

# EXTECH<sup>®</sup>

# USER GUIDE

## Dual Input True RMS AC Voltage/Current Datalogger

### Model DL160



Additional User Manual translations available at [www.extech.com](http://www.extech.com)

## ***Introduction***

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Congratulations on your purchase of this Dual Input Voltage / Current datalogger. With this meter, you can monitor and log data (Voltage/Voltage, Current/Current or Voltage/Current) over long periods of time and then easily transfer the data to a pc for viewing and evaluation. The LCD display provides real time data, Max/Min data and time information. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## ***Safety***

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### **Warning!**

- Do not attempt to make measurement in flammable gaseous areas!
- When testing a non-insulated cable, pay attention to avoid short circuits.
- Do not attempt to use the instrument when your hand is wet!
- Do not input over range during measurements.
- Never open the battery cover during measurements.
- Stop using the instrument when there is any structural defect or exposed metal parts.
- Do not install substitute parts or make modifications on the meter.
- Never replace the battery in moist areas.
- Ensure the meter is disconnected and switch off before opening the battery cover to replace the battery.
- Do not attempt to place the instrument in high vibration areas.
- Do not expose the meter to direct sunlight, high temperature and high moisture environment.
- Switch off the meter after use. Remove the AAA batteries when the meter will be stored for a period of time..
- When cleaning, do not use abrasives or solvents on the meter, use a damp cloth and mild detergent only.

# Description and Button Functions

## 1. LCD Description



Auto power off (does not apply when recording), the meter will automatically shut off after 5mins without any button presses.

**REC:**

Recording status. After the record mode is set up by the software, press the START/STOP button for more than 4 seconds to begin recording. This icon will be displayed and indicates the meter is recording data. Press the same button again for more than 4 seconds to stop recording.



Record until full is selected. When the memory is full, the datalogger will stop recording.



Continuous recording is selected. When the memory is full, the data will overwrite the oldest data.

**FULL**

Memory full and recording has stopped.



Battery status, when completely filled in (black) the battery power is full. When there is only one section filled in, the battery is exhausted and should be replaced with a new one.



## 2. AC adaptor Jack

## 3. ON/OFF Button

**4. MAX/MIN:** Press the button one time to display the MAX (maximum) reading. Press again to display the MIN (minimum) reading. A third press will exit MAX/MIN mode. The meter will automatically exit MAX/MIN mode in 10 seconds if no button is pressed.

**5. CH Input Jacks:** Insert the current or voltage sensor to these ports to measure and record the data.

**6. CHANNEL:** Select the channel for display on the LCD

**7. START/STOP:** After the datalogger is setup from the software, press the START/STOP button for 4 seconds to begin recording. Press the button again for 4 seconds to stop recording.

**Recording cannot be started again until the data is downloaded to the software!**

## 8. USB Port

**9. AC Current Clamp Jaw:** Clamp the jaws around a single conductor for AC current measurements to 200A

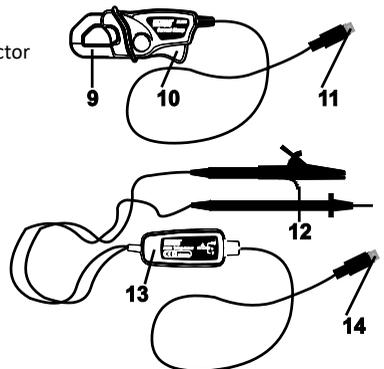
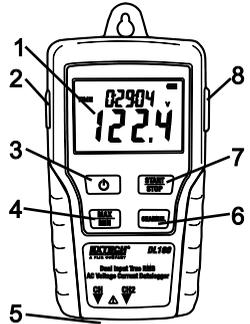
## 10. Jaw Opening Trigger

## 11. CH Plug

## 12. AC Voltage Probes or Alligator clips

## 13. Voltage module

## 14. CH Plug



# Operation

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1. Install 4 fresh AAA batteries or connect the AC adaptor.
2. Set-up the datalogger using the software provided.  
See the Software Help Guide that comes with the software.
3. Connect either the voltage or current probes, or one of each the bottom of the meter.
4. Connect the voltage test leads or the current probes to the AC source to be measured.
5. Press and Hold the START/STOP button for four seconds to start recording. The “REC” icon will appear in the display indication that recording has begun.
6. Press and Hold the START/STOP button for four seconds to stop recording. The “REC” icon will disappear from the display.  
  
NOTE: if you STOP the recording you MUST reprogram the meter with the software before recording again.
7. Remove the probes from the test circuit, connect the datalogger to a PC and use the supplied software to download the data.

## Voltage Test Leads

Single Phase: Connect one lead to one phase and the other lead to the Neutral line.

Multi phase: Connect one lead to one phase and the other lead to another phase.

## Current clamps

Connect the clamp over one lead only and the clamp jaw must fully close in order to measure correctly.

Note: If the clock does not set to the correct time, replace the 3V button battery internal to the meter

## PC Software

This meter has the capability to connect to and communicate with a PC.

Check the software download page of the website [www.extech.com/software](http://www.extech.com/software) for the latest version of the PC software and its operating system compatibility.

Download and unzip the software. Run ExtechInstaller.exe and then refer to the instructions provided in the HELP Utility within the software program.

## Specifications

<b>Display</b>	Multi-function LCD
<b>Maximum data points</b>	262,144 (Single channel or 131,072 (dual channel))
<b>Channels</b>	dual channel, TRMS AC Voltage or Current
<b>Sample rate</b>	1s to 24h selectable
<b>Data output</b>	USB port
<b>Current Clamp Jaw opening</b>	0.5" (12.7mm)
<b>Open input indication</b>	"LO" appears on the LCD (also if measured value is less than 10V/10A)
<b>Low battery indication</b>	Empty battery symbol appears on the LCD
<b>Power supply</b>	4 AAA Batteries and 1 CR 3V memory button battery (CR2032 or equivalent)
<b>Battery life</b>	5 days (approximately)
<b>AC Adaptor</b>	9V, 0.5A
<b>Standards</b>	<b>CE</b> , CAT III 600V, for inside use, maximum height 2000 meters
<b>Operating Temperature</b>	32 to 122°F (0 to 50°C)
<b>Operating Humidity</b>	<70% RH
<b>Storage temperature:</b>	-4°F to 140°F (-20°C to 60°C)
<b>Storage Humidity</b>	< 80% relative humidity.
<b>Dimensions</b>	4.5 x 2.5 x 1.3" (114 x 63 x 34mm)
<b>Weight</b>	8.7oz. (248g)

Function	Range	Accuracy
Voltage (40Hz to 1kHz)	10VAC to 600.0VAC	±2.0%±1V
Current (50/60Hz)	10A to 200.0A	±2.0%±1A

## **Two-year Warranty**

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*Teledyne FLIR warrants this Extech brand instrument to be free of defects in parts and workmanship for **two years** from date of shipment (a six-month limited warranty applies to sensors and cables). To view the full warranty text please visit:*

<http://www.extech.com/support/warranties>.

## **Calibration and Repair Services**

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Teledyne FLIR offers calibration and repair services for the Extech brand products we sell. We offer NIST traceable calibration for most of our products. Contact us for information on calibration and repair availability, refer to the contact information below. Annual calibrations should be performed to verify meter performance and accuracy. Product specifications are subject to change without notice. Please visit our website for the most up-to-date product information:

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

## **Contact Customer Support**

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Customer Support Telephone List: <https://support.flir.com/contact>

Calibration, Repair, and Returns: [repair@extech.com](mailto:repair@extech.com)

Technical Support: <https://support.flir.com>

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