Power Analyzer/Meter

High-precision Three-phase Power Meter

TM-330E

Product description:

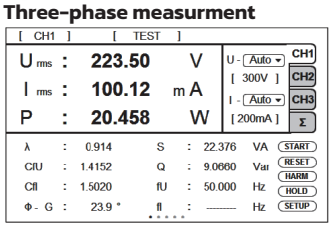
Three-phase high-precision power meter, 0.1% accuracy, can measure both AC and DC electrical values. DC measurement bandwidth: 0.5Hz~100kHz, with a maximum voltage range of 1000V (1500V peak), a maximum current of 50A, and supports external sensors (optional). It can measure sudden load changes and maintain high accuracy stability, while being small and lightweight. Suitable for Analysis of standby power consumption and power of single-phase/three-phase household appliances and commercial appliances, Electrical performance measurement of electric vehicles and charging piles, Power electronics, transformers and generator.

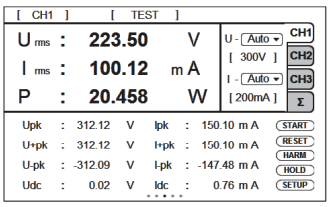
Features

- Display size 800*480 high brightness, high resolution touch screen.
- Using high-speed DSP processor, 16 -bit high-speed and high-precision AD converter, the basic accuracy can reach 0.1% , the fastest 100ms display data update cycle.
- Single channel can measure current 50A (optional 20A , 10A , 5A , 2A , 1A and other specifications, and support mixed matching), minimum power resolution 0.1mW , meet the standby power consumption measurement needs and rated power measurement needs.
- Can be used for both AC and DC signals, power measurement bandwidth DC , 0.5Hz~100kHz , can meet various standard and non-standard sinusoidal waveform load power measurement.
- Three-phase harmonic analysis can be performed simultaneously, up to 50 harmonics measurement, distortion analysis, can intuitively display the harmonic content and total content.
- Three-phase frequency can be measured simultaneously.
- Using 500Hz, 5.5kHz low-pass filter, can measure the fundamental value of PWM waveform, filter out high-frequency interference of switching power supply current.
- Transformation ratio function, supports conventional II and VV type voltage / current transformers; supports IV type current sensor with BNC interface , maximum input voltage 10V, optional large current sensor.
- Can simultaneously measure the input and output energy consumption of the equipment and calculate its efficiency.
- Can accumulate positive electric energy, reverse electric energy and comprehensive electric energy separately, and measure the buying and selling electric energy.
- Each channel can independently set the threshold and measurement threshold value of voltage, current, power, power factor, etc., automatically determine the upper and lower limits, and alarm.

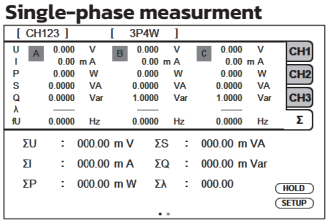
Channel Configulation

Three-phase measurment

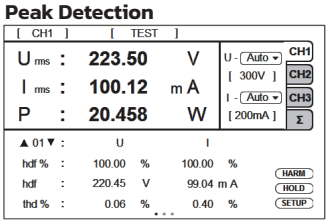




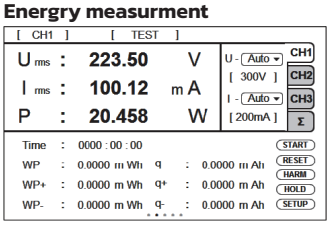
Single-phase measurment



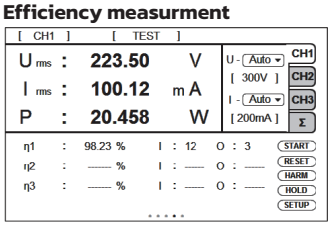
Peak Detection



Energry measurment



Efficiency measurment



Information interface function

The three-phase power analyzer can support a variety of wiring methods, including 1P2W, 1P3W, 3P3W, 3V3A, 3P4W, etc. Users can configure the multi channel mode according to the requirements to meet the measurement of voltage, current, power, efficiency and other parameters of specific loads.

Wiring Method	Channel 1	Channel 2	Channel 3
1P2W single-phase two-wire	1P2W	1P2W	1P2W
1P3W single-phase three-wire	1P3W		
3P3W three-phase three-wire	3P3W		
3V3A three-phase three-wire	3V3A		
3P4W three-phase four-phase	3P4W		

Ordering Informations

TM-330E : High Precision Three-phase Power Meter
1000V (1500Vrms)/50A

Standard Accessories :

- User Manual
- Power cord

Specifications

Model	TM-330E
Display	7-inch widescreen color LCD touch screen
Measurement parameters	Voltage U, current I, active power P, reactive power Q, apparent power S, power factor PF, voltage frequency fU, current frequency fI, phase angle Φ, efficiency η, total electric energy Wh, forward electric energy Wh+, reverse electric energy Wh−, current integral Ah, 50th harmonic analysis HDF, voltage and current distortion THD, peak voltage Upk, peak current Ipk, voltage peak factor CfU, current peak factor CfI, DC voltage Udc, DC current Idc, rectified average value Umn/Imn/ Urmn/Irmn, three-phase parameters Σ
Wiring Method	1P2W (single-phase 2 wire), 1P3W (single-phase 3-wire), 3P3W (three-phase 3-wire, 2 voltages 2 currents), 3P3W (3V3A) (three-phase 3-wire, 3 voltages 3 currents), 3P4W (three-phase 4-wire)
Measurement channels	3
Input Impedance	Voltage: about 2MΩ, direct current input: about 2.5mΩ (50A specification), current sensor input: about 100kΩ
AD sampling rate	About 100kS/s
Full scale crest factor	3
Voltage rated range (Direct input)	15/30/60/100/150/300/600/1000[V] *1000V full scale crest factor is 1.5
Current rated range (Direct input)	50A current specification: 500m/1/2/5/10/20/40/50*[A]
	Optional: 20A current specification: 100m/200m/500m/1/2/5/10/20*[A]
	10A current specification: 50m/100m/200m/500m/1/2/5/10*[A]
	5A current specification: 20m/50m/100m/200m/500m/1/2/5*[A]
	2A current specification: 10m/20m/50m/100m/200m/500m/1/2*[A]
	1A current specification: 5m/10m/20m/50m/100m/200m/500m/1*[A]
	*The maximum full-scale crest factor of the above specifications is 1.5
Current rated range (Sensor input)	50m/100m/200m/500m/1/2/5/10[V]
Voltage and current range accuracy	(1% ~ 110%)*×range * The accuracy range of voltage 1000V range and current 50A range is (1% to 100%) × range
Power factor range	±(0.001 ~ 1.000)
Voltage Measurement accuracy	DC ± (0.1% × display value + 0.1% × range)
	0.5Hz ≤ f ＜45Hz ± (0.1% × display value + 0.2% × range)
	45Hz ≤ f ≤ 66Hz ± (0.1% × display value + 0.1% × range)
	66Hz < f ≤ 1kHz ± (0.1% × display value + 0.2% × range)
	1kHz < f ≤ 10kHz ± ({0.1+0.05 × (f-1)}% × display value + 0.2% × range)
	10kHz < f ≤ 100kHz ± ({0.5+0.04 × (f-1)}% × display value + 0.3% × range)
Current Measurement accuracy	DC ± (0.1% × display value + 0.1% × range)
	0.5Hz ≤ f < 45Hz ± (0.1% × display value + 0.2% × range)
	45Hz ≤ f ≤ 66Hz ± (0.1% × display value + 0.1% × range)
	66Hz < f ≤ 1kHz ± (0.1% × display value + 0.2% × range)
	1kHz < f ≤ 10kHz ± ((0.1 × f)% of displayed value + 0.2% × range)
	10kHz < f ≤ 100kHz ± ({1+0.08 × (f-10)}% × display value + 0.3% × range)
Active power measurement accuracy	DC ± (0.1% × display value + 0.1% × range)
	0.5Hz ≤ f < 45Hz ± (0.3% × display value + 0.2% × range)
	45Hz ≤ f ≤ 66Hz ± (0.1% × display value + 0.1% × range)
	66Hz < f ≤ 1kHz ± (0.2% × display value + 0.2% × range)
	1kHz < f ≤ 10kHz ± ({0.2+0.1 × (f-1)}% × display value + 0.2% × range)
	10kHz < f ≤ 50kHz ± ({0.2+0.1 × (f-1)}% × display value + 0.3% × range)
	50kHz <f ≤ 100kHz ± ({5.1+0.18 × (f-50)}% × display value + 0.3% × range)
Active Power Measuring range	50A current specification: 11mW~11kW@220V , PF=0.01~1
	Optional: 20A current specification: 2.2mW~4.4kW@220V , PF=0.01~1
	10A current specification: 1.1mW~2.2kW@220V , PF=0.01~1
	5A current specification: 0.4mW~1.1kW@220V , PF=0.01~1
	2A current specification: 0.2mW~440W@220V , PF=0.01~1
	1A current specification: 0.1mW~220W@220V , PF=0.01~1
Low power factor Power accuracy range	Apparent power measurement accuracy, ± (0.2%×display value)@PF=0 The active power measurement accuracy is based on the above, plus 0.05% of the reading @ PF = 0.001 ~ 0.1
Active power resolution	0.1mW
Frequency measurement range	DC, 0.5Hz ~ 100kHz
Frequency measurement accuracy	±0.1%×display value
Harmonic Measurement	10Hz ~ 600Hz, 1st ~ 50th harmonic content, total distortion
Energy measurement range	0 ~ 999999MWh (resolution: 1mWh/ 0.01mAh)
Energy measurement accuracy	±0.2%×displayed value
Expanded uncertainty	Voltage, current, power, frequency, electric energy ≤ 0.20%
Filter function	500Hz, 5.5kHz voltage line, current line and frequency filtering
Transformation ratio range	Voltage 1 ~ 50000, Current 0.1 ~ 5000.0, BNC 0.01~999.99
Data update cycle	100m / 250m / 500m / 5 [s]
Alarm function	Voltage, current, power, power factor; upper limit, lower limit, threshold setting
Control interface	Standard: RS-232, switch interface; Optional: RS-485
Terminal block depth	32.5 mm (current terminal)
Power Input	198 ~ 240Vac, 50Hz
Dimensions (WxHxD)	213 x 132.5 x 483.5 mm
Weight	Approx. 7 kg.