# Lumento C3

**3-channel constant current PWM dimmer for DC LED loads**

**ZDI-RGBCC3** **TECHNICAL DOCUMENTATION**

## FEATURES

- Control of constant current RGB LED loads or 3 independent channels
- Output currents: 220 mA, 300 mA, 350 mA, 500 mA, 550 mA, 630 mA, 700 mA, 750 mA, 900 mA and 1000 mA
- External 12-30 VDC power supply
- LED test function
- Integrated KNX BCU (TP1-256)
- Dimensions 165 x 44 x 23 mm
- Surface-mounted inside panels or boxes
- Conformity with the CE, UKCA, RCM directives (marks on the back side)

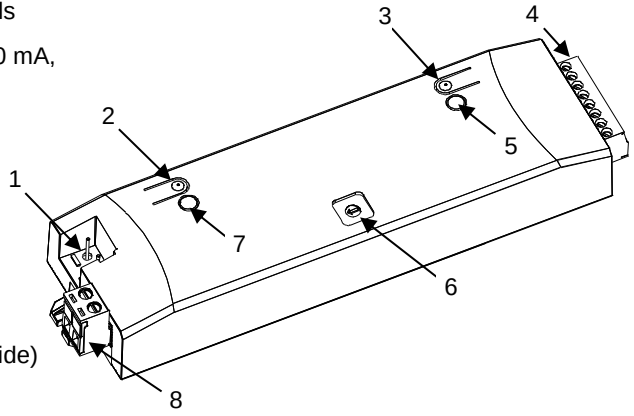



Figure 1: Lumento C3

| | | | |
|---|---|---|---|
| 1. KNX connector | 2. Programming button | 3. Test button | 4. Output channels |
| 5. Test LED | 6. Current selector switch | 7. Programming LED | 8. External power supply |

Programming button: short press to set programming mode. If this button is held while plugging the device into the KNX bus, it enters the safe mode.
Programming LED: programming mode indicator (red). When the device enters the safe mode, it blinks (red) every half second. During the start-up (reset or after KNX bus failure) and if the device is not in safe mode, it emits a red flash.
Test button: if this button is held for more than 3 seconds, the device enters the test mode.
Test LED: it indicates which channel (red=channel 1/R, green=channel 2/G, blue=channel 3/B) is being tested during test mode. In addition, it shows errors in the installation and/or parameterization (see section "test LED error identification").

## GENERAL SPECIFICATIONS

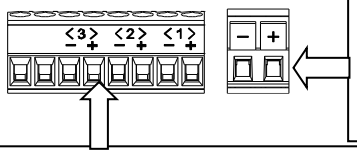
| CONCEPT | | | DESCRIPTION | |
|---|---|---|---|---|
| Type of device | | | Electric operation control device | |
| KNX supply | Voltage (typical) | | 29 VDC SELV | |
| | Voltage range | | 21-31 VDC | |
| | Maximum consumption | Voltage | mA | mW |
| | | 29 VDC (typical) | 8 | 232 |
| | | 24 VDC[1] | 10 | 240 |
| | Connection type | | Typical TP1 bus connector for 0.8 mm Ø rigid cable | |
| External power supply | | | 12-30 VDC | |
| Operation temperature | | | 0 .. +55 °C | |
| Storage temperature | | | -20 .. +55 °C | |
| Operation humidity | | | 5 .. 95% | |
| Storage humidity | | | 5 .. 95% | |
| Complementary characteristics | | | Class B | |
| Protection class | | | III | |
| Operation type | | | Continuous operation | |
| Device action type | | | Type 1 | |
| Electrical stress period | | | Long | |
| Degree of protection | | | IP20, clean environment | |
| Installation | | | Independent device to be surface-mounted inside electrical panels or boxes. The installation is also possible in false ceiling. Connect the device as near as possible to both, the load to dimmer and the external power supply. | |
| Minimum clearances | | | Not required | |
| Response on KNX bus failure | | | Data saving according to parameterization | |
| Response on KNX bus restart | | | Data recovery according to parameterization | |
| Operation indicator | | | The programming LED indicates programming mode (red). The Test LED indicates the following events: red light on with test mode (red), green light on with test mode (green), blue light on with test mode (blue), power supply reverse polarity (orange), power supply error (blinking orange), inconsistency between parametizered current and switch position (blinking white), overheating error on level 1 (blinking red) and level 2 (red). | |
| Weight | | | 96 g | |
| PCB CTI index | | | 175 V | |
| Housing material | | | PC FR V0 halogen free | |

[1] Maximum consumption in the worst-case scenario (KNX Fan-In model).

| OUTPUTS SPECIFICATIONS AND CONNECTIONS | |
|---|---|
| **CONCEPT** | **DESCRIPTION** |
| Number of outputs | 3 |
| Output type | Solid state switching device |
| Maximum load per output | 1000 mA |
| Output currents | 220 mA, 300 mA, 350 mA, 500 mA, 550 mA, 630 mA, 700 mA, 750 mA, 900 mA or 1000 mA. |
| Load type | Constant Current LED load |
| Short-circuit protection | YES |
| Overload protection | NO |
| Overheating protection | YES |
| Connection method | Screw terminal block (0.2 Nm max.) |
| Cable cross-section | 0.2-1.5 mm² (IEC) / 16-30 AWG (UL) |

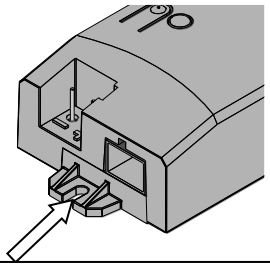
| EXTERNAL POWER SUPPLY SPECIFICATIONS AND CONNECTIONS | |
|---|---|
| **CONCEPT** | **DESCRIPTION** |
| Voltage | 12-30 VDC |
| Current | 3000 mA |
| Connection method | Pluggable screw terminal block (0.4 Nm max.) |
| Cable cross-section | 0.5-2.5 mm² (IEC) / 28-12 AWG (UL) |

## WIRING AND ASSEMBLY DIAGRAMS



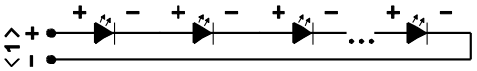

**External power supply:**
+ and - terminals of external power supply (**constant voltage)** from 12 to 30 VDC.
**It is recommended to use the closest external power supply value to the load working voltage**.

**LED**
Each LED load must be connected according to its positive and the negative terminals. Respect always the maximum current allowed by the loads.
**Correspondence**
**1**: Red **2**: Green **3**: Blue **+:** Positive terminal **-:** Negative terminal



**Assembly:**
Screw mounting, 2 holes of 3.5 mm diameter. Screws not included.

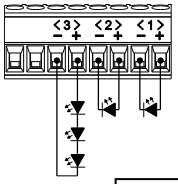
## SEVERAL LOADS CONNECTED TO THE SAME OUTPUT



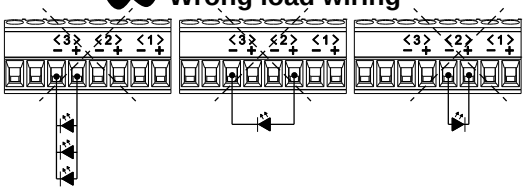
**Power restriction**: It is mandatory to fulfil the next restriction regarding the power connected to one output channel:

$$I_{Out} \times 30\,Vdc \geq N_{Loads} \times P_{Load}$$

**Right load wiring**




**Wrong load wiring**




**Important warning:** the following rules when not considered may result in load or device irreversible damages

## OUTPUT CURRENT SELECTOR SWITCH

| I Out*: | Switch Position | | I Out*: |
|---|---|---|---|
| 220 mA | 0 | 5 | 630 mA |
| 300 mA | 1 | 6 | 700 mA |
| 350 mA | 2 | 7 | 750 mA |
| 500 mA | 3 | 8 | 900 mA |
| 550 mA | 4 | 9 | 1 A |


***it is mandatory that the output current chosen by ETS parameter and the current selected with the switch match**. On the contrary, the load cannot be controlled and the test LED will blink in white.

## TEST LED ERROR IDENTIFICATION

Depending on the color, the test LED indicates different errors:

| Color | Error |
|---|---|
| Blinking white | Output current selection |
| Blinking orange | No auxiliary power supply detected |
| Continuous orange | Wrong auxiliary power supply polarization |
| Blinking red | Overheating level 1 |
| Continuous red | Overheating level 2 |

## SAFETY INSTRUCTIONS AND ADDITIONAL NOTES

- Installation should only be performed by qualified professionals according to the laws and regulations applicable in each country.
- Do not connect the mains voltage nor any other external voltage to any point of the KNX bus; it would represent a risk for the entire KNX system. The facility must have enough insulation between the mains (or auxiliary) voltage and the KNX bus or the wires of other accessories, in case of being installed.
- The facility must be equipped with a device that ensures the omnipolar sectioning. Installation of a 10 A mini-circuit-breaker is recommended. To prevent accidents, it must remain open in case of manipulation of the device.
- Once the device is installed (in the panel or box), it must not be accessible from outside.
- Keep the device away from water (condensation over the device included) and do not cover it with clothes, paper or any other material while in use.
- The WEEE logo means that this device contains electronic parts and it must be properly disposed of by following the instructions at https://www.zennio.com/en/legal/weee-regulation.