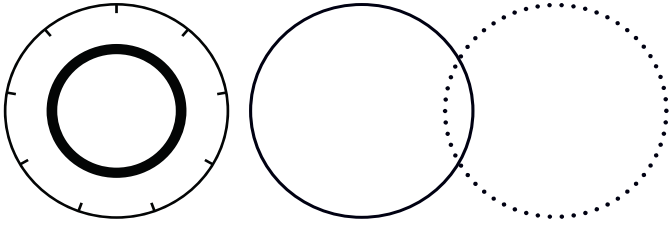
FieldMax Touch Meter

Installation and Quick Start Guide



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COHERENT

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Product Made in Wilsonville, Oregon U.S.A.

Table of Contents

1.0 About This Guide

This guide provides an introduction to the product, and includes the following sections:

- Safety information, including signal words and symbols to know before measurements are taken.
- Overview of the user interface and common functions.
- Installation instructions for software and hardware
- Quick Start Tutorials that allow users to begin taking measurements within minutes.

For complete operating instructions, refer to the FieldMax Touch Meter Operator's Manual (P/N 2223756), available in Adobe® PDF format, available at www.Coherent.com.

1.1 Product Introduction

These meters provide compatibility with Coherent's catalog of laser power and energy sensors.

- The standard FieldMax Touch Meter samples at 10 Hz with thermopile, optical and PowerMax-Pro sensors.
- The FieldMax Touch Pro Meter model adds support for Pyroelectric energy sensors, measuring every pulse at repetition rates up to 1000 Hz.

The touchscreen interface and the Coherent Meter Connection software provide an easy-to-use interface between a PowerMax Pro or thermopile sensor and a PC.

1.2 Signal Words and Symbols

Sections may contain specific hazards defined or special attention is drawn to specific conditions. These sections have signal words in accordance with ANSI Z-535.6 and safety symbols (pictorial hazard alerts) in accordance with ANSI Z-535.3 and ISO 7010.

1.2.1 Signal Words

The following signal words are used in this documentation: **DANGER**, **WARNING**, **CAUTION** and ***NOTICE***

These signal words designate the degree or level of hazard when there is the risk of injury, as described in the following table:

Table 1. Signal Words

Signal Word	Description
DANGER	Indicates a hazardous situation that, if not avoided, WILL result in *death or serious injury*. This signal word is to be limited to the most extreme situations.
WARNING	Indicates a hazardous situation that, if not avoided, COULD result in *death or serious injury*.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in *minor or moderate injury*.
NOTICE	Indicates information considered important, but not hazard-related. The signal word "***NOTICE***" is used when there is the risk of property damage.

This symbol is intended to alert the operator to the presence of important operating and maintenance instructions.

This symbol is intended to alert the operator to the danger of exposure to hazardous visible and invisible laser radiation.

This symbol is intended to alert the operator to the danger of Electrostatic Discharge (ESD) susceptibility.

1.3 Laser Safety

The safety precautions shown here are to be read and obeyed by anyone that does work on or near the laser. At all times, make sure that all personnel are protected from accidental exposure to laser radiation that is not necessary.

WARNING!

Exposure to laser radiation can be harmful. Eye contact with the output beam from a laser will cause eye injury and possible blindness. Prevent hazards to eyes and skin.

Because of its optical qualities, laser light has safety hazards not associated with light from usual light sources. Make sure that there is no exposure to the laser light, and follow these control measures described in the *FieldMax Touch / Touch Pro Operator's Manual*, available at:

www.coherent.com/resources.

1.4 Product Label Location and Information

The bottom of the FieldMax Touch Meter unit has a product label that provides serial number, safety and compliance information. Refer to the example in Figure 1.

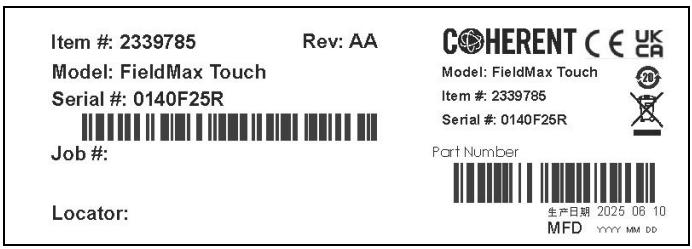

Figure 1. FieldMax Touch Product Label

2.0 Meter Setup and Installation

Complete the installation and set-up instructions in this guide first, before using the Quick Start tutorials.

Figure 2. FieldMax Touch Pro Meter

CAUTION!

Operation of controls or adjustments or performance of procedures other than those specified can cause in hazardous radiation exposure.

2.1 Components

The FieldMax Touch Meter comes with the cables and accessories shown in Figure 3:

Figure 3. FieldMax Touch Meter and Accessories

- USB A-to-USB B Mini cable (P/N 1108906)
- Trigger-Input cable (P/N 2237381)
- Power Supply (P/N 1256370)

Refer to ’Laser Safety’ on page 5 for more information about necessary safety precautions when using lasers.

The different connectors are shown in the illustration below:

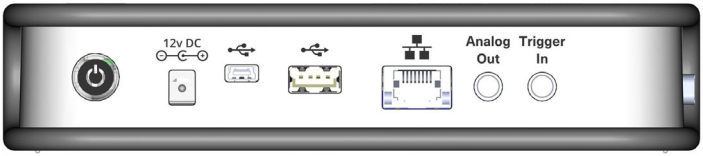

Figure 4. Connectors and Labels

NOTICE

Use precautions to prevent Electrostatic Discharge (ESD) when equipment is set up.

2.2 Set-Up

To set up the FieldMax Touch Meter:

1. Attach a sensor to the FieldMax Touch Meter at the DB-25 connector.

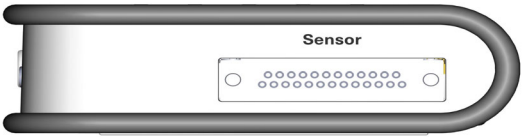

Figure 5. 25-pin Connector

2. Attach the FieldMax Touch Meter meter to the PC with a USB 2.0 (or higher) connector (*optional for use with Coherent Meter Connection software or host software commands)*.
3. If necessary, connect the power supply to the FieldMax Touch Meter. If there is sufficient battery power, the unit can be operated without the power supply connection.

   The power button becomes green when the unit receives power.

Figure 6. Power Switch and Power Cable Connection

4. If the meter will be used with the Coherent Meter Connection Software on a PC, refer to 'Coherent Meter Connection' on page 26.

3.0 Controls and Indicators

3.1 Function Buttons

The descriptions for the function buttons on the front panel of the device for the FieldMax Touch Meter are given in Table 2.

Figure 7. Function Buttons on the Device

Table 2. Function Button Descriptions

Button	Description
Back	Gives a fast method to cancel an operation, close a window and go back to the previous screen without accepting changes.
Menu	Shows the top-level menu with icons for the different function windows on the touchscreen.
Wavelength	Shows the wavelength selection dialog.

Table 2. Function Button Descriptions (Continued)

Button	Description
Zero	Cancels out any measurement offset caused by scattered light, temperature, or sensor conditions.
Run/Stop	Press one time to start recording data into the buffer. Press again to stop recording of data.

3.2 Main Screen

An example of the Main screen for the FieldMax Touch Meter is shown in Figure 8:

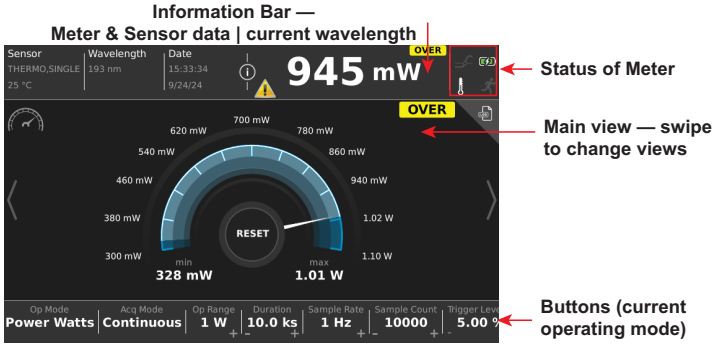

Figure 8. Main Screen Interface Description

The screen includes these functional areas:

- *Information bar* - sensor data and current wavelength
- *Status indicators*

- *Main view* — swipe to move between primary views
- *Button bar* — for operating mode configuration — options relevant to the current operating mode — press to toggle on/off, use (+/-) to increase/decrease settings, or press and hold to open up settings

To change the view, simply swipe the touchscreen to the left or to the right.

3.3 Settings Menu

Press the MENU function button on the device to show the Settings menu. The Settings screen shows some categories of settings (example shown in Figure 9) to configure the FieldMax Touch Meter.

Figure 9. Settings Screen

Press the BACK function button on the device to return to the measurement screen.

4.0 Quick Start Tutorials

The tutorials provide information for users so they can quickly start collecting measurements with the touch screen interface. Topics include:

- 'Basic Power Measurement' on page 18
- 'Pyroelectric Energy Measurement' on page 22

Before any procedure shown in the tutorials is started, read and obey all safety precautions.

Note that the meter will default to the sensor's settings such as wavelength, power, and energy. Most of these can be adjusted in the meter settings.

WARNING!

Operation of controls or adjustments or performance of procedures other than those specified can cause hazardous radiation exposure.

4.1 Sensor Compatibility

Table 3 shows the compatible sensors and sample rates:

Table 3. Compatible Sensors

Type	Compatibility	Sample Rates
Pyroelectric	EnergyMax DB-25 **pyro-electric** sensors	• Repetition Rate: Measure 1000 Hz • Each pulse
Thermopile	PowerMax **thermopile** devices (such as LM-10 and PM-10)	• Supports quadrant beam position data when using LabMax model thermopiles • Sample Rate: 10 Hz
Transverse Thermoelectric	PowerMax-Pro **transverse thermoelectric** devices	• Sample Rate: 10 Hz
Optical	LM-model and OP-model optical sensors (e.g. LM-2, OP-2)	• Sample Rate: 10 Hz

4.2 Set the Meter to Zero

NOTICE

Set the meter baseline to zero at first power ON; This is done before starting a new set of power measurements using a thermopile, optical, or transverse thermo-electric PowerMax-Pro sensor.

The ZERO function button is unavailable for pyroelectric sensors as it is not applicable.

Press the ZERO function button to set the meter to zero.

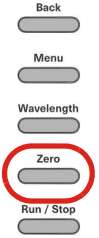

Figure 10. ZERO Function Button

When a zero procedure is in process, no other button events are queued or activated until the procedure stops. The zero procedure immediately stops if the sensor is disconnected or if an error is found.

4.3 Export Capture Data

To export and save log files to an external flash drive, do the following:

1. Put a USB drive into the USB port on the FieldMax Touch Meter. The USB drive must be formatted with a FAT partition.
2. Press the MENU function button.

3. Press **Export Capture Data** in the **System Utilities** tab on the Settings menu.

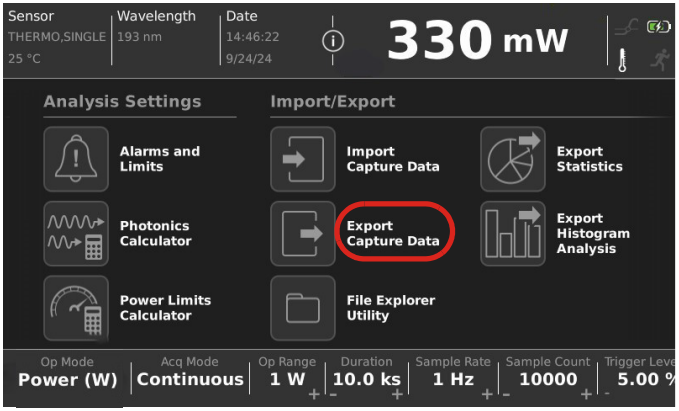

Figure 11. Configure System Utilities, View Settings

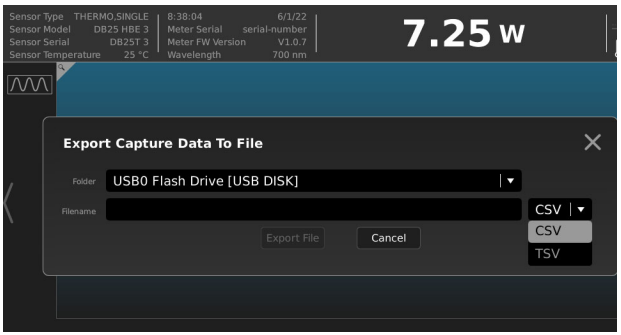

Figure 12. Save to File Settings

4. Select the file type (**CSV/TSV**) in the drop-down.
5. Press in the **Filename** field to enter the name for the file and then press the Enter key on the touch keyboard.

6. Press the **Export File** button to save the file to the flash drive.

4.4 Basic Power Measurement

NOTICE

This procedure is for operation with thermopile or optical power sensors.

1. Set up and power on the meter and sensor. Refer to 'Components' on page 8.

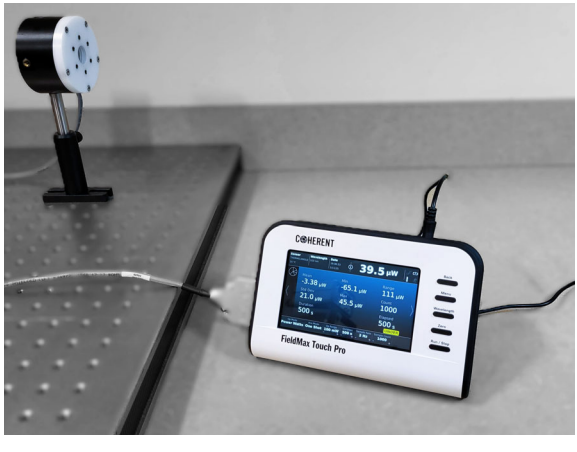

Figure 13. Connect the Meter to a Sensor

2. Press the MENU function button. Refer to Figure 14.

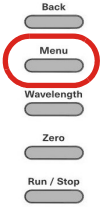

Figure 14. Front Panel MENU Function Button

3. Press the **Acquisition Settings** button in the Settings menu.

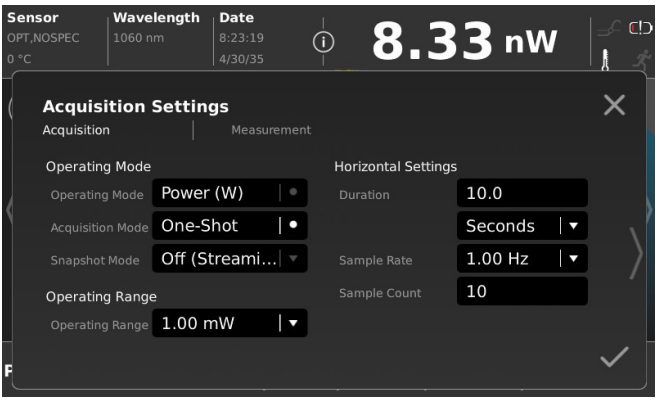

Figure 15. Acquisition Settings Menu

4. Make sure that **Operating Mode** is set to Power Watts measurement.
5. Select the **Operating Range** for the sensor.

   This value must be above the power that is expected for each measurement. The default range is specified for

each sensor's electronics. It must be set each time a sensor is replaced or the meter is set to OFF and ON.

6. Press the WAVELENGTH function button, and then select the wavelength to be measured.

Figure 16. WAVELENGTH and ZERO Function Buttons

NOTICE

The default wavelength is specified for each sensor's electronics. It must be set each time a sensor is replaced or the meter is set to OFF/ON.

7. Press the ZERO function button to set the meter to zero.
8. Put a USB drive into the USB port on the FieldMax Touch Meter. The USB drive must be formatted with a FAT partition.

NOTICE

The log file button can be seen only if there is a USB connection to the device.

9. If necessary, press the Log File button to save the measurement data to a log file.

Figure 17. Log File Button

10. In Data Measurement view, press the RUN/STOP function button to start data recording, and then start the laser. Refer to Figure 18.
11. When the measurement is complete, press the RUN/STOP function button again to stop measurement.

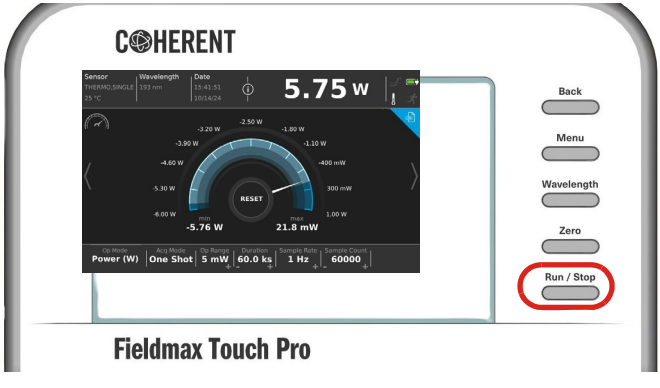

Figure 18. RUN/STOP Function Button

If data logging was selected, the measurement is now saved as a log file on the flash drive. Refer to the *FieldMax Touch Meter Operator's Manual* for more information on log files and management.

4.5 Pyroelectric Energy Measurement

NOTICE

This procedure is for Coherent pyroelectric sensors.

1. Set up the FieldMax Touch Pro Meter and pyroelectric sensor and then set the power to ON.
2. Press the MENU function button and then press Acquisition Settings on-screen.

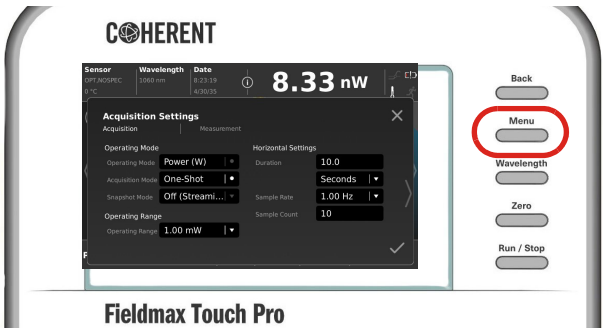

Figure 19. MENU Function Button and Acquisition Settings Menu

3. Set the **Operating Mode** to Joules.

4. Select the **Operating Range** for the sensor.

   This value must be *above* the expected power measurement. The default range is specified for each sensor's electronics. It must be set each time a sensor is replaced or the meter is set to OFF and ON.

5. Press the **Trigger** sub-tab in the Acquisition Settings menu.

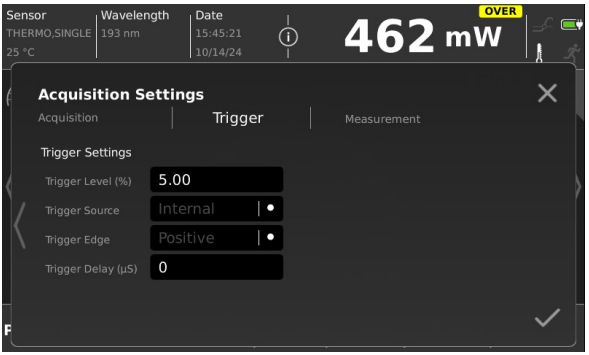

Figure 20. Acquisition Settings - Trigger

6. Make sure that the **Trigger Source** is set to Internal and the **Trigger Edge** is set to Positive. Refer to the *FieldMax Touch Meter Operator's Manual* for more instruction on trigger options.

7. Set the **Trigger Level %** to a percentage of the Operating Range that is *below* the expected pulse energy to be measured.

NOTICE

If the trigger level is set above the energy of the pulses, the meter will not be triggered. No measurement is recorded. If the trigger threshold is set too low, the electronics could trigger on baseline noise. This is one of the most common setup issues associated with using pyroelectric energy sensors.

8. Press the WAVELENGTH function button, and then select the wavelength to be measured. Refer to Figure 21.

NOTICE

The default wavelength is specified for each sensor's electronics. It must be set each time a sensor is replaced or the meter is power is set to OFF and ON.

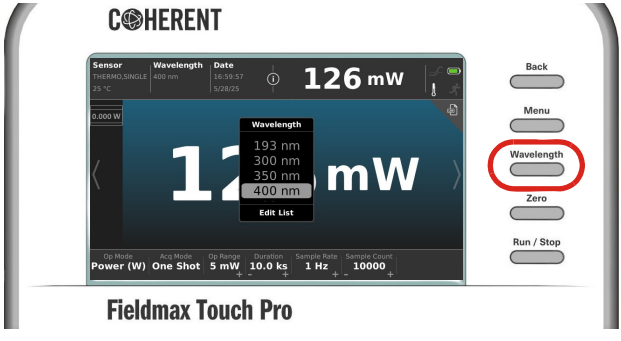

Figure 21. Select Wavelength

9. Put a USB drive into the USB port on the FieldMax Touch Meter. The USB drive must be formatted with a FAT partition.
10. If necessary, press the **Log** button to save the measurement data to a log file

Figure 22. Save Log File Button

11. In Data Measurement view, press the RUN/STOP button to start measurement, and then activate the laser.

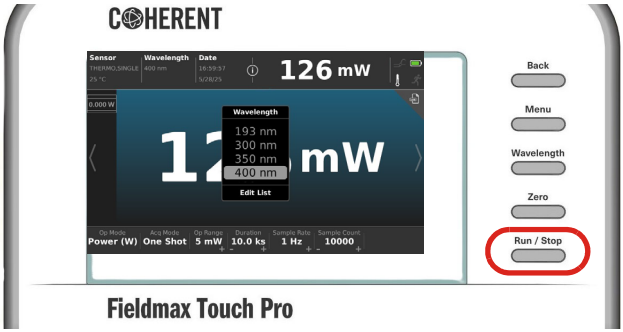

Figure 23. Run/Stop Measurement Button

12. Press the RUN/STOP button again to stop measurement.

    If data logging was selected, the measurement is now saved as a log file on the flash drive. Refer to the *FieldMax Touch Meter Operator's Manual* for more information on log files and file management.

5.0 Coherent Meter Connection

To enable operation of the CMC software with the device, select the remote communications in the Settings menu.

For more information, full installation instructions, and for operation with the software, refer to the *FieldMax Touch / Touch Pro Operator's Manual* or to the *Coherent Meter Connection Software User Manual* available at:

https://www.Coherent.com/resources

5.1 Software System Requirements

Coherent Meter Connection system requirements for this release include:

- 2.5 GHz or faster processor
- Windows v10 or v11 (32- or 64-bit)
- 4 GB of RAM
- 100 MB of available hard disk space
- USB 2.0 high-speed connection
- 1024x768 screen resolution
- Microsoft .NET Framework 4.8 or higher.

5.2 Install and Start Software

Start installation of the Coherent Meter Connection software and drivers:

1. Download the software from the Coherent website:

   Coherent product information and related software is available in one location easy to access:

   https://www.Coherent.com/resources

2. Close all programs.

   Start the set-up file, where the last two digits show the current software version. For example:

   Coherent Meter Connection v1.4.x.x Release Setup.exe

3. Follow the on-screen instructions to complete the installation.

4. Look for the following shortcut icon on the desktop.

   The software and hardware is ready for use.

5. Click on the shortcut icon to get to the introduction screen.

6.0 Technical Support, Parts, Accessories

Coherent provides telephone and web-based technical assistance as a service to its customers and assumes no liability thereby for any injury or damage that may occur contemporaneous with such services.

Contact Coherent as follows for technical support or to order any parts, tools, and accessories.

- Call Coherent Technical Support for laser measurement products: (800) 343-4912
  or 1-(503)-454-5700 outside the U.S.
- Send an email to customer.support@Coherent.com.
- Contact a local Coherent service representative (see www.Coherent.com for a list of worldwide contacts).
- Order products and accessories at:
  https://coherentinc.my.site.com/Coherent

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部件名称 Part Name	产品中有害物质的名称及含量 有害物质 Hazardous Substances						
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	
印刷电路板组装 Printed Circuit Board Assembly	X	O	O	O	O	O	
电源 Power Supply	X	O	O	O	O	O	
电源线 Power Cord	X	O	O	O	O	O	

本表格依据 SJ/T 11364 的规定编制

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

Download software and manuals at https://www.Coherent.com/resources:

2338458 AB

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