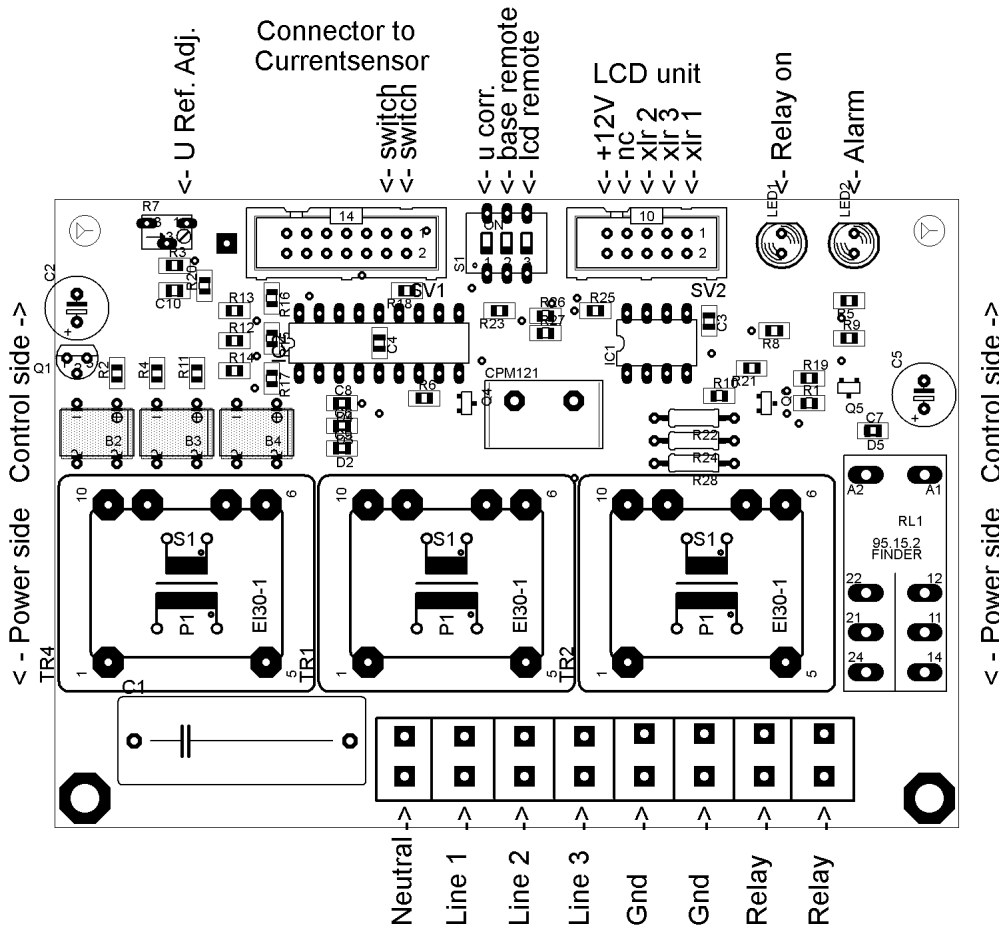


# User Instructions for the Overvoltage protection

Congratulations to your new Overvoltage Protection. This device might help to save the „life“ of your equipment in some circumstances and will help to indicate the status of the 3 power lines.

The OVP is a din rail device what can be used as a independent single box or in combination with the optional LCD controller and the current sensor. You will find something similar to the following picture of the board under the top cover if you remove the cover from the OVP:



## Installation:

On the left side is the **trimpot for the reference voltage**. This is the border of the maximum voltage. A right turn will increase the maximum voltage up to 255 Volt. The OVP will switch off the internal relay immediately and an implemented piezo beeper will beep „SOS“ if one of the 3 powerline voltages is above the adjusted reference voltage. The internal relay will switch on if all 3 line voltages are below of the adjusted reference voltage.

The **dip switch 1** is intended for 60 Hz lines. Just switch it in the „On“ position if you have a 60 Hz line. Switch off if you have 50 Hz lines. It will correct the measurement result a bit.

The **dip switch 2** will enable the OVP and is wired to pin 1 and 3 on the connector to the current sensor. You can connect here an external enable switch for a wired remote control of the OVP.

The **dip switch 3** will enable or disable the remote relay function in the LCD controller.

So, the standard setting of the dip switches for a correct function is: 1=off, 2=on, 3=on.

The data transfer between the base unit and the LCD unit works with an RS485 protocol. You can use a 3 pin xlr cable for the connection to the LCD controller. Pin 1 xlr is pin 1 on the connector, pin 3 xlr is pin 3 on the connector and pin 2 xlr is pin 5 on the connector.

The lower section of the board is the power side. Here are the connectors for the power line and the internal relay. The internal relay can be connected to an external 3 phase relay.

The **LCD controller** works with any kind of 9 - 12V, 1 Ampere power supply. The power connector is on the left side of the controller. The polarity of the power supply doesn't matter due to an implemented rectifier. Please note that LED gooseneck lamps might not work with wrong polarity. In this case just check the polarity of the lamp xlr connector (pin1/2) before use it and change the polarity of the psu if necessary.

The **upper button** on the LCD controller will change the LCD display from the 3 line voltages to current. The **middle button** will show the adjusted reference voltage and the **lower button** will toggle the relay in the OVP base unit if the dip switch 3 is in the "On" position.

The **current sensor** is connected to the base unit with a 14 pin cable. You just need to put the 3 main cables of the powerline through the 3 holes in the coils of the current sensor board. Please connect the sensor board to the base unit **after** you have fixed the 3 line cables. Take care that you don't touch the parts on the sensor board with any metal parts, even if the supply voltage is only 5V on the board.

### Technical Specifications:

Dimensions Base unit	127mm x 90mm x 53mm
Input voltage range	Between 160V and 400 V, all 3 lines are connected Between 200V and 400 V, only 1 line is connected
Accuracy voltage range	+/- 4 % +/- 1 digit w. 3 phases, +/- 6% +/- 1 digit w.1 phase
Accuracy current sensor	+/- 5 % +/- 1 digit
Accuracy reference voltage	+/- 4 % +/- 1 digit w. 3 phases, +/- 6% +/- 1 digit w. 1 phase
Connectors base unit	Wago 7,6 for the power side, RIA multipin for control side
Switching off time "alarm"	Below 0,1 sec.
Switching on time "ok"	About 1 sec.
Max. load internal relay	16Ampere
Dimensions LCD Controller	480mm x 44mm x 65mm
Power supply LCD Controller	External 9 – 12V DC, 1 Ampere supply
Dimensions current sensorb.	80mm x 50mm x 30mm
Power supply sensorboard	Internal 5V from Base unit
Max. input current	50 Ampere

**WARNING: Please take care that you doing all works on the OVP without any connection to one of the power lines cause you might the risk of an electrical shock!**

### Service and Warranty:

The warranty on this product is 2 years from invoice date. Legal references: Please note that these devices may be used only by trained technicians. A responsibility of the manufacturer for possible damage or disadvantages of the user by the use of the devices is hereby expressly excluded. The respective laws over the enterprise of this kind of devices are to be kept by the user. The company Axel Joost Elektronik declared further that these devices are made under the applicable CE-standards and ROHS regulations, Please feel free to contact us at [info@optogate.com](mailto:info@optogate.com) if you have further questions.

