



# **FT-64**

## **Instruction Manual**

### Warranty and Contact Information:

Congratulations on your purchase of the Digatron FT-64 Fuel Tester. This is the most user friendly and forward engineered fuel tester we have ever produced. With it, you will be able to read three functions of a solution, including dielectric constant, conductivity and temperature.

This unit has twice the resolution and four (4) times the accuracy of the FT-47. As well, this instrument is temperature compensated so it will require less re-calibration and also has a backlight for low light conditions.

The FT-64 performs 2 electrical tests for preliminary screening of fuels, both by comparing the dielectric constant and the direct current conductivity to a known base fuel. This unit will not identify the components in the fuel.

It is best to place the liquid being tested in a plastic or glass, container not metal, and place the container on a non-metallic surface ( wood, plastic, Glass, Etc.) Do not hold the container when testing a liquid.

The temperature of the liquid is also displayed and a quality value is shown in addition to verify that the FT-64 is operating correctly (note: this is not an indication of correct calibration, it is a functional check).

If you have any questions or are having difficulty with any of the instructions, additional information and graphical guides are available on our website:

[www.digatrondirect.com](http://www.digatrondirect.com)

And if you cannot find what you are looking for there, we have live technicians ready to take your call. Our hours are Mon. thru Fri. 8:00 am to 4:00 pm. So please, feel free to call:

**940-232-3883**

If you have any questions about the operation of your instrument, please call. One of our technicians will be happy to help you. Please have your instrument nearby to help while troubleshooting with the technician.

Your instrument is warranted to be free from factory defects and electronics failure for two years from the date of purchase. Physical damage during usage is not covered under the warranty. Be sure to fill out and return your warranty card for our records. If we do not have a card on file for your instrument, you will be charged for repairs unless you can provide us with a proof of purchase date.

When returning an instrument for repair, please use the repair form found on our website, or enclose a note indicating your return address, phone number, and a detailed description of the problem. Send your instrument and sensors so that we can check the complete system.

Ship repairs to:

**Digatron Racing Instruments LLC**

**6706 General Custer Dr.  
Wichita Falls Tx 76310**

**[www.digatrondirect.com](http://www.digatrondirect.com)**

**940-232-3883**

## Hydrometer:

Typical Hydrometer ranges are:

Alcohol: .785 to .789. Gasoline: .70 to .76.

Note: If using fuel from a local source test it on a regular basis to know the normal range. Additionally, the race official in charge of testing fuel should have their own clean sample of the local fuel to compare with hydrometer readings found when testing racer fuel.

### Hydrometer Instructions:

Insert the glass hydrometer float into the glass syringe barrel.  
Moisten the flange of the glass syringe and insert into the rubber hex nozzle.

Squeeze the rubber bulb and draw fluid into the nozzle and glass syringe barrel.

Be sure the hydrometer is floating freely in the glass syringe barrel. If the hydrometer sticks to the side of the syringe barrel, tilt it from side to side until it floats freely. Observe the hydrometer reading where the top of the fluid level meets the hydrometer scale.

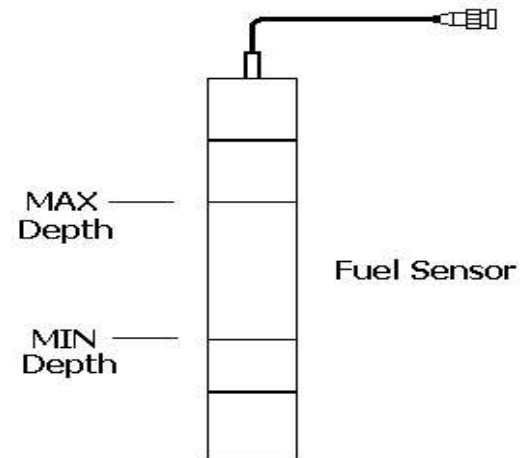
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## FT-BUS Sensor:

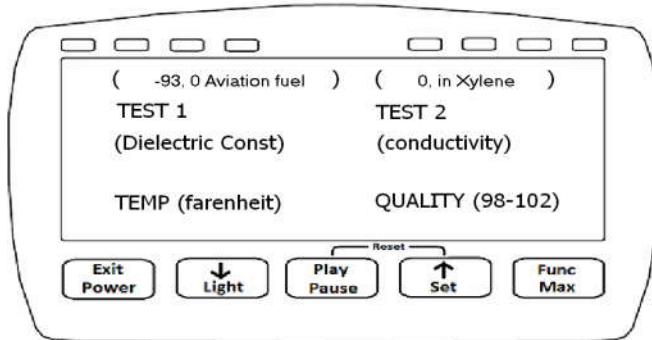
The FT-BUS sensor should be inserted into the fuel until the level reaches between the 2 scribed lines (above the seam between the plates and below the handle). As shown below:

### Important Sensor Insertion Depth

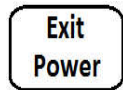


## The Controls:

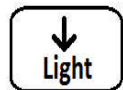
The FT-64 instrument is laid out with the following control face:



There are four buttons to control the functions (Play/Pause Not used):



As the Power button, this will turn the FT-64 on or off. As the Exit button, this allows you to navigate one step back from the menu currently being displayed.



As the LIGHT button, this allows you to turn the backlight on. As the DOWN arrow button, this will allow you to enter calibration mode along with the SET button and allow you to change a value displayed in calibration or Limits downward.

## Troubleshooting:

### No customer serviceable parts:

Before you break out the screwdriver and hammer to pry apart your FT-64 so you can try to fix it, consider this:

Inside you will find a large number of custom parts requiring custom tools.

In contrast, you can just send your instrument in to the manufacturer to have it repaired, or replaced at a discount. Most repairs remain quick and inexpensive.

**[www.digatrondirect.com](http://www.digatrondirect.com)**

**940-232-3883**

**Digatron Racing Instruments LLC**

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### Codes / Messages:

#### What do these messages mean?

A number of codes can appear on your FT-60 display. Here is a listing of each of those messages:

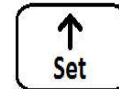
#### Codes:

|      |                            |
|------|----------------------------|
| SEL  | Set display limits – Setup |
| dC   | Dielectric constant        |
| Con  | Conductivity               |
| F    | Temperature                |
| rEF  | Quality                    |
| bAT  | Battery voltage            |
| CHrG | Charging                   |
| FULL | Battery fully charged      |
|      |                            |

Please note that when the battery is low, the backlight will not function. This is a power saving measure so you can continue to use the instrument



This button is not used on this instrument



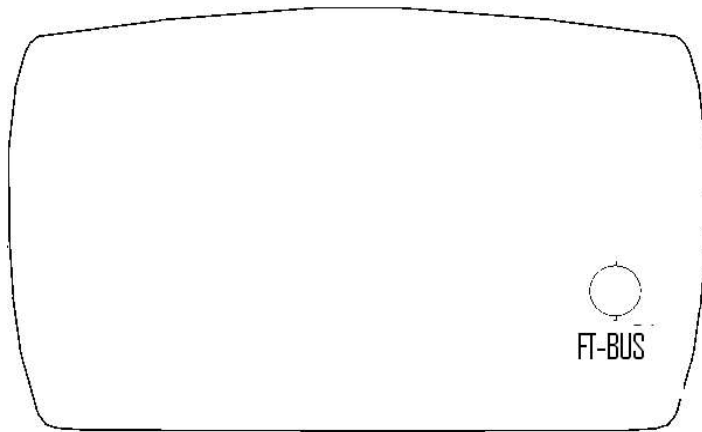
As the SET button, this allows you to enter calibration or limit mode. As the UP arrow button, this will allow you to enter calibration mode along with the LIGHT button and allow you to change a value displayed in calibration or limits, upward.



In normal mode, it will allow you to view the nominal voltage left on the internal battery. In calibration or limits mode, the FUNC button will allow you to change to the next function.

### The Sensor Connector:

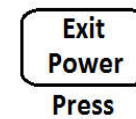
The FT-64 has one connector on the rear of the tester for both the charger (to charge the internal battery) and for the FT-BUS sensor itself.



### Frequently Asked Questions:

#### I don't know which menu I'm in:

This can be a common concern. If you've mistakenly pressed a button to get into a menu, or you just had to walk away and come back, there's a simple fix. Press the Exit / Power button repeatedly until you either see the main display or you turn off the power. If the power was turned off, press the Exit / Power button once, and the FT-64 will be back on and in the main menu again.



#### The power doesn't come on:

Chances are, the internal lithium battery is low, try recharging and call Digatron if this does not work.

#### The backlight doesn't come on:

If you press and hold the Down arrow / Light button and no backlight shows up, you might simply have a low battery. Try recharging and call Digatron if this does not work.

### **Fuel Testing Overview:**

When checking fuel with the FT64 it is important that the temperature of the fuel being tested are below 110 degrees F and within 10 degrees F of each other for the best accuracy. Draw a sample of fuel to be tested and place it in the plastic container. The container should be placed on a Non-Metallic surface, not held. See FT-Bus sensor section for proper insertion depth. Insert the sensor into the fuel to the proper depth and observe the readings on the display, then compare these reading to what your track or series allows.

### **Charging Instructions:**

Your FT-64 has an internal rechargeable lithium battery which is designed to provide power while you are using it in the field. You should recharge your FT-64 daily when in use. To charge the tester, connect the charging cable to the FT-Bus connector and plug into a USB port on a computer or other electronic device. Adapters for the converting a 120V wall receptacle or cigarette lighter to the USB charging port are provided. While charging, the display will show CHrG alternating with the battery voltage. When it has a full charge, the display will show FULL. The FT-64 will operate approximately 15 hours on a full charge. After reaching full charge, remove the charging cable as soon as practical.

Battery Voltage:      -Above 3.00 V = Full charge  
                              -Below 2.20 V = Discharged

### **Maintaining Your FT-64:**

The FT-64 is a water resistant electronic device. It is designed to withstand rain and the occasional splash of water without any harm. However, it will be damaged by submersing it in water, or by heavy amounts of water on the tester itself.

Caustic chemicals can damage and pit the surface of the FT-64. Oil contamination can permanently compromise the sensor jack, as well as solvents and concentrated exposure to fumes from racing fuels and exhaust can damage the FT-64 control face. To clean your FT-64, use soap and water on a damp cloth.

## The Control Instructions:

Each button of your FT-64 has a distinct purpose. For example, Exit / Power does not only turn the instrument on and off, it also allows you to exit out of the menu you are in. Additionally, a button can be pressed momentarily for one effect, or held down for another effect. We will be using a picture of the button to show you which button you are to use.

Below the picture, there will either be the word Press for a simple momentary press, or the word Hold when you are to hold the button down. Most of the time, Hold means to just keep the button pressed down to look at something or while you press something else. On occasion, you'll need to hold it down for a specific length of time to do something. In that event, the instructions below the bubble will let you know. If you see the + symbol, you must use two or more buttons together to get the result you want.

All instructions to get into a menu are written with the idea in mind that you are starting from the main menu.

So, here are a couple examples:



Momentary press the Exit / Power button.



Hold down the Funct/Max button



Press the Down / Light and Up / Set buttons together

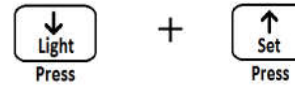
## Calibrating the FT-64:

These instructions are to show how to calibrate your FT-64 in Aviation fuel.

### Entering Set mode:



Press and hold the set button until the screen flashes “SEL”.



When “SEL” flashes on the screen, press both Light and Set buttons at the same time to enter calibration mode.

TEST 1 value will flash (dielectric constant).

Once in calibration mode, put the sensor in a plastic or glass container of Aviation fuel and allow it to stabilize. The container should be placed on a Non-Metallic surface, not held. See FT\_BUS sensor section for proper insertion depth. Adjust this value up or down with the Up or Down arrows to achieve the calibrated control number of -93.0 for the Aviation fuel.



Press the Funct/Max button to change the display in order to change the value of TEST 2.

TEST 2 will flash (conductivity)



Put the sensor in a plastic container of Aviation fuel and allow it to stabilize. Adjust this value up or down with the Up or Down arrows to achieve the calibrated control number of zero (0) for the Aviation fuel.

To exit the calibration mode, press the Exit/Power button.