

Warranty and Contact Information:

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 LLC
120 N. Wall St. Suite 300
Spokane, WA 99201**

www.DigatronUSA.com

(509) 467-3128



FT-64 Instruction Manual

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 officials 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.

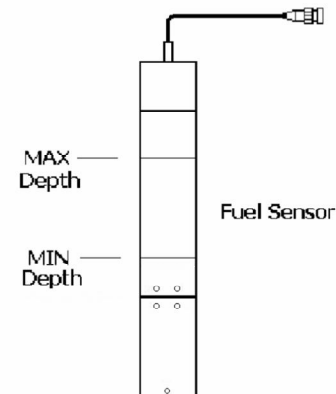
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FT-BUS Sensor:

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



Troubleshooting:

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 (Cyclohexane). This unit will not identify the components in the fuel. The most commonly used base material is Cyclohexane (C₆H₁₂) and should be fresh and uncontaminated. 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 that should be between 98 and 102.

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

www.DigatronUSA.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:

(509) 467-3128

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.

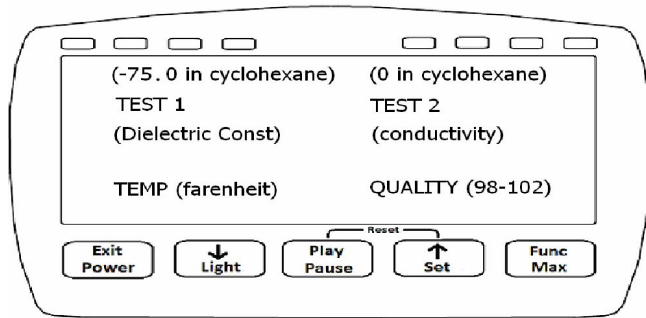
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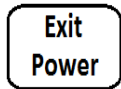
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The Controls:

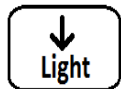
The FT-64 instrument is laid out with the following control face:



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.



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 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.



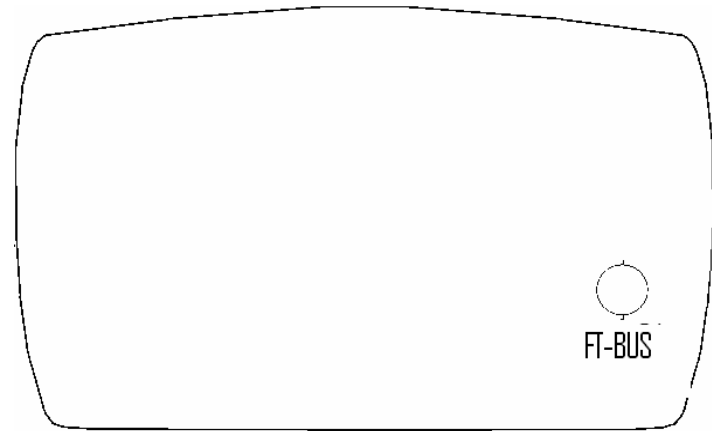
Hold down the Funct/Max button



Press the Down / Light and Up / Set buttons together

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.



Fuel Testing Overview:

When checking fuel with the FT64 it is important that the temperature of the fuel being tested and the Cyclohexane 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

When battery voltage reaches 2.30v Lob will be displayed. At this voltage the FT-64 will operate another 30 minutes accurately. At 2.05v the FT-64 will turn itself off to prevent battery damage.

Maintaining Your FT-64:

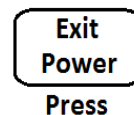
The FT-64 is a water resistant electronic device. It is designed to withstand rain and the occasional splash of water without any harm. However, it will be damaged by submersing it in water, or by heavy amounts of water on the tester itself.

Caustic chemicals can damage and pit the surface of the FT-64. To clean your FT-64, use soap and water on a damp cloth.

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 instrument doesn't turn 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.

Codes / Messages:

What do these messages mean?

A number of codes can appear on your FT-64 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
Lob	Low 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

Important Information When Testing

Temperature is a key factor in obtaining an accurate reading from your FT-64 instrument.

The properties of the fuel and the operation of the instrument are both temperature dependent.

A temperature sensor is built-in with the fuel sensor to measure the internal temperature of the fuel sensor. This temperature is displayed in the lower left portion of the LCD.

Allow it to stabilize for maximum accuracy.

The fuel sample and the Cyclohexane (or other base fluid) should be within ten degrees of each other. If they are not you may have inaccurate readings.

The numbers from the different tests will never be exactly the same as the instrument and fuel are affected by many factors that can make small differences. If a racer adds something to their fuel, usually an oxidizer, that will impact their racing, the instrument will show a markedly different number. For example, you will see a 15, 20 or larger numeric difference on the instrument.

It is important to remember that this instrument is used as an indicator that something changed or has been added and is not an exact determination that the fuel is now illegal.

When this instrument has been calibrated at -75 in Cyclohexane, or -5 in Xylene for test 1, it is generally thought that when a tested fuel gives a negative number it is within acceptable limits. When the reading is a positive number then additives are indicated. Many tracks will let it go a bit into the positive just to make sure. Also, sample testing of fuel in your area gives you a feel for what readings should be. The amount of alcohol that has been added to pump gas can make a significant difference, you are starting with a fuel that has an additive.

Additives increase the dielectric constant and create a more positive reading.

The FT-64 continuously performs functional checks on its internal circuitry. These result in a number between 98 and 102 when everything is working correctly.

Calibrating the FT-64:

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

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 Cyclohexane 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 -75.0 for the Cyclohexane.



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 Cyclohexane 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 Cyclohexane.



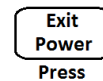
To exit the calibration mode, press the Exit/Power button.

Basic Operation:

Turning on your FT-64:

When the display is blank, the FT-64 is off. Pressing the Power button once turns it on. It will display all 4 values.

Turning off your FT-64:



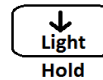
When there is anything displayed on your FT-64, it is on. Press the Exit/Power button one or more times to turn off.

Exiting a menu:



All of the various menus of the FT-64 share this one way to step back out of them. Press the Exit button once to exit that mode.

Turn on the backlight:



From the main menu, turn on the backlight by holding the Light button, hold to keep lit. To turn off the backlight, release the Light button.