

Arc-fault Protection Switch

General description

The arc-fault protection switch is a device designed to protect LED circuits against interruptions and resulting disturbances which can lead to the formation of an electric arc.

Its primary task is to detect an electric arc early in its formation and switch off the respective control gear/ballast to prevent the risk of fire.

Electric arcs, which are caused by an interruption in the LED circuit, cannot be detected by standard protection elements (fuse, earth-leakage trip). Hence, the arc-fault protection switch is a useful supplement to standard protection elements.

Functional description

The formation of an electric arc is detected by monitoring the total LED voltage on the secondary side of the LED converter. During trouble-free normal operation this voltage has a constant value.

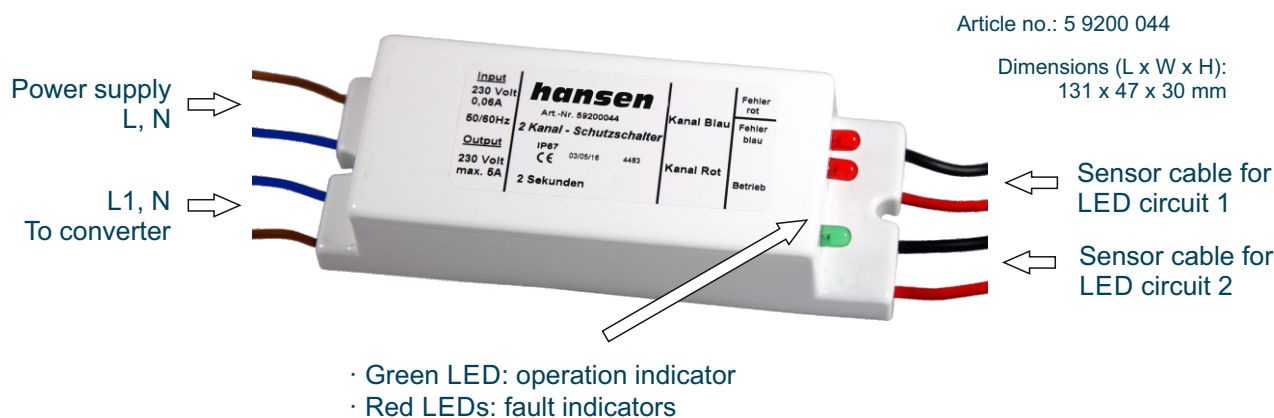
When an electric arc starts to form, the total LED voltage increases significantly. This voltage increase is used as a trigger signal for a relay.

The relay is located in the 230 V line feeding the converter of the faulted circuit. The relay disconnects the converter on the line side. Afterwards, it remains locked in, i.e. the converters remain switched off until the mains voltage is disconnected, e.g. by a time switch.

Upon reconnection, e.g. by the time switch, the converters are switched on again. If the fault in the LED circuit is still present, the protection switch will trip again.

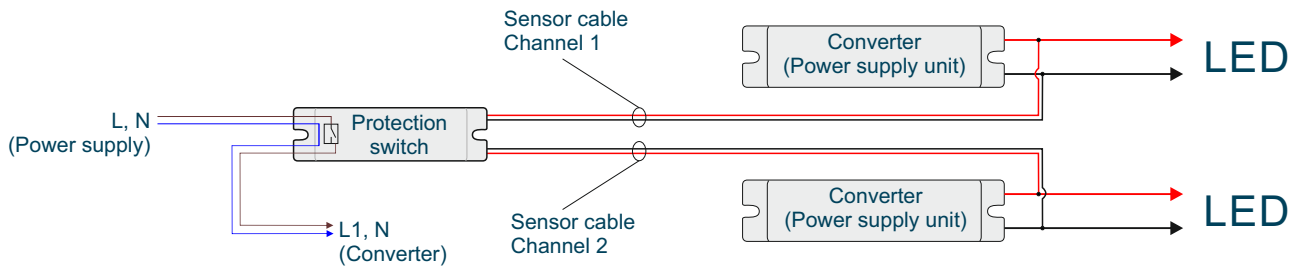
Alternatively, the protection switch can be supplied with a permanent disconnection. In this case, the converter remains switched off even if the mains voltage is disconnected and reconnected. The permanent disconnection can only be terminated by pushing a reset button on the device.

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Connection scheme for the monitoring of two circuits



If only one circuit is monitored, the sensor line not in use is short-circuited.

Technical data of the arc-fault protection switch

Input voltage:	230 V, 50/60 Hz
Input current (intrinsic consumption):	0.06 A
Max. switching current:	5 A
Ambient temperature:	-20 °C to +65 °C
Sensor voltage range:	0 V to 990 V
Tripping condition:	8 rising edges > 4 V
Tripping reset:	5 seconds without event
Housing:	PVC, potted
Potting compound:	Poylurethane
Weight:	0.35 kg
Electrical connection:	Open cable ends
Degree of protection:	IP 67
Conformity:	CE



Dimensions:
(L x W x H) 131 x 47 x 30 mm

Article no.: 5 9200 044

Indicator LEDs:

Green LED flashes:	Normal operation
Green LED flashes, one red LED flashes briefly (fault):	A fault is detected and stored
Green LED and red LED are lit permanently:	A disturbance was detected, the connected converters are switched off

