

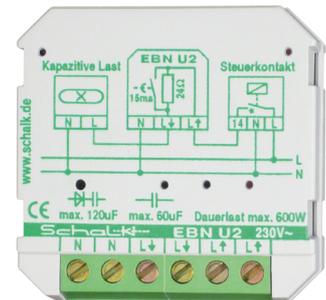


Inrush current limiter EBN 2 EBN U2

Protection device for upstream relay contacts by suppression of inrush current

Special features

- ▶ limits capacitive switch-on currents
- ▶ prevents relay contacts sticking
- ▶ prevents tripping the L5 circuit breaker
- ▶ suitable for all types of lamps and ballasts
- ▶ also ideal for LED bulbs
- ▶ simple installation upstream of load
- ▶ very low power consumption



Measuring relays

General

Modern energy-saving lamps such as LED bulbs or energy saving bulbs (and almost all electronic power supplies or ballasts) cause extremely high inrush currents due to their capacitive switch-on characteristic. These current peaks usually mean an unacceptably high contact load at relay-switched lighting technology. Defects (glued or welded) relay contacts result in increasing costs in modern lighting systems. In larger systems this inrush currents may also result in tripping of circuit breakers. The EBN 2 and EBN U2 suppress completely and reliable these capacitive inrush currents and thus allow long-term trouble-free operation of relay-switched lighting systems.

Application

Relay-switched lighting systems with LED's, energy-saving lamps, fluorescent bulbs or electronic ballasts.

Operation

The switch-on pulse current limiter EBN 2 is simply connected downstream of the relay contact to be protected. By briefly connecting a limiting resistor into the circuit, the switch-on current peaks are reduced to a non-critical value.

In determining the effective limitable capacitive load, the distinction must be drawn between C-load connected directly to the mains voltage (e.g. parallel-compensated fluorescent lamps) and C-load connected downstream of a rectifier (e.g. energy-saving bulbs and electronic ballasts, LED's).

The capacity specification for the EBN 2 and EBN U2 are practical recommendations. Also much larger capacitive loads can be connected to the EBN, but in these cases, there full effectiveness of the current limiting can not be guaranteed absolutely.

The EBN 2 can be permanently loaded with 16A, the compact flush mounted variant EBN U2 is designed for 10A continuous load.

EBN 2 and EBN U2 can be generally applied even with inductive inrush current, if the duration of the current limiting (EBN 2 = 70ms / EBN U2 = 15ms) is sufficient for the particular application.

Exemplary current waveform without / with current limiter

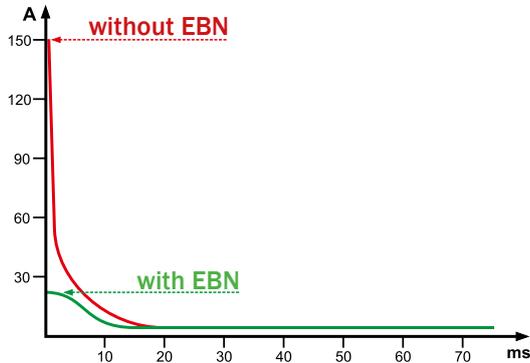
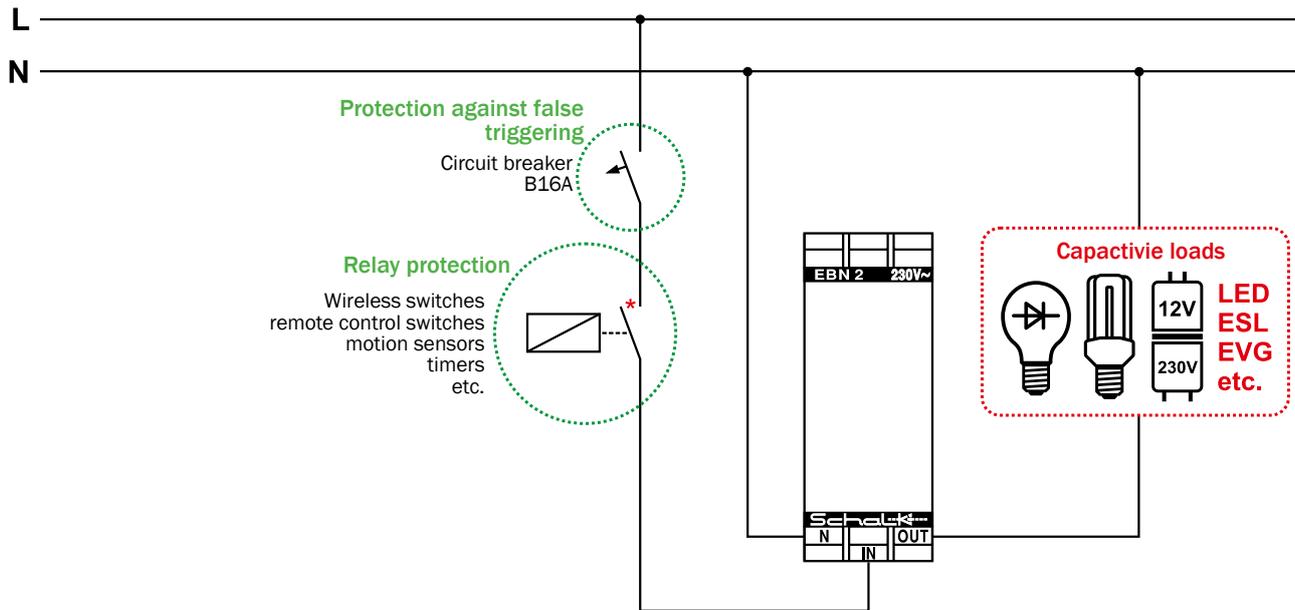


Fig.: Typical current waveform at high capacitive load by parallel connection of several LED lamps

Measuring relays

Installation:



Caution!

A current limiter must always be operated on full rated voltage! It may, for example, not be operated at a dimmer's dimmed phase output.

Technical data EBN 2 / EBN U2

Operating voltage	230V 50/60 Hz 10 %
Max. switching frequency	6 switching cycles / min
Electrical service life	1 x 10 ⁵ switching cycles
Ambient temperature	-10°C bis +45°C
Colour conforming to RAL	Gray 7035 / Green 6029

Technical data EBN 2

Power consumption	approx. 0,6 W
Limiting resistor	11.2 Ω
Limiting duration	approx. 70 ms
Max. capacitive load	120 uF direct on mains 240 uF behind rectifier
Max. continuous load	16 A
Surge resistance	3000V (1.2/50us) according to EN 61000-4-5
Connections	Socket terminals with captive screws M3.5
Clamping range	0.5 mm ² - 4.0 mm ²
Strip length	6.0 mm - 6.5 mm
Screwing torque	0.80 Nm
Mounting	Click-mount on standard 35-mm rail (EN 60715)
Outside dimensions	18 x 88(45) x 58 mm ³
Weight	approx. 74 g

Technical data EBN U2

Power consumption	approx. 0,3 W
Limiting resistor	24 Ω
Limiting duration	approx. 15 ms
Max. capacitive load	60 uF direct on mains 120 uF behind rectifier
Max. continuous load	10 A
Connections	Socket terminals with captive screws M3
Clamping range	0.5 mm ² - 2.5 mm ²
Strip length	6.5 mm - 7.0 mm
Screwing torque	0.50 Nm
Outside dimensions	43 x 43 x 18.5 mm ³
Weight	approx. 38g

Order data

Item no.	EAN	Type	Item designation
EBN209	4 046929 301183	EBN 2	Inrush current limiter 230V AC
EBNU29	4 046929 301190	EBN U2	Inrush current limiter 230V AC (flush-mounted)