

**Universal power booster**  
Order No. : 1035 00

## Operating instructions

### 1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

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

**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.

**Danger of electric shock.** Always disconnect before carrying out work on the device or load. At the same time, take into account all circuit breakers that supply dangerous voltage to the device or load.

**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.

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.

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

### 2 Device components

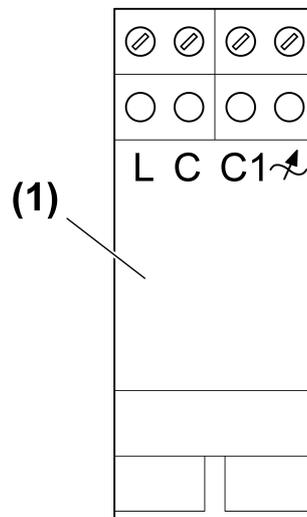


Figure 1: Device components

(1) Power booster

### 3 Function

#### Intended use

- Power enhancement for the Tronic or universal dimmers contained in the reference list (see section Technical data)
- Switching and dimming of incandescent lamps, HV halogen lamps and Tronic or dimmable inductive transformers with halogen lamps.
- Suitable for mixed operation up to the specified output (see section Technical data)
- Installation in distribution boxes on DIN rail according to EN 60715

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

- i** No mixed operation of Tronic and inductive transformers.
- i** Operation with HV LED lamps is not possible.

### 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** Flickering of the connected lamps due to undershoot of the specified minimum load or through centralised pulses from the power stations. This does not represent any defect in the device.
- i** Brightness differences between the lighting on a dimmer without powerpower booster and a dimmer with power booster are possible.

## 4 Information for electrically skilled persons

### 4.1 Fitting and electrical connection



#### **DANGER!**

**Electrical shock when live parts are touched.**

**Electrical shocks can be fatal.**

**Before carrying out work on the device or load, disengage all the corresponding circuit breakers. Cover up live parts in the working environment.**

#### Fitting and connecting the power booster

- i** To prevent overheating, maintain a distance of 1 module when operating multiple dimmers or power units within the same control cabinet.
- i** The terminals must be at the top.
- Snap power booster onto DIN rail.



#### **CAUTION!**

**Destruction of the devices when connected to the wrong outer conductor.**

**The dimmer and power boosters will be destroyed.**

**Connect all devices to the same outer conductor.**

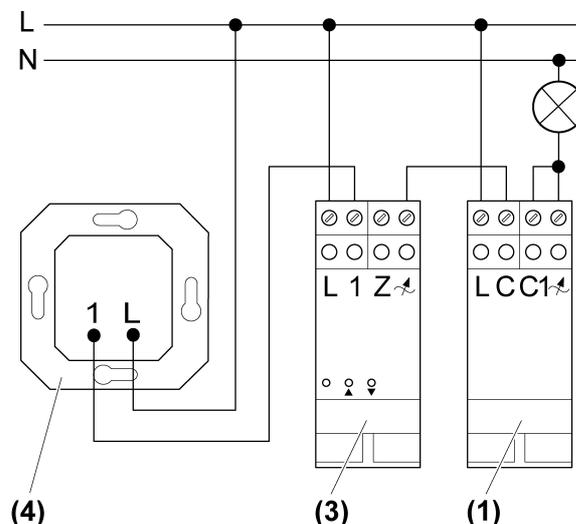


Figure 2: Connection diagram with RMD dimmer

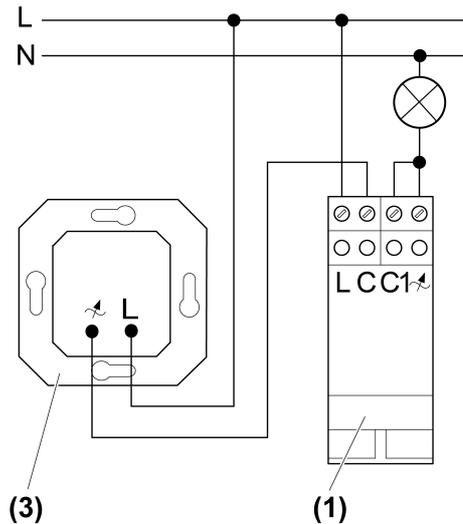


Figure 3: Connection diagram with FM dimmer

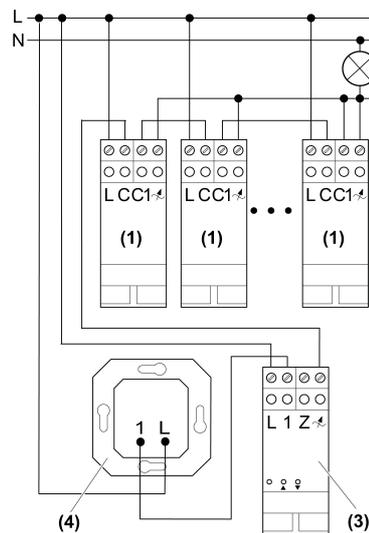


Figure 4: Connection diagram with multiple power boosters

(1) Power booster

(3) Dimmer

(4) Local extension

**i** Pay attention to the necessary cable cross-section of the common power cable.

**i** If multiple power boosters are used, add up the minimum loads of all the separate devices.

**i** In the case of lighting systems with an output of over 3500 W/VA, the installation must be distributed across two miniature circuit breakers with the same conductor.

- Connect the power booster according to the connection diagram, connection diagram with RMD dimmer (Figure 2), connection diagram with FM dimmer (Figure 3) or connection diagram with multiple power boosters (Figure 4).
- If multiple circuit breakers supply dangerous voltages to the device or load, couple the circuit breakers to ensure tripping.

Calculation example for the number of power boosters required:

$P_L$	Load to be dimmed, e.g. 2200 W
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$P_D$	Max. dimmer load, e.g. 500 W
$P_{LZ}$	Max. universal power extension load, e.g. B. 500 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:

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

$$P_{LZG} = 2200 \text{ W} - 500 \text{ W} = 1700 \text{ W}$$

Number of power power boosters:

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

$$n = 1700 / 500 = 3.4$$

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

## 5 Appendix

### 5.1 Technical data

Rated voltage	AC 230 V ~
Mains frequency	50 / 60 Hz
Ambient temperature	+5 ... +45 °C
Power loss	5 W
Connected load at 45 °C see reference list (Figure 5)	
 Power specifications including transformer power dissipation.	
 Operate inductive transformers with at least 85% nominal load.	
 For ohmic-inductive mixed load, maximum 50% proportion of ohmic load. Otherwise incorrect calibration of the dimmer may result.	
capacitive-inductive	not permitted
Minimum connected load	200 W/VA
Power reduction per 5°C in excess of 45°C	-15 %
Connection	
single stranded	max. 4 mm <sup>2</sup>
Finely stranded with conductor sleeve	0.5 ... 2.5 mm <sup>2</sup>
finely stranded without conductor sleeve	0.75 ... 4 mm <sup>2</sup>
Number of power boosters	see reference list
Total length power cable	max. 100 m
Fitting width	36 mm / 2 modules

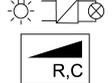
Best. Nr.	 R,C		 R,L	
	n <sub>max</sub>	P <sub>LZ</sub>	n <sub>max</sub>	P <sub>LZ</sub>
0305 00	10	500 W	5	420 VA
0307 00	10	500 W	-	-
0381 00	10	400 W	-	-
0809 00	10	500 W	5	300 VA
1034 00	10	500 W	5	420 VA
1176 00	10	500 W	5	420 VA
2263 00	a1	10	500 W	-
	a2	10	500 W	-
5420 00	5	350 W	-	-
	4	400 W	-	-
5430 00	5	450 W	-	-
5431 00	10	500 W	5	250 VA

Figure 5: Reference list of conventional and radio dimmers

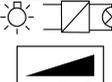
Best. Nr.	 R,C		 R,L	
	n <sub>max</sub>	P <sub>LZ</sub>	n <sub>max</sub>	P <sub>LZ</sub>
1031 00	10	500 W	5	420 VA
1032 00	1-Kanal	10	500 W	5
	2-Kanal	10	500 W	5
1043 00	10	500 W	-	-
1135 00	10	500 W	5	420 VA
2171 00	101	10	500 W	5
2172 00	101	10	500 W	5
2174 00	101	10	500 W	5

Figure 6: Reference list KNX dimmer



The icons used to label the dimmer load shows the load type that can be connected to a dimmer and the electric behaviour of a load:  
 R = ohmic, L = inductive, C = capacitive

## 5.2 Troubleshooting

### System has switched off.

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

Eliminate short-circuit.



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.  
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.

## 5.3 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.

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