

TH-PV instruction

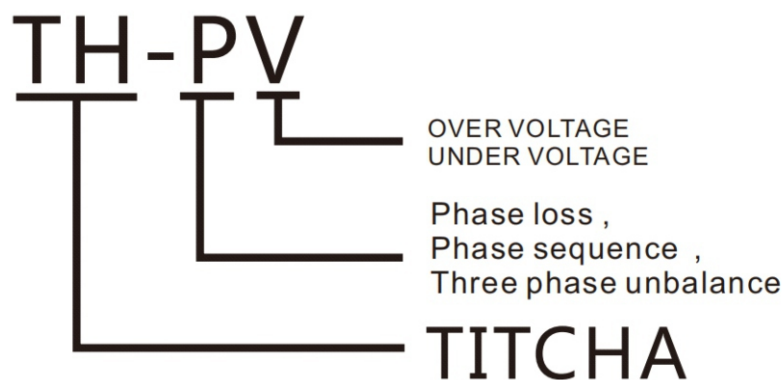
1、 Overview

1.1 Scope of application

TH-PV relay is suitable for power systems with three-phase voltage AC380V, providing protection for over voltage, under voltage, phase failure, three-phase imbalance, and phase sequence situations in power lines.

Executive standard: GB/T 14048.5

1.2 Model code Definition



1.3 Normal working conditions and installation conditions

1.3.1 Operating environment:

The altitude does not exceed 2000 meters;

The ambient temperature shall not be higher than +40 °C and not lower than -5 °C; The voltage variation range of the power supply is 85% -110% of the rated voltage, in a medium without severe vibration and explosion hazards, and without gases and dust that are sufficient to corrode metals and damage insulation;

In places where rain and snow cannot erode.

1.3.2 Vertical or horizontal installation

2、 Structural features and working principles

This product mainly consists of four parts: shell, setting panel, main control circuit, and output relay. Advanced electronic circuits are used internally to detect faults such as overvoltage, undervoltage, phase failure, and phase sequence, and provide reliable protection.

3、 Technical features

3.1 Rated insulation voltage U_i : AC400V

3.2 Each rated working voltage U_e /rated working current I_e under the usage category

U_e/I_e : AC380V/0.95A

3.3 Agreed heating current I_{th} : 5A

3.4 Rated working voltage: three-phase AC380V

3.5 Shell protection level: IP50

3.6 Pollution level: 3

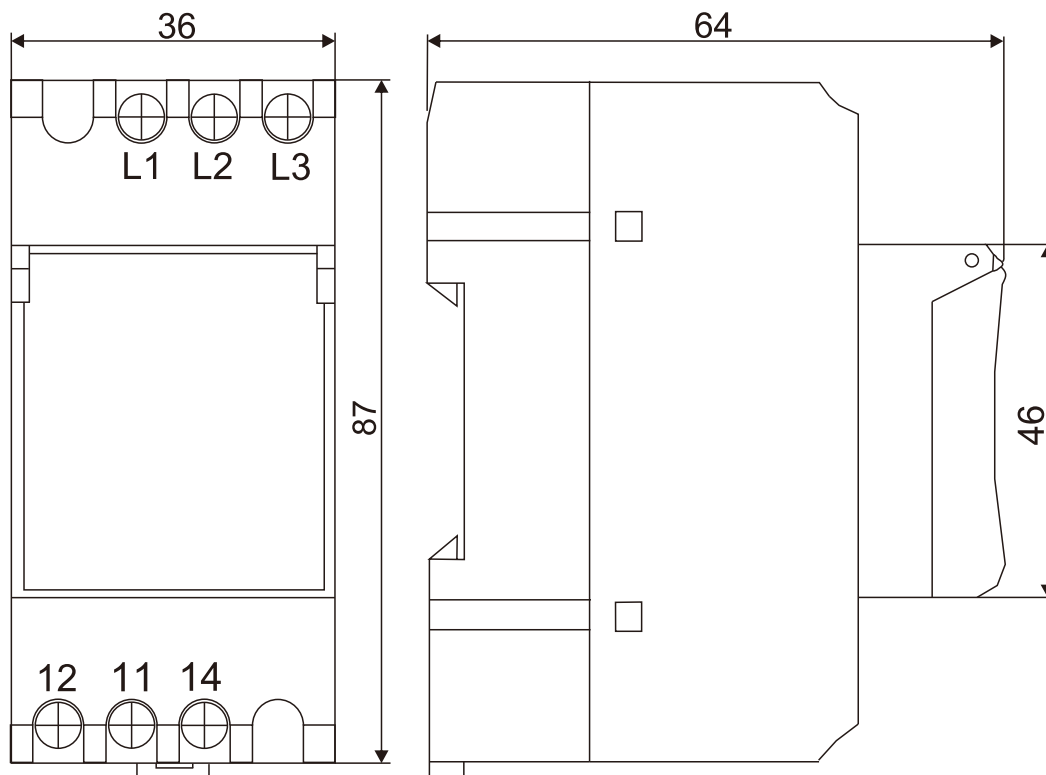
3.7 Mechanical life: ≥ 1 million times

3.8 Electrical life: ≥ 100000 cycles;

3.9 Protection characteristics: see the table below

Protection function	Model code TH-PV
Over voltage protection range (AC)	385V-460V
Under voltage protection range (AC)	300V-375V
Over voltage and under voltage protection time	1-30S
Three phase imbalance protection range	5%~49%
Time range of three-phase imbalance protection	1~25S
Phase failure protection action time	$\leq 2S$
Phase sequence protection	Instantaneous (after confirming the phase sequence, if the phase sequence error occurs when starting the load again, the load cannot be started)

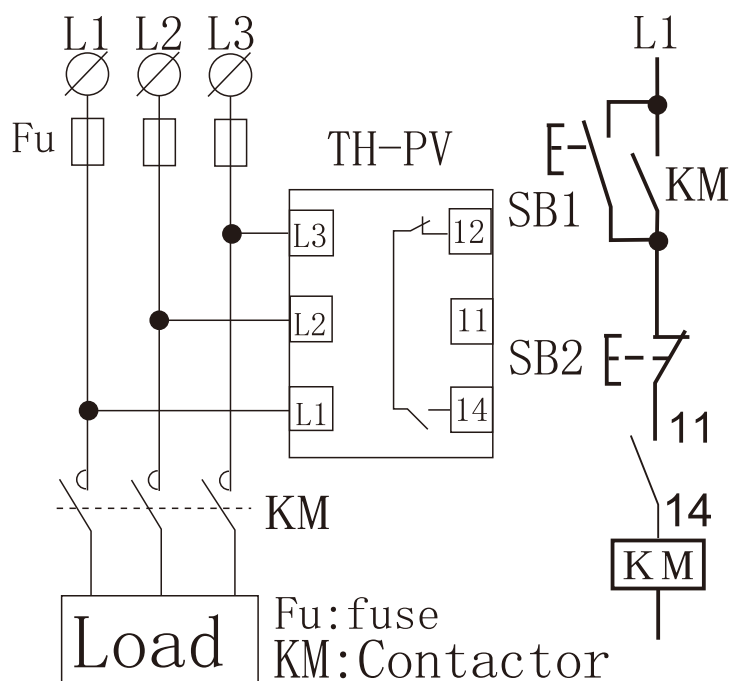
4、 Product appearance, installation dimensions diemensions



WIRING DIAGRAM

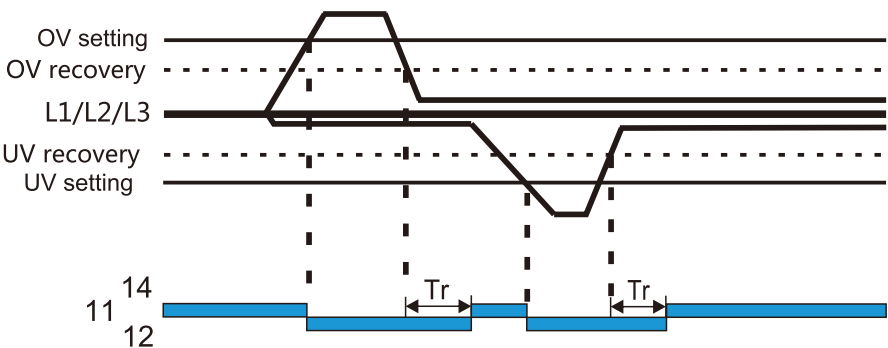
TH-PV

Us:L1/L2/L3 50Hz AC380V

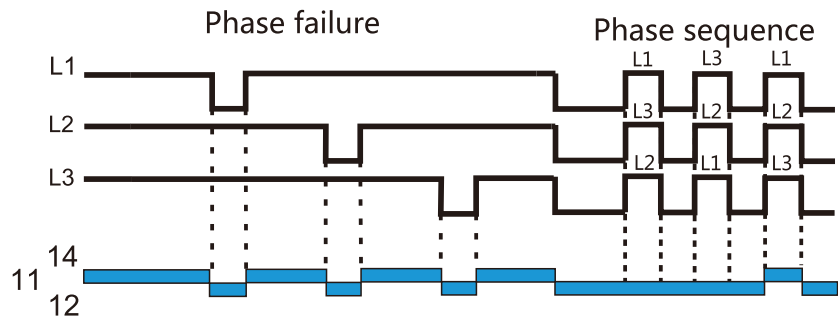


Working diagram

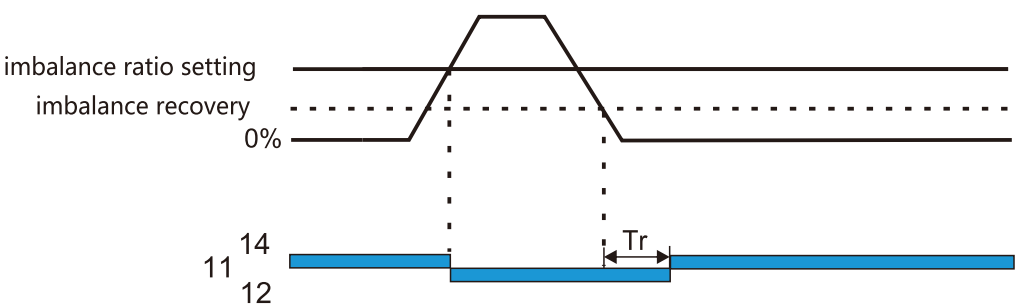
OVER AND UNDER VOLTAGE PROTECTION



PHASE FAILURE AND SEQUENCE PROTECTION



THREE PHASE IMBALANCE PROTECTION



T_r : recovery delay time

5、 Installation and operation instructions

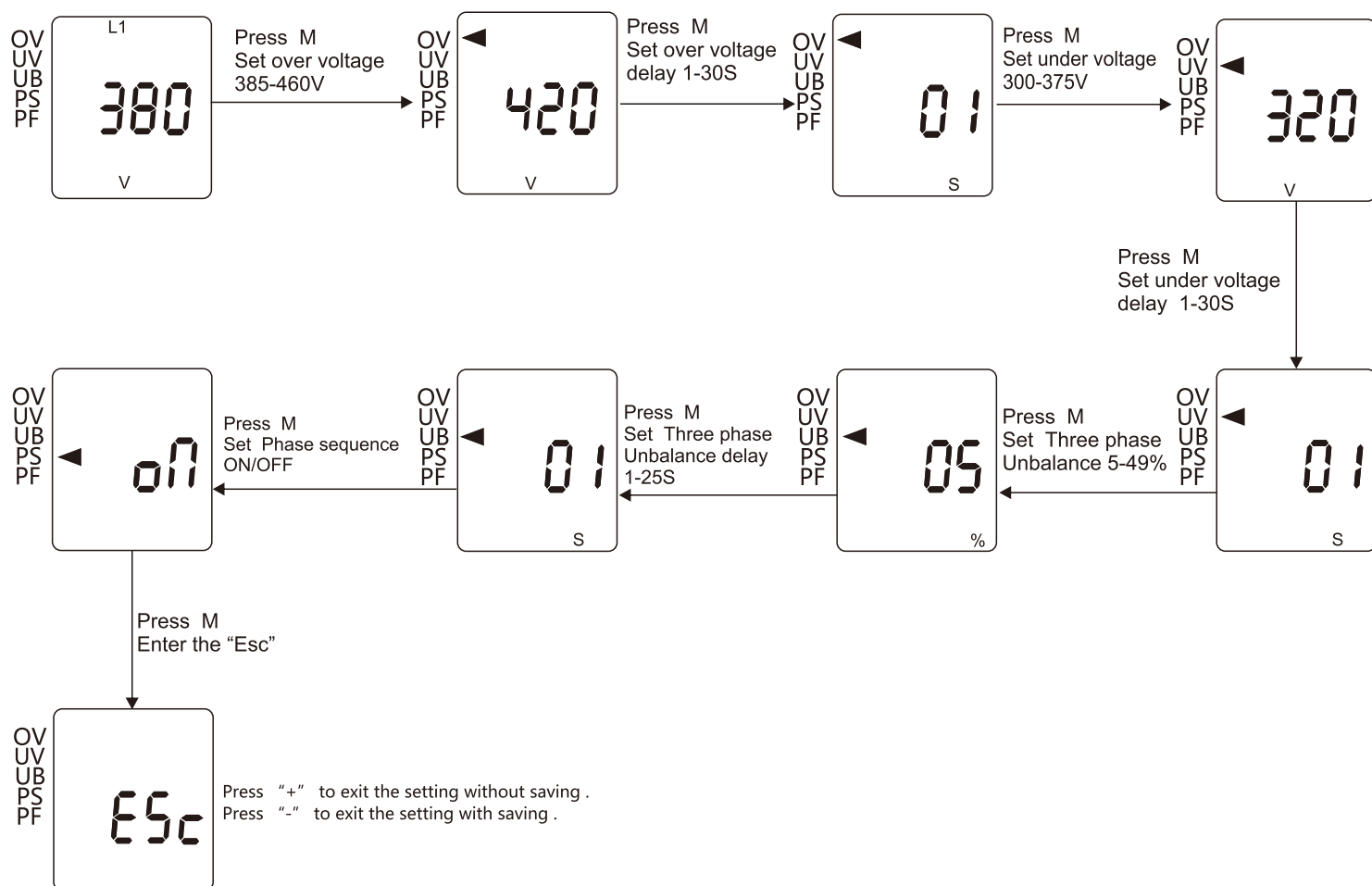
5.1 Install using TH35-7.5 rigid mounting rails.

5.2 Connect the wires correctly according to the wiring diagram.

After connecting the wires to each terminal, it is necessary to use insulating sleeves to securely secure the wires to prevent accidents caused by short circuits in the power supply.

5.3 Check that the power supply voltage must be consistent with the rated power supply voltage of the product;

5.4 Setting method:



5.5 Operating precautions:

- 1) When wiring, the control wire on the wiring terminal must be firmly fixed
- 2) It is strictly prohibited to install or disassemble products with electricity
- 3) The use of relays should have a working voltage within the rated working voltage range.
- 4) For equipment that may cause significant economic losses or personal safety, it is important to design with sufficient margin for technical characteristics and performance values, and safety measures such as double circuit protection should be adopted.

6、 Common faults and troubleshooting methods

6.1 Startup does not work

The power pin is not connected or the wiring is incorrect or disconnected. The power supply is not connected.

6.2 Burnt products

Check if the power supply exceeds the rated power supply voltage of the product and if the power cord is connected incorrectly.

6.3 Troubleshooting

When the product malfunctions, first disconnect the power supply, connect the wires correctly according to the wiring diagram, check the wiring is correct, and then follow the operating precautions. If the product itself has quality issues, please contact your local distribution company or our company.

7、 Transportation and Storage

During storage and transportation, the product should not be affected by rain, snow, or compression. During storage, it should be placed in a well ventilated environment with a relative humidity ($25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$) of no more than 90%. The lower temperature limit is $-25\text{ }^{\circ}\text{C}$, and the upper temperature limit is $+55\text{ }^{\circ}\text{C}$.

8、 Unpacking and inspection

Open the outer packaging paper box and check that there is a user manual inside the packaging box.

9、 Ordering instructions

When placing an order, please indicate the product model and specifications. If there are special requirements, please consult with the manufacturer.