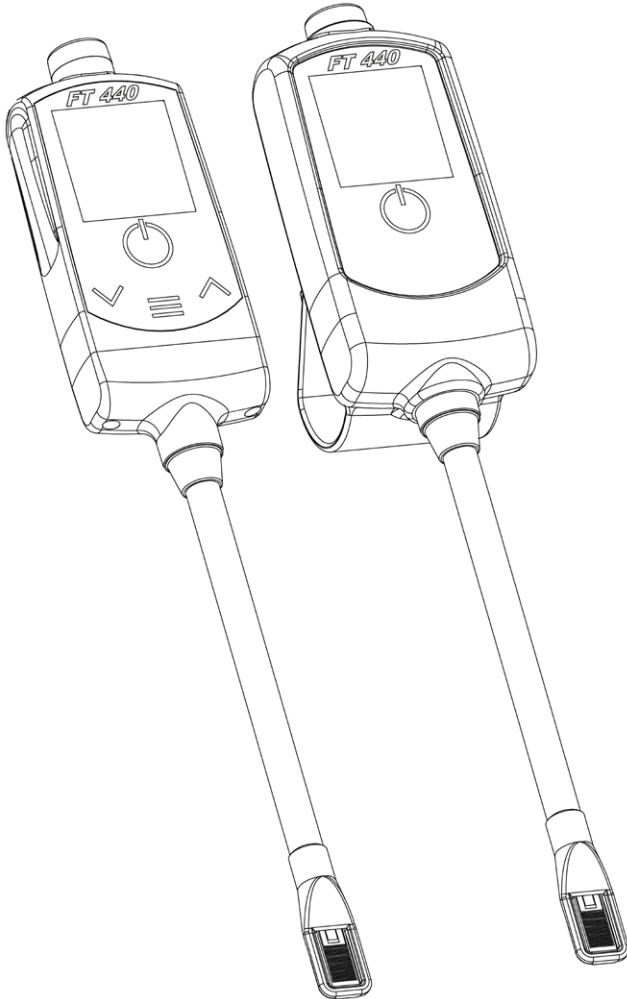


FT 440



FOR ALL SERVICE & WARRANTY REQUIREMENTS

**CONTACT FSM P/L
(03) 9368 2300**

**Office/Showroom & Warehouse facilities in
Melbourne, Sydney, Brisbane, Perth**

Service Australia-wide

Dear customer,

Congratulations on the purchase of this VITO Oil Tester.

We hope than you can make use of this product for a long time and that it helps you with your work.

Please take your time to read this manual carefully, and make yourself familiar with the device before you start to use it.

This product fulfills the CE guidelines.

Safety notes

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Safety notes



Never expose the device to high temperatures ($> 50\text{ }^{\circ}\text{C}$ / $> 122\text{ }^{\circ}\text{F}$)! The probe can endure temperatures up to $+200\text{ }^{\circ}\text{C}$ ($392\text{ }^{\circ}\text{F}$).

Under no circumstances measure live components with this device and external sensors!

Do not use the device in explosionendangered areas!

The instrument should only be operated within the parameters specified in the Technical data.

The instrument should only be opened if expressly described in the instruction manual for maintenance purposes.

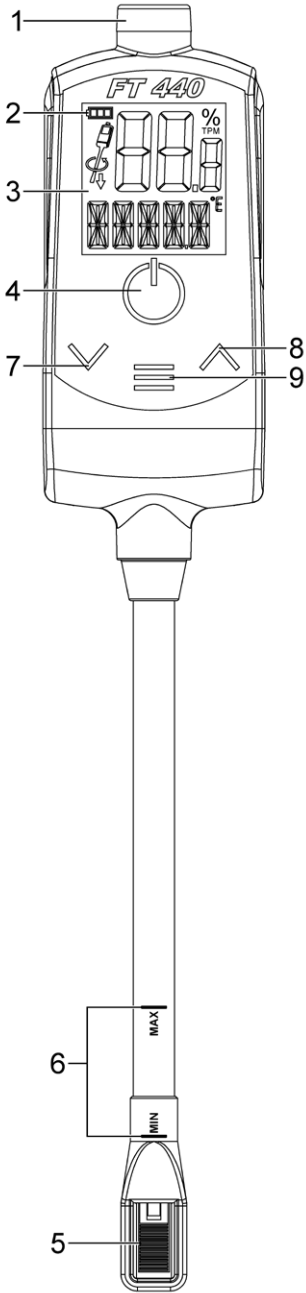


Be careful while measuring in the hot oil! Do not touch the temperature sensor with bare hands immediately after measuring! Danger of burn injuries!



Do not measure if fried goods are in the deep frying pan and always dry up the sensor carefully before measuring, as water evaporates with lightning speed in the hot oil and as a result there is danger of burn injuries due to oil spray.

FT 440



Description

The oil meter FT 440 (Frytest 440) is a handy sensing device with which you can determine the quality of various oil types.

The measurement is performed directly in hot oil – e.g. in the deep fat fryer. This helps in determining the oil temperature in °C/°F and the oil quality in percent TPC (Total Polar Compounds). The PC value is a measure for thermaloxidative utilization factor of a frying oil.

Local regulations regarding maximum value of %TPC have to be respected.

1. Signal light
2. Display (LCD)
3. NextStep indicator
4. ON/OFF button
5. Quality and temperature sensor
6. Immersion depth limit
7. DOWN button
8. UP button
9. MENU button

(A)



(B)



(C)



Unpacking / scope of delivery

Check whether the contents of the packaging are complete and undamaged.

The shipment contains:

- one food oil monitor FT 440 with
- sensor protection
- one hand protection
- this manual
- 8-step short instructions
- one certificate of calibration
- one carrying case

If you find a damage or have reason for complaint, please contact VITO or your dealer.

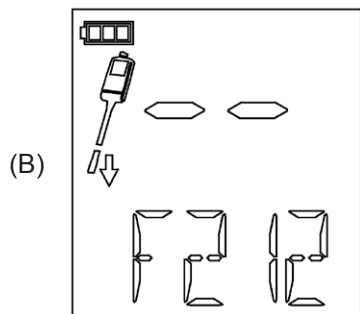
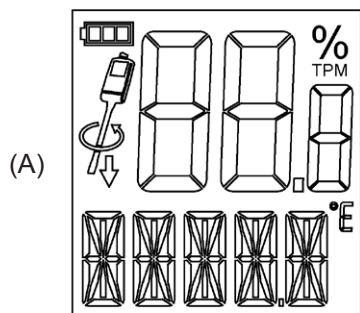
Operation

FT 440 was calibrated in factory in such a way that you can obtain optimum measuring results by using commercial fritter/frying oils.

NextStep-display

The display of the FT 440 shows a picture, which gives a hint on the next step to do:

Immerse (A)
Stir (B)
Read (C)



Switching on the FT 440

Switch on the instrument by pressing the ON/OFF button.

The device will perform a system test during which all segments of the display are visible in the display (A).

Thereafter the display shows two dashes and the NextStep-display suggests to immerse the sensor in the oil (B). The device is ready to measure.

Measuring with FT 440

In order to obtain optimum measuring results, ensure the following:

- Remove fried goods from the oil and wait approximately 20 minutes
- Heat up the oil at 150 °C to 180°C / 302 °F to 356 °F
- If necessary, shut down the circulating system
- Remove the sensor protection from the sensor
- Ensure that the the probe is clean and absolutely dry

Proceed as follows for determining the oil quality:

Immerse the probe within the marked area

- Keep the probe at least 2 cm / 1 inch away from the external wall of the vessel
- Stir with the sensor until the measured temperature deviates less than ± 5 °C / °F from the actual oil temperature. Then hold the measuring unit still in the oil.

As long as the measurement signal is not stable, the %TPC display is flashing. It is shown continuously as soon as the signal is stable. A stable measuring result is indicated by a blinking signal lamp.

The display shows the polar components (PC) and the oil temperature as measurement results.

0 % to 18.5 %:

Oil new and/or unused (signal lamp flashes green).

19 % to 24 %:

Oil in the critical range (signal lamp flashes yellow). It is recommended that the oil is changed or partially improved.

Higher than 24 %:

Waste oil. The selected threshold (24 % by the factory) is exceeded (signal lamp flashes red). The oil must be changed.

Press the ON/OFF button longer than 3 seconds to turn the device off.

Cleaning



Do not touch the temperature sensor with bare hands immediately after measuring. Danger of burn injuries!

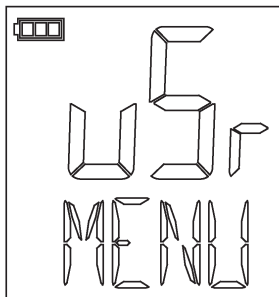
The oil can be easily removed while the sensor is in the hot state – immediately after measurement. Therefore, do not wait until the temperature sensor has cooled off. Clean the hot sensor.

If oil is still sticking on the cooled down sensor, clean it with hot water.

Subsequently rub the sensor thoroughly dry with a soft and non-fluffy cloth.



A clean probe is of great importance for the quality of the measurements. It is absolutely necessary to avoid water and detergents residues.



User Menu

IMPORTANT NOTE: (blocked)

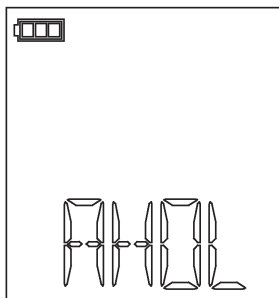
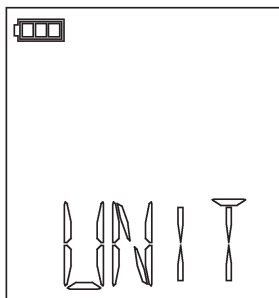
The user menu is only available at the 4-button version of the FT 440!

Displaying the User Menu

- Please ensure that the measuring device is switched on.
- Press and hold the MENU button for 3 seconds. The first menu option will appear.
- You can navigate through the menu options with the UP- and DOWN buttons.
- You can enter a menu option with the MENU button
- You can exit the user menu at any time with the ON/OFF-button. The device won't be switched off,. Instead, you will enter the measuring mode.

Options of the User Menu

- UNIT
- AHOL
- OFFSET
- GAIN
- CLR
- ECH



Temperature unit: UNIT (blocked)

Here you can change the unit of the displayed temperature.

“UNIT C” = degrees Celsius

”UNIT F” = degrees Fahrenheit

Select the desired unit using the UP or DOWN button. Confirm your choice with the MENU button. You get back to the user menu.

Auto hold: AHOL (blocked)

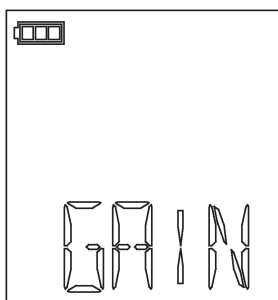
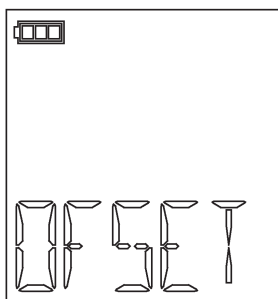
Here you can activate or deactivate the auto hold function. With this option active, the measurement result will be shown continuously, when the measurement is stable. This way you can remove the device from the oil, clean it, document the result comfortably and show it.

Activate the menu item with the MENU button. By using the UP or DOWN buttons you can change the setting. The display shows the current setting:

“AHOLD ON” = Auto Hold activated

“AHOLD OFF” = Auto Hold deactivated

Confirm the selection with the MENU button. You get back to the user menu.



Offset correction: OFFSET (blocked)

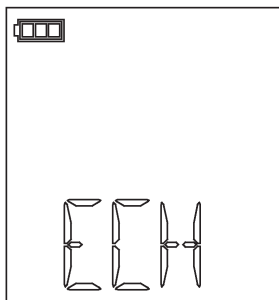
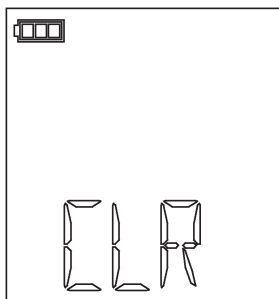
Here, you can adjust the offset value required for your oil. Select the desired offset using the UP or DOWN button, and confirm with the MENU button.

Examples for the offset setting: see page 31.

Gain correction: GAIN

Here, you can adjust the gain for your oil.

Select the desired gain with the UP or DOWN button and confirm with the MENU button.



Deleting the saved values: CLR (blocked)

In this menu item, you can reset the values in a memory location to the factory default settings.

Factory settings:

- OFFSET = 0 %
- GAIN = 1.0
- LIM 1 = 18,5 %
- LIM 2 = 24 %

This menu option has no settings. It is simply activated, setting back the settings. Activate it using the MENU-button.

Easy Check: ECH (blocked)

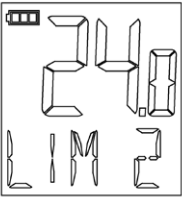
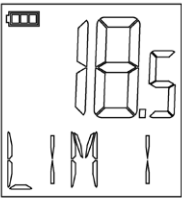
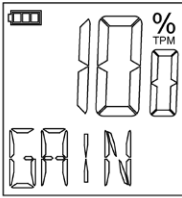
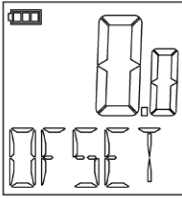
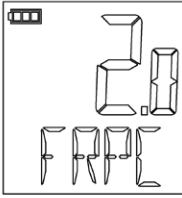
Easy Check is a quick functional check of the device. It does not replace a calibration, but can be performed anywhere, any time.

HINT: to perform the EasyCheck, the reference oil CO 330 is required. It can be purchased separately.

Please follow the instructions of the reference oil CO 330 to perform the Easy-Check.

„NOK,,

The result is „OK“ for passed or „NOK“ for not passed.



Quick oil settings (blocked)

With this function all relevant settings of an oil can be made fast and comfortable.

Start the quick oil settings by holding the UP-button for 5 seconds. The options will be shown one after another. Switching back is not possible, but you can exit any time with the ON/OFF-button.

Basic settings of fresh oil: FRPC

This setting should be the TPM-value of the fresh oil. Adjust with UP/DOWN, next with MENU.

OFFSET-correction: OFFSET

The desired offset. Adjust with UP/DOWN, next with MENU.

GAIN-correction: GAIN

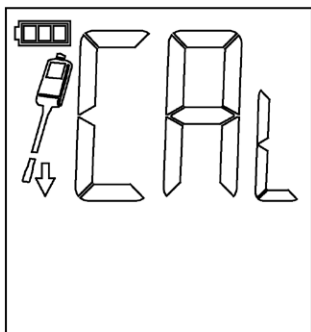
The desired gain. Adjust with UP/DOWN, next with MENU.

Limit for yellow signal light: LIM 1

The limit value between fresh and medium quality oil. Adjust with UP/DOWN, next with MENU.

Limit for red signal light: LIM 2

The limit value between medium quality oil and old oil. Adjust with UP/DOWN, finish the quick oil settings with MENU. You get back to the measurement mode.



User adjustment

The adjustment should be made in new and unused deep-frying oil and it must be done at a temperature of 150 °C to 190 °C / 302 °F to 374 °F.

An adjustment is to be made to the typical fresh oil values for the oil type depending on the oil used.

Preparation: Before the adjustment the FRPC-value (see quick oil settings) should be that of fresh oil. A test measurement should be performed with the device before the first adjustment. The sensor is warmed up by this means to accelerate the adjustment procedure.

Execution

- Switch on FT 440 (push ON/OFF). The device is ready for the measurement to be made.
- Press and hold the DOWN button for 5 seconds. "CAL" will then appear in the display.
- The adjustment procedure begins as soon as "CAL" appears in the display; this is done by dipping the FT 440 sensor into the frying oil. (Observe the MIN and MAX markings!)
- The adjustment procedure ends as soon as there is a stable measured result and "OK" is shown in the display.

Oil settings

Different oils have different properties, and that's also related to the %TPM-values. For an accurate measurement the oil should be known. The offset of the device should be set accordingly.

Due to the sheer number of commercially available oils it is not possible to give you setting for each oil type. This is also due to the fact that most oils are mixtures, are post-treated or have admixtures. Here is a short list of the most common oils, together with recommended offset-settings, though.

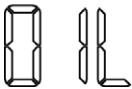
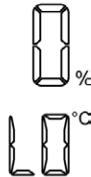
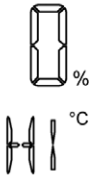
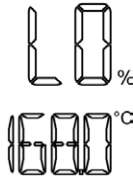
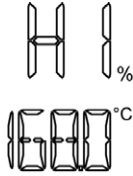
Oil	Offset
sunflower oil	-4%
high oleic sunflower oil	0%
rapeseed oil	-2%
high oleic rapeseed oil	0%
palm oil	0%
soy oil	-5%

إعدادات الزيت

الزيوت المختلفة لها خصائص مختلفة، والتي تتعلق أيضا بقيم %TPM. للحصول على القياس الدقيق للزيت ينبغي أن يكون معروفا. يجب تعيين إزاحة الجهاز وفقا لذلك

نظرا للعدد الهائل من الزيوت المتاحة تجاريا فإنه ليس من الممكن أن نعطيك الإعداد لكل نوع من الزيت. وهذا يرجع أيضا إلى حقيقة أن معظم الزيوت هي مزيج، هي بعد المعالجة أو لديها إضافات. وهنا لائحة قصيرة من الزيوت الأكثر است شيوعا، جنباً إلى جنب مع أوصى-إعدادات تعويض، وإن كان.

الزيت	نطاق الموازنة
زيت عباد الشمس	-4 %
زيت عباد الشمس عالي الأوليك	0%
زيت بذور اللفت	-2 %
زيت بذور اللفت عالي الأوليك	0%
زيت النخيل	0%
زيت الصويا	-5 %

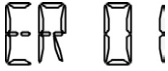


English

Troubleshooting

Possible cause	Remedy
Measurement value PC > 40 %	Note Measure- ment range
Measurement value PC < 0 %	Note Measure- ment range
Measurement value Temp. > 200°C > 392°F	Note Measure- ment range
Measurement value Temp. < 45°C < 113°F	Note Measure- ment range
Measurement value TPC < -10 % or PC > 65 %	Note Measure- ment range

Error messages



Possible cause

Remedy

Defective temperature sensor



Temporary short circuit oil sensor

Clean sensor



Defective oil sensor

Servicing and waste disposal

Cleaning

Clean the device with a slightly dampened cloth.

Never use solvents (such as acetone) for cleaning because these may attack the plastic.

n-Propanol may be used to disinfect and to clean the sensor.

In no case use wire brushes or similar to clean the sensor!

Waste disposal

Should the device become unsuitable for use, it must be disposed of professionally, such as at recycling centres that accept electronic scrap.

Never dispose of the device in household waste.

Please dispose of spent batteries responsibly.

Technical Data

Measuring oil quality

Measurement range	0 to 40 % TPM
Accuracy (typical)	±2 % PC
Resolution	0.5 % PC
Temperature range	+50 to +200 °C +122 to +392 °F
Optimum range	+150 to +180 °C +302 to +356 °F

Temperature measuring

Accuracy	±1 °C / °F
Resolution	0.1 °C / °F
Response time t90	< 2 min

Instrument

Operating temperature	-10 to +50 °C
Instrument housing	-50 to + 122 °F

Battery	Lithium button cell 3 V / 1 Ah, type CR 2477
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Battery life	Typically 3 years
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Dimensions	14 x 54 x 22 mm 0,56 x 2,13 x 0,87 in (L x W x H)
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Weight	200g / 0,44 lbs
Housing material	ABS
Protection class	IP 67



Excellence since 1976

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spare parts requirements,
please call**

03 9368 2300