

Mains Filter Type 5A Technical Explanations

Technical Explanation:

Our mains filter offers protection against the following types of disturbances in the electrical grid:

- High-frequency disturbing pulses (burst pulses)
- Impulse voltages (surge pulses)
- High-frequency line disturbances

Burst Pulses:

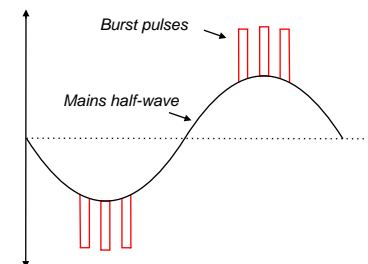
The term "burst" generally refers to a repeated, bundled occurrence of an event.

Burst pulses occur during switching operations such as:

- Switching of relays and protective contacts
- Switching of inductive loads
- Switching with mechanical switches

During switching, disturbing pulses can occur (due to spark gaps or switch bounce) which are characterized by short rise times, low energy content, a broad frequency spectrum, and a high repetition frequency.

The test peak voltage according to the relevant standard EN 61547 is 1000 V. Our mains filter offers protection against disturbances of up to 4000 V.



Surge Pulses:

For short periods of time, higher voltages can occur in the electrical grid. Due to their high voltage-levels and energy content, these so-called surge pulses can be destructive and very dangerous to electronic devices.

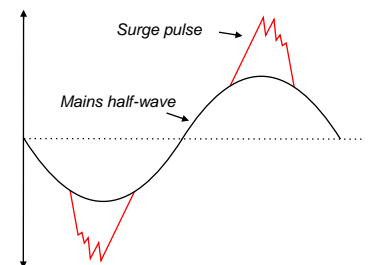
According to the cause, surge pulses are subdivided into:

- External overvoltages: caused by influences outside the system, mainly by electrical discharges during thunderstorms (lightning impulse voltages)
- Internal overvoltages: caused by events within the network, mainly by switching operations (switching impulse voltages) occurring for example during switching of heavy loads, lines at no load, inductances (transformers in no-load operation) and during load shedding.

The test requirements according to EN 61547 are:

- Phase to phase (between L and N): 1000 V
- Phase to earth (between L or N and PE): 2000 V

Our mains filter offers protection against disturbances of up to 4000 V.



Line Disturbances:

When operating, electronic devices connected to the electrical grid send disturbing pulses into the grid via the supply line.

These disturbances must not exceed a certain level as they can affect the function of other devices. The limit values to be complied with are specified in the standard EN 55015.

Our mains filter is capable of damping disturbances of up to 20 dB.