

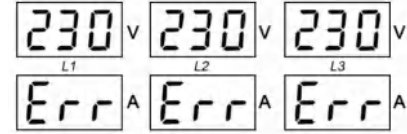
● Main menu setting

230 V • Voltage display L1	U9 V • Three phase voltage error value L1
63 A • Current display L1	0 A -95→95%
P1 V • Power-on delay time S L1	U10 V • Three phase voltage unbalance value V L1
10 A 1→500	30 A 20→99
U1 V • Over-voltage protection value V L1	U11 V • Three phase voltage unbalance recovery value V L1
270 A 230→300	25 A 15→94
U2 V • Over-voltage recovery value V L1	U12 V • Phase sequence protection switch L1
265 A 225→295	on A off/on
U3 V • Over-voltage recovery delay time S L1	C1 V • Over-current protection value A L1
30 A 1→500	30/60 A 3→63/100→off
U4 V • Over-voltage protection action time S L1	C2 V • Over-current recovery delay time S L1
1.0 A 0.1→30	30 A 1→500
U5 V • Under-voltage protection value V L1	C3 V • Over-current protection action time S L1
170 A 140→210	1.0 A 0.1→30
U6 V • Under-voltage recovery value V L1	C4 V • Three phase current error value L1
175 A 145→215	0 A -95→95%
U7 V • Under-voltage recovery delay time S L1	C5 V • Continuous over current faults times setting L1
30 A 1→500	off A off→1→20
U8 V • Under-voltage protection action time S L1	rEL V • Work mode L1
1.0 A 0.1→30	5yn A 5yn/ASY
	End V • Save & Exit Setting L1
	A

- Long press (▲▼) 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.

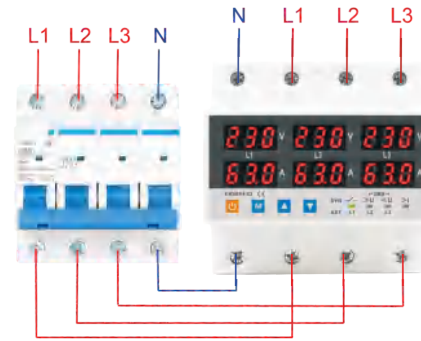


- Disconnect the overload device
- Start the relay after reset manually

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.

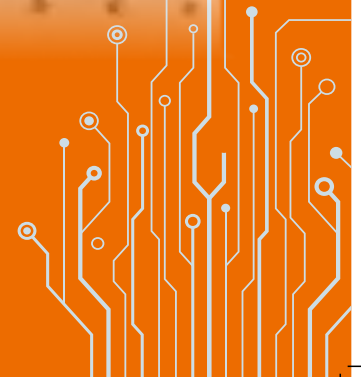
WIRING DIAGRAM



ETAK

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.

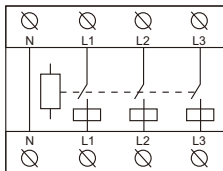
## FEATURES

- 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	$\leq 2000m$
Operating temperature	-5°C-40°C
Humidity	$\leq 50\%$ at 40°C(without condensation)
Storage temperature	-25°C-55°C

## SYMBOL



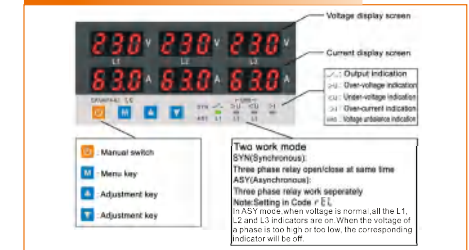
## OPERATING RANGE

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.

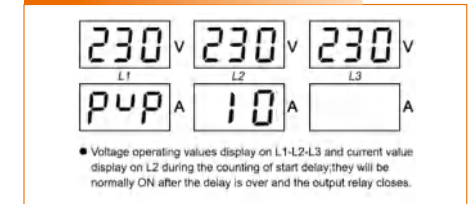
## THREE PHASE VOLTAGE AND CURRENT PROTECTOR WITH SYN & ASY MODE

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

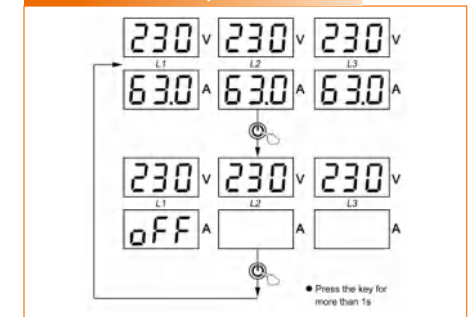
### FRONT-FACE PANEL



### Reset/start delay display



### Switch on/off manually



### Indication for incorrect phase sequence

