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**FLUKE®**

# **1735**

Power Logger

## Users Manual

March 2006 Rev. 2, 3/10

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# 1735 Power Logger

## **Introduction**

With this 1735 Power Logger (referred to throughout this manual as “Logger”) you can conduct voltage, current and power studies for determining existing loads. The Logger is also a general-purpose power quality investigative tool that reveals the quality of voltage supply at any point in a distribution network.

The Logger was developed in particular for plant electricians and electrical installers, who have an important role in investigating and solving disturbances of the power distribution system.

Your 1735 Power Logger is equipped with Flash Technology. This enables you to perform firmware updates. Please use the Windows Flash Update utility to do this. You will find it on the supplied 1735 CD-ROM. If there is a firmware update, it can be found on the Fluke website: [www.fluke.com](http://www.fluke.com).

## **Contacting Fluke**

To contact Fluke, call one of the following telephone numbers:

- Technical Support USA: 1-800-44-FLUKE (1-800-443-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31 402-675-200
- Japan: +81-3-3434-0181
- Singapore: +65-738-5655
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at [www.fluke.com](http://www.fluke.com).

To register your product, visit <http://register.fluke.com>.

To view, print, or download the latest manual supplement, visit <http://us.fluke.com/usen/support/manuals>.

Address correspondence to:











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## Symbols

Table 1 lists the symbols used on the instrument and/or in this manual.

**Table 1. Symbols**

Symbol	Description
	Important information. See manual.
	Hazardous voltage.
	Earth ground.
	Double insulation.
	DC (Direct Current).
	Conforms to requirements of European Union.
	Canadian Standards Association is the certified body used for testing compliance to safety standards.
	Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information.
	Conforms to relevant Australian Standards.
	Do not apply around or remove from HAZARDOUS LIVE conductors.
<b>CAT III</b>	IEC Overvoltage Category III  CAT III equipment is designed to protect against transients in installations, such as distribution panels, feeders and short branch circuits, and lighting systems in large buildings.

## **Safety Instructions**

Please read this section carefully. It will make you familiar with the most important safety instructions for handling your Logger. In this manual, a **Warning** identifies conditions and actions that pose hazard(s) to the user. A **Caution** identifies conditions and actions that may damage the Calibrator or the test instruments.

### **⚠️⚠️ Warnings**

**To prevent possible electrical shock or personal injury, follow these guidelines:**

- **The Logger must only be used and handled by qualified personnel.**
- **Adhere to local and national safety codes. Individual protective equipment must be used to prevent shock injury where hazardous live conductors are exposed.**
- **To avoid electrical shock, remove all test leads from the Logger before you open the battery door. Open the Logger only to replace the rechargeable battery.**
- **Maintenance work must be done only by qualified service personnel.**
- **Use only specified current probes. If you use flexible current probes, wear suitable protective gloves or work on de-energized conductors.**
- **Protect the Logger against dampness, wetness and humidity.**
- **To prevent electrical shock, always connect voltage and current test leads to the Logger before connecting to the load.**

- **The plug and socket connection for the voltage lead set is designed for 600 V CAT III. The maximum voltage between outer conductor and earth potential must not exceed 600 V. With multi-phase connections, phase-phase voltage may not exceed 800 V.**
- **Use only the provided original or specified accessories. This includes the ac power adapter.**

Adequate qualifications are the following:

- Trained and authorized to switch on/off, ground (earth) and mark power distribution circuits and devices in accordance with the safety standards of electrical engineering.
- Training or instruction in accordance with the standards of the safety engineering in maintenance and use of appropriate safety equipment.
- Training in first aid.

## Standard and Optional Accessories

The standard equipment for the Power Logger is listed in Table 2. Optional accessories are listed in Table 3.

**Table 2. Standard Equipment**

Equipment	Model or Part Number
Power Logger	Fluke-1735
Battery Charger, BC1735, 115V/230V 50/60 Hz	2584895
International AC Power Plug Set For Battery Charger	2441372
FS17XX, Shielded 4-Phase Flexi Set for Models 1735, 1743, 1744, 1745 (15A/150A/1500A)	2637462
VL1735/45,BANANA 4-PHASE VOLTAGE LEAD SET FOR FLUKE-1735/45	3276205
Dolphin Clip, Black	2540726
WC17XX, COLOR CODE WIRE CLIPS	2637481
Rechargeable Battery,NiMH 7.2V	2625171
Soft Case	1642656
CD-ROM,FLUKE-1735 MANUAL AND SOFTWARE Includes: manuals, PC application software, firmware upgrade utility (English, French, German, Italian, Spanish, Portuguese, Simplified Chinese, Czech, Polish, Russian, Turkish, Swedish)	2583487
1735 Getting Started Manual	3611908
USB 2.0 Connection Cable, Mini USB B5 Male – USB A Male	3671726



Table 3. Optional Accessories

Description	Model or Part Number
11A/10A CLAMP PQ4, 4-PHASE 1A/10A MINI CURRENT CLAMP SET FOR PQ	3024424
15A/50A CLAMP PQ3, 3-PHASE 5A/50A MINI CURRENT CLAMP SET FOR PQ	3024436
15A/50A CLAMP PQ4, 4-PHASE 5A/50A MINI CURRENT CLAMP SET FOR PQ	3024449
120/200A CLAMP PQ3, 3-PHASE 20A/200A MINI CURRENT CLAMP SET FOR PQ	3024451
120/200A CLAMP PQ4, 4-PHASE 20A/200A MINI CURRENT CLAMP SET FOR PQ	3024460
3000/6000A FLEX 4,3000A/6000A 36-INCH FLEXI PROBE 4 PHASE	3024472
11A/10A CLAMP PQ3, 3-PHASE 1A/10A MINI CURRENT CLAMP SET FOR PQ	3024413
1-PHASE 1A/10A MINI CURRENT CLAMP SET FOR PQ	3345753
1-PHASE 5A/50A MINI CURRENT CLAMP SET FOR PQ	3345766
SHIELDED 1-PHASE FLEXI SET FOR MODELS 1735, 1743, 1744, 1745	3345748
FS17XX IP65, IP65 RATED 4-PHASE FLEXI SET FOR MODELS 1735, 1743, 1744, 1745	3474696
3000/6000A FLEX 4,3000A/6000A 36-INCH FLEXI PROBE 4 PHASE	3024472

Inspect the contents of the shipping box for completeness and damage. If there is any damage, report the damage to your shipper.

## **Software and Information CD-ROM**

The CD-ROM delivered with the Logger contains additional, important information. This includes:

- International manuals
- Power Log PC application software
- 1735 Upgrade Utility for future Logger upgrades
- USB Drivers

## **Instrument Familiarity**

### *Note*

*Please charge the battery before the first operation or use the provided charging adapter at the beginning.*

## **Current Probes**

Fluke flexi-sets or current clamps are automatically detected by the Logger when the Logger is turned on. If you change current probes, turn the Logger off and on again so the Logger can recognize the new probe.

## **Control Elements, Display**

This section familiarizes you with the display and the controls.

Turn the Logger on by turning the rotary switch in clockwise direction. The display shows the selected measuring function.

## Display Symbols

Figure 1 shows the display symbols the Power Logger uses.

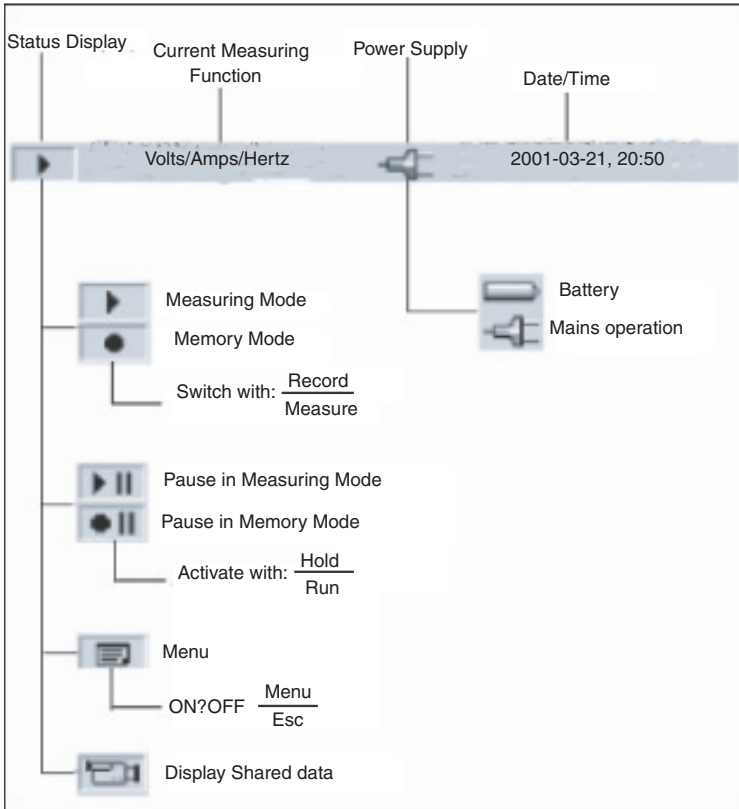
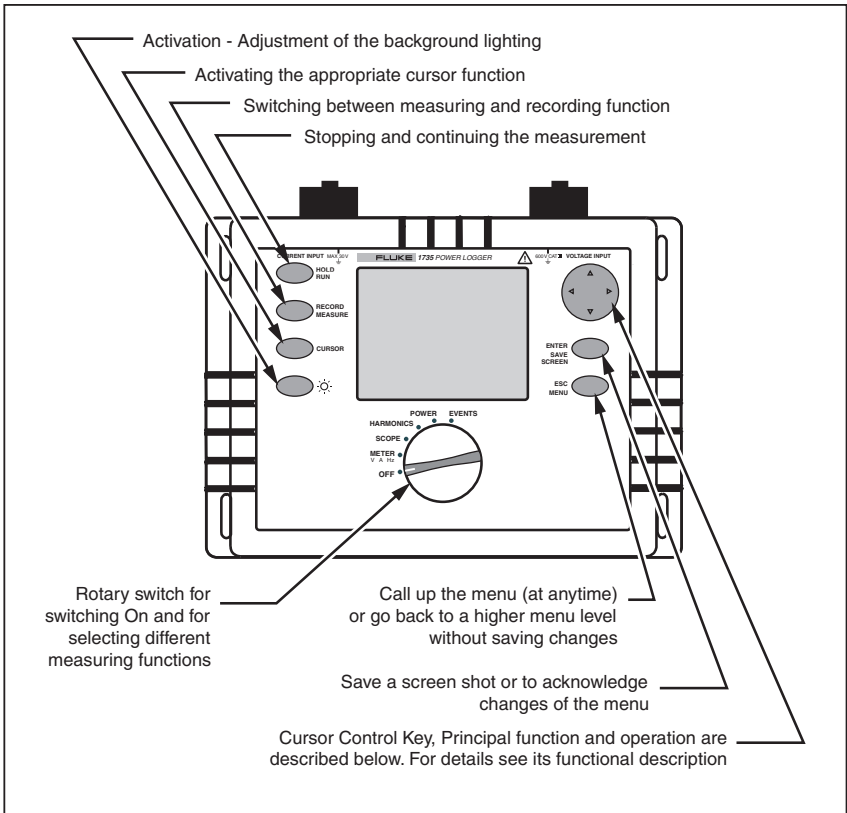


Figure 1. Display Symbols

edx004.eps

## Description of the Control Elements

Figure 2 indicates the control elements of the Power Logger.



edx005.eps

**Figure 2. Control Elements**

### Note

The symbols occurring in this operating instruction  $\triangle$   $\nabla$  and  $\triangleleft$   $\triangleright$  correspond to the respective directions of the cursor control keys.

## Using the SAVE and CURSOR Keys

Pressing the ENTER/SAVE SCREEN key saves the current picture as a screenshot.

Since it is a screenshot, a saved picture cannot be modified or edited with the cursor.

The cursor control keys (◀ ▶ △ ▽) are activated once you are in HOLD mode. The CURSOR key activates HOLD mode and displays a cursor (vertical line) for detailed analysis of measurement results.

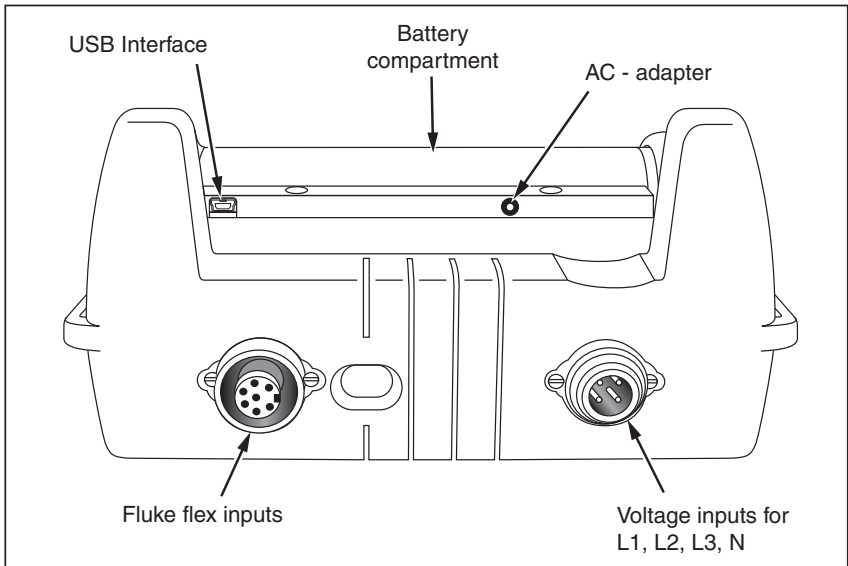
Pressing the CURSOR key starts cursor mode. Press ◀ and ▶ to move the cursor and read the current values on the display.

Pressing the CURSOR key in the view logged data mode sets a reference cursor.

Screenshots can also be taken in cursor mode.

Pressing ESC exits cursor mode and returns to the hold mode. From HOLD mode, different parameters may be selected and Cursor mode may be re-entered by pressing CURSOR.

## Connectors



edx006.eps

**Figure 3. Power Logger Connectors**

### USB Interface

The USB interface is used for communication with an external PC. Use Power Log software (included) to download and analyze logged data. This interface is also used for updating firmware using the 1735 Upgrade Utility. Refer to “Installing the USB Driver”.

### Installing the USB Driver

USB drivers are located on the CD-ROM that came with the instrument. Note that some drivers will automatically load twice. See instrument manuals for more details.


To load the USB driver:

1. Run the *1735 Product CD-ROM* on a PC.
2. Click on **USB Driver Installation**.

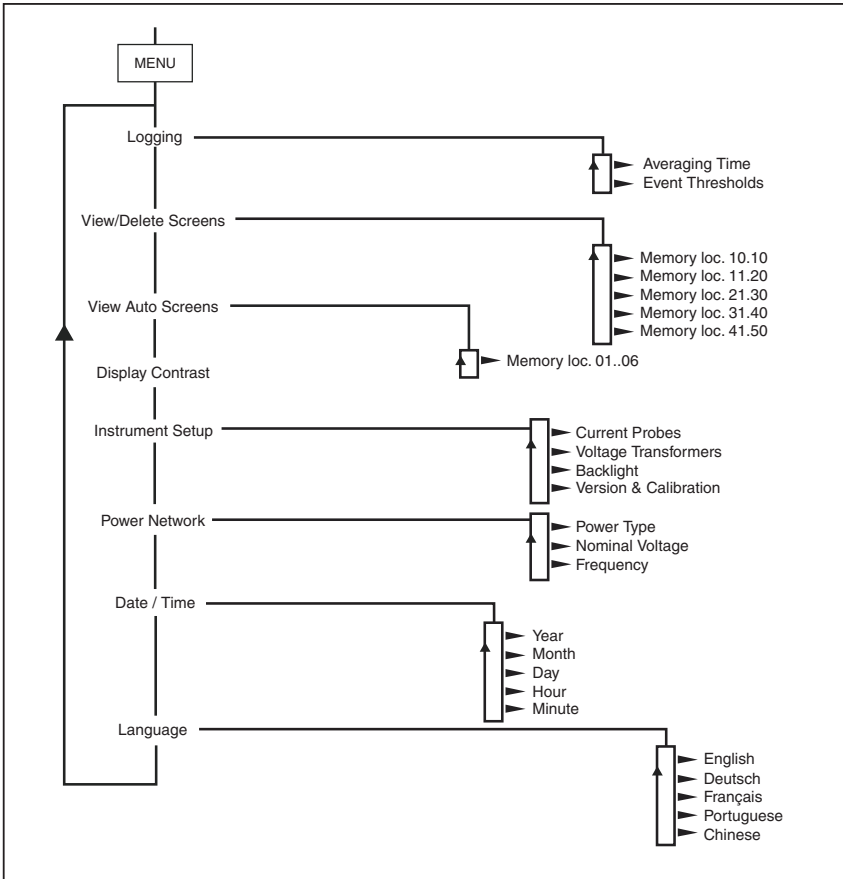
3. Either select the default directory by clicking on **Install**, or click **Change Install Location...** and change the file path to a different location.
4. Follow the on screen instructions.
5. The necessary files are copied to the PC.
6. Restart the PC to conclude driver installation.

## ***Basic Adjustments (Menu)***

### ***Menu Structuring***

You make all basic adjustments of the Logger in the main menu. You can call this at any time with the key . If you push it again you return to the previous display.

**Short Overview of the Menu**



edx007.eps

**Figure 4. Menu Overview**



## Charging the Internal Battery




Before you use the Logger, charge the internal battery as follows:

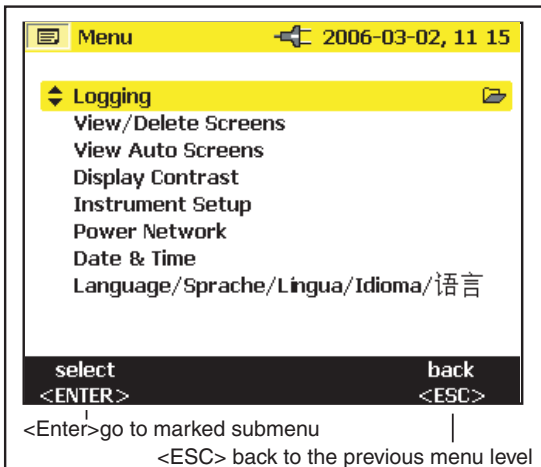
1. Switch the 1735 Battery Charger to either 115V or 230V as appropriate.
2. With the Logger power off, attach the BC1735 Battery Charger to a power outlet and then to the Logger.
3. Charge the Logger for 5 hours before using it for the first time.
4. On subsequent use, turn the Logger power on before you connect the BC1735 Battery Charger.

This helps ensure that the fast charge mode is activated. If the Logger does not turn on due to a discharged battery, recharge the battery for 5 hours with the Logger power off as described in steps 2 and 3 above.

## Basic Operation

The following examples show how to select parameters in the menu.

- Entering the main menu: 
- Selecting menu options with the cursor control keys:  



edx008.eps

Changing parameters:

- The displayed parameters can be modified with the cursor control keys (in the available preset values).
- If values are not preset you can modify them by using the cursor control keys. With ◀▶ you can select the decimal place and with △ ▽ you can modify the number.

*Note*

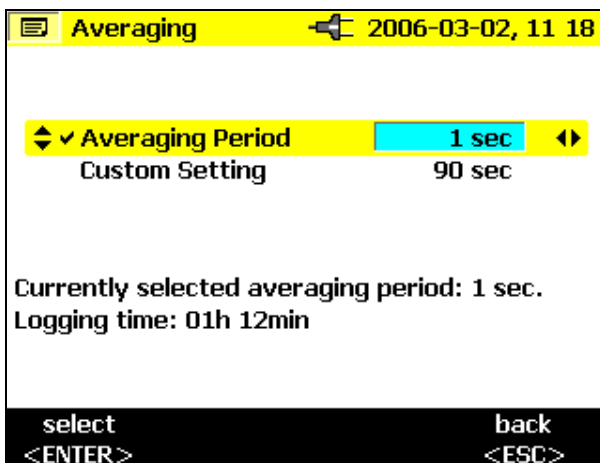
*Selected parameters are stored in the memory with Enter. With ESC the adjusted value can be rejected at any time.*

## **Parameter Configuration**

### **Logging Menu**

If you call the logging menu, then you can select between two further submenus: Menu for adjusting the averaging time and for adjusting the event threshold in recording adjustments.

In the menu *Averaging* you select the time over which the data are to be averaged. You can also select these values from the predefined values for averaging time. As you change the averaging time, you will see on the display the resulting logging time available for each averaging interval.



edx009.bmp