

# پترو فرهان گستر جنوب

Tehran, Tehransar

FLUKE®

TECHNICAL DATA

## 1770 Series Three-Phase Power Quality Analyzers



### **AUTOMATICALLY MEASURE POWER AND POWER QUALITY PARAMETERS**

Critical power quality data is captured as soon as you begin a session, without extensive setup or selections

### **INTUITIVE USER INTERFACE**

The streamlined user interface makes it easy to navigate between measurement parameters like V/A/Hz, power, dips and swells, harmonics, or power quality health at the push of a button

### **HIGH-SPEED VOLTAGE TRANSIENT CAPTURE**

Capture damaging high-speed transients so you can mitigate their effects before equipment fails

### **ANALYSIS AND REPORTING**

Comes standard with Fluke Energy Analyze Plus software with up to 100 integer harmonics for specialist harmonic analysis, giving you the ability to create customized reports, or leverage built-in one-click reporting to industry standards like EN 50160, IEEE 519 and G5/5

### **ENERGY LOSS CALCULATOR**

Discover where energy losses exist in your electrical system and calculate the actual money lost to energy waste

### **Automatic Measurements. More Flexibility. Better Power Quality Troubleshooting.**

Fluke 1770 Series Three-Phase Power Quality Analyzers eliminate the complexities of power quality logging, troubleshooting, and analysis. Engineered to be the faster, easier way to perform power quality studies, the 1770 Series offers automatic measurements, a straightforward user interface and setup, best-in-class specifications, and a simplified reporting platform. The instrument can also be powered directly from the measurement circuit, eliminating the need to find a power outlet or use a lengthy extension cord.

With the 1770 Series you'll never miss a critical power quality event—from fast transients up to 8 kV (Fluke 1775 and 1777 only), dips and swells, as well as the voltage, current, and power measurements that enable you to characterize your electrical system.



Easily navigate using the large color touchscreen

### **Automatic Measurement Capture**

Whether you're performing a quick system check or a detailed power quality study, consistent data is key. The Fluke 1770 Series offers a unique automatic measurement capture system that helps ensure you're collecting the right data every time, while still giving you the flexibility to select and adjust specific parameters as needed. More than 500 power quality parameters are captured by default and the guided setup makes it easy to select the right parameters for the system you're working on. Logged data is instantly viewable, downloadable, and shareable with Fluke Energy Analyze Plus software so you never need to wait to finish a session before reviewing results or analyzing data.

### **Ultimate Measurement Confidence**

The Fluke 1770 Series are 2-in-1 devices that combine the troubleshooting functionality of a power quality meter with the robust analysis and logging capabilities of a standalone power quality analyzer—in a single, easy-to-use, handheld device.

The 'PQ Meter' function gives you immediate access for 24 hours to live on-screen data in the field so you can quickly identify potential problems while troubleshooting. The detailed 'PQ Logging and Analysis' function eliminates the complexity of performing power quality studies by guiding you through the setup process ensuring you're capturing the right data every time. Couple these measurement modes with a unique measurement connection autocorrect function and you can be confident that you never need to worry about going back for a second measurement—even if you were unsure about what to look for when you started.

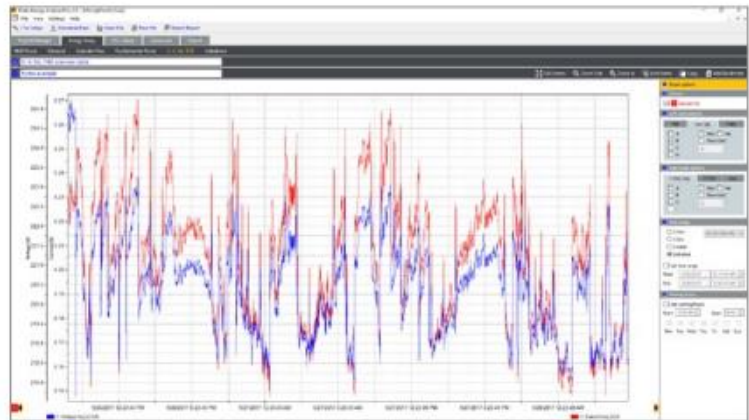
## Powerful Analysis Software with Easy-to-Create Reports

Fluke 1770 Series Power Quality Analyzers come standard with the powerful Fluke Energy Analyze Plus software, designed to eliminate the hassles found with other multi-purpose application software. Energy Analyze Plus helps you evaluate power quality data right out of the box and without extensive training.

Download, analyze, track, and report power quality and energy data easier than ever. Quickly compare results to historical values, benchmark against industry norms, compare measured data to local conditions, and create a more complete picture of what's occurring across your facility,

even as the data is still being collected. Energy Analyze Plus offers unified support for the Fluke 1730 Series Energy and Power Loggers, 1740 Series Power Quality Loggers, and 1770 Series Power Quality Analyzers.

- “In-workshop” and “in-the-field” download through PC application software
- Simple data downloads using USB memory stick, WiFi, LTE, wired Ethernet, or USB cable
- Analyze every measured detail of energy consumption and power quality state-of-health with automated reporting
- One-touch reporting creates standardized reports conforming to standards like EN 50160, IEEE 519, G5/5, IEC 61000-2-2, or export data in PQDIF or NeQual compatible format or CSV for use with third-party software
- Advanced analysis allows the user to choose any available logged parameter and create a highly customized view of measurements for advanced data correlation



Fluke Energy Analyze Plus: Energy study tab



Fluke Energy Analyze Plus: Power quality health summary

## High-speed Voltage Transient Capture

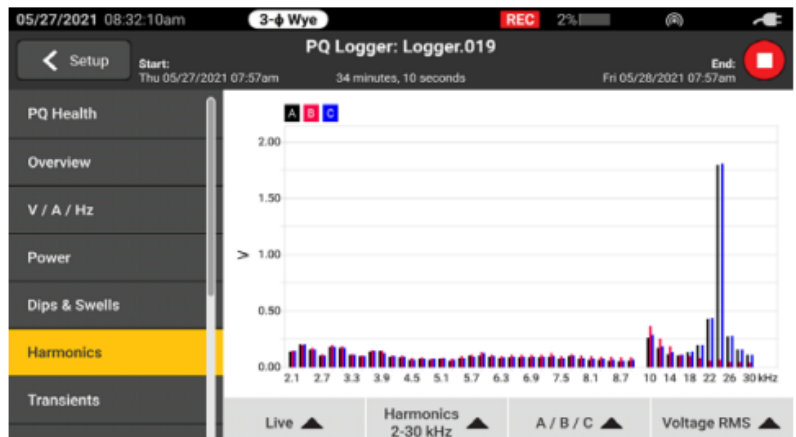
Transients negatively impact otherwise healthy systems every day and their potential to damage your equipment can't be underestimated. Whether your system is experiencing impulsive or oscillatory transients, the results can be devastating and cause problems ranging from insulation failures to total equipment failures. The Fluke 1775 and Fluke 1777 incorporate advanced transient capture technology to help you clearly identify high-speed voltage transients, so you have the data you need to stop them in their tracks. The Fluke 1775 Power Quality Analyzer has 1MHz sampling capability to capture fast transients, while the Fluke 1777 Power Quality Analyzer has 20MHz sampling capability to capture the fastest transients in high detail.



View real-time voltage transitory events while logging for faster troubleshooting

## From Traditional Industrial Systems to Renewable Energy Systems to Electric Vehicles, We've Got You Covered

The Fluke 1770 Series was designed to be safe and easy to use in any measurement environment. The 1770 Series allows you to capture a full range of power quality variables as well as high-speed waveforms, high-speed transients, and higher frequency harmonics, all of which are instantly viewable on the large, high-resolution screen. With a best-in-class CAT IV 600 V / CAT III 1000 V overvoltage rating, these analyzers can be used at the service entrance or downstream, measuring AC and DC inputs, and harmonics measuring up to 30 kHz. With the 1770 Series you can be confident that you'll capture the data you need to make better maintenance decisions no matter the task.



A full range of harmonics available on the Fluke 1775 and 1777 models are available from the first 100 integer harmonics and from 2 kHz to 30 kHz



Applications	1773	1775	1777
Energy surveys and load testing	•	•	•
Harmonic surveys	•	• (100)	• (100)
Nuisance circuit breaker tripping		•	•
Power utility power quality surveys		•	•
Discovery of equipment failures caused by transients		•	•

## Compliant to International Standards

The Fluke 1770 Series offers the best-in-class accuracy you've come to expect from a Fluke Power Quality Analyzer in a IEC 61000-4-30 Class A edition 3 compliant package. On top of that, the 1770 Series has been engineered to meet the future requirements of Class A edition 4, for conformance to EN 50160 and IEEE 519, so you'll be prepared to tackle tomorrow's measurement requirements, today.

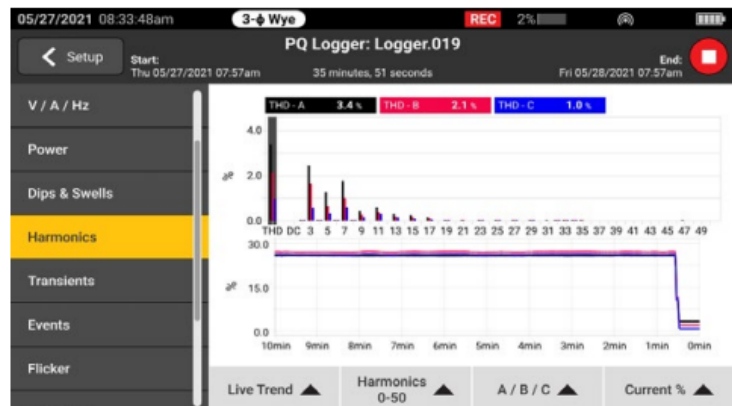
## Work Where, When, and How You Want

No two days in the field are the same. You need a power quality analyzer that can go where you go and do what you need it to when you get there. With a full range of accessories and built-in features the Fluke 1770 Series makes it easier to get your job done. The slim ergonomic design and integrated hand strap make it easy to hold and the included hanging kit makes it easy to secure your analyzer inside a cabinet. The integrated internal power supply allows the unit to be powered directly from the measured circuit, while a 75-minute battery helps ensure you can still access and review data even when you aren't connected to a live system.

Quickly and easily transfer data to your PC using the USB C, USB A, Ethernet, WiFi, cellular network support options, depending on your requirements. With an internal GPS module and an optional double insulated external antenna cable accessory and user supplied GPS antenna, you can time sync your data for more accurate troubleshooting and analysis.

## Calculate Current Harmonics Limits

When downloading data from the Fluke 1770 Series Power Quality Analyzers the included Energy Analyze Plus software package can compare measured voltage and current harmonic statistical data to different standards, like EN 50160 or IEEE 519, to determine if they exceed compliance limits. This powerful predictive maintenance feature enables current harmonics to be observed before distortion appears in the voltage allowing you to prevent unexpected failures or non-compliance situations and increase system uptime. With the proliferation of inverter-based loads and power generation, keeping current harmonics in check is becoming increasingly critical to ensure reliable power quality and avoid system downtime.

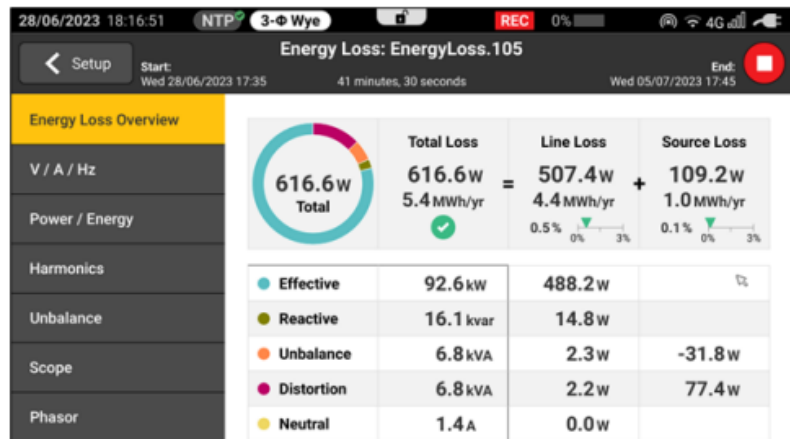


Individual harmonics can be easily selected to view trend data as loads change

## Calculate Money Lost to Energy Waste in Terms of Real Dollars with the Energy Loss Calculator

The Energy Loss Calculator (ELC) mode in the Fluke 1775 and 1777 Power Quality Analyzers is designed to discover where energy losses exist in your electrical system using Fluke's patented Unified Power calculation developed by the University of Valencia. In every electrical system, some energy is wasted and that energy is not delivered to the loads in your system to drive them. This waste comes from:

- Transmission of effective power – Heat generated as power flows through cables
  - Reactive power – Does not drive the load but consumes energy
  - Unbalance losses – Unbalanced loads contribute to wasted energy
  - Distortion power – Non-linear loads create harmonics that consume power, but do not perform work
  - Neutral losses – Neutral losses can be due to both unbalance and harmonics, leading to increased heat and requiring larger conductors
- The ELC can calculate each of these losses and together with the included Energy Analyze Plus software package, you'll get specific insight into the amount of loss in real dollars. Armed with this critical data, you can justify the investment necessary to develop mitigation countermeasures, saving that wasted energy and ultimately, having a big impact on the bottom line.



The Energy Loss Overview Screen shows a summary of the key elements of the losses. The "Total" doughnut shows the sum of all the losses. Each piece of the doughnut is color coded to show the source of the loss, either load current or voltage losses.

## Specifications

Key Features		1770 Series Three-Phase Power Quality Analyzers
<b>Voltage Inputs</b>		
Number of inputs	4 inputs, 3 phases and neutral referenced to PE (5 connectors)	
Measurement category	1000 V CAT III/600 V CAT IV	
Maximum input voltage	1000 V rms/1000 V dc (1700 Vpk)	
Nominal voltage range	Wye and single phase: variable (50 V – 1000 V) Delta: Variable (100 V – 1000 V) IEC 61000-4-30 Class A compliance for the nominal voltages ( $V_{dn}$ ) 100 V – 690 V	
Input impedance	10 M $\Omega$ between P-P and P-N, 5 M $\Omega$ between P-PE and N-PE	
Bandwidth	DC to 30 kHz for PQ measurements, excluding transients	
Resolution	24-bit synchronous sampling	
Sampling frequency	80 kS/s at 50/60 Hz	
Scaling	1:1, variable for use of potential transformers	
<b>Voltage Transients</b>		
Measurement range	$\pm 8$ kV	
Sampling rate	1775: 1 MS/s 1777: 1 MS/s, 20 MS/s	
Bandwidth	DC to 1 MHz	
Trigger	Adjustable trigger level. Triggers on high-frequency components > 1.5 kHz	
Resolution	14-bit synchronous sampling	
<b>Current Inputs</b>		
Number of inputs	4 inputs 3 phases and Neutral, range selected automatically to attached sensor	
Range	AC	1 A to 1500 A with i17XX-FLEX1500 12 1 A to 1500 A with i17XX-FLEX-1500 18 1 A to 1500 A with i17XX-FLEX1500 24 3 A to 3000 A with i17XX-FLEX3000 24 6 A to 6000 A with i17XX-FLEX6000 36 40 mA to 40 A with clamp i40s-EL 4 A to 400 A with clamp i400s-EL
	DC	DC current supported using separate Fluke DC current clamp with separate clamp adapter accessory
Bandwidth	DC to 30 kHz	
Resolution	24-bit synchronous sampling	
Sampling frequency	80 kS/s at 50/60 Hz	
Scaling	1:1, variable	
Input voltage	Clamp: 50 mV/500 mV rms; CF 2.8 Rogowski Coil: 15 mV/150 mV rms at 50 Hz, 18 mV/180 mV rms at 60 Hz; CF 4 all at nominal probe range	
Input impedance	11 k $\Omega$	
<b>Aux Inputs</b>		
Wired connection with 17xx-AUX adapter		
Number of inputs	2	
Input range	Direct: 0 V dc to $\pm 10$ V dc 0 V to 1000 V dc	
Input impedance	Direct: 2.92 M $\Omega$	
Scale factor	Format: mx + b (gain and offset) user configurable	
Displayed units	User configurable (up to 8 characters, for example °C, psi, or m/s)	

## Specifications

Key Features		1770 Series Three-Phase Power Quality Analyzers
<b>Data Acquisition Voltage and Current</b>		
Input mains frequency	DC, 50/60 Hz ± 15 % (42.5 Hz ... 57.5 Hz, 51 Hz ... 69 Hz)	
Topologies	1-φ, 1-φ IT, Split phase, 3-φ delta, 3-φ wye IT, 3-φ Aron/Blondel (2 element delta), 3-φ delta open leg, 3-φ high leg delta	
Data storage	Fluke 1773/1775: 8 GB internal (expandable with microSD card) Fluke 1777: 32 GB microSD card (installed)	
Memory size	Typical 10 logging sessions of 8 weeks with 1-minute intervals and 100 events. The number of possible logging sessions and logging period depends on user requirements.	
Real-time accuracy	Internal: 3 ppm (0.26 s per day, 8 s per month) NTP (internet time): Depending on internet latency, typical < 0.1 s absolute to UTC GPS: < 1 ms absolute to UTC	
<b>Trend Interval</b>		
Measured parameter	See operator manual	
Trend interval	User selectable: 1 sec, 3 sec, 5 sec, 10 sec, 30 sec, 1 min, 5 min, 10 min, 15 min, 30 min	
Averaging interval min/max values	Voltage, Current: ½ cycle RMS (20 ms at 50 Hz, 16.7 ms at 60 Hz) Aux, Power: 200 ms	
Total harmonic distortion	THD for voltage and current is calculated on 50 harmonics	
<b>Power Quality Measurements</b>		
Measured parameter	See operator manual	
Harmonics	h0 ... h100 % fund and RMS for voltage, current and power Phase angles for voltage and current up to h11	
Interharmonics	ih0... ih100 % fund and RMS for voltage and current	
Supraharmonics	2-9 kHz with 200 Hz bins 9-30 kHz with 2 kHz bins RMS for voltage and current (Fluke 1775 and 1777)	
Harmonics measurement method	Grouped, sub-grouped and single harmonic bins according to IEC 61000-4-7. Method selected automatically based on configured PQ standard or user configurable	
Total harmonic distortion	Calculated on up to 50 harmonics (depends on selected PQ standard)	
Mains signaling	2 frequencies in the range from 110 Hz to 3000 Hz	
Events	Voltage	Dip, swell, interruption, rapid voltage change, mains signaling, waveshape deviation, transients
	Current	Inrush current
Triggered recordings	Half cycle RMS of voltage and current for 10 s Waveform of voltage and current for 10/12 cycles Mains signaling: 200 ms RMS of mains signaling voltage up to 120 s Transients: Waveform of voltage (Fluke 1777: 1 MS/s or 20 MS/s, 500,000 pts, Fluke 1775: 1 MS/s, 25,000 pts)	
<b>Standard Compliance</b>		
Power	IEEE 1459	
Harmonics	IEC 61000-4-7: Class 1 IEEE 519 (short time and very short time harmonics)	
Flicker	IEC 61000-4-15 Class F1	
Power quality	IEC 61000-4-30 Class A, IEC 62586 PQI-A-PI	
Power quality compliance	EN 50160 + G5/5 + NEQUAL + NETCODE + FOL	

## Specifications

Key Features	1770 Series Three-Phase Power Quality Analyzers
<b>Interfaces</b>	
Ethernet	1 Gbit/s 1000BASE-T
USB type A	USB 2.0 high speed for USB flash drives to transfer measurement data, firmware updates and license installation. Max. supply current: 500 mA
USB-C	USB 2.0 high speed for data download to PC and calibration (requires USB type A to USB-C or USB-C to USB-C cable) Auxiliary power supply for the Analyzer (requires USB C power adapter PD 2.0 or higher with 9 V 1.8 A support) USB 3.0 super-speed for USB-C flash drives to transfer measurement data, firmware updates and license installation. Max. supply current: 900 mA
WiFi/BLE module:	802.11 ac 2.4 GHz / 5 GHz, support for concurrent access point and client mode Bluetooth 5.0/BLE Antenna: Internal and external:
LTE/4G module:	LTE-A Cat 12 Worldwide LTE-A and UMTS/HSPA+ coverage Antenna: External:
GPS	MCX connector to attach a GNSS antenna for GPS/GLONASS:

## Electrical Measurement Accuracy

Parameter	Range	Resolution	Intrinsic Accuracy at Reference Conditions % of Reading + % of Full Scale
Voltage	1000 V	0.1 V	0.1 % of nominal voltage in accordance with IEC 61000-4-30 Class A <sub>1,2</sub> ± (0.04 % + 0.004 %) <sup>1</sup>
Voltage dips and swells	-	0.1 V	0.2 % of Vnom <sup>1,2</sup>
Voltage transients	± 8 kVpk	-	± (5 % + 0.25 %)
Voltage harmonics/interharmonics	100 %	0.1 %/0.1 mV	≥ 1 % Vnom: ± 2.5 % of rdg. < 1 % Vnom: ± 0.025 Vnom
THD on voltage	100 %	0.1 %/0.1 V	± (2.5 % + 0.5 %)
Voltage distortions 2-9 kHz	Max 100 V	0.1 mV	± (2.5 % + 0.1 V)
Voltage distortions 9-30 kHz	Max 100 V	0.1 mV	± (2.5 % + 0.1 V)
Current (Rogowski clamp mode)	With iFlex 1500 A, i17XX-FLEX1500 18	150 A 1500 A	0.01 % 0.1 A ± (1 % + 0.02 %)
	With iFlex 3000 A, i17XX-FLEX3000 24	300 A 3000 A	0.01 A 0.1 A ± (1 % + 0.03 %)
	With iFlex 6000 A, i17XX-FLEX6000 36	600 A 6000 A	0.1 A 1 A ± (1.5 % + 0.03 %)
	With AC clamp 40 A, i40s-EL	4 A 40 A	0.001 A 0.01 A ± (0.7 % + 0.02 %)
	With AC clamp 400 A, i400s-EL	40 A 400 A	0.01 A 0.1 A ± (2 % + 0.2 %) ± (0.7 % + 0.1 %)
	With AC/DC clamp 2000 A, 80i-2010s <sup>4</sup>	200 A 2000 A	0.01 A 0.1 A ± (0.8 % + 0.2 %)
Current min/max	100 %	defined by accessory	x2 of intrinsic accuracy
Current harmonics/interharmonics	100 %	0.1 %/0.01 A	≥ 3 % Inom: ± 2.5 % of rdg. <sup>4</sup> < 3 % Inom: ± 0.15 % of Inom

<sup>1</sup> Not in 177X/BASIC versions

<sup>2</sup> Requires 5 m i17XX-FLEX5M-EXT extension cable

<sup>3</sup> Availability and supported providers vary by country. Check with your local Fluke representative.

<sup>4</sup> Current clamp adapter required

## Electrical Measurement Accuracy

Parameter	Range	Resolution	Intrinsic Accuracy at Reference Conditions % of Reading + % of Full Scale
THD on current	100 %	0.1 %	±(2.5 % + 0.5 %)
Frequency	42.5 Hz ... 69 Hz	0.001 Hz	± 0.01 Hz
Voltage unbalance	100 %	0.1 %	± 0.15 %
Current unbalance	100 %	0.1 %	± 0.15 %
Flicker Pinst, Pst, Plt	0 to 20	0.01	5 %
Mains signaling voltage	Up to 3 kHz 0-15 % of Vnom	0.1 V/0.1 %	1-3 % Vnom: ±0.15 % of Vnom 3-15 % Vnom: ±5 % of rdg.
AUX input	± 10 V	0.1 mV	±(0.2 % + 0.05 %)

<sup>1</sup> Nominal voltage in the range of 100 V to 690 V. Also known as U<sub>din</sub>.

<sup>2</sup> 0 °C to 45 °C: Intrinsic Accuracy x2. Outside of 0 °C to 45 °C: Intrinsic Accuracy x3

<sup>3</sup> Only for calibration laboratories

<sup>4</sup> With iFlex 1500A, I17XX-FLEX1500 18

## Power/Energy

Parameter	Direct Input <sup>1</sup>	Clamp i40S-EL
Power range W, VA, var	Clamp: 50 mV/500 mV Rogowski: 15 mV/150 mV	4 A/40 A
	Clamp: 50 W / 500 W Rogowski: 15 W / 150 W	4k W/40 kW
Max. resolution W, VA, var	0.1 W	1 W/10 W
Phase (voltage to current) <sup>2</sup>	± 0.2°	± 1°

Parameter	iFlex 1500A, I17XX-FLEX1500 18	iFlex 3000A, I17XX-FLEX3000	iFlex 6000A, I17XX-FLEX6000
Power range W, VA, var	150 A/1500 A	300 A/3000 A	600/6000 A
	150 kW/1.5 MW	300 kW/3 MW	600 kW/6 MW
Max. resolution W, VA, var	0.1 kW/1kW	1 kW/10 kW	1 kW/10k W

Parameter		I17XX-FLEX1500 18	I17XX-FLEX3000	I17XX-FLEX6000
Active power P	PF ≥ 0.99	150 A/1500 A	300 A/3000 A	600/6000 A
		1.2 % + 0.005 %	1.2 % + 0.0075 %	1.7 % + 0.0075 %
Active energy E <sub>a</sub>	0.1 ≤ PF < 0.99	$(1.2 + \sqrt{(1-PF_2)/(2 \times PF)})$ % + 0.005 %	$(1.2 + \sqrt{(1-PF_2)/(2 \times PF)})$ % + 0.0075 %	$(1.7 + \sqrt{(1-PF_2)/(2 \times PF)})$ % + 0.0075 %
Apparent power S Apparent energy E <sub>a</sub>	0 ≤ PF ≤ 1	1.2 % + 0.005 %	1.2 % + 0.0075 %	1.7 % + 0.0075 %
Reactive power Q Reactive energy E <sub>r</sub>	0 ≤ PF ≤ 1	2.5 % of measured apparent power/energy		
Additional uncertainty (% of power high range)	VP-N > 250 V	0.02 %	0.02 %	0.02 %
Phase (voltage to current)	-	0.28°	0.28°	0.28°

<sup>1</sup> Nominal voltage in the range of 100 V to 690 V. Also known as U<sub>din</sub>.

### Reference Conditions

Environmental: 23 °C ± 5 °C, instrument operating for at least 30 minutes, no external electrical/magnetic field, RH < 65 %

Input conditions: Cos Φ/PF=1, Sinusoidal signal f=50/60 Hz, power supply 120 V/230 V ± 10 %.

Current and power specifications: Input voltage > 100V

Input current > 10 % of current range

Primary conductor of clamps or Rogowski coil in center position

Temperature coefficient: Add 0.1 x specified accuracy for each degree C above 28 °C or below 18 °C

## General Specifications

Key features	1770 Series Three-Phase Power Quality Analyzers
Warranty	Analyzer: 2 years (battery not included) Accessories: 1 year (including battery)
Calibration cycle	2 years
Size (L X W X HD)	28.0 cm x 19.0 cm x 6.2 cm (11.0 in x 7.5 in x 2.4 in)
Weight	2.1 kg (4.6 lb)
Anti-theft protection	Slot to support Kensington lock

## Environmental Specifications

Operating temperature range	-10 °C to 50 °C
Storage temperature range	-20 °C to 60 °C
Operating humidity	IEC 60721-3-3: 3K5, modified: -10 °C to 30 °C: ≤ 95 %, no condensation or ice 35 °C: 70 % 40 °C: 55 % 50 °C: 35 %
IP Rating	IEC 60529: IP50
Vibration	IEC 60721-3-3/3M2

## Power Supply

Voltage range	100 V – 600 V -15 % / +10 % (85 V ... 660 V)
Power consumption	Max. 40 VA
Mains frequency	50/60 Hz (42.5 Hz ... 69 Hz)
UPS	Li-Ion battery BP1770 with extended temperature range, customer replaceable On-battery runtime: 75 minutes

## Safety

General	IEC 61010-1: Pollution Degree 2
Power supply	Overvoltage Category IV 600 V With Mains Adapter MA-C8: Overvoltage Category II 300 V
Measurement	IEC 61010-2-030: CAT IV 600 V, CAT III 1000 V
Altitudes 2000 m to 4000 m	Derate to: Power Supply: Category IV 300 V With MA-C8 Adapter: Category II 150 V Measurement: CAT IV 300 V, CAT III 600 V, CAT II 1000 V



**Fluke 1777 Power Quality Analyzer**  
 Note: Included items vary by model and are listed in the "Ordering

**Ordering Information**

Qty	Model	FLUKE-1773	FLUKE-1773/ BASIC	FLUKE-1775	FLUKE-1775/ BASIC	FLUKE-1777	FLUKE-1777/ BASIC
1	FLUKE-1773, POWER QUALITY ANALYZER	•	•				
1	FLUKE-1775, POWER QUALITY ANALYZER			•	•		
1	FLUKE-1777, POWER QUALITY ANALYZER					•	•
4	i17XX-FLEX1500 18	•		•		•	
1	FLUKE-17XX, FLAT CABLE, VOLTAGE TEST LEAD 3-PHASE+N	•	•	•	•	•	•
4	AC285, BLACK ALLIGATOR CLIP	•	•	•	•	•	•
1	AC285, GREEN ALLIGATOR CLIP	•	•	•	•	•	•
1	BLACK 1 M USB-C CABLE	•	•	•	•	•	•
1	LINE CORD	•	•	•	•	•	•
1	FLK-17XX 0.18 M TEST LEAD SET, NONSTACK/STACK	•	•	•	•	•	•
1	GREEN TEST LEAD	•	•	•	•	•	•
1	MP1-3R/1B, MAGNET PROBE 1, 3 RED / 1 BLACK MAGNET PROBES FOR 4 MM BANANA			•		•	
1	FLUKE-174X-HANGER KIT			•		•	
1	FLUKE-177X-4204 WIFI/BLE MODULE	optional	optional	•	optional	•	optional
1	CABLE MARKER SET (FOR VOLTAGE AND CURRENT)	•	•	•	•	•	•
1	FLUKE-174X-MA-C8 WALL OUTLET ADAPTER	•	•	•	•	•	•
1	STATEMENT OF CALIBRATION PRACTICES	•	•	•	•	•	•
1	BLACK SOFT CASE			•	•		
1	FLUKE-1777 HARDCASE					•	•

## Accessories

Model	Description
3PHVL-17XX	CABLE ASSEMBLY, VOLTAGE TEST LEAD 3-PHASE+N
3PHVL-17XX-5M	CABLE ASSEMBLY, VOLTAGE TEST LEAD 3-PHASE+N 5M
FLUKE-17XX-TL	TEST LEAD SET; 1000V CAT III, NONSTACK/STACK 0.18M
FLUKE-17XX-TL 2M	BLUE, NON-STACKABLE PLUG AND 2X ALLIGATOR CLIPS
F1P17XXPQ	FUSED TEST PROBES SET, THREE PHASE PQ, AC285, R/B
MP1-3R/1B	MAGNET PROBE 1, 3RED/1BLACK MAGNET PROBES FOR 4MM BANANA
I40S-EL3X	FLUKE-17XX I40S-EL CLAMP-ON CURRENT TRANSFORMER
I40S-EL3X/3PK	FLUKE-17XX I40S-EL CLAMP-ON CURRENT TRANSFORMER, 3 PACK
FLUKE-I400S-EL	17XX 400A CURRENT CLAMP
FLUKE-I400S-EL-3PK	17XX 400A CURRENT CLAMP/3 PACK
I30S	30A DC, 20A AC CURRENT CLAMP 1
80I-110S	100A AC/DC CURRENT CLAMP 2
I400S	400A AC CURRENT CLAMP 2
I5S	5A AC CURRENT CLAMP 1
I200S	200A AC CURRENT CLAMP 1
I400S	400A AC CURRENT CLAMP 2
I1000S	1000A AC CURRENT CLAMP 2
I3000S	3000A AC CURRENT CLAMP 2
I17XX-FLEX1500	AVAILABLE IN 12, 18, 24 IN HEAD LENGTHS
I17XX-FLEX3000	FLUKE-17XX IFLEXI 3000A 24 IN
I17XX-FLEX6000	FLUKE-17XX IFLEXI 6000A 36 IN
I17XX-FLEX5M-EXT	FLUKE-17XX IFLEXI EXTENSION CABLE 5M
C177X/6000	FLUKE Soft Case
C1777	FLUKE Hard Case With Rollers
LTE MODULE	FLUKE Cellular LTE Module
177X-ANTENNA	FLUKE Antenna for LTE and WiFi
177X-ANT C-W LTE MODULE	FLUKE Cellular LTE Module with Antenna
17XX-CLAMP-ADPT-2V8	FLUKE BNC Clamp Adapter 2.8V
17XX-CLAMP-ADPT-1V	FLUKE BNC Clamp Adapter 1V
17XX BATT W/HOUSING	BATTERY PACK
FLUKE-17XX AUX	2 Channel Auxiliary DC Voltage Adapter. 0-10VDC, 0-1000VDC

+982165565901

+982144584619

+989034119385

پتروفهران گستر جنوب

FGJ-NDT.IR

DIGINDT.IR