EKF



TECHNICAL MANUAL

Power limiter OM-14 EKF

1 DESCRIPTION

Power limiter OM-14 EKF is a sensing device that monitors the electrical power consumed by the load and turns off the consumer if the consumption level exceeds the power limit. An embedded microcontroller constantly monitors supply voltage and current and outputs them on integrated LCDs. Switching is performed by an electromagnetic relay. Trip setpoints and reset time delay can be set using the buttons on the front panel of the device. Setpoints are saved in non-volatile memory.

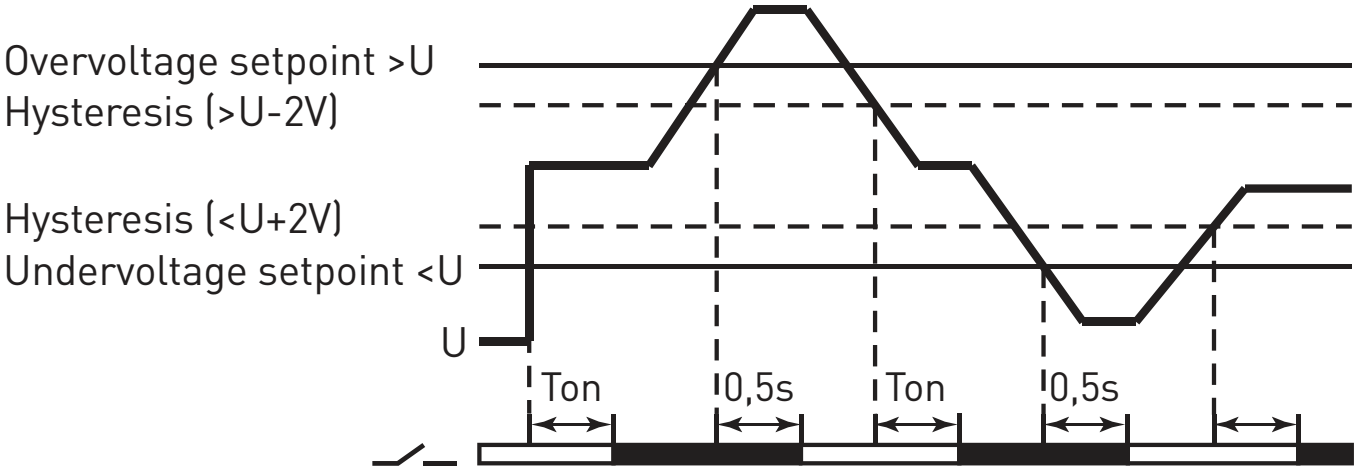
2 TECHNICAL DATA

Table 1

Characteristics	**Values**
Supply voltage, V	220-240
Rated frequency, Hz	50/60
Output contact	1NO
Adjustable apparent power range S, kVA	0,1-14,0
Adjustable active power range P, kW	0,1-14,0
Adjustable reactive power range Q, kVAr	0,1-14,0
Overvoltage range, V	220-280
Undervoltage range, V	120-210
Current adjustment range, A	1-63
Maximum load current, A	80
Utilization category	AC-1
Hysteresis, V	2

Characteristics	**Values**
Turn-on/reset delay, sec.	5-300
Switching delay, sec.	5-600
Overvoltage protection trip delay, sec.	<285V: 0,1. ⩾285V: 0,02.
Undervoltage protection trip delay, s	>120V: 0,1. ⩽120V: 0,02.
Measurement error, %	max. 10
Number of reclosing cycles	1-20
Voltage measurement error, %	1,5
Current and power measurement error, %	3
Rated insulation voltage Ui, V	400
Mechanical endurance, cycles	1 000 000
Electrical endurance, cycles	100 000
Altitude above sea level, m	2000
Operating temperature, °C	-20 to +55
Storage temperature °C	-30 to +70
Degree of protection	IP20

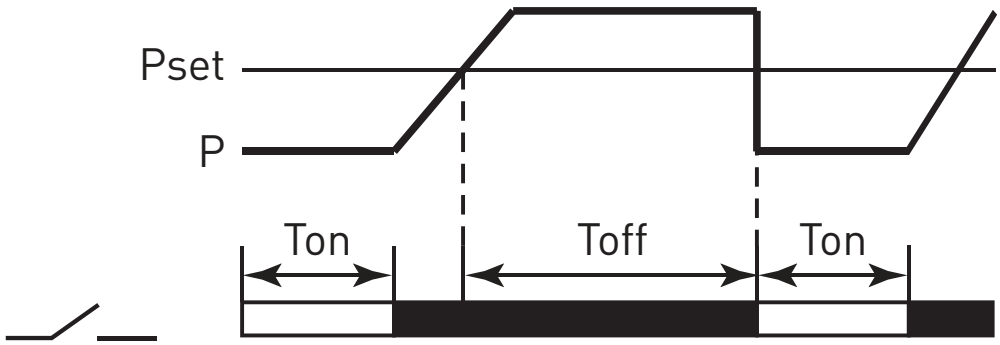
For relay operation under fault voltages, refer to Figure 1.



Ton – Reset time delay

Figure 1. Relay operation under fault voltages

For relay operation under fault power, refer to Figure 2.



Ton – Reset time delay
Toff - Overload trip delay

Figure 2. Relay operation under fault power

3 INSTALLATION AND OPERATION

Mount the device onto a 35 mm DIN rail. Connect the wires as per wiring diagram, refer to Figure 7. The cross-section of the wires must correspond to the maximum load current. To protect against overload and short circuit, install a circuit breaker before the relay. Circuit breaker tripping current must be in-line with the power limit of the relay. To avoid damaging stranded wire conductors by the terminal screws, use the appropriate cord end terminals.

After the device is energized, the numeric display will show supply voltage and start blinking (Figure 3). Blinking display indicates that there is no voltage at the output of the device. If the supply voltage is within the set range, after the Ton time (5 sec. by default) the load will be switched on and the indicator will stop flashing. If the voltage is out of bounds, the load will not be connected to the network until the voltage returns to normal. If, after the reset, the voltage remains out of bounds, an associated error LED will be blinking.

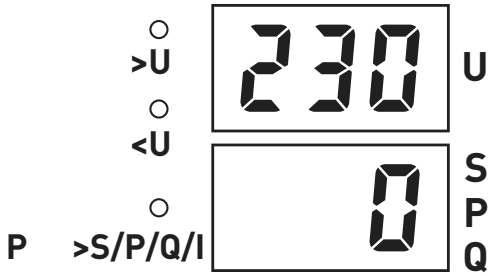


Figure 3. indication LCD

Follow Figure 5 instructions to change the default settings. The buttons are located on the front panel, to the right of the display. For control elements, refer to Figure 4.

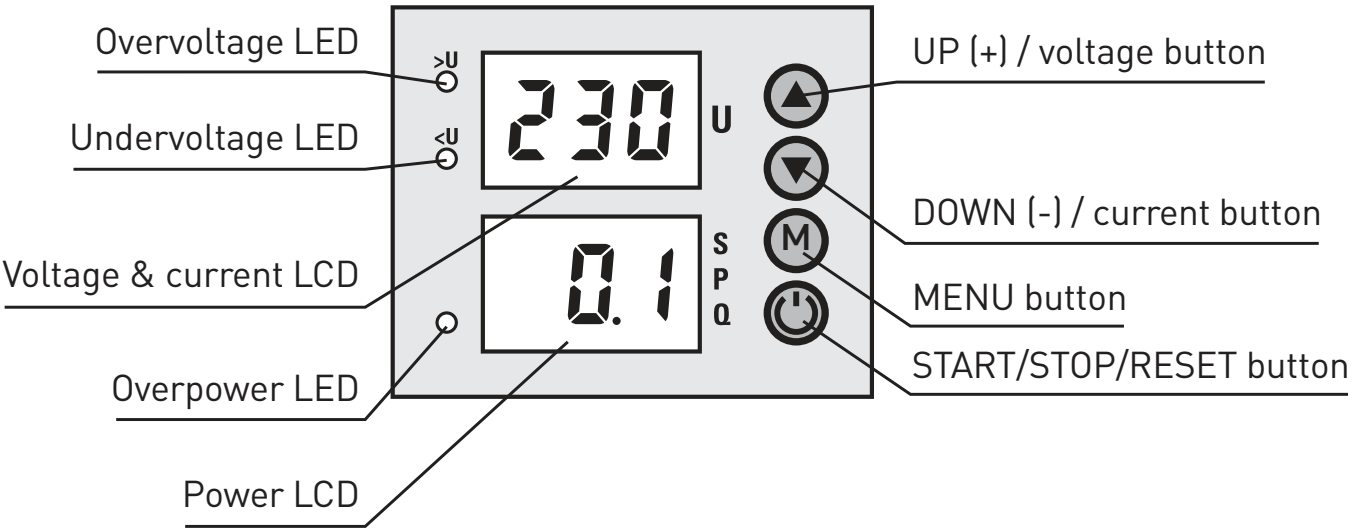


Figure 4. Front panel

For controls symbols, refer to Table 2.

Table 2

Symbol	Description	Setting range	Setting step	Value by default
PrC	Parameter	S: Apparent power P: Active power Q: Reactive power C: Load current		S
Pou	Power, kW (kVA, kVAr)	1,0-14,0	0,1	1,0
Cur	Current, A	1-63	1	5
UrH	Overvoltage, V	220-280	1	250
UrL	Undervoltage, V	120-210	1	170

Table 2 continued

Symbol	Description	Setting range	Setting step	Value by default
UPr	Voltage protection	ON OFF		ON
Ton	Turn-on/reset delay, sec.	5-300	1	5
Tof	Switching delay, sec.	5-600	1	5
CPr	Number of reclosing cycles	OFF-1-20	1	OFF
diS	Parameter on the second LCD	Con: One parameter constantly displayed CYC: Several parameters cyclically displayed		Con
PAS	Password setting	000-999		111

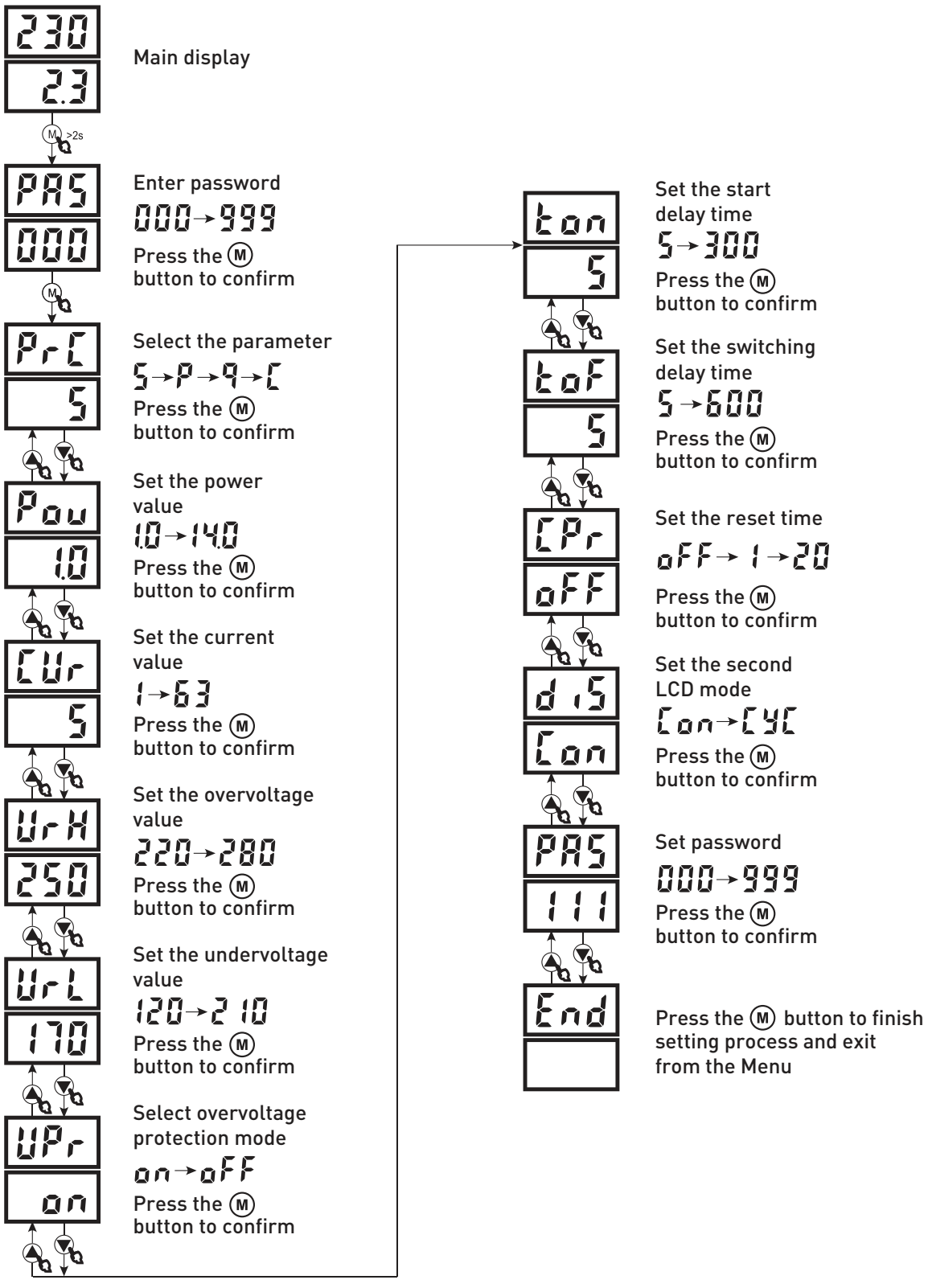


Figure 5. Relay setting

You can adjust these values higher or lower as needed. To save the setpoints, pass all setting steps.
The device will automatically exit setting mode 60 seconds after the last button press, not saving any changes made.
Press the ⏻ button to switch the relay on/off.
If overpower persists, the relay will fail safe and display an error. Refer to Figure 6. In order to continue operation, eliminate the fault and manually reset the relay.

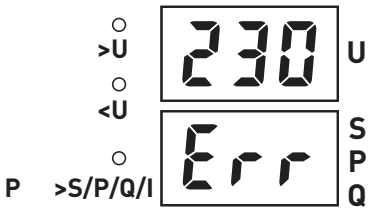


Figure 6. Error displayed

4 WIRING DIAGRAM

Rated current of a circuit breaker must not exceed 63 A.

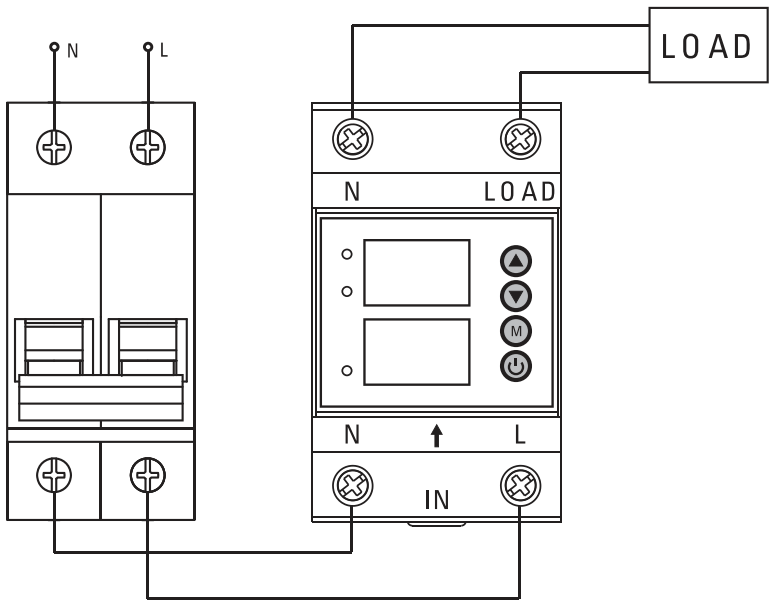


Figure 7. Wiring diagram

5 OVERALL AND INSTALLATION DIMENSIONS

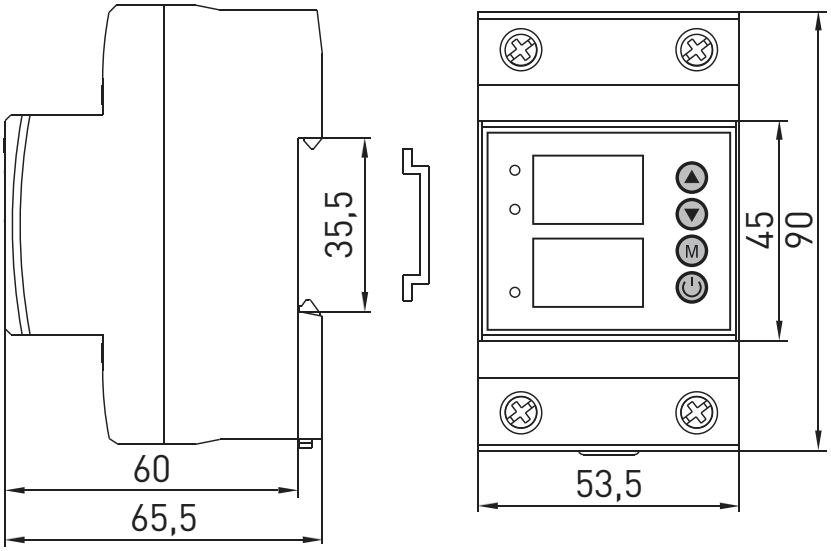


Figure 8. Overall and installation dimensions

6 DELIVERY SCOPE

Power limiters OM-14 EKF are supplied in a group package. For all available documentation, scan the QR-code on the insert or on the inside of the package.

7 SAFETY REQUIREMENTS

Do not operate the devices with visible mechanical damage.
Power limiters must be operated and serviced only by qualified personnel. Failure to follow the guidelines may result in injury and/or damage to the equipment.
Do not operate the relays with damaged housing.

8 TRANSPORTATION AND STORAGE

Power limiters can be transported by any means of enclosed transport that protects the packed goods from mechanical impact and weather exposure. Power limiters shall be stored indoors in the original package at the ambient temperature from -40°C to+75°C.

9 DISPOSAL

Life-expired and failed products shall be disposed of in compliance with the effective national and local laws and regulations.

To dispose of the product, send it to an authorized company for recycling in compliance with the effective national and local laws and regulations.

10 MANUFACTURER'S WARRANTY

The manufacturer guarantees the products comply with the declared characteristics, provided that consumers follow the operation, transportation and storage conditions.

Warranty period: 7 years from the date of sale specified in the sales receipt.

Shelf life: 7 years from the date of manufacture specified on the product package or housing.

Service life: 10 years

Manufacturer: OOO Electroresheniya, Otradnaya st., 2b/9, 127273, Moscow, Russia, tel. +7 (495) 788-88-15.

MEA regional headquarters: EKF ELECTRICAL SOLUTION FZCO, Techno Hub-2, DSO, P.O. box 341079, Dubai, United Arab Emirates, tel. +971-4-547-06-18.

Importer and EKF trademark service representative in the territory of the Republic of Kazakhstan: TOO «Energoresheniya Kazakhstan», Kazakhstan, Almaty, Bostandyk district, Turgut Ozal st., 247, apt 4.

11 CERTIFICATE OF ACCEPTANCE

The power limiters OM-14 EKF have been manufactured in compliance with the effective laws and regulations and have been approved for operation.

Date of manufacture: for information, refer to the product package.

Quality control stamp

EAC

v3

ekfgroup.com

EKF