

# Lightning arrester LightningController MC 50-B VDE



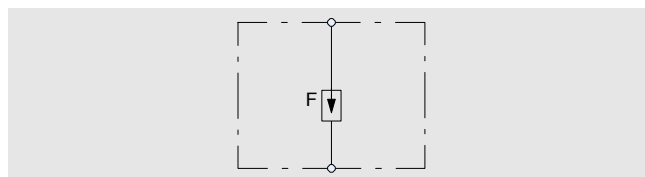
## Operation and fields of application

LightningController MC 50-B VDE is a plug-in multiple spark gap. The device consists of nine partial spark gaps, formed by ten heavy-duty carbon discs. The precisely defined spacing of the spark gaps is safely ensured by highly heat-resistant Teflon discs. Blade contacts of pressure die-cast zinc, which are screwed to each other, clamp the spark gap together with accurate positioning. Eight of the nine spark gaps are capacitively controlled and thus ensure a precisely defined operating surge voltage of  $\leq 2$  kV.

The lightning arrester conforms to requirement class B to DIN VDE 0675 Part 6 (Draft 11.89) A1, A2 and class I to IEC 61643-1 (02.98). The device is designed to be used between interface 0 to 1 in accordance with the lightning protection zone concept of IEC 61312-1.

In a lightning protection installation in a building, LightningController MC 50-B VDE provides lightning protection potential equalisation with the power supply lines. The device has been successfully tested with respect to the lightning current parameters according to ENV 61024-1 and IEC 61024-1.

Since the protective action of LightningController MC 50-B VDE is ensured even with a direct lightning strike on an overhead line, the device can also be used in buildings supplied with power via an overhead line.



Block diagram of LightningController

## Mounting

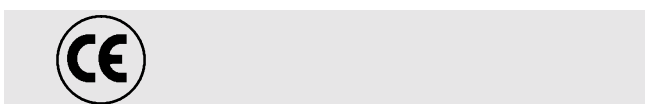
LightningController MC 50-B VDE is easy to install, since the dimensions of the housing of the device conform to the space-saving 17.5 mm grid module. The lightning arrester is installed simply by snapping it to the top-hat rail. The LightningController has two terminals each for the N and PE-conductors.

*Note:* since the spark gap of the device is enclosed, no plasma arcs are produced outside the casing.

## Test marks



## Other marks



## Technical data

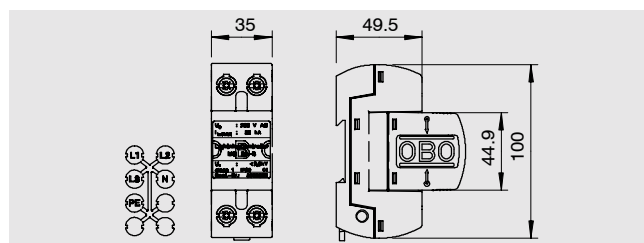
| LightningController lightning arrester   |             | MC 50-B VDE  |
|--|-------------|--|
| Type   |             |  |
| Nominal voltage  | $U_N$       | 230 V / 50-60 Hz                                   |
| Maximum continuous operating voltage   | $U_c$       | 255 V  |
| Requirement class to DIN VDE 0675, Part 6 (Draft 11.89) A1, A2 to IEC 61643-1            |             | B class I  |
| LPZ  |             | 0 → 1  |
| Insulation resistance  | $R_{ins}$   | > 100 M $\Omega$                                   |
| Voltage protection level   | $U_p$       | < 2 kV   |
| Response time  | $t_A$       | < 100 ns   |
| Surge voltage test (10/350) with the lightning parameters set out in IEC 61312-1 (02.95) |             |  |
| Peak current   | $I_{imp}$   | 50 kA  |
| Charge   | Q           | 25 As  |
| Spec. energy   | W/R         | 0.63 MJ/ $\Omega$                                  |
| Mains follow-up current quenching capacity of the arrester at $U_c$                      |             | 12.5 kA <sub>rms</sub>                             |
| Maximum asymmetric short-circuit current   | $I_p$       | 25 kA  |
| Max. series fuse (only required if there is no such fuse already in the network)         |             | 500 A gL/gG  |
| Short-circuit strength (series fuse 500 A gL)  |             | 17.6 kA <sub>rms</sub>                             |
| Maximum asymmetric short-circuit current   | $I_p$       | 25 kA  |
| Temperature range  | $\vartheta$ | -40 °C to +85 °C                                   |
| Air humidity   |             | ≤ 95%  |
| IP Code  |             | IP 20  |
| Connection cross-section rigid/flexible/stranded   |             | 10-50 / 0-25 / 10-35 mm <sup>2</sup>               |
| Tightening torque ( $M_A$ ) at least 4 Nm  |             | AWG 8-2  |
| Mounting   |             | Snap-fitting on 35 mm top-hat rail to DIN EN 50022 |

Subject to technical alterations

## Ordering data

| Type                 | Description            | Order no.        |
|----------------------|------------------------|------------------|
| <b>MC 50-B VDE</b>   | Complete <sup>1)</sup> | <b>5096 84 7</b> |
| <b>MC 50-B VDE/O</b> | Upper part             | <b>5096 82 0</b> |
| <b>MC 50-B VDE/U</b> | Base                   | <b>5096 83 9</b> |

<sup>1)</sup> Complete = upper part and base



## Features at a glance MC 50-B VDE

## Advantages in use

Enclosed system, no plasma arcs outside the casing

► Can be installed in any standard commercial distribution board enclosure

Safety-tested, VDE, ÖVE, KEMA KEUR, MEEI, EZU test marks

► Reliable arrester in all applications, tested by several independent institutes

Low protection level

► Decoupling inductances only needed where the distance (line length) between class B and C arresters is less than 5 metres

Plug-in upper part

► Simple checking of the technical connection condition (TAB) of the VDEW (see page 24)

Two connection possibilities on each side

► Easy to install

High follow-up current quenching capacity

► Can be used close to transformers

Connection duct at side

► No busbars required