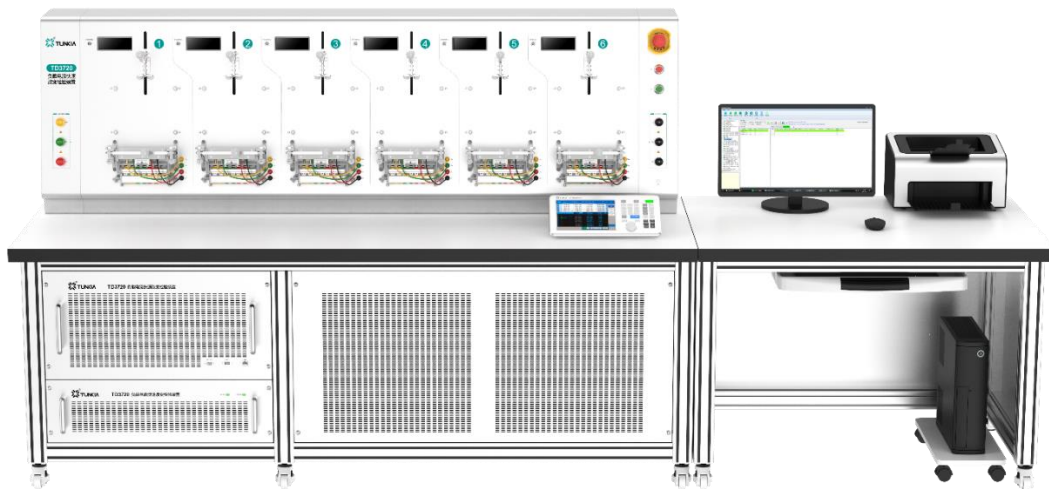


TD3720 Load Current Rapid Change Test Device



* Reference only. Configuration and details may vary depending on the application scenario..

1. Summary

TD3720 is a set of equipment used to test the impact of rapid changes in load current on the error of three-phase electric energy meters. It is mainly composed of a three-phase electric energy meter calibration device (whose current channel can be quickly shut down and connected), system and software, etc. The device accuracy is class **0.05**.

2. Features

- The three-phase standard source has a maximum output of 456 V / 120 A, which can ensure the stability of the value output under full load conditions.
- The user can set the duration of ton and toff, the total duration of a single test, etc. The switching of off and on is completed within a nominal frequency cycle, a single test can be repeated for more than 4 hours, and multiple tests can be performed continuously.
- Supports AC voltage sag and short-term interruption tests for voltage circuit power supply.
- **Zero-crossing switching:** The current can be set to complete the switch switching at the zero-crossing point, which can ensure the accuracy of the load rapid change signal.
- By reading the cumulative electric energy value of the standard device and comparing it with the cumulative electric energy value of the DUT, the error deviation of the DUT under the condition of

rapid change of load current is measured.

- **Mobile measurement station:** The value output can be observed or controlled through its LCD touch screen, which is convenient for manual testing.
- **Automatic test software:** It can complete the automatic test records of the inherent error of the energy meter, the initial indication of the energy meter, the end indication of the energy meter, the energy meter metering, the energy meter metering of standard device, the tested pulse, the metering error and other items. The whole process is automatic and the test report is exported.
- **Breakpoint resume function:** After the device is powered off and restarted, the software supports detection from the current error point.
- **Crimping wiring:** Equipped with a crimping wiring device, it can automatically crimp the energy meter that meets the standard type requirements of the State Grid and the Southern Grid, which is convenient for users to quickly check the meter.
- **Multi-meter position calibration test bench:** 3/6 positions are optional, and the test bench is equipped with interfaces such as power output, energy pulse, and communication.
- **Single-three-phase compatibility (optional):** Optional compatible single-phase meter testing

3. Specification

3.1 Three-phase Voltage Output

Range	Resolution	Short-term Stability (% / min)	Measurement Uncertainty ($k=2$) (ppm*RD+ppm*RG) ^①	Distortion (%)
60 V	0.1 mV	0.01	200 + 50	< 0.3
120 V	1 mV	0.01	200 + 50	< 0.3
240 V	1 mV	0.01	200 + 50	< 0.3
380 V	1 mV	0.01	200 + 50	< 0.3

Note: ① RD is the reading, RG is the range, the same below

- Output range: 6 V ~ 456 V, 6-digit display, load capacity: 15 VA / (phase·meter position)
- Symmetry: voltage $\leq 0.2\%$, phase $\leq 0.5^\circ$
- Protection function: short circuit protection, overload protection

3.2 Three-phase Current Output

Range	Resolution	Short-term Stability (% / min)	Measurement Uncertainty ($k=2$) (ppm*RD+ppm*RG)	Distortion (%)
100 mA	1 μ A	0.01	200 + 50	< 0.5
200 mA	1 μ A	0.01	200 + 50	< 0.5
500 mA	1 μ A	0.01	200 + 50	< 0.5
1 A	10 μ A	0.01	200 + 50	< 0.5
2 A	10 μ A	0.01	200 + 50	< 0.5
5 A	10 μ A	0.01	200 + 50	< 0.5
10 A	100 μ A	0.01	200 + 50	< 0.5
20 A	100 μ A	0.01	200 + 50	< 0.5
50 A	100 μ A	0.01	200 + 50	< 0.5
100 A	1 mA	0.01	200 + 50	< 0.5

- Output range: 10 mA ~ 120 A, 6-digit display, load capacity: 30 VA / (phase·meter position)
- Symmetry: current $\leq 0.5\%$, phase $\leq 0.5^\circ$
- Protection function: open circuit protection, overload protection.

3.3 Frequency/Phase

Measurement		Class 0.05
Frequency	Measuring range	45 Hz~65 Hz
	Minimum resolution	0.000 01 Hz
	Measurement uncertainty (k=2)	0.005%*RD
Phase (I ≥ 50mA)	Measuring range	0~360°
	Minimum resolution	0.000 1°
	Measurement uncertainty (k=2)	0.012°

3.4 Power/Energy

Voltage Range	Current Range	Power Factor	Measurement Uncertainty (k=2)
			Class 0.05
30 V ≤ U ≤ 380 V	50 mA ≤ I ≤ 120 A	0.5L~1~0.5C	0.05%*RD
	10 mA ≤ I < 50 mA	1	0.05%*RD
		0.5L~1~0.5C	0.08%*RD

- Output power stability: 0.02% / 2min;
- Power/ energy measurement range: combination of AC voltage range and AC current range;
- Power factor measurement range: -1.000 00...0.000 00...1.000 00;
- Standard electric energy pulse output: high frequency full range value corresponds to 60 kHz, low frequency full scale range corresponds to 6 Hz;
- Standard electric energy pulse input: frequency ≤ 200 kHz, voltage: 0...3.3 V...24 V;
- Energy error display: automatic, with a resolution of 0.0001%.

4. General Specification

Power Supply	Single-phase AC (220 ± 22) V, (50 ± 2) Hz		
Power consumption	/		
Warm-up Time	30mins		
Temperature Performance	Working temperatures: 5°C~45°C; Storage temperature: -10°C~55°C		
Humidity Performance	Working humidity: < 80% @ 30°C, < 70% @ 40°C, < 40% @ 50°C Storage humidity: (20%~80%) R·H, no condensation		
Altitude	< 3000 m		
Communication Interface	RS232, RS485, LAN		
Test Bench Dimensions (L*W*H /total height, mm)	Positions	3-position	6-position
	Crimp wiring	1350*750*750/1395	1850*750*750/1395
Computer Table Dimensions (optional) ((L*W*H, mm)	1000*800*750		

5. Ordering Information

