

## Fluke 1735 Power Logger

**Performs electrical load studies, energy consumption testing, and general power quality logging**

The compact Fluke 1735 Power Logger is easy to set up with its color display and included four flexible current probes. It features a rugged design and enough memory for up to 45 days of recording. In addition to power load studies, the 1735 logs most critical three-phase power parameters, harmonics and it captures voltage events. Saved data can be viewed on screen or you can view graphs and generate reports with the included Fluke Power Log software. Applications include:

- Load studies** – verify electrical system capacity before adding loads
- Energy assessments** – quantify energy consumption before, and after improvements, to justify energy saving devices
- Harmonics measurements** – uncover harmonic issues that can damage or disrupt critical equipment
- Voltage event capture** – monitor for dips and swells that cause spurious resets or nuisance circuit breaker tripping

### Log the most common power parameters

Designed to measure the most critical three-phase power parameters, the 1735 can log rms voltage, rms current, phase angle, voltage events, voltage and current THD, voltage and current harmonics up to the 50th, active power, reactive power, power factor, active energy, reactive energy, and more. With memory for up to 45 days of data, the 1735 can uncover intermittent or hard-to-find issues.

### Easy to use

The instrument automatically detects and scales included flexible current probes that require no external power or batteries. These variable range current probes are easily set to 15 A, 150 A, or 3000 A for high accuracy in nearly any application. The voltage connections are single leads, enabling safe and quick setups. The color screen provides instant confirmation that connections are correct and then logging begins when you press the RECORD button.



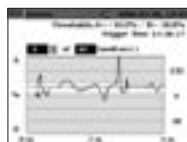
Conduct load studies for up to 45 days and view saved data on-screen or on a computer.

Phase	V <sub>avg</sub>	V <sub>rms</sub>	I <sub>avg</sub>	I <sub>rms</sub>	PF
L1	3.867	4.052	-1.238		
L2	4.361	4.567	-1.399		
L3	3.108	3.254	-0.998		

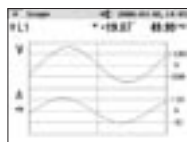
Quantify energy consumption quickly on-screen or log to memory for extended periods.



Assess voltage and current harmonics up to the 50th.



Capture voltage events using user-defined thresholds.



View waveforms onscreen to uncover waveform distortion and to verify correct voltage and current connections.



## Technical Data



### Generate reports and view graphs with Fluke Power Log Software

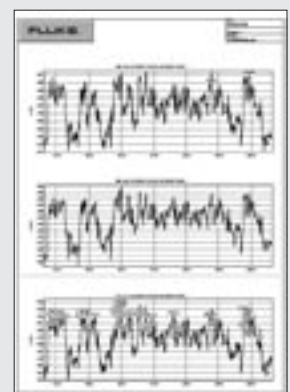
Designed to quickly view recorded data, the included Power Log software displays all recorded parameters on interactive trends. Generate a professional looking report with 'Report Writer' function or copy and paste images into report document manually.



View recorded data in simple graphs and tables with Fluke Power Log software.



Customize the report generator to easily generate professional looking reports.



Create professional reports.

# Specifications

## General

<b>Display</b>	1/4 VGA Graphic Color transmissive displays 320 x 240 Pixel with additional background lighting and adjustable contrast, text and graphics in color
<b>Quality</b>	Developed, designed and manufactured according to DIN ISO 9001
<b>Memory</b>	4 MB Flash memory, 3.5 MB for measuring data
<b>Interface</b>	RS-232 SUB-D socket; 115.2 k Baud, 8 data bits, no parity, 1 stop bit, firmware updates are possible with the RS-232 interface (9-pole extension cable)
<b>Sample rate</b>	10.24 kHz
<b>Line frequency</b>	50 Hz or 60 Hz, user-selectable, with automatic synchronization
<b>Power supply</b>	NiMH battery-pack, with ac adapter (15 V to 20 V/0.8 A)
<b>Operation time with battery</b>	Typical > 12 hours without backlight and > 6 hours with backlight high
<b>Dimensions</b>	240 mm x 180 mm x 110 mm
<b>Weight</b>	1.7 kg, including battery

## Ambient conditions

<b>Working temperature range</b>	-10 °C to +50 °C
<b>Storage temperature range</b>	-20 °C to +60 °C
<b>Operating temperature range</b>	0 °C to +40 °C
<b>Reference temperature range</b>	23 °C ± 2 °C

Note: The above terms are defined in European Standards. To calculate the specification at any point in the working temperature range, use the temperature coefficient below.

<b>Temperature coefficient</b>	± 0.1 % of the measured value per °C from the reference
<b>Intrinsic error</b>	Refers to reference temperature, maximum deviation is guaranteed for two years
<b>Operating error</b>	Refers to operating temperature range, maximum deviation is guaranteed for two years
<b>Climatic class</b>	C1 (IEC 654-1) -5 °C to +45 °C, 5% to 95% RH, no dew
<b>Housing</b>	Cyclopol shock and scratch proof thermoplast VO-type (non-flammable) with rubber protection holster

## EMC

<b>Emission</b>	IEC/EN 61326-1:1997 class B
<b>Immunity</b>	IEC/EN 61326-1:1997

## Safety

<b>Safety</b>	IEC 61010-1 600 V CAT III, double or reinforced insulation, pollution degree 2
<b>Protection</b>	IP65; EN60529 (refers only to the main housing without the battery compartment)

RMS values are measured with a 20 ms resolution.

## V-rms wye measurement

<b>Measuring range</b>	57 V/66 V/110 V/120 V/127 V/220 V/230 V/240 V/260 V/277 V/347 V/380 V/400 V/417 V/480 V ac
<b>Intrinsic error</b>	± (0.2% of measured value. + 5 digits)
<b>Operating error</b>	± (0.5% of m. v. + 10 digit)
<b>Resolution</b>	0.1 V

## V-rms delta measurement

<b>Measuring range</b>	100 V/115 V/190 V/208 V/220 V/380 V/400 V/415 V/450 V/480 V/600 V/660 V/690 V/720 V/830 V ac
<b>Intrinsic error</b>	± (0.2% of m. v. + 5 digit)
<b>Operating error</b>	± (0.5 % of m. v. + 10 digit)
<b>Resolution</b>	0.1 V

## A-rms measurement

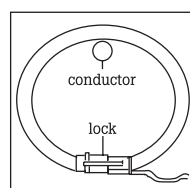
<b>Flexi set I ranges</b>	15 A/150 A/3000 A rms (at sine)
<b>Current clamp ranges</b>	1 A/10 A
<b>Resolution</b>	0.01 A
<b>Ranges</b>	150 A/3000 A and 1 A/10 A Intrinsic error: $\pm (0.5 \% \text{ of m. v.} + 10 \text{ digit})$ Operating error: $\pm (1 \% \text{ of m. v.} + 10 \text{ digit})$
<b>Ranges</b>	15 A Intrinsic error: $\pm (0.5 \% \text{ of m. v.} + 20 \text{ digit})$ Operating error: $\pm (1 \% \text{ of m. v.} + 20 \text{ digit})$

The errors of the current probes are not considered.

## By using Flexi-Set

<b>Flexi Set measuring error</b>	$\pm (2\% \text{ of m. v.} + 10 \text{ digit})$
<b>Position influence</b>	$\pm (3 \% \text{ of m. v.} + 10 \text{ digit})$
<b>CF (typical)</b>	2.83

**Note:** When using Flexi Set please make sure to position the conductor opposite to the Flexi Set-lock. Please refer to the figure on the right).



Flexi Set-Lock

## Power measurement (P - Active, S - Apparent, Q - Reactive, D - Distorting)

- Measuring range: see V rms and A rms measurement
- Power errors are calculated by adding the errors of voltage and current
- Additional error due to power factor PF
- Specified error x (1-[PF])
- Maximum range with voltage range 830 V delta-connection and 3000 A current range is 2.490 MW, higher displayed values possible when using PTs and CTs with ratio feature

<b>Intrinsic error</b>	$\pm (0.7 \% \text{ of m.v.} + 15 \text{ digit})$
<b>Resolution</b>	1 kW
<b>Operating error</b>	$\pm (1.5 \% \text{ of m.v.} + 20 \text{ digit})$

- Typical range with voltage range 230 V wye connection and 150 A current range is 34.50 KW.

<b>Intrinsic error</b>	$\pm (0.7 \% \text{ of m.v.} + 15 \text{ digit})$
<b>Resolution</b>	1 W to 10 W
<b>Operating error</b>	$\pm (1.5 \% \text{ of m.v.} + 20 \text{ digit})$

The errors of the current sensors themselves have not been considered.

## Harmonics

<b>Measuring range</b>	To 50 <sup>th</sup> harmonic (< 50 % of nom)
------------------------	--

## Accuracy

<b>Vm, Im, THDV, THDI</b>	IEC 61000-4-7:2002, Class II
<b>Vm ≥ 3% Vn</b>	$\pm 5\% Vm$
<b>Vm &lt; 3% Vnom</b>	$\pm 0.15\% Vnom$
<b>Im ≥ 10% Inom</b>	$\pm 5\% Im$
<b>Im &lt; 10% Inom</b>	$\pm 0.5\% Inom$
<b>THDV</b>	for THD < 3% $\pm 0.15\%$ at Vnom for THD ≥ 3% $\pm 5\%$ at Vnom
<b>THDI</b>	for THD < 10% $\pm 0.5\%$ at Inom for THD ≥ 10% $\pm 5\%$ at Inom

Vnom: Normal voltage range

Inom: Nominal current range

Vm and Im are measured values of harmonic m

## Energy measurement (kWh, KVAh, kVARh)

<b>Intrinsic error</b>	$\pm (0.7 \% \text{ of m.v.} + F \text{ variation error}^* + 15 \text{ digit})$
<b>Resolution</b>	1 W to 10 W
<b>Operating error</b>	$\pm (1.5 \% \text{ of m.v.} + F \text{ variation error}^* + 20 \text{ digit})$

\*Frequency variation error

## PF (Power factor)

<b>Range</b>	0.000 to 1.000
<b>Resolution</b>	0.001
<b>Accuracy</b>	$\pm 1 \% \text{ of full scale}$

## Frequency measurement

<b>Measuring range</b>	46 Hz to 54 Hz and 56 Hz to 64 Hz
<b>Intrinsic error</b>	$\pm (0.2 \% \text{ of m. v.} + 5 \text{ digit})$
<b>Operating error</b>	$\pm (0.5 \% \text{ of m. v.} + 10 \text{ digit})$
<b>Resolution</b>	0.01 Hz

## Events

Detection of voltage dips, voltage swells and voltage interruptions with a 10 ms resolution and measuring error of the half period sine wave of rms.

<b>Intrinsic error</b>	$\pm (1\% \text{ of m.v.} + 10 \text{ digit})$
<b>Operating error</b>	$\pm (2\% \text{ of m.v.} + 10 \text{ digit})$
<b>Resolution</b>	0.1 V

## Ordering Information

Fluke-1735 Power Logger

### Includes:

- Soft carrying case
- 4 flexible current probes (15 A/150 A/3000 A)
- Power Log software
- Voltage leads and clips
- Color localization set
- PC interface cable
- International ac adapter (115/230 V, 50/60 Hz)
- Printed English manual
- Multi-language manual CD

### Recommended Accessories

- MBX Clamp 1 A/10 A – 3 precision dual range current clamps (1 A/10 A) for secondary CT applications
- C435 – Water-tight hard case with rollers



**Fluke.** *Keeping your world  
up and running.™*

### Fluke Corporation

P.O. Box 9090  
Everett, WA USA 98206

### Fluke Europe B.V.

P.O. Box 1186  
5602 BD Eindhoven  
The Netherlands

### Fluke (UK) Ltd

52 Hurricane Way  
Norwich  
Norfolk  
NR6 6JB  
United Kingdom  
Tel.: 0207 942 0700  
Fax: 0207 942 0701  
E-mail: industrial@uk.fluke.nl

Visit us on the world wide web at:  
**<http://www.fluke.co.uk>**

### For more information call:

In the U.S.A. (800) 443-5853  
or Fax (425) 456-5116  
In Europe/M-East/Africa  
+31 (0)40 2 675 200  
or Fax +31 (0)40 2 675 222  
In Canada (905) 890-7600  
or Fax (905) 890-6866  
From other countries  
+1 (425) 456-5500  
or Fax +1 (425) 456-5116

Visit us on the world wide web at:  
**<http://www.fluke.com>**

© Copyright 2006 Fluke Corporation.  
All rights reserved.  
Printed in the Netherlands 05/06  
Data subject to alteration without notice.  
Pub\_ID: 11115-eng