

# FR2010E+ Smart double clamp phase voltmeter



## I. Product Introduction

FR2010E+ Smart double clamp phase voltmeter, is a high-quality, multi-functional, high-precision, intelligent, portable handheld measuring instrument designed for on-site measurement of voltage, current, power, power factor, frequency, and phase. Widely used in energy metering, electricity inspection, power inspection, power meter and relay protection, differential detection, start-up test, industrial and mining enterprises, scientific research institutions and other departments. Instrument testing is precise, fast, simple, stable and reliable.

FR2010E+ Smart double clamp phase voltmeter has the ability to directly measure the AC voltage, AC current, the phase between voltage, between currents and the phase between voltage and current, it also has other measurement judgment functions, judge the inductive current and capacitive circuit, check the transformer wiring group, check whether the power meter is wired correctly. It is the ideal instrument for checking the use of power and performing secondary circuit inspection.

FR2010E+ Smart double clamp phase voltmeter is composed of a host, current clamp, and test line, and stores 500 sets of data at the same time, and has a data static storage function. With historical data read, consult, save, report, print and other functions.

## II. Technical Specification

<b>Function</b>	Measure three-phase AC voltage, current, voltage phase, current phase, voltage and current phase, frequency, phase sequence, active power, reactive power, apparent power, power factor, judging the transformer wiring group, inductive, capacitive circuit, test secondary circuit and busbar protection system, read out the phase relationship between the CTs of the differential protection groups, check the correctness of the wiring of the watt-hour meter, repair the line equipment, etc.
<b>Power</b>	3.7V lithium rechargeable battery
<b>Power consumption</b>	Turn on the backlight with the maximum power consumption of 50mA, and the battery works continuously for more than 12 hours
<b>Display mode</b>	LCD color display, 72×55mm
<b>Instrument size</b>	L/W/T: 187*119*48mm

<b>Voltage range</b>	AC 0.00V~600V	Resolution: 0.01V	Accuracy: $\pm(0.5\% \text{ FS})$
<b>Current range</b>	AC 0.0mA~20.0A	Resolution: 0.1mA	Accuracy: $\pm(0.5\% \text{ FS})$
<b>Phase range</b>	0.0° ~360.0°	Resolution: 0.1°	Accuracy: $\pm 1^\circ$
<b>Frequency range</b>	45.00Hz~65.00Hz	Resolution: 0.01Hz	Accuracy: $\pm 0.5\text{Hz}$
<b>Active power range</b>	0.0W~12kW	Resolution: 0.1W	Accuracy : $\pm$ (3%rdg+3dgt)
<b>Reactive power range</b>	0.0W~12kVAR	Resolution: 0.1VAR	Accuracy : $\pm$ (3%rdg+3dgt)
<b>Apparent power range</b>	0.0W~12kVA	Resolution: 0.1VA	Accuracy : $\pm$ (3%rdg+3dgt)
<b>Power factor range</b>	-1~+1	Resolution: 0.001	Accuracy: $\pm 0.03$
<b>Detection rate</b>	About 2 second/time		
<b>Data hold</b>	Press <b>HOLD</b> key to hold data during test, "HOLD" symbol display		
<b>Data storage</b>	500 groups		
<b>Silicone protective sleeve</b>	Have		
<b>USB interface</b>	USB interface, uploading data to a computer for analysis of management data		
<b>Automatic shut-down</b>	About 15 minutes after power on, the meter will automatically shut down to reduce battery consumption		
<b>Backlight function</b>	Yes, suitable for dark places and night use		
<b>Voltage detection</b>	When the battery voltage is lower than 3.2V, the battery voltage is low and the symbol indicates, prompting timely charging		
<b>Instrument weight</b>	Host: 350g(including battery)		
	Tip-shaped current clamp: 180g×2		
	Test line: 190g		
<b>Voltage test line length</b>	1.5m		
<b>Current clamp line length</b>	2m		
<b>Working temperature and humidity</b>	-10℃~40℃; below 80%Rh		
<b>Storage temperature and humidity</b>	-10℃~60℃; below 70%Rh		
<b>Input impedance</b>	Test voltage input impedance is: 1MΩ		
<b>Pressure resistance</b>	The withstand voltage of 1000V/50Hz sine wave AC voltage between the instrument circuit and the housing lasts 1 minute		
<b>Insulation</b>	Between instrument line and housing $\geq 100\text{M}\Omega$		
<b>Structure</b>	Housing insulation		
<b>Suitable for safety regulations</b>	IEC61010-1 CAT III 600V, IEC61010-031, IEC61326, pollution level 2		

### III. Accessories

<b>Phase voltmeter</b>	1PC
<b>Current clamp</b>	2PCS
<b>USB communication line</b>	1PC
<b>Monitoring software (CD-ROM)</b>	1PC
<b>Instrument box</b>	1PC

<b>Test line</b>	4PCS (Red、black each 2)
<b>3.7V lithium rechargeable battery(internal)</b>	1PC
<b>Charger</b>	1PC
<b>Manual, certificate</b>	1SET



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