

TH0520 Precision Current and Voltage Measurement Standard



1. Summary

TH0520 is a Current and Voltage Measuring instrument that directly measures currents up to 2 A or 1 0.5 V voltage, mated to precision I/V, V/V conversion standards, current sensor can be set AC DC high current or high voltage measurement system.

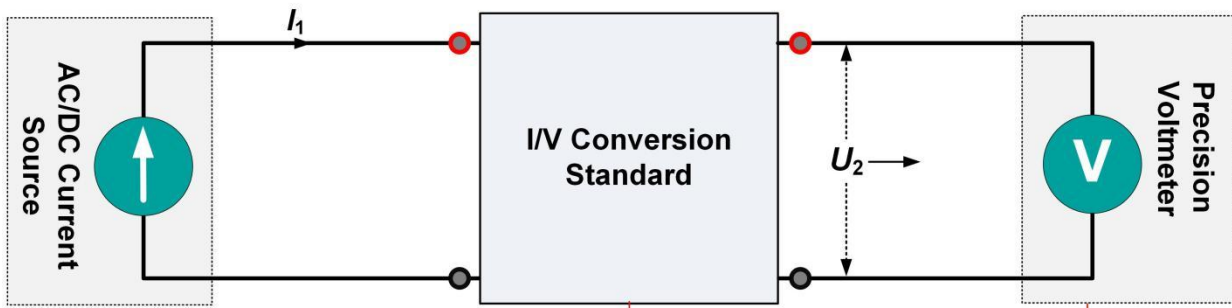
2. Features

- Direct current measurement: 10 μ A~2 A.
- Direct voltage measurement: 10 mV~10.5 V.
- Frequency range: DC, 40 Hz~5 kHz.
- Current measurement uncertainty up to 50 ppm @DC.
- Voltage measurement uncertainty up to 30 ppm @DC.
- Equipped with a dedicated current sensor measurement interface.
- Set the sensor ratio to directly display the primary charge.
- Support DC ripple, 2nd~64th harmonic measurement.
- LCD touch color screen.

3. Applications

- Accurate measurement of AC and DC current and voltage on site
- Calibrate the AC and DC current standard source/meters
- Calibrate AC and DC voltage standard sources/meters

☆ High current conversion measurement



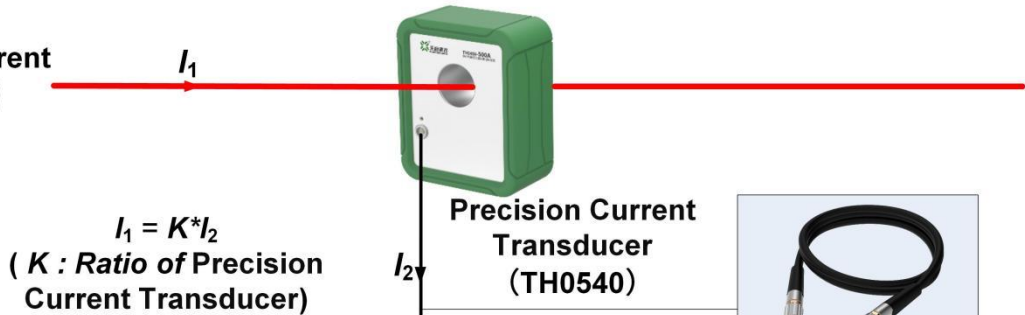
$$I_1 = K * U_2$$

(K : Ratio of I/V Conversion Standard)



- It can be used with I/V conversion standards such as TH0400 Precision Coaxial Current Shunt and TH0500U Precision Current Transformer to achieve precise measurement of high-current signals.

High Current (DUT)



$$I_1 = K * I_2$$

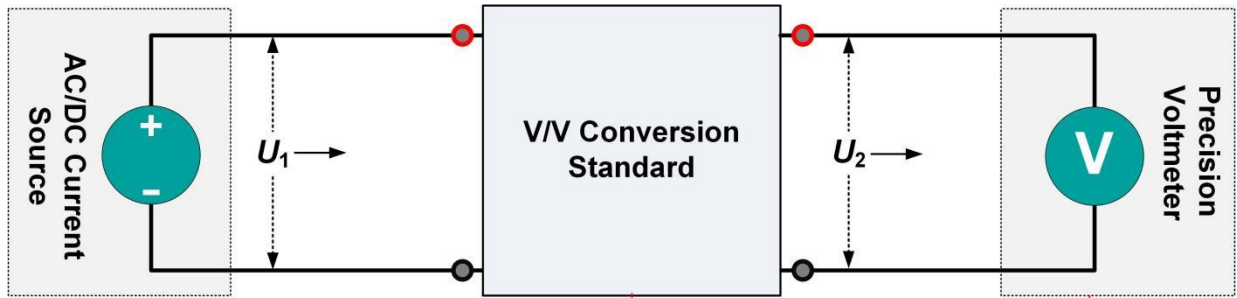
(K : Ratio of Precision Current Transducer)



Special Measuring Wire (Power Supply, Secondary Measurement)

- It can also be connected to a dedicated current sensor for high-current conversion measurements.

☆ Connect V/V to measure high voltage



$$U_1 = K \cdot U_2$$

(K : Ratio of V/V Conversion Standard)



- It can be used with precision voltage dividers such as TH 0150 and TH0170 to achieve precise measurement of high-voltage signals.

4. Specifications

4.1 AC and DC current measurement

Measurement type	Current range	Resolution	Measurement uncertainty at different frequencies (k=2, ppm*RD+ppm*RG).			
			DC	45 ≤ F ≤ 200	200 < F ≤ 1k	1k < F ≤ 5k
Direct measurement	100 μA	0.1 nA	60 +40	120 + 80	200 + 100	300 + 200
	200 μA	0.1 nA	60 +40	120 + 80	200 + 100	300 + 200
	500 μA	0.1 nA	60 +40	120 + 80	200 + 100	300 + 200
	1 mA	1 nA	30 + 20	60 +40	100 + 50	150 + 50
	2 mA	1 nA	30 + 20	60 +40	100 + 50	150 + 50
	5 mA	1 nA	30 + 20	60 +40	100 + 50	150 + 50
	10 mA	10 nA	30 + 20	60 +40	100 + 50	150 + 50
	20 mA	10 nA	30 + 20	60 +40	100 + 50	150 + 50
	50 mA	10 nA	30 + 20	60 +40	100 + 50	150 + 50
	100 mA	100 nA	30 + 20	60 +40	100 + 50	150 + 50
	200 mA	100 nA	30 + 20	60 +40	100 + 50	150 + 50
	500 mA	100 nA	30 + 20	60 +40	100 + 50	150 + 50
	1 A	1 μA	30 + 20	60 +40	100 + 50	150 + 50
	2 A	1 μA	30 + 20	60 +40	100 + 50	150 + 50
Sensor measurement (Straight in).	5 A	1 μA	30 + 20	200 + 100	500 + 100	1000 + 100
	10 A	10 μA	30 + 20	200 + 100	500 + 100	1000 + 100
	20 A	10 μA	30 + 20	200 + 100	500 + 100	1000 + 100
	50 A	10 μA	30 + 20	200 + 100	500 + 100	1000 + 100
	100 A	100 μA	30 + 20	200 + 100	500 + 100	1000 + 100
Sensor measurement (Piercing).	200 A	100 μA	30 + 20	200 + 100	500 + 100	1000 + 100
	500 A	100 μA	30 + 20	200 + 100	500 + 100	1000 + 100
	1 kA	1 mA	30 + 20	200 + 100	500 + 100	1000 + 100
	2 kA	1 mA	30 + 20	200 + 100	500 + 100	1000 + 100

Note [1]: RD is the reading value and RG is the range value. Note [2]: Current sensors are optional, one sensor per range

4.2 AC and DC voltage measurement

Measurement type	Voltage range	Resolution	Measurement uncertainty at different frequencies (k=2, ppm*RD+ppm*RG).			
			DC	45 ≤ F ≤ 200	200 < F ≤ 1k	1k < F ≤ 5k
Direct measurement	1 V	1 mV	18 + 12	30 + 20	60 + 40	100 + 50
	2 V	1 mV	18 + 12	30 + 20	60 + 40	100 + 50
	5 V	1 mV	18 + 12	30 + 20	60 + 40	100 + 50
	10 V	10 mV	18 + 12	30 + 20	60 + 40	100 + 50

5. General Specifications

Power supply	AC (220±22) V, (50±2) Hz
Maximum power consumption	100 VA
Warm-up time	2 times the warm-up time from the last forecast, up to 30 minutes
Working environment	15°C ~ 35°C, (20%~85%) R·H, no-condensing
Storage environment	0°C ~ 40°C, < 95% R·H, no-condensing
altitude	<3000 m
Communication interface	USB×1、LAN×1、RS232×1
Size	215 mm (W) × 252 mm (D) ×88 mm(H), without feet
Quality	Approx 5 kg