



The 513 rectangular series residual current transformer is mainly used in low-voltage distribution cabinets such as 380V and 660V, or in drawer cabinets with relatively high density, to continuously detect and monitor the residual current at the installation node of the corresponding circuit.

The shell of this series of products is made of environmentally friendly flame-retardant ABS engineering plastics and high-magnetic nanocrystalline soft magnetic materials. It has the characteristics of high precision, good balance characteristics, small size, high insulation strength, strong impact resistance, and easy installation. It can work reliably and stably in indoor environments.

The 513 rectangular series includes 5 specifications, which are suitable for circuits with a total busbar width of less than 300mm, and can basically meet the detection of all residual currents in distribution circuits below 1000A.

This series of products adopts the most optimized magnetic circuit design, sets the coil winding process according to the magnetic circuit characteristics, and combines a compact shielding structure, so that the product meets the requirements of product accuracy, sensitivity, balance characteristics, etc. under the premise of small size. And the fixed foot of the product adopts a rotating structure design, which can not only reduce costs as much as possible during packaging and transportation, but also play a good protective role for the fixed structure.

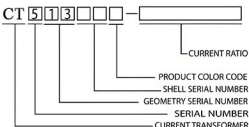
When installing larger-sized products on the copper busbar loop, it is recommended to use a flat-mount bracket to increase the stability of the installation due to the heavy weight of the product. In order to obtain better monitoring results, the busbar should be located in the middle of the rectangular through-hole of the transformer as much as possible, and it is not advisable to make the busbar too close to the straight inner wall of the product.

The terminal position of this series of products also adopts a standard guide rail structure design, and the housing of the signal processing unit can be mounted on it. This gives the product greater expansion functions.

FEATURES

- Signal processing units can be added to expand product functions.
- Strong overload capacity, 20 times the rated current can be overloaded for a long time as needed.
- Excellent balance characteristics, small-size products meet the detector alarm threshold requirement of 50mA.
- High precision: 0.5/1.0/3 levels of precision are optional.
- Compact design, small size, beautiful appearance
- Strong versatility and good interchangeability

NAMING



Color code:
0: black; 3: red; 8 GREY 9 WHITE
The shell color specified by the customer is coded and classified according to the main color of the color system;

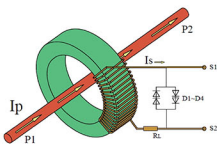
Normal use and installation conditions

- Installation location: Indoor/outdoor.
- Ambient temperature: -10°C~+40°C.
- Ambient humidity: It is recommended that the relative humidity should not exceed 80%.
- The altitude shall not exceed 3000m.
- Atmospheric conditions: There is no serious pollution, corrosive and explosive media in the atmosphere.
- Environment without significant frequent vibration and shock.
- Storage temperature: -20°C~+75°C.

General technical indicators

Technical indicators		Electrical parameters				
Rated primary current	1000mA	5A	5A	10A	10A	
Rated secondary current	0.5mA	2.5mA	5mA	5mA	10mA	
Rated continuous thermal current	2000mA	10A	10A	50A	50A	
Operating frequency	50~60Hz					
Rated accuracy grade	Equal to or better than 0.5					
Operating voltage	≤660V					
Product flame retardant grade	UL94-V0					
Insulation resistance	≥1M ohms@500Vdc					
Power frequency withstand voltage	3KV@2mA\1min\50Hz					
Insulation heat resistance grade	E-Class					

Electrical Schematic



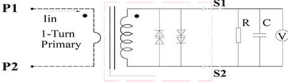
code	Code Description
IP	Measured current/input current
IS	Secondary output current
P1/P2	Measured current input/output terminal
S1/S2	Secondary current output/input terminal
RL	Secondary internal resistance of transformer
D1-D4	Clamping diode (A7)

- The primary current IP flows in from the P1 terminal and out from the P2 terminal; the secondary current flows out from the S1 terminal and flows in from the S2 terminal.
- Generally, current transformers use a reduced-pole same-name relationship, that is, the secondary output terminal and the primary input terminal are same-name terminals to indicate the primary-secondary
- The output current signal of the secondary side of the residual current transformer is generally small. It is recommended to use current output to improve the anti-interference ability as much as possible.
- IP*N1=IS*N2, generally the primary rated current is 1A, the secondary rated current is 0.5mA, or other parameters are specified according to the equation; Ip is the vector sum of the currents of the cables passing through the residual current transformer window loop, and has no significant correlation with the current size of the loop cable.
- The product contains a voltage clamping circuit with an effective value of 1.4V. It can be changed according to customer design during production.

Balance characteristic parameters

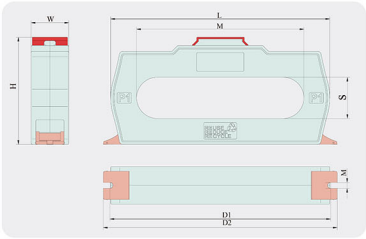
Specifications	Main circuit rated working current	Test current	Conductor diameter	Conductor insulation thickness	Residual current characteristics
CT513603	0≤In≤100A	100A	6mm	0.5mm	≤5mA@100A
CT513703	0≤In≤250A	315A	10mm	1.5mm	≤10mA@315A
CT513803	0≤In≤400A	630A	14mm	2.0mm	≤20mA@630A
CT513903	0≤In≤630A	630A	14mm	2.0mm	≤20mA@630A
CT513003	0≤In≤1000A	1000A	20mm	2.0mm	≤30mA@1000A

When the residual current transformer passes the corresponding sinusoidal AC current, its output sampling value voltage should meet the requirements in the following table.



R=1000Ω C=0.022μF Current source frequency: 50-60Hz; accuracy better than 0.1%; voltmeter AC mV sampling accuracy better than 0.1%.

DIMENSIONS



MODEL	Main circuit current	Aperture	DIMENSIONS (mm)			MOUNTING (mm)	
			L	W	H	D1-D2	M
CT513603	≤100A	112-25	152	32	77	153.5-163.5	6
CT513703	≤250A	142-35	186	32	91	185-198.5	6
CT513803	≤400A	192-40	240	32	100	245.5-257	6
CT513903	≤630A	232-45	282	32	107	284.5-298	6
CT513003	≤1000A	300-60	368	45	140	388-368	6