

# TD3250 Portable Three-phase Energy Meter Tester



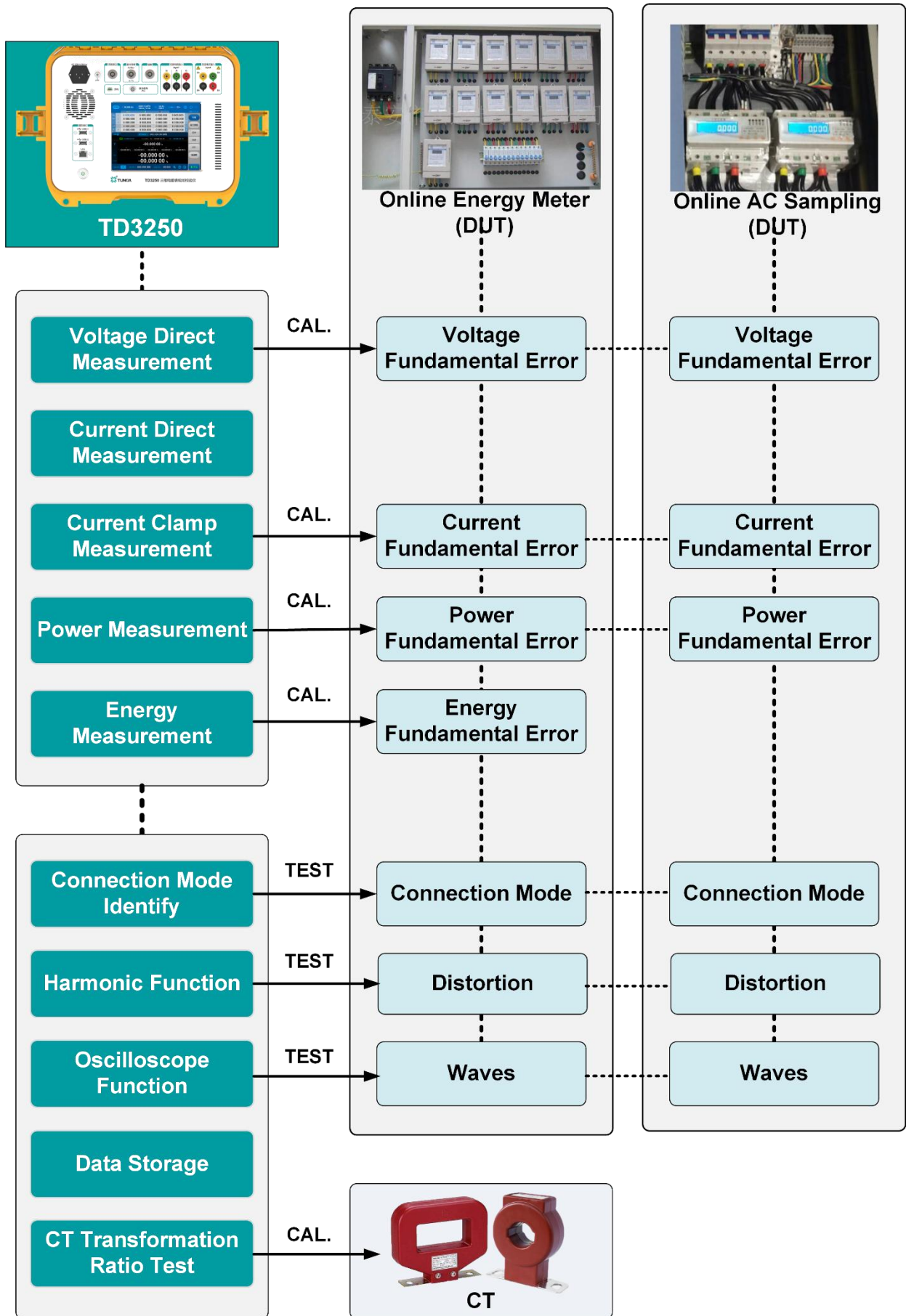
## 1. Summary

**TD3250** is a portable standard meter specially used for energy meter on-site test, AC sampling etc. It integrates the functions of electrical parameter measurement, energy meter calibration, connection mode identification, harmonic analysis, waveform display, phasor diagram display, data management.

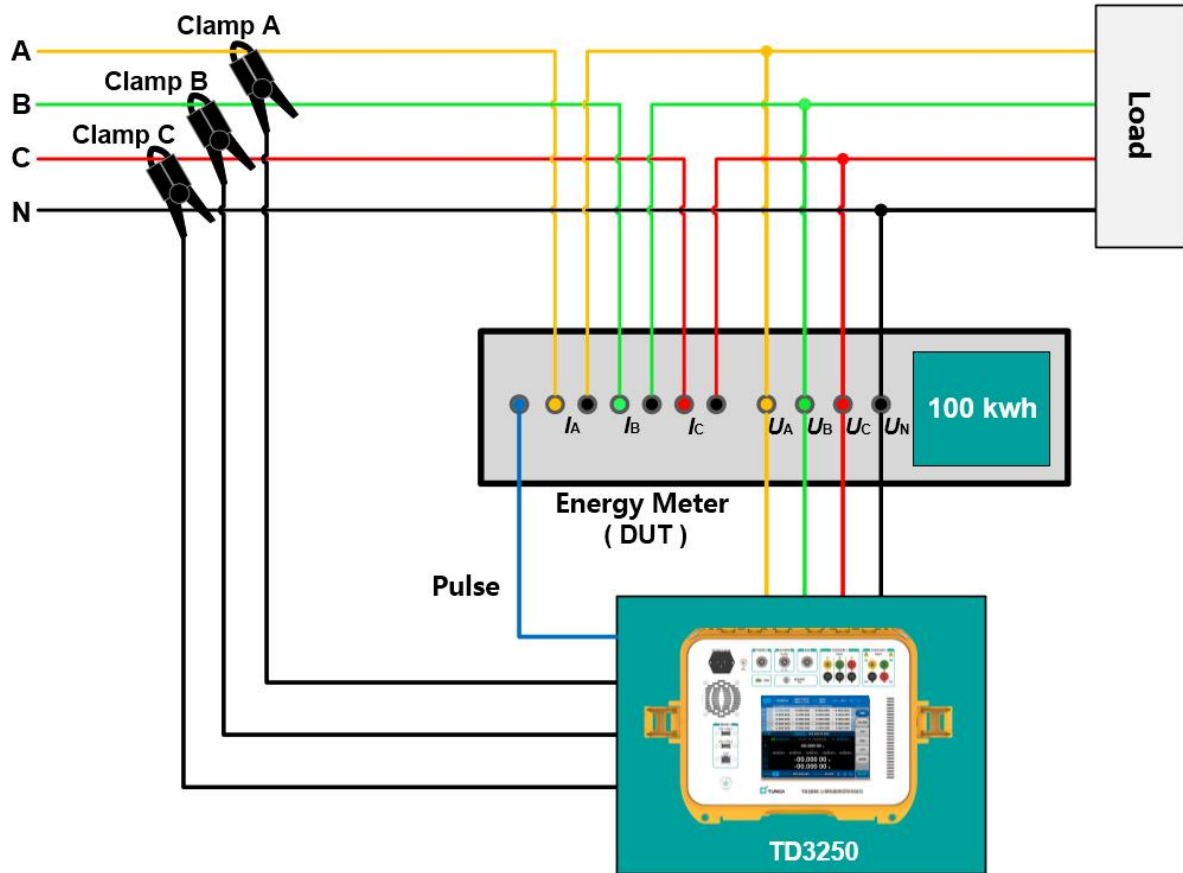
## 2. Features

- Accuracy: Class 0.02 or 0.05.
- 3PH voltage measurement: 0~480 V.
- 3PH current measurement (direct) : 50 mA~ 12 A.
- 3PH current measurement (clamp) : 100 mA~ 120 A.
- Support energy pulse optical/electrical pulse input.
- LCD touch screen.
- Support AC 100 V~264 V wide range supply.
- Support large capacity lithium battery.
- Internal memory, and quickly record test data.
- USB and RS232 interfaces.

### 3. Application

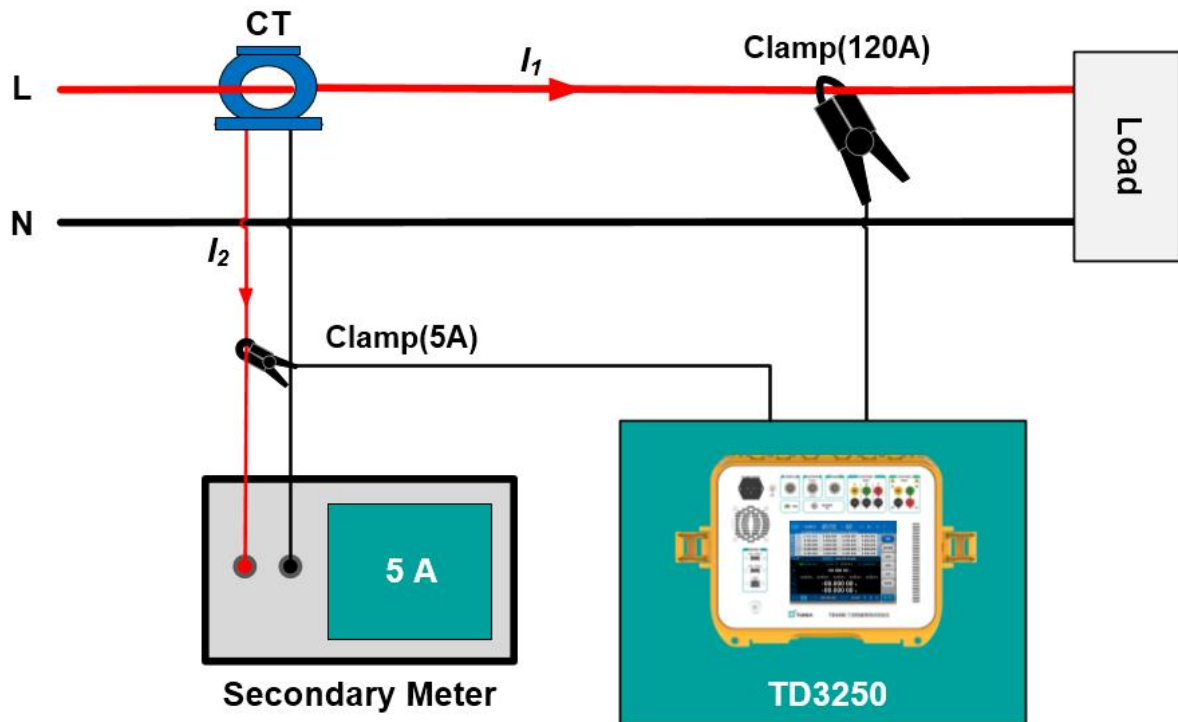


### ☆ Calibration for Energy Meter Online



- Support direct measurement for 10 V~480 V, 0.05 A~12 A, and current clamp measurement for 0.1 A~120 A; energy metering;
- **Application 1 (direct measurement of current):** applicable to the calibration of single-phase / three-phase voltage source, current source, power source, etc. in the laboratory or on site.
- **Application 2 (use clamp for current):** It is not necessary to cut off the circuit, just clamp the current line into the jaw, and you can real-time measuring online.

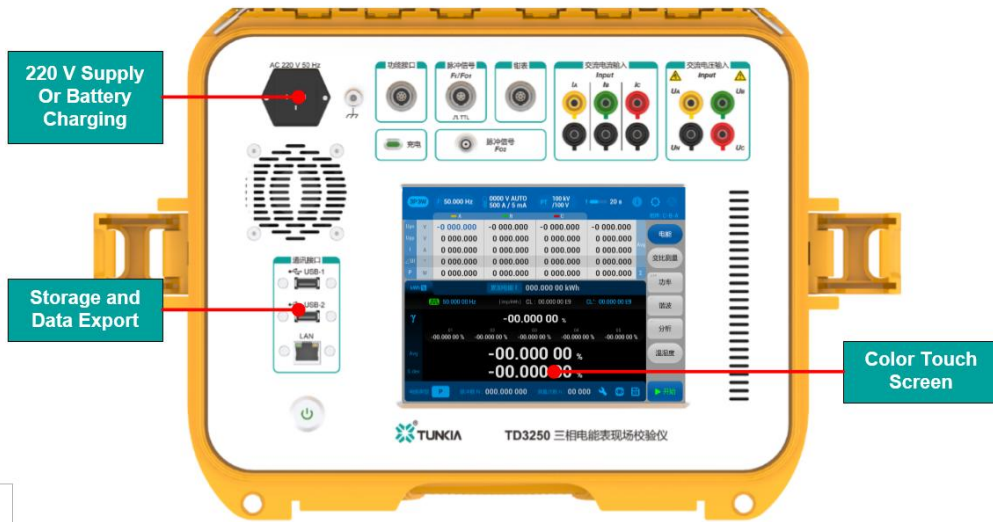
## ☆ CT Transformation Ratio Calibration



- CT transformation ratio test: use large current clamp for primary signal of CT, and with small current clamp for secondary signal of CT; Calculate the transformation ratio of CT and the phase relationship of primary/secondary current. Help judge if the CT runs well.
- Note: Standard configuration for 5 A clamp, which can be used for the secondary side, If user need other clamps should indicate the optional specification in the order.

## 4. Characteristics

### ★ Convenient Operation

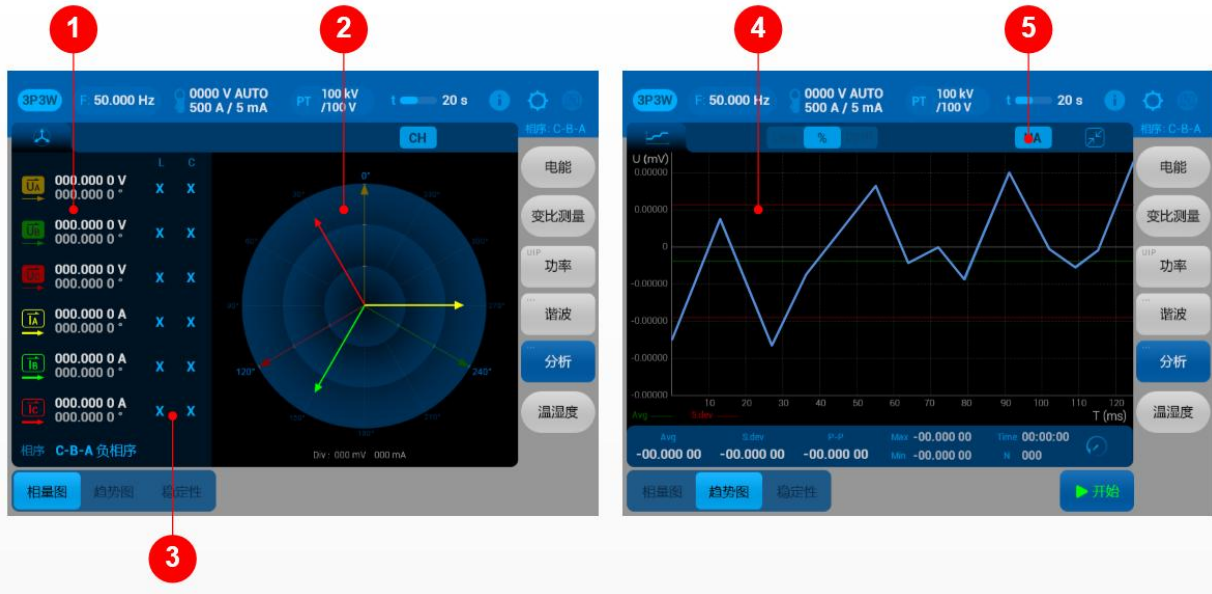


- Color LCD screen, supporting touch operation.
- **Front Panel Wiring:** convenient for the user to replace the test lead.
- 220 V mains power supply or the lithium battery mode available.
- Internal memory and quickly record the test data, data can be transferred to the PC.



- The volume is equivalent to the conventional tool box, weighs about 8 kg.

★ Connection Mode Identify and Graphical Display



S/N	Function
1	Accurately measure/display the amplitude and phase of voltage and current of each phase.
2	Accurately measure the phase between voltage and current of each phase, and visually display them in the form of phasor diagram.
3	Automatically identify the actual results of voltage and current, including phase sequence display.
4	The trend chart display function of the measuring channel can display the trend change of the measured electricity quantity with time.
5	Users can customize single or multiple power waveforms for display.

☆ Harmonic Function



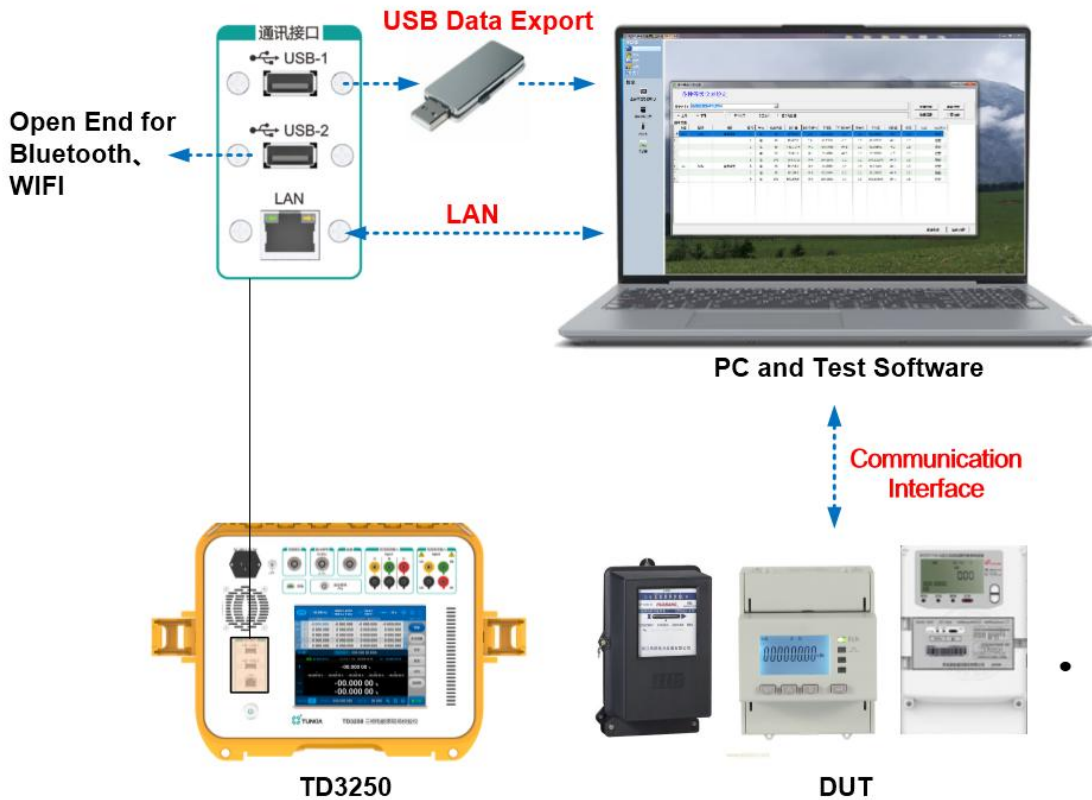
S/N	Function
1	It can measure 2 <sup>nd</sup> ~63 <sup>rd</sup> harmonics and display the amplitude or content.
2	Display the phase value of each harmonic.
3	Display the waveform after harmonic superposition.
4	Display the phase of each harmonic. The spectrum of each harmonic is displayed visually in the form of histogram (fundamental wave is 100%).

☆ Data Management



- The equipment can store and manage the test data on site.
- The selected data can be saved to the mobile USB flash disk.

☆ Test Software



- USB and LAN communication interfaces, and customize the test report.



## 5. Specifications

### 5.1 Three-phase Voltage/Current Measurement

Type	Measurement Mode	Range	Resolution	Accuracy	
				$\pm(\text{ppm of reading} + \text{ppm of range})^{[1]}$	
				Class 0.05	Class 0.02
<b>ACV</b>	Direct Measurement	110 V	1 mV	300 + 200	120 + 80
		220 V	1 mV	300 + 200	120 + 80
		440 V	1 mV	300 + 200	120 + 80
<b>ACI</b>	Direct Measurement	1 A	10 $\mu$ A	300 + 200	120 + 80
		10 A	100 $\mu$ A	300 + 200	120 + 80
	Clamp Measurement	1 A <sup>[2]</sup>	10 $\mu$ A	0.2%*RG	0.1%*RG
		5 A	10 $\mu$ A	0.2%*RG	0.1%*RG
		10 A <sup>[2]</sup>	100 $\mu$ A	0.2%*RG	0.1%*RG
		20 A <sup>[2]</sup>	100 $\mu$ A	0.2%*RG	0.1%*RG
		100 A <sup>[2]</sup>	1 mA	< 50 A: 0.2%*RG; ≥ 50 A: 0.5%*RG	< 50 A: 0.1%*RG; ≥ 50 A: 0.2%*RG

Note [1]: (ppm = parts per million) (e.g., 10ppm = 0.001%).

Note [2]: The clamp of 5A model is standard, and other models is option.

- Voltage input: 10 V~480 V, 6-digits decimal display.
- Current input (direct measurement): 0.05 A~12 A, 6-digits display.
- Current input (clamp measurement): 0.1 A~6 A, 6-digits display.

## 5.2 Frequency/Phase

Frequency	Range	45.000 Hz~65.000 Hz	
	Resolution	0.001 Hz	
	Accuracy	± 0.01 Hz	
Phase	Range	0.000°~359.999°	
	Resolution	0.001°	
	Accuracy	Direct Measurement:	± 0.05°
		Clamp Measurement:	± 0.2°

## 5.3 Three-phase Power / Energy Measurement

Power/Energy Parameters	Accuracy			
	Direct Measurement		Clamp Measurement	
	Class 0.05	Class 0.02	Class 0.05	Class 0.02
Active P/E   $\cos \varphi  \geq 0.5$	± 0.05%*FS <sup>[3]</sup>	± 0.02%*FS <sup>[3]</sup>	± 0.2%*FS <sup>[3]</sup>	± 0.1%*FS <sup>[3]</sup>
Reactive P/E   $\sin \varphi  \geq 0.5$	± 0.1%*FS <sup>[3]</sup>	± 0.05%*FS <sup>[3]</sup>	± 0.5%*FS <sup>[3]</sup>	± 0.2%*FS <sup>[3]</sup>
Apparent power	± 0.1%*FS <sup>[3]</sup>	± 0.05%*FS <sup>[3]</sup>	± 0.5%*FS <sup>[3]</sup>	± 0.2%*FS <sup>[3]</sup>
Power factor	± 0.0005	± 0.0005	± 0.002	± 0.002





Note [3]: FS=voltage range value × current range value.

- Power factor measurement range: -1.000 0... 0.000 0... 1.000 0.
- Standard energy pulse output: high frequency full range value corresponds to 60 kHz, low frequency full range value corresponds to 6 Hz.
- Standard energy pulse input: frequency ≤ 200 kHz, voltage: 0... 3.3 V... 24 V.

## 6. General Specifications

<b>Power Supply</b>	AC ( 220 ± 22 ) V, ( 50 ± 2 ) Hz
<b>Temperature</b>	Working temperature: 0°C~45°C
<b>Performance</b>	Storage temperature: -20°C~70°C
<b>Humidity</b>	Working humidity: < 80% @ 30°C, < 70% @ 40°C, < 40% @ 50°C
<b>Performance</b>	Storage humidity: (20%~80%) R·H, non-condensing
<b>Interface</b>	USB, LAN

## 7. Ordering Information

<p><b>TD3250</b> -    </p>	Class	
	Code	Note
	500	Class 0.05
200	Class 0.02	

e.g.: **TD3250-200** represents class 0.02.