certificate of conformity

name: Residual current operated circuit breaker

model: DZ30LE-32

This product has passed the inspection and is allowed to leave the factory.

Execution standards: IEC61009-1

Examination clerk: Test 03

Date of production: See inner box label

DZ30LE-32 residual current operated circuit breaker

Operation Instructions

Installation, use and maintenance

● Installation and use

(1) Before installation, check whether the product logo matches the conditions used.
(2) Before powering on, operate the residual current operated circuit breaker several times, and its mechanism should be flexible, reliable, and free of jamming.
(3) The incoming end should be connected to the power supply, and the load end should be connected to the load.
(4) Refer to Table 3 for the cross-sectional area of the connecting wires.

Table 3 Sectional area and rated current of connecting wires

Rated current value A	6	10	16、20	25	32	40
Wire cross-sectional area mm^2	1	1.5	2.5	4	6	10

(5) After powering on, intermittently operate the residual current operated circuit breaker test button several times to confirm its reliable operation.
(6) When the handle moves upwards, it indicates that the circuit is in a connected state, and when the handle moves downwards, it indicates that the circuit is in a disconnected state
(7) During installation, clamp the residual current operated circuit breaker into the installation rail to fix it securely, without loosening or falling off. When it is necessary to remove the residual current operated circuit breaker, push the residual current operated circuit breaker upwards with force, and then pull the upper part of the residual current operated circuit breaker outward to remove it from the installation rail.

(8) The working reference temperature of the residual current operated circuit breaker is $+30^{+5}_{0}$ ℃ . When the ambient temperature changes, its rated value needs to be corrected. The temperature correction factor is shown in Table 4; If multiple residual current operated circuit breakers are simultaneously installed in a sealed box, the temperature inside the box will increase accordingly, and the rated current should be multiplied by a derating factor of 0.8.

Table 4: Correction Factors for Rated Current and Temperature

temperature (℃) / Rated current(A)	–20	–10	0	10	20	30	40	50	60
6	7.35	7.10	6.84	6.57	6.29	6	5.69	5.37	5.02
10	13.09	12.54	11.95	11.34	10.69	10	9.26	8.45	7.56
16	19.77	19.07	18.35	17.60	16.82	16	15.13	14.22	13.23
20	24.49	23.66	22.80	21.91	20.98	20	18.97	17.89	16.73
25	30.72	29.67	28.57	27.43	26.24	25	23.69	22.30	20.82
32	39.19	37.86	36.49	35.05	33.56	32	30.36	28.62	26.77
40	49.24	47.54	45.77	43.93	42.01	40	37.88	35.64	33.24

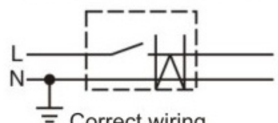
● Maintenance

After running for a period of time, the residual current operated circuit breaker should be checked regularly (monthly). In the closed and energized state, press the test button to check whether the residual current operated circuit breaker operates reliably. If it cannot work properly, it must be replaced immediately and cannot continue to be used.

Fault analysis and troubleshooting

The fault analysis and troubleshooting of residual current operated circuit breakers are shown in Table 5

Table 5 Fault Analysis and Troubleshooting

Reason for malfunction		cause analysis	Troubleshooting
maloperation	Malfunction caused by grounding of neutral line on load side of residual current operated circuit breaker	The residual current action of the neutral line grounding on the load side of the circuit breaker will cause the normal operating current to flow through the grounding point, resulting in misoperation Residual current operated circuit breaker  Wrong wiring	Connect the grounding wire to the neutral wire on the power side of the residual current operated circuit breaker Residual current operated circuit breaker  Correct wiring
	Misoperation caused by leakage current and wire to capacitor current	The wires on the load side are laid closely to the ground for a long time	Select residual current operated circuit breakers with slightly larger residual current specifications
		The insulation performance of the load side wire decreases, resulting in an increase in ground leakage current	Replace the wire
failure to operate	Refusal of operation caused by residual current operated circuit breaker not connected to neutral wire	The power supply side of the residual current operated circuit breaker is only connected to the phase line and not to the neutral line	Connect the neutral wire on the power side

Unpacking inspection

After opening the box, the user must check whether the product is intact, whether the exposed metal is rusted, and whether the product has defects due to poor transportation and storage. If the above phenomena occur, the product cannot be used. Please contact the seller in a timely manner to solve them.

Company commitment

Within 18 months from the date of product production, provided that the user complies with the usage and storage conditions and the product seal is intact. If the product is damaged or cannot be used normally due to manufacturing quality issues, our company is responsible for repairing or replacing it free of charge. Beyond the warranty period, paid repairs are required. However, if damage is caused by the following circumstances, paid repairs will be made even during the warranty period:

(1) Due to improper use, maintenance, and storage;

(2) Self modified or improperly repaired;

(3) Due to falling or damage during installation after purchase;

(4) Earthquakes, fires, and lightning strikes. Force majeure events such as abnormal voltage and secondary disasters.

If you have any questions, please contact the seller or our customer service department.

Ordering Information

When placing an order, the user should specify:

1) Name, model, and specifications of residual current operated circuit breakers;

2) Rated current of residual current operated circuit breaker;

3) The residual operating current of the residual current operated circuit breaker;

4) Quantity.

Example: Order DZ30LE-32, electronic, C-type, rated current 16A, rated residual operating current 30mA, quantity 100 units. It should be written as: DZ30LE-32 C16 30mA 100 units.

DZ30LE-32 residual current operated circuit breaker

Safety Notice

Before installation, operation, maintenance, and inspection, please read this manual carefully and install and use this product accurately according to the contents of the manual.

⚠ danger:

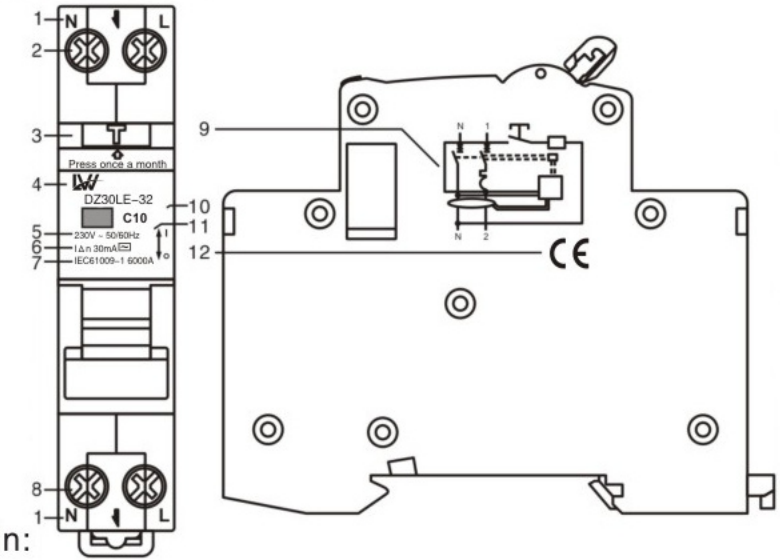
- It is strictly prohibited to operate circuit breakers with wet hands;
- During use, it is strictly prohibited to touch conductive parts;
- During maintenance and upkeep, it is mandatory to ensure that the product is not electrified;
- It is strictly prohibited to use short circuits to test products;

⚠ be careful:

- Installation, maintenance, and upkeep should be carried out by personnel with professional qualifications;
- The various characteristics of the product have been set at the factory and cannot be disassembled or adjusted arbitrarily during use;
- Before use, please confirm whether the rated voltage, rated current, frequency, and characteristics of the product meet the working requirements;
- When wiring this product, the incoming wire is connected from above and the outgoing wire is connected from below; After inserting the wire into the wiring hole, tighten the wiring screw with a torque of 1.5N · m to prevent the wire from loosening or being pulled out, and the exposed copper wire should not be exposed outside the terminal;
- This product cannot provide protection against the risk of electric shock caused by simultaneous contact with the phase and neutral wires of the protected circuit; The risk of electric shock caused by the neutral wire breaking before the incoming end and contacting the phase line of the protected circuit cannot be protected.
- This product has a protection level of IP20 and does not have dust prevention function. When used in dusty environments, please install it in a well sealed terminal box;
- If the product is damaged or makes abnormal noises when unpacking, it should be immediately stopped from use and the seller should be contacted;
- After the leakage protection, overload protection, or short circuit protection of this product is disconnected, the fault should be eliminated first before resuming operation. Otherwise, it will affect the service life of the product;
- After the installation of this product, the insulation resistance between the phase line and neutral line of the protected circuit cannot be tested using an insulation resistance shake meter tester;
- This product shall not be affected or dropped by rainwater during use, storage, or transportation;
- When the product is scrapped, please handle the waste properly. Thank you for your cooperation.

Get to know DZ30LE-32 residual current operated circuit breaker

- Panel Introduction



explain:

1 N–pole identification 2 Incoming end 3 Test button
4 Company trademark
5 Rated voltage and frequency (see Table 1)
6 Rated residual operating current and AC symbol
7 Reference standards and breaking ability 8 Outgoing terminal
9 Wiring diagram 10 Product model
11 Release curve and rated current (see Table 1)
12 Certification Mark

(5) Pollution level: Level 2

(6) Installation category: Class III;

(7) Protection level: IP20 (installed in distribution boxes, cabinets or boxes, IP40).

- Normal storage and transportation conditions

(1) Temperature:- 40℃~+70℃;

(2) Relative humidity (at 25 ℃): ≤ 95%;

(3) The product should be handled gently during transportation, not inverted, and avoid strong collisions.

Main specification and technical parameter

- The main technical parameters are shown in Table 1

Table 1 Main Technical Parameters

Model	Rated current In A	frequency Hz	rated voltage Ue V	Rated short-circuit breaking capacity Icn A	rated residual operating current I△n mA	rated residual non-operating current I△no mA	Breaking time at I△n s	Type of overcurrent instantaneous release device
DZ30LE-32	6 10 16 20 25 32 40	50	230	4500	30	15	≤0.1	C

The protection characteristics of overcurrent release are shown in Table 2

Table 2 Protection Characteristics of Overcurrent Release Device

Rated current In A	test current A	Initial state	Test time	Expected results	annotations	Reference Temperature
≤40	1.13In	cold state	t≤1h	Do not release	— —	$+30^{+5}_{0}$ ℃
	1.45In	Immediately following the experiment	t<1h	Trip	The current rises to the specified value within 5 seconds	
	2.55In	cold state	1s<t<60s (answer In≤32A) 1s<t<120s (answer In>32A)	Trip	— —	
	5In/10In	cold state	t≤0.1s	Do not release	Close the auxiliary switch and turn on the power supply	

- Mechanical and electrical lifespan

  Mechanical lifespan: 10000 cycles;

  Electrical lifespan: 4000 cycles.

Structural features and working principle

This residual current operated circuit breaker is mainly composed of zero sequence current transformers, electronic component boards, release devices, contact operating mechanisms, and plastic casings.

The working principle is shown in Figure 1. When there is leakage or personal electric shock in the circuit, a signal (induced voltage) is generated in the secondary coil of the zero sequence current transformer. As long as the residual operating current reaches the set value of the operating current, it is amplified by the electronic circuit to make the residual current operating circuit breaker break, thereby cutting off the power supply and providing leakage protection.

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	2.55In	cold state	1s<t<60s (answer In≤32A)	Trip	——	
			1s<t<120s (answer In>32A)			
	5In/10In	cold state	t≤0.1s	Do not release	Close the auxiliary switch and turn on the power supply	

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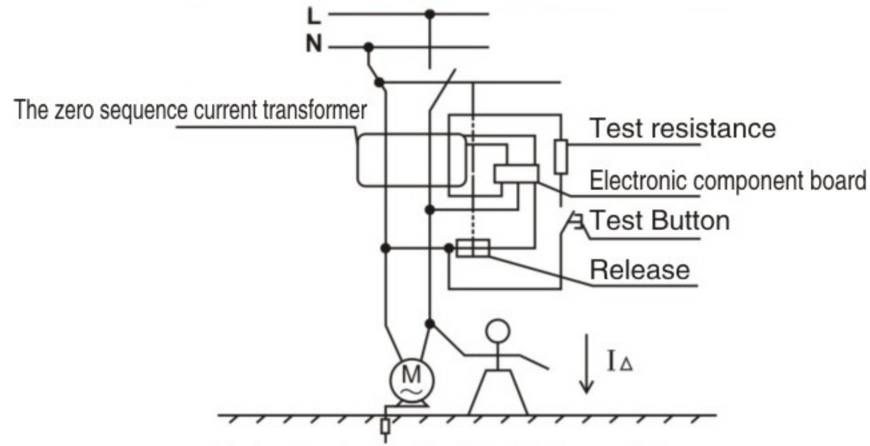

Figure 1 Working principle diagram of residual current operated circuit breaker

Appearance and installation dimensions

The appearance and installation dimensions of DZ30LE-32 are shown in Figure 2

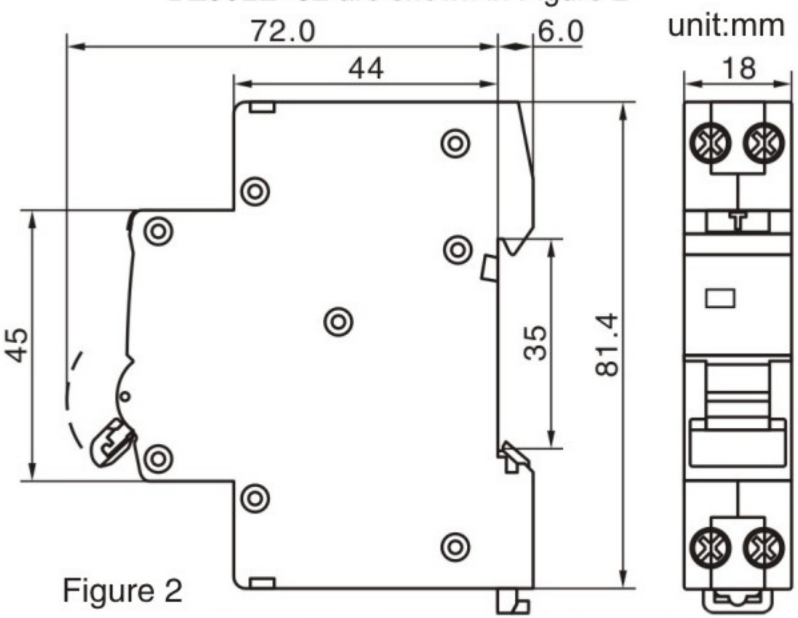

Figure 2