

OVP



Protective functions of the line voltage analyzer

OVER-VOLTAGE PROTECTION

The over-voltage value is set by the user as a percentage of V_{in} – from 1.05 to 1.30 times V_{in} .

UNDER-VOLTAGE PROTECTION

The under-voltage value is set by the user as a percentage of V_{in} – from 0.70 to 0.95 times V_{in} .

Phase sequence protection

If there is a change in the phase sequence for any reason, the voltage relay opens immediately to cut the output voltage.

Break in the neutral connection

The line voltage analyzer continually measures the phase neutral voltages even when it shifts and responds accordingly.

Over Voltage Protection (OVP)

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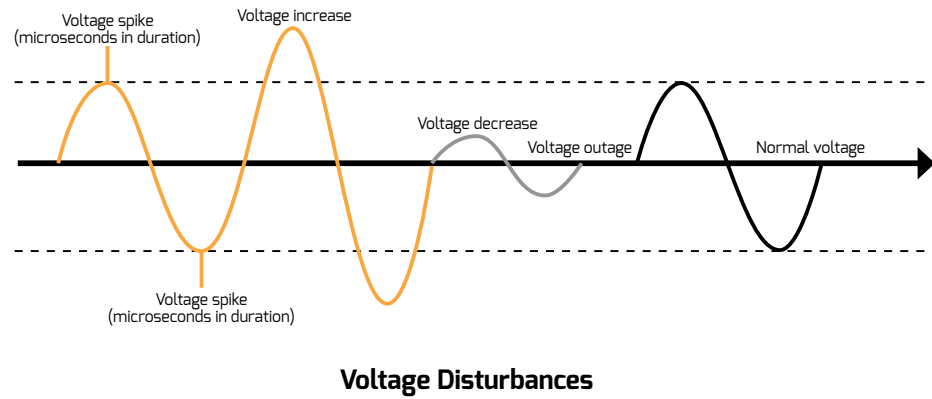
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OVP

The Over Voltage Protector (OVP) protects critical loads from damage caused by common types of electrical problems:

- Very short term voltage increases (spikes) such as from lightning and switching surges (microseconds in duration).
- Short-term voltage increases (1-30 milliseconds duration).
- Longer term voltage increases and voltage drops (more than 30 ms).
- Loose Neutral conductor that cause damage for critical load.



The OVP consists of three stages:

- Surge protection stage**
Standard Type II surge protection.
- Energy absorbing system**
based on rectifier and capacitor to protect the load from temporary voltage increases.
- Line voltage analyzer and main contactor**
to protect the load from longer-term voltage increases and decreases, and loose Neutral conductor.

Four models of the OVP are available:

Output (kVA)	32	60	100	260
Current (ARMS per phase)	50	100	145	400

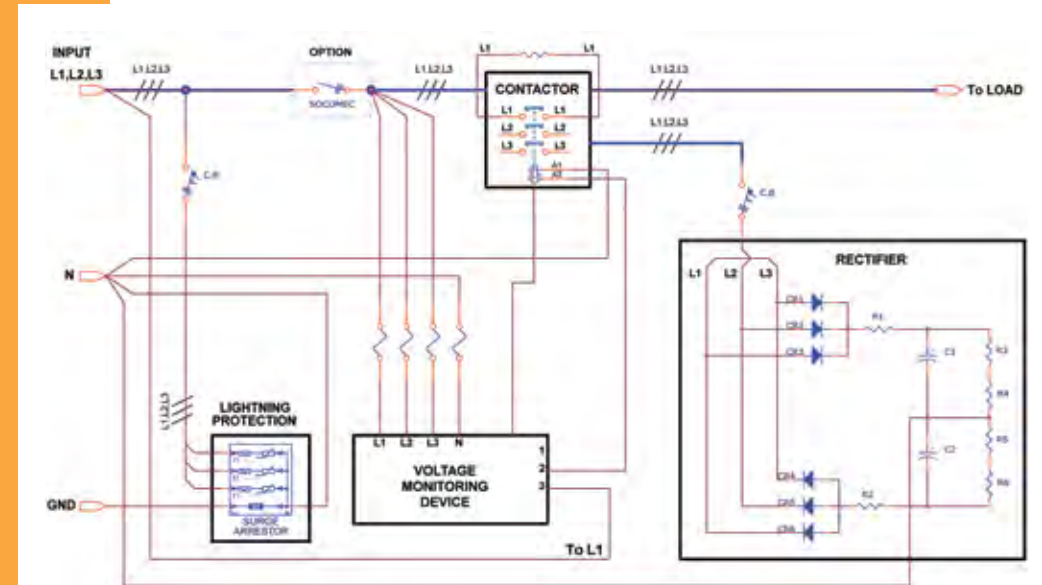
PRINCIPLES OF OPERATION

The unit consists of 3 main parts:

- Lightning and surge protection
- Line voltage analyzer with voltage protection relay
- Rectifier section (PC600)

OVP BLOCK DIAGRAM

- Three-phase voltage line and neutral is connected to the load through an input contactor.
- Lightning and surge protection and the line voltage analyzer are connected in parallel to input.
- LPC600 protects the load by absorbing temporary over-voltages. It rectifies the input and its capacitors absorb the disturbances.
- The line voltage analyzer and the main contactor protect the load from long term voltage increase or decrease and disconnection of the Neutral line.



TECHNICAL SPECIFICATIONS

INPUT	
Voltage	3 400 V 50/60 Hz nominal; 5 wires, 3 phases, neutral, ground
Lightning and Protection	Class II according to IEC 61643-1, 20kA, 8/20 Sec (Class I+II is available as an option)
Max. value of input voltage	700 V RMS between phases, 400 V RMS between any phase and neutral
High voltage limit for output shutdown	User selectable: from 1.05 up to 1.30 x Vin (240v - 300 V)
High voltage limit for output return after shutdown	Same as over-voltage shutdown limit with user-specified time delay
Delay from input voltage deviation to output voltage shutdown	User selectable, from 100 ms to 20 sec
Delay to resumption of output voltage, after return of input voltage to valid range	User selectable, from 100 ms to 20 sec
OUTPUT	
Max. output current	50 A RMS per phase 100 A RMS per phase 145 A RMS S per phase 400 A RMS per phase
Max. crest factor	No limit
Efficiency	99.9% @ 3400 Vac input
GENERAL	
Isolation	1.5 kV between inputs + neutral and ground, outputs + neutral and ground
Safety	IEC 60950 compliant
Ambient temperature	From -10 to +50 °C operating, -40 to +70 °C storage
Relative humidity	95 % at 40 °C non-condensing
Dimensions	Depends on maximum amperage. 400 A model: (HxWxD) 74 x 24 x 72 cm (appx.)

* In the interest of continuous improvement, specifications are subject to change without notice.