



MarMonix MPQ400 Pro

POWER QUALITY ANALYZER

Product Overview

The Marmonix MPQ400 Pro is a professional power quality analyzer designed for measuring and analyzing electrical parameters in AC systems. It can measure voltage up to 1000V, current up to 1000A, and analyze harmonics up to the 50th order. With features like transient recording, voltage flicker analysis, energy consumption monitoring, and an advanced alarm system, it is an ideal tool for electrical engineers and industrial technicians.

Functions & Features

- The AC voltage value between the devices(up to 1000V).
- The AC current value value (include neutral wire, up to 1000A).
- Sustaining voltage and current value (include neutral wire).
- Minimum and maximum half-cycle RMS value of voltage and current.
- Peak of voltage and current (include neutral wire).
- Power network of 50 Hz or 60 Hz.
- The peak factor of voltage and current (excluding neutral).
- Calculation of the K factor (KF) (apply to calculate the harmonics current of transformers).
- Current and voltage distortion factor (DF) (excluding neutral).
- Current and voltage total harmonic distortion (excluding neutral).
- Active power, reactive power (capacitive and inductive), apparent power of each phase (excluding neutral).
- Power factors (PF) and phase different power factors (DPF) (excluding neutral).
- Short-term voltage flicker (PST) (excluding neutral).
- Active, reactive (capacitive and inductive), and apparent energy (excluding neutral).
- Current and voltage harmonics (excluding neutral) up to order 50: harmonic ratio, RMS value, minimum and maximum, and sequence harmonics.
- Apparent power harmonic(50 times): harmonic ratio, RMS value, minimum and maximum.
- Screen shot (60 groups maximum).
- Transients function. Detect and record power network parameters transient event records in a period of time (set the start and end times of the detection schedule)(up to 150 groups), store 4 complete period (one period before transient triggering, 3 period after triggering).
- Trend diagram record function (2GB memory card which with the time, date, the start and end time of setting record--- max can record 100 groups). with histogram or curve shows the recorded parameters values and averages in chronological order.
- Alarm function. Alarm record log (up to 12,800 groups)(triggered according to the setting threshold value); Set the start and end times of alarm monitoring; Displays the trigger channel of the alarm, the maximum and minimum value after the trigger, and the duration.

Available software for PC connection, data transmission & analysis, and printing measurement reports.

Technical Parameters

Measurement	Range	Display resolution	The maximum error in the range of the reference
Frequency	40Hz~ 70Hz	0.01Hz	$\pm(0.03)\text{Hz}$
True RMS phase-to-neutral voltage	1.0V~ 1000V	Min resolution 0.1V	$\pm(0.5\%+5\text{dgt})$
True RMS phase-to phase voltage	1.0V~ 2000V	Min resolution 0.1V	$\pm(0.5\%+5\text{dgt})$
DC voltage	1.0V~ 1000V	Min resolution 0.1V	$\pm(1.0\%+5\text{dgt})$
True RMS current	10mA~ 1000A	Min resolution 1mA	$\pm(0.5\%+5\text{dgt})$
Peak of phase-to-neutral voltage	1.0V~ 1414V	Min resolution 0.1V	$\pm(1.0\%+5\text{dgt})$
Peak of phase-to-phase voltage	1.0V~ 2828V	Min resolution 0.1V	$\pm(1.0\%+5\text{dgt})$
Current peak	10mA~ 1414A	Min resolution 1mA	$\pm(1.0\%+5\text{dgt})$
Peak factor	1.00~ 3.99	0.01	$\pm(1\%+2\text{dgt})$
	4.00~ 9.99	0.01	$\pm(5\%+2\text{dgt})$
Active power	0.000W~ 9999.9kW	Min resolution 0.001W	$\pm(1\%+3\text{dgt})$ $\text{Cos}\varphi \geq 0.8$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Cos}\varphi < 0.8$
Reactive power, inductive or capacitive	0.000VAR~ 9999.9kVAR	Min resolution 0.001VAR	$\pm(1\%+3\text{dgt})$ $\text{Sin}\varphi \geq 0.5$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Sin}\varphi < 0.5$
Apparent power	0.000VA~ 9999.9kVA	Min resolution 0.001VA	$\pm(1\%+3\text{dgt})$
Power factor	-1.000~ 1.000	0.001	$\pm(1.5\%+3\text{dgt})$ $\text{Cos}\varphi \geq 0.5$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Cos}\varphi < 0.5$
Active energy	0.000Wh~ 9999.9MWh	Min resolution 0.001Wh	$\pm(1\%+3\text{dgt})$ $\text{Cos}\varphi \geq 0.8$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Cos}\varphi < 0.8$
Reactive energy, inductive or capacitive	0.000VARh~ 9999.9MVARh	Min resolution 0.001VARh	$\pm(1\%+3\text{dgt})$ $\text{Sin}\varphi \geq 0.5$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Sin}\varphi < 0.5$
Papparent energy	0.000VAh~ 9999.9MVAh	Min resolution 0.001VAh	$\pm(1\%+3\text{dgt})$
Phase angle	-179°~ 180°	1°	$\pm(2^\circ)$
Tan φ (VA $\geq$ 50VA)	-32.76~ 32.76	Min resolution 0.001	$\varphi: \pm(1^\circ)$
Battery	Rechargeable lithium-ion battery pack 9.6V		
Capacity	4500 mAh		
Life	at least 500 charge-discharge cycles.		
Charging current	approx. 0.6A		
Charging time	approx. 8 hours		
Service T°	[0 °C ; 50 °C].		

Type of current sensor	True RMS current	Max error of true RMS current	Max error of phase angleφ
008B current clamp	10mA~ 99mA	±(1%+3dgt)	±(1.5°),Arms≥20mA
	100mA~ 10.0A	±(1%+3dgt)	±(1°)
040B current clamp	0.10A~ 0.99A	±(1%+3dgt)	±(1.5°)
	1.00A~ 100A	±(1%+3dgt)	±(1°)
068B current clamp	1.0A~ 9.9A	±(2%+3dgt)	±(3°)
	10.0A~ 1000A	±(2%+3dgt)	±(2°)
300F flexible coil current sensor	10A~99A	±(1%+3dgt)	±(3°)
	100A~6000A	±(1%+3dgt)	±(2°)

2.2. Instrument Weight

No.	Designation	Weight
1	MPQ-400 PRO	1.6Kg (with battery).
2	MPQ400-CT8-10A mA Clamp Probe 10A	170gX4.
3	MPQ400-CT40x35-100A AC Clamp Probe 100A	190gX4.
4	MPQ400-CT68-1000A AC Clamp Probe1000 A	510gX4.
5	MPQ400-CT300-6000A Flexible Sensors 6000A	330gX4.
6	AC/DC Switching Adapter with test leads Cables	900g.
7	Total weight.	9.2kg (with packaging).

Standard Configuration

S/N	ORDER ITEMS / PART NUMBER	Description
1	MAIN DEVICE	MPQ-400 PRO
2	MPQ400-CT300-6000A	Flexible Sensors 6000A
3	MPQ400-CT68-1000A	AC Clamp Probe1000 A
4	MPQ400-CT40x35-100A	AC Clamp Probe 100A
5	MPQ400-CT8-10A	mA Clamp Probe 10A
6	MPQ-USB-A	Data Transfer Probe
7	MPQ-3A-36W-ADP	AC/DC Switching Adapter
8	MPQ400-TL	TEST LEAD CABLES
9	MPQ400-DAS	DATA ANALAYEZ SOFTWARE
10	MPQ400-QC	MPQ- QC
11	MPQ-400-CRV-DOC	Product Calibration Reports Verification
12	MPQ400-UM	User Manual
13	MPQ400-HCC	Hard Carrying Case
14	MPQ400-CAL-Cer	Calibration Certificate
15	MPQ-AL-CLIP	5 Alligator Clip
16	MPQ Lit-Bi	Lithium Battery (Built in)
17	MPQ-2G-MC	2G Memory CARD (Built in)

With its advanced capabilities, the Marmonix MPQ400 Pro is an ideal choice for electrical engineers, industrial network technicians, and power quality analysts. This device enables precise monitoring of power networks and helps in identifying and resolving power quality issues effectively.