TH0330 Ultra-Stable Resistance Standard

1. Summary

TH0330 is a series of standard resistance with ultra-high precision and stability, using new stress-free technology and has excellent long-term stability and extremely low temperature coefficient. With good anti-moisture and anti-oxidation properties, it can be used directly in the air. This type of resistance can be used with precision I/I conversion standards and precision voltmeters to achieve a wide range of precision current conversion measurements. It is also suitable for the calibration of precision transformers, sensors, measurement laboratory resistors, high-precision resistance meters, multi-function calibrators and high-precision digital multimeters.

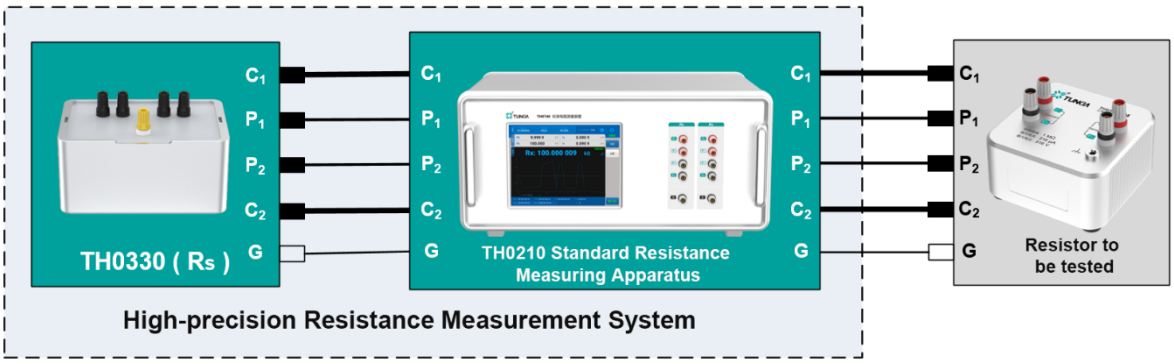
2. Features

- Nominal resistance value: 1 Ω ~ 1 kΩ (4 in total)
- Using stress-free metal foil technology
- Long-term stability: typical value 0.2 ppm/year
- Low temperature coefficient: 0.05 ppm/℃@ (23℃±5℃)
- Moisture resistance: 0.1 ppm/% RH
- Pressure coefficient: 0.001 ppm/hpa
- Adopt low thermoelectric potential and good structural design
- Can be used directly at room temperature (18℃ ~ 28℃)
- Small size and light weight

3. Application

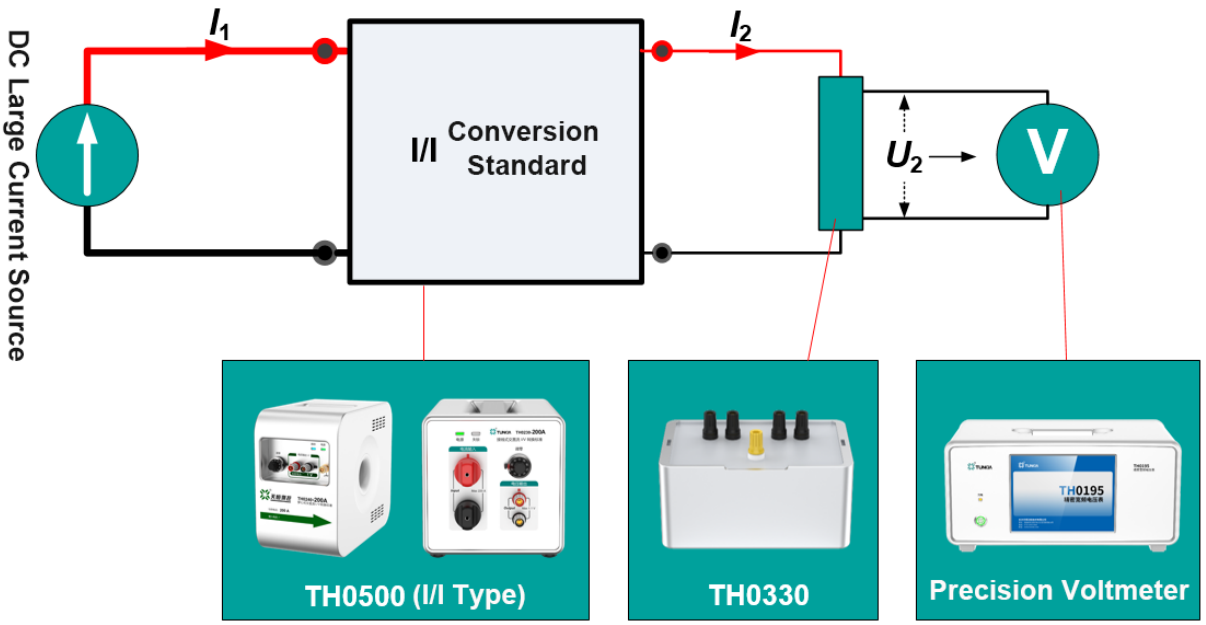
- Calibrate high-precision resistance meter
- Establish a precision current measurement system
- Standard resistance value transfer

☆ Calibrate standards/precision resistors



- TH0330 can be used with precision resistor bridges such as TH0210 to achieve transfer calibration of standard resistors (first and second class).

☆ Establish a precision current measurement system



- TH0330 can be used with DC I/I conversion standard (ratio standard) and precision voltmeter to form a precision DC current measurement system.
- Note: When measuring current, the maximum operating current of the standard resistor should not be exceeded; for precision current measurement, the influence of factors such as the resistor's rated power and power coefficient should also be considered.

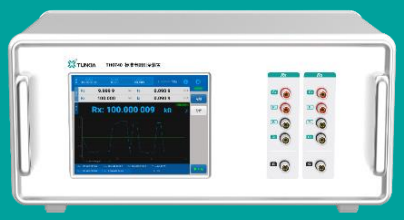
4. Specification

Model	Nominal Resistance	Initial Deviation (ppm)	Calibration Uncertainty (ppm)	Annual Stability (ppm)	Temperature Coefficient (ppm/°C)	Rated Power (W)	Power Coefficient (ppm/ power)
TH0330-1R	1 Ω	2	2.5@ 23°C	0.2	0.05 @23°C±5°C	1.0	1
TH0330-10R	10 Ω						
TH0330-100R	100 Ω						
TH0330-1kR	1 kΩ						

5. General Specification

Power Supply	——
Temperature Performance	Operating temperature: 18 °C ~ 28 °C; Storage temperature: 0 °C ~ 50 °C;
Weight	Approx 2.5 kg
Wiring	4W

6. Related Product

 **TH0210 Standard Resistance Measuring Device**	• Resistance measurement range: 1 mΩ ~ 100 kΩ • Output current: 100 μA ~ 3.2 A • Best measurement uncertainty: 0.5 ppm • The typical test cycle is about 4.5 minutes • LCD touch screen
 **TH0240 Standard Resistance Multiplexer**	• 10 channels, four terminal channels • Use tellurium copper terminals to ensure low thermal potential at the contact points • The relay has a current carrying capacity of 3 A • Thermal electromotive force < 50 nV • Input error < 20 nV • Relay life 5×10^7 times