CHTCC®

Operating Instruction of ZHRV2-54T Digital Household Self-resetting Overvoltage and Undervoltage Protector

☐ Functions and features

- Built-in high-performance microcontroller, with high reliability and strong antijamming capability.
- LED Nixie tube displaying the operating voltage value.
- Featuring with overvoltage and undervoltage protective function.
- User can set the protection parameters by using the buttons.
- Voltage measuring accuracy≤1%.
- Measuring frequency: 45Hz-65Hz.
- It can be installed on standard rail 35mm.

☐ Model and meaning

ZH RV2— 54T☐

- ☐ — Rated operational current: 50A, 65A
- 54T — Protection model
- RV2 — Voltage protection
- ZH — Enterprise code

☐ Main technical parameters

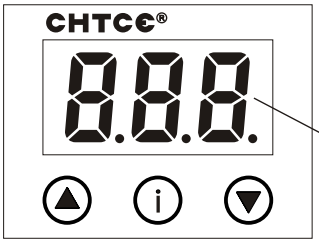
Rated supply voltage	AC220V
Rated operational voltage range	AC100V～400V
Rated supply frequency	50/60Hz
Overvoltage actuation time	0.1s
Undervoltage actuation time	120～200V, 1s
	＜120V, ＜0.1s
Voltage lagged value	5V
Voltage measuring error	≤1% (entire setting range)
Delay error	±10%+0.1s
Measuring accuracy	1%, true virtual value measurement
Rated insulation voltage	415V
Model and maximum rating of short circuit protector	NT00-6A
Protection class	IP20
Pollution level	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Operating ambient temperature	-5℃～40℃
Permissible relative humidity	≤50% (40℃) (without condensation)
Storage temperature	-25℃～55℃

Technical parameters	Setting range	Stepping amount	Factory set value
Overvoltage operating value	210V～280V	1V	250V
Undervoltage operating value	120V～200V	1V	170V
Breakover delay time	5s～600s	5s	15s

Current specification	50A	65A
Rated operating current	50A	65A
Maximum operating current (within 10min)	63A	80A
Rated operating frequency	11kW	13.9kW
Maximum cross-section of conductor	16mm²	16mm²

☐ Operating instructions of button menu

○ ○ Panel schematic diagram



○ ○ Button explanation

- Setting of undervoltage operating value/digit+ button
- Confirm modification button
- Setting of overvoltage operating value/digit- button

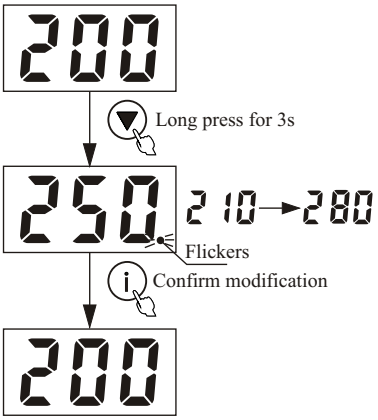
○ Example

Breakover delay display

- Operating voltage value of LED Nixie tube flickers during breakover delay; operating voltage value of LED Nixie tube will be normally on after delay is over and output relay is with breakover.

Setting of overvoltage operating value

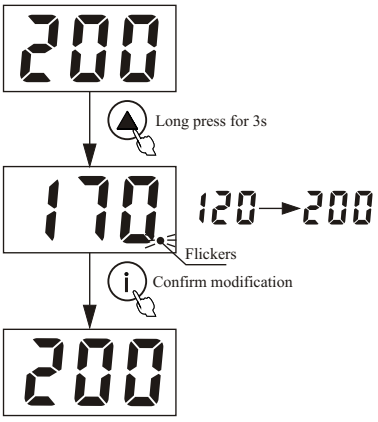
Long press ▼ for 3s to enter setting interface of overvoltage operating value:



- The rightmost indication point flickers after entering overvoltage setting interface.
- It can change the setting value by pressing ▼ ▲
- The relay will automatically quit the menu and not save the modified data if not operating the button for continuous 60s during setting parameters.

Setting of Undervoltage operating value

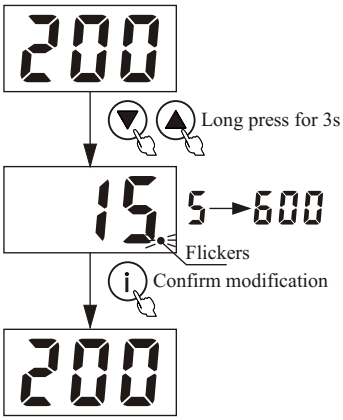
Long press ▲ for 3s to enter setting interface of Undervoltage operating value:



- The rightmost indication point flickers after entering Undervoltage setting interface.
- It can change the setting value by pressing ▼ ▲
- The relay will automatically quit the menu and not save the modified data if not operating the button for continuous 60s during setting parameters.

Setting of breakover delay time

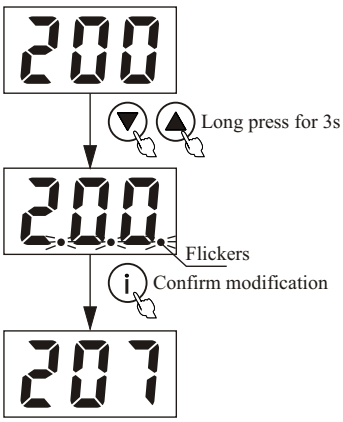
Long press both ▼▲ for 3s to enter setting interface of breakover delay time:



- The rightmost indication point flickers after entering setting interface of breakover delay time.
- It can change the setting value by pressing ▼▲
- The relay will automatically quit the menu and not save the modified data if not operating the button for continuous 60s during setting parameters.

Voltage value calibration

Long press both ▼▲ for 3s to enter voltage value calibration interface before the relay is energized:

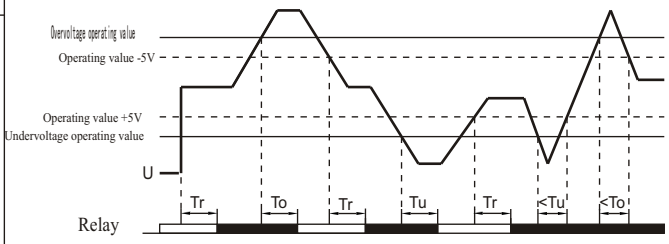


- The three indication points flicker after entering voltage value calibration interface.
- It can change the setting value by pressing ▼▲
- The relay will automatically quit the menu and not save the modified data if not operating the button for continuous 60s during setting parameters.

☐ Operating instructions

- If there is voltage fault while power on after the breakover delay of relay completes, the output relay will not operate.
- LED Nixie tube will display the operating voltage value after the relay normally operates.

☐ Function sequence diagram

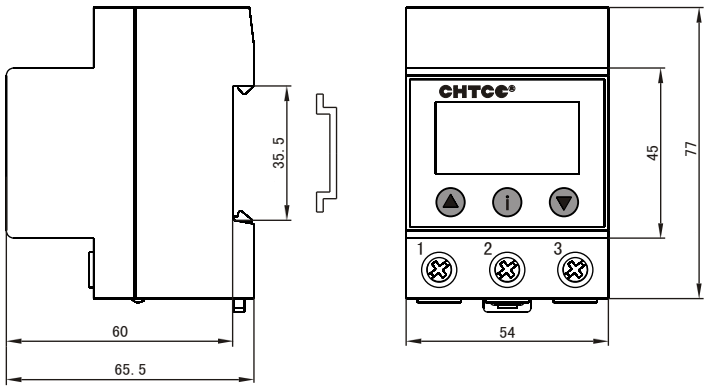


Tr: Breakover delay time

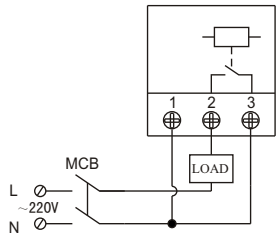
To: Overvoltage operating delay time

Tu: Undervoltage operating delay time

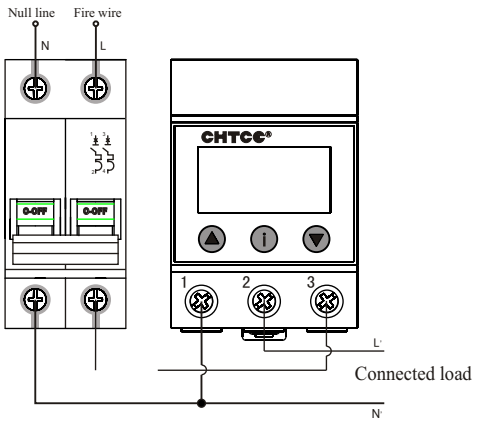
☐ Shape and dimension



☐ Electrical diagram



☐ Wiring diagram



- Rated operating current of circuit breaker is 75% maximum current of voltage relay. Ie=0.75Imax

☐ Precautions

1. The installation, operation and overhaul of this product shall be carried out by a professional. The product warranty period is 18 months under regular service condition.
2. The user is prohibited to take apart or maintain the product regardless of whether the product is normal or damaged, otherwise our company will not assume any liability for any accident caused.
3. Please refer to the wiring diagram for wiring.
4. Power incoming line is prohibited for wiring in the same tube with other electric wires of strong current. And please use shielded wire if necessary to avoid interference and influencing the normal operation of the protector.
5. It is prohibited to use the product in places with dustiness, corrosive gas, direct sunlight or rain.
6. The product is prohibited to be used in medium with explosion hazard, which medium shall not contain corroding metal, gas destroying insulation and conducting dust.
7. Please store and use the product under rated supply voltage and the stipulated temperature, altitude and humidity.