

FloTech FT555 Series Automatic Truck Overfill System Tester

Optic/5-Wire Systems
Thermistor/2-Wire Systems
Ground Bolt
Truck ID Module

10784PA Rev G



Dixon
Dixon Bayco Division
Cincinnati, Ohio

Table of Contents

Table of Contents	2
Introduction	3
Main Features	3
FT555 Indicators	5
Unpack Unit and Initial Setup	6
Power On/Off	6
First Time Startup – Display Language Setup	7
Normal Startup - After Display Language Has Been Setup	8
Initial Startup Screen	8
Initial System Setup – one time only	9
Normal Operations	9
Setup Instructions – Initial Startup Only	10
Setup Instructions – Normal Operation	11
Setup Instructions – Continued	11
Selecting Test Options	17
Automatic Test	18
Optic/5-Wire Test	21
Thermistor/2-wire Test	23
Ground Bolt Test	25
Pin 9/10 Continuity Test	26
Truck ID Module Test	27
Optic/5-Wire Wet Test Thermistor/2-Wire Wet Test	28
Technical Support Hotline	32

Introduction

This Manual describes the features, use, and maintenance of the FT555 Automatic Truck Overfill System Tester. The FT555 is compatible with all makes of Optic sensor systems, 2 wire Thermo-Optic systems, and truck onboard monitor systems regardless of manufacture as long as they are compatible with API RP1004: 2003 recommended practice.

Main Features

The FloTech FT555 Automatic Truck Overfill System Tester has the following features:

- Automatically test all 4 test functions, Optic/5-wire Sensor, Thermistor/2-wire Sensor, Ground Bolt, and TIM number.
- Test all API 5 wire optic sensor systems and report the number of functional / wetted sensors*.
- Test 2 wire Thermo-Optic sensors and report the number of functional / wetted sensors*.
- Monitors up to eight compartments.
- Test Ground Bolts with both forward and reverse continuity check.
- Read TIM modules and report serial number in display
- Perform “WET TEST” to report when sensors are wetted using integrated beeper.
- Configure auto test to perform all selected tests at once.
- Configure maximum number of compartments.
- Software can be upgraded to include new tests and future expanded testing and troubleshooting capability.

* Optic/5-wire Sensor and thermistor/2-wire Sensor tests will only indicate correct number of functional / wetted sensors for systems without an onboard monitor.

FloTech FT555 Automatic Truck Overfill System Tester

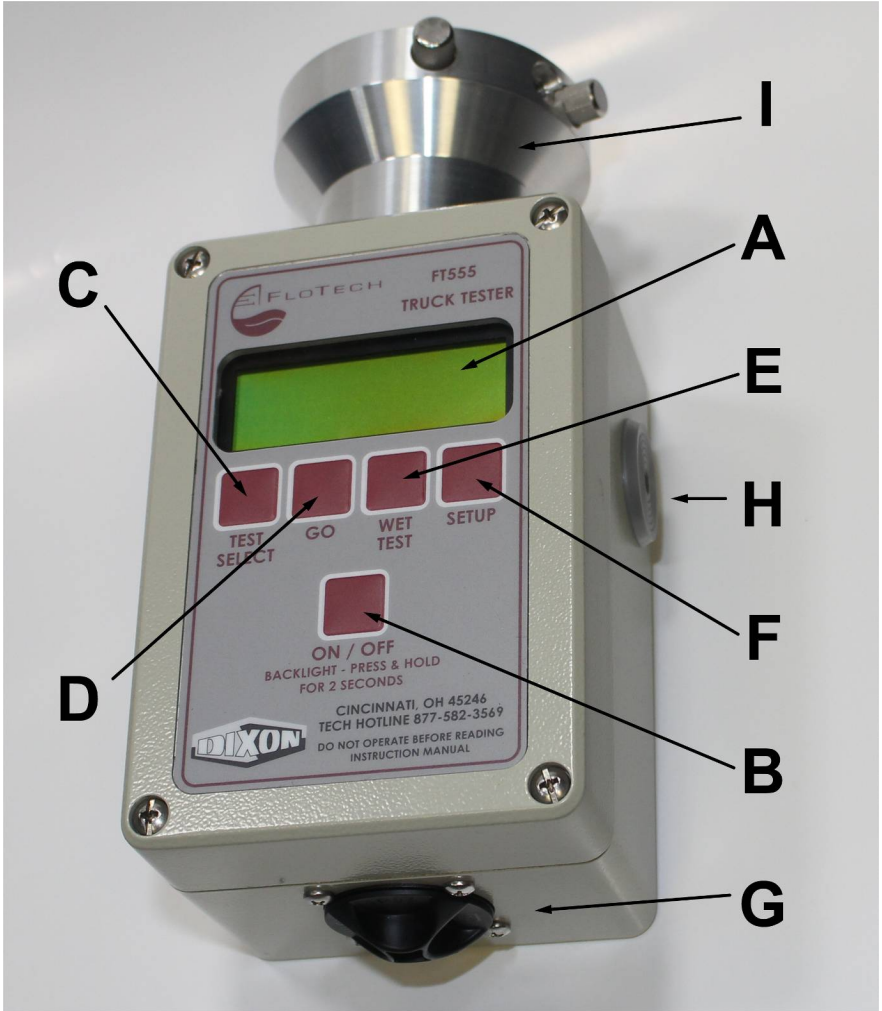


Fig. 1 FT555 Automatic Truck Tester

FT555 Indicators

A) LCD SCREEN

The LCD screen is the main display where test selection, test results, and test instructions are displayed. Screen backlight is enabled using the ON/OFF button.

B) ON/OFF BUTTON

Press and release this button to turn the FT555 Automatic Truck Tester on and off. The unit will automatically turn off after 10 minutes. Press and hold this button for 2 seconds and the backlight will illuminate.

C) TEST SELECT BUTTON

Press and release this button to cycle through the available tests.

D) GO BUTTON

Press and release this button to start the selected test.

E) WET TEST BUTTON

Press and release this button while in the Optic/5-Wire or Thermistor/2-Wire Test mode and the wet test feature will begin. Pressing and releasing any button will stop the wet test.

F) SETUP BUTTON

Press and release this button to enter the set up screens.

G) BATTERY DOOR

Twist to open, hold two D cells, positive points towards battery door (out).

H) ALARM

Audible alarm sounds when FT555 Automatic Tester is in WET TEST mode and sensor is wetted.

I) API PLUG CONNECTOR

API compatible plug with configurable J-Slot pins for both optic and thermistor sockets.

Unpack Unit and Initial Setup

Step 1) When unpacking the FT555 Automatic Truck Tester you will find the following:

- a) FT555 Automatic Truck Tester
- b) Two “D” size batteries
- c) Three J-Slot thumb screws
- d) This instruction manual

Step 2) Screw in the three J-Slot Screws into the threads marked “O” for Optic socket compatibility and into the J-Slot threads marked “T” for thermistor socket compatibility.

Step 3) Remove the battery door by turning counter clock wise until door opens. Insert two “D” size batteries with positive battery terminal facing out of the opening. Reinstall battery door by turning clockwise.

DO NOT FORCE BATTERY DOOR OPEN OR CLOSE

Power On/Off

Press and release the ON/OFF button once to turn the tester on. Press and release the button again to turn the tester off. The tester has a display back light for dark conditions. After turning on the tester, press and hold the ON/OFF button for 2 seconds and the back light will turn on. Press and hold again for 2 seconds and the back light will turn off.

FloTech FT555 Automatic Truck Overfill System Tester

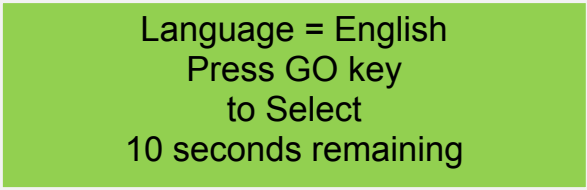
This manual will **ONLY** show the English language version of all the screens.

First Time Startup – Display Language Setup

The FT555PA/PW allows the user to select one of the following languages when the tester is turned on for the first time:

- English
- French
- German
- Spanish.

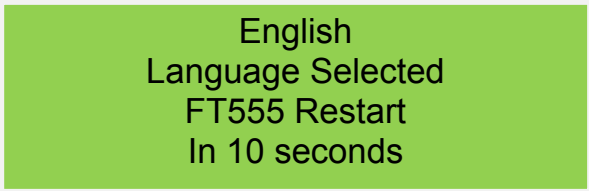
Press and release the ON/OFF button once. The FT555PA/PW will show the screen below:



Language = English
Press GO key
to Select
10 seconds remaining

The display language setup screen for each display language will be shown for 10 seconds. When the user recognizes the desired display language to be used with the tester, the “GO” key should be pressed and released one time.

The following screen will be displayed:



English
Language Selected
FT555 Restart
In 10 seconds

The remaining 3 languages will show similar screens to allow these display languages to be selected.

FloTech FT555 Automatic Truck Overfill System Tester

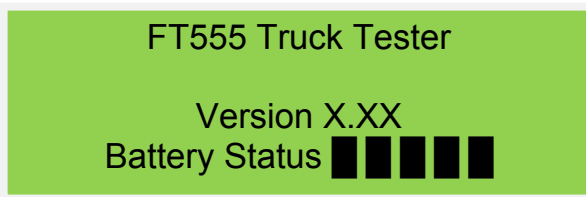
Go to section [Initial Startup Screen](#)

Normal Startup - After Display Language Has Been Setup

Press and release the ON/OFF button once. The FT555PA/PW will show the screen below:

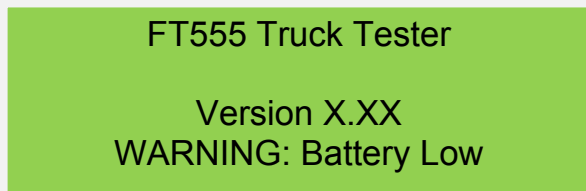
Initial Startup Screen

After the FT555PA/PW starts/restarts, the following screen will be shown in the selected display language.



The screen above will be the initial display screen every time the FT555PA/PW Automatic Truck Tester is turned on. This screen shows the firmware version of the FT555PA/PW and the battery health status in bars. 5 bars represent full battery capacity.

If the bars displayed are 2 or less, a warning beep will sound and a warning message (see below) will flash for a few seconds. Batteries should be changed at your next convenience.



Initial System Setup – one time only

The screen below is shown only at initial system setup. It allows the user to customize the operation of the FT555PA/PW Automatic Truck Tester suit his needs.

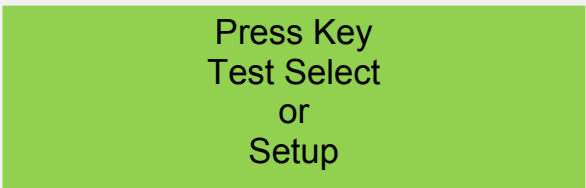
A green rectangular screen with the text "Initial System Setup" centered in black font.

Initial System Setup

Go to section [Setup Instructions – Initial Startup Only](#)

Normal Operations

This is main screen during normal operations

A green rectangular screen with the text "Press Key", "Test Select", "or", and "Setup" centered in black font.

Press Key
Test Select
or
Setup

Go to section [Selecting Test Options](#)

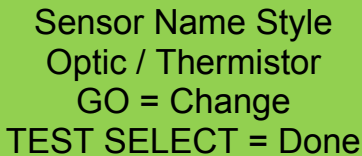
Setup Instructions – Initial Startup Only

If the language selected was English, the FT555PA/PW Automatic Truck Tester allows for the use of 2 different name styles for the sensors to be tested:

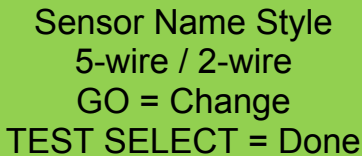
- “Optic / Thermistor”
- “5-Wire / 2-Wire”

French and German default to a “5-Wire / 2-Wire” sensor name style

Spanish defaults to an “Optic / Thermistor” sensor name style.



Sensor Name Style
Optic / Thermistor
GO = Change
TEST SELECT = Done



Sensor Name Style
5-wire / 2-wire
GO = Change
TEST SELECT = Done

Select the Sensor Name Style to be used.

Press and release the TEST SELECT button to move to the next SETUP screen

Go to section **Setup Instructions – Continued**

FloTech FT555 Automatic Truck Overfill System Tester

Setup Instructions – Normal Operation

At the screen below, press and release the SETUP key to enter the setup mode.

Press Key
Test Select
or
Setup

Setup Instructions – Continued

Max Optic Comps = # (English or Spanish)

Max 5-Wire Comps = # (English, French or German)

Press and release the GO button to toggle between 6, 8 or 9 maximum number of compartments. Generally, the USA has a maximum of 6 compartments signals per one socket and Canada or European regions will have a maximum of 8 or 9. Once the correct number of maximum compartments is displayed, Press and release the TEST SELECT button to move to the next SETUP screen.

Max Optic Comps = 6

GO = Change
TEST SELECT = Next

Max 5-Wire Comps = 6

GO = Change
TEST SELECT = Next

Max Therm Comps = # (English or Spanish)

Max 2-Wire Comps = # (English, French or German)

FloTech FT555 Automatic Truck Overfill System Tester

Press and release the GO button to toggle between 6 and 8 maximum number of compartments. Generally, the USA has a maximum of 6 compartments signals per one socket and Canada or European regions will have a maximum of 8. Once the correct Maximum Compartments count is showing, press and release the TEST SELECT button to move to the next SETUP screen.

Max Therm Comps = 6

GO = Change
TEST SELECT = Next

Max 2-Wire Comps = 6

GO = Change
TEST SELECT = Next

AutoTest Optic/Therm (English or Spanish) **AutoTest 5-wire/2-wire (English, French or German)**

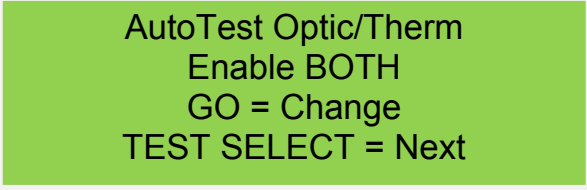
Some regions may not have a need to test optic / 5-wire or thermistor / 2-wire type systems as none are found in that region. Example, trailers in California do not have Thermistor sockets so there is no need to perform the Thermistor test. In this case the Optic / 5-wire test would be enabled.

This screen will enable or disable the optic / 5-wire or thermistor / 2-wire tests when performing an automatic test of the trailer overfill system. This configuration is only for the automatic testing mode. All four tests are available in the manual test selection.

FloTech FT555 Automatic Truck Overfill System Tester

If English(Optic/Therm) or Spanish display language selected:

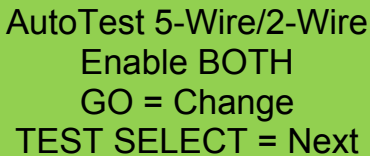
Press and release the “GO” button to choose between “Enable BOTH”, “Enable OPTIC” or “Enable THERM”. Press and release the “TEST SELECT” button to move to the next screen.



AutoTest Optic/Therm
Enable BOTH
GO = Change
TEST SELECT = Next

If English(5-wire/2-wire), French or German display language selected:

Press and release the “GO” button to choose between “Enable BOTH”, “Enable 5-wire” or “Enable 2-wire”. Press and release the “TEST SELECT” button to move to the next screen.

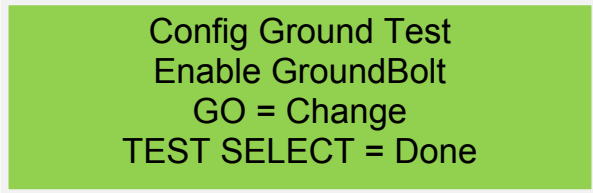


AutoTest 5-Wire/2-Wire
Enable BOTH
GO = Change
TEST SELECT = Next

FloTech FT555 Automatic Truck Overfill System Tester

Auto Test Ground Continuity System

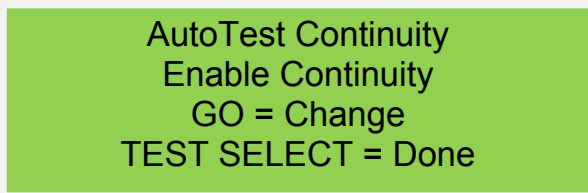
1. Press and release GO button to select either Ground Bolt or Continuity. Once the selection has been made, press TEST SELECT to move to the next screen. See step 2 for Continuity or step 3 for Ground Bolt.



Config Ground Test
Enable GroundBolt
GO = Change
TEST SELECT = Done

2. **Continuity**

If you selected Continuity, the screen below will be shown. Press and release the GO button to Enable or Disable the Auto Test function. Press and release the TEST SELECT button to move to the Automatic Test Screen. See Performing Automatic Test Function on page 18



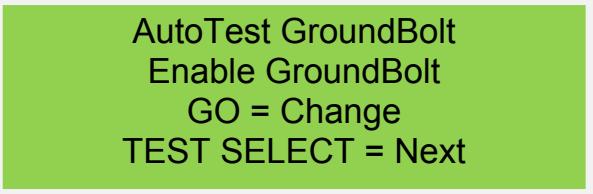
AutoTest Continuity
Enable Continuity
GO = Change
TEST SELECT = Done

- 3.

FloTech FT555 Automatic Truck Overfill System Tester

Ground Bolt

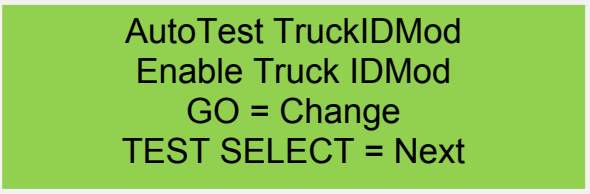
If you selected Ground Bolt, the screen below will be shown. Press and release the GO button to Enable or Disable the Auto Test function. Press TEST SELECT to move to the Automatic Test screen. See Performing Automatic Test Function on page 18



AutoTest GroundBolt
Enable GroundBolt
GO = Change
TEST SELECT = Next

Auto Test Truck ID Module

Press and release the GO button to ENABLE or DISABLE the Truck ID Module test during the automatic testing. Press and release the TEST SELECT button to exit the SETUP mode and return you to the “PRESS KEY/ TEST SELECT” screen.



AutoTest TruckIDMod
Enable Truck IDMod
GO = Change
TEST SELECT = Next

Selecting Test Options

When at the “Press Key” screen, each time the TEST SELECT button is pressed and released, the tester will cycle through each of the five available testing modes:

AUTOMATIC TEST

OPTIC or 5-WIRE TEST

THERMISTOR or 2-WIRE TEST

GROUND BOLT or CONTINUITY TEST

TRUCK ID MODULE TEST

Automatic Test

This test option will automatically test all of the available test options previously enabled in the setup procedure above, and report the findings in a PASS / FAIL screen.

Step 1) Connect API Extension Test Cable

Step 2) Press and release the ON/OFF button to turn on the FT555PA/PW Automatic Truck Tester. When “Press Key” screen appears, press and release TEST SELECT button one time so the “Automatic Test” screen appears.

Step 3) Press and release the GO button to start the test. Follow the prompts listed in the display screen.

Automatic Test

Press GO to Start

Automatic Test

Optic Mode

Connect OPTIC socket

Press GO to Continue

Automatic Test

5-Wire Mode

Connect 5-Wire socket

Press GO to Continue

Step 4) Move the J slot screws to match the J-Slot configuration of the optic/5-wire socket.

Step 5) Connect the tester to the optic/5-wire socket.

Step 6) Press and release GO button to start the test.

FloTech FT555 Automatic Truck Overfill System Tester

Step 7) Once the optic/5-wire portion of the test is complete, disconnect the tester from the optic/5-wire socket.

Step 8) Move the J-Slot Screws to match the configuration of the thermistor/2-wire socket.

Step 9) Connect the tester to the thermistor/2-wire socket. Press and release the GO button to start the thermistor/2-wire portion of the test.

Automatic Test
Thermistor Mode
Connect THERM socket
Press GO to Continue

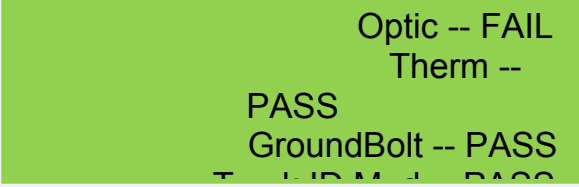
Automatic Test
2-Wire Mode
Connect 2-Wire socket
Press GO to Continue

The tester will automatically perform the ground bolt and/or pin 9/10 continuity, and/or Truck ID Module tests if these options are activated and enabled in the set up screen.

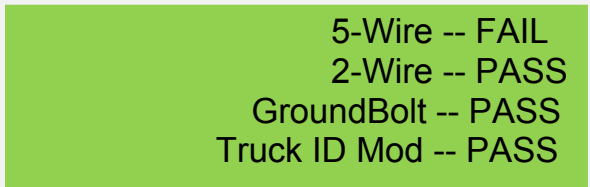
FloTech FT555 Automatic Truck Overfill System Tester

If the tester encounters a failure during any portion of the automatic test it will halt and display the failure on the display.

When the test is complete, the screen will display the PASS / FAIL status of each test performed.



Optic -- FAIL
Therm --
PASS
GroundBolt -- PASS
Truck ID Mod -- PASS



5-Wire -- FAIL
2-Wire -- PASS
GroundBolt -- PASS
Truck ID Mod -- PASS

Step 10) Press and release the TEST SELECT button to move on to a new test. Press and release the GO button to restart the test, or press and release the ON/OFF button to turn the tester off.

FloTech FT555 Automatic Truck Overfill System Tester

Optic/5-Wire Test

The API Optic/5-Wire signal from the trailer mounted sensors or onboard monitor will be tested and report a Pass/ Fail.

OPERATION NOTE:

This test will also report the number of good sensors IF THE SENSORS ARE WIRED DIRECTLY TO THE SOCKET AND NO ONBOARD MONITOR IS USED. Should your trailer have an onboard monitor the tester will test the Onboard Monitor as if it were a single sensor. The status of sensor connected to an Onboard Monitor does not pass through the monitor to the socket.

Step 1) Connect the API Extension or J560 Extension Test Cable.

Step 2) Move the J-Slot thumb screws to the correct holes to match the type of socket to be connected. Follow the “O” and “T” markings on the plug body. Refer to Figure 2, on page 4.

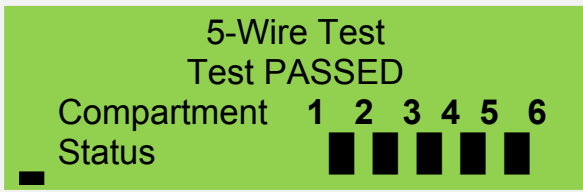
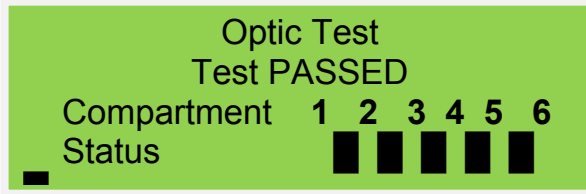
Step 3) Connect the FT555PA/PW Automatic Truck Tester to the trailer socket.

Step 4) Press and release the ON/OFF button to turn on the FT555PA/PW Automatic Truck Tester. When “Press Key” screen appears, press and release the TEST SELECT button two times so that the Optic/5-Wire Test screen appears.

Step 5) Press and release the GO button to start the test. When the test is complete the screen will display the PASS / FAIL status and a wet/dry status for each of the compartments enabled during the setup. A black square under the number indicates a dry sensor or a dash under the number indicates a wet or missing sensor. If connected to an Onboard Monitor, ONLY dashed lines will show and no black bars.

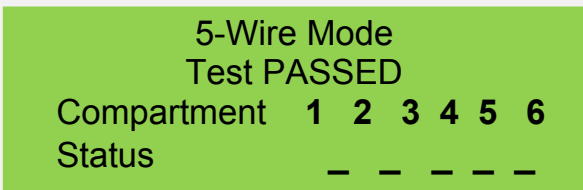
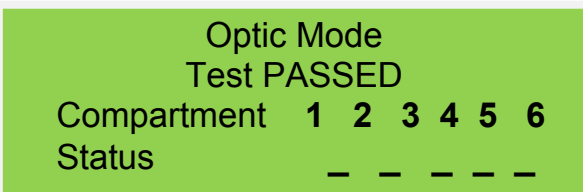
Step 6) Press and release the TEST SELECT button to move on to a new test. Press and release the GO button to restart the test, or press and release the “ON/OFF” button to turn the tester off.

FloTech FT555 Automatic Truck Overfill System Tester



The screens ABOVE show the optic/5-wire pass condition when connected to sensors. A black square will be shown for each dry working sensor. A dash under the number indicates a wet or missing sensor.

The screens BELOW show the optic/5-wire pass condition when connected to an onboard monitor. When connected to an onboard monitor, optic/5-wire pass condition will show dashes for sensor status. Onboard monitors do not have a diagnostic connection to the rack monitor. They do not pass the number of good sensors through to the rack monitor.



FloTech FT555 Automatic Truck Overfill System Tester

Thermistor/2-wire Test

The API Thermistor signal from the trailer mounted sensors or onboard monitor will be tested and report a Pass/ Fail.

OPERATION NOTE:

This tester is not compatible with the old style analog “green or silver tipped sensors. These devices require the FT510 tester.

Step 1) Connect API Extension Test Cable

Step 2) Move the J-Slot thumb screws to the correct holes to match the type of socket to be connected. Follow the “O” and “T” markings on the plug body. Refer to Figure 2, on page 6.

Step 3) Connect the FT555PA/PW Automatic Truck Tester to the trailer socket.

Step 4) Press and release the ON/OFF button to turn on the FT555PA/PW Automatic Truck Tester. When “Press Key” screen appears press and release TEST SELECT button three times so the Thermistor/2-Wire Test screen appears.

Step 5) Press and release the “GO” button to start the test. When the test is complete the screen will display the PASS / FAIL status and a wet/dry status for each of the compartments enabled during the setup. A square under the number indicates a dry sensor or a dash under the number indicates a wet or missing sensor. If connected to an Onboard Monitor dashed lines will show and no black bars.

Step 6) Press and release the TEST SELECT button to move on to a new test. Press and release the GO to restart the test, or press and release the ON/OFF button to turn the tester off

FloTech FT555 Automatic Truck Overfill System Tester

Thermistor Mode
Test PASSED
Compartment 1 2 3 4 5 6
Status - - - - -

2-Wire Mode
Test PASSED
Compartment 1 2 3 4 5 6
Status - - - - -

Ground Bolt Test

The Ground Bolt will be tested using the forward and reverse test to confirm proper operation of the diode inside the ground bolt. The tester will report a Pass/ Fail.

Step 1) Connect API Extension Test Cable

Step 2) Move the J-Slot thumb screws to the correct holes to match the type of socket to be connected. Follow the “O” and “T” markings on the plug body. Refer to Figure 2, on page 6.

Step 3) Connect the FT555PA/PW Automatic Truck Tester to the trailer socket.

Step 4) Press and release the ON/OFF button to turn on the FT555PA/PW Automatic Truck Tester. When “Press Key” screen appears press and release the TEST SELECT button four times so the “Ground Bolt Test” screen appears.

Step 5) Press and release the GO button to start the test. When the test is complete the screen will display the PASS / FAIL status.

Step 6) Press and release the TEST SELECT” button to move on to a new test. Press and release the GO button to restart the test, or press and release the ON/OFF button to turn the tester off.



GroundBolt Test

Test Passed

Pin 9/10 Continuity Test

Pins 9 and 10 of the API socket will be tested for continuity and the result of the test will be shown as PASS or FAIL on screen.

Step 1) Move the J-Slot thumb screws to the correct holes to match the type of socket to be connected. Follow the “O” and “T” markings on the plug body.

Step 2) Connect the FT555 Automatic Truck Tester to the trailer socket.

Step 3) Press and release the ON/OFF button to turn on the FT555 Automatic Truck Tester. When “Press Key” screen appears press and release the TEST SELECT button four times so the “Ground Continuity Test” screen appears.

Step 4) Press and release the GO button to start the test. When the test is complete the screen will report either “PASS” or “FAIL”.

Step 5) Press and release the TEST SELECT” button to move on to a new test. Press and release the GO button to restart the test, or press and release the ON/OFF button to turn the tester off.



Gnd Continuity Test

Test Passed

Truck ID Module Test

The Truck ID Module will be tested and report the 12 digit serial number stored inside the ID module. If there is no Truck ID Module or the test fails the screen will show “TIM not found”

Step 1) Connect API Extension Test Cable

Step 2) Move the J-Slot thumb screws to the correct holes to match the type of socket to be connected. Follow the “O” and “T” markings on the plug body. Refer to Figure 2, on page 6.

Step 3) Connect the FT555PA/PW Automatic Truck Tester to the trailer socket.

Step 4) Press and release the ON/OFF button to turn on the FT555PA/PW Automatic Truck Tester. When “Press Key” screen appears press and release the TEST SELECT button five times so the “Truck ID Module Test” screen appears.

Step 5) Press and release the GO button to start the test. When the test is complete the screen will report the 12 digit serial number or show “TIM not found”.

Step 6) Press and release the TEST SELECT” button to move on to a new test. Press and release the GO to restart the test, or press and release the ON/OFF button to turn the tester off.

Truck ID Module Test

TIM Detected

Ser Num: 0000013338F6

Optic/5-Wire Wet Test Thermistor/2-Wire Wet Test

NOTE: THE WET TEST FUNCTION IS INTENDED TO BE USED ON WORKING SYSTEMS. IF THE SYSTEM HAS A PROBLEM IT MUST BE REPAIRED BEFORE USING WET TEST.

Step 1) Connect API Extension Test Cable

Step 2) Move the J-Slot thumb screws to the correct holes to match the type of socket to be connected. Follow the “O” and “T” markings on the plug body for optic and thermistor style sockets, respectively. Refer to Figure 2, on page 6.

Step 3) Connect the FT555PA/PW Automatic Truck Tester to the trailer socket.

Step 4) Press and release the ON/OFF button to turn on the FT555PA/PW Automatic Truck Tester. When “Press Key” screen appears press and release the TEST SELECT button until the “Optic Test”/”5-Wire” or “Thermistor Test”/”2-Wire Test” screen appears, depending on the socket the tester is connected to.

Step 5) Press and release the WET TEST button to begin the wet test.

Optic Wet Test
Test Running

Sensor Wet

5-wire Wet Test
Test Running

Sensor Dry

FloTech FT555 Automatic Truck Overfill System Tester

Thermistor Wet Test
Test Running

Sensor Dry

2-Wire Wet Test
Test Running

Sensor Wet

Step 6) The FT555PA/PW will repeatedly test for the presence of any wet sensors connected to the socket.

Step 7) Dip test a compartment and listen for a number of beeps corresponding to the compartment number that was dipped. The display will also indicate the compartment number of the wet sensor*.

Step 8) Continue testing each compartment.

Step 9) Stop the wet test by pressing and releasing any key.

Optic Wet Test
No Sensors Found
Check Connections

Cont = GO

Stop=Setup

5-Wire Wet Test
No Sensors Found
Check Connections

Cont = GO

Stop=Setup

FloTech FT555 Automatic Truck Overfill System Tester

Thermistor Wet Test
No Sensors Found
Check Connections

Cont = GO Stop=Setup

2-wire Wet Test
No Sensors Found
Check Connections

Cont = GO Stop=Setup

NOTE: IF THE TESTER DOES NOT SEE ANY SENSORS OR IS NOT CONNECTED, IT WILL DISPLAY THE ABOVE SCREEN UNTIL IT SEES A SENSOR OR THE TEST IS STOPPED.

- * 1. The wet test function will only indicate correct wet compartment number for systems without an onboard monitor.
- 2. Systems using an onboard monitor will only show sensor 1 wet when any sensor becomes wet.

CAUTION:

The FT555 is not certified as suitable for use in a Class I Division 1 hazardous location. You should avoid use in explosive or flammable atmospheres.

Troubleshooting:

- a) Should the FT555 fail to start or shut down during use, check the battery indicator on the welcome screen and or replace the batteries.**
- b) Should the FT555 appear to freeze, remove the batteries to force the unit to power down. Reinstall the batteries and begin test procedure. By removing the batteries you will force the FT555 to restart back to the welcome screen.**

Technical Support Hotline (877) 582-3569

Contact the FloTech Technical Support Hotline for help:

- Troubleshooting overfill systems.
- Verifying defective components
- To request an RGA for defective FloTech products under warranty.