

**SVEN**<sup>®</sup>

Voltage Relay

## USER'S MANUAL



**OVP-17P**

[www.sven.fi](http://www.sven.fi)

***Congratulations on your purchase of the SVEN voltage relay!***

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*Technical support is on [www.sven.fi](http://www.sven.fi).*

## 1. PRECAUTIONS

- Before using the device, please carefully read the following User's Manual and save it for the whole operation period.
- Before connecting the device to the power supply network, keep it within two hours in operating conditions.
- Do not use abrasive materials or organic compounds (alcohol, petrol, solvents etc.) to clean the device.
- It is prohibited to open and repair the device on your own.
- It is prohibited to open and repair any protected equipment, if it is connected to the device socket.
- It is prohibited to use the device with mechanical damages of its case.
- It is prohibited to use the device in high humidity conditions.
- Avoid ingress of water into the device.
- Shipping and transportation equipment is permitted only in the original container.
- Does not require special conditions for realization.
- Dispose of in accordance with regulations for the disposal of household and computer equipment.

### **Attention**

- ▶ ***The device must operate in the power network protected by an automatic circuit breaker with the interrupting current not more than 15 A.***
- ▶ ***The device is not designed for power-cut while short-circuited.***

## 2. PACKAGE CONTENTS

- Voltage relay – 1 pc
- User's Manual – 1 pc
- Warranty card – 1 pc

### 3. APPLICATION

OVP-17P voltage relay is designed to protect household appliances (refrigerators, washing-machines, PCs, video and audio equipment, etc.) connected to it against inadmissible supply voltage deflections and impulse noises in the power supply network.

### 4. FEATURES

- Protection of connected devices against high/low voltage in the power supply network
- Protection of connected devices against impulse noises in the power supply network
- Programmable disconnection thresholds and turn-on delay time
- Nonvolatile memory of programmed settings
- Multifunctional LED display to show voltage level in the power supply network, delay time and protection status indication
- Protective shutters in the output socket
- Protective grounding connection

### 5. TECHNICAL DESCRIPTION

OVP-17P voltage relay presents a device with an electronic circuit with microprocessor control assembled in a case with a wall plug and socket. OVP-17P voltage relay provides the power supply disconnection of appliances connected to it, if the power supply voltage exceeds specified values, and automatically recovers the power supply within the specified time after voltage normalization. An indicator on the front panel displays the active voltage value in the power supply network and signals about its operation mode. OVP-17P voltage relay is a programmable device. Buttons on the front panel are used to set its parameters.

Set parameters of the voltage relay are saved in its nonvolatile memory.

**Design description** (Fig. 1)

- ① Four-digit LED indicator to display voltage value of the power supply network, values of parameters being set and the voltage relay status indication
- ② SET: button to enter the programming mode and select programmable parameters
- ③  $\Delta$ : button to increase the value of a parameter being set
- ④ V: button to decrease the value of a parameter being set
- ⑤ RES: reset button
- ⑥ Protective shutters
- ⑦ Grounding contacts
- ⑧ Wall plug to connect the voltage relay to  $\sim 220 - 230 \text{ V} / 50 \text{ Hz}$  power supply network socket

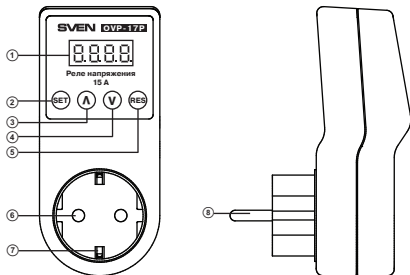


Fig. 1

## 6. CONNECTION

OVP-17P voltage relay is connected to a standard socket of  $\sim 220 - 230 \text{ V} / 50 \text{ Hz}$  power supply network. The socket must be rated at the current 15 A. The power supply line of the socket must be protected by an automatic circuit breaker with current not more than 15 A to protect against short circuit and overload. Protected devices are connected to the output socket of the voltage relay. The long consumption current of devices being connected to the relay must not exceed  $2/3$  of the maximum load current indicated in their specification.

The voltage relay is designed for operation indoor only. The device operation is inadmissible in places with high humidity and where ingress of liquid on its case is possible. Ambient temperature during the voltage relay operation must be in the range  $+10$  to  $+35 \text{ }^\circ\text{C}$ .

Before connecting equipment to the voltage relay it is necessary to set actuation values, namely, high voltage switching off threshold ( $U_H$ ), low voltage switching off threshold ( $U_L$ ) and turn-on delay time after voltage normalization of the power supply network ( $t_d$ ) (see p. 7). It is recommended to set these values in accordance with operation manuals of connected equipment. As a rule, household appliances can operate safely at 10 % supply voltage deviation, i.e. in the range 198-242 V. The turn-on delay time value after allowable voltage renewal is selected depending on the type of connected electrical appliances. For refrigerators, air-conditioners and other compressor devices the delay value should be not less than 3 minutes.

## 7. PARAMETER SETTINGS

- Connect the voltage relay to a  $\sim 220 - 230 \text{ V} / 50 \text{ Hz}$  socket to set protection parameters. The display shows its model name for a short time and the zero time reference will start to switch on the relay output.
- Enter the parameter setup mode holding the button "SET" within 3 seconds. There will be flashing "H" symbol and the upper switching-off threshold value ( $U_H$ ) in volts on the display ①. Set a required value using

buttons "Λ" ③ and "V" ④. The range of possible values of the  $U_H$  parameter is 230 to 265 V / 50 Hz.

- Start setting lower switching-off threshold value by pressing the button "SET" ②. There will be flashing "L" symbol and the upper switching-off threshold value ( $U_L$ ) in volts on the display ①. Set a required value using buttons "Λ" ③ and "V" ④. The range of possible values of the  $U_L$  parameter is 150 to 210 V.

- Start setting turn-on delay value by pressing the button "SET" ②. There will be the flashing "d" symbol and delay value ( $t_d$ ) in seconds on the display. Set a required value using buttons "Λ" ③ and "V" ④. The range of possible values of the  $t_d$  parameter is 5 to 999 seconds.

- The set parameters will be saved in the voltage relay nonvolatile memory in 5 seconds after the last button press. At that the "SAVE" inscription will be displayed for a short time, the voltage relay enters the operation mode with new settings and the zero time reference will start to switch on the relay output.

- When the protection actuation parameters of the voltage relay have been set, connect protected equipment to its socket.

- When the delay time is over, the relay will provide power supply to the protected equipment. At that, the indicator ① will display the active voltage in the power supply network.

- Where it is necessary to reset parameters of the voltage relay to factory settings, push the button "RES" ⑤. Then there will be the "deF\_H245\_L175\_d180" creeping line on the display ① and the voltage relay enters the operation mode with the following parameter values:  $U_H = 245$  V,  $U_L = 175$  V,  $t_d = 180$  sec.

## 8. OPERATION

The voltage relay has the following operation modes:

- normal operation;
- protection mode;
- turn-on delay mode;
- parameter settings mode.

The voltage relay is in the normal operation mode, when the active power supply voltage is within the range of voltage actuation protection thresholds having been set by a user and the turn-on delay time is over. In this mode the protected equipment is connected to the power supply network and active voltage in the network is displayed continuously.

If the voltage exceeds the set thresholds, the relay enters the protection mode. In this mode the equipment connected to the relay is de-energized. The "Hi" symbol and voltage value in the power supply network will blink by turns on the display (on operation of high voltage protection) or the "Lo" symbol and voltage value in the power supply network (on operation of low voltage protection). The voltage relay will be in this mode as long as the voltage in the power supply network returns to the range of values from  $(U_L+5)$  V to  $(U_H-5)$  V.

The relay enters the turn-on delay mode after its connection to the network or when it leaves the protection mode. In this mode the equipment connected to the relay is de-energized and the countdown time of turn-on delay is displayed. When the time is over the relay enters the normal operation mode.

The parameter settings mode is used to adjust protection actuation parameters. To enter this mode press and hold the button "SET" ② within 3 sec, the mode is over automatically in 5 seconds after the last pressing of any button.



## 9. TECHNICAL SPECIFICATIONS

Parameters	Value
Rated voltage, V / Hz	~220 – 230 / 50
Maximum load current, A	≤15
Maximum power, kVA	≤3.3
Maximum absorbed impulse noise power, J	125
Protection actuation time	not more than 0.3 sec
Measured voltage, V	100 – 300
Range of possible adjustable parameter values:	
- operation threshold to decrease power supply voltage, V	150 – 210 (1 V step)
- operation threshold to increase power supply voltage, V	230 – 265 (1 V step)
- delay time, sec	5 – 999 (1 sec step)
Dimensions, mm	53 × 116 × 80

### Notes:

- **Technical specifications given in this table are supplemental information and cannot give occasion to claims.**
- **Technical specifications and package contents are subject to change without notice due to the improvement of SVEN production.**

## Voltage Relay

# SVEN®



**Model: OVP-17P**

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Условия гарантийного обслуживания смотрите в гарантийном талоне или на сайте [www.sven.fi](http://www.sven.fi).  
Гарантийный срок: 12 мес. Срок службы: 2 года.  
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