FLUKE

1750

The Fluke 1750 Three-Phase Power Quality Recorder is a high-precision, headless power monitoring instrument designed for compliance with IEC 61000-4-30 Class A standards. It automatically records every power quality parameter on all channels continuously, offering threshold-free post-processing analysis. Users configure the device and visualize real-time data wirelessly using a PDA or PC.

SPECIFICATIONS

General

Interfaces	Ethernet (100Base-T RJ-45), Bluetooth Class 1, SD Card Slot
Display	None (headless design; utilizes wireless PDA or PC as virtual front panel/display)
Calibration Cycle	1 year (recommended)

Physical

Power Supply	85 V to 264 V AC, 47 Hz to 63 Hz, or 120 V to 370 V DC; 40 VA maximum
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	215 mm × 310 mm × 91 mm mm
Weight	3.0 kg kg

Input Channels & Configuration

Number of Voltage Inputs	5 channels (A/L1, B/L2, C/L3, N, G)
Number of Current Inputs	5 channels (A/L1, B/L2, C/L3, N, G)
Phase Configurations Supported	One Phase Plus Neutral, One Phase IT No Neutral, One Phase Split Phase, Three Phase Wye, Three Phase Delta, Three Phase IT, Three Phase High Leg, Three Phase Open Leg, 2 Element Delta, 2 1/2 Element Wye
Voltage Input Coupling	DC coupled
Input Terminals Type	Single-lead voltage connections and self-identifying current probes

Measurement Ranges & Input Characteristics

Direct Voltage Range	0 to 1000 Vrms (AC or DC)
Transient Voltage Range	8000 Vpk
Direct Current Input Range	50 mV to 1.414 Vrms with 2 V peak (probe dependent)
Voltage Input Impedance	4 MΩ per channel to ground
Current Input Impedance	50 kΩ
Maximum Voltage Input	1000 Vrms

Measurement Performance & Accuracy

Mains Frequency Range	45 Hz to 65 Hz
PLL Frequency Synchronization Range	42.5 Hz to 69 Hz
Voltage Resolution	16-bit (for power parameters), 14-bit (for 5 MHz transient sampling)
Sampling Rate (Power Parameters)	256 samples per cycle (phase locked to mains)
Sampling Rate (Transient)	5 MHz (simultaneous on all voltage channels)
Voltage Measurement Accuracy	±0.1% of Vdin (from 10% to 150% of Vdin)
Frequency Measurement Accuracy	±10 mHz
Standard Compliance	IEC 61000-4-30 Class A

Power & Harmonic Analysis Functions

Measured Parameters	Voltage, current, active power (P), apparent power (S), reactive power (Q), power factor, frequency, THD, harmonics, interharmonics, flicker, unbalance, transients
Harmonic Measurement Bandwidth	Up to 50th harmonic
Flicker Measurement	Pst and Plt in accordance with IEC 61000-4-15
Interharmonics Analysis	In accordance with IEC 61000-4-7
Voltage Crest Factor	Calculated and logged
Current Crest Factor	Calculated and logged

Data Logging, Memory & Visualization

Internal Storage Capacity	SD Memory Card (2 GB standard, removable)
Logging Rate	Every cycle, continuously without thresholds
Setup Method	Threshold-free setup; thresholds applied post-collection via PC software
Software	Fluke Power Analyze software (for data retrieval, analysis, and reporting)
Data Retrieval Options	Via SD card, Ethernet, or Bluetooth

System Interfaces & Connectivity

External Synchronization Input	GPS time synchronization input (via optional GPS receiver)
Status Indicators	LEDs for Power, Status, LAN, Bluetooth, Card, Phase/Voltage Channels

Power Supply & Safety Compliance

Safety Category Rating	CAT IV 600 V / CAT III 1000 V
Safety Standards	IEC/EN 61010-1
EMC Standards	EN 61326-1
Internal Backup Battery	NiMH battery, >5 minutes backup, typical recharge time 4 hours

Physical & Environmental Specifications

Storage Temperature Range	-20 °C to 50 °C (with battery); -20 °C to 60 °C (without battery)
Operating Humidity Range	10% to 90% RH non-condensing
Enclosure Protection Class	IP30

Accuracy & Performance

Current Accuracy (Instrument Only)	±0.1% of reading ± 0.02% of range
Active Power Accuracy	±0.2% of reading + sensor accuracy
Phase Angle Accuracy (Voltage to Voltage)	±0.05°
Phase Angle Accuracy (Voltage to Current)	±0.15° (instrument only)
Power Factor Accuracy	±0.002 + sensor accuracy
Clock Accuracy (Internal)	±1 s per day
Clock Accuracy (GPS Synchronized)	±16.7 µs (relative to GPS UTC)

Power & Battery

Power Consumption	40 VA max.
Internal Battery Chemistry	NiMH (Nickel-Metal Hydride)
Battery Charge Time	4 hours (with instrument turned off)
Battery Ride-Through Time	5 minutes minimum

Environmental

Maximum Operating Altitude	2000 m (CAT IV 600 V / CAT III 1000 V), up to 3000 m (derated to CAT III 600 V / CAT II 1000 V)

Measurement Resolution

A/D Converter Resolution	24-bit (continuous sampling on all channels)
Transient Sampling Resolution	14-bit

Connectivity

Bluetooth Class & Range	Bluetooth v1.2 Class 1, up to 100 m (328 ft) typical range
Ethernet Port Specification	RJ-45 (10/100 Base-T with Auto MDIX)

Measurement Characteristics

Input Range Selection	Fully automatic ranging
Total Simultaneous Channels	9 channels (4 voltage and 5 current)

TECHNOLOGY

Digital power quality auditing and transient analysis

APPLICATIONS

Power quality auditing, disturbance analysis, energy assessments, and compliance testing

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.