



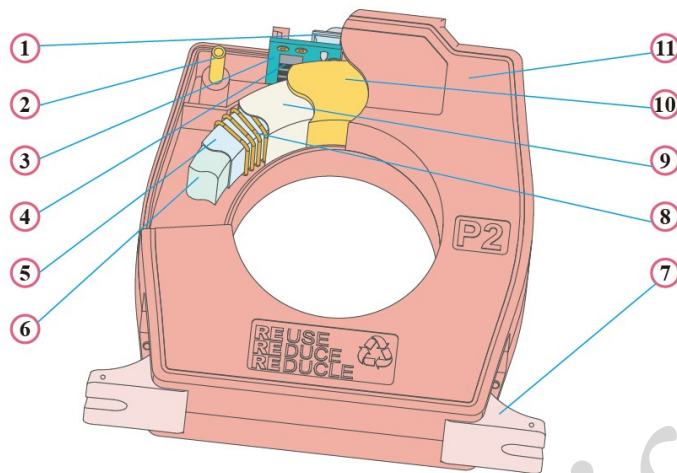
The LO-ZRCT-XX series residual current transformers are primarily used in low-voltage distribution systems such as 380V and 660V, or in densely packed drawer cabinets, to continuously monitor and detect residual currents at installation nodes in corresponding circuits. The outer shell of this series is made from environmentally friendly flame-retardant ABS engineering plastic, and it uses high magnetic permeability nanocrystalline soft magnetic material. Combined with a reasonable structural design and rigorous production processes, the product features high precision, good balance performance, small size, high insulation strength, strong impact resistance, and easy installation, making it reliable and stable for indoor use.

Additionally, the structural design incorporates customer feedback, with the fixing feet designed to be retractable into corresponding slots before transport and installation. This prevents damage to the fixing feet before installation, reducing the risk of product failure, and also helps lower packaging and transportation costs. This series includes 11 different models, suitable for monitoring residual currents in cable circuits or copper busbar circuits, with a minimum detectable leakage current of less than 5mA and accuracy meeting or exceeding the national standard GB14287.2. The balance characteristics can be customized according to usage requirements. The color of the product casing can be customized to meet different color scheme requirements specified by customers.

### **Features:**

- Resin casting process, excellent waterproof and moisture-proof performance
- It has strong overload capability and can be overloaded 50 times the rated current for a long time if necessary.
- Excellent balance characteristics, small size products meet the detector alarm threshold requirement of 20mA
- High precision: precision level 0.5/1.0/3, optional compact design, small size

## Structure:



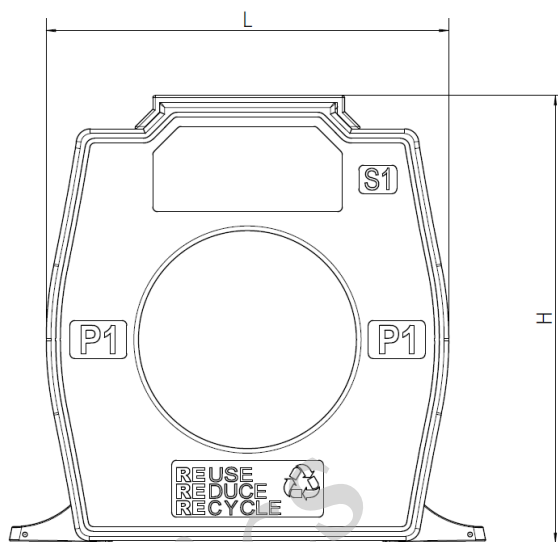
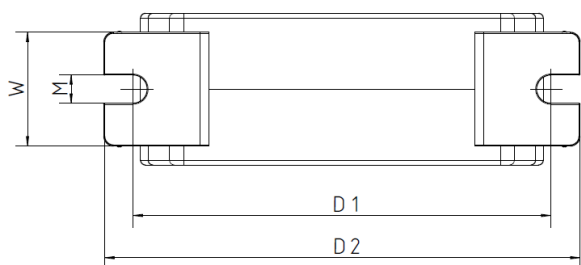
| S/N | Name                       | Main features                                                                                                                               |
|-----|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Secondary terminal block   | For output signal connection                                                                                                                |
| 2   | Fixing tube                | Made of brass or ABS plastic, used to connect the two parts of the transformer housing during assembly.                                     |
| 3   | PCB for terminal connector | Hidden beneath the terminal block, to connect the output signal wires terminals and clamping diode                                          |
| 4   | Clamping diode             | According to the customer's technical specifications, the output signal is clamped to the required voltage                                  |
| 5   | Insulation layers of core  | The structure used to protect the iron core and prevent the enamel-coated wires of the winding from being damaged.                          |
| 6   | Core                       | Highly permeable nanocrystalline soft magnetic materials                                                                                    |
| 7   | Fixing part                | Produced from flame-retardant ABS engineering plastic, it is rotated out from the enclosure slot during installation to secure the product. |
| 8   | Secondary winding          | Made of oxygen-free copper material, directly welded with polyurethane paint film, temperature resistant up to 155 degrees Celsius          |
| 9   | Winding insulation         | Polyester film/PVC film/crepe paper, etc., used to protect enameled wires from damage                                                       |
| 10  | Shield                     | Made of high magnetic permeability silicon steel or other magnetic permeability materials to ensure excellent balance characteristics       |
| 11  | Enclosure                  | Flame-retardant ABS plastic or PC/ABS alloy plastic, with high temperature resistance, high strength and good flame-retardant properties    |

### Normal use and installation conditions:

- Installation location: indoor/outdoor. Ambient temperature  $-40^{\circ}\text{C} \sim +45^{\circ}\text{C}$
- It is recommended that the relative humidity of the environment should not be greater than 80%
- The altitude does not exceed 3000m
- Atmospheric conditions: There are no seriously polluted, corrosive and explosive media in the atmosphere
- An environment without significant frequent vibration and shock. Storage temperature : ---  
 $-20^{\circ}\text{C} \sim +75^{\circ}\text{C}$

### Balance performance:

| P/N         | Main circuit rated operating current | Test current | Conductor diameter | Conductor insulation thickness | Unbalance current               |
|-------------|--------------------------------------|--------------|--------------------|--------------------------------|---------------------------------|
| LO-ZRCT-30  | $0 \leq I_n \leq 63\text{A}$         | 63A          | 4mm                | 0.5mm                          | $\leq 2\text{mA}@63\text{A}$    |
| LO-ZRCT-46  | $0 \leq I_n \leq 100\text{A}$        | 100A         | 6mm                | 1.0mm                          | $\leq 5\text{mA}@315\text{A}$   |
| LO-ZRCT-65  | $0 \leq I_n \leq 250\text{A}$        | 250A         | 10mm               | 1.5mm                          | $\leq 5\text{mA}@315\text{A}$   |
| LO-ZRCT-80  | $0 \leq I_n \leq 315\text{A}$        | 315A         | 10mm               | 1.5mm                          | $\leq 10\text{mA}@630\text{A}$  |
| LO-ZRCT-100 | $0 \leq I_n \leq 630\text{A}$        | 630A         | 14mm               | 2.0mm                          | $\leq 20\text{mA}@630\text{A}$  |
| LO-ZRCT-120 | $0 \leq I_n \leq 1000\text{A}$       | 1000A        | 20mm               | 2.0mm                          | $\leq 20\text{mA}@1000\text{A}$ |

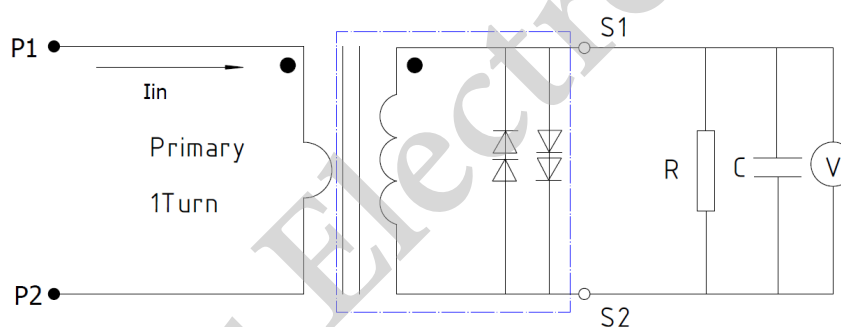


| Model specifications | Main circuit current (A) | Aperture (mm) | Overall dimensions (mm) |    |     | Dimensions (mm) |       |   |
|----------------------|--------------------------|---------------|-------------------------|----|-----|-----------------|-------|---|
|                      |                          |               | L                       | W  | H   | D1              | D2    | W |
| LO-ZRCT-30           | ≤63A                     | 30            | 65                      | 32 | 75  | 67.5            | 75.5  | 6 |
| LO-ZRCT-46           | ≤100A                    | 46            | 85                      | 32 | 94  | 88.5            | 100.5 | 6 |
| LO-ZRCT-65           | ≤250A                    | 65            | 108                     | 32 | 120 | 108.5           | 122   | 6 |
| LO-ZRCT-80           | ≤400A                    | 80            | 128                     | 36 | 140 | 134             | 144   | 6 |
| LO-ZRCT-100          | ≤630A                    | 100           | 150                     | 36 | 162 | 152             | 172   | 6 |
| LO-ZRCT-120          | ≤1000A                   | 120           | 172                     | 36 | 184 | 177             | 197   | 6 |

### General technical specs:

| Technical Spec                   | Electrical specs          |       |     |     |      |
|----------------------------------|---------------------------|-------|-----|-----|------|
| 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 class             | Equal or above Class 0.5  |       |     |     |      |
| Operating voltage                | $\leq 660V$               |       |     |     |      |
| Flame retardant class            | UL94V-0                   |       |     |     |      |
| Insulation resistance            | $\geq 1M\ \Omega$ @500VDC |       |     |     |      |
| Dielectric strength              | AC3KV/2mA/60s/50Hz        |       |     |     |      |
| Thermal Class                    | Class B                   |       |     |     |      |

When the corresponding AC current passes the residual current transformer, the output sampling voltage should meet the requirements listed in the table below



$R=1000\Omega$   $C=0.022\mu F$  Current source frequency: 50-60Hz, accuracy class better than 0.1%, the voltage meter accuracy class of mV testing range is better than 0.1%

| Detection current value(mA) | Current range (mA) | Load resistor                | Testing terminals | Sampling voltage range (mV) |
|-----------------------------|--------------------|------------------------------|-------------------|-----------------------------|
| 50                          | 49.75-50.25        | 1000 $\Omega$ /0.022 $\mu F$ | S1-S2             | 24.64-25.64                 |
| 200                         | 199-201            |                              |                   | 97.18-101.14                |
| 500                         | 498-502            |                              |                   | 243.01-253.01               |
| 800                         | 796-804            |                              |                   | 388.7-404.7                 |
| 1000                        | 995-1005           |                              |                   | 486.25-506.26               |