

**Universal LED power booster DRA**

Order no.: 2383 00

**Operating instructions****1 Safety instructions**

Electrical devices may only be mounted and connected by electrically skilled persons.

Serious injuries, fire or property damage possible. Please read and follow manual fully.

Danger of electric shock. Always disconnect before carrying out work on the device or load.

Danger of electric shock. Device is not suitable for disconnection from supply voltage. The load is not electrically isolated from the mains even when the device is switched off.

A minimum power of 10 kVA is required for operation on isolating transformer networks. Otherwise it is not ensured that the dimmer will correctly recognise the dimming principle suitable for the load. Device can be damaged.

Fire hazard. For operation with inductive transformers, each transformer must be fused on the primary side in accordance with the manufacturer's instructions. Only safety transformers according to EN 61558-2-6 may be used.

These instructions are an integral part of the product, and must remain with the end customer.

**2 Intended use**

- Power enhancement for the dimmers contained in the reference list (see section Technical data)
- Mounting in a sub-distribution unit on DIN rail according to EN 60715

**i** Lighting systems with an power of more than 1000 W/VA are professional applications.

**3 Product characteristics**

- Connection of several power boosters to a single dimmer
- The total power of the connected loads is divided between the dimmer and power boosters.
- Power is supplied to the connected loads via a common power cable
- Operation using upstream dimmer
- Electronic over-temperature protection

**i** Brightness differences between the lighting on a dimmer without power booster and a dimmer with power booster are possible.

**4 Information for electrically skilled persons****DANGER!**

Mortal danger of electric shock.

Disconnect the device. Cover up live parts.

## Fitting and electrical connection

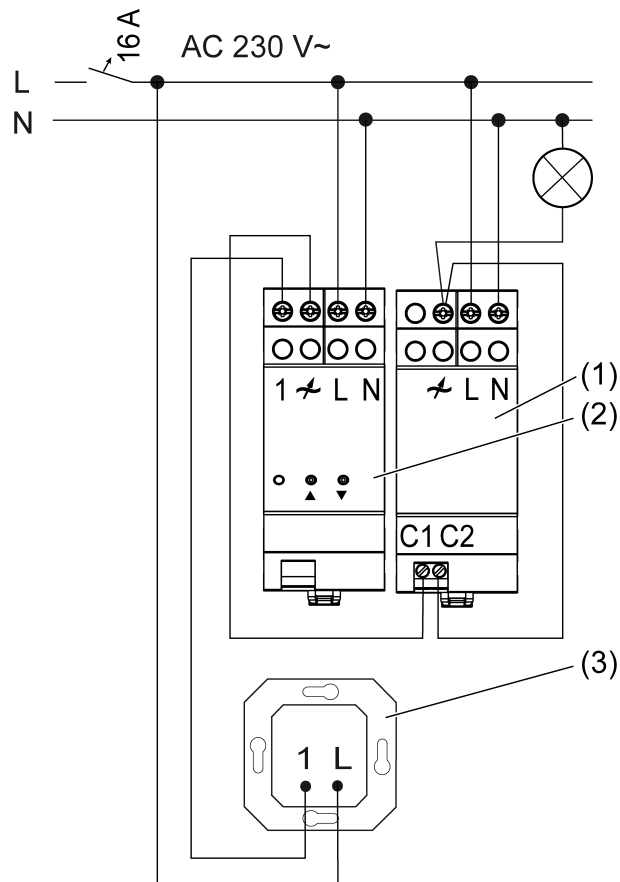


Figure 1: Connection example with a power booster

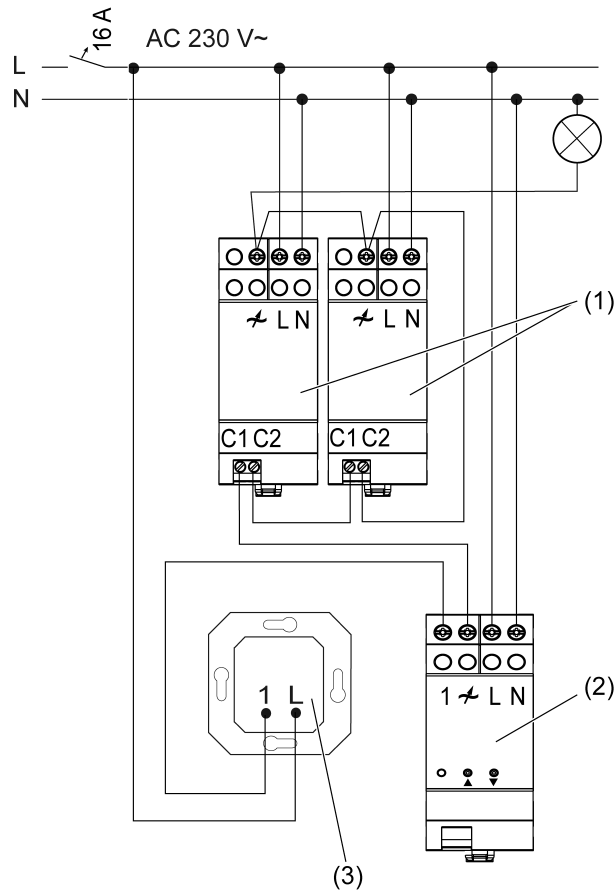


Figure 2: Connection example with two power boosters

- (1) Power booster
- (2) Dimmer
- (3) 2-wire extension

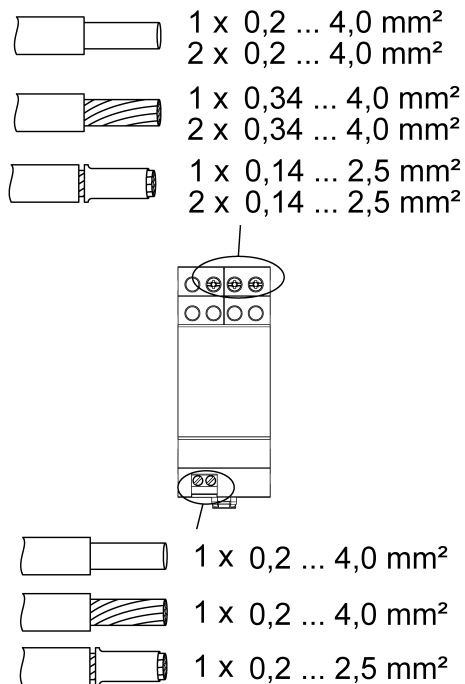


Figure 3: Clampable conductor cross-section

- i** When operating multiple dimmers or power boosters in a sub-distribution, maintain a distance of 1 module, approx. 18 mm, between the devices in order to prevent overheating.
- i** If multiple power boosters are used, add up the minimum loads of the individual power boosters.
- i** Pay attention to the necessary cable cross-section of the common power cable. The maximum connectable power is the sum of the individual loads of the dimmer and the connected power boosters.
- i** Connect 600 Watt LED lamps or compact fluorescent lamps at most per 16 ampere circuit breaker.
- i** When connecting transformers, observe the data of the transformer manufacturer.
- i** Our dimmers and power boosters take into account the different electronic characteristics of most LED maps found on the market. However, it cannot be guaranteed that in individual cases the desired results may not be achieved.
- Observe the clampable conductor cross-sections of the connection terminals (Figure 3).
- Snap the power booster onto the DIN rail and connect according to the connection examples (dimmer with one power booster (Figure 1), dimmer with multiple power boosters (Figure 2)).

#### Calculation example for the number of power boosters required

$P_L$	Load to be dimmed, e.g. 1100 W
$P_D$	Max. dimmer load, e.g. 420 W
$P_{LZ}$	Max. universal power extension load, e.g. 420 W
$P_{LZG}$	Power that the power boosters have to provide
n	Number of power boosters required

Calculation of the load to be covered by power boosters:

$$P_L - P_D = P_{LZG}$$

$$P_{LZG} = 1100 \text{ W} - 420 \text{ W} = 680 \text{ W}$$

Number of power power boosters:

$$P_{LZG} / P_{LZ} = n$$

$$n = 680 \text{ W} / 420 \text{ W} = 1.6$$

2 power boosters are required for the loads assumed in the example.

#### Reset the overheating protection / short-circuit protection

- Disconnect the dimmer from the mains supply.

## 5 Technical data

Rated voltage	AC 230 V~
Mains frequency	50 / 60 Hz
Standby power	approx. 0.5 W
Power loss	approx. 4.3 W
Ambient temperature	-5 ... +45 °C

For power booster connected load at 45°C and maximum number of power boosters see reference lists for trailing edge phase control (Figure 4), leading edge phase control (Figure 5)




Best. Nr.			 LED			
	n	W	n	W	n	W
2015 00	5	280	2	200	4	280
2025 00	5	280	2	200	4	280
2171 00 abV04	2	420	2	200	2	420
2172 00 abV04	4	420	2	200	4	420
2174 00 abV04	4	420	2	200	4	420
2365 00	5	420	2	200	5	420
2385 00	5	420	2	200	5	420
2440 00	2	210	2	200	2	210
2450 00	5	210	2	200	5	210
2455 00	5	420	2	200	5	420
5400 00	5	210	2	200	5	210
5401 00	5	420	2	200	5	420
5402 00	3	350	2	200	3	350
5420 00	5	250	2	200	5	250
5430 00	3	420	2	200	3	420
5431 00	4	420	2	200	4	420

Figure 4: Trailing edge phase control





Best. Nr.			 LED					
	n	W	n	W	n	W	n	VA
2015 00	2	350	2	50	4	280	2	380
2025 00	2	350	2	50	4	280	2	380
2171 00 abV04	2	420	2	100	2	420	2	420
2172 00 abV04	4	420	2	100	4	420	4	420
2174 00 abV04	4	420	2	100	4	420	4	420
2365 00	5	420	2	100	5	420	5	420
2385 00	5	420	--	--	5	420	5	420
2440 00	2	210	2	50	2	210	2	210
2450 00	5	210	2	60	5	210	5	210
2455 00	5	420	2	100	5	420	5	420
5400 00	5	210	2	60	5	210	5	210
5401 00	5	420	2	100	5	420	5	420
5402 00	3	350	2	100	3	350	3	350
5420 00	5	250	2	70	5	250	5	250
5430 00	3	420	2	65	3	420	3	420
5431 00	4	420	2	100	4	420	4	420

Figure 5: Leading edge phase control

Minimum load for combination of dimmer with one power booster

Not LED loads

200 W / VA

LED loads leading edge phase control

75 W

LED loads trailing edge phase control

200 W

- i** Power specifications including transformer dissipation.
- i** Inductive capacitive mixed load is not permitted.
- i** Operate inductive transformers with at least 85% nominal load.
- i** Ohmic-inductive mixed load: Max. 50% proportion of ohmic load. Otherwise, an incorrect measurement is possible.

Power reduction

per 5 °C in excess of 45 °C

-15%

Total length power cable

max. 100 m

Fitting width

36 mm / 2 module

## 6 Troubleshooting

### System has switched off.

Cause 1: short-circuit protection has tripped. The power booster behaves like the upstream dimmer.

Disconnect system from mains, switch off circuit breakers.

Eliminate short-circuit.

- i** The short-circuit protection is not based on a conventional fuse. Thus the load circuit is not interrupted electrically.

Cause 2: overheating protection has tripped.

Disconnect system from mains, switch off circuit breakers.

Let system cool down for approx. 15 minutes.

Check the installation situation.

Reduce the connected load.

LED load in leading edge phase control, check if operation is possible in trailing edge phase control.

LED load, use another type of lamp.

Switch circuit breakers and system on again.

- i** Load is initially distributed to the remaining devices. The further behaviour of the system depends on the dimmer used and the number, utilisation and installation situation of the devices.

## 7 Warranty

The warranty is provided in accordance with statutory requirements via the specialist trade.

Please submit or send faulty devices postage paid together with an error description to your responsible salesperson (specialist trade/installation company/electrical specialist trade). They will forward the devices to the Gira Service Center.

**Gira**  
**Giersiepen GmbH & Co. KG**  
Elektro-Installations-  
Systeme

Industriegebiet Mermbach  
Dahlienstraße  
42477 Radevormwald

Postfach 12 20  
42461 Radevormwald

Deutschland

Tel +49(0)21 95 - 602-0  
Fax +49(0)21 95 - 602-191

[www.gira.de](http://www.gira.de)  
[info@gira.de](mailto:info@gira.de)