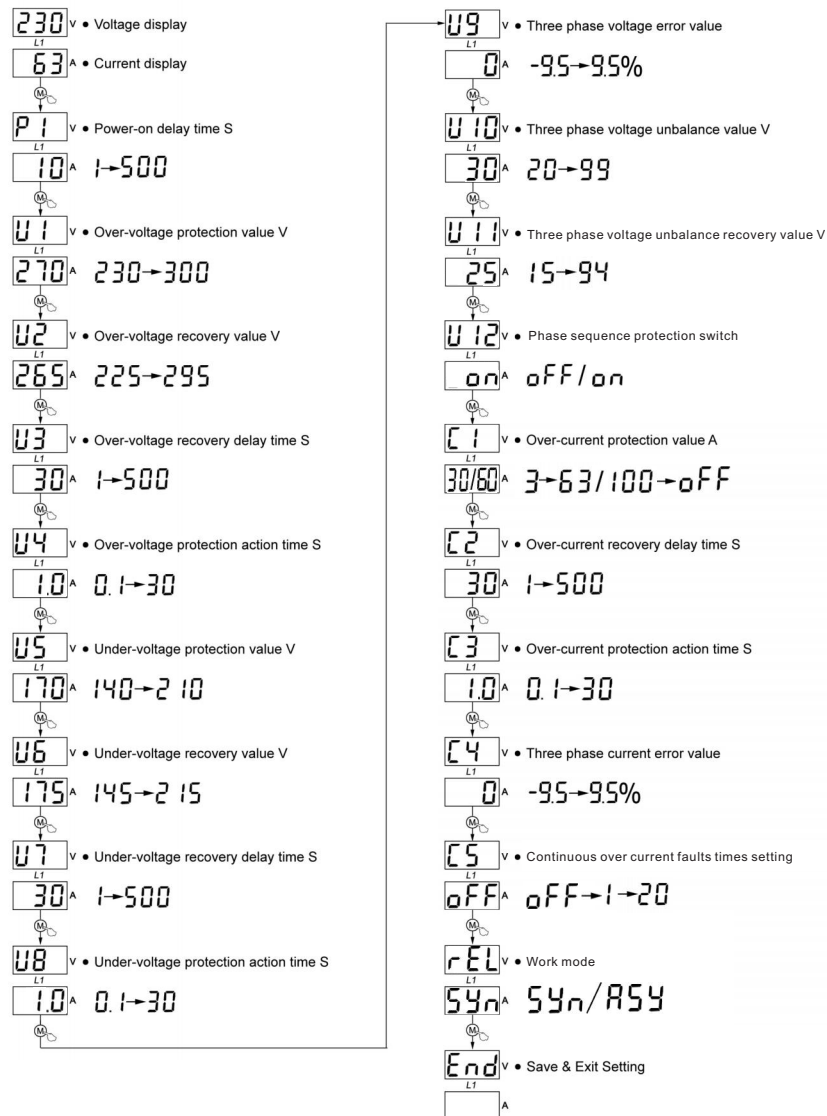


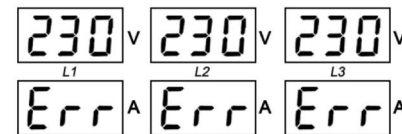
## ● Main menu setting



- Long press (M) can increase or decrease rapidly.
- Only L1 display when setting. L2 and L3 don't display.

## ● Indication of continuous over current faults

Display for continuous over current faults after reset/start delay is over. Over current faults times is more than preset times.

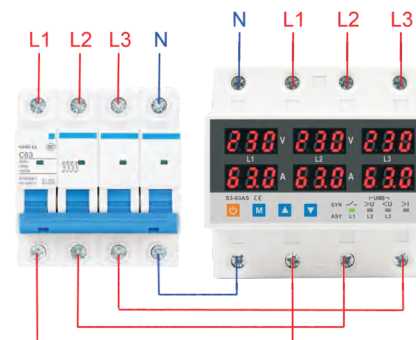


- Disconnect the overload device
- Start the relay after reset manually

## OPERATING INSTRUCTIONS

- If a voltage fault was detected when the reset/start delay of relay is counting, the output relay opens and faults indication LED lights up.
- The operating voltage and current values will be displayed on screen when the relay is operating normally. If a voltage or current fault was detected, the output relay opens and fault indication LEDs light up.
- Voltage faults: If input voltage was detected to have returned to Hys after tripped for voltage faults, the relay will reset automatically. During the counting of reset/start delay faults indication LEDs go out and the operating Voltage and current values flash on screen.
- Current faults: After the relay tripped for current faults, it will reset automatically. During the counting of reset/start delay, fault indication LED goes out, the operating voltage and current values flash on screen.

## WIRING DIAGRAM



# Three Phase Voltage and Current Protector With SYN & ASY Mode Instruction Manual



## SAFETY PRECAUTIONS

- 1.The device must be installed by a qualified person.
- 2.Disconnect all power before working on the device.Don't touch any terminal when the power is ON.
- 3.Verify correct terminal connection when wiring.
- 4.Don't dismantle or repair the device whether it operates normally, otherwise no responsibility is assumed by producer and seller.
- 5.Never use the device at the site which can be invaded by corrode gas,strong sunshine light and rain.
- 6.Clean the device with a dry cloth.
- 7.Fail to follow these instructions will result in serious injury or death.

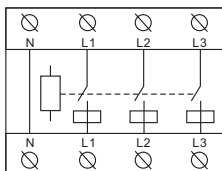
## FEATURES

- Microcontroller based
- Digit display for operating voltage and current value
- Protect electrical device against over/under voltage,over current,three phase asymmetry and incorrect phase sequence
- Voltage measurement accuracy  $\leq 1\%$
- Parameters setting by keys
- LEDs indication for over/under voltage and over current faults
- 5 Module,DIN Rail mounting

## TECHNICAL DATA

Rated supply voltage	AC220V
Operation voltage range	AC140V-300V
Rated frequency	50/60Hz
Hysteresis	Over voltage and asymmetry:5V Under voltage:3V
Asymmetry trip delay	10s
Voltage measurement accuracy	$\leq 1\%$ (over the whole range)
Rated insulation voltage	450V
Output contact	1NO
Electrical life	$10^5$
Mechanical life	$10^5$
Protection degree	IP20
Pollution degree	3
Altitude	$\leq 2000\text{m}$
Operating temperature	$-5^{\circ}\text{C}-40^{\circ}\text{C}$
Humidity	$\leq 50\%$ at $40^{\circ}\text{C}$ (without condensation)
Storage temperature	$-25^{\circ}\text{C}-55^{\circ}\text{C}$

## SYMBOL



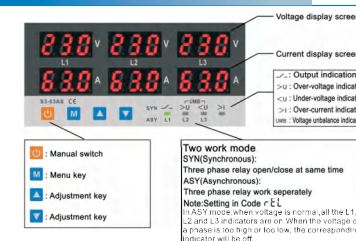
## OPERATING RANGE

Technical parameter	Setting range	Factory setting	Step	Function description
Power-on delay time	1s-500s	10s	1s	After external power cut,the time needed for power-on when power recovery.
Over-voltage protection value	230V-300V	270V	1V	When the voltage is higher than the set value, the protector will cut off the line.
Over-voltage recovery value	225V-295V	265V	1V	When the voltage is lower than the set value, the protector will automatically reset, and the set value must be less than the over-voltage protection value by more than 5V.
Over-voltage recovery delay time	1s-500s	30s	1s	After voltage recovery,the time needed for automatic reset.
Over-voltage protection action time	0.1s-30s	1.0s	0.1s	When the voltage is higher than the set value,the time needed for protection action.
Under-voltage protection value	140V-210V	170V	1V	When the voltage is lower than the set value, the protector will cut off the line.
Under-voltage recovery value	145V-215V	175V	1V	When the voltage is higher than the set value, the protector will automatically reset, and the set value must be more than the under-voltage protection value by more than 5V.
Under-voltage recovery delay time	1s-500s	30s	1s	After voltage recovery,the time needed for automatic reset.
Under-voltage protection action time	0.1s-30s	1.0s	0.1s	When the voltage is lower than the set value,the time needed for protection action.
Three phase voltage error value	-9.5%-9.5%	0		Correct the three phase voltage error.
Three phase voltage unbalance value	20V-99V	30V	1V	When the error among the three phase voltage is bigger than the set value,the protector will cut off the line.
Three phase voltage unbalance recovery value	15V-94V	25V	1V	When three phase voltage unbalance value is lower than the set value,the protector will automatically reset.
Phase sequence protection switch	OFF/ON	ON		Switch on or on the phase sequence protection function.
Over-current protection value	3A-63A-OFF 3A-100A-OFF	30A/60A	1A	When the current is higher than the set value, the protector will cut off the line.
Over-current recovery delay time	1s-500s	30s	1s	After current recovery,the time needed for automatic reset.
Over-current protection action time	0.1s-30s	1.0s	0.1s	When the current is higher than the set value,the time needed for protection action.
Three phase current error value	-9.5%-9.5%	0		Correct the three phase current error.
Times of continuous over current protection	OFF-1-20	OFF	1	When the times of continuous over-current protection exceeds the set value,the protector will cut off the line,then it needs to be opened manually.
Phase-loss protection	ON			One of the three-phase voltages is losing,the protector will cut off the line.

## THREE PHASE VOLTAGE AND CURRENT PROTECTOR WITH SYN & ASY MODE

Please read complete instructions prior to installation and operation of the device.

### FRONT-FACE PANEL

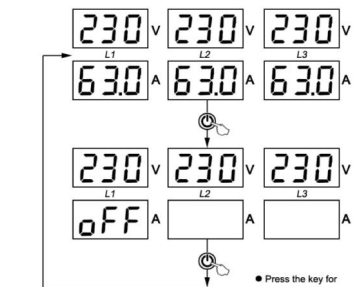


### Reset/start delay display



- Voltage operating values display on L1-L2-L3 and current value display on L2 during the counting of start delay;they will be normally ON after the delay is over and the output relay closes.

### Switch on/off manually



- Press the key for more than 1s

### Indication for incorrect phase sequence



- Display L1-L3-L2 when phase failure fault occurs.User can change the position of L2 and L3 after disconnected supply.