FT-150

Weighing Terminal

Truck Scale User Manual

flintec

Table of Contents

1 Introduction

1.1 Disclaimer

No patent liability is assumed with respect to the use of the information contained herein. While every precaution has been taken in the preparation of this book, Flintec assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein.

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NOTICE: The contents of this manual are subject to change without notice.

1.2 Safety Instructions

CAUTION: READ this manual BEFORE operating or servicing this equipment. FOLLOW these instructions carefully. SAVE this manual for future reference. DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment. ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL Flintec for parts, information, and service.

WARNING: Only permit qualified personnel to service this equipment. Exercise care when making checks, tests and adjustments that must be made with power on. Failing to observe these precautions can result in bodily harm.

WARNING: For continued protection against shock hazard connect to properly grounded outlet only. Do not remove the ground prong.

WARNING: Disconnect all power to this unit before removing the fuse or servicing.

WARNING: Before connecting/disconnecting any internal electronic components or interconnecting wiring between electronic equipment always remove power and wait at least thirty (30) seconds before any connections or disconnections are made. Failure to observe these precautions could result in damage to or destruction of the equipment or bodily harm.

CAUTION: Observe precautions for handling electrostatic sensitive devices.

1.3 Overview

FT-150 Truck is a state-of-the-art, OIML type-approved weighing terminal that offers economical and powerful solutions for all kinds of truck scale applications consisting of analogue load cells, thanks to its special software and hardware developed for truck scales.

FT-150 Truck, with a digital I/O card offered as an option, provides the feature to control traffic lights and barriers at the entrances and exits of the truck scale with position sensor inputs. Its wide range of interfaces and powerful software provides a seamless connection to peripheral devices, such as external display, RFID / Barcode reader, PC, keyboard, label printer, etc., and data transfer to USB memory, backup, and restore facilities.

FT-150 H version has IP67 protection class, and it is designed for harsh industrial conditions. Thanks to this feature, it offers the most suitable usage solutions in all kinds of industrial environments.

A typical truck scale application, using the digital input and output option, is shown in the figure below.

Figure 2.1- Truck scale application

This technical manual details the FT-150 Truck features, installation, and how to use it. While the common features of FT-150 Truck and FT-150H Truck terminals are explained in the manual, the names of both terminals will not be written separately, but only as FT-150 Truck.

Those who will install and & or operate the FT-150 Truck should read this document before installation and operation and know the system. Saving this manual for future reference is highly recommended.

1.4 Specifications

Analogue Load cell	
A/D converter type	24-bit Delta-Sigma ratio metric with integral analog and digital filters
Conversion rate	Up to 800 measurement values per second
Input sensitivity	0,4 µV/e approved; 0.05 µV/e non approved.
Analog input range	-5 mV to +19 mV
Internal resolution	up to 16 000 000
Excitation	5 VDC max. 125 mA
Number of load cells	Up to 8 load cells (350 Ω) or 24 load cells (1150 Ω) (min. 43 Ω)
Connection	4- or 6-wire technique. Home cable length: maximum 1000 m/mm² for 6-wire connection between FT-150 Truck and junction box.
Scale	
Accuracy class & EU type approval	OIML class III, single-interval, multi-range, or multi-interval up to 10.000 division
Operating system	WinCE6.0
Display	Active matrix TFT 7" anti-glare, 800x400 pixel, colour LCD Touchscreen
Display resolution	Up to 500 000
Platform	A truck scale platform equipped with the strain gage-based analogue load cells can be connected to FT-150 Truck.
Alibi Memory (Option)	20900 records
Calibration and Functions	
Calibration	Full calibration (zero and gain) Linearity Correction Zero adjustment, Gain adjustment eCal electronic calibration without test weights,
Digital filter	5 steps programmable adaptive filter
Weighing functions	Taring, zeroing, auto zero tracking, motion detection, auto zero at power up, tare status saving at power off, increased resolution, automatic tare and clear, temporary gross indication, unit change.
Standard Application	Truck scale, basic weighing

Communication			
Connectable with		PC, printer, Remote display, EPL printer, RFID / Barcode reader, etc.	
Parallel-Port		Centronics Parallel Port, DB-25 Connector for printer connection	
RS 232	Port	2 x galvanically isolated, 3 wire	
	Baud Rate	1200 to 115200 programmable, default 9600	
	Data	Length 7 or 8 bits; parity even, odd or none	
Ethernet TCP/IP	Transmission rate	10 / 100 Mbit/s, Full duplex	
	TCP/IP settings	Manual IP assign over EtherX PC Software or by keys in programming mode	
	Connection method	Server or Client	
	Installation	Switched Ethernet transmission with shielded twisted pair cables and RJ-45.	
	Isolation	Galvanically isolated bus electronics	
	Response speed	Max. 4 ms response delay after read/write commands	
USB	Connection	Standard USB 1.1	
	Response speed	Max. 4 ms response delay after read/write commands	
Digital Inputs and Outputs (option)			
Digital Inputs		Opto-isolated 4 digital inputs, 12 to 28 VDC, 10mA	
Digital Outputs		4 free relay contact, 250 VAC or 30 VDC, 0.2A	
Power Consumption			
		100 – 240 VAC 50-60 Hz max. 25 mA or 12 – 28 VDC max. 250 mA	
Environment and Enclosure			
Operation temp. range		Approved scales Industrial usage	-15 °C to +55 °C -10 °C to +40 °C
Humidity		Approved scales Industrial usage	80% RH max, non-condensing 90% RH max, non-condensing
Enclosure		Stainless steel	
Protection		IP30 for FT-150 Truck, IP67 for FT-150H Truck	
Sizes (W x H x D)		FT-150 Truck FT-150H Truck	: 245 x 190 x 75 mm : 249 x 238 x 75 mm

1.5 Housing

FT-150

FT-150 Truck and FT-150H Truck weighing terminals technical drawings and dimensions are shown below. Side view dimensions of FT-150 and FT-150H Truck weighing terminals are the same.

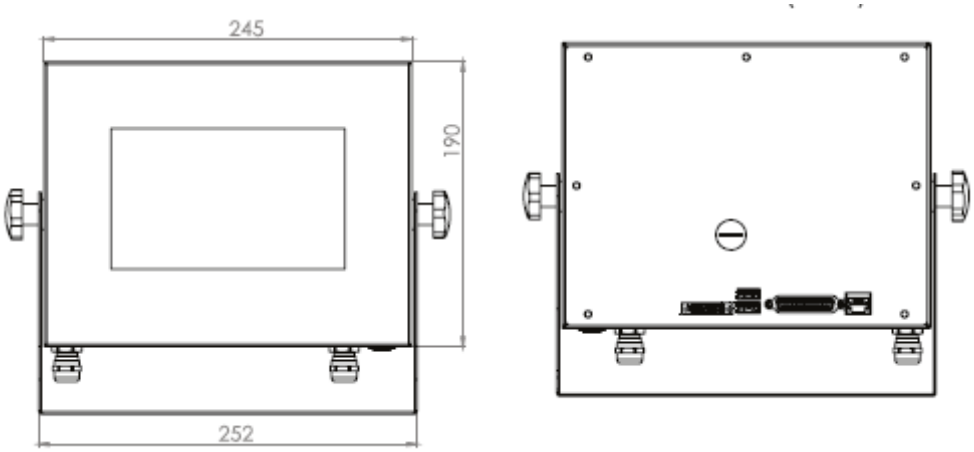


Figure 1-1

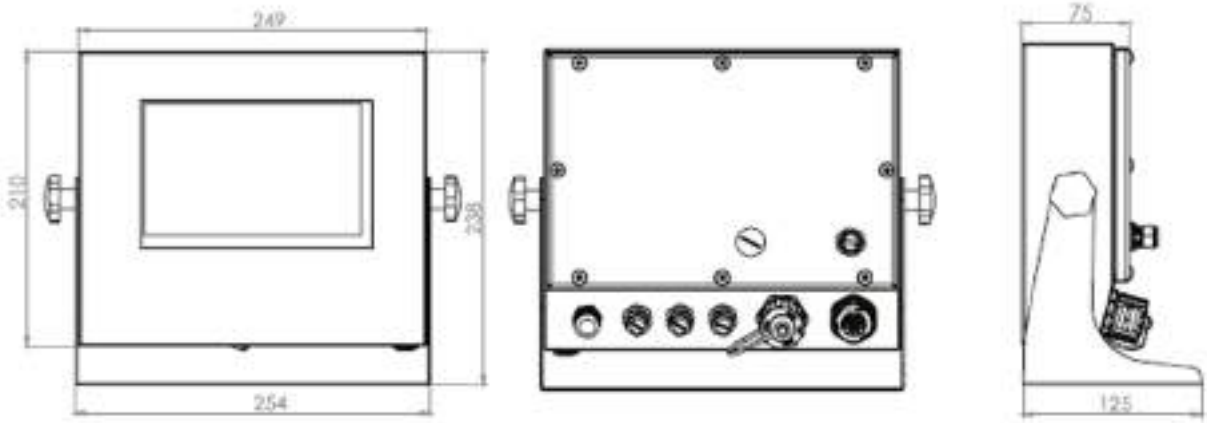


Figure 1-2

2 Main Screen and Softkeys

After the FT-150 Truck weighing terminal is energized and logged in, the Main Screen in Figure 3.2 appears, where the truck weighs is performed. The Main Screen consists of 3 different sections, as seen in the figure.

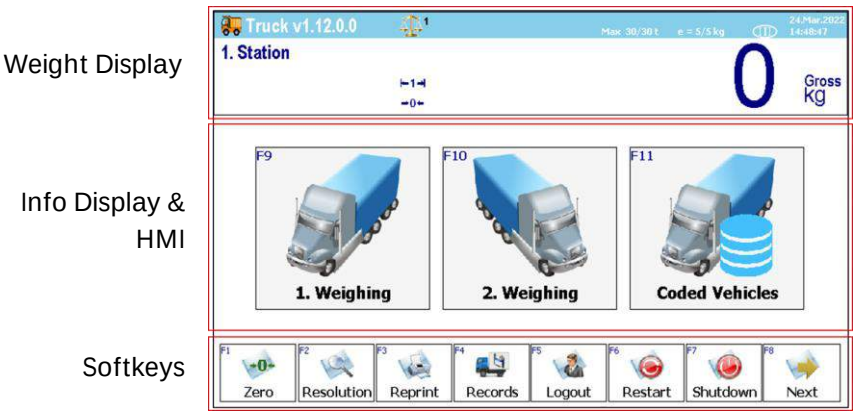


Figure 2-2

Weight Display

This section contains the weighing-related info such as weight value, gross or net, etc.

Info display & HMI

This section is used as an information display and HMI for vehicles. In this section, there are text boxes where the license plate numbers are entered, the vehicle with code and the first weighed vehicle plates are displayed, the "LIST" softkey that brings the list of these vehicles, and the "OKAY" softkey to confirm the operation.

Softkeys

The soft keys in this section are to perform a function or to access another menu. Softkey configuration may change according to the selected menu.

The meanings of the symbols on the weight display are.

Gross	Indicates that the weight on the display is the gross weight.
kg	Indicates that the selected weight unit is kg. Selectable weight units: g, kg, t, lb, klb.
→0←	Indicates that the weight is in the zero range.
~	Indicates that the scale is not stable. This symbol disappears after the scale is stable.
⊢1⊣ ⊢2⊣ ⊢3⊣	Indicates the number of ranges of the FT-150 Truck weighing terminal.

	Indicates that the scale is OIML approved and its accuracy class.
	The expression "Max xx t" in the blue strip at the top of the weighing display indicates the maximum capacity set for the scale in the "Scale Settings" menu. Refer to 5.6.1
	The expression "Min xx kg" in the blue strip at the top of the weighing display indicates the minimum capacity set for the scale in the "Scale Settings" menu. Refer to 5.6.1
	The expression "e =x kg" in the blue band at the top of the display section indicates the scale interval set for the scale in the "Scale Settings" menu. Refer to 5.6.1
	The number (1) on the balance icon indicates that one weighing platform is connected to the FT-150 Truck weighing terminal. Only one weighing platform consisting of analog load cells can be connected to the FT-150 Truck weighing terminal.
	An external scale can be connected to the FT-150 Truck weighing terminal via RS232 serial output. The number 3 on the balance icon identifies the external balance.
	Indicates the software version of the FT-150 Truck weighing terminal. The version in the example is v01.12.

2.1 Softkeys

The function of the softkey can be understood intuitively. When the softkey is clicked, its background colour changes to light blue to indicate that its function is executed.

	The function of the softkey is not active for the user logged on.
	The function of the softkey is active but not executed.
	The function of the softkey is being executed.

The softkeys on the "Login" and "Home Screen" and general-purpose softkeys are explained below. Other softkeys are explained in the releted sections.

 Zero	Zero drift is compensated by this softkey.
 Tables	It is used for two purposes, depending on the current screen: 1- To enter the data into the database, 2- To recall the data from the database.
 Vehicles	It is used to save frequently incoming vehicles and their data, and to bring up the vehicle list.
 Records	It is used to access the weighing records.
 Reprint	It is used to get the ticket printout.
 Logout	It is used to log out of the current session and log in with another code or name.
 Resolution	It is used to increase the resolution 10 times.
 Ticket I/E	It is used to download a label file from the USB memory to the FT-150 Truck weighing terminal or to copy the existing label file to the USB memory.
 Ticket	It is used to access the ticket setup menu. Refer to Chapter 4.3.2
 Setup	It is used to access the Setup menu. Refer to Chapter 5
 Restart	It is used to turn the device off and on again.
 Shut down	Turn off key
 Indicator	It is used to weigh without logging in.
 Keyboard	It is used to enter alphanumeric information.
 Save	It is used to save the data entered or weighing result.
 Edit	"Edit" key is used to make changes to a record.

 Add	It is used to add a record.
 Delete	"Delete" key is used to delete a record.
   	These keys are used to move to the next, previous screen, navigate through records or pages.

3 INSTALLATION

IMPORTANT: Read this section carefully before the installation of the instrument. Applying the recommendations in this section will increase your system reliability and its long-term performance.

3.1 Rekommandation

3.1.1 Environment

Ensure that the environment where the FT-150 Truck weighing terminal will operate is clean and that the device is mounted in a way not exposing to direct sunlight if possible.

The ambient air temperature should be -10°C to +40°C for approved scales (-15°C to +55°C for unapproved scales), and the non-condensing humidity should be 80 %.

All external cables should be installed to avoid mechanical, chemical, or thermal damage.

The electronic systems used in open areas such as truck scales or in industrial environments are highly susceptible to electrical noise-generating and damaging effects such as lightning strikes, electrostatic discharge, high-power power lines and switches, motor control equipment, inductive loads, etc.

Making a quality grounding in accordance with the current industry standards is very important to prevent the truck scales from being damaged due to the above-mentioned effects and to ensure stable and reliable operation.

Protection measures should also be taken against overvoltage surges coming from the mains and lightning strike. For this purpose, Flintec´s LPK24 lightning protection unit can be used. LPK24 protects the weighing system from high voltage by connecting it in parallel to the mains input.

3.2 Mechanical Installation Rekommandation

FT-150 Truck weighing terminal can be installed on to a column, a desk, or a wall. Take care the housing drawings and dimensions given in this manual to design your weighing scale or weighing station mechanically.

3.2.1 Cabling Rekommandation

FT-150 Truck weighing terminal is very low-level signal measuring instrument. For this reason, necessary precautions should be taken to prevent the disruptive effects of electrical noises and electromagnetic interferences on the weighing system. In this context, the FT-150 Truck should be separated from equipment producing electrical noise, and all cables coming to the instrument should be high quality and shielded.

The instrument body must be connected to the good ground against the electromagnetic disturbances. Load cell cable should be separated from other cables especially from power cables if possible. If there are electrical noise-generating equipment such as heavy load switches, motor control equipment, inductive loads etc., please pay attention against the EMC interference and take all the prevention. Connect parallel reverse diodes to the DC inductive loads like relays, solenoids etc. to minimize voltage peaks on the DC power lines.

Distance from load cell cables, interface cables and DC power supply cables to power line cables should be minimum 50 cm. The separate cable tray usage for these low signal level cables is strongly recommended.

All cables coming to the control cabinet should be grounded. The cables shield should be grounded to their glands or connected to the grounding pins of the related connectors.

3.2.2 Electrical Connection Rekommandation

Make the cable connections of the mains, load cells, and peripheral devices with the FT-150 Truck according to the following instructions.

1. Since the device works with 230 VAC supply, only trained persons should make the electrical connections of the device. Intervention by untrained persons may cause some undesired damage or injury.
2. Power off the instrument before connecting or disconnecting any peripheral instrument.
3. If you need to service the terminal, turn the power off and wait at least 30 seconds before opening housing.
4. Remember, the FT-150 Truck weighing terminal is a very low voltage measuring device. Correct installation will ensure reliable and stable operation of the device.

Cables and Junction Box

5. Using a shielded cable and grounding the shield will increase the device immunity against electrical disturbances (interference). Connect the cable shield to the gland, or the grounding pin of the related terminal.
6. The cable between the junction box and the FT-150 Truck must be shielded, and the shield of the cable must be connected to the grounding screw of the box on the junction box side and to the relevant grounding connection on the FT-150 Truck side.
7. The shields of the serial interface cables must be connected to the ground connection at the FT-150 Truck side and must be left open at the other side.
8. If a communication connection is made to the weighing system electronic equipment (such as FT-150 Truck or a computer) from a device that is not powered from the weighing system group socket, the connection must be signal isolated.
9. Do not use low-quality cables. Ensure that the cables have sufficient thickness, high quality, and high-quality shield. It is recommended to use load cell and communication cables specially produced by Flintec.
10. Use junction box with lightning protection and special grounding screw.

11. Power line connection and grounding
12. Protection measures should also be taken against overvoltage surges coming from the mains and lightning strike. For this purpose, Flintec´s LPK24 lightning protection unit can be used. LPK24 protects the weighing system from high voltage by connecting it in parallel to the mains input.
13. If the mains voltage and grounding at the facility are not suitable for the device, lay a dedicated line with appropriate mains voltage to power the device and make a proper grounding.
14. The facility grounding quality is very important for the accuracy of the weighing and the safety of the device. Do not use the facility grounding unless it is specially made considering the scale located outside the building or if the company or country does not have a specific restriction for grounding.
15. Within whole power system, it is a MUST to apply only one protecting method, either Neutralized Protection Method or "direct" Grounded Protection Method. The mix of these two methods is not allowed.
16. If the neutralized protection method is applied to the weighing system, a sole neutral line should be considered. No other electrical device is allowed to use this line.
17. For devices other than the weighing system devices in the weighing room, such as the air conditioner, another residual current protective device should be installed in the cabinet.
18. ONLY connect weighing instruments to the group socket of the scales

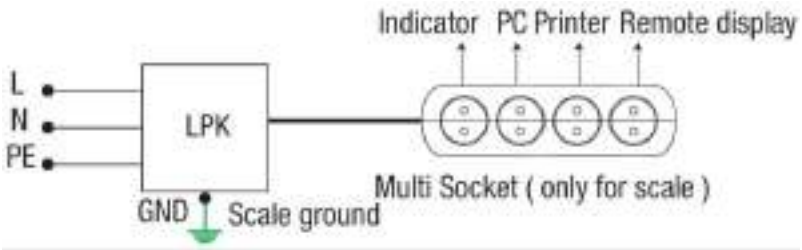


Figure 3-1

19. If a safe power supply such as UPS is utilized, the voltage protector must be connected between the safe power supply and mains.

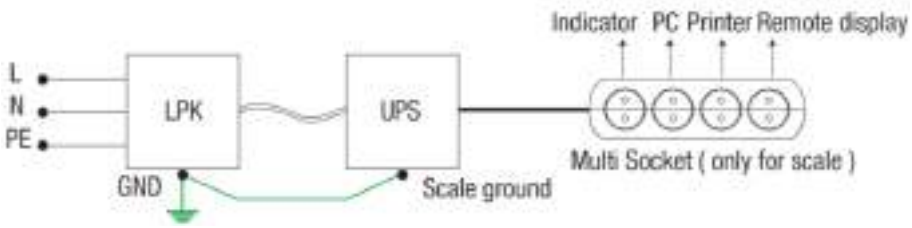


Figure 3-2

20. Weighing system grounding: If the distance between the weighing room and the weighing platform is more than 15 meters, lay a metal conduit and pass the cables between the weighing room and the scale through it. Connect all the grounds of the weighing equipment to this metal conduit.
21. All weighing system equipment enclosures must be connected to the ground to protect the
22. person from electric shock.

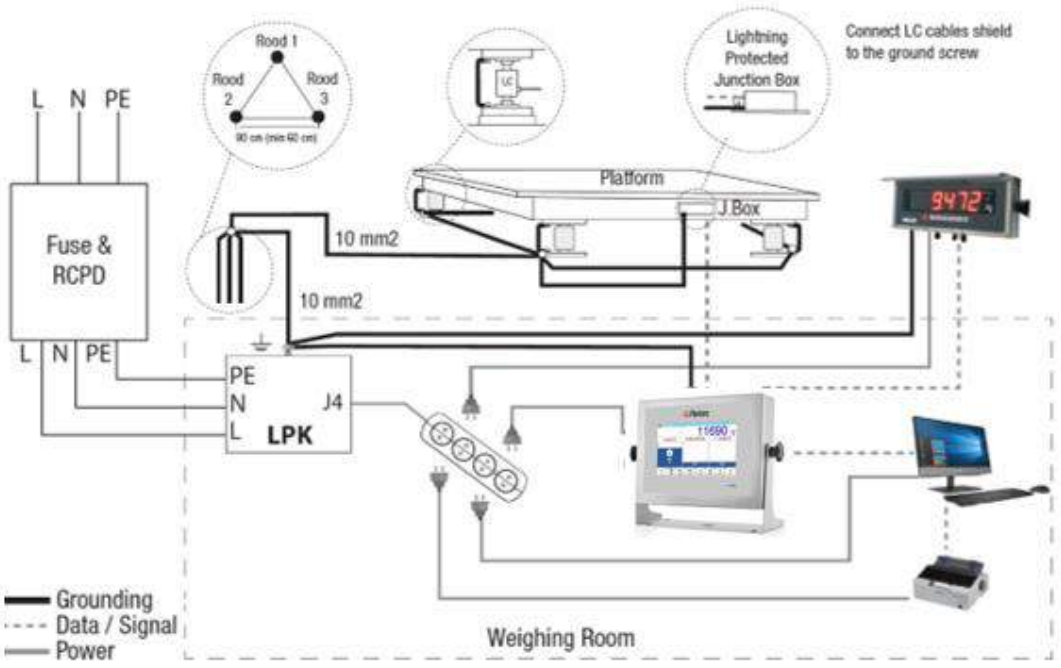
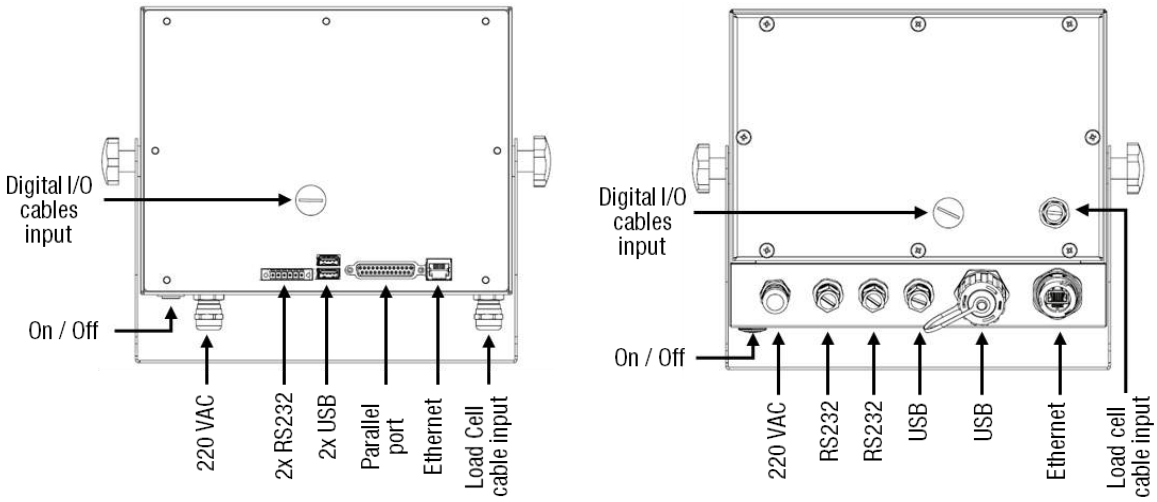


Figure 3-3

The inputs and outputs of the FT-150 Truck and FT-150H Truck weighing terminals are shown in the figure below.



FT-150 Truck FT-150 H Truck

Figure 3-4

3.3 Installation Steps

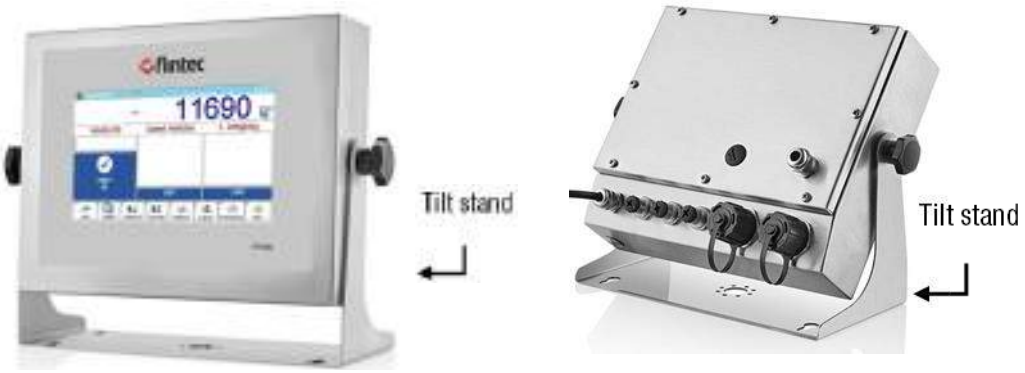
Follow the steps below carefully to install the FT-150 Truck weighing terminal.

Step 1: Preliminary Preparations

1. Make the following preparations, considering the recommendations in section 3.1.1
2. Select the most suitable place to install the weighing terminal.
3. Prepare the Protective Earth (PE) cable for grounding the FT-150 housing. The grounding quality is very important in terms of the safety of the user and the reliability of the weighing system.
4. Prepare the electrical power supply connection near the weighing terminal.
5. Prepare the conduit, cabling tray, etc. from the platform to the weighing terminal.

Step 2: Mechanical Installation

FT-150 Truck weighing terminal can be used as a desktop, or wall-mounted or column mounted thanks to its tilt stand. The FT-150 Truck weighing terminal can be mounted on the wall using the holes in the four corners of the tilt stand and suitable fasteners. It can also be attached to a column with the screw holes in the middle of the tilt. The tilt stand allows the device to be used on the desk without fasteners. If need be, the FT-150 Truck terminal can be fixed to the desk via the holes in the four corners of the tilt stand.



FT-150 Truck FT-150H Truck

Figure 3-5

Step 3: Opening the rear cover plate

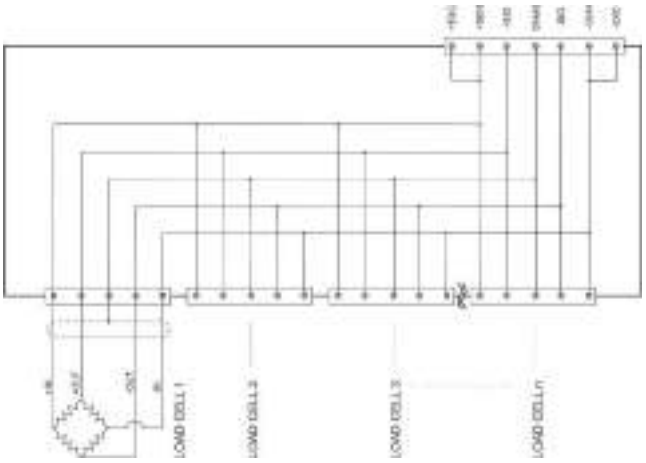
CAUTION: Only authorized persons should open the rear cover plate of the device.

CAUTION: Before opening the rear cover plate of the device, turn off the device, unplug the power cord and wait 30 seconds.

To connect the load cells and digital inputs cables, and to access the calibration switch the rear cover plate of the device must be opened. Open the rear cover plate by removing the 7 screws for FT-150 Truck, 8 screws for FT-150H Truck, shown in Figure 3-4.

Step 4: Analog Load Cell Connection

The load cell connection must be made carefully before energizing the device to avoid damaging the load cell and the device. Load cell connection details are shown in Figure 3-6.



Junction box connection

Wiring between the instrument and the junction box will be 6 wires.

Figure 3-6

IMPPORTANT: Using a 6-wire cable between the FT-150 Truck and the J-Box and making the excitation and sense terminals with the same polarity a short circuit in the junction box will provide better performance. Non-connected sense pins may cause the wrong Excitation voltage measurement and create an accuracy and instability problem

IMPPORTANT: It is recommended to connect the load cell cable shield to the housing or shield pin of the load cell connector to increase the EMC immunity against electromagnetic disturbances.

To connect the load cell cable to the FT-150 / FT-150H Truck weighing terminal, follow the steps below.

FT-150 Truck

1. Open the FT-150 Truck rear plate by removing the 7 screws as shown in Figure 3-7/1.
2. To remove the plate covering the load cell connector, remove the 3 screws marked in Figure 3-7/2.
3. Install the load cell cable through the gland towards the load cell terminal, as shown in Figure 3-7 /3.
4. Connect the load cell cable to the load cell terminal, as shown in Figure 3-7/ 4.

FT-150H Truck

1. Open the FT-150H Truck rear plate by removing the 8 screws as shown in Figure 3-7/5
2. To remove the plate covering the load cell connector, remove the 3 screws marked in Figure 3-7/6.
3. Install the load cell cable through the gland towards the load cell terminal, as shown in Figure 3-7 /3.
4. Connect the load cell cable to the load cell terminal, as shown in Figure 3-7/ 4.

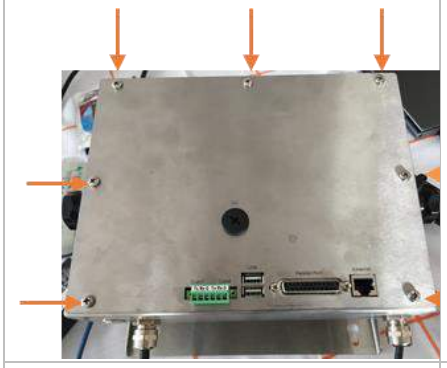
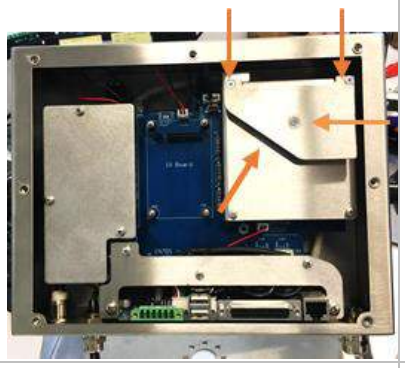
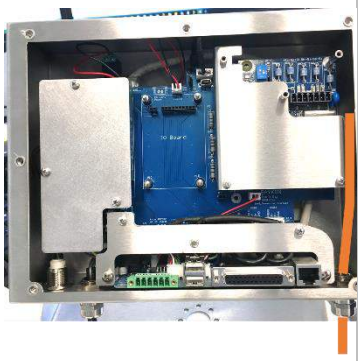
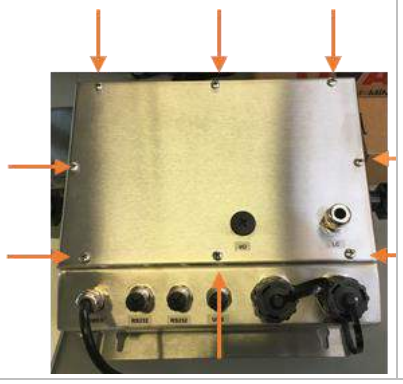
1	2	3
		
4	5	6
		

Figure 3-7

Step 5: RS 232C Serial Ports

FT-150 Truck has 2 x RS232C serial ports, which are galvanically isolated from other circuitry to increase the EMC immunity. RS232C serial ports are defined as COM1 and COM2 in the "Interface setup" menu. Technical specifications of these serial ports are given in Table 4.1, and their positions on the devices and pinouts are given in Figure 3-8.

Usage	Interfacing with printer, PC, remote display, card reader
Data formats	Continuous, Printer
Baud rate	1200 / 2400 / 4800 / 9600 (Default) / 19200 / 38400 / 57600 bps
Length	7 or 8 (default) bits
Parity	Even, Odd or No (default)
Start / Stop bits	1 start bit and 1 stop bit

Table 4.1- RS 232C Serial Interface Specifications

Figure 3-8

COM1/COM2 Konnektör	Pim#	Sinyal
	2	RXD
	3	TXD
	4	—
	5	GND
	1,4,6,7,8	—

FT-150 Truck FT-150H Truck

Figure 3-9

2-wire connection to peripherals: If there is no data entry to the FT-150 Truck weighing terminal RS 232C serial connection is made with two wires as shown in Figure 3-9.

Typical applications are printer and remote display connections.

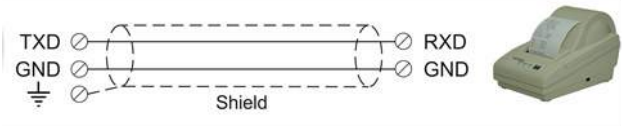


Figure 3-10

3-wire connection to the peripherals: RS 232C serial connection is made with three wires as shown in Figure 4.8 for bidirectional interfacing. Typical application is bidirectional

BSI format interfacing with PC or PLC.

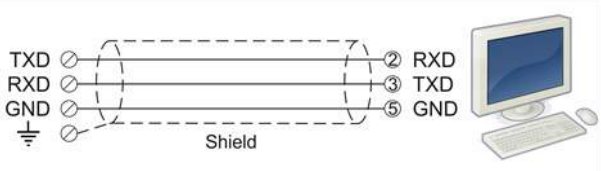


Figure 3-11

NOTE: *Connect the RS232 cable shield to the reference ground to protect your weighing system from the influence of electromagnetic interference.*

Step 6: Ethernet TCP/IP

Ethernet TCP/IP port is used to interface with PC and Ethernet printer. Pinouts of Ethernet RJ45 connector Is given in the Table 4.3. Ethernet interface setting is done through the "Interface setup" menu. Refer to section 5.7.3.

NOTE: Use RJ45 connector with metal body and connect Ethernet cable shield to the metal body of the connector.

Pin numbers	Signal	DIR	Description
1	TX+	Out	Differential Ethernet transmit data +
2	TX–	Out	Differential Ethernet transmit data –
3	RX+	In	Differential Ethernet receive data +
6	RX–	In	Differential Ethernet receive data –
4	Not used		Terminated
5	Not used		Terminated
7	Not used		Terminated
8	Not used		Terminated
	Shield		Metal body of the RJ45 connector

Table 4.2- Pinouts of RJ45 Ethernet connector

Cabling for HUB connection is a direct connection, as shown below.

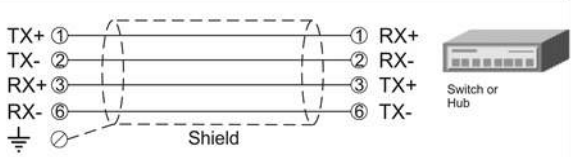


Figure 3-12

Cabling for PC connection is done via cross cable, as shown below. IP address blocks and gateway address of FT-150 Truck and PC should be the same in this connection.

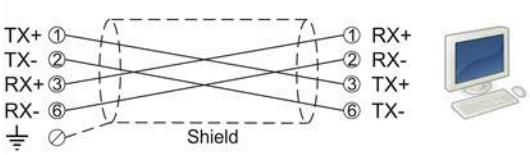


Figure 3-13

Step 7: USB Ports

There are two standard USB connectors on the rear cover plate of the FT-150 Truck weighing terminal. On the rear cover plate of the FT-150H Truck weighing terminal, there are two USB connectors, one circular with IP67 protection and the other standard, as seen in the photo below.

These USB ports can be used for backup, restore, or software update.

FT-150 Truck

FT-150H Truck

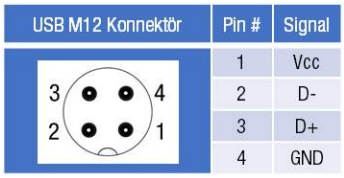


Figure 3-14

Step 9: Printer connection

The FT-150 Truck has a 25 pins DB25 Centronics connector for parallel printer connection. Connection to the USB printer is made by using USB to parallel cable.

Step 10: Digital I/O PCB installation (optional)

An optional Digital I/O card can be installed on the FT-150 Truck weighing terminal. All information required to install this option board is given in Chapter 11.

Step 11: Power Source Connection and Grounding

FT-150 Truck weighing terminal measures very low-level signal. Therefore, the power line and grounding quality will determine the accuracy and the safety of your weighing system. The weighing terminal should not share power lines with noise-generating high-power electrical equipment such as heavy load switching relays, motor control equipment, inductive loads, etc. Prepare a dedicated power line and grounding if the condition of the power supply in the facility is not appropriate. Before powering the device, ensure the power line voltage is the same as the voltage written on the device.

FT-150 Truck weighing terminal is offered with 1.8 meters permanently attached line cord having Euro type F plug. Prepare the power socket near the weighing terminal. Check all electrical and grounding connections if they are okay, then energize the terminal.

Step 12: Scale Setup and Calibration

Before starting using the FT-150 Truck weighing terminal, its parameters should be set, and it should be calibrated. For this, read the Technical Manual carefully and determine the values of the parameters required for your truck scale application and follow the steps given below.

IMPORTANT: In legal trade applications, you cannot change parameter values and calibration once the device has been legally sealed. Therefore, ensure the parameters setup you have made are correct before the scale is sealed.

1. Set the calibration switch of the device to the 'ON' position for programming and calibration. Refer to Chapter 5.6.1
2. From the "Setup>Scale Setup>1. Scale Setup> Parameters" menu, select the parameters you have specified for your application, save, and exit. Refer to Chapter 5.6.1
3. Calibrate the FT-150 Truck scale. Refer to Chapter 5.2
4. Test the accuracy and performance of the truck scale after performing the calibration.
5. Before using the FT-150 Truck weighing terminal, test its connections with the peripheral devices.

After this step, the truck scale is ready to be used.

3.4 Cleaning

WARNING: For your safety, disconnect the instrument from the power source before starting the cleaning, and cover the open glands.

FT-150 Truck Weighing Terminal is designed for use in a harsh industrial environment. To clean the instrument, never use harsh abrasive cleaners or solvents. Wipe the instrument with a soft cloth, slightly dampened with warm soapy water or mild detergent.

3.5 Disposal

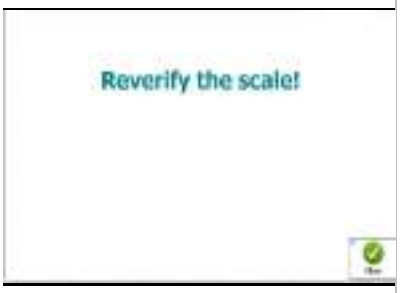
This device is in conformity with the AEEE Regulation harmonizing 2012/19/EU European Directive (WEEE). This device may not be disposed of with domestic waste. This rule also applies to the non-EU countries, according to their specific regulations. Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. For your questions, please contact the responsible local authority. Thank you for your attention to environmental protection.

4 FT-150 Functions

NOTE: For easier understanding of the menus, it will be beneficial to follow the explanations in the Manual through the FT-150 Truck Weighing Terminal.

4.1 Overview

After switching on FT-150 Truck weighing indicator, the following screens appear sequentially.

1	2	3
		
Power-on screen	This screen indicates that the operating system is loading.	After loading the operating system, this screen reminds you that the review due date is approaching. Click "Okay" to skip to the next screen.
4	5	6
		
This screen indicates that the Truck application software is loading.	After loading the application software, Login Screen appears. To access the Home Screen, enter the code or name and password via keypad popping up after clicking the related text box or Keypad button.	If the "Indicator" button is clicked on the Login Screen, this screen appears. On this screen, the FT-150 Truck acts as a basic weighing indicator without entering the truck scale application. To return the Login Screen click the Logout button.

4.2 Login, Password

Code or Name: **00000**
Password: **1987**

Calibration Password: **340635**

After entering the code or name and password and clicking the Okay button, the FT-150 Truck Home Screen appears

Figure 4-1

FT-150 Truck weighing terminal Home Screen has 14 softkeys shown below when logged on as admin.

Figure 4-2

Tables, Vehicles, Records, Ticket I/Y, and Ticket soft keys functions are explained in Chapter 4.4, and the other ones in Chapter 2.1.

Truck weighing is done twice, 1st weighing when a truck is empty/full and 2nd when it is full/empty. In FT-150 Truck software, these weighing sequentially is named "*First Weighing*" and "*Second weighing".* The flow chart below shows the main steps of the truck weighing.

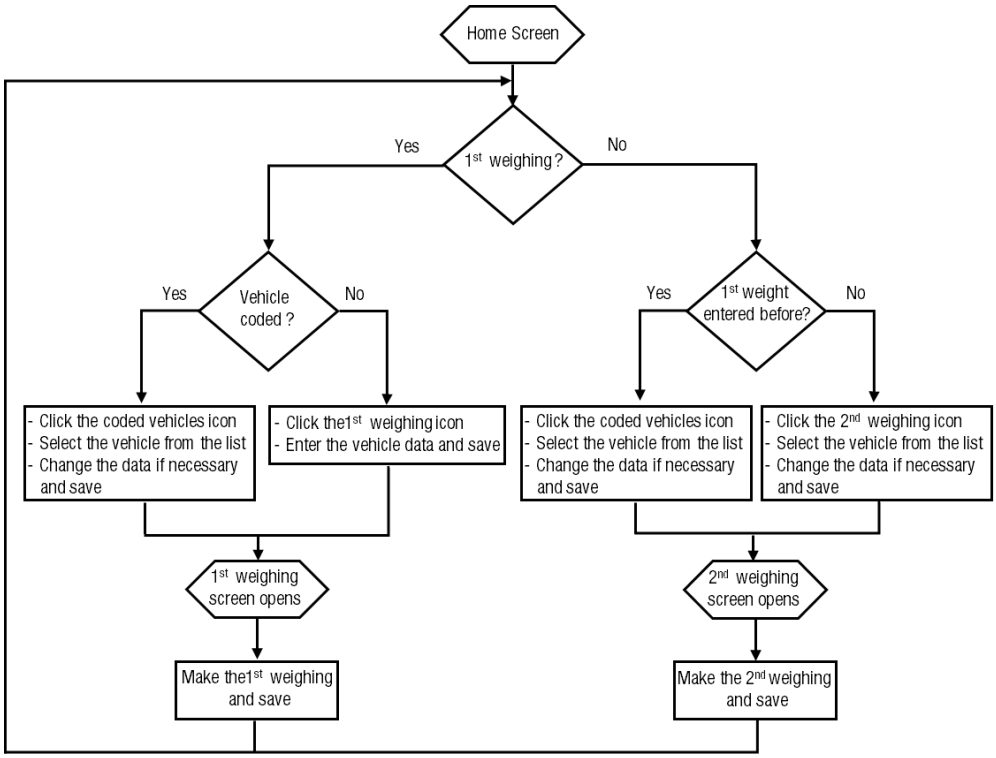


Figure 4-3

Frequently used information such as customer, product, driver name, etc., can be entered into the FT-150 Truck database. At the end of a weighing, this info can be printed on the label together with the weight values.

As shown in the table below, database field name is entered via " Setup >Application Setup > Database " menu (Refer to Chapter 5.7.2) and data is entered to the fields via the screen opened by clicking the «Tables» softkey (Refer to Chapter 4.4.1).

After installing the FT-150 Truck weighing terminal, the data should be entered into the system in the following order before starting the weighing.

1. Enter the database field name via " Setup >Application Setup > Database " menu (Refer to Chapter 5.7.2)
2. Enter the data into the fields via the screen opened by clicking the "Tables" softkey (Refer to Chapter 4.4.1).
3. Enter the vehicle-specific data and the database queries into the Vehicle list through the screen opening by touching the Vehicles key. (Refer to Chapter 4.4.3).

Vehicle Table Fields	=	Fixed Fields	+	Database Fields*
	1	Vehicle Code	1	Customer
	2	Vehicle ID	2	Product
	3	Max. Load	3	Transporter
	4	1st Weight	4	Driver
	5	Single	5	.....
	6	Date&Time**	...	.....
			12	.....

* User definable

** Stamped automatically, it is not an enterable item.

4. Set up the ticket by clicking the "Ticket" softkey button (Refer to Chapter 4.4.3).
5. Enter the vehicle-specific information of the frequently weighed vehicles such as license plate, vehicle capacity, empty weight, etc., through the screen opened with the "Vehicles" softkey. This info can be linked with the data in the database.

Vehicle-specific data of the frequently weighed vehicles together with the data from the Database is entered to the Vehicle table

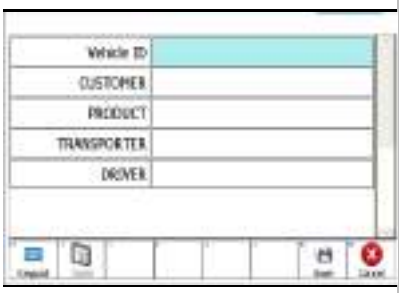
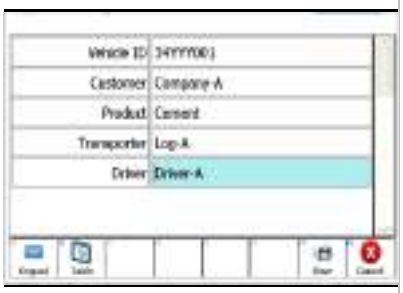
4.3 Weighing

As explained in the previous section, two different ways are followed for weighing, depending on whether the vehicle empty weight was recorded before or not.

4.3.1 First Weighing

The first weighing is carried out on vehicles whose empty weight (tare) is not recorded.

The vehicle is not coded

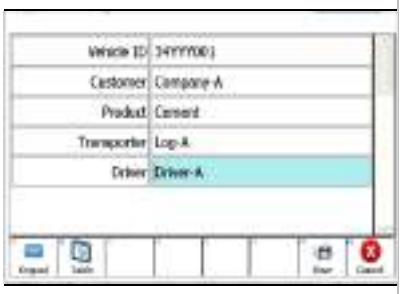
1	2	3
		
Touch the "1st Weighing" icon. And the screen 2 appears.	Touch the Vehicle ID text box. Its colour changes to turquoise. Then enter the vehicle ID using the keypad. Later, enter all the data required by the screen using the keypad, or select the data from the table.	After entering all the data, touch the Save softkey. Then screen 4 appears.
4	5	6
		
If you need to change the data on this screen, you can edit it by touching the Edit softkey.	If the vehicle is on the platform, weighing display shows its weight. Save the 1st weighing by clicking Save softkey.	Then FT-150 Truck weighing terminal returns to Home Screen.

The vehicle is coded

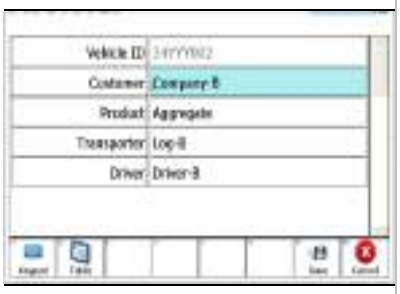
1	2	3
		
Touch the "Coded Vehicles" icon. And the screen 2 with the coded vehicles list appears.	Select the vehicle from the list (line colour changes to yellow) or enter the vehicle code / ID. After touching the okay key, screen 3 appears.	On this screen, you can change the vehicle data. Use the keypad to edit the data or the Table key to select the data from the database. After touching the Save key, screen 4 appears.
4	5	6
		
If you need to change the data on this screen, you can edit it by clicking the Edit softkey.	If the vehicle is on the platform, make the first weighing and save it.	Then FT-150 Truck weighing terminal returns to the Home Screen.

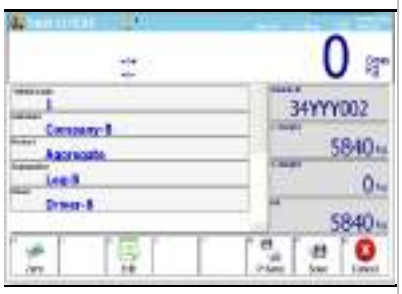
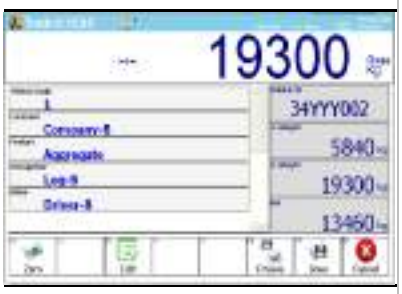
4.3.2 Second weighing

In case a vehicle is not coded, the first weight value (tare) was not entered during the vehicle recording.

1	2	3
		
Click the "2nd. Weighing" icon. And the screen 2 appears.	Select the vehicle from the list (line colour changes to yellow) or enter the vehicle ID. After touching the Okay key, screen 3 appears.	On this screen, you can change the vehicle data. Use the keypad to edit the data or the Table key to select the data from the database. After touching the Save key, screen 4 appears.
4	5	6
		
Here, the data can be edited with the Edit key. After editing, save the data.	If the vehicle is on the platform, the weight is displayed. Save the second weighing.	Then FT-150 Truck weighing terminal returns to Home Screen.

If the vehicle is coded:

1	2	3
		
Touch the "Coded Vehicles" icon. And the screen 2 with the coded vehicles list appears.	Select the vehicle from the list (line colour changes to yellow) or enter the vehicle code / ID. After touching the Okay key, screen 3 appears.	On this screen, you can edit the vehicle data. Use the keypad to edit the data or the Table key to select the data from the database. After touching the Save key, screen 4 appears.

4	5	6
		
If you need to change the data on this screen, you can edit it by clicking the Edit softkey.	If the vehicle is on the platform, weighing display shows its weight. Save the 2nd weighing.	Then FT-150 Truck weighing terminal returns to the Home Screen.

4.4 Home Screen Softkeys

4.4.1 Tables

In truck scale application, there are two groups of data namely vehicle-specific and non-specific. Vehicle-specific data are vehicle ID & code, maximum capacity, first weight, etc. Data such as customer, product, driver name, etc., is unspecific but can be frequently used.

FT-150 Truck has a database to enter these frequently used data, and vehicle-specific data can link to them. This feature provides quick and error-free operation by selecting the data from the database instead of manually entering it.

1. Field name is entered via "Setup >Application Setup > Database " menu.

2. Data is entered to the fields via the screen opened by touching the "Tables" key.

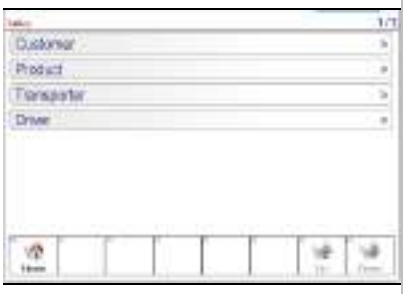
Customer	Product	Transporter	Driver	Field-5	…	Field-12*
Company-a	Cement	Log-a	Driver-a	……..	…	……..
Company-b	Aggregate	Log-b	Driver-b	……..	…	……..
Company-c	Sand	Log-c	Driver-c	……..	…	……..
……..	……..	……..	……..	……..	…	……..
……..	……..	……..	……..	……..	…	……..

* In the database, up to 12 fields can be defined.

Figure 4-4

Entering data into the database

As shown in the table above, database field name is entered via " Setup >Application Setup > Database " menu (Refer to Chapter 5.6.2) and data is entered to the fields via the screen opened by clicking the "Tables" softkey.

1	2	3
		
Touch the "Table" key. Screen 2 with the database fields names created before appears.	Select the field to be edited by touching its line. Then screen 3 appears.	To add a new name, touch the "Add" key. Then screen 4 appears.

4	5	6
		
To type the name, touch the "Keypad" key. Screen 5 appears.	Type the new customer's name via keypad and click Okay. Screen 6 appears.	Click the "Save" key. Screen 3 with the new customer's name added appears.


Edit


Delete

"Edit" key is used to make changes to a record. "Delete" key is used to delete a record.

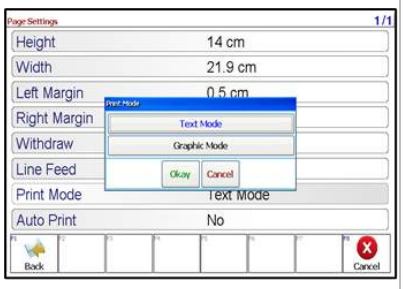
4.4.2 Ticket Setup

Labels and report formats, where the weight value with the weighing-related data is printed, should be defined during the setup of the FT-150 Truck terminal. This section describes how to make these settings.

Before Label and Report settings, Page Settings should be adjusted according to the label and paper size to be used.

Page Setting

Follow the steps below for page setting.

1	2	3
		
Touch the "Ticket" key. Ticket Setup screen (2) appears.	Touch the ticket tabs or report tab on the upper side of the screen. The tab title colour changes to Blue. Then touch the "Page" key, Page Settings screen (3) appears.	Touch each page setup parameter line to edit it. Descriptions of these parameters are given below. After touching the first line, screen 4 with numeric keypad appears.
4	5	6
		
Enter the required value then click Okay key. Repeat the same action for the other numeric entries.	For the last two parameters, the choice box opens after selecting them. Select the relevant option and click Okay. After entering all the parameters click Back key, then screen 6 appears.	Click the Save key to save the page setting. Follow the same steps for the page settings of the other tabs.

Descriptions of Page Settings parameters are given below.

Height:	Ticket page length
Width:	Ticket page width
Right margin:	The space given on the right side of the ticket
Left margin:	The space given on the left side of the ticket. This parameter is for languages written from right to left, such as Arabic, Hebrew.
Withdraw:	Dot-matrix printers advance the label to the cutting position when the printing is finished, as the printer head is behind the cutting position. If the printer does not take the ticket back before the next one starts to print, a wide gap remains at the top of the ticket. This parameter is used to set this gap.
Line feed:	Blank lines are added to the ticket using this parameter to advance the bottom edge of the ticket to the printer's cutting position.

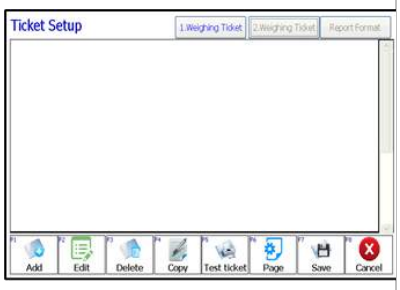
IMPORTANT: The withdrawn and Line Feed parameters are used to ensure that the ticket content is correctly placed between the printhead and the cutting position so that no unnecessary gaps are left in the ticket and cutting it at the right place.

Print Mode: There are two printing modes; Text and Graphic Mode. Graphic mode is used for the languages having non-Latin characters such as Arabic, Hebrew, Russian. However, it can also get used for all languages.

Auto Print: If this parameter is enabled, ticket is printed automatically after weighing transaction.

Ticket Setting

1st and 2nd Weighing Tickets format sets up line by line via Ticket Setup menu. Follow the screens below for setting a ticket.

1	2	3
		
Touch the "Ticket" key. If the ticket setting has not been made before, Screen 2 appears.	Click the "Add" key to create a line. Then screen 3 appears.	Touch the Line 1 to select. Line colour changes to yellow (screen 4).
4	5	6
		
Touch the "Edit" key, screen 5 appears.	Touch the "Line Type" line. Then screen 6 with choice box of Line Type appears.	Select the required option from the choice box and click Okay. If the database option is selected, screen 10 appears. See Note 1 below.

7	8	9
		
Touch the "Line Font Size" line. The screen with choice box of Line Font Size appears Select the required option from the choice box and click Okay.	Touch the "Line Alignment" line. The screen with choice box of Line Alignment appears Select the required option from the choice box and click Okay. See Note 2 below.	If the Text option is selected, the keyboard opens after touching the Value Line. Enter the text freely.

10	11	12
		
Select the lines shown on the screen above. A choice box or numeric keypad or keyboard opens according to the selected line. Enter the relevant parameter.	**For the first weighing ticket:** When you touch the "Value" line, the screen with the choice box above appears. Select the required option from the choice box and click Okay.	**For the second weighing ticket:** When you touch the "Value" line, the screen with the choice box above appears. Select the required option from the choice box and click Okay.
13	14	15
		XXX METAL INC. ISTANBUL www.xxxmetal.com Ticket No : 17 Entry Date Time : 14/03/2022 14:33:01 Exit Date Time : 28/03/2022 09:18:21 Vehicle Code : 6 Customer : Company-D Product : Steel sheet Transporter : Log-D Driver : Driver-D 1. Weight : 6190 kg PT 2. Weight : 26355 kg Net : 20165 kg
If the line feed is required, touch the Line Feed key. The above screen with the dialog box appears, then Click Yes.	See Note 3 below.	See Note 3 below.

16	17	18
		
After entering all the parameters of the selected line, touch the Back key to return the Ticket Setup screen.	To add another line to the ticket and enter its parameters, do the same steps from screens 2 to 13. After completing the ticket format, touch the "Save" key to save it. Then screen 1 appears.	Copy key is used to copy a first Weighing Ticket format to second Weighing Ticket or vice versa. After touching the "Copy" key the dialog box above opens.
19	20	21
		
To get the ticket test printout, select the ticket first and then touch the Test Ticket key.	Test printout of the 2nd Weighing Ticket.	The new line is added at the bottom automatically after touching the "Add" key. To insert a new line between two lines, touch the upper line. Its color changes to yellow. Then click the "Add" key to insert the new line.

NOTE1: For the unchanged texts on the ticket, such as company name Line Type should be selected as Text, for the text to be selected from the Table it should be selected as Database.

NOTE2: Line Alignment for Value and Header must be the same and can be selected as Left or Right depending on the language.

NOTE3: The Header length is the number of characters of the Header. When entering the Header Length, spaces also should be added to the number of characters in the header. The same Heading Length should be entered for all selected database fields to create a neat column on the Label as shown in Screen 14 and ticket 15.

Report Setting

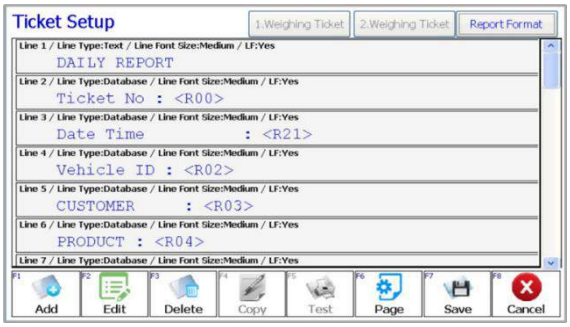
In Report Format, the first line defines the Report Header such as "DAILY REPORT", "DETAILED TRANSACTION REPORT". Therefore, the Line Type of the first line should be selected as Text then the report header is entered as a value of this line.

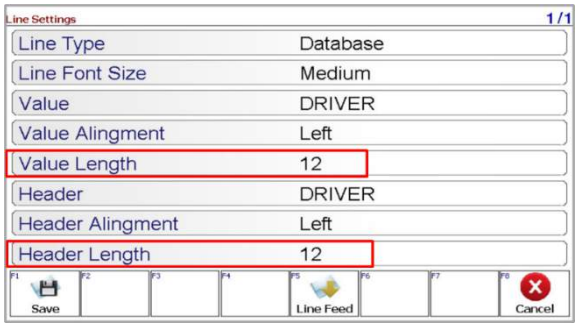
The date is automatically added to the Report Header as shown below:

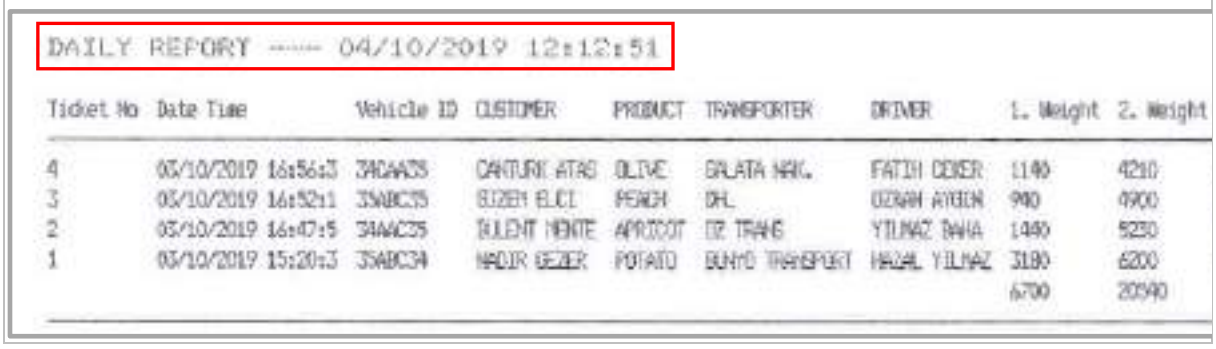
DAILY REPORT --- 20.3.2019

All other lines must be selected "Database Field". The reports are printed column by column and in the condensed mode of the printer (132 characters in one line)..

Important: While entering Report Format, ***Value length and Header length must be the same*** *and should be minimum to arrange more fields in the report.*







4.4.3 Vehicle

Vehicle-specific data of the trucks frequently weighed can be entered into the Vehicle list, and these recorded data can be used during later weighing. Vehicle-specific data such as customer, product, driver name, etc. is linked automatically to the field names of the database. This feature provides fast and error-free entry of the vehicle data, thus speeding up the weighing process.

Vehicle table fields consist of fixed and database fields, as shown below.

Vehicle Table Fields

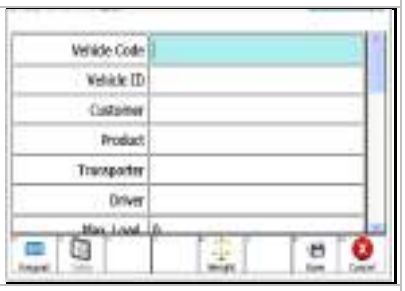
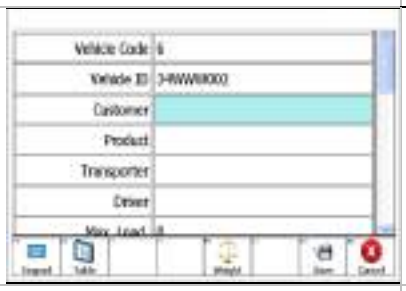
	Fixed Fields	+		Database Fields*
1	Vehicle Code		1	Customer
2	Vehicle ID		2	Product
3	Max. Load		3	Transporter
4	1st Weight		4	Driver
5	Single		5	……..
6	Date&Time**		…	……..
			12	……..

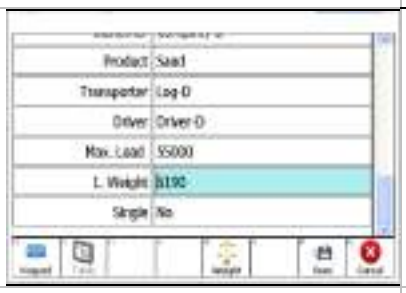
* User definable

** Stamped automatically, it is not an enterable item.

The data is entered in two ways into the database fields portion of the Vehicle list, either selecting from the Table or entering freely via keyboard.

Entering vehicle-specific data into Vehicle list:

1	2	3
		
Click the "Vehicle" softkey. Screen 2 with the vehicle list appears.	Click the "Add" key to enter a new vehicle data. Then screen 3 appears.	Click the Vehicle Code text box to enter the vehicle code. Then screen 4 with the keyborad appears
4	5	6
		
Vehicle ID & Code entry: Enter the vehicle code and click the	**Entry to database fields:** There are two ways to enter the data	**Entry from database:** Click the Table key, click the line to be

Okay key. At the same way enter the vehicle ID. Then click the Customer text box. Screen 5 appears.	into the database fields of the Vehicle list. Either select the data from the database via Table key or enter the data freely via keyboard.	entered and then click the Okay key. **Entry via keyboard:** Click the Keyboard key and enter the value via keyboard. Same as screen 4.
7	8	9
		
Max. Load entry: Click the Maximum Load line, enter the value via numeric keypad, and then click Okay.	**First Weight entry:** If the truck tare is known, it can be entered as the first weight value via the numeric keypad. Otherwise, if the truck is on the weighbridge, it is weighed by clicking the Weight key, and at the same time, this weight is entered automatically.	If these entries are to be used only one time select No, otherwise select Yes. After completing all the entries click the Save key. Screen 2 with the new Vehicle Code added to the list appears.

4.4.4 Records

Weighing data is recorded on the FT-150 Truck weighing terminal. These recordings can be accessed by clicking the Recordings button on the home screen as shown below.

1	2	3
		
Click the "Records" key. Screen 2 with the list of the weighed vehicles appears.	Click the Filter key to search the records according to certain criteria. Then Screen 3 is displayed, where 4 different criteria can be determined.	After clicking the first line Screen 4 appears.

4	5	6
		
Click the Criterion Type line, Screen 5 with the criterion type list appears.	After selecting the Criterion Type you need, Screen 6 appears. For the alphabetic value dimension line is automatically populated. For the numeric value it is selectable	Click the "Value" line and enter the customer's name (Company-D). Then, Screen 7 appears after clicking the Okay key.
7	8	9
		
If more than one criterion is necessary to search, the same operations are applied by clicking the other Criterion lines on Screen 4.	After completing the criteria selection and clicking the Okay key, the screen above filtered according to the selected criteria appears.	The Build key is used to edit the records for a certain date range or certain fields in the database. After clicking the Build key, the Screen above is displayed. See Notes below.
10	11	12
		
After clicking the Columns on Screen 9, the Screen above appears. See Note 1.	After clicking the Search date on Screen 9, the Screen above appears. See Note 2.	After clicking the File Export on Screen 9, the Screen above appears. See Note 4.

NOTES:

1. **Selection of the Columns:** On this screen, database fields to be displayed are selected by clicking one by one, and the OK button is clicked. The records appear on the screen arranged according to the selected database fields.
2. **Search Date:** The Search date box is clicked on Screen 9 to filter the records in a certain date range, and Screen 11 appears. The date setting window opens when the start and end dates are clicked on this screen. After entering the date here, the OK button is clicked. Then the records between the specified dates are displayed on the screen.

3. **Report:** The Report on Screen 9 is clicked to get the report of the filtered records in the predetermined format.
4. **File Export:** Weighing records filtered according to defined criteria can be transferred to a USB memory as an Excel file below. For file transfer, insert a USB memory stick formatted as FAT32 into the FT-150 Truck USB output, and click the Export File key. Screen 12 appears, showing that the file transfer is done.

Vehicle Code	Vehicle Id	CUSTOMER	PRODUCT	DRIVER	Entry Date Time	1. Weight	1.Weight /	Exit Date Time	2. Weight	Descriptio	Net
	34EE1234	MANNESMAN	CEMENT		7.9.2018 19:20	6810	13	7.9.2018 19:25	12550		5740
34AA1234	34AA1234	BAYER	SAND		7.9.2018 19:21	6810	14	7.9.2018 19:25	12550		5740
34SS1234	34SS1234	BAYKON	1234		7.9.2018 19:24	8110	17	7.9.2018 19:25	12540		4430
34SS1234	34SS1234	BAYKON	SAND		7.9.2018 19:22	11270	15	7.9.2018 19:22	8020		3250
34SA1234	34SA1234	QATAR SCALE	CEMENT		7.9.2018 19:10	1000	-1	7.9.2018 19:19	6810		5810
34BB1234	34BB1234	QATAR SCALE	CEMENT		7.9.2018 19:07	1000	-1	7.9.2018 19:19	6810		5810
34AA1234	34AA1234	BAYER	SAND		7.9.2018 19:18	10830	9	7.9.2018 19:18	6800		4030
						64270			108620		58910
34AA1234	34AA1234	BAYER	CEMENT		7.9.2018 19:16	7750	7	7.9.2018 19:17	10830		3080
	3456	QATAR SCALE	CEMENT		7.9.2018 19:12	3670	4	7.9.2018 19:13	11520		7850
	2345	BAYER	SAND		7.9.2018 19:11	3660	3	7.9.2018 19:13	11520		7860
	1234	MANNESMAN	IRON	ALI	7.9.2018 19:11	3360	1	7.9.2018 19:11	8670		5310
						64270			108620		58910

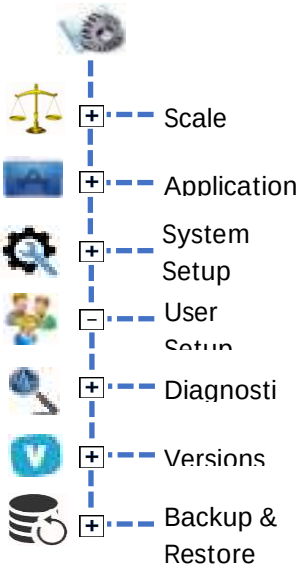
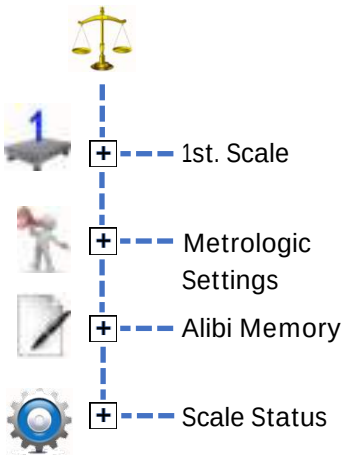
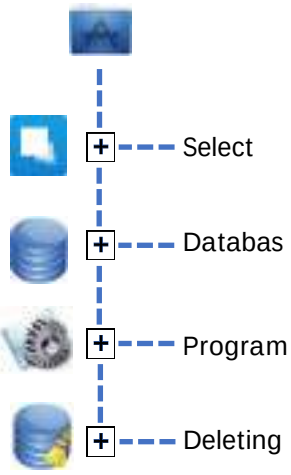
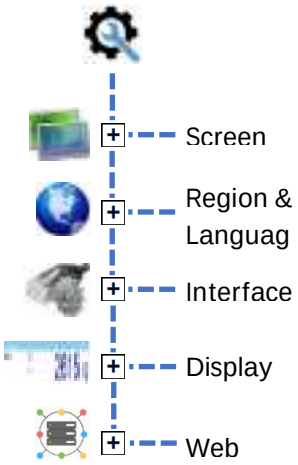
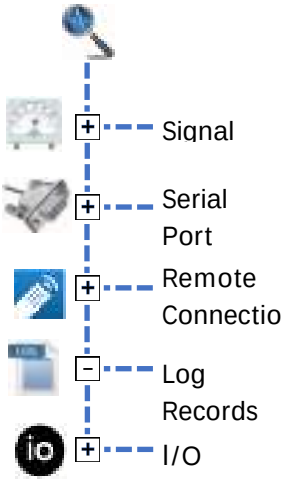
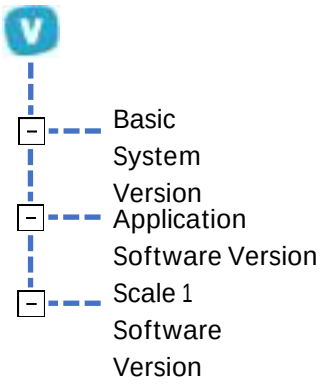
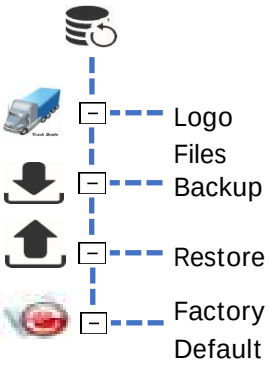
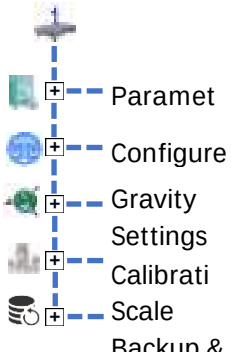
Figure 4-5

5. **Show deleted records:** To get the list of deleted records, click on the "Show deleted records" key button on screen 9.
6. **Total Line:** To see the totals of the filtered weighing for a defined date range as 1st Weighing, 2nd Weighing and Net, the "Show Total line" key is clicked on Screen 9. Total weighing values are displayed on the last line of the list.

 Reprint	**Reprint:** To print the 1st or 2nd weighing tickets in a selected line on the Records screen, the "Reprint" key is clicked. Select the ticket to print from the pop-up window.
 Edit	**Edit:** Click the relevant line first (the line colour turns yellow), then the "Edit" button to make changes to an existing record. The change made is shown in the Description section of the related record.
 Delete	**Delete a record:** To delete an existing record, click on the related line (the line colour turns yellow), then click the "Delete" button.

5 Setup Menu

The Setup Menu is entered by clicking the  "Setup" soft key on the Home Screen. The structure of the Setup menu and its submenus are given below.

Setup	Scale Setup	Application Setup
		
System Setup	**Diagnostic**	**Versions**
		
Backup & Restore		**1st Scale Setup**
		

5.1 Scale Setup

Setup > Scale Setup

Caution: In legal for trade applications, you cannot change parameter values and calibration once the device has been sealed. Therefore, ensure that the adjustments you have made are correct before the balance is sealed.

To set and calibrate the metrology-related parameters of the FT-150 Truck weighing terminal, the calibration switch on the scales PCB must be set to the "ON" position. Weighing Terminal calibration switch location is shown in Figure 6.1, and the description of the switch positions is given in Table 6.1 .

To access the calibration switch, open the back cover of the housing and the cover on the load cell connector as described in Chapter 3.3, Steps 3 and 4. Set the calibration switch (DIP switch #1) to the "ON" position.

DIP switch #2 is not related to the calibration, and it must be in the OFF position.

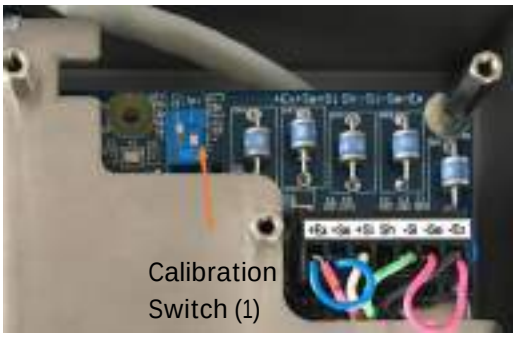


Figure 6.1- Calibration switch

Switch #1 position	Description
OFF	Parameters related to legal metrology cannot be set in this position.
ON	In this position, parameters related to legal metrology can be set.

Table 6.1- Calibration switch position description

5.1.1 1st. Scale Setup

Setup > Scale Setup > 1st Scale Setup

To enter the First Scale Setup menu, follow the steps below:

1. Put the calibration switch to the ON position.
2. Click the Setup key on the Home Screen (Screen 1 in Figure 5-1 below).
3. Click the Scale Setup icon on the Setup Screen, and then Screen 2 with the numeric keypad below appears.
4. Type the password and click Okay to enter the Scale Setup. Screen 3 appears.

NOTE: Only one platform equipped with analogue load cells can connect to the FT-150 Truck weighing terminal. Therefore, second Scale and the External Scale icons are not active.

5. Click the First Scale icon on the Screen 3, and then First Scale Setup screen (4) appears. From screen 4, you can Access "Parameters", "Configure scale", "Calibration", and "Scale Backup / Restore" menus. The "Gravity Settings" icon is disabled.

1	2
	
3	4
	

Figure 5-1

CALIBRATION PASSWORD: **340635**

Parameters

Setup > Scale Setup > 1st Scale Setup> Parameters 

WARNING: The calibration switch must be set to the "ON" position to change the metrology-related parameters.

When the parameters  icon in screen 4 of Figure 5-1 is clicked, screen 1 below opens. Click the Down key to access the second page of this screen, then screen 2 opens.

1	2
	

Figure 5-2

The explanations and options of the parameters in screens 1 and 2 above are given in the table below. Metrology-related parameters are indicated in the table with the letter "**M**".

When the parameter line is clicked, the choice box for multiple-choice parameters or the numeric keypad for the numerical parameters appears. Parameter value entry is completed by selecting the appropriate option or entering it from the keypad and clicking the OK button.

Note: Options in the choice boxes may change according to whether the scale is OIML approved or not.

Parameters		Explanations	Options
Approval	M	This parameter must be selected as OIML for legal for trade usage.	
Resolution	M	It shows the resolution 10 times higher. For OIML approved scales, there is only the "Temporary indication with key" option.	
Power on zero	M	After powering on the scale, it will be zeroed automatically if the weight on the platform is within one of the options given as a percentage of the total capacity. If the weight is not in the zero range, a warning message will appear on the screen as [**E E E**]. For OIML approved scales, ±20 % option is not available.	
Zeroing with key	M	With this parameter, the zeroing range of the scale is limited according to the selection on the right. For OIML approved scales, "Disabled" and ±2 % options are available.	
Automatic zero tracking	M	This parameter allows the scale to be zeroed automatically if minor deviations in weight are within the selected parameter value. This feature ensures that the scale stays in the zero region in the case of snow, rain, dust, etc. For OIML approved scales, "Disabled" and ±0,5d options are available.	
Unit	M	Selection of the weight unit	

Stability detection	**M**	It determines the weight range, in terms of the division percentage, in which the scale is considered stable. For OIML approved scales, ±0,3d and ±0,5d options are available.	
Stability delay		The period in which the scale is considered stable. If there is no change in weight within this period, the scale is accepted as stable, and the commands such as zeroing, printing, etc. can be executed. A value up to a maximum of 9.9 seconds is entered via the keypad.	
Filter		Digital adaptive filter used to prevent the effects of environmental factors such as wind, vibration etc. that may affect weighing. When it is disabled, very fast weighing is performed, but the scale is too sensitive to external effects.	
Saving tare value at power off		This option is disabled for the truck scale.	
Automatic clear of tare		This option is disabled for the truck scale.	
Tare		This option is disabled for the truck scale.	
Minimum Weight		Minimum weight required to get a printout. A printout can be taken when the weight is more than this value. The desired minimum weight value is entered via the numeric keypad.	
Automatic Tare		This option is disabled for the truck scale.	
Automatic Print		If the load is heavier than the Minimum Weight and the scale is stable, this parameter is activated if you want to print automatically.	

Table 6.2- Parameter setup

Configure the scale

Setup > | Scale Setup > | 1st Scale Setup> Configure scale

The scale consists of selected range / intervals of a scale and their maximum and division values.

1	2	3
		
After clicking the "Configure scale" icon Screen 2 appears.	When you click the Range line on this screen the window on screen 3 opens.	Selection is made according to the application.
4	5	
		
If you select the "2 x Multi Range" option on screen 3, the "Maximum 2" and "Division 2" lines are added.	Click the Maximum 1 line and enter the relevant value via keypad. Do the same for the Maximum 2. Maximum scales capacity is 300.000 kg.	When you click the Division line the window showing division values opens. Select the Division value you need.
	Division values are different for approved and non-approved scales. Division values on the left side are for the non-approved scale.	

After entering all the parameters above, the scale configuration is complete.

5.2 Calibration

Setup > | Scale Setup > | 1st Scale Setup> | Calibration

WARNING: The calibration switch must be set to the "ON" position to change the metrology-related parameters.

IMPORTANT: The menu for calibration is protected by a password, see **section 4.2.**

To enter the calibration menu, click on the "Calibration" icon on screen 1 below, and screen number 2 is displayed. As seen on this screen, there are 5 different calibration options.

1	2
	
First Scale Setup Screen	Calibration Screen

Figure 5-3

Calibration options are described below.

 Full Calibration	**Full Calibration:** In this calibration, zero and gain adjustment of the FT-150 Truck weighing terminal is made.
 Linear Calibration	**Linear Calibration:** Multi-point Linearity Calibration is performed to correct the linearity problem caused by the load cells and & or the mechanical system of the scale. This calibration improves scale performance.
 Zero Adjustment	**Zero Adjustment:** In this calibration, FT-150 Truck weighing terminal learns the zero value of the unloaded scale.
 Load Adjustment	**Load Adjustment:** In this calibration, the test weight is loaded on the scale, and the FT-150 Truck weighing terminal adjusts its gain according to the test weight.
 Electronic Adjustment	**Electronic Adjustment:** Electronic calibration is used to calibrate the scale without using a test weight.

5.2.1 Full Calibration

Full Calibration consists of zero and gain adjustment. Follow the steps below to make Full Calibration.

1. Click the Full Calibration icon on the Calibration Screen in Figure 5-3, then the "Unload Scale" message displays.
2. If there is a load on the scale, unload it, and click the OK button, then "Please wait" and "Zero calibration is being done" messages display on the screen sequentially. During this process, FT-150 Truck weighing terminal automatically captures the zero value of the truck scale.
3. When the zero calibration is completed, the calibration weight to be loaded and "Please load calibration weight" message displays.
4. Load the calibration weight given on the screen and click the Okay key. If a different weight value is used for calibration, click the "Calibration weight" box, the numeric keypad opens, and enter the desired weight value via keypad.

WARNING: A test weight of at least 20% of the weighing capacity must be used for the gain calibration. FLINTEC recommends calibration with a weight between 50% and 75% of the weighing capacity. If an unsuitable weight is used, a calibration error will occur.

5. "Please wait" and "Load calibration is being done" messages display sequentially after loading the test weight and clicking the Okay key.
6. When the calibration is completed, " Calibration ended" message displays.
7. Click the Okay key to end the Full Calibration.

5.2.2 Linearity Calibration:

1. Click the Linearity Calibration icon on the Calibration Screen in Figure 5-3, then the "Unload Scale" message displays.
2. If there is a load on the scale, unload it, and click the OK button, then "Please wait" and "Zero calibration is being done" messages display on the screen sequentially. During this process, FT-150 Truck weighing terminal automatically captures the zero value of the truck scale.
3. When the zero calibration is completed, the first calibration weight to be loaded and "Please load calibration weight" message displays.
4. Load the calibration weight given on the screen and click the Okay key. If a different weight value is used, click the "1st Calibration weight" box, the numeric keypad opens, and enter the desired weight value via keypad.

WARNING: The test weight should be between 35% and 60% of the scale capacity.

5. After loading the test weight and clicking the Okay key, "Please wait" and "1st.Load calibration is being done" messages display sequentially.
6. Then the second calibration weight to be loaded and "Please load calibration weight" message displays.
7. Load the second calibration weight given on the screen and click the Okay key. If a different weight value is used, click the "2nd Calibration Weight" box, the numeric keypad opens, and enter the desired weight value via keypad.

WARNING: Put the test weight, at least 90% of the scale capacity, onto the platform. It is more accurate to use the test weight as much as the scale capacity.

8. After loading the second test weight and clicking the Okay key, "2sd.Load calibration is being done" messages display.
9. When the calibration is completed, " Calibration ended" message displays.
10. Click the Okay key to end the Linearity Calibration.

5.2.3 Adjustment

Zero Adjustment

Only the zero adjustments will be executed.

1. Click the Zero Adjustment icon on the Calibration Screen in Figure 5-3.
2. "Unload the Scale" message appears.
3. If there is a load on the scale, unload it, and click the OK button. "Zero calibration is being done" message appears on the screen. During this process, FT-150 Truck weighing terminal automatically captures the zero value of the truck scale.
4. After the calibration, " Calibration ended" message appears.
5. Click the Okay key to end the Zero Adjustment.

Load Adjustment: Only the gain adjustments will be executed.

1. Click the Load Adjustment icon on the Calibration Screen in Figure 5-3.
2. "Please load calibration weight" message appears.
3. Load the calibration weight given on the screen and click the Okay key. If a different weight value is used, click the "Calibration Weight" box, the numeric keypad opens, and enter the desired weight value via keypad.

WARNING: A test weight of at least 20% of the weighing capacity must be used for the gain calibration. FLINTEC recommends calibration with a weight between 50% and 75% of the weighing capacity. If an unsuitable weight is used, a calibration error will occur.

4. "Please wait" and "Load calibration is being done" messages display sequentially after loading the test weight and clicking the Okay key.
5. When the calibration is completed, " Calibration ended" message displays.
6. Click the Okay key to end the Load Calibration.

5.2.4 Electronic Adjustment

WARNING:

1. *Full calibration cancels the eCal performed before.*
2. *Span adjustment cancels the eCal performed before.*

This parameter lets you perform calibration without using any test weights. A/D coefficients of the indicator are adjusted in production for increasing eCal accuracy. The calibration coefficients are calculated by scale capacity, total load cell capacity, load cell full-scale output, and estimated dead load. If the conditions are convenient for zero calibration, you may perform automatic zero adjustments instead of entering the estimated preload.

Follow the steps below to perform the electronic calibration.

When the "Electronic Calibration" icon is clicked on the "Calibration" screen number 1 in Figure 5-4, screen number 2 is displayed. The explanations of the parameters on screen 2 are given below.

Total Load Cell Capacity

The total capacity of all load cells used in the truck scale.
For example, for 6 x load cells with 10,000 kg each enter 60,000 with the numeric keypad.

Average Load Cell Output

The average value of the mV/V values written in the certificates of the load cells

For example, average loadcell output of 6 load cells is calculated as follows.

LC1: 2.0010 mV/V, LC2: 1.9998 mV/V, LC3:1.9986 mV/V, LC4:2.0002 mV/V , LC5:2.0006, LC6:1.9994
Average Load Cell Output = (2.0010 + 1.9998 + 1.9986 + 2.0002+2.0006+1.9994) / 6 = 1.9999 mV/V.

Estimated Dead Load

Estimated dead load value on the truck scale.

Total Load Cell capacity and Average Load Cell Output parameters can be entered in two ways:

- Entering pre-calculated parameters values: The values calculated as described above are entered via the numeric keypad opened by clicking the related box (screen no. 3).
- Calculating the values of the parameters by FT-150 Truck: After clicking the "Calculate" key on-screen number 2, screen number 4 appears. The load cells quantity, the weight unit, the load cell capacity, load cell mV/V value (from the certificates of each load cell) are entered (Screen 5), and the OK button is clicked. FT-150 Truck calculates the value of the parameters, and the same screen in number 3 appears.

Depending on the input of the estimated dead load value, the calibration continues in two ways.

- If eCal is to be performed with zero setting without entering the estimated dead load value, the eCal+Zero key is clicked, then the "Please wait" and "Unload the scale" messages appear sequentially. After unloading the weighbridge, "Please wait", "Zero calibration is in progress" and "Calibration is ended" messages are displayed in order. The calibration process is completed by clicking the OK key.
- If the dead load value is entered (screen 6), the eCal key is clicked, first "Please wait" and then "Calibration ended" message appears. The calibration process is completed by clicking the OK key.

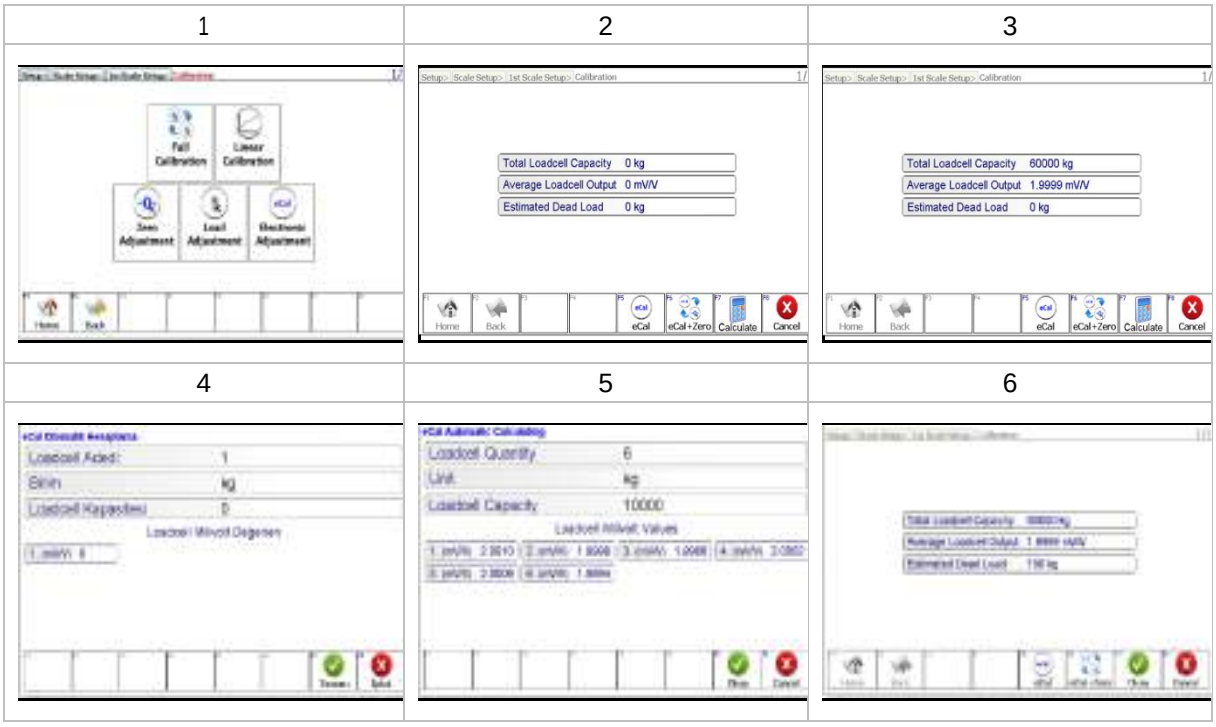


Figure 5-4

Scale Backup / Restore

Setup > | Scale Setup > | 1st Scale Setup> | Scale Backup / Restore 

IMPORTANT: The USB memory stick used for scale backup should be formatted as FAT32. Otherwise, no copying or downloading will take place.

The FT-150 Truck weighing terminal settings can be saved into a USB memory stick to use later in case of replacement of the device or installation of another device of the same type. If the Scale Backup icon on the 1st scale settings screen is clicked, the 2nd screen appears. After inserting the USB memory stick formatted as FAT32 into the FT-150 Truck, click the "Backup" key to copy the scales settings, and the "Restore" button to load the scales settings into another device.

1	2
	

Figure 5-5

5.3 Metrological Settings

Setup > | Scale Setup > | 1st Scale Setup> | Metrological Settings 

If the "Metrological Settings" icon on the Scale Settings screen below (number 1) is clicked, the screen 2 is displayed. The first line on this screen shows the approval status of the scale, which depends on the approval selection in the Scale Settings. The second line is not active. If the scale is OIML approved, Alibi Record option is also automatically active and cannot be changed. Alibi Records can be disabled if the scale is not OIML approved.

When the Next Sealing Date line is clicked, the next sealing date is entered from the calendar window that opens.

When the Scale Connection Type line is clicked, serial port and Bluetooth options appear. The appropriate connection type is clicked and selected by pressing the OK button.

1	2
	

Figure 5-6

5.4 Alibi Memory

Setup > | Scale Setup > | Alibi Memory 

Alibi Memory:

FT-150 Truck weighing terminal has Alibi memory on the motherboard storing all weighing results for legal for trade use. Alibi memory is organized as cyclic memory. When the recording capacity is full, the first record is deleted first (FIFO). Data in Alibi memory is checksum protected.

Alibi Records:

If the "Alibi Memory" icon on the Scale Settings screen is clicked, the screen 1 with the Alibi records is displayed.

The previous and next pages can be accessed with the "Up", "Down" key, as well as the desired page can be accessed by entering the page number on the numeric keypad that appears when the "Page No" key is clicked.

1	2	3
		
Search button is clicked to search within the Alibi records, then screen 2 is displayed.	After clicking the "Criterion Type" line Screen 3 with the choice box showing criterion types opens.	After selecting the criteria type, Screen 4 appears. Criterio types: All List, Alibi No, Date, Scale No, Gross, Tare, Net, Unit

4	5	6
		
Click the "Dimension" line to select the condition for the selected criteria and the "Value" line to enter the value. Then, Screen 5 appears after clicking Okay key.	Alibi Memory list filtered according to the selected criteria is shown on the screen.	To export the Alibi Memory records, insert a USB memory stick formatted as FAT32 and click the Export key. The screen above appears, and Alibi records are copied as an Excel file into the Alibi folder opened automatically in the USB stick.

5.5 Scale Status

Setup > Scale Setup > Scale Status 

If the "Scales Status" icon is clicked on the Scale Setup screen 1 below, Screen 2 is displayed. The scale can be enabled or disabled by clicking on the 1st Scale Setup line on this screen. Since only one platform can be connected to the FT-150 Truck weighing terminal, External Scale is disabled.

1	2
	

Figure 5-7

5.6 Application Setup

Setup > Application Setup 

When the Application Setup icon is clicked on Screen 1 below, the "Application Setup" menu consisting of Select Application, Database, Program Setup, and Deleting Records submenus is accessed.

1	2
	

5.6.1 Select Application

Setup > Application Setup> Select Application 

When the Application Selection icon is clicked, the screen with Active Application appears. Truck.exe is the default active application.

5.6.2 Database

Setup > Application Setup> Database 

The database consists of columns (Field) and rows, like a table below. The column headers, such as customer, product, transporter, driver, etc. to be entered during weighing are defined while creating the database. Frequently used data are pre-entered to the columns of the database via the Table key. This feature provides ease of data entry during weighing. Info entered before weighing can be printed on the label with the weight values at the end of weighing.

1. Field name is entered via "Setup >Application Setup > Database " menu.
2. Data is entered to the fields via the "Tables" key.

Customer	Product	Transporter	Driver	Field-5	...	Field-12*
Company-a	Cement	Log-a	Driver-a	……..	…	……..
Company-b	Aggregate	Log-b	Driver-b	……..	…	……..
Company-c	Sand	Log-c	Driver-c	……..	…	……..
……..	……..	……..	……..	……..	…	……..
……..	……..	……..	……..	……..	…	……..

* In the database, up to 12 fields can be defined.

Database field name is entered via Database menu as explained below and data is entered to the fields via the screen opened by clicking the "Tables" softkey (Refer to Chapter 4.4.1).

1	2	3
		
Click the database icon, Screen 2 (without numeric keypad) appears.	Click the Number of Fields line, numeric keypad opens, then enter the number of fields you need via keypad.	After entering the number of fields, the above screen appears. Click the Field-1 line, Screen 4 appears.
4	**5**	**6**
		
After clicking the Field Name line, Screen 2 with keyboard opens.	Enter the Field Name via keyboard and click the Okay key. For the other entries on	In the same way, enter all the Field names you need and their parameters.

	Screen 4, please see the explanation below.	

Field Name	Database field (table column) title such as Customer, Product, Company, etc.
Field Table	If the data field must be populated only from the Table, "Enabled " is selected from the option box that appears when the relevant row is clicked. Select Disabled to enter the data via keyboard only.
Must be entered	If the data field must be filled, "Enabled" is selected from the option box that appears when the relevant row is clicked. Otherwise, "Disabled" is selected, and the OK key is clicked.
Can be selected only from table	If the data field must only be populated from the table, "Enable", otherwise, "Disabled is selected, and the OK button is clicked.
Field Type	When the Field Type line is clicked, an option box with Text, Number, Date, Time options appears. Select the appropriate option with the field and click the OK button. If the number option is clicked, the "Format" and "Formula Active" lines appears additionally. If the Format line is clicked, the formats of the number to be entered are given as 0 / 0.00 /0.000 /0.0000. If the Formula Active line is clicked, an option box with Enabled and Disabled options appears. Select the appropriate one.
Number of characters	It is the number of characters in the text if the Field Type is selected as Text. It is entered via numeric keypad that is opened when the relevant line is clicked.

5.6.3 Programm Setup

Setup > Application Setup> Program Setup 

1	2	3
		
After clicking the Program Setup icon, Screen 2 (without option box) is displayed.	After clicking each line, the option box or numeric keypad opens according to the parameter. Select the appropriate option from the option box.	Or enter the value via numeric keypad.

1st Weight Manual	If the first weighing value can also be entered manually, "Yes" is selected.
Position Sensors	If the digital I/O card is installed and scale input/output sensors are used, "Yes" is selected.
Check zero return	If "Yes" is entered, the message "Unload the Scale" appears at the end of the weighing transaction and the new weighing does not start until the weight entered in Setup / 1st Scale setup / Parameters is less than the Minimum Weight.
Next weighing period (Minute)	This parameter defines the time that must elapse between consecutive weighings of the same truck. It is entered in minutes.
Main menü Truck	It is set as "Yes" as a factory default.
Public Weighing	If it is allowed to weigh the vehicles that are not coded also, YES is selected.

5.6.4 Deleting Records

Setup > Application Setup> Deleting records 

1	2	3
		
After clicking Deleting Records icon on the Application Setup screen, Screen 1above is displayed. Click the Date line and Screen 2 with the date picker appears.	Via the date picker, enter the date up to which date all the records are to be deleted.	After entering the date on Screen 2, the above warning message appears. Click the Okay key to delete all the records before the entered date.

5.7 System Setup

Setup > System Setup 

When the System Setup icon is clicked on Screen 1 below, the System Setup menu consisting of Screen Setup, Region/Language Setup, Interface Setup and Display Setup submenus is accessed. Ticket icon is not active on this screen.

1	2
	

Figure 5-8

5.7.1 Screen Setup

Setup > System Setup> Screen Setup

After clicking Setup>System Setup>Screen Setup, Screen 1 below is displayed. If the Accessing touch keypad line is clicked, Screen 2 (with option box) appears. Select the Automatic option if you want that the keyboard automatically appears when you click a line that accepts alphanumeric entries.

1	2
	

Figure 5-9

5.7.2 Region / Language Setup

Setup > System Setup> Region / Language Setup

After clicking Setup>System Setup>Region / Language Setup, Screen 1 below is displayed. Language, Time Zone, Date, and Time information is set from this screen. Click the parameter line to be set and select one of the options from the option box that appear (Screen 2) or enter the date and time (Screen 3).

1	2	3
		

Figure 5-10

5.7.3 Interface Setup

Setup > System Setup> Interface Setup 

After clicking Setup>System Setup>Interface Setup, Screen 1 below consisting of Ethernet Settings, COM1 and COM2 Settings, LPT1 Settings, I/O Settings and Ethernet Printer settings is displayed.

1	2	3
		
4	5	6
		

Figure 5-11

Ethernet Settings

Setup > System Setup > Interface Setup > Ethernet Settings 

1	2	3
		
After clicking the Ethernet Settings icon on the Interface Setup Screen, the above screen consisting of the Ethernet parameters is displayed. If the DHCP line on this screen is clicked, Screen 2 appears.	Click the DHCP line and select the Statik or Dynamic IP. If the static IP is selected, all parameters line on the above screen is clicked, and the relevant values are entered.	If the dynamic IP is selected, the above screen is displayed, and all parameters are set automatically.

Figure 5-12

COM1 and COM 2 Settings

Setup > System Setup > Interface Setup > COM1 Settings 

1	2	3
		
After clicking the COM1 Settings icon on the Interface Setup Screen, the above screen consisting of the COM1 parameters is displayed. Select the RS232 parameters from the choice box opened after clicking the related line.	Select the device type to connect to the COM port from the choice box opened after clicking the Device type line. If the computer is selected as a device type, the Data Mode line is added to the COM1 settings.	If the Print option is selected as Data Mode, the data is sent to the PC in the format below. G: 6.02:kg; T: 2.68:kg; N: 3.36:kg; ALB: 57

Figure 5-13

LPT1 Settings

Setup > System Setup > Interface Setup > LPT1 Settings 

	1	2
After clicking the LPT1 Settings icon on the Interface Setup Screen, Screen 1 on the left is displayed. If a dot matrix printer is to be connected to the FT-150 Truck LPT1 port, after clicking the Printer Type line, select the dot matrix printer from the option box opened on Screen 2.		

Figure 5-14

I/O Settings

Setup > System Setup > Interface Setup > I/O Settings

	1	2
After clicking the I/O Settings icon on the Interface Setup Screen, Screen 1 on the left is displayed. If the I/O board option is installed into FT-150 Truck, click the I/O Board line and select the Enabled from the option box opened on Screen 2.(Rerfer to Chapter **Fehler! V erweisquelle konnte nicht gefunden werden.** for I/O board installation.)		

Figure 5-15

Ethernet Printer

Setup > System Setup > Interface Setup > Printer

1	2	3
		
The screen above is displayed after clicking the Ethernet Printer icon on the Interface Setup Screen. If an Ethernet printer is to be connected to the FT-150 weighing terminal Ethernet port must be Enabled	Enable the printer from the option box opened after clicking the Eth. Printer line. Then, the next screen opens.	Enter the IP address and port number via the numeric keypad that opens after clicking the related line.

Figure 5-16

5.7.4 Display Setup

Setup > | System Setup > Display Setup 

After clicking Setup>System Setup>Display Setup, Screen 1 below is displayed. If a name is to be given to the scale, type it via the keyboard that opens after clicking the Scale name line. To show the scale name on the weight display click the Displayed scale name line and select "Show" option

To activate the sleep mode at the end of a certain time after the last operator interaction with FT-150 Truck, click the Sleep mode setting line and enter a duration in a minute via the numeric keypad. To be logged out when FT-150 Truck is in sleep mode, click the check box on Screen 2.

1	2
	

Figure 5-17

5.7.5 Web Service

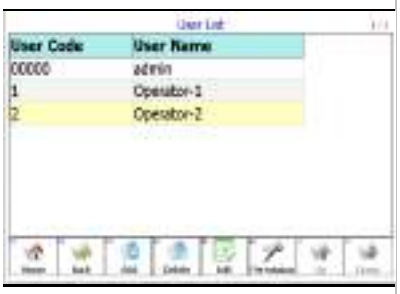
Setup > | System Setup > Web Service 

Web Service is provided as an option. Please refer to Chapter 10.

6 Users Setup

Setup > Users Setup 

Only the administrator can create a new user. Follow the steps below to create a user after logged on as admin.

1	2	3
		
After logging on as the administrator, click the Users Setup icon on the Setup screen above. Screen 2 with the user list is displayed.	To edit or delete a user record, click its line, the line colour changes to yellow. Then click The Edit or Delete key. Click the Add key to create a new user. Screen 3 opens with blank fields.	Fill in the fields and click the Save key.
4	5	
		
To arrange the user permission, click the relevant user line, the line colour changes to yellow. Then click the Permission key. Screen 5 opens.	When the new user is created, the soft keys on the above screen are active for this user. To deactivate a function for the user, click on the related softkey, its colour changes. That means that the softkey function is no longer active.	

7 Diagnostic

Setup > Users Setup 

When the Diagnostic icon is clicked on Screen 1 below, the Diagnostic menu (Screen 2) consisting of Signal Test, Serial Port Test, Remote Connection, Log Records, and I/O Test submenus is accessed.

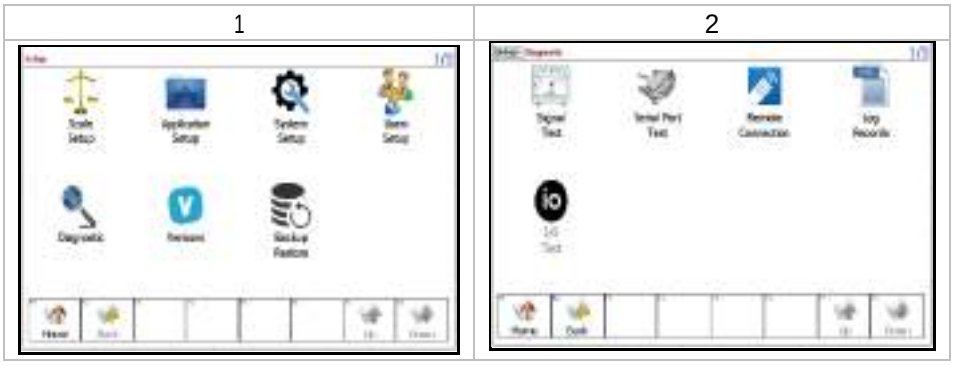


Figure 7-1

7.1 Signal Test

Setup > Diagnostic > Signal Test 

With the Signal Test, load cells can be tested by measuring their millivolt value at the load cell input of the weighing terminal. When the "Loadcell Test" icon is clicked on the Diagnostics screen, Screen 1 below appears. When the "1st Scale millivolt value" line is clicked, Screen 2 opens, and the load cell input voltage of the weighing terminal in millivolts is displayed.

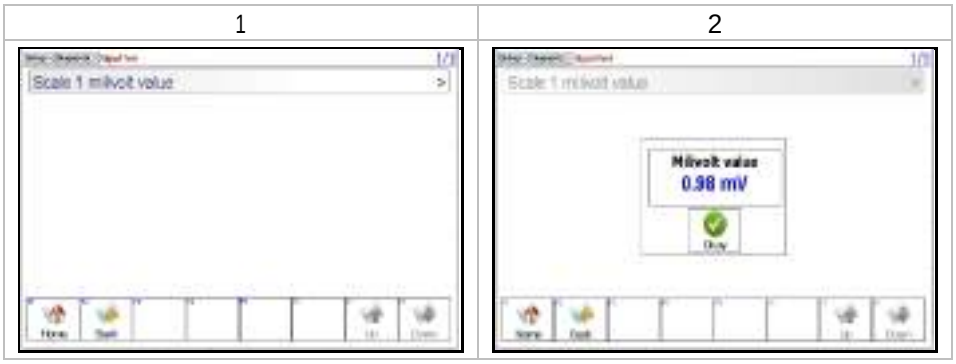


Figure 7-2

7.2 Serial Port Test

Setup > Diagnostic > Serial Port Test 

When the "Serial Port Test" icon is clicked on the Diagnostic screen, Screen 1 with COM1 and COM2 tests is displayed. External Scale Data Monitoring is not applicable for the truck scale. After clicking the COM1 Test line, Screen 2 is displayed.

The test is based on sending data from the RS232 TX output and receiving the same data from the RX input. For this, connect a test connector with TX and RX pins short-circuited to the RS232 port to be tested and then clik the starts key.

If the data sent from the RS232 TX output is also received from the RX input, Screen 3 with the test successful message is displayed.

1	2	3
		
When the "Serial Port Test" icon is clicked on the Diagnostic screen, Screen 1 with COM1 and COM2 tests is displayed. External Scale Data Monitoring is not applicable for the truck scale. After clicking the COM1 Test line, Screen 2 is displayed.	The test is based on sending data from the RS232 TX output and receiving the same data from the RX input. For this, connect a test connector with TX and RX pins short-circuited to the RS232 port to be tested and then clik the starts key.	If the data sent from the RS232 TX output is also received from the RX input, the screen with the test successful message is displayed.

Figure 7-3

7.3 Remote Connection

Setup > Diagnostic > Remote Connection 

FT-150 Truck can remotely connect with a computer or mobile phone. When the "Remote Connection" icon is clicked on the Diagnostic screen, Screen 1 below appears. After clicking the Remote Connection line on this screen, Screen 2 opens to activate this function. Click Enabled option and Okay key. Then enter the IP and Port number.

1	2
	

Figure 7-4

7.4 Log Records

Setup > Diagnostic > Log Records 

When the "Log Records" icon is clicked on the Diagnostics screen, the screen on the left appears. Setup changes are recorded based on user and date, together with explanations. In the log records, the previous and next pages can be accessed with the Up and Down arrows. The desired page can also be accessed by entering the page number on the numeric keypad that appears when the Page No key is clicked.

Figure 7-5

7.5 I/O Test

Setup > Diagnostic > I/O Test 

An optional I/O card can be installed on the FT-150 Truck weighing terminal. After installing the I/O card, enable it from the

System Setup > Interface Setup > I/O Settings menu (See I/O Settings) and click the "I/O Test" icon on the Diagnostic screen to perform the I/O test. Then the Screen on the left appears.

Input LEDs show the status of the inputs as ON/OFF. When the output LEDs are touched, an ON / OFF output signal is generated, and the related LED lights.

Figure 7-6

7.6 Versions

After clicking the Version icon on the Setup menu, the screen on the left showing the Basic System Software, Application Software version, and Scale 1 Software Version opens.

Figure 7-7

8 Backup / Restore

Setup > Backup / Restore 

When the Backup / Restore icon is clicked on Setup screen, Screen 1 below consisting of the "Loge File", "Backup", "Restore" and "Factory Default" submenus is accessed.

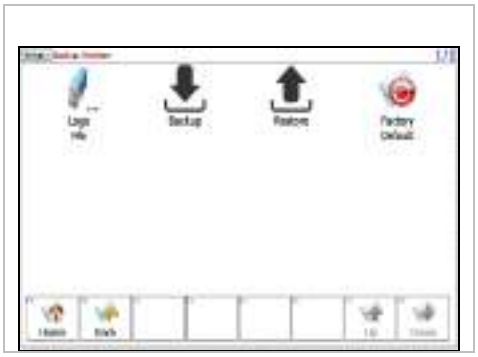


Figure 8-1

IMPORTANT: The USB memory stick used for the operation below should be formatted as FAT32. Otherwise, no copying or downloading will take place.

8.1 Logo File

Setup > Backup / Restore > Logo File 

The logo on the opening screen can be customized. The Logo folder that contains "LogoApp.png" and "LogoMain.png" files shown below is copied during the backup process.

Figure 8-2

For the new logo, two files with the same name and extensions (png) with the files in the backup are created, and these are replaced with the logo files in the USB containing the backed-up files. The USB memory stick with the new logo files is inserted into the FT-150 Truck, and the new logo is loaded by clicking the "Logo File" icon on screen 1. If the "Logo File" icon is clicked without inserting the USB memory stick, a message will appear asking to insert a USB containing the logo file, as seen on screen 2.

8.2 Backup

Setup > Backup / Restore > Backup 

The USB memory stick to which the installation settings will be copied is inserted into the FT-150 Truck, and the "Backup" icon is clicked on Screen 1 above. If the "Backup" icon is clicked without inserting the USB memory stick, a message asking to insert the USB will appear, as seen on screen 2. The following folder and files are saved on the USB memory stick.

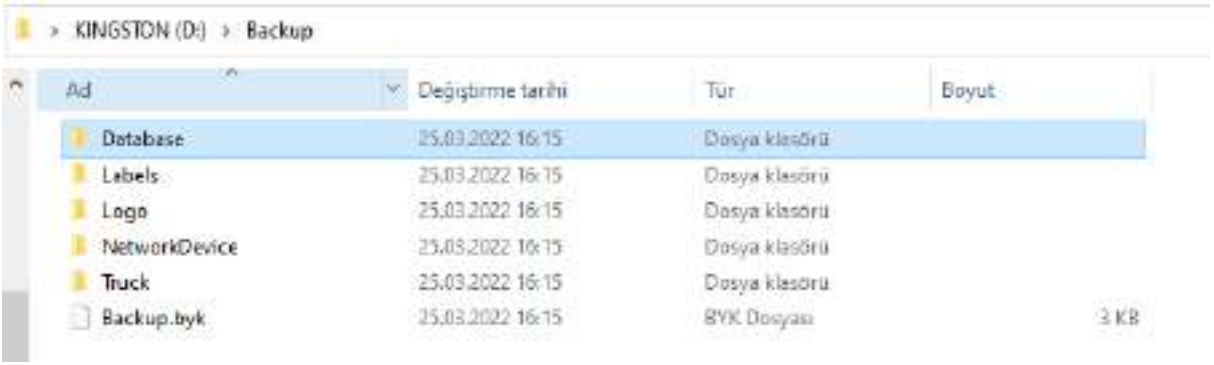


Figure 8-3

8.3 Restore

Setup > | Backup / Restore > | Restore 

For service purposes or to install another FT-150 Truck with the same specifications, previously backed up folders and files may need to be restored. For this purpose, insert a USB memory stick having the installation files into the FT-150 Truck weighing terminal, and click the Restore icon. Files and folders on the USB are uploaded to the FT-150 Truck weighing terminal. If the "Restore" icon is clicked without the USB memory stick inserted, a message will appear asking to insert the USB, as.

8.4 Factory Default

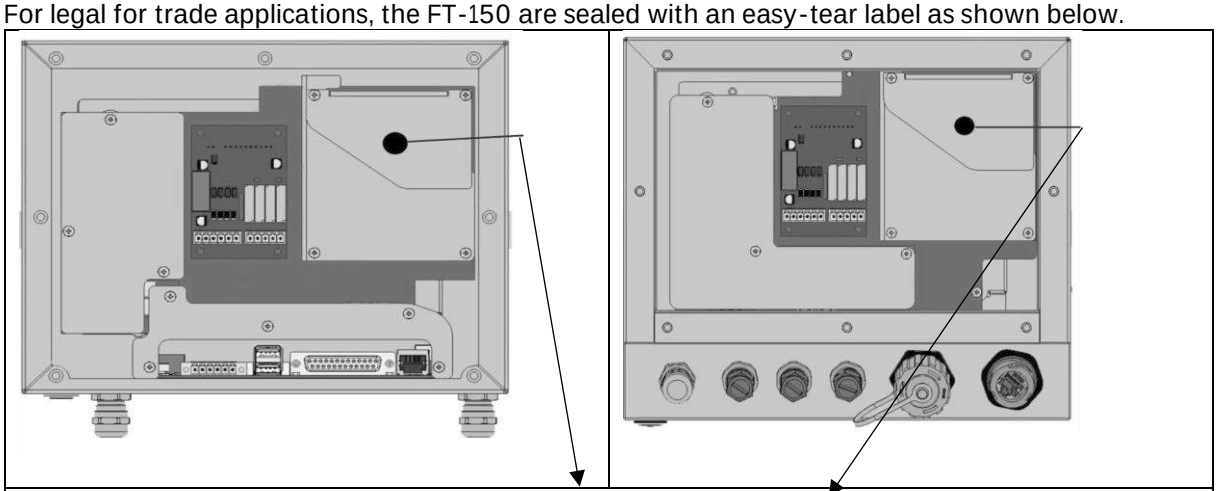
Setup > | Backup / Restore > | Factory Default 

IMPORTANT NOTICE: When the factory settings are loaded, the database, records, setup parameters, Alibi memory available in the FT-150 Truck are deleted.

To load the factory settings, click on the "Factory Default" icon, screen 3 appears. If the "OK" button is clicked on this screen, the factory default settings of the FT-150 Truck weighing terminal are restored.

9 SEALING OF APPROVED SCALE

For legal for trade applications, the FT-150 are sealed with an easy-tear label as shown below.



Sealing of FT-150 and FT-150H weighing terminal with easy tear-off label

10 TROUBLESHOOTING

FT-150 Weighing Terminals are highly reliable devices designed with minimum probability of failure. Do not intervene with the device without detecting the source of the malfunction in case of any malfunction. Record the problem you encountered and the error message on the screen and find a solution to the problem by using the error table given below. Prevent untrained persons from intervening with the device.

Error messages

Error message	Explanation	Action to do
UNDER	Weight is too low	• Check the load • Check the mechanical structure • Check the calibration • Load cell or device may be broken • Check the load cell connection
OVER	Overload, weight is too high	
ADCOUT	ADC output is out of the operation range. ADC cannot convert the load cell signal within the defined range. ADC or its load cell connection circuit has a malfunction, or load cell excitation voltage is too low.	
EEE	The load on the scale is out of the power on zero range	• Unload the scale. • Set the power on zero range.
ERR		• Contact Flintec.

Calibration error messages:

Error message	Explanation	Action to do
E10 NVM ERROR	NVM version error.	• If confirmed by the Okay key, the factory settings are loaded. • If the error still exists, replace the scale PCB. If this error occurred after a software update, install the previous software so that the setup values are not deleted.
E20 CALIBRATION	Checksum error of calibration Coefficients	• Check the scale performance. • Re-calibrate the scale. • Change the scale PCB.
E21 SETUP ERROR	Check sum error of parameters	• Check the scale performance. • Re-calibrate the scale.
E34 NOT LOADED	ADC output is not changing during the span calibration.	• Try to re-calibrate the scale.
E35 LC CONNECTIO	The load cell output is decreasing after loading.	• Check load cell connections. • Change the scale PCB.
E36 ADD LOAD	The load is not enough for span calibration.	• Load the required test weight and re-calibrate the scale.
E37 UNSTABLE	The load is not stable during calibration.	• Wait until the scale becomes stable. • Check the grounding. • Re-calibrate the scale.
E61 FLASH ERROR	EEPROM Error.	• Change EEPROM

11 Appendix1: Digital I/O Board Option

11.1 Digital I/O Board Funktion

Thanks to the digital I/O card offered as an option, the FT-150 Truck weighing terminal controls the traffic lights and barriers at the entrance and exit of the truck scale, depending on the entry/exit position sensors and weighing.

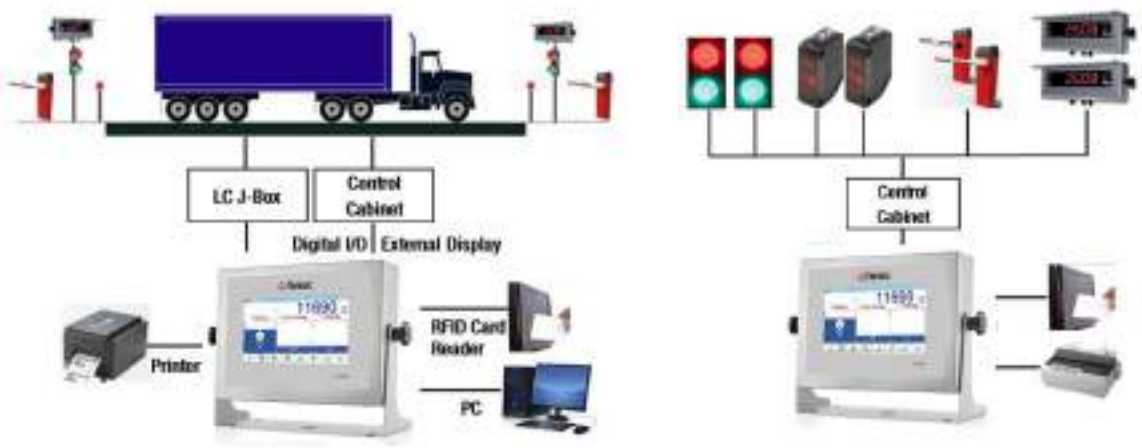


Figure 11-1

Entrance and exit in one-way traffic

If the traffic on the truck scale is one-way, the operating mode and entry/exit definitions are given below.

1. The traffic lights at the entrance and exit of the platform are RED when the truck is on the platform.
2. After weighing, the traffic light at the exit turns GREEN, and the exit barrier opens.
3. When the truck leaves the platform, the traffic light at the entrance turns on GREEN.
4. The barrier control system closes the exit barrier.

One-way traffic		Operation for 1-WAY Traffic
Outbound traffic light	Output-1	When the truck is on the platform, BOTH LIGHTS become RED.
Outbound traffic light	Output-2	After weighing, OUTBOND TRAFFIC LIGHT becomes GREEN and OUTBOND BARRIER is opened.
Outbound barrier	Output-3	
Position sensor-1	Input-1	When the truck left the platform, the INBOUND TRAFFIC LIGHT became GREEN.
Position sensor-2	Input-2	OUTBOND BARRIER is closed by BARRIER CONTROL System.

Entrance and exit in two-way traffic

If the traffic on the truck scale is two-way, the operating mode and entry/exit definitions are given below.

1. The traffic lights at the entrance and exit of the platform are RED when the truck is on the platform.

2. After weighing, the traffic lights at the entrance and exit turn GREEN, and both barriers are opened.
3. When the truck leaves the platform, the traffic lights at the entrance and exit turn GREEN.
4. The barrier control system closes the entry and exit barriers.

Twoe-way traffic		Operation for 2-WAY Traffic
Inbound traffic light	Output-1	When the truck is on the platform, BOTH LIGHTS become RED.
Outbound traffic light	Output-2	After weighing, BOTH LIGHTS become GREEN and BOTH BARRIERS are opened.
Entry/Exit barriers	Output-3	
Position sensor-1	Input-1	When the truck left the platform BOTH LIGHTS become GREEN.
Position sensor-2	Input-2	BARRIERS are closed by the BARRIER CONTROL System

11.2 Installation of Digital I/O Board

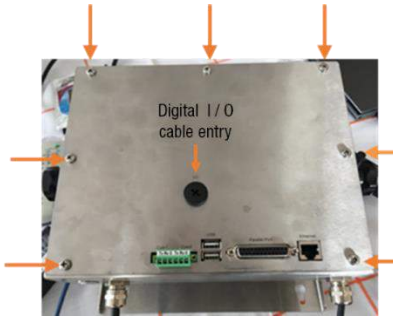
WARNING! DISCONNECT ALL POWER TO THIS UNIT BEFORE REMOVING ANY CONNECTION, OPENING THE ENCLOSURE OR SERVICING AND WAIT AT LEAST 30 SECONDS.

CAUTION! ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS DEVICE.

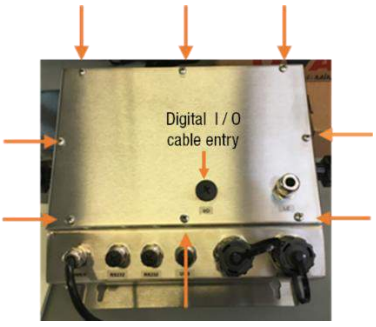
CAUTION! OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

Follow the steps below to install the digital I/O board to the FT-150 Truck terminal.

1. Observe the general rules given in Chapter 3.
2. Open the rear cover by removing 7 screws (Figure 11-2) for the FT-150 Truck and 8 screws (Figure 11-2) for the FT-150H Truck.
3. Place the digital I/O board (Figure 11-2) through the mounting studs and connect it to the connector on the motherboard gently, as shown in Figure 11-2 and. Insert the nuts on the mounting studs and fix the board.
4. Route the digital I/O cable through the glands shown in Figure 11-2. And then extend it up to the sockets on the I/O board.
5. Connect the digital input cables to the connector, as shown in ***Figure 11-2***.
6. Connect the digital output cables to the connector, as shown in ***Figure 11-2***.
7. Connect the digital input and output cable connectors to the terminals on the digital I/O board. After checking the connections, install the rear cover of the device.
8. Enable the digital I/O board. Refer to Chapter 5.7.3
9. Perform an I/O test before connecting the ends of the digital I/O cables to the related device /equipment. (Refer to Chapter 7.5)



1 - FT-150 Truck rear cover

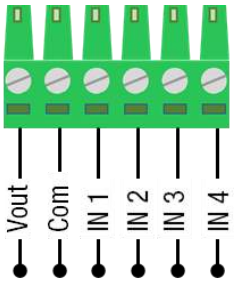


2 - FT-150H Truck rear cover

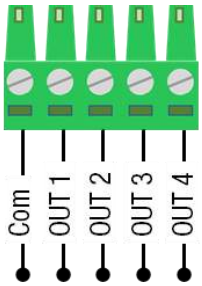
3 - Digital I/O PCB

4 - Digital I/O PCB slot

5 - Digital I/O PCB installed



6 - Digital inputs connetor pinouts



7 - Digital outputs connector pinouts

Figure 11-2

12 Appendix 2: Data Transfer Programs

The following data transfer programs are offered as options.

12.1 Data Editor Program

With the Data Editing Program, FT-150 weighing data can get directly transferred to a PC as an Excel file. To transfer weighing data, Data Editing Program gets loaded on a PC, and it connects to the terminal via Ethernet port. Refer to the relevant manual.

12.2 Web Service

Web Service, over the internet, provides automatic transfer of data in FT-150 to MS SQL database installed on a remote server, viewing data with BSQLR Web Report program and obtaining Excel reports.

A license is required to use the Web Service. The Web Service license also covers the BSQLR Web reporting software. The web service license code is given to the manufacturer, and the license password is requested.

http://www.flintec.com