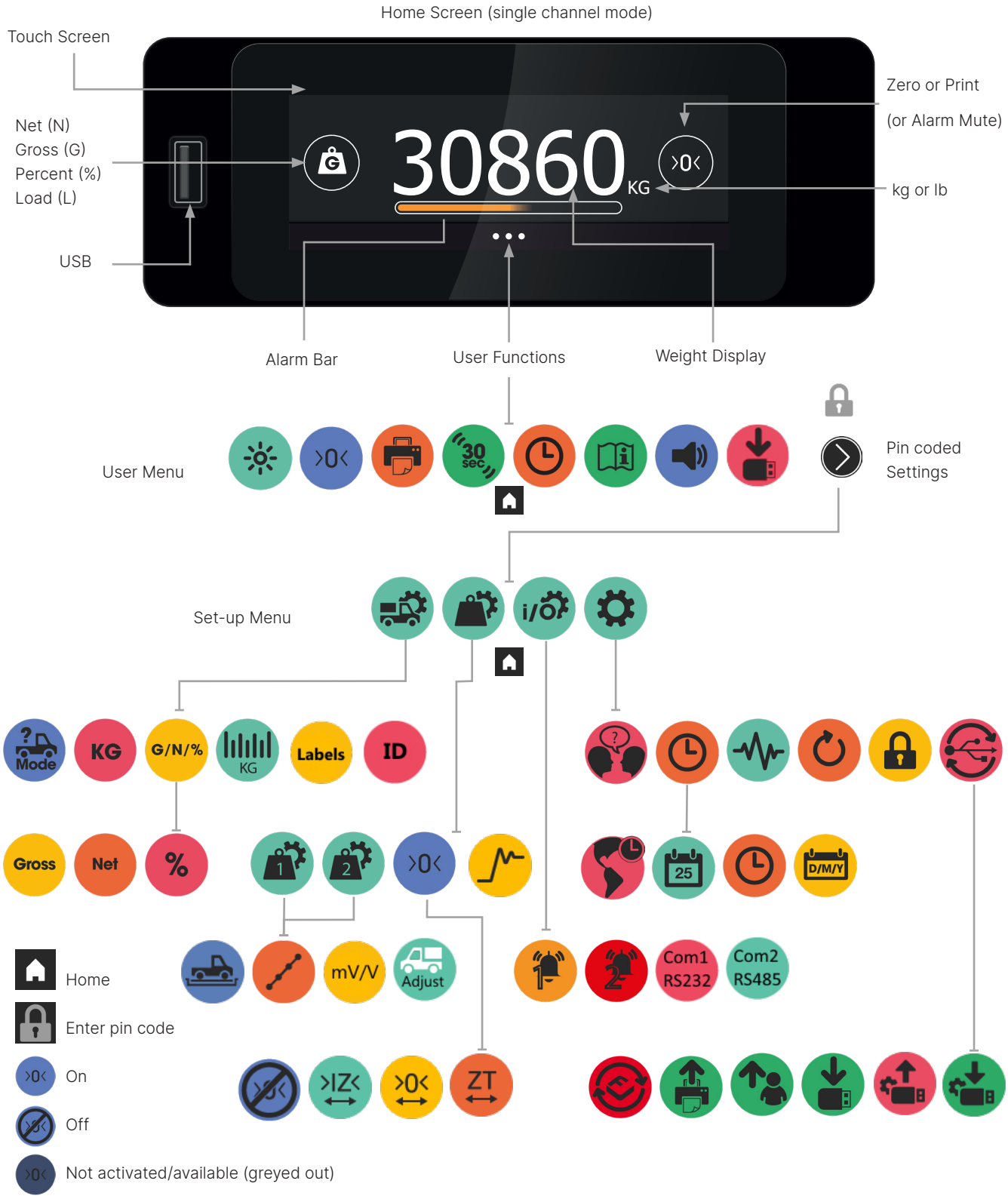
7. Select Mode

Swipe up or down to select the desired Truck Mode. Press: ✓

Graphic User Interface - Menu Map

Intuitive Touch Screen Operation Software

For quick and easy navigation, a finger press or swipe gesture guides users through the graphic functions. Driver MENU settings allow frequently used adjustments to be made. Critical MENU settings are pin code protected.



User Functions

User Functions and Settings

The FT-30M is configured & calibrated for the application. Not all functions are available, some require additional devices.
Faded button = function not available or out of range. Strike-through = not activated.

	MENU	To access user functions. Will revert to HOME after 45 seconds of no activity.
	HOME	To go back to HOME screen.
	GROSS	Total vehicle weight. Press to view another weighing mode.
	NET	NET is the weight of materials loaded on the vehicle. Press for Gross.
	PERCENTAGE	Is the PERCENTAGE of GROSS weight. Press to view another weighing mode.
	ZERO	Press to display ZERO. Max range +/-300kg from calibrated zero weight.
	PRINT	Print displayed weight. Press to PRINT.
	MOTION DETECT	Display shows '----' after 30 seconds of motion. Touch screen to display HOME.
	ENTER	To accept a value.
	EXPLORE	For next page or back a step.
	ALARM SET-OFF	AMBER ALARM has been triggered. Press to mute.
	ALARM MUTED	AMBER / RED ALARM has been triggered AND muted.
	ALARM SET-OFF	RED ALARM has been triggered. Press to mute.
	COPY TO USB STICK	Copy user data to USB stick.
	BRIGHTNESS	Toggle between Low, Medium and High.
	iWHEEL	To adjust the time or select a value or customer Finger swipe to select setting. To accept press: 
	TIME	Press to adjust the time with the adjustment iWHEEL.
	INFORMATION	Press to view: Date & time. Serial no. Software version. Calibration time & date.Tare and Gross. Alarm status & settings.
	BLEEP VOLUME	Toggle between off, Low, Medium and High.
	SETTINGS	To access passcoded settings menu.
	ON-SITE DELIVER	Print & record delivered loads. Arrive on site, press & select or enter a customer name.
	OFF-SITE DELIVER	Press when leaving site.
	ON-SITE PICK-UP	Print & record collected loads. Arrive on site, press & select or enter a customer name.
	OFF-SITE PICK-UP	Press when leaving site.
	LOAD COLLECT	Press to record individual container or part loads from or to customer sites. LOAD and SITE weights are added to NET.
	WARNING BAR	Amber means WARNING, the vehicle is close to its maximum legal payload. Red means OVERLOAD, maximum legal payload is reached. Unload the vehicle. When gross weight reaches 80% of the weight warning alarm setting, the warning bar shows and increments in steps of 2% until it reaches 100%.

Set-up Functions

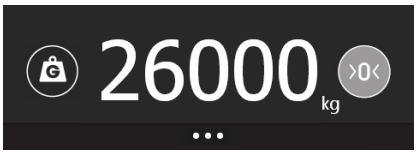
	WEIGH SETTINGS	Access Modes, Kg, Lbs, Gross, Net, %, Count-by.
	CALIBRATION	Calibration settings.
	ALARM & PRINT	Press for Alarm and Print settings.
	OPTIONS	Press for: Language, adjust time, diagnostics, reset, change password, update software, change print ticket, get data files.
	TRUCK MODES	Press for truck modes. E.g. Single, Dual or Twin channel or Pick up or Delivery.
	KILOS OR LBS	Toggle for Kilograms or Pounds.
	WEIGHT MODES	Weighing modes are Gross, Net, Percent.
	COUNT-BY	Count-by: 1, 10, 20, 50, 100, 200.
	GROSS WEIGHT	Total vehicle weight. Press activate/deactivate.
	NET WEIGHT	NET is the weight of materials loaded on the vehicle. Press activate/deactivate.
	PERCENTAGE	Is the PERCENTAGE of GROSS weight. Press activate/deactivate.
	CALIBRATE CH1	Press to enter Channel 1 calibration settings.
	CALIBRATE CH2	Press to enter Channel 2 calibration settings.
	ZERO	Press to remove zero offset.
	AMBER ALARM	AMBER ALARM is ON, Press to access setting. ALARM is OFF.
	ALARM TEST	Amber alarm test. OP1 will be set (on power and alarm).
	RED ALARM	RED ALARM is ON, Press to access setting. RED ALARM is OFF.
	PRINT SETTINGS	Press to turn printer On or Off.
	LANGUAGE	Press to access language settings.
	TIME	Press to access Time Zone, Date, Time and Date Format.
	TIME ZONE	Press to to access Time Zone.
	SET DATE	Set the current day, month and year.
	DATE FORMAT	Choose from: DD-MM-YYY, MM-DD-YYY or YYYY-MM-DD.
	DIAGNOSTICS	Displays analogue to digital counts.
	RESET SETTINGS	Resets to factory or to new install settings - exercise caution - should be done by competent person.
	PASSCODE RESET	To change passcode.
	USB SETTINGS	To access USB functions.
	UPDATE SOFTWARE	Update FT-30M software from a memory stick.
	UPDATE PRINT TICKETS	Upload print ticket styles.
	UPDATE CUSTOMER LIST	Upload customer lists to the FT-30M.
	DOWNLOAD WEIGHTS	Download weighing transactions to the USB memory stick.

Set-up Functions (continued)

	LABELS	Select and edit user / customer labels.
	ID	Enter truck ID
	CALIBRATION W WEIGHBRIDGE	Calibration sequence based on weighbridge readings
	4-POINT CALIBRATION	Linearisation function with 4 loading points across the weighing range.
	MV/V CALIBRATION	Electronic calibration based on mV/V readings.
	GROSS WEIGHT ADJUST	Allows to make minor adjustments to GROSS vehicle weight.
	SET FILTER	Select averaging filters.
	RS232 COMMS	Select and adjust RS232 parameters.
	RS485 COMMS	Select and adjust RS485 parameters.
	INITIAL ZERO RANGE	Select the amount of zero range on power-up.
	ZERO BUTTON RANGE	Select the amount of zero range on pressing zero button.
	ZERO TRACK RANGE	Select the amount of zero tracking range.
	SAVE SETTINGS	Save settings to USB stick.
	RESTORE SETTINGS	Restore settings from USB stick.

Calibration - Important Note

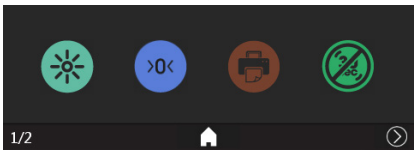
Before calibration, ensure that there are no `3/4 Point Calibrations' active from a previous calibration.
To access 3/4 point caliration use the following sequence:



1. Home

Navigate to the menu.

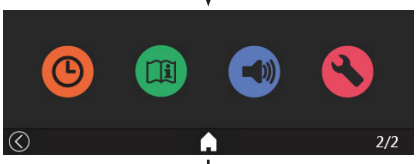
Press: •••



2. Menu

Navigate through the User Functions.

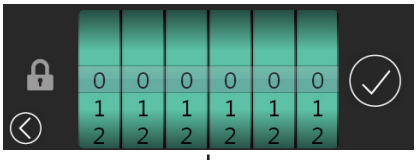
Press:



3. Settings

Enter the Settings menu. (Pin code protected)

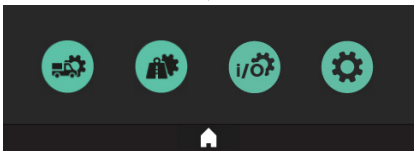
Press:



4. Pin code

Swipe up or down to enter pin code.

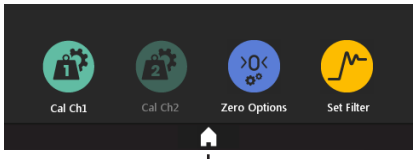
Press:



5. Calibration Settings

Enter the Weight Settings Menu.

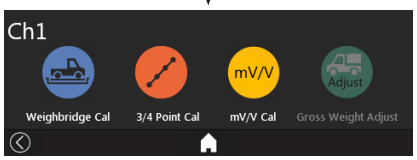
Press:



6. Calibration - Channel 1

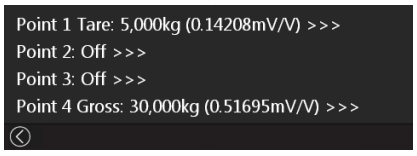
Begin Channel 1 calibration.

Press:



7. 3/4 Point Calibration

Press



8. Check Points 2 and 3

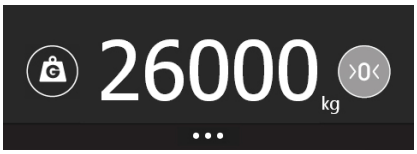
Points 2 and 3 should be `Off'. If not, select the Point, and select

`Disable' on the touchscreen.

Calibration - Single Channel

Calibration

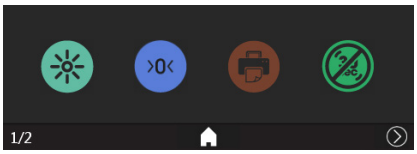
If calibration was not completed in the initial set-up, or needs subsequent adjustment follow these steps. Access to a weighbridge is required. Calibration is performed whilst stationary and on flat ground by entering tare (unladen) weights. Calibration is completed by loading the vehicle to its legal maximum and weighing the vehicle to obtain the Net Payload.



1. Home

Navigate to the menu.

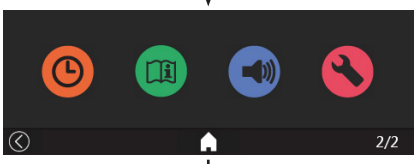
Press: •••



2. Menu

Navigate through the User Functions.

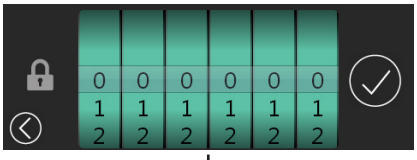
Press:



3. Settings

Enter the Settings menu. (Pin code protected)

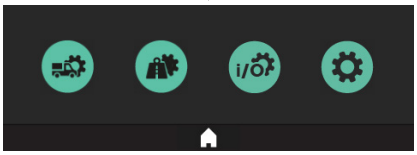
Press:



4. Pin code

Swipe up or down to enter pin code.

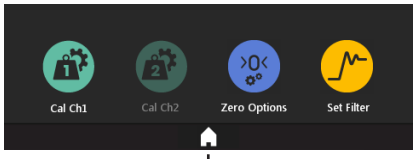
Press:



5. Calibration Settings

Enter the Weight Settings Menu.

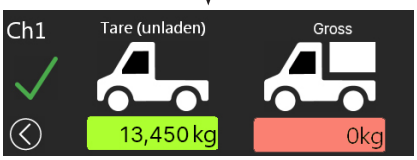
Press:



6. Calibration - Channel 1

Begin Channel 1 calibration.

Press:

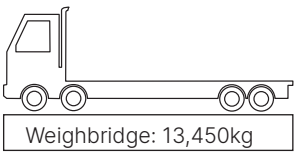


7. Tare

Weigh unladen vehicle. (Tare weight)

Press to enter the Tare weight.

*previous calibration figures are displayed.

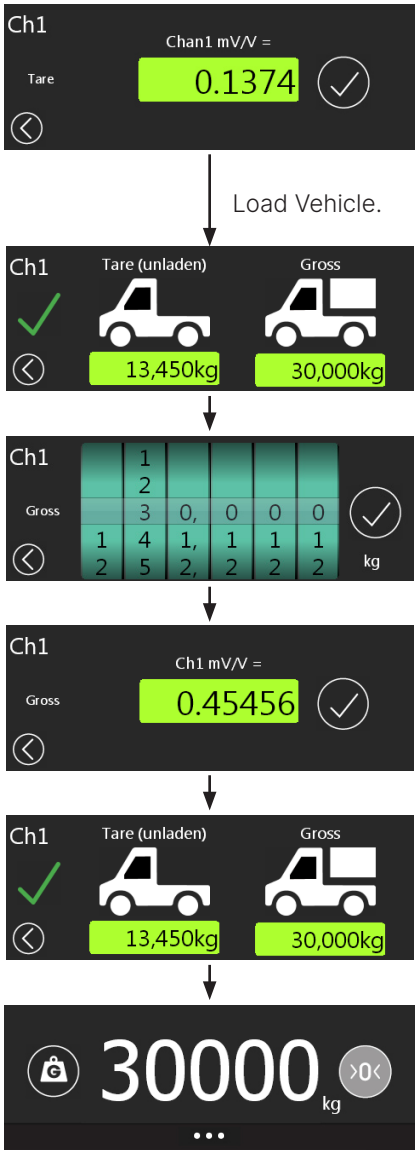


8. Tare Weight

Input the unladen (Tare) weight. (13, 450kg)

Press:

Calibration - Single Channel



9. Tare mV/V

Confirm the Tare mV/V.

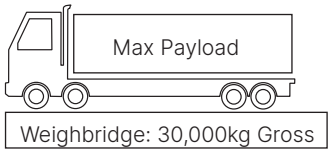
Press:

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving.

10. Gross

Weigh the fully laden vehicle. (Gross weight)

Press: to enter the Gross weight.



11. Gross Weight

Swipe up or down to input the Gross weight. (30,000kg)

Press:

12. Gross mV/V

Confirm the Gross mV/V.

Press:

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving. Values are different from the Tare mV/V.

13. Calibration Done

The green tick confirms calibration.

Press:

*Tare + Net = Gross. The gross weight is what's displayed on the home screen by default.

14. Home

Home screen displays the Gross weight by default.

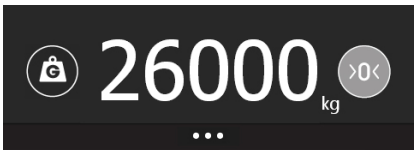
Press: to toggle the Net weight to be displayed.

Calibration - Dual Channel

Calibration

Dual mode allows two input channels to be calibrated separately and independently. The displayed weight is the summed total of Channel 1 and Channel 2 (Ch1+Ch2). Dual allows load cell and sensor types with different outputs to be installed to the same vehicle.

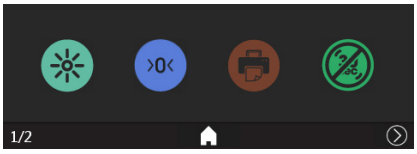
On flat and level ground weigh and enter Tare (unladen) weights for channel 1 & 2. Load the vehicle to its legal maximum. Weigh and enter the vehicle Net Payload for channel 1 & 2. Example shown is an articulated truck with 5th wheel load cells fitted to the tractor unit & wired to channel 1 (Ch1). Air pressure sensors are fitted to the trailer & wired to channel 2 (Ch2).



1. Home

Navigate to the menu.

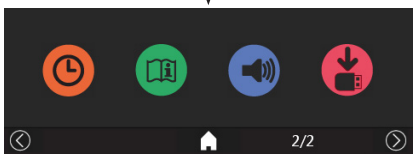
Press: 



2. Menu

Navigate through the User Functions.

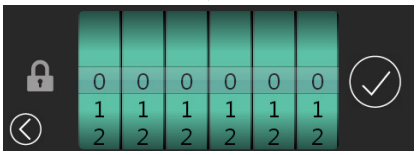
Press: 



3. Settings

Enter the Settings menu. (Pin code protected)

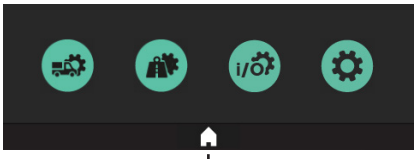
Press: 



4. Pin code

Swipe up or down to enter pin code.

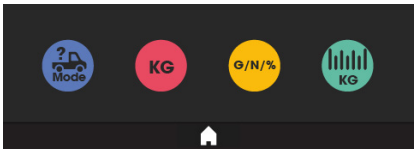
Press: 



5. Set Up Menu

Enter the Weight Settings menu.

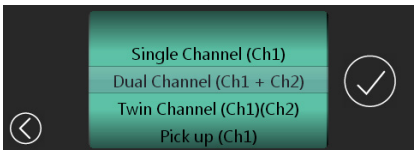
Press: 



6. Weight Settings

Enter the Truck Modes menu.

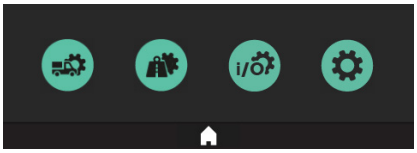
Press: 



7. Modes

Select Dual Channel mode.

Press  and  to return to Calibration Settings.

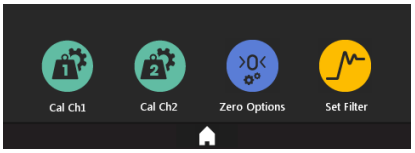


8. Set Up Menu

Enter the Weight Settings Menu.

Press 

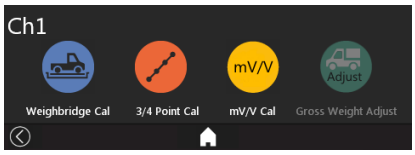
Calibration - Dual Channel



9. Channel 1 Calibration - Tractor Tare

Begin Channel 1 calibration.

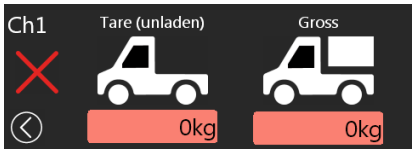
Press:



10. Weighbridge Calibration

Select Weighbridge Calibration

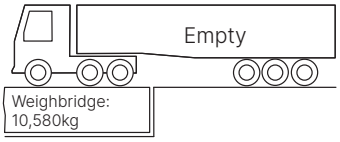
Press:



11. Tractor Tare

Weigh and record unladen tractor. (Tare weight)

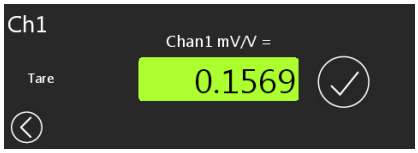
Press: to enter the Tare weight.



12. Tractor Tare Weight

Swipe up or down to input the tractor Tare weight. (10,580kg)

Press:

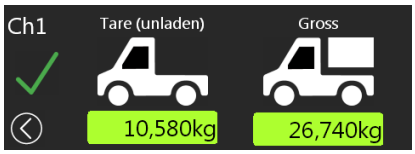


13. Tractor Tare mV/V

Confirm the tractor Tare mV/V.

Press:

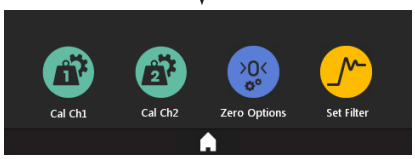
*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving.



14. Channel 1 - Tractor Tare Calibration Done

Return to calibrate Channel 2 Tare.

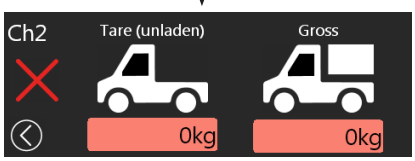
Press: twice to return to Weight Settings Menu.



15. Channel 2 Calibration - Trailer Tare

Begin Channel 2 calibration.

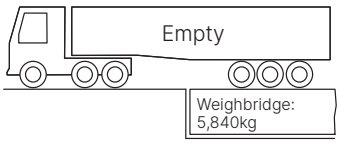
Press:

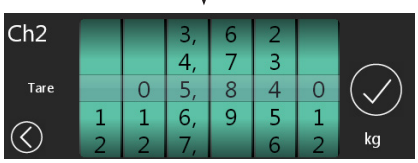


16. Trailer Tare

Weigh and record unladen trailer. (Tare weight)

Press: to enter the Tare weight.



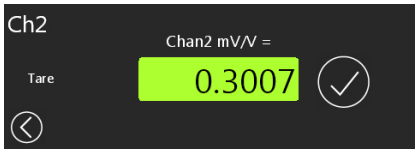


17. Trailer Tare Weight

Swipe up or down to input the trailer Tare weight. (5,840kg)

Press: to enter the Tare weight.

Calibration - Dual Channel

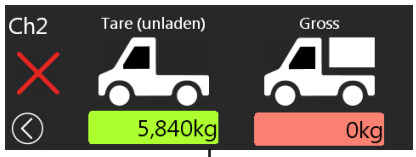


18. Trailer Tare mV/V

Confirm the trailer Tare mV/V.

Press: ✓

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving.

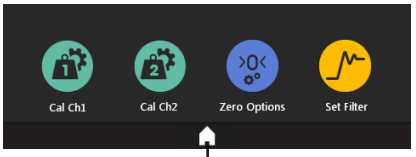


Load Vehicle.

19. Channel 2 - Trailer Tare Calibration Done

Return to calibrate Channel 1 Gross.

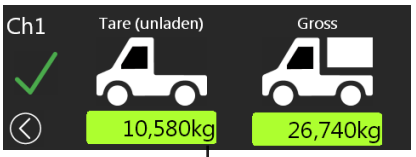
Press: ← twice to return to Weight Settings Menu.



20. Channel 1 Calibration - Tractor Gross

Complete Channel 1 calibration.

Press: 1

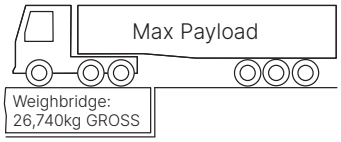


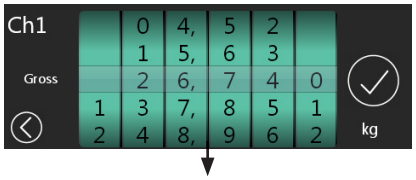
21. Tractor Gross

Weigh and record fully laden tractor Gross weight.

Press: ✓

*Tippers raise body to weighing height





22. Tractor Gross Weight

Swipe up or down to input the tractor Gross weight. (26,740kg)

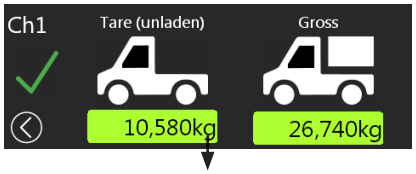
Press: ✓

23. Tractor Gross mV/V

Confirm the tractor Gross mV/V.

Press: ✓

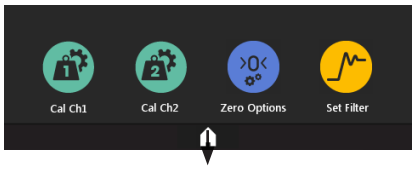
***mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving. Values are different from the Tare mV/V.**



24. Channel 1 - Tractor Gross Calibration Done

The green tick confirms calibration for Channel 1 is complete.

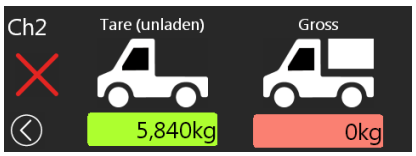
Press: ← twice to return to Weight Settings Menu.



25. Channel 2 Calibration - Trailer Gross

Complete Channel 2 calibration.

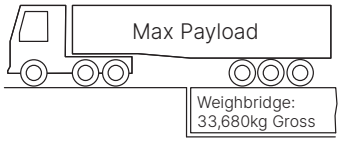
Press: 2



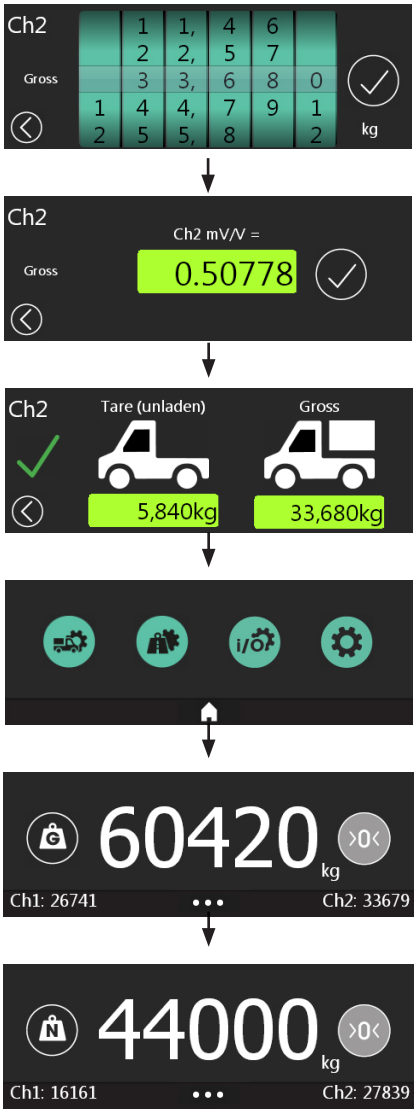
26. Trailer Gross

Weigh and record fully laden trailer Gross weight.

Press: 🚚



Calibration - Dual Channel



27. Trailer Gross Weight

Swipe up or down to input the trailer Gross weight. (33,680kg)

Press: ✓

28. Trailer Gross mV/V

Confirm the trailer Gross mV/V.

Press: ←

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving. Values are different from the Tare mV/V.

29. Channel 2 - Trailer Gross Calibration Done

The green tick confirms calibration for Channel 2 is complete.

Press: ← twice to return to Weight Settings.

*Tare + Net = Gross. (5,840 + 27,840kg = 33,680kg).

30. Calibration Complete

Dual channel calibration is complete.

Press: ⌂

31. Home Screen

Home screen displays the Gross weight by default.

*Ch1 + Ch2 Gross = 26,740 + 33,680kg = 60,420kg.

Press: G to toggle the Net weight to be displayed.

32. Home Screen- Net

Home displaying Net.

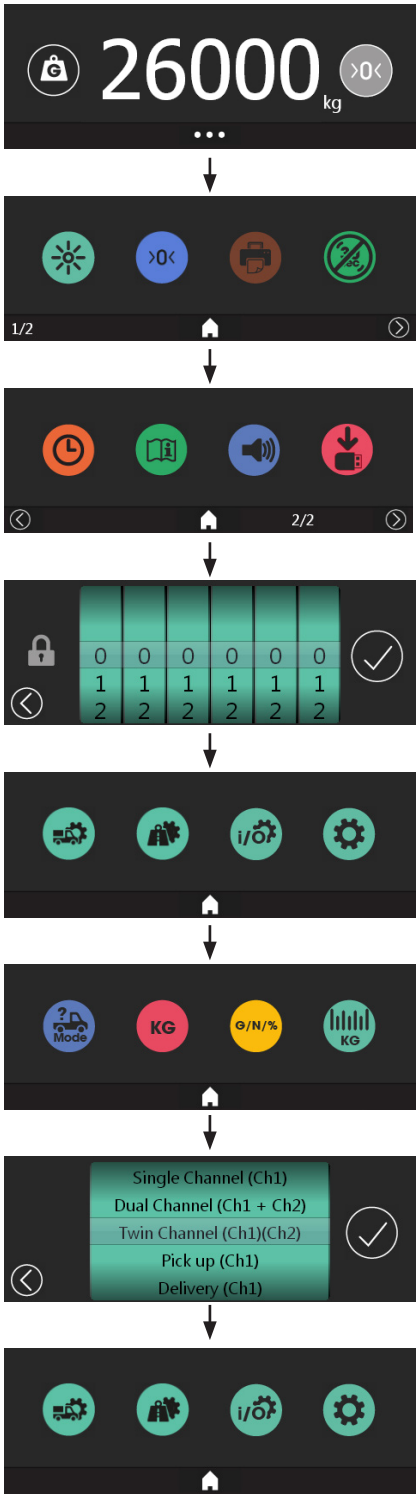
Press: N to toggle back to Gross weight.

Calibration - Twin Channel

Calibration

Twin mode allows two input channels to be calibrated separately and independently. The displayed weights are two weights to show the rigid truck body (Channel 1) and the trailer weight (Channel 2).

On flat and level ground weigh and enter Tare (unladen) weights for channel 1 & 2. Load the vehicle to its legal maximum. Weigh and enter the vehicle Net Payload for channel 1 & 2. Example shown is a rigid wagon and drag truck.



1. Home

Navigate to the menu.

Press:

2. Menu

Navigate through the User Functions.

Press:

3. Settings

Enter the Settings menu. (Pin code protected)

Press:

4. Pin code

Swipe up or down to enter pin code.

Press:

5. Set Up Menu

Enter the Weight Settings menu.

Press:

6. Weight Settings

Enter the Truck Modes menu.

Press:

7. Modes

Select Twin Channel mode.

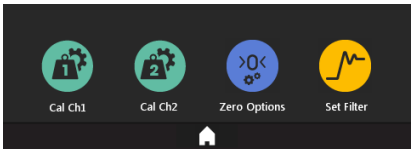
Press and to return to Calibration Settings.

8. Set Up Menu

Enter the Weight Settings Menu.

Press

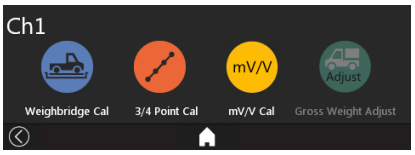
Calibration - Twin Channel



9. Channel 1 Calibration - Truck Tare

Begin Channel 1 calibration.

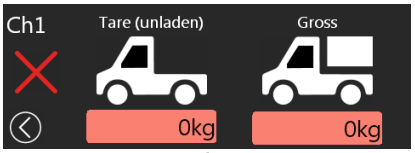
Press:



10. Weighbridge Calibration

Select Weighbridge Calibration.

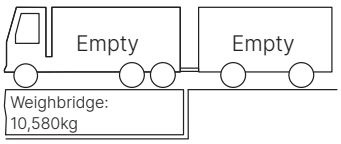
Press:



11. Truck Tare

Weigh and record unladen truck. (Tare weight)

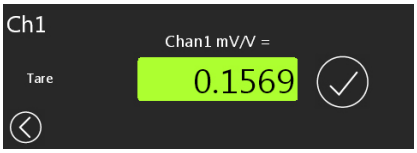
Press:



12. Truck Tare Weight

Swipe up or down to input the truck Tare weight. (10,580kg)

Press:

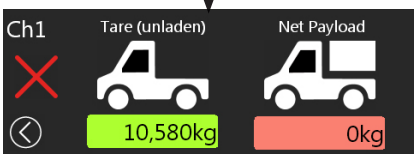


13. Truck Tare mV/V

Confirm the truck Tare mV/V.

Press:

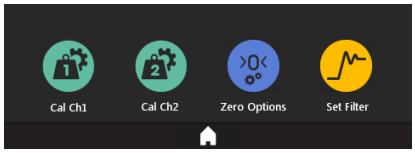
*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving.



14. Channel 1 - Truck Tare Calibration Done

Return to calibrate Channel 2 Tare.

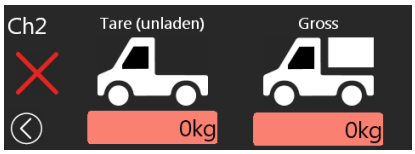
Press: twice to return to Weight Settings Menu.



15. Channel 2 Calibration - Trailer Tare

Begin Channel 2 calibration.

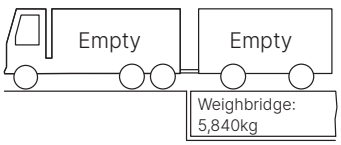
Press:



16. Trailer Tare

Weigh and record unladen trailer. (Tare weight)

Press:

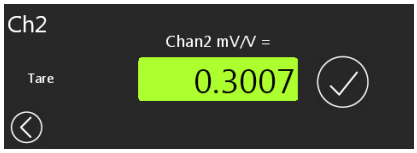


17. Trailer Tare Weight

Swipe up or down to input the trailer Tare weight. (5,840kg)

Press: to enter the Tare weight.

Calibration - Twin Channel

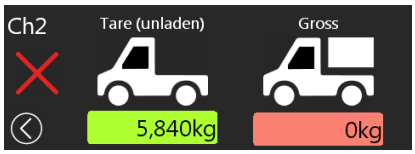


18. Trailer Tare mV/V

Confirm the trailer Tare mV/V.

Press: ✓

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving.

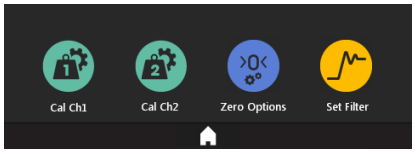


19. Channel 2 - Trailer Tare Calibration Done

Return to calibrate Channel 1 Gross.

Press: ‹ twice to return to Weight Settings Menu.

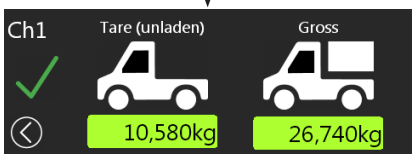
Load Vehicle.



20. Channel 1 Calibration - Truck Gross

Complete Channel 1 calibration.

Press: 1

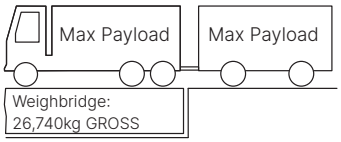


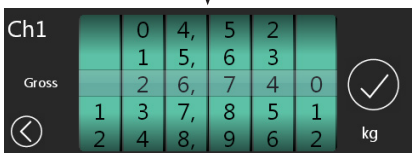
21. Truck Gross

Weigh and record fully laden truck Gross weight.

Press: ✓

*Tippers raise body to weighing height

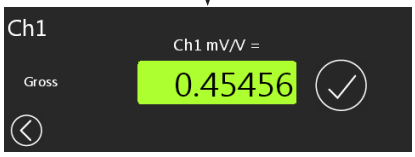




22. Truck Gross Weight

Swipe up or down to input the truck Gross weight. (26,740kg)

Press: ✓

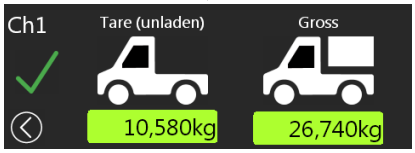


23. Truck Gross mV/V

Confirm the truck Gross mV/V.

Press: ✓

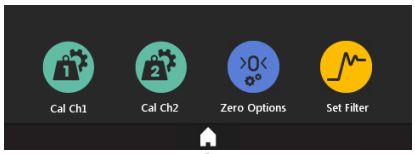
*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving. Values are different from the Tare mV/V.



24. Channel 1 - Truck Gross Calibration Done

The green tick confirms calibration for Channel 1 is complete.

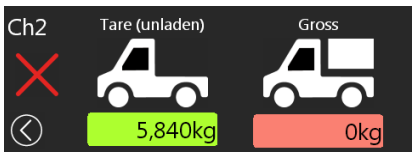
Press: ‹ twice to return to Weight Settings Menu.



25. Channel 2 Calibration - Trailer Gross

Complete Channel 2 calibration.

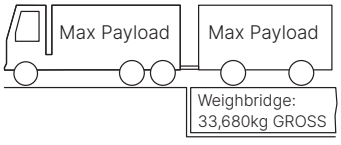
Press: 2



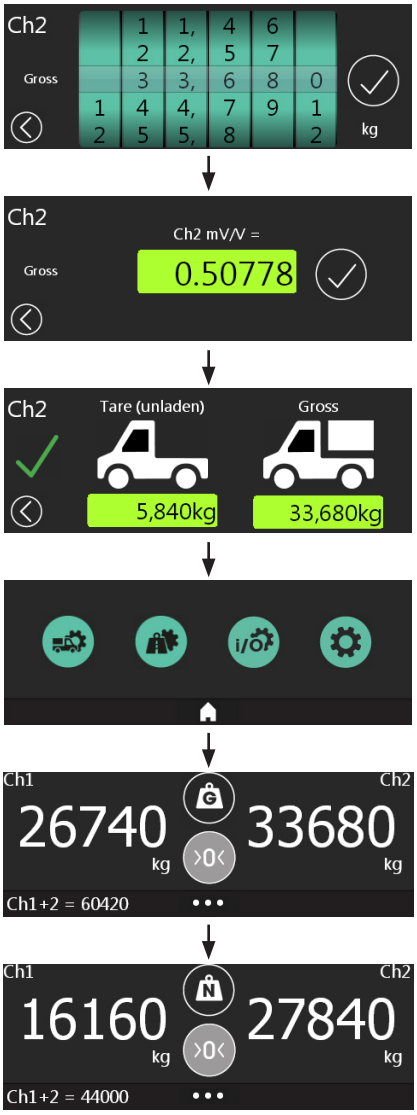
26. Trailer Gross

Weigh and record fully laden trailer Gross weight.

Press: 🚚



Calibration - Twin Channel



27. Trailer Gross Weight

Swipe up or down to input the trailer Gross weight. (33,680kg)

Press: ✓

28. Trailer Gross mV/V

Confirm the trailer Gross mV/V.

Press: ✓

*mV/V is the signal level from the load cells and must be stable. Flickering indicates a problem with a load cell, connection or the load is moving. Values are different from the Tare mV/V.

29. Channel 2 - Trailer Gross Calibration Done

The green tick confirms calibration for Channel 2 is complete.

Press: ← twice to return to Weight Settings.

*Tare + Net = Gross. (5,840 + 27,840kg = 33,680kg).

30. Calibration Complete

Twin channel calibration is complete.

Press: ⌂

31. Home Screen

Home screen displays the Gross weight by default.

Press: G to toggle the Net weight to be displayed.

32. Home Screen - Net

Home displaying Net.

Press: N to toggle back to Gross weight.

FT-30M 3 or 4 point linearisation calibration

The 3 or 4 point calibration provides a straight-forward method to improve scale performance using the touchscreen.

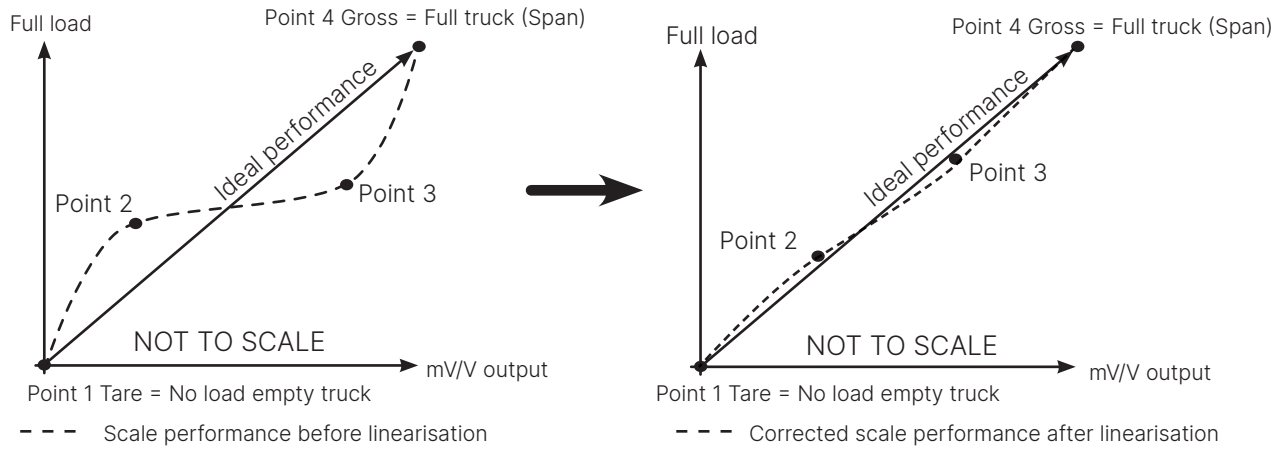
It improves accuracy from no-load to full-load where the installed sensor or load cell outputs display a non-linear characteristic. It is available in all modes except Totalising.

An accurate weighbridge or known weights are required. Point 1 Tare and Point 4 Gross must always be included, Points 2 and 3 can be enabled or disabled and calibrated where required.

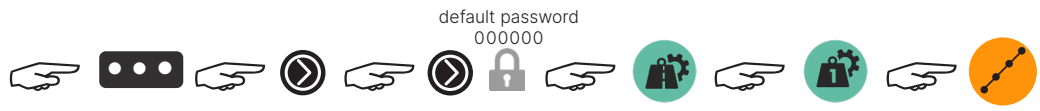
Reverse calibration can be performed where the user starts with a full load and does Point 4 Gross first.

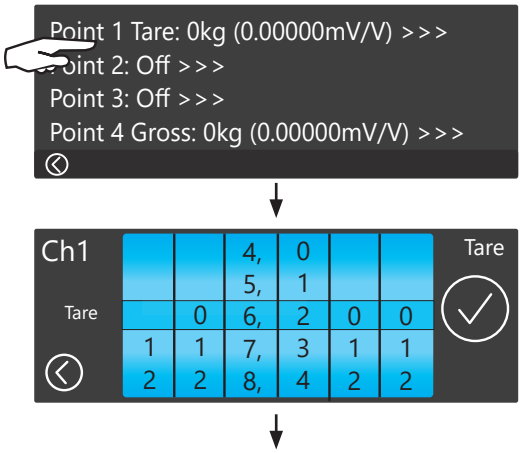
On-screen red text means an error has occurred, check the entered figures and repeat the steps below.

The example graphs show the effect of deploying this feature on a scale with “S” shaped non-linearity:



To access 3/4 point calibration:





Set the Tare (empty vehicle) weight

To activate points 2 & 3 see steps further below.

press **Point 1 Tare**:

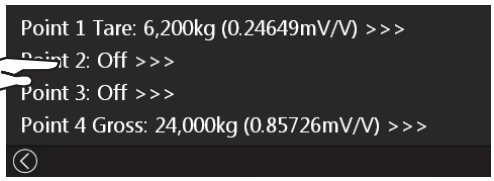
Set Point 1 Tare Weight. Weigh the empty truck on a weighbridge.

Swipe up or down to set the **Tare** weight.

FT-30M 3 or 4 point linearisation calibration

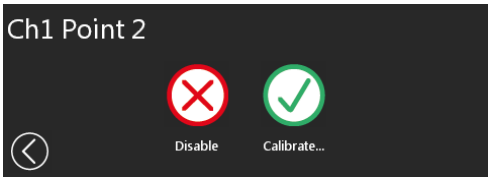
Set Point 1 Tare Weight. If no mV/V value is shown, check the connections.

press:



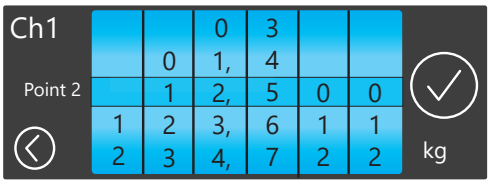
Activate Point 2

Press **Point 2:**



Activate Point 2

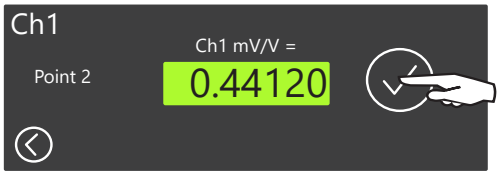
press



Set Point 2

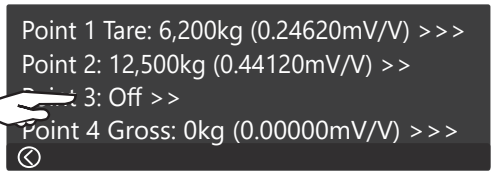
Place a 1/3 max. known weight on the truck, or load approx. 1/3 weight and weigh on a weighbridge. Enter the total (tare + 1/3) weight.

Swipe up or down to set the **Point 2** weight.



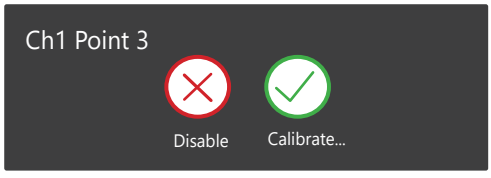
Set Point 2 Weight

press



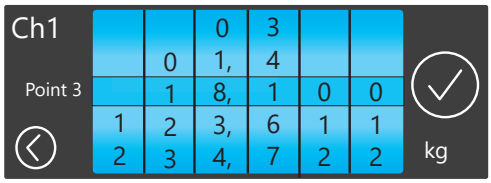
Activate Point 3

Press **Point 3:**



Activate Point 3

press

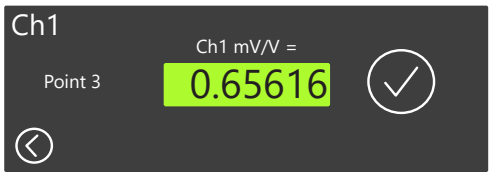


Set Point 3

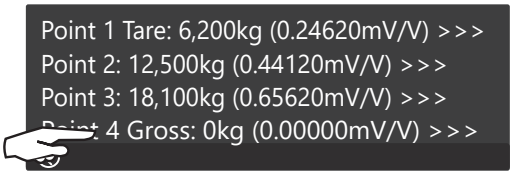
Place a 2/3 max. known weight on the truck, or load approx. 2/3 weight and weigh on a weighbridge. Enter the total (tare + 2/3) weight.

Swipe up or down to set the **Point 3** weight.

FT-30M 3 or 4 point linearisation calibration

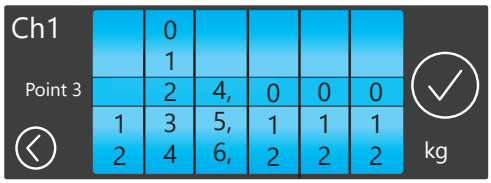


Set Point 3 Weight



Set Point 4 Gross Maximum weight

Press **Point 4 Gross:**

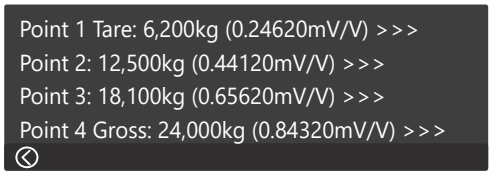


Set Point 4 Gross

Place a maximum weight known weight on the truck, or load approx. 100% weight and weigh on a weighbridge. Enter the total gross weight.

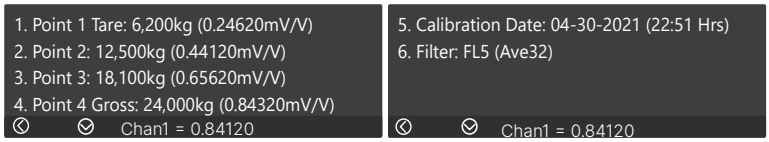
Swipe up or down to set the **Point gross** weight

Set Point 4 Gross



Done

To view calibraion settings from the driver-side menu:



FT-30M - mV/V Calibration and Gross Weight Adjust

mV/V Calibration, calibrate without weights using the touchscreen

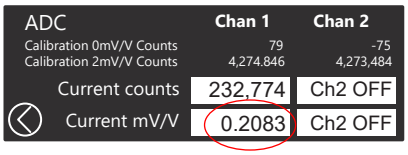
Gross Weight Adjust, adjust gross weight for small discrepancies

mV/V calibration (eCal) - without weights

A calibration made by entering mV/V values is a convenient method of calibrating an onboard scale. It is typically used where weighbridge truck scales or known dead weights are not immediately available. It allows users and OEMs to receive a pre-calibrated weighing system or indicator. The mV/V values are read from the load cell nameplate or calibration certificate and a calculation made based on the number of cells fitted. Tare mV/V is caused by the dead weight of the load carrying body resting on the load cells. Small misalignments can affect the precision of the mV/V signals. Should a discrepancy with a weighbridge scale become known, an in-service calibration adjustment can be made with the Gross Weight Adjust feature (described below). Alternatively, recalculate mV/V values and re-enter them in the mV/V calibration page or perform a weighbridge calibration.

The Tare weight is often printed on a Weight Plate inside a truck door or door pillar. If this weight is not correct then it is preferable for Tare calibration to be made using the standard weighbridge calibration page. For details see the FT-30M manual on the Flintec website. If the Tare weight is not known, set the display to read Net weight only until the empty vehicle can be accurately weighed on a weighbridge and the weight edited in the calibration pages.

Example mV/V calibration: A Tare mV/V signal is caused by the weight of the empty truck body resting on the load cells. With the truck body completely empty, read the Tare mV/V value in the diagnostic page.



Current mV/V is 0.2083, use this value in the Tare mV/V calibration page. Net weight is the Maximum permitted Net payload.

Tare = **0.2083mV/V**

Calculate Net Payload mV/V values using four DSB7-15t cells

The mV/V signal from the DSB7-15t cell at 15 tonnes is 2mV/V. The four identical cells are connected into a parallel summing junction box. The Net Payload mV/V calculation is:

$$\left(\frac{\text{Net Payload}}{\text{Load Cell Capacity}}\right) \times \left(\frac{\text{Load Cell mV/V}}{\text{Number of Load Cells}}\right)$$

$$\left(\frac{17{,}800}{15{,}000}\right) \quad \text{X} \quad \left(\frac{2}{4}\right)$$

Net = 0.5933mV/V

Net payload = maximum gross weight - tare weight

E.g. 24,000kg - 6200kg (tare weight) = 17,800kg

The mV/V signal read from the load cells supporting the empty body frame is 0.2083mV/V, the weight of the empty body approximately 3250kg. This is added to the Net Payload value.

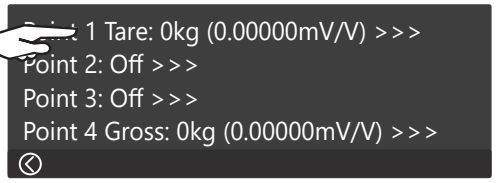
0.5933 + 0.2083

Use this value in the Gross weight mV/V calibration page.

Gross = 0.8016 mV/V

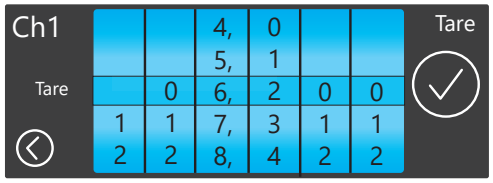
FT-30M - mV/V Calibration and Gross Weight Adjust

Use this sequence to enter the mV/V calibration menu:



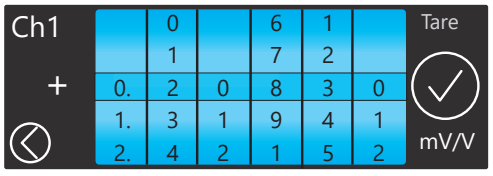
Set the Tare (empty vehicle) weight

press Point 1 Tare:



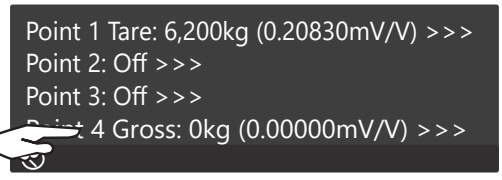
Set Tare (empty truck) Weight.

Swipe up or down to set the **Tare** weight.



Slide numbers to the previously noted tare mV/V. Press

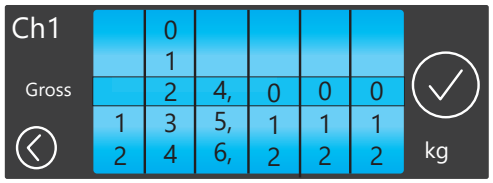
The Tare mV/V signal is caused by the weight of the empty truck body sat on the load cells. It will be a small value and can be read in the diagnostic page. Navigate to:



Set Point 4 Gross Maximum weight.

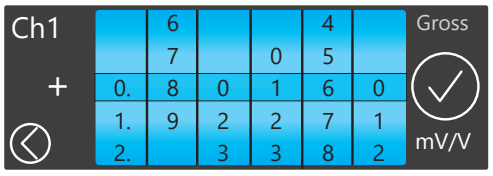
(This page is the same as four point linearisation - this feature needs known weights)

Press point 4: Gross

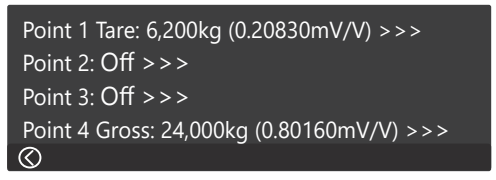


Slide number to legal maximum weight

Swipe up or down to set the **Gross** weight. **Press**



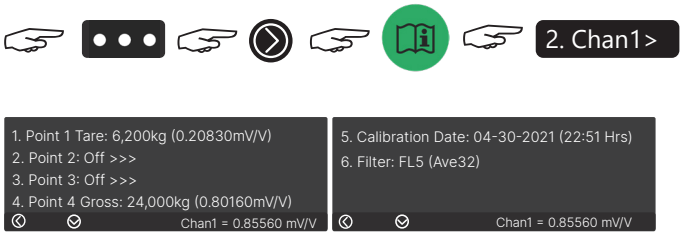
Slide numbers to the calculated **Gross** mV/V. **Press**



Done

FT-30M - mV/V Calibration and Gross Weight Adjust

To view calibration settings from the driver home page menu:



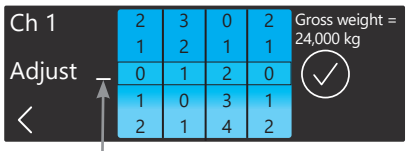
Press to toggle through net, gross and %.

Gross Weight Adjust

In the weeks and months following a mV/V calibration, small discrepancies in the weight readings might be observed between a weighbridge and the displayed gross weight. The Gross Weight Adjust feature allows the calibration to be fine tuned. Several readings should be taken and an average error of these weights used to adjust the calibration gross weight. Example:

The truck runs over a weighbridge and the difference in gross weight is noted. Use the average (mean) difference kg (or lbs) to fine-tune the gross calibration, in this case it weighs heavy:

Use this number in the Gross Adjust Weight page → $\frac{120 + 140 + 120 + 100}{4}$ = 120 kg



minus kg adjustment

positive kg adjustment

Press to toggle between - & +

The amount of error in this example is +120 kg.

Press -/+ and swipe the numbers to read -120.

This will adjust the gross weight by -120 kg.

Press to accept and to return to the Calibration Options menu.

Check the home page weight to make sure the correct weight is displayed.

FT-30M Zero Options

Sometimes a scale may display a small amount of weight where there is no load present. This is referred to as drift or zero offset and can be down to several reasons such as dirt build-up, steel creep or temperature. Zero Options helps to provide the user with a better understanding of the actual weight being transported. The settable zero options described in this document are adjustment values, and do not affect the calibration set-points. If zero values remain high, a fresh calibration is recommended.

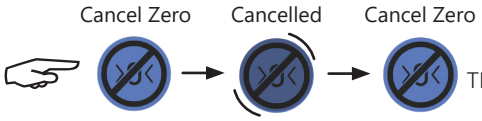
FT-30M onboard weighing indicator

To access Zero Options:

default passcode: 000000

Cancel Zero

Cancels any previous zero off-set arising from Initial Zero (IZ), the user pressing the Zero button (>0<) or Zero Tracking (ZT). Cancels offset arising from Zero drift - e.g. the amount of zero accumulated by pressing the driver zero button.



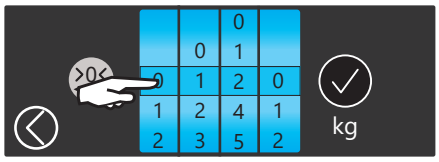
The cancel zero button will momentarily flash 'cancelled'.

Initial Zero Range

Weight can drift from zero on power up. This feature will cancel any stray weight within a settable range when the FT-30M is powered on. Initial Zero is Off when 0kg or 0lb is selected. The max. range is 500.

Initial Zero Range

slide numbers to required value



Zero Button Range.

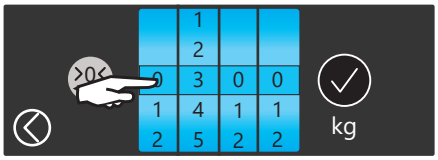
Minimum value = 10kg, max. value is 999kg.

This is the maximum accumulated weight which can be zeroed by repeated use of the Zero function

It reduces the risk of user scale manipulation.

Zero Button Range

slide numbers to required value



FT-30M Zero Options

Zero Track Range

Zero Tracking is a feature for saving the driver from pressing zero after fully emptying a load. It works by

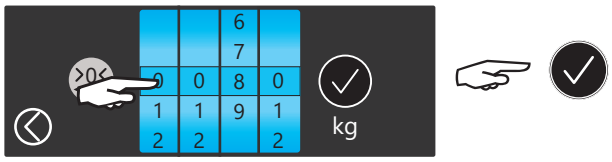
maintaining a zero indication when the measured weight is within a certain range, close to zero. When the feature is activated, and the measured weight is within the desired range, the displayed weight can be seen counting towards zero, updating every second. The max. range is 200kg.

Zero Track Range

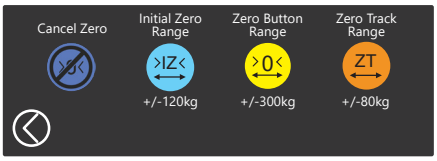
ZT

Off

slide numbers to required value



Done. Programmed Zero settings will be shown under each selection button



and

to return to home screen.

FT-30M onboard weight indicator filter set-up

FT-30M will respond to vibrations and dynamic forces when the vehicle, machine or load is in-motion by showing fluctuating weights (often referred to as noise). There is a trade-off between filtering the fluctuating weights and the step-response time of the system. The step-response is defined as the time between placing a weight on the scale and the correct stable weight reading being displayed. It simply defines the amount of time that is required to determine a final weight reading. In single channel mode there are 10 samples per second (SPS). In Dual or Twin mode (two channel mode) there are 4SPS per channel. Filtering is performed by averaging over these samples.

There are occasions where it's useful to take weight readings whilst the vehicle, machine or load is moving or settling-down such as live remote weighing or a crane weighing scale. FT-30M has digital averaging filters which slows down the step-response making weight readings more stable. It does this by averaging a number of consecutive readings when calculating the displayed weight. This is used to dampen unwanted weight fluctuations caused by vibrations or dynamic forces (noise). High settings will stabilise the display at the expense of rapid response to sudden weight changes. The options are FL0 to FL7.

The Filter setting FL define the number of samples over which the average weight is taken. Increasing the averaging samples will result in a more stable reading but will extend the time it takes FT-30M to settle to a final reading. The additional delay time can be calculated by dividing the number of samples by 10 (single channel) or 4 (dual/twin channels).

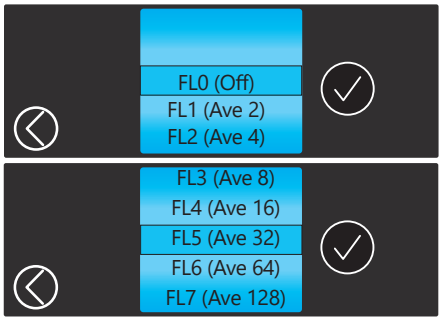
Where faster high-speed sampling rates are required Flintec offers a load cell digitising unit (LDU) EM100. This provides sampling rates of upto 1200 samples per second.

Example 1, Single channel:

FL0 = No filter = 10 samples per second
FL5 = Average over 32 samples = 32/10 = 3.3 second delay
FL7 = Average of 128 samples = 128/10 = 12.8 second delay

Example 2, Twin channel:

FL2 = Average over 4 samples = 4/4 = 1 second delay
FL6 = Average over 64 samples = 64/4 = 16 second delay

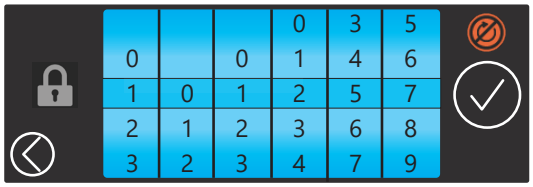


FT-30M Passcode Guide

To access critical settings, a six number passcode is required. The factory default passcode is '000000'.

For the fixed master passcode, contact your local Flintec sales office.

To change the passcode:



Slide numbers to a new Passcode. Press 

New passcode is now set.

Revolving Passcode

Revolving passcode generates a new passcode every hour, every day and every year. This helps prevent users guessing the passcode and making unnecessary changes to the calibration or settings.

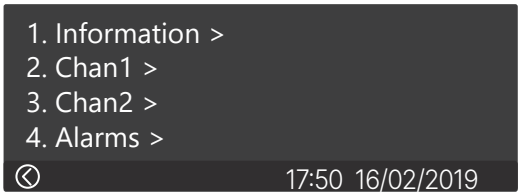
To activate, toggle:

The calculation to work-out the next passcode is given in this example:

If the FT-30M password is set to 123456 (factory default is 000000).

The second digit is reset to zero to become a base number: 103456.

Read the hour (0 to 23), day (1 to 31) and year currently set in the information page



e.g. 17:50pm on the 16th of the month in 2019.

Formula = (hour x month day) + year + 103456

Therefore: (17×16) + 2019 + 1034 56 = 105747 this is the new one-time use passcode.

Repeat for a new passcode - it will change within the hour.

If the unit is changed back from revolving passcodes to a fixed one the user will be prompted to select a new passcode.

Tip: For a basic revolving passcode set the Passcode to "000000" with Revolving Passcode enabled. This allows a simple Passcode of = (hour x day) + year.

Reading FT-30M Settings

Driver information pages

Weighing system settings are displayed in the driver information pages. Changes can not be done in these pages.

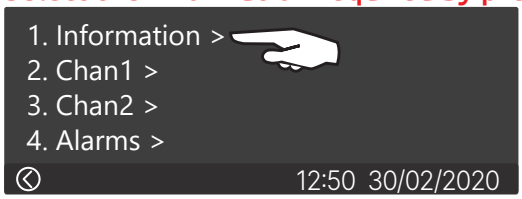
Home Screen

From the home weighing screen:

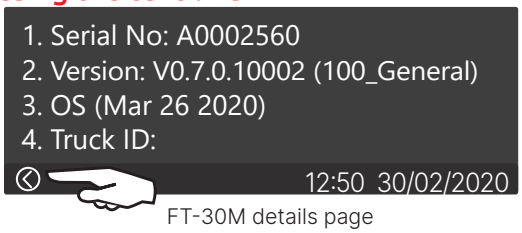
To go back to the home weighing screen:

Home screen will display after 40 seconds of no presses

Select the information required by pressing the text line



Information page

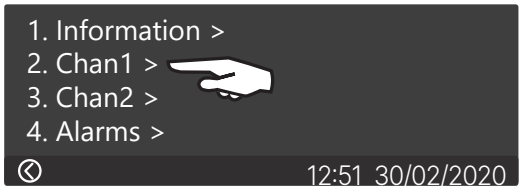


FT-30M details page

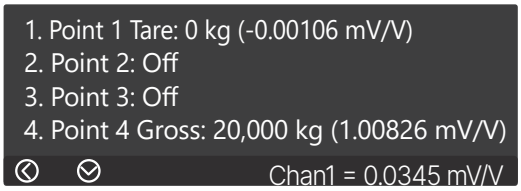
Details displayed:

1. Indicator serial number
2. Software version
3. Operating System release date (Windows CE)
4. Truck ID

Select Channel 1 calibration settings (Channel 2 follows the same format)

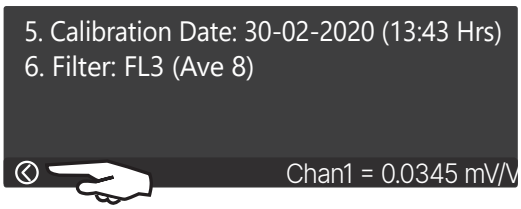


Channel 1 calibration settings page



Channel 1 calibration settings page

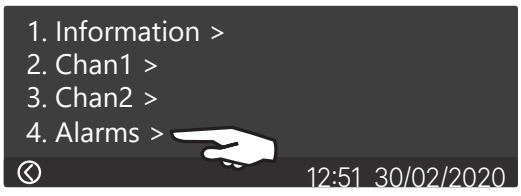
1. Tare weight & signal voltage
2. Point 2 weight & sig voltage
3. Point 3 weight & sig voltage
4. Gross weight & signal voltage



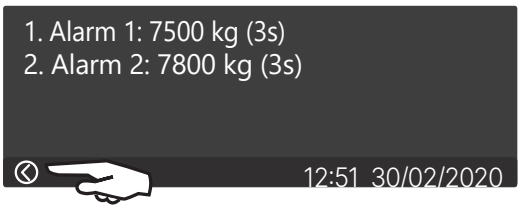
Channel 1 calibration settings page 2

5. Last calibration date & time
6. Filter settings

Select Alarms calibration settings



Alarms settings page



Alarms settings page

1. Amber Alarm 1 set weight & delay time in seconds

2. Red Alarm 2 set weight & delay time in seconds

Guide to using the FT-30M USB port

Upload FT-30M software updates

1. Software updates can be emailed or downloaded from a secure on-line folder.

Integral 16GB Hi-Speed USB 2.0 flash drive

2. Using a PC or Laptop, create a new folder on a USB 2.0 memory stick and name it FT-30M. The FT-30M looks for this folder.

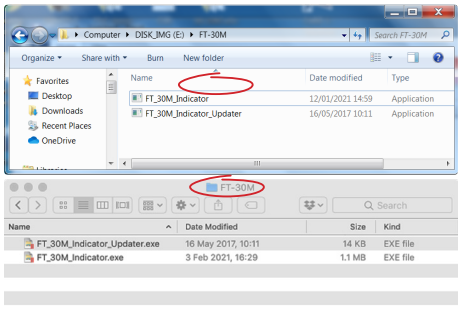
3. Place the software files into this folder.

4. If the file extensions are not already .exe rename them from .ex_ to .exe. Files with .exe can get rejected on computer servers when attached to emails etc.

FT_30M_Indicator.exe

FT_30M_Indicator_Updater.exe

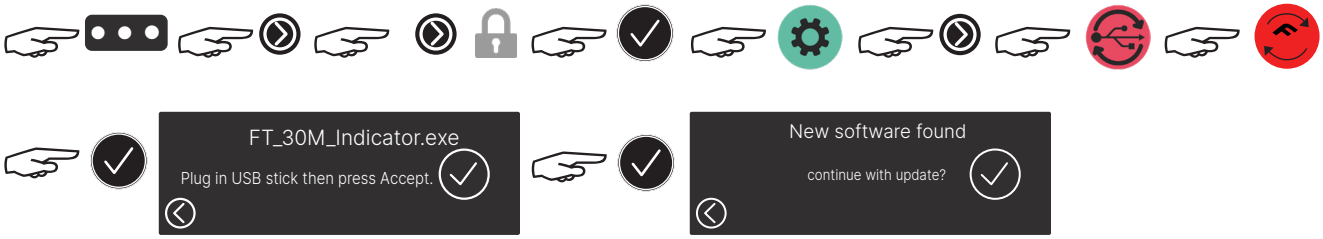
OSX



5. Power up the panel and wait for it to boot up,

6. Plug the USB stick into FT-30M front panel USB socket.

7. Navigate to the software update button.



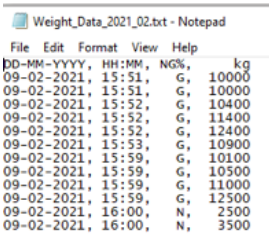
8. New software will be copied from the USB stick to the FT-30M. The FT-30M will restart and run the updated software. Check the Software Version in the driver info page.

Copy monthly weight data to the USB 2.0 memory stick

FT-30M will store a rolling one month of weight data for every print, load or remote button press. This can be downloaded even if no printer is connected:

1. Plug the USB 2.0 stick into FT-30M front panel USB socket.

2. Navigate to the download button. Press < > to select a previous month.

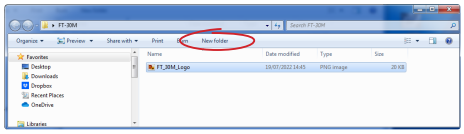


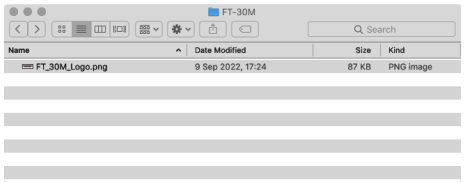
FT-30M logo (splash screen) on start-up

A brand logo or custom image can be displayed instead of the Flintec logo for a few seconds whilst the FT-30M weighing application boots-up.

Suitable graphic editing software such as Adobe Illustrator (Ai) or Adobe Photoshop (Ps) is required to configure the image logo to the following parameters:

- 72 dpi (dots per inch)
- 480px X 170px (pixels)
- Set Image>Mode to RGB (Red Green Blue) and 8 bits/channel
- In the CHANNELS tab check each colour has 8 bits/channel (32 in total R/G/B/RGB)
- Change background to Layer 0
- Save As a png file (portable network graphics)
- Save As Interlaced, Interlaced1 or Adam 7 when prompted
- Save As file name: FT_30M_Logo.png. Don't Save As a copy

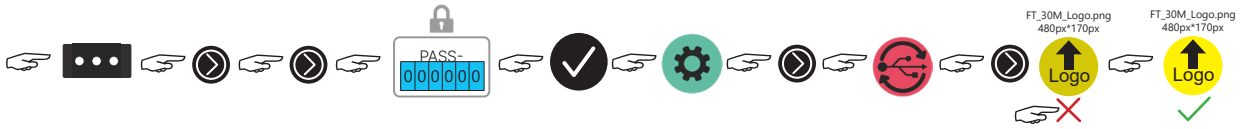




Upload to the FT-30M indicator:

1. Create a new folder on a USB 2.0 memory stick and name it FT-30M. The FT-30M looks for this folder and its contents
2. Save As or drag & drop the PNG image file into this folder
3. Plug the USB stick into the FT-30M front panel USB socket
4. Navigate to the Logo update button

Integral 16GB Hi-Speed, USB 2.0 Flash drive



Done.

Restart the FT-30M, the new logo will appear as the new splash screen.

The new logo can be switched off in the USB Menu: press the green tick to a red cross. When the new logo appears, pressing the display (anywhere) twice will allow the default Flintec logo to appear.

Failure to upload logo:

A number of checks are made on the png file to ensure it is of the correct format. An errorcode will be returned if the FT-30M identifies the png is not of the correct format:

- SIGNATURE_FAIL - not a valid .png file
- IHDR_FAIL - not a valid .png file
- WIDTH_FAIL - logo width not 480px
- HEIGHT_FAIL - logo height not 170px
- BIT_DEPTH_FAIL Bit Depth (8) or Color Type (6) or Interlace (1) values incorrect (see above parameters)

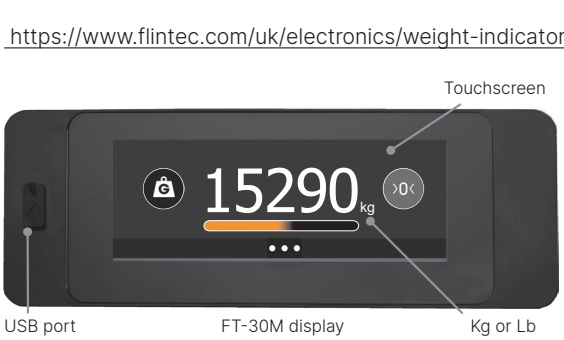
FT-30M Fixed and Custom data streaming for telemetry & GPS modems

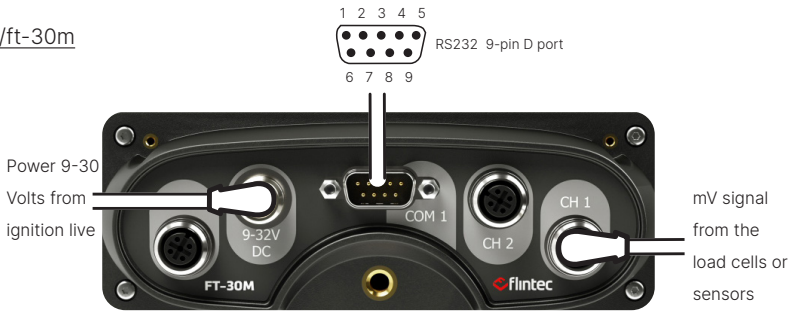
This guide helps users to connect and test the FT-30M onboard weighing indicator to telemetry devices through the RS232 port. FT-30M features a clear & easy-to-read full-colour LCD touchscreen. For easy navigation, finger gestures guide users through graphic functions. Critical calibration MENU settings are passcode protected.

Telemetry/GPS modems

FT-30M is compatible with a range of load cells, sensors & accessory devices for maximum vehicle safety & efficiency. On-screen calibration allows straightforward set-up. It has two input channels for separate groups of load cells, power for alarm devices, RS485 & RS232 ports for printers, external remote displays & telemetry devices. It fits neatly into spare radio slots, can be panel-mounted or placed on the dashboard with a swivel-mount bracket. The operation manual can be found at:

https://www.flintec.com/uk/electronics/weight-indicators/ft-30m





RS232 9-pin D pin configuration for PCs, telematic/modem devices

Pin 2 TxA_1	Output Serial port (transmit data) for direct connection to the host device - printer or telemetry device
Pin 3 RxA_1	Input Serial port (receive data) for direct connection to the host device - printer or telemetry device
Pin 4 CTS	Clear to Send input (Check for busy handshake for printers)
Pin 5 GND	Ground 0 V
Pin 9 12V	Optional battery volt source (12-24V) for printers

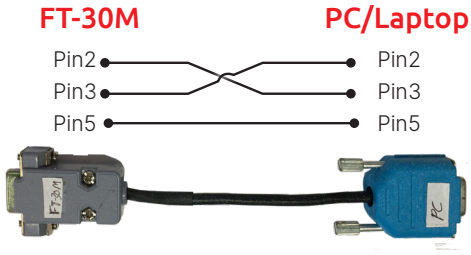
To test the connection with a Windows PC/Laptop.

A free PC Terminal program is Tera Term which can be downloaded from: https://osdn.net/projects/ttssh2/releases/

For a PC/Laptop without a serial port, a USB-RS232 adaptor or adaptor lead can be used.

Be aware that Pin 9 from the FT-30M maybe carrying 12-24v, make sure the RS232 Power is off.

A 9 pin Female to 9 pin Female (Null-Modem) cable is needed with the following connections:



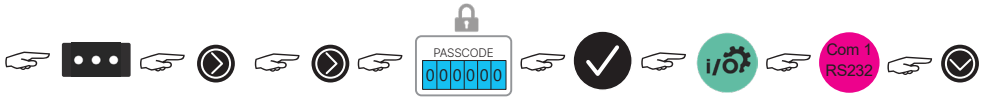
9 Pin Female to Female Null Modem test cable

9 Pin D to USB cable or adaptor

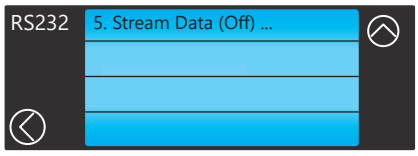
FT-30M connected to a laptop

RS232 Configuration and Data Streaming Setup of the FT30-M

From the home sceen navigate to Stream Data settings:



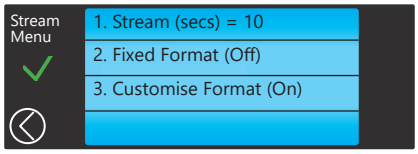
Fixed data stream set-up



RS232

Settings 1-5

5. Press Stream Data (Off) ... to toggle between On and Off

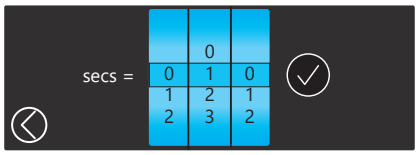


Stream Menu

Settings 1-3

Press ☒ to enable. Press ☑ to disable, leave on when in use

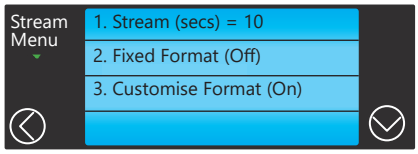
1. Press Stream (sec)



Stream (secs)

Time between each poled stream of data in seconds 1-999

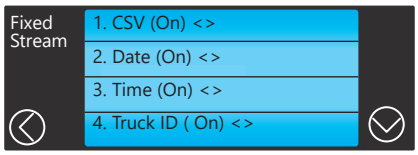
Scroll to required pole-rate. Press ✓



Stream menu

Settings 1-3

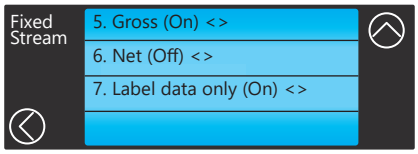
For Fixed Format, Press 2.



Fixed Stream

Settings 1-4

1. CSV* (On) <> -Press to toggle On and Off
2. Date (On) < > -Press to toggle On and Off. Date also sent
3. Time (On) < > -Press to toggle On and Off. Time also sent
4. Truck ID** (Off) < > -Press to toggle between On and Off



Stream Data

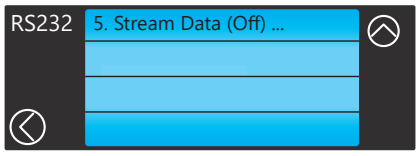
Settings 5-8

5. Gross (Off) < > -Press to toggle On and Off. Gross weight sent
6. Net (Off) < > -Press to toggle On and Off. Net weight sent
7. Label data only (On)< > -Press to toggle On and Off. Where activated, label data sent.

Press ✓ Press ◁ Press ◁ Press ⌂ Press ⌂ when done.

RS232 Configuration and Data Streaming Setup of the FT30-M

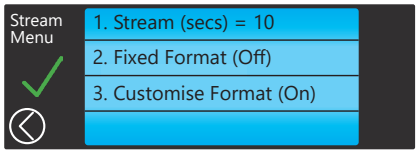
Custom data stream set-up



RS232

Settings 1-5

Press 5. Stream Data (off) ...

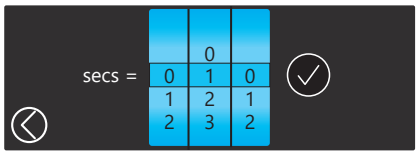


Stream Menu

Settings 1-3

Press ✗ to enable. Press ✓ to disable, leave on when in use

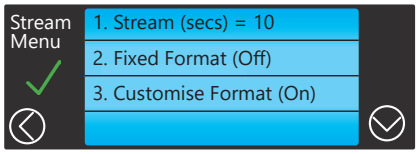
1. Press Stream (sec)



Stream (secs)

Time between each poled stream of data in seconds 1-999

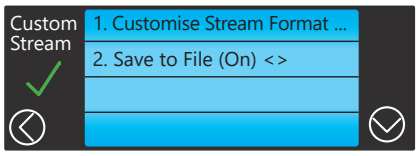
Scroll to required pole-rate. Press ✓



Stream menu

Settings 1-3

Press 3. Customise Format (On) ....



Custom Stream

Settings 1-2

Press ✗ to enable. Press ✓ to disable, leave on when in use

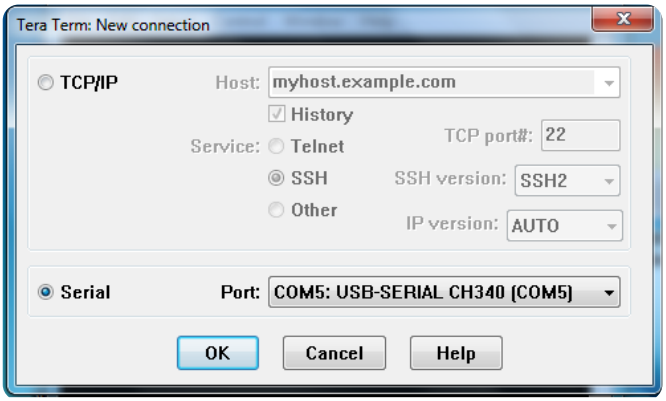
Press 1. Customise Stream Format ... to access Formatter

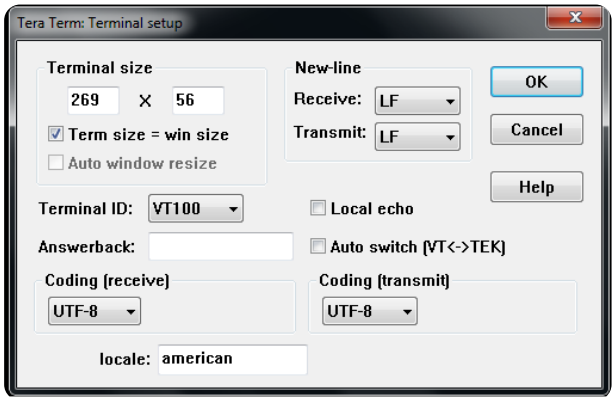
Save to file will store every poled weight in the internal memory

Press 2. Save to File < > to toggle on or off

Tera Term

1. Set the Tera Term connection to serial and select the connected port.
2. Set Terminal setup New-line to LF (Line Feed) also set FT-30M LF on Receive and Transmit.
3. The data being received is shown in the terminal program - TeraTerm.



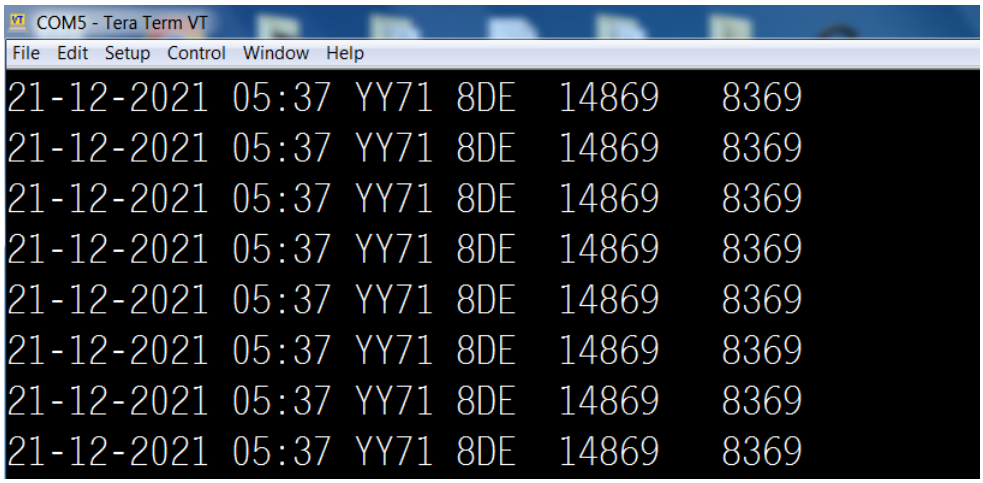


RS232 Configuration and Data Streaming Setup of the FT30-M

Examples of streamed data-set for every second

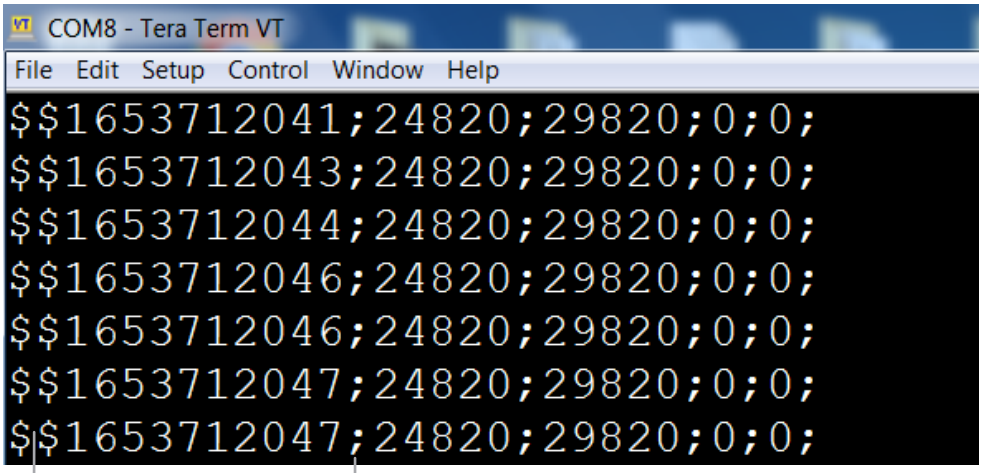
Comma separated value (CSV) is Off so there is no comma delimiter, time and date format is editable, see manual. Each data packet can be On or Off, here they are on, this is a screen print:

Example A: Fixed data stream



Date	Time	Truck ID =	Gross	Net
Format is editable		truck reg. no.	total	material

Example B: Custom data stream



Header

UTS
unique time stamp

Delimiter

Net
weight in the truck body

Gross
total truck, tare + Net

Place holders

Save to File

As well as streaming over the RS232 port, the weight data string can be saved in the FT-30M. The data can then be later downloaded onto a USB stick: Make sure Save to File is On: 2. Save to File (On) <> To download stored weigh data:-

1. Plug the USB stick in to the FT-30M front panel.
2.  

Press < > to scroll to required month. Press 

RS232 Configuration and Data Streaming Setup of the FT30-M

The Custom Formatter entry field

This field is where the formatter is entered, it can be entered in 3 ways;

1. On-screen keyboard; (not all special characters are available)
2. USB keyboard
3. Text file

1. Press to access on-screen keypad

2. Plug in a USB keyboard, tap format field to bring up cursor, start typing

3. On a PC/Laptop create the text file:

FT_30M_Stream_Format.txt.

Type the formatter in the very first line on the

document page (this is the only line read).

Save to a folder called 'FT-30M' on the USB stick.

Plug USB stick into FT-30M and press 'USB' icon

List of Formatters: Supported fields (can be lower or uppercase)

[NT]	Net	[LW]	Pickup/Drop off Load WtNNT]	[TM]	Time
[GR]	Gross	[ID]	Truck ID	[LF]	Line Feed (NewLine) = '\n'
[1N]	Channel 1 Net Twin Mode	[TMT]	Telematics Type	[CR]	Carriage Return = '\r'
[2N]	Channel 2 Net Twin Mode	[A1]	Alarm1 Tripped 0/1	[DD] [MM] [YY]	
[1G]	Channel 1 Gross Twin Mode	[A2]	Alarm2 Tripped 0/1	[HH] [MN] [SS]	
[2G]	Channel 2 Gross Twin Mode	[UT]	Unix Time Stamp		
[CS]	Customer (Pickup/Drop off)	[DT]	Date as per user setting		

A weight field such as [NT] or [2G] can be further modifield by stating its field width and justification:

Example 1: If the current net weight = 3645kg (quotes not transmitted)

[NT] will transmit "3645"
[NT:8] will transmit " 3645" (fieldwidth = 8 and right justified)
[NT:-8] will transmit "3645 " (fieldwidth = 8 and left justified)

Example 2:

A Telemetry system requires a header of "$$" with Gross & Net semi-colon seperated and CR Terminated.
If the current net weight = 3645kg and the gross weight = 10655kg the FT-30M would be looking to send:
"$$;10655;10655\r" (Note: '\r' represents the Carriage Return character) (quotes not transmitted)
The formatter to achieve this would be: "$$;[GR];[NT][CR]" see example B for the data stream on a PC.

FT-30M Remote Button (RB)

Robust and waterproof, the RB can be conveniently located in the loading area of a waste collection truck or close to crane or fork-lift controls. It activates the same function as the on-screen FT-30M total weight print button or the partial load button. Green LED button status:

- Off = The scale is unstable due to the truck swaying
- On = Ready, the truck and scale is stable
- Flashes = To acknowledge the button press

Press to print and record a weight.

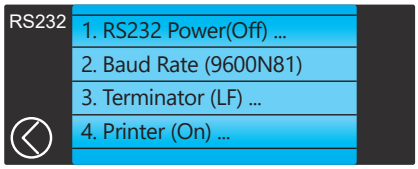
In Pick-up, Drop-Off and Totalising Modes: It works as per the Load Button, where the driver is On-Site picking up multiple loads from same customer.

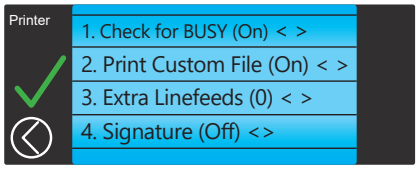
The Remote Button LED will only turn green (Ready) when:

1. The Driver is 'On-Site'
2. Load is stable (within Stability Level)
3. There is a load available

SET-UP

Set the printer to On and use the settings as shown >





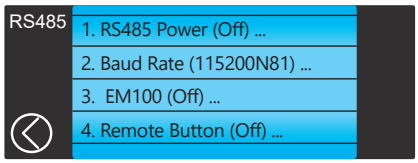
Then press to go back to the I/O menu screen. See next page for RB settings.

Note: The Remote Button should be connected with the FT30-M turned off. Otherwise the FT-30M needs to be power-cycled after the Remote Button is enabled in the I/O menu.

FT-30M Remote Button (RB)

RB settings

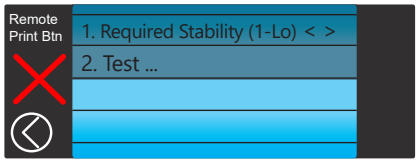
in the I/O menu screen.



RS485

Settings 1-4

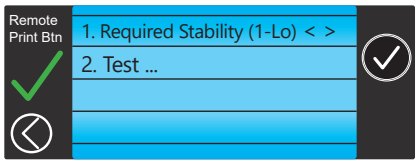
Press 4. Remote Button (Off) ...



RS485

RB 1-2

Press

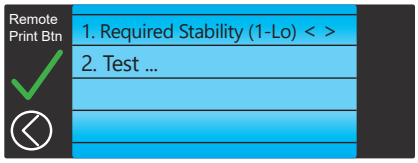


RB

Press 1. to select stability level

Press when done

A flashing Green LED means movement is detected, it will stay on when the scale has stablised. The stability level depends on the amount of machinery movement whilst weighing is taking place. See example below.



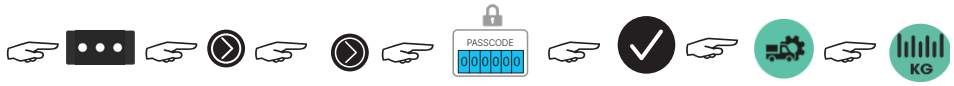
Test

Press Test

Press twice when done.
Press button twice.

It reads and displays the RB version of firmware. Press the on-screen print button and the RB Green LED will light up. Press the RB and the on-screen print button will open and close. It means you can test it easily without having to go to a weighing screen.

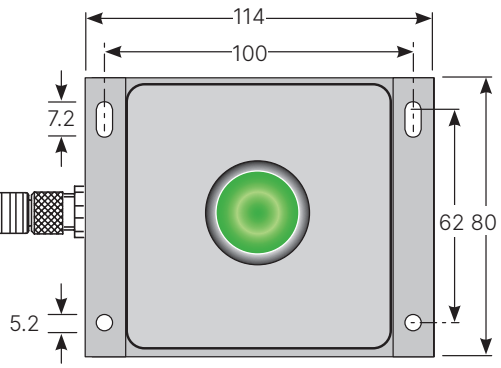
Stability is a factor of the 'CountBy' setting. To modify that use the following sequence:

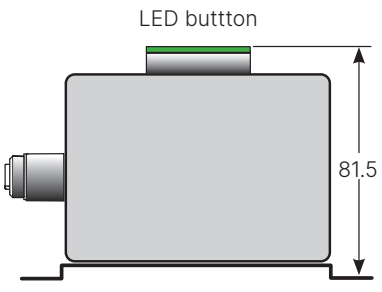


Example. CountBy = 20kg

1 = Off Don't check for Stability LED always on
2 = Lo Must be within CountBy x 4, eg 80kg
3 = Med Must be within CountBy x 3, eg 60kg
4 = Hi Must be within CountBy x 2, eg 40kg

Thumbturn M12 Male-Female cable-connector to Com2 (RS485 port). Availalble in 3, 5, 7.5 and 10M lengths





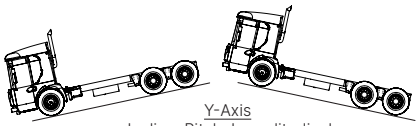
Stainless steel bracket 1.5mm thick

FT-30M Inclinometer Installation & Set-up

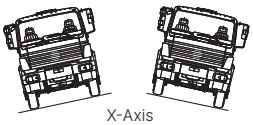
Vehicles and mobile machines often operate in terrains with inclined surfaces. Examples include: logging trucks operating in forests, agricultural machines working on sloping fields and waste collection trucks loading on steep gradients. Most chassis mounted load cells will exhibit a cosine error when weight readings are taken on a slope and/or camber, often referred to as 2-axis X-Y inclines. An inclinometer device measures these angles and together with software in the FT-30M on board weighing indicator these weighing errors can be corrected (compensated).

FT-30M onboard weighing indicator

FT-30M, together with tilt sensor model number SOLAR-2-30-2-RS485M-01 from Level Developments is designed to provide accurate, robust and easy to set-up +/-30º inclinometer correction in all modes. However, in Twin mode only channel 1 is corrected. In this document the terms 'inclinometer', 'tilt sensor' and 'slope sensor' are referring to the same device.



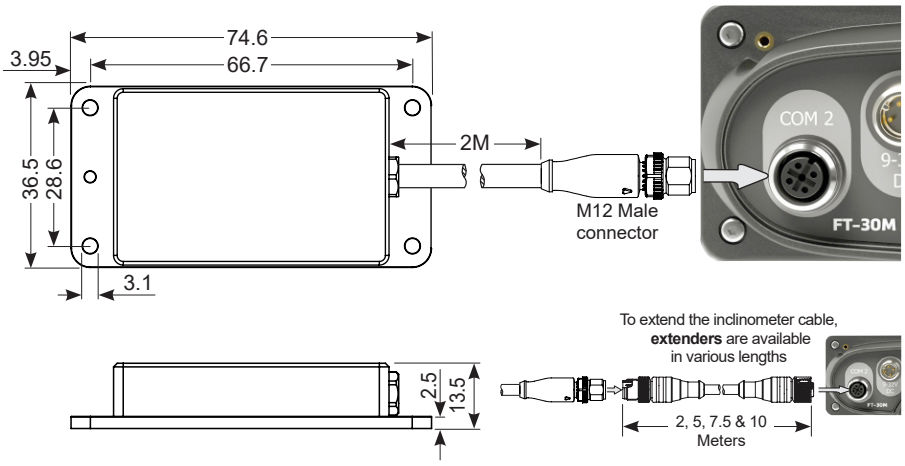
Y-Axis
Incline, Pitch, Longditudinal slope or Steep gradient



X-Axis
Tilt, Roll, Side-ways slope or Camber

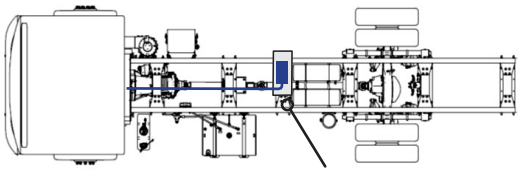
For accurate weighing results and better protection, it is preferable to attach the inclinometer on top of a chassis cross member and as close as possible to the geometric centre of the truck.

Connect the inclinometer thumb-turn M12 connector to the FT-30M COM2 - this is the RS485 port. Cable extenders are available on request.

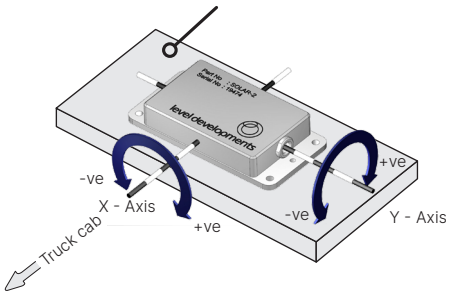


SOLAR-2-30-2-RS485M-01
from Level Developments

- Two Axis (X-Y) Inclinometer
- Measures +/- 30 degrees
- Hermetically sealed to IP67
- Aluminium construction
- Operating temperature rating -20ºC to +70ºC
- Compensated between -10ºC & +60ºC
- High accuracy, high resolution
- 2 metre PUR cable with over-moulded M12 connector



Chassis cross member



In the example described below, the displayed weight will remain unaffected by Y-axis (inclines) and/or X-axis (tilts) up to +/-10º.

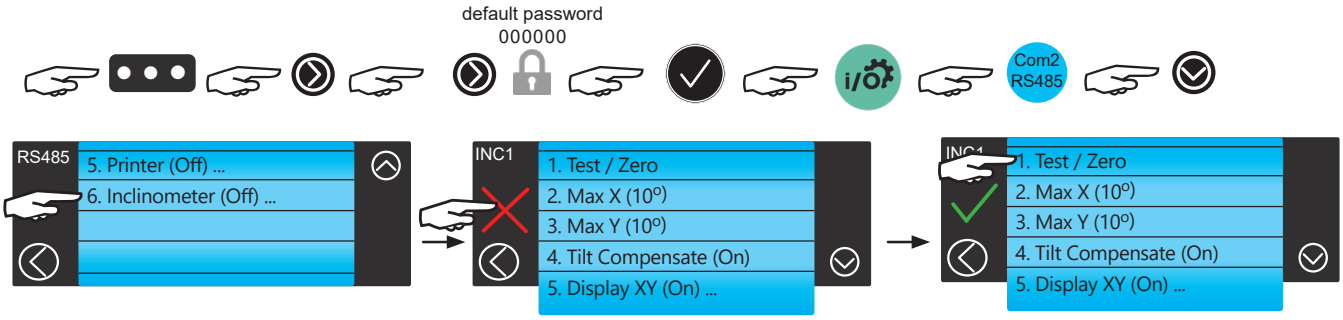
Note that the inclinometer should be connected while the FT-30M is turned off. Otherwise the FT-30M will need to be power-cycled after enabling the inclinometer function in the RS485 menu.

FT-30M Inclinometer Installation & Set-up

Set-up

For accurate operation, the installed inclinometer requires a zero level reference point. Follow these instructions: Ensure the vehicle is on flat and level ground, preferably on a weighbridge.

For weighing system calibration, refer to the FT-30M user manual, available from Flintec's website.



1. Test / Zero ...

If there are question marks (?) or errors showing, check the connection and settings.
No Term Resis = Terminal Resistor is deactivated
X = angle of chassis tilt (roll or side-ways camber)
Y = angle of incline (pitch, longitudinal slope or gradient)
XY Comp: = X+Y resultant angle which is used to calculate the cosine correction of the total weight

With X & Y angles close to 0°, cancel the current zero then set the Zero point:

The SOLAR inclinometer has internal filters to improve stability. Filter 4 is recommended for a typical industrial vehicle.

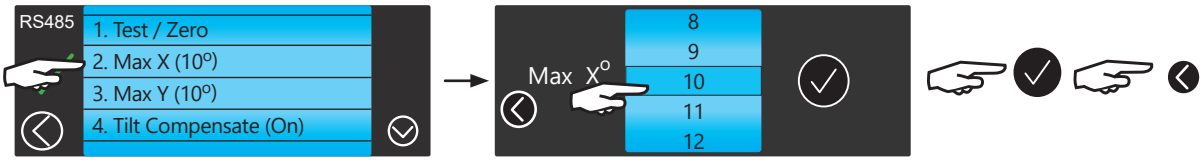
 to toggle between 1 to 7.

Filter index	Frequency response (Hz)	Damping time in Seconds
1	0.125	8
2	0.25	4
3	0.5	2
4	1	1
5	2	0.5
6	4	0.25
7	8	0.125

FT-30M Inclinometer Installation & Set-up

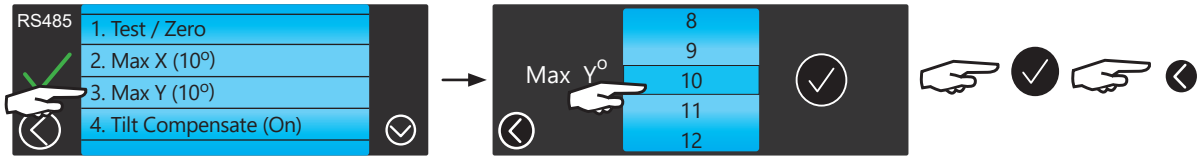
2. Max X (10°)

Slide nubers to desired Max. X angle



3. Max Y (10°)

Slide nubers to desired Max.Y angle

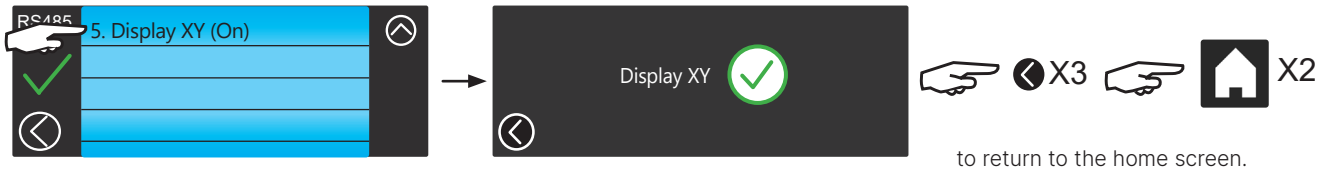


4. Tilt Compensation (On)

Ensure the green tick is visible

5. Display XY (On)

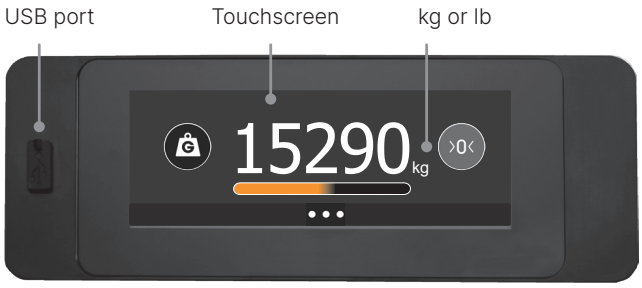
To show angles on the main display ensure the green tick is visible



to return to the home screen.

FT-30M Printing on the RS485 COM 2 port

This guide helps users to connect and test the FT-30M onboard weighing indicator to an RS485 enabled printer on the Half Duplex RS485 COM 2 port.



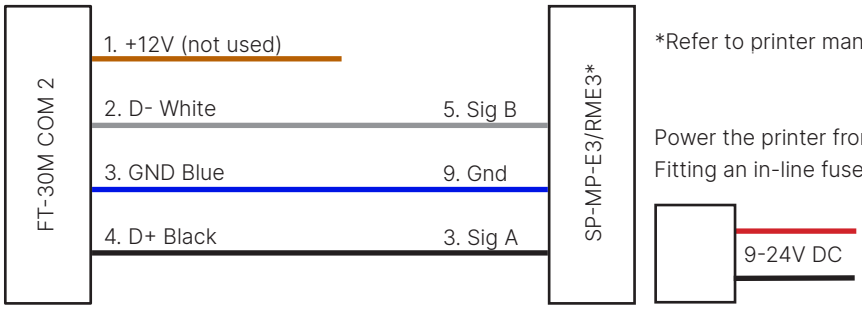
FT-30M COM 2 - RS485 port		
Pin no.	Typ. colour	Description
1	BROWN	+12V Supply max 0.5A. Don't use
2	WHITE	R485 Half-Duplex D-
3	BLUE	GND 0 Volts Ground
4	BLACK	R485 Half-Duplex D+

RS485 printer connections - based on Syncotek RME3/SP-MP-E3		
Pin no.	Signal label	Description
3	TXD	RS485 Half-Duplex A
5	RXD	RS485 Half-Duplex B
9	GND	Ground

Use M12 4-pin male connector to COM 2

Rewireable 4-pin M12 connector

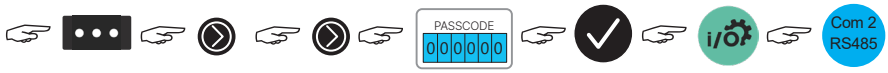
Overmoulded 4-pin M12 cable-connector



*Refer to printer manual for connections and settings

Power the printer from an igition live source
Fitting an in-line fuse is recommended

On the FT-30M, navigate to RS485 settings:



Check the settings are:

1. RS485 Power (Off)
2. Set Baud Rate to 9600

Fixed software settings:

Data Bits = 8
Parity = None
Stop bits = 1

3. EM100 (Off)
4. Remote Button (Off)
5. Printer (On)
6. Inclinometer (Off)

FT-30M onboard flow meter mode

Flow meter is a mode aimed at agricultural trailer hoppers & vehicle vesseled bodies to:

1. Display the flow-rate of a fluid or semi-fluid material as it unloads in real-time (kg or lbs)
2. Determine the time to empty a hopper or body
3. Measure and record the weight of fluid or semi-fluid delivered to site

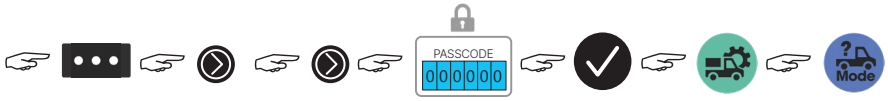
Flow rate

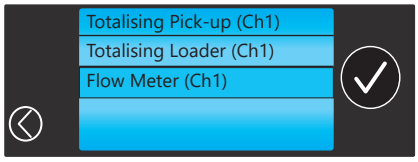
Flow meter mode measures the loss-in-weight over time from a loaded vessel supported on load cells installed to a steel structure. It shows the Net weight at the start of discharge, the live flow-rate, the net amount delivered and the net weight remaining.

An optional remote button can be connected to access to the start & stop/pause button

Flow meter mode set-up

Navigate to Operating mode settings:





Mode settings

Select Flow Meter. Press

Done.

Calibration is the same as in single channel mode, refer to FT-30M manual: www.flintec.com
To connect the optional Remote Button - refer to RPB section in the main manual.

Instructions for use:

1.

Arrive at receiving site. Vessel body is full and ready to discharge, net weight is displayed. Make sure site equipment does not connect to the hopper/body or has no effect on the Net weight when connected.

2.

Press or to start

Switches to kg/sec.
Greeen LED is on

Press to Start of loss-in-weight or press remote button.

Net weight in the body

Press to toggle between flow meter rates

Net weight in the body

Press kg/sec to select:

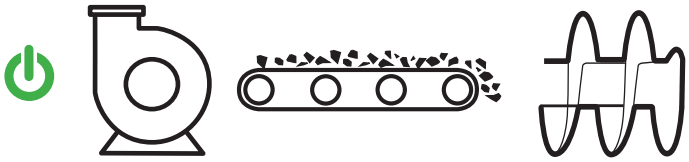
- kg/sec
- kg/min
- kg/hour
- tone/sec
- tone/min
- tone/hour
- lb/sec*
- lb/min
- lb/hour
- ton/sec**
- ton/min
- ton/hour

*when using lbs
**1 ton = 2klb

FT-30M onboard flow meter mode

3.
Start to discharge/unload

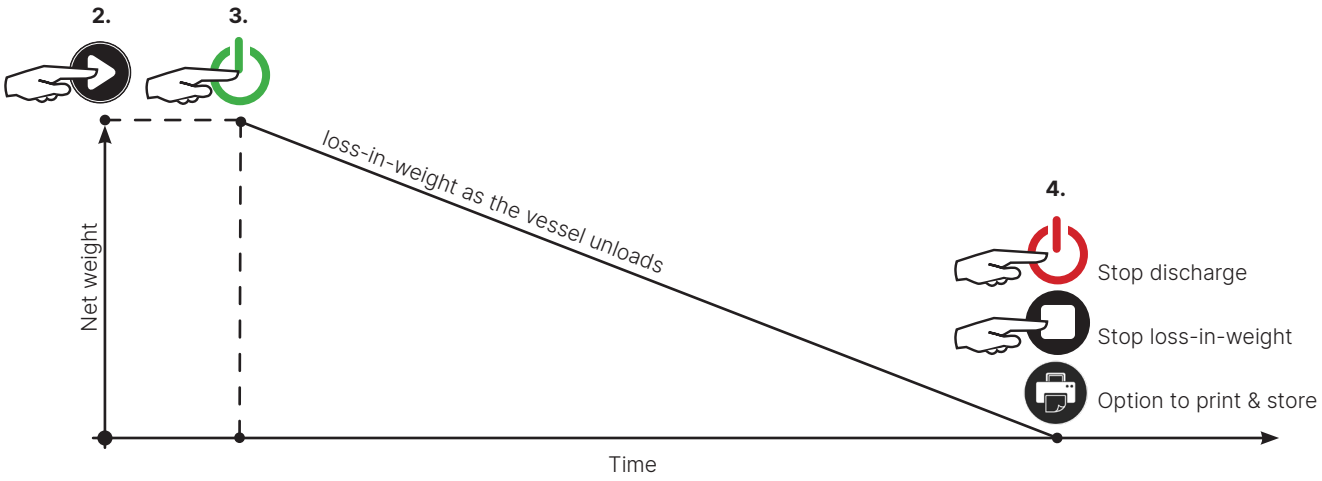
flow-rate displays after a few seconds



4.
Press or to stop

or pause. Green LED is off.

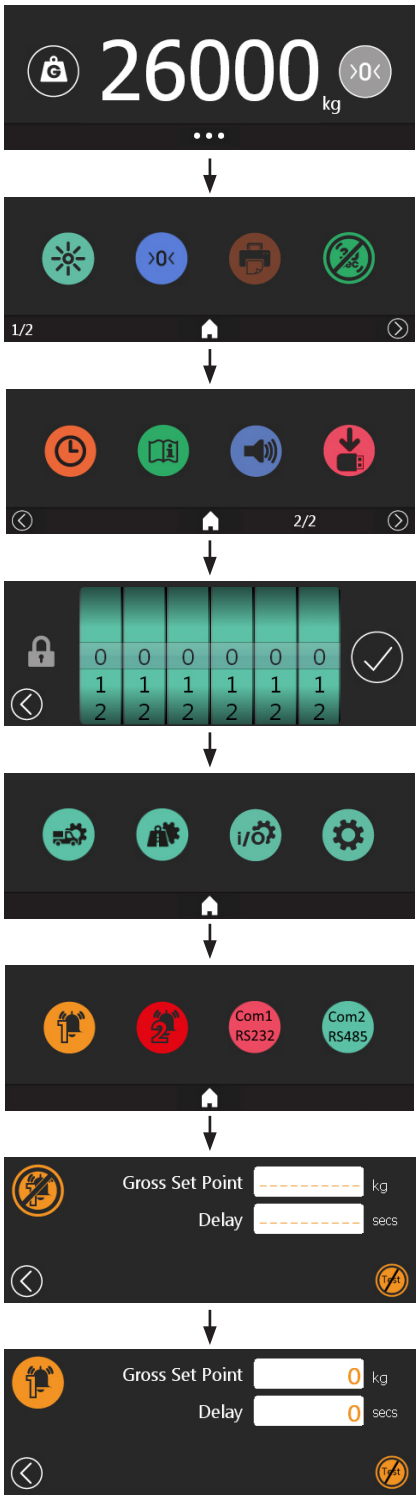
Press or to restart



Alarm and PPCO Settings

Alarm Settings

Pin code is required. The FT-30M will show the warning bar when the truck is close to being fully loaded. Amber means WARNING, the vehicle is close to its maximum legal load. Red means OVERLOAD, maximum legal payload is reached.



1. Home

Navigate to the menu.

Press: 

2. Menu

Navigate through the User Functions.

Press: 

3. Settings

Enter the Settings menu. (Pin code protected)

Press: 

4. Pin code

Swipe up or down to enter pin code.

Press: 

5. Set Up Menu

Enter the Alarm and Print Settings menu.

Press: 

6. Alarm and Print Settings

Select alarm 1.

Press: 

7. Alarm 1 - Amber

Toggle Alarm 1 on.

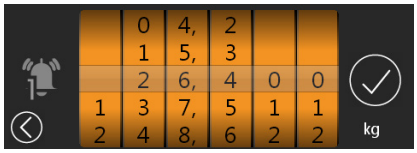
Press 

8. Alarm 1

Select Gross Set Point

Press 

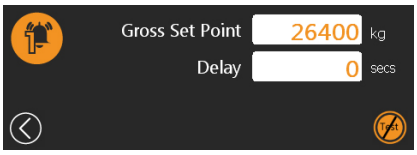
Alarm and PPCO Settings



9. Set Gross Weight

Swipe up or down to set the desired Gross weight alarm setpoint. (26,400kg)

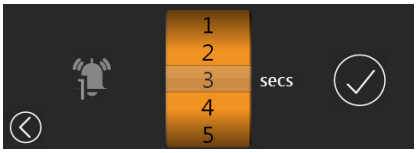
Press:



10. Alarm 1 - Delay

Select alarm delay.

Press: 0 secs



11. Set Delay

Swipe up or down to set the desired delay setpoint. (3s)

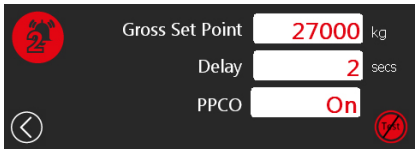
Press:

If the weight of the truck exceeds 26,400kg for a sustained 3 seconds, the alarm will trip.

12. Test Alarm

Externally fitted alarms can easily be tested.

Press: to test the alarm. To return press



13. Alarm 2 -Red

Alarm 2 can be set by following the same steps above.

Packer Plate Cut-Off (PPCO) can be toggled on/off by pressing PPCO X

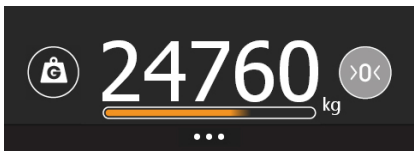
Alarm Bar

The alarm bar is displayed below the weight on the Home Screen. When the gross weight of the truck hits 80% of the set Amber limit, the bar will fill at 2% increments from 80% to 100%.

Using the alarm settings above where Alarm 1 = 26,400kg and Alarm 2 = 27,000kg

Alarm bar is empty when gross weight is < 80% of Amber weight.

Alarm bar incrementally fills. (88%)



Alarm bar incrementally fills. (94%)

Amber alarm threshold reached. Alarm 1 triggered.

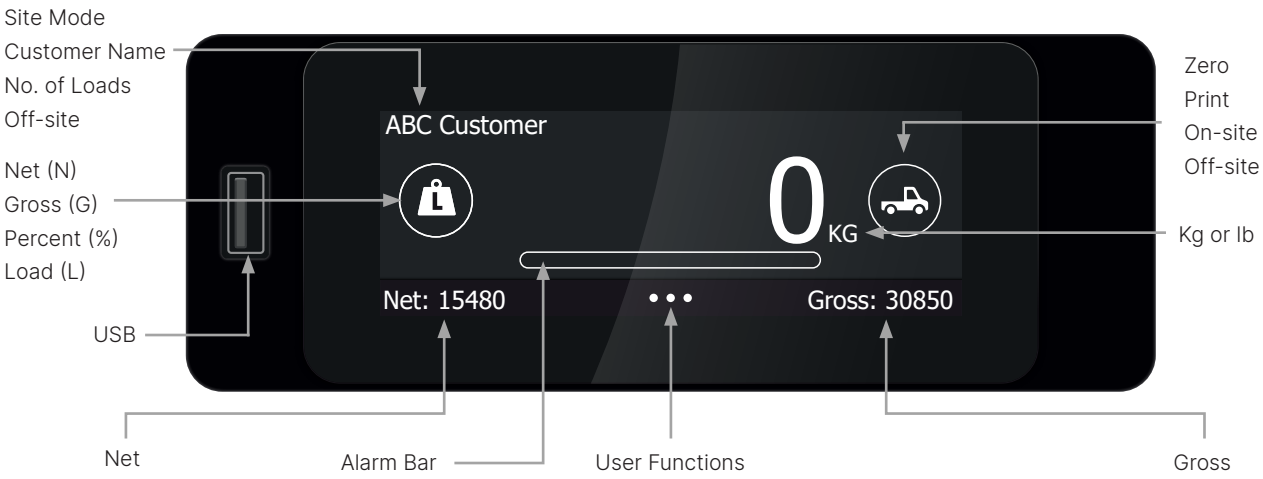
Red alarm threshold reached. Alarm 2 triggered.

Alarms will remain triggered until the vehicle is unloaded.

Load Mode (Pickup/Delivery)

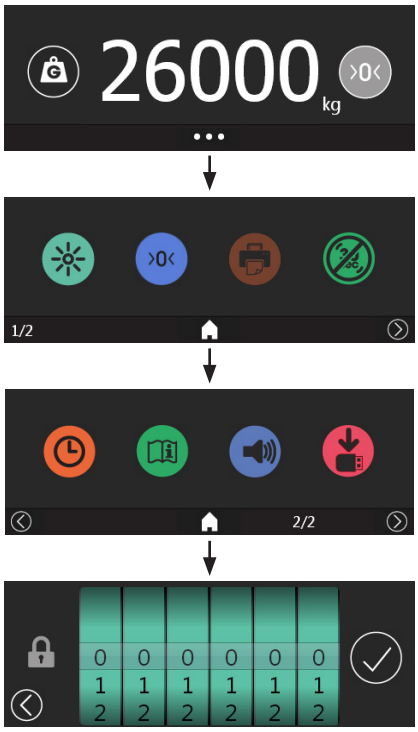
Load Mode (Pickup/Delivery) allows the driver to pickup from or deliver to a user site, with the display showing 0kg each time. When the driver arrives at a site, he logs on to the site with the On-site button and can set the customer name. He then picks up the load, with the display showing the weight from that customer.

He will then press Off-site to print a ticket for the customer. The display will then show 0kg ready for the next customer.



To set up the indicator for use in Pick Up / Delivery mode use Customer Profiles must be created and uploaded first as outlined on pages 66-67. Then use the following sequence to select Pick Up / Delivery mode for the home screen. To exit Pick Up / Delivery mode use the same sequence but select Single Channel or Dual / Twin Channel mode in step 7.

Templates for printing tickets can be created and uploaded as outlined in pages 64-67.



1. Home

Navigate to the menu.

Press: •••

2. Menu

Navigate through the User Functions.

Press: ›

3. Settings

Enter the Settings menu. (Pin code protected)

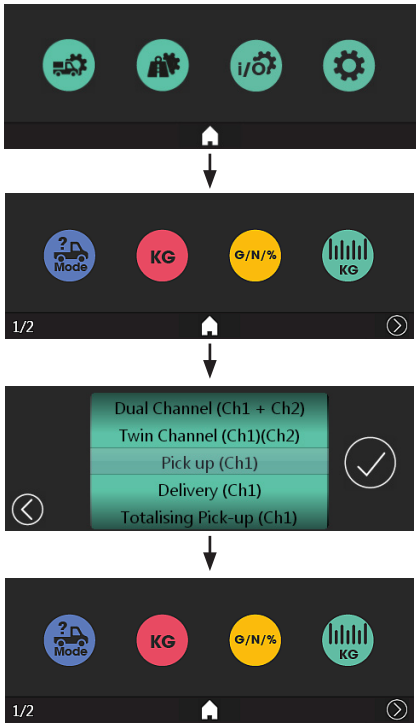
Press: ›

4. Pin code

Swipe up or down to enter pin code.

Press: ✓

Load Mode (Pickup/Delivery)



5. Calibration Settings

Enter the Truck Mode Menu.

Press:

6. Truck Modes

Press:

7. Pick Up Mode

Press:

8. Truck Modes

Go back to home screen.

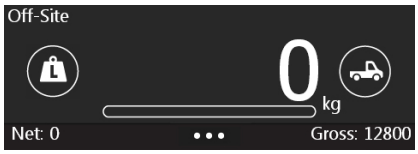
Press: twice.

Pickup Mode: Single Pickup per Customer Site

User Guide

This workflow allows you to pick up a single load from a customer site and print an accompanying ticket. Subsequent customer sites can be visited, printing a ticket for each. The device display will return to zero between each site.

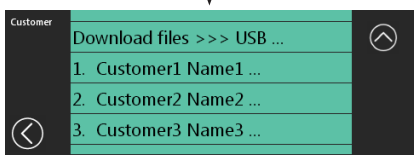
Customer profiles can be uploaded in advance via USB as detailed on pages 66-67.



1. Home Screen

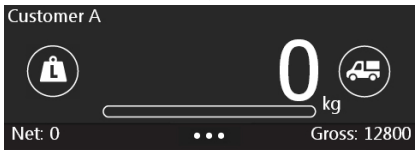
This is the home screen for Pickup Mode.

Press: to log your arrival at a customer site, prompting customer selection.



2. Customer Selection

Navigate up or down to select the relevant customer account.



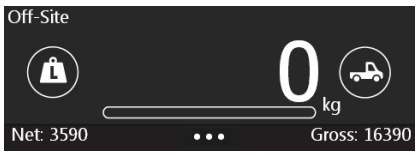
3. Collect Load

Collect the load from the customer. (Customer A).

4. Complete Load

The display shows the Net load collected from Customer A.

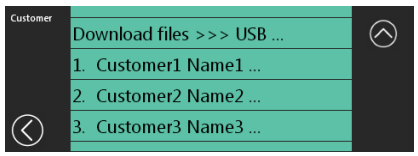
Press: to log your departure from the site. A customer ticket will be printed.



5. Home Screen

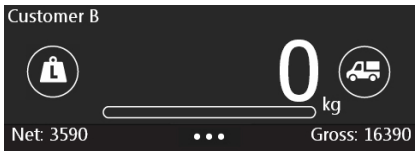
The display returns to zero. Cumulative Net and Gross figures are in the footer.

Press: to log your arrival at the next customer site, prompting customer selection.



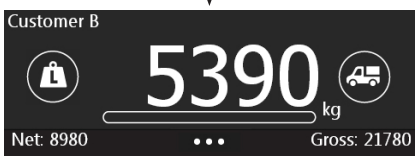
6. Customer Selection

Navigate up or down to select the relevant customer account.



7. Collect Load

Collect the load from the customer. (Customer B).

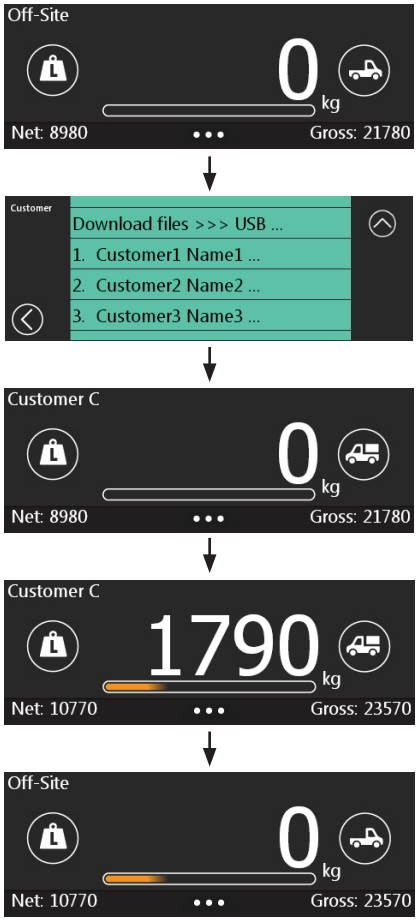


8. Complete Load

The display shows the Net load collected from Customer B.

Press: to log your departure from the site. A customer ticket will be printed.

Pickup Mode: Single Pickup per Customer Site



9. Home Screen

The display returns to zero. Cumulative Net and Gross figures are in the footer.

Press: to log your arrival at the next customer site, prompting customer selection.

10. Customer Selection

Navigate up or down to select the relevant customer account.

11. Collect Load

Collect the load from the customer. (Customer C).

12. Complete Load

The display shows the Net load collected from Customer C.

Press: to log your departure from the site. A customer ticket will be printed.

13. Home Screen

The display returns to zero. Cumulative Net and Gross figures are in the footer.

The amber alarm bar rises when Gross weight is between 80-100% of alarm setpoint.

Customer A

Cleanit Waste Services
Clean Road, Cardiff CF22 3PT
Tel. 999999 cleanit.com

Vehicle: YK62 PBC
Ticket no: 123456
07:51 29 Oct 2015

NET	3590 kg
GROSS	16390 kg
LOAD	3590 kg

Sign:

Customer B

Cleanit Waste Services
Clean Road, Cardiff CF22 3PT
Tel. 999999 cleanit.com

Vehicle: YK62 PBC
Ticket no: 123456
08:12 29 Oct 2015

NET	8980 kg
GROSS	21780 kg
LOAD	5390 kg

Sign:

Customer C

Cleanit Waste Services
Clean Road, Cardiff CF22 3PT
Tel. 999999 cleanit.com

Vehicle: YK62 PBC
Ticket no: 123456
08:31 29 Oct 2015

NET	10770 kg
GROSS	23570 kg
LOAD	1790 kg

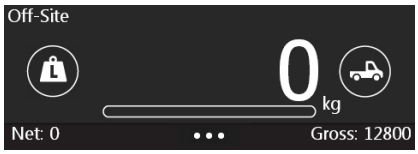
Sign:

Ticket creation and editing can be done with a text editor and uploaded to the device via USB. Details on pages 64-67.

Pickup Mode: Multiple Pickups per Customer Site

User Guide

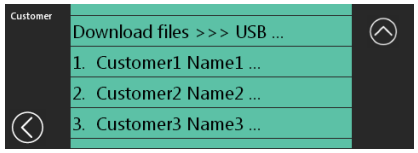
This workflow allows you to pickup multiple loads from a single customer site and print an accompanying ticket at the end. The device display will return to zero between each load. The ticket will highlight each independent load that was picked up for that customer. Customer profiles can be uploaded in advance via USB as detailed on page 66-67.



1. Home Screen

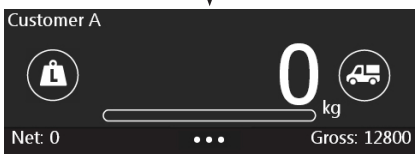
This is the home screen for Pickup Mode.

Press: log your arrival at a customer site, prompting customer selection.



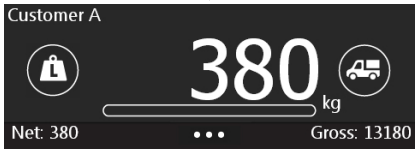
2. Customer Selection

Navigate up or down to select the relevant customer account.



3. Collect First Load

Collect the first load from the customer. (Customer A).



4. Complete First Load

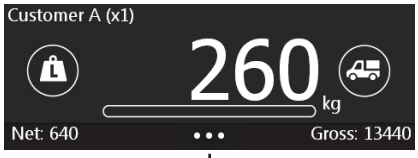
The display shows the Net weight of the load collected from Customer A.

Press: to log the first load and return the display to zero.

5. Collect Second Load

Collect the second load from the customer. (Customer A).

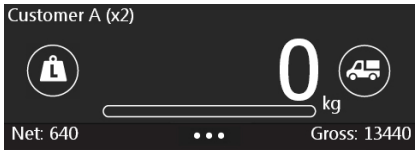
Previously logged loads are referenced in the top left.



6. Complete Second Load

The display shows the Net weight of the load collected from Customer A.

Press: to log the second load and return the display to zero.



7. Collect Third Load

Collect the third load from the customer. (Customer A).

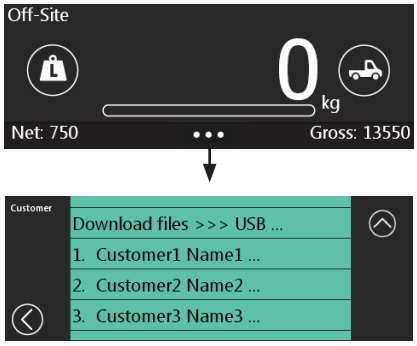
Previously logged loads are referenced in the top left.

8. Complete Third (Final) Load

The display shows the Net weight of the final load collected from Customer A.

Press: to log your departure from the site. A customer ticket will be printed.

Pickup Mode: Multiple Pickups per Customer Site



9. Home Screen

The display returns to zero. Cumulative Net and Gross figures are in the footer.

Press: to log your arrival at the next customer site, prompting customer selection.

10. Customer Selection

Navigate up or down to select the next relevant customer account.

Customer A
Cleanit Waste Services
Clean Road, Cardiff CF22 3PT
Tel. 999999 cleanit.com

Vehicle: YK62 PBC
Ticket no: 123456
07:51 29 Oct 2015

NET	750 kg
GROSS	13350 kg
LOAD 1	380 kg
LOAD 2	260 kg
LOAD 3	110 kg

Sign:

Customer Details

On-site pickups

Ticket creation and editing can be done via a text editor and uploaded to the device via USB. Details on page 64-67.

Printed Ticket Templates

Creating and Editing Printed Tickets

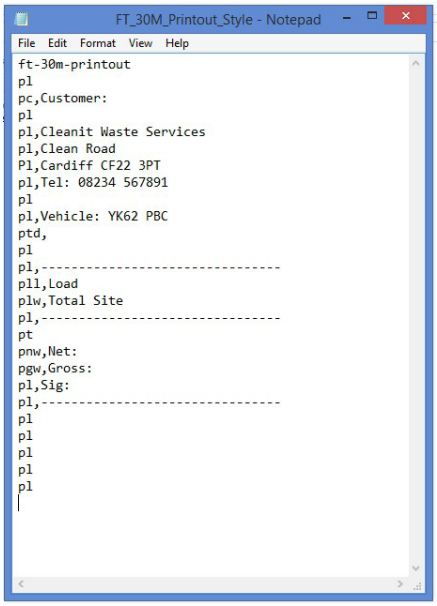
Create and edit printed ticket templates using a text editor such as Notepad. (Do not use MS Word or similar word processor).

Using the available commands you can customise the ticket's content and layout. The print ticket file needs the name:

FT_30M_Printout_Style.txt

On a USB memory stick, create the directory (folder): FT-30M

Copy the FT_30M_Printout_Style.txt into this folder. This can then be uploaded directly to the device via the USB interface.



Template File

ft-30m-printout
pl,Cleanit Waste Services
pl,Clean Rd
pl,Cardiff CF22 3PT
pl,Tel: 02920 111 www.cleanit.com
pl,Vehicle: YY93 PBC
ptd
pl
pnw,Net:
pgw,Gross:
ps
pl,Sig:
pl
pl
ps
pl3

Resulting Printed Ticket

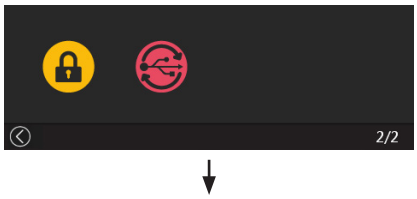
Cleanit Waste Services
Clean Rd
Cardiff CF22 3PT
Tel: 02920 111 www.cleanit.com
Vehicle: YY93 PBC
09:28 02-06-2016

Net: 1,130 kg
Gross: 11,130 kg

Sig:

Upload to Device

To upload the template file to the device, navigate to the USB menu and connect the flash drive when prompted.

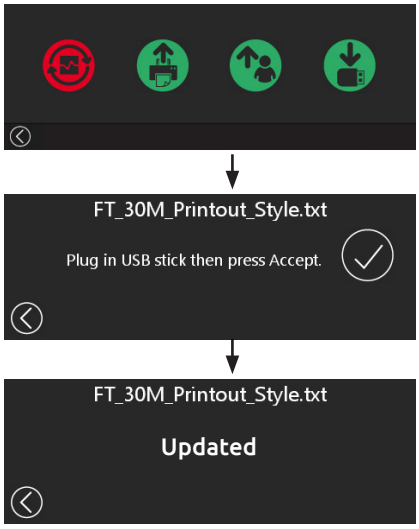


1. USB Settings

Enter the USB settings.

Press:

Printed Ticket Templates



2. Update Print Tickets

Prepare the device for upload.

Press:

3. Connect USB

Connect the USB flash drive loaded with the ticket template.

Press:

4. Update Successful

Press: and until you return to home screen.

Printed Ticket Template Commands

The following list are commands that allow a ticket to be created and edited to suit the user. Any unrecognised commands will be ignored. To print a duplicate ticket: copy and paste the code with several pl. lines (empty) in-between.

Command	Function	Example Print Output
ft-30m-printout	File Header: must be on first line to show correct format	-
pl	print an empty line	
pl,Flintec UK	print the line: "Flintec UK"	Flintec UK
pl3	print 3 blank lines	
ps	print full line separator	----------
pt	print time	
pd	print date - according to date-format	
pdt	print date and time on same line	
ptd	print time and date on same line	
pc,Customer:	print customer: in Load Mode doing Pickup or Delivery, this will print 'Customer name' where xxxx will be supplied when going 'On-Site'	
pnw,Net Weight:	Prints the current net weight (in full line: 32 characters)	Net Weight: 2,550 kg
pgw,Gross Weight:	Prints the current gross weight (in full line: 32 characters)	Gross Weight: 2,550 kg
plw,Load: -	Prints the current load weight or a list of load weights (in full line: 32 characters)	Load: 2,550 kg or: Load 1: 1,750 kg Load 2: 2,550 kg Load 3: 0,820 kg Load 4: 5,550 kg
pnwch1	Print Net weight Chan 1 (Twin Mode)	
pnwch2	Print Net weight Chan 2 (Twin Mode)	
pgwch1	Print Gross weight Chan 1 (Twin Mode)	
pgwch2	Print Gross weight Chan 2 (Twin Mode)	

Customer Lists

Creating and Editing Customer Lists

Create and edit customer lists using a text editor such as Notepad. (Do not use MS Word or similar word processor).

Using the available commands you can customise.

The customer list file needs the name:

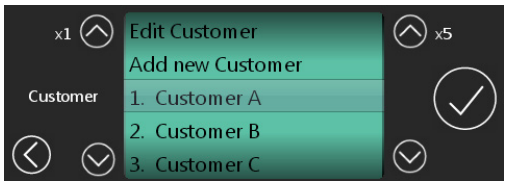
FT_30M_Customer_List.txt

On a USB memory stick, create the directory (folder): FT-30M Copy the FT_30M_Customer_List.txt into this folder.

This can then be uploaded directly to the device via the USB interface.

Example Template File

```
ft-30m-customerlist

cust-edit

cust-add

Customer A

Customer B

Customer C
```



On the Device

After successfully uploading the customer list file, your defined customers will appear on the customer selection step as show above.

This screen is presented to you when you log onto a site using Pickup/ Delivery Mode.

Customer List Commands

The following list are commands that allow you to setup the customer list file. Any unrecognised commands will be ignored.

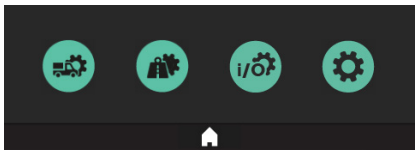
To print a duplicate ticket: copy and paste the code with several pl. lines (empty) in-between.

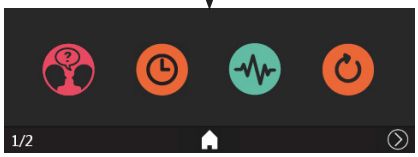
Command	Function
ft-30m-customerlist	File Header: must be on first line to show correct format
cust-edit	Optional - Show “Edit Customer” Option in iWheel
cust-add	Optional - Show “Add Customer” Option in iWheel
cust-delete	Optional - Show “Delete Customer” Option in iWheel
cust-upload-files	Optional - Show “Upload files <<< USB” Option in iWheel
cust-download-files	Optional - Show “Download files >>> USB” Option in iWheel
Customer1 Name	Adds the customer name to the device
Customer2 Name	Adds the customer name to the device

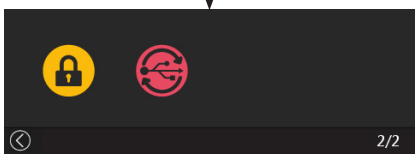
USB Transfers

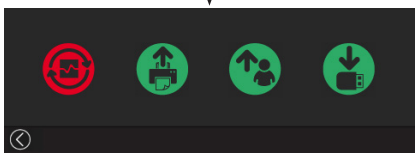
User Guide

The USB interface allows for easy uploads and downloads. Compatible files can be loaded onto a flash drive and inserted into the device. Software updates, printed ticket styles, customer lists can all be uploaded in this way. Weighing transactions can also be downloaded to a USB device.









1. Set Up Menu

Enter the Settings menu.

Press:

2. Options Menu

Navigate through the menu.

Press:

3. USB Settings

Enter the USB settings.

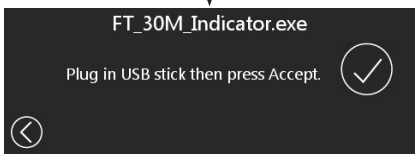
Press:

4. Choose Operation

Choose the relevant USB operation.

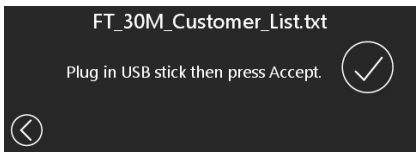
Press: or or or

Software Update | Print Ticket Update | Customer List Update | Data Download

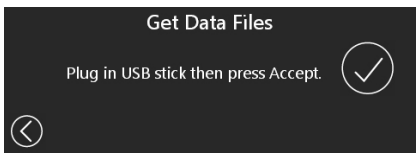


or

or



or



5. Connect USB for Software Update

Connect the USB flash drive loaded with the software update.

Press:

6. Connect USB for Print Ticket Update

Connect the USB flash drive loaded with the printed ticket template file.

Press:

7. Connect USB for Customer List Update

Connect the USB flash drive loaded with the customer list file.

Press:

8. Connect USB for Data Download

Connect the USB flash drive to receive data download.

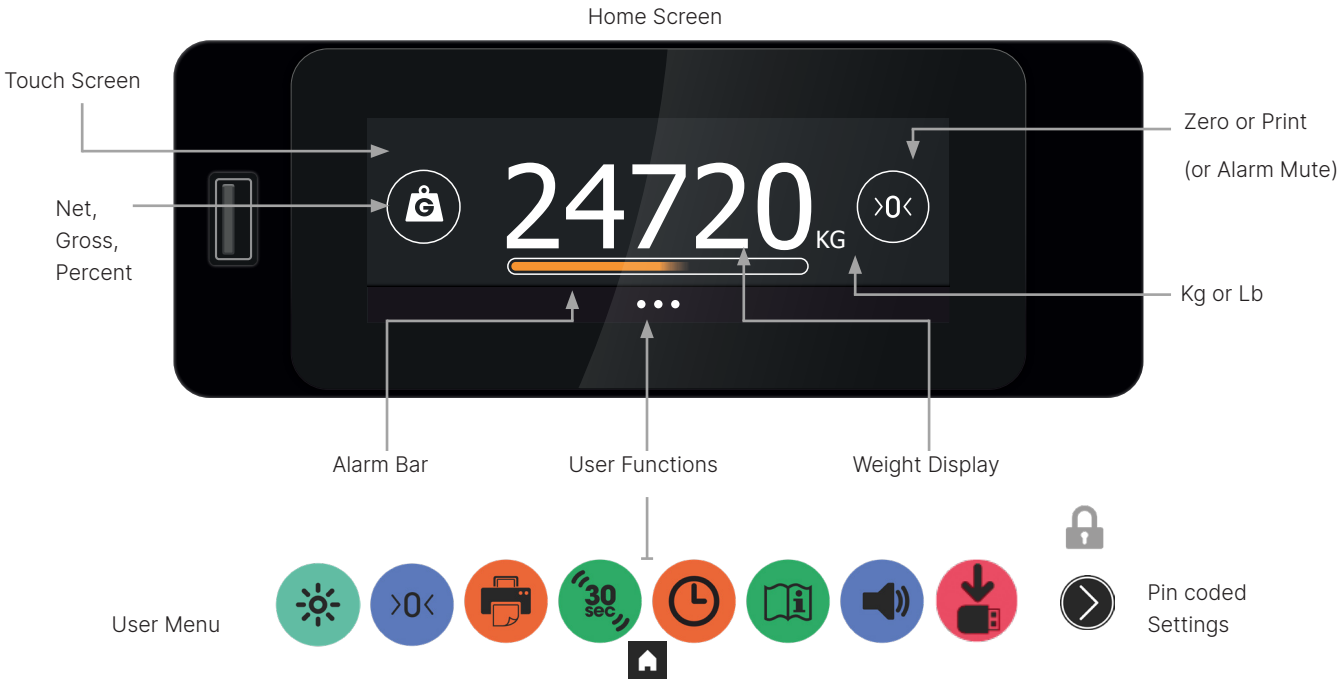
Press:

Essential Terms

Terms	Meaning
GROSS	Or GVW (gross vehicle weight) or GMW (gross mass weight) is the total truck weight (NET + TARE).
NET	Or Net Load or Payload is load weight in the truck body.
TARE	Is the unladen weight of the empty vehicle.
LOAD	A partial weight which adds to, or subtracts from, the overall (NET) weight of a payload, when loaded onto, or unloaded from, a container/vehicle.
SITE LOAD	Is the total weight of material collected from, or delivered to, a customer's site. For example: The aggregate waste collected from several wheeled bins.
ALARM	An alarm sounder or flashing beacon will activate when alarm set-point is reached (where fitted).
ON SITE	Arrival at a site for pick up or delivery of goods, a customer name can be logged at this point.
MODE	Weighing modes are Gross, Net, Tare, Load, Percent, Split weights. These are different ways of showing loaded vehicle weights.
PAYLOAD	Is the NET weight.
TRIGGER	A time delay before the alarm is activated.
CALIBRATION	Is necessary on all new installations. Allows the unit to calculate and display measured values against previously stored calibration points.
FILTER	Filters the raw counts of the analogue to digital converter to achieve stable readings.
DIAGNOSTICS	Gives the technician information with which to troubleshoot.
DRIVER ZERO	The home weighing driver zero screen is used to remove 'zero drift' under service conditions and will only zero the display where the drift is within +/- 500kg.
CALIBRATION ZERO	Is the units's calibrated zero weight value. That value is stored every time the on-board weighing system is calibrated.
OUTPUT	This is the signal from the load cells.
RS485, RS232	Digital signals used to transfer data from one device to another.
LOAD MODE	A feature allowing individual containers to be weighed in Pickup or Delivery Mode.
PRINT TICKET	A printed weight receipt.
COUNT BY	Displayed resolution, e.g. 1, 10, 20, 50 100, 200 kg or lbs.
PPCO	Packer (compaction) Plate Cut Off. A compaction plate operating in the rear hopper of a waste truck compacts wastes. When the alarm is triggered a 24v (supply volts) feed from the FT-30M connected to a PLC or a controller on the compaction unit switches it off and prevents the RCV crew from loading any more wastes. The compaction unit will reactivate after the all the waste has been ejected into a tip or waste transfer station. The compaction unit will reactivate when load is tipped off.
SMASH BUTTON	A button on the back of the truck to allow each load to be weighed, printed and transaction stored.
mV/V	millivolts per volt - the ratio of load cell signal voltage against excitation voltage, used for weight measurement
mV / V	The signal from the load cell or group of load cells is measured in mV (millivolts), 1mV = 0.001 Volt. These are very small voltages the indicator uses to measure weights.

Quick Start Guide - Tippers & Bulk Haulage

Note: Select Single Channel, Dual Channel or Twin Channel from the Truck Mode Menu (page 14) for this functionality



Power On and Use

Turn ignition on and FT-30M powers up. Vehicle weight displays. For quick & easy navigation, a finger press guides users through functions. User function settings allow frequently used adjustments to be made.

Critical settings are pin code protected.

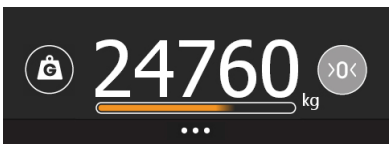
Good to Know

GROSS	Gross Vehicle Weight is the total truck weight. NET + TARE = GROSS
NET	Net Load or Payload is the load weight in the truck.
TARE	Is the unladen empty weight of the vehicle.
ALARM	The alarm will activate when a pre-set set point is reached. Where fitted, a sounder or flashing beacon device will activate.
ZERO	Weighing systems may drift from zero when unloaded, e.g. because of debris or dirt, a zero button allows a true zero to be set. Only available if gross weight is within +/- 500kg of tare weight.
MODE	Net, Gross, Percent, Load, Site are all modes (different ways of displaying a weight).

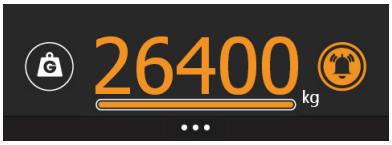
Press to ZERO the display

Load the truck

Press to toggle through GROSS weight, NET weight or %



Alarm bar fills between 80-100% of Amber alarm weight at 2% increments.



Press to mute AMBER alarm

Press to mute RED alarm

Truck is full, unload

User Functions

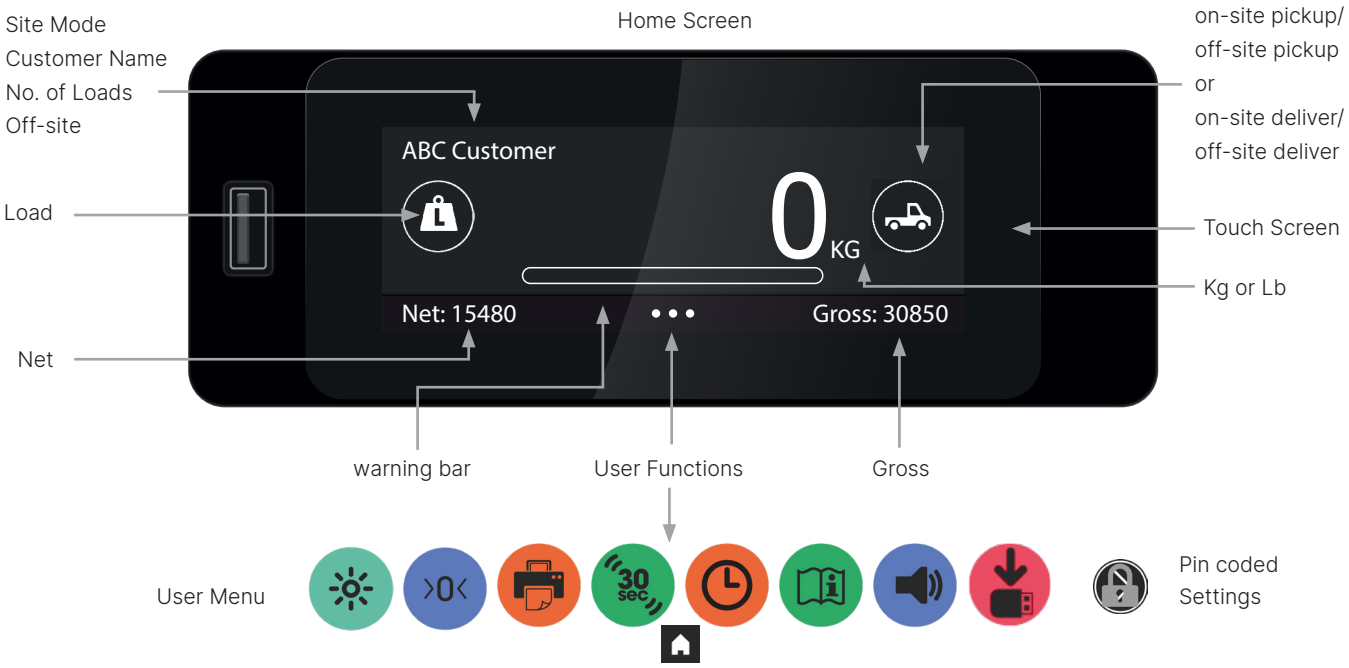
User Functions and Settings

The FT-30M is configured & calibrated for the application. Not all functions are available, some require additional devices.
Faded button = function not available or out of range. Strike-through = not activated.

MENU	To access user functions. Will revert to HOME after 45 seconds of no activity.
HOME	To go back to HOME screen.
GROSS	Total vehicle weight. Press to view another weighing mode.
NET	NET is the weight of materials loaded on the vehicle. Press for Gross.
PERCENTAGE	Is the PERCENTAGE of GROSS weight. Press to view another weighing mode.
ZERO	Press to display ZERO. Max range +/-300kg from calibrated zero weight.
PRINT	Print displayed weight. Press to PRINT.
MOTION DETECT	Display shows '----' after 30 seconds of motion. Touch screen to display HOME.
ENTER	To accept a value.
EXPLORE	For next page or back a step.
ALARM SET-OFF	AMBER ALARM has been triggered. Press to mute.
ALARM MUTED	AMBER / RED ALARM has been triggered AND muted.
ALARM SET-OFF	RED ALARM has been triggered. Press to mute.
COPY TO USB STICK	Copy user data to USB stick.
BRIGHTNESS	Toggle between Low, Medium and High.
iWHEEL	To adjust the time or select a value or customer Finger swipe to select setting. To accept press:
TIME	Press to adjust the time with the adjustment iWHEEL.
INFORMATION	Press to view: Date & time. Serial no. Software version. Calibration time & date. Tare and Gross. Alarm status & settings.
BLEEP VOLUME	Toggle between off, Low, Medium and High.
SETTINGS	To access passcoded settings menu.
ON-SITE DELIVER	Print & record delivered loads. Arrive on site, press & select or enter a customer name.
OFF-SITE DELIVER	Press when leaving site.
ON-SITE PICK-UP	Print & record collected loads. Arrive on site, press & select or enter a customer name.
OFF-SITE PICK-UP	Press when leaving site.
LOAD COLLECT	Press to record individual container or part loads from or to customer sites. LOAD and SITE weights are added to NET.
WARNING BAR	Amber means WARNING, the vehicle is close to its maximum legal payload. Red means OVERLOAD, maximum legal payload is reached. Unload the vehicle. When gross weight reaches 80% of the weight warning alarm setting, the warning bar shows and increments in steps of 2% until it reaches 100%.

Quick Start Guide - Waste Collection

Note: Select Delivery (Ch1) from the Truck Mode Menu (page 14) for this functionality



Power On and Use

Turn ignition on and FT-30M powers up. Vehicle weight displays. For quick & easy navigation, a finger press or swipe gesture guides users through functions. User function settings allow frequently used adjustments to be made. Critical settings are pin code protected.

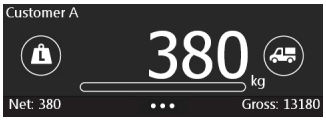
Good to Know

GROSS	Gross Vehicle Weight is the total truck weight. NET + TARE = GROSS
NET	Net Load or Payload is the load weight in the truck.
TARE	Is the unladen empty weight of the vehicle.
ALARM	The alarm will activate when a pre-set set point is reached. Where fitted, a sounder or flashing beacon device will activate.
ZERO	Weighing systems may drift from zero when unloaded, e.g. because of debris or dirt, set zero button allows a true zero to be done.
SITE	A customer where loads are collected from or delivered to.
LOAD	Is an individual load collected or delivered to or from a customer's site.

Press to log arrival at site

Press after selecting customer

Load the vehicle



Press for each load

Press to log departure from site

Customer A

Cleanit Waste Services
Clean Road, Cardiff CF22 3PT
Tel. 01234 99889
Vehicle: YK62 PBC
Customer A
07:51 29 Oct 2015

NET	380 kg
GROSS	13180 kg
LOAD	380 kg

Sign:

Truck Weight on arrival
Collection
Truck weight on departure

User Functions

User Functions and Settings

The FT-30M is configured & calibrated for the application. Not all functions are available, some require additional devices.
Faded button = function not available or out of range. Strike-through = not activated.

	MENU	To access user functions. Will revert to HOME after 45 seconds of no activity.
	HOME	To go back to HOME screen.
	GROSS	Total vehicle weight. Press to view another weighing mode.
	NET	NET is the weight of materials loaded on the vehicle. Press for Gross.
	PERCENTAGE	Is the PERCENTAGE of GROSS weight. Press to view another weighing mode.
	ZERO	Press to display ZERO. Max range +/-300kg from calibrated zero weight.
	PRINT	Print displayed weight. Press to PRINT.
	MOTION DETECT	Display shows '----' after 30 seconds of motion. Touch screen to display HOME.
	ENTER	To accept a value.
	EXPLORE	For next page or back a step.
	ALARM SET-OFF	AMBER ALARM has been triggered. Press to mute.
	ALARM MUTED	AMBER / RED ALARM has been triggered AND muted.
	ALARM SET-OFF	RED ALARM has been triggered. Press to mute.
	COPY TO USB STICK	Copy user data to USB stick.
	BRIGHTNESS	Toggle between Low, Medium and High.
	iWHEEL	To adjust the time or select a value or customer Finger swipe to select setting. To accept press: 
	TIME	Press to adjust the time with the adjustment iWHEEL.
	INFORMATION	Press to view: Date & time. Serial no. Software version. Calibration time & date. Tare and Gross. Alarm status & settings.
	BLEEP VOLUME	Toggle between off, Low, Medium and High.
	SETTINGS	To access passcoded settings menu.
	ON-SITE DELIVER	Print & record delivered loads. Arrive on site, press & select or enter a customer name.
	OFF-SITE DELIVER	Press when leaving site.
	ON-SITE PICK-UP	Print & record collected loads. Arrive on site, press & select or enter a customer name.
	OFF-SITE PICK-UP	Press when leaving site.
	LOAD COLLECT	Press to record individual container or part loads from or to customer sites. LOAD and SITE weights are added to NET.
	WARNING BAR	Amber means WARNING, the vehicle is close to its maximum legal payload. Red means OVERLOAD, maximum legal payload is reached. Unload the vehicle. When gross weight reaches 80% of the weight warning alarm setting, the warning bar shows and increments in steps of 2% until it reaches 100%.

FT-30M Totalising Pick-up & Loader Mode

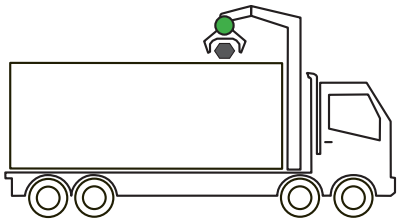
FT-30M is an easy-to-use touchscreen weighing indicator. For vehicle loading machines with weight sensors, user friendly menus help users to configure, calibrate and make best use of totalising modes. Features include the ability to print & store weights or set targets and alarms.

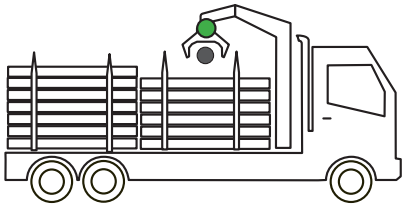
- Safely load first time, every time
- Optimise payloads & avoid overloads
- Weigh when and where it's needed
- Better route planning
- Know what you're carrying
- Weigh each and every load
- Measure the profit of every journey
- Know when target weights are hit

For logistics vehicles and bulk handling machinery, totalising mode is used to weigh materials at

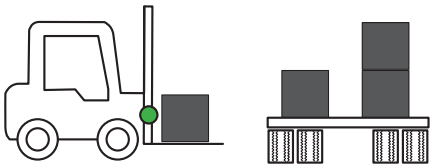
the point of loading or unloading. Materials being moved with mechanical handling equipment can be weighed and totalled using one of two totalising modes:

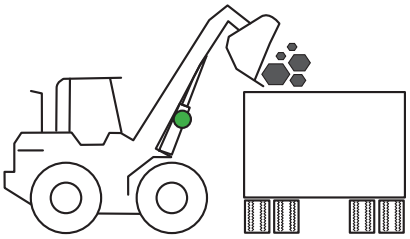
Totalising Pick-up for a truck loading or unloading itself with a vehicle mounted crane or hoist





Totalising Loader for machinery loading another vehicle





● = weighing load cell or sensor

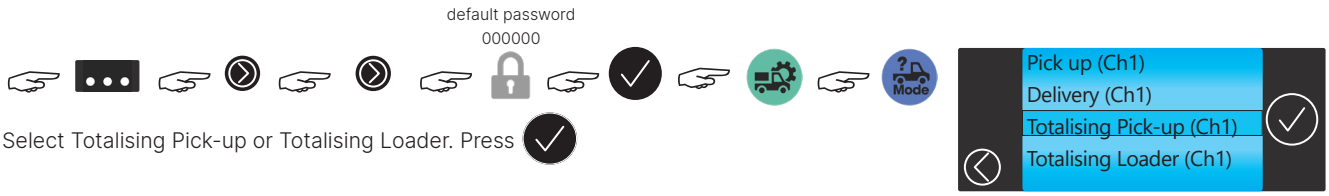
Contents:

1. Select the totalising mode for the application.
2. Calibrate with weights
3. Calibrate without weights
4. Set Tare - Totalising Pick-up only.
5. Filters
6. Remote Button
7. Totalising Pick-up User Guide
8. Totalising Loader User Guide

FT-30M Totalising Pick-up & Loader Mode

1. Select the totalising mode for the application

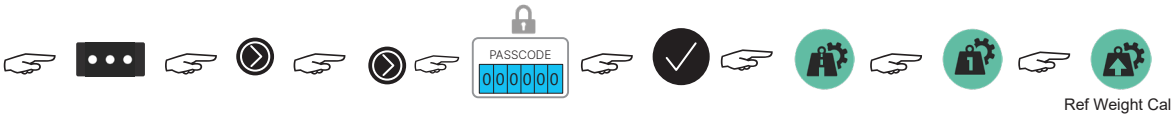
Connect load cell or sensor to channel 1

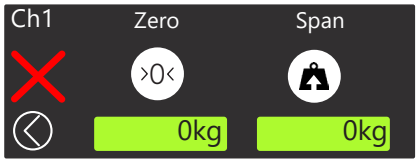


Select Totalising Pick-up or Totalising Loader. Press

2. Calibrate with weights

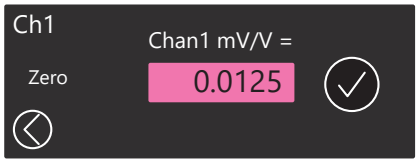
Weighing scales are typically calibrating using a pre-weighed load or known weight block





Calibrate Zero

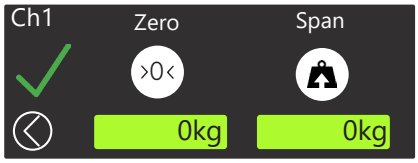
Press



Calibrate Zero

Ensure there is no load on the lifting apparatus. Raise off the ground.
Allow to settle
When stable Press

Stable means the mV/V numbers are not changing. There will be a small amount of mV/V shown in the red box, this is the dead weight of any steelwork attached to the load cell or sensor and is expected.

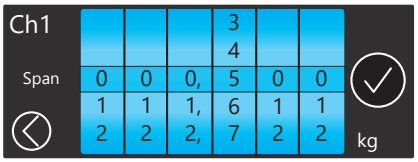


Calibrate Span

Raise a known weight off the ground with the lifting apparatus. E.g... 500kg

Press

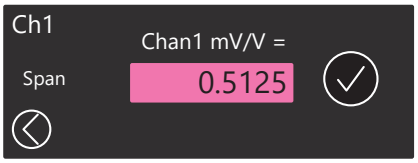
Span is the range between max. scale capacity and zero, here it refers to the max. weight used for calibration



Calibrate Span

Slide numbers to the exact weight lifted

Press



Calibrate Span

When stable Press

Press when done and return to home screen.

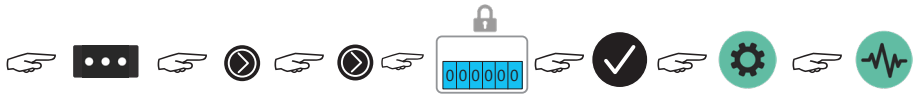
FT-30M Totalising Pick-up & Loader Mode

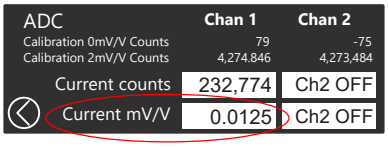
3. Calibrate without weights

Calibration can also be done by entering load cell mV/V values using the touchscreen. It is typically used where known dead-weights are not available. The mV/V values are read from the load cell nameplate, calibration certificate or datasheet and added to the existing dead load mV/V. Should a discrepancy with a weighbridge or scale become known, adjust mV/V values and re-enter in the mV/V calibration page or perform a known-weight calibration.

Read the no-load mV/V value

Ensure there is no-load on the lifting apparatus, raise off the ground. Read the no-load mV/V in the diagnostics page.





Write-down the no load Current mV/V value. E.g. 0.0125 mV/V

Example. Calculate the Span mV/V value.

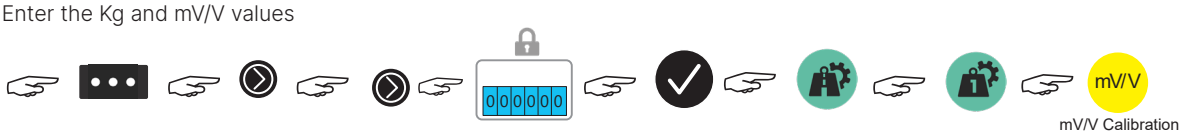
The mV/V signal from the load cell at a capacity of 5 tonnes is 2mV/V (printed on the cell, datasheet or calibration certificate).
The lifting apparatus maximum weight determines the scale capacity. E.g. Safe Working Load (SWL) = 2t.
Calculate the maximum mV/V at 2 tonnes:

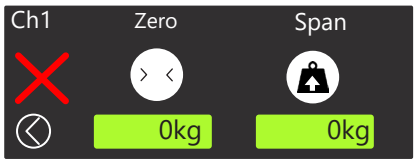
$$\frac{\text{Lift Capacity}}{\text{Load Cell Capacity}} = \frac{2t}{5t} \times 2mV/V = 0.80000\ mV/V$$

add the no-load zero mV/V

0.8 + 0.0125 = 0.8125 mV/V this is the calculated Span mV/V signal value

Enter the Kg and mV/V values

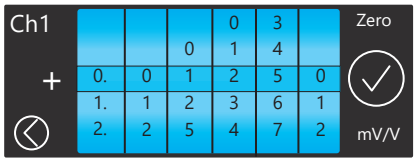




Calibrate Totalising mode

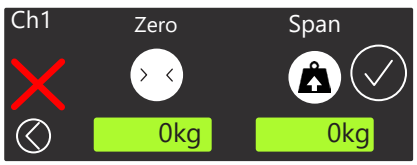
Ensure there is no load on the lifting apparatus, raise off the ground, allow it to settle

Press >0<



Calibrate Totalising mode Zero

Slide numbers to 0.0125. Press ✓

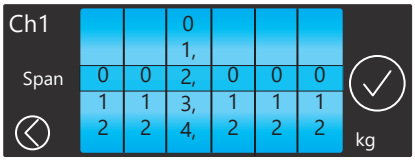


Calibrate Totalising mode Span

Ensure there is no load on the lifting apparatus, keep of the ground

Press

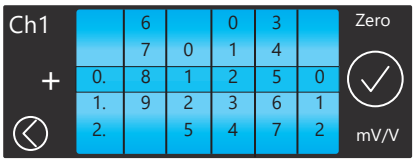
FT-30M Totalising Pick-up & Loader Mode



Calibrate
Totalising mode
Span

Slide numbers to the lifting capacity of the apparatus E.g. 2,000kg

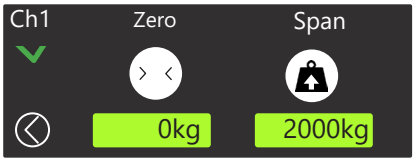
Press



Calibrate
Totalising mode
Span

Slide the numbers to the calculated span mV/V value E.g. 0.81250

Press



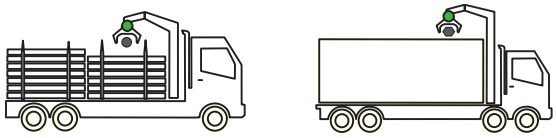
Calibrate
Totalising mode

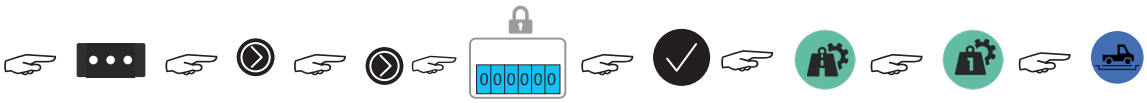
Calibration is done

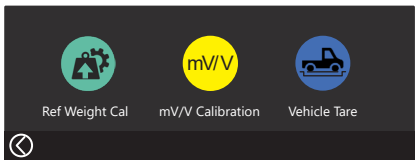
Press Press Press Press

4 Set Tare - Totalising Pick-up only

Adding the vehicle Tare (empty vehicle) weight in Totalising Mode (not Totalising Loader) provides users with Gross weights and Net weights. Amber and Red alarms can be set using the Gross vehicle weight. Refer to the FT-30M manual for alarm settings. Audio and/or visual alarm devices can be fitted to alert the driver and others to the amount of weight loaded.



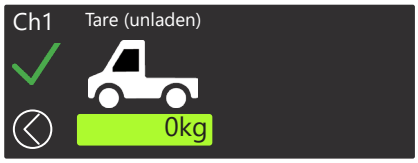




Calibrate
Tare

Press

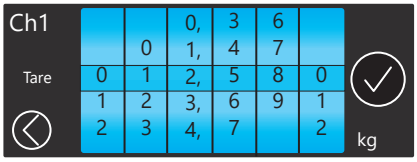
Tare is the empty weight of the total vehicle. Setting tare allows Gross and Net weights to be read.



Calibrate
Tare

Press

Weight empty (unladen weight) vehicle on a weighbridge



Calibrate
Tare

Slide numbers to the tare weight. Press Calibration Done.

Press Press Press Press

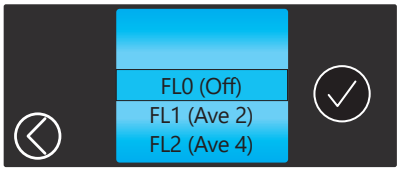
FT-30M Totalising Pick-up & Loader Mode

5. Filters

Setting filters is optional. FT-30M will respond to vehicle vibrations and the swaying of the lifting aparatus. FT-30M has digital averaging filters which can be used to dampen unwanted weight fluctuations. High settings will stabilise the display at the expense of rapid response to sudden weight changes. Increasing the averaging samples will result in a more stable reading but will extend the time it takes FT-30M to settle to a final reading.

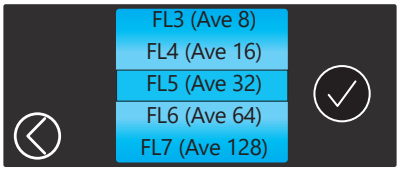
Example 1, Single channel:

FL0	=	No filter = 10 samples per second		
FL5	=	Average over 32 samples	= 32/10	= 3.3 second delay
FL7	=	Average of 128 samples	= 128/10	= 12.8 second delay



Example 2, Twin channel:

FL0	=	No filter = 4 samples per second		
FL2	=	Average over 4 samples	= 4/4	= 1 second delay
FL6	=	Average over 64 samples	= 64/4	= 16 second delay

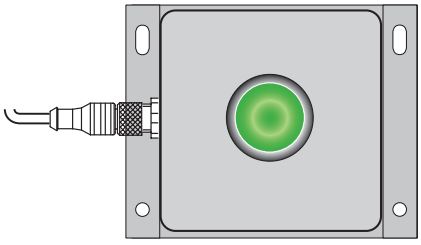


6. Remote Button

The Remote Button is optional and can be located in the loading area or close to crane or fork-lift controls. Its function is equivalent to theon-screen FT-30M Load button.

Green LED button status:

Off =	The scale is unstable due to the apparatus swaying
On =	Ready, the truck and scale is stable
Flash =	To acknowledge the button press



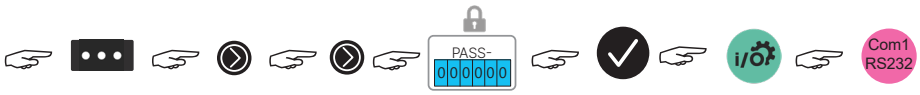
Stability is a factor of 'CountBy'. Press to record a weight. E.g. CountBy = 20kg

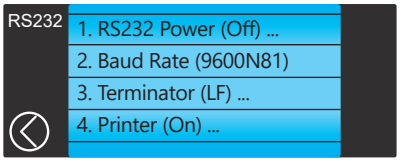
1 = Off	Don't check for Stability LED always on
2 = Lo	Must be within CountBy x 4, eg 80kg
3 = Med	Must be within CountBy x 3, eg 60kg
4 = Hi	Must be within CountBy x 2, eg 40kg

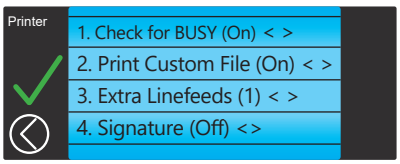
When the driver is on-site picking-up multiple loads the Remote Button LED will only turn green (Ready) when:

1. The Truck is 'On-Site'
2. Load is stable (within Stability Level)
3. There is a load available

Set the printer to On and use the settings as shown >



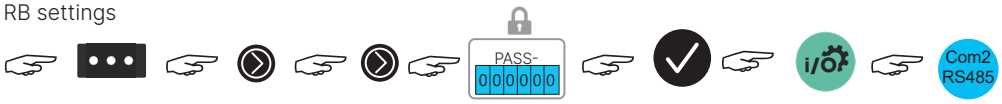


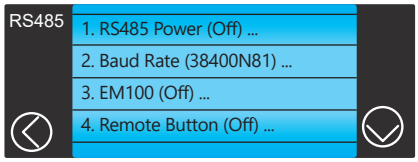


Note: The Remote Button should be connected with the FT30-M turned off. Otherwise the FT-30M needs to be power-cycled after the Remote Button is enabled in the I/O menu.

FT-30M Totalising Pick-up & Loader Mode

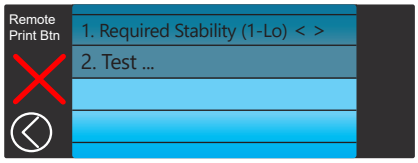
RB settings





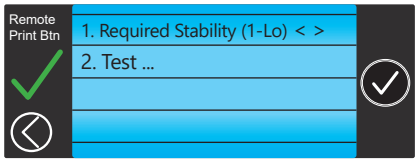
RS485 Settings 1-3

Press 4. Remote Button (Off) ...



RS485 RB 1-2

Press ✕

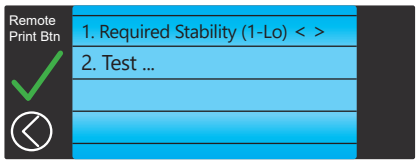


RB

Press 1. to select stability level

Press ✓ when done

A flashing Green LED means movement is detected, it will stay on when the scale has stabilised. The stability level depends on the amount of machinery movement whilst weighing is taking place.



Test

Press Test

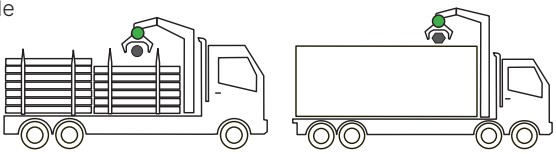
Press ◁ twice when done.

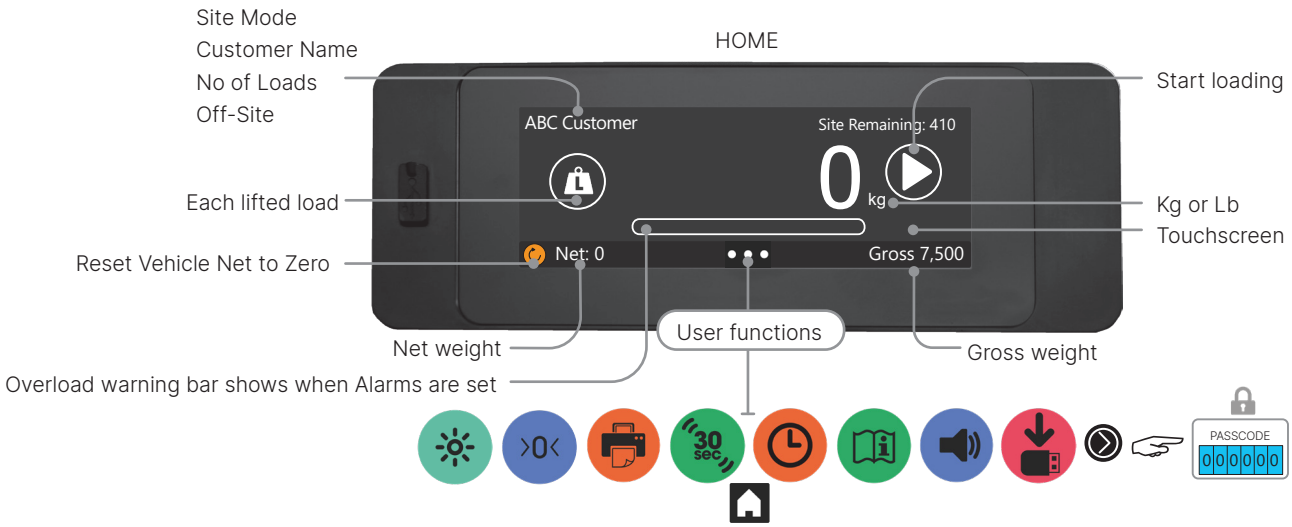
Press ⌂ button twice.

It reads and displays the RB version of firmware. Press the on-screen print button and the RB Green LED will light up. Press the RB and the on-screen print button will open and close. It means you can test it easily without having to go to a weighing screen.

7. Totalising Pick-Up User Guide

See section 1 for selecting this operating mode



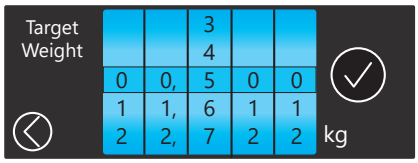


FT-30M Totalising Pick-up & Loader Mode

Start

Press

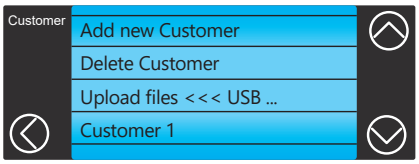
If there is any drift weight Press Press to Reset vehicle Net to Zero



Select Target Weight (optional)

Slide numbers to target weight. Press

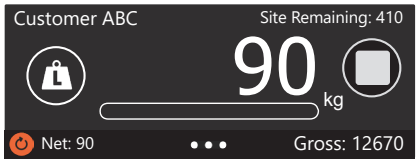
If target weight is not needed leave blank



Select Customer (optional)

Press to select a customer or enter a new customer

This page will appear if customer names are loaded and activated. Customer names or a materials identifier can be added using a PC+USB stick or by pressing 'Add new Customer' and keyed in with a USB keyboard. Refer to the manual.



Weigh a load

Lift a load  Press the Green button or

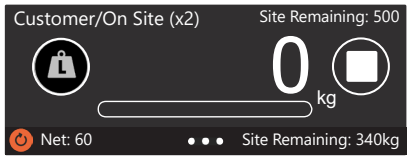
A flashing Green LED = movement is detected

Weigh a load

Unload/release load 

Weigh another load

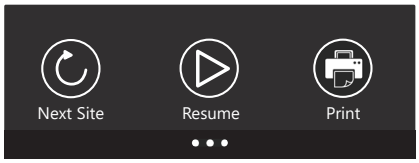
Lift a load  Press the Green button or



Site load collected Done

Unload/release load  When target weight is reached

Press



Print
Resume
Next Site

Press to print loads & total weight

Press to resume

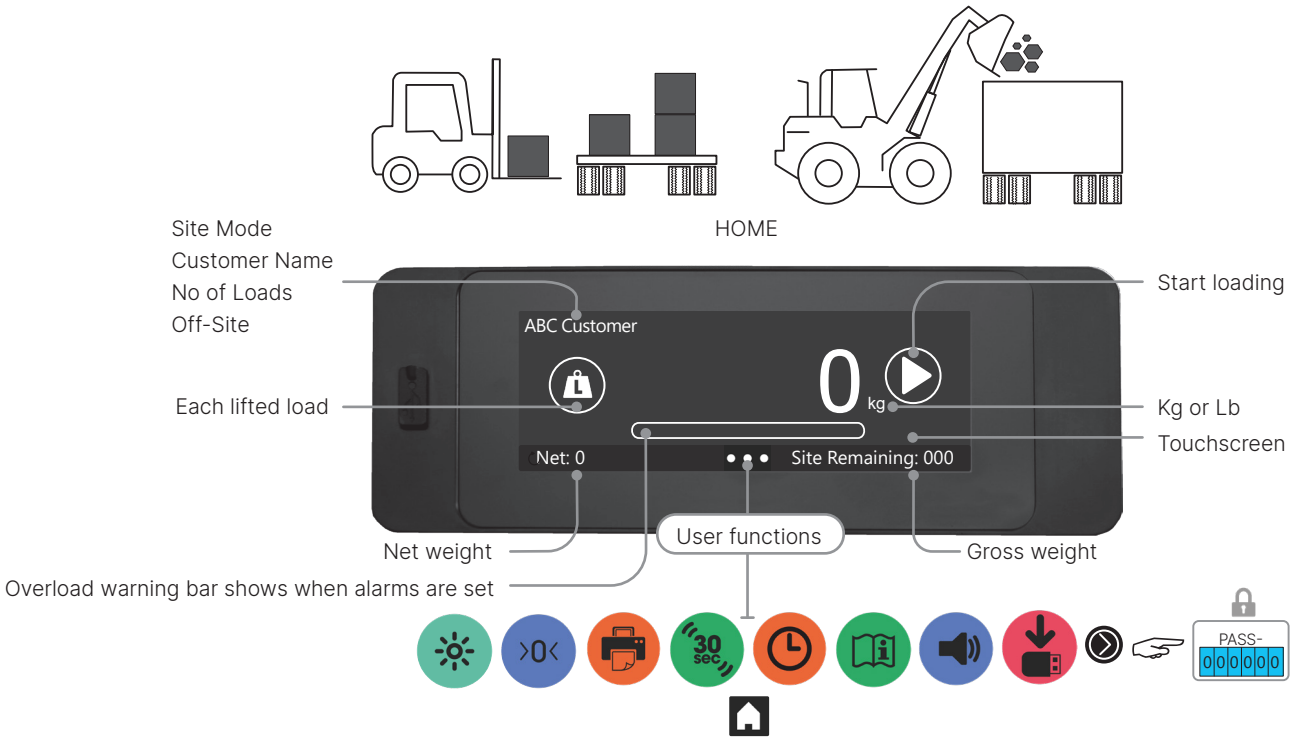
Move to the next site and repeat

Printed weight receipts are editable to show information needed. Weight receipts are stored internally for later download using a USB stick. Refer to FT-30M manual.

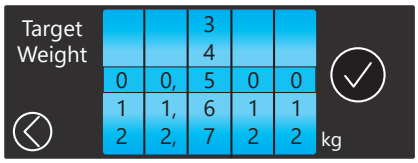
FT-30M Totalising Pick-up & Loader Mode

8. Totalising Loader User Guide

See section 1 for selecting this operating mode

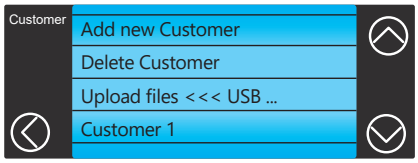


Start — Press



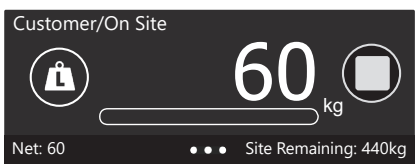
Select Target Weight (optional) — Slide numbers to target weight. Press

If target weight is not needed leave blank

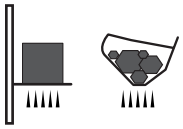


Select Customer (optional) — Press to select a customer or enter a new customer - can also be a vehicle reg. no.

This page will appear where a customer name has been loaded and activated. Customers can be added using a PC+USB stick or by pressing 'Add new Customer' and keyed in with a USB keyboard. Refer to the manual.



Weigh a load — Lift a load



Press the Green button

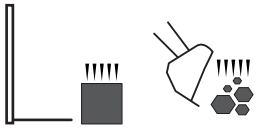
or

Flashing = movement, allow to settle

FT-30M Totalising Pick-up & Loader Mode

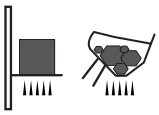
Weigh a load

Unload / Release load



Weigh another load

Lift a load



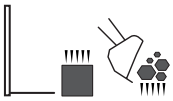
Press the Green button

or

Flashing = movement, allow to settle

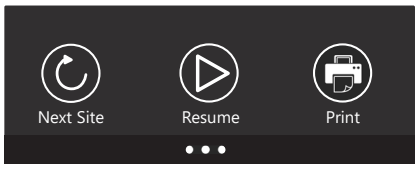
Site load collected Done

Unload /



When Target Weight is reached,

Press Release load



Print
Resume
Next Site

Press to print loads & total weight

Press to resume

Press to load another truck

Printed weight receipts are editable to show information needed. Weight receipts are stored internally for later download onto a USB stick.