

FEATURES

- Size: 80 x 90 x 60mm (4.5 DIN rail units).
- 2 Channel 310W (230VAC) or 160W (110VAC) for R L C loads or 125W (230VAC) or 65W (110VAC) for dimmable CFL and LED lamps @ 25°C (50-60Hz).
- Automatic detection of R L C load type.
- Dimming pattern manual selection for CFL and LED lamps.
- Optional dimming manual control.
- 2 analog/digital inputs.
- KNX BCU integrated.
- Independent control assembly, to be mounted in electrical panels with DIN rails.
- Total data saving when power failure occurs.
- CE directive compliant.

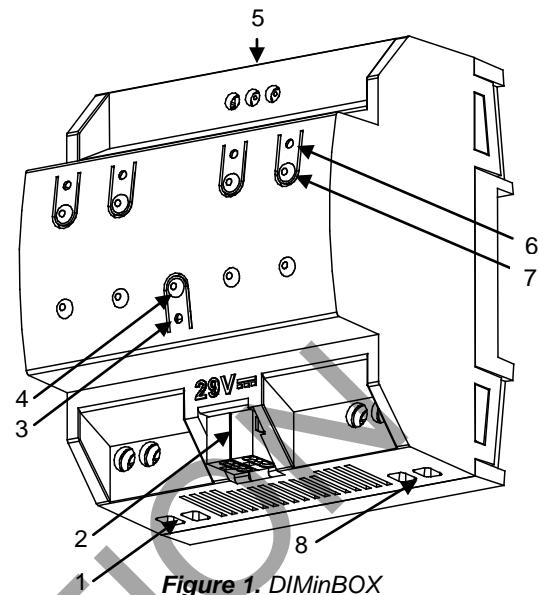


Figure 1. DIMinBOX

1. Terminal block (neutral and phase)	2. KNX bus connection	3. Programming/Test LED	4. Programming/Test push button
5. Analog/Digital inputs	6. Output LED indicator	7. Manual Control push button	8. Output channels

Programming/test button: push the button to set the PROGRAMMING MODE. If this button is held while plugging the device into the KNX bus, it goes into secure mode. If this button is held more than 3 seconds, the device goes into TEST MODE.

Programming LED: lighting red = programming mode; blinking red = safe mode; lighting green = test mode.

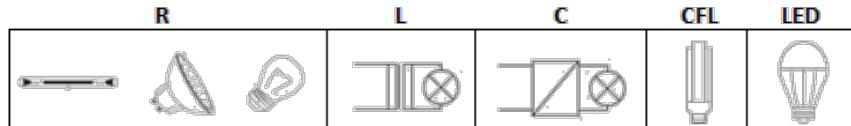
Output LED indicators: lighting during a press button with manual control enabled. Moreover, it indicates the error present in the outputs. For further information, consult the "error notifications" section.

GENERAL SYSTEM FEATURES

Device type	Electric operation control device
KNX supply	Voltage 29V DC SELV
	Voltage range 21...31VDC
	Consumption 192mW
	Connection type Typical bus connector TP1, 0,50 mm ² section
External power supply	110-230V 50-60Hz
Max channel load	R L C Loads: 310W (230VAC) or 160W (110VAC) @ 25°C; CFL and LED lamps 125W (230VAC) or 65W (110VAC) @ 25°C (depending on manufacturer and model)
Min channel load rating	5W R L C loads; 5W (230VAC) or 3W (110VAC) CFL and LED lamps
Device action type	Type I
Electrical solicitations period	Long
Type of protection	IP 20, clean environment
Ambient temperature	-5 °C to +45 °C
Storage temperature	-20 °C to +70 °C
Ambient humidity	30 to 85% RH (no condensation)
Storage humidity (relative)	30 to 85% RH (no condensation)
Assembly	Independent control assembly to be mounted inside distribution boxes or electrical panels
Power failure response	Data saving
Operation indicator	Programming LED (red) ON when pushing the programming button. Test LED (green) ON when device is in Test mode
Weight	200 gr.
PCB CTI index	175 V
Enclosure	PC+ABS FR V0, halogen free

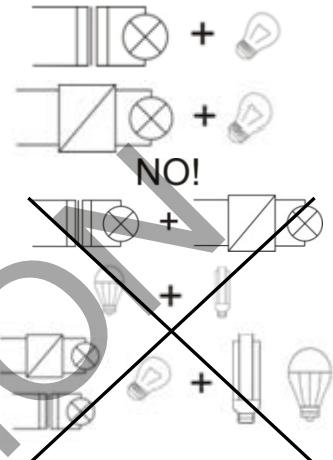
SUPPORTED LOADS

- R= Resistive
- L= Inductive
- C= Capacitive
- CFL = Dimmable Compact Fluorescent Lamps
- LED = Dimmable LED lamps

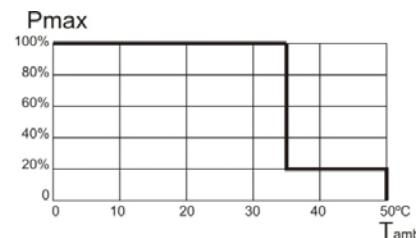


LOAD MIXING

- For mixed resistive (R) with inductive (L) loads, do not exceed a 50% share for the resistive load.
- For mixed resistive (R) with capacitive (C) loads, do not exceed a 50% share for the resistive load.
- **NEVER connect capacitive loads and electronic transformers with inductive loads in the same channel.**
- Do not mix in the same channel CFL or LED lamps with R L C loads.
- It is not advisable to mix different models of CFL lamps, LED lamps or transformers in the same channel since correct functioning can be affected.



OVERHEATING PROTECTION



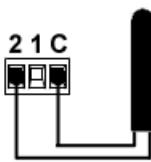
- When the ambient temperature is too high the universal dimmer actuator will regulate itself, at a maximum of 20%.
- Once the ambient temperature decreases, the dimmer will resume normal operation. Refer to user manual.

INPUT SPECIFICATIONS

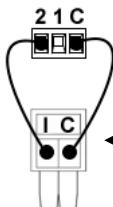
INPUTS CONNECTIONS	
CONCEPT	DESCRIPTION
Number of inputs per common	2
Input voltage	+3.3V DC for the common
Input current	1.0mA @ 3.3V DC (each input)
Input impedance	Aprox. 3.3kΩ
Switching type	Dry voltage contacts between input and common
Connection method	Cable screw terminal
Max. cable length	30 m.
NTC probe length	1.5 m.
NTC accuracy (@ 25°C)	0.5°C
Temperature measure resolution	0.1°C
Cable cross-section	0,15 mm ² to 1,5 mm ²
Response time	Max 10ms.

 Any combination of the next **accessories** is allowed in the inputs:

Temperature Probe

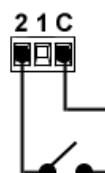

 Temperature probe references:
 ZN1AC-NTC68E
 ZN1AC-NTC68F
 ZN1AC-NTC68S

Motion Sensor

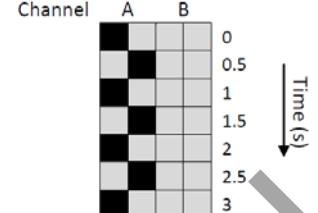
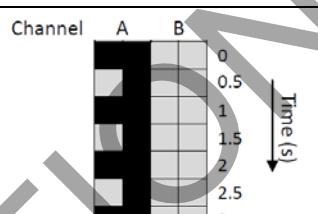
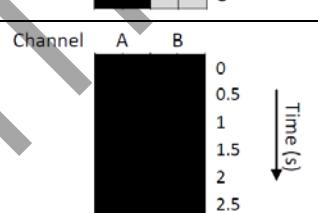
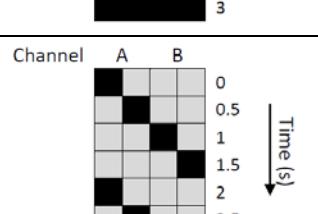
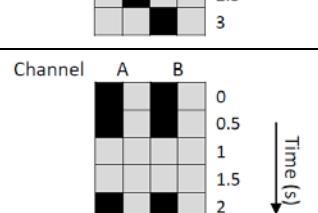
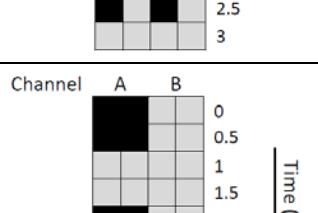
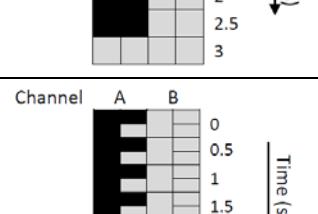


Up to two motion sensors can be plugged into the same DIMinBOX 2CH input (parallel wiring)

 Motion sensor cable screw terminal.
Motion sensor reference:
 ZN1IO-DETEC-P⁽¹⁾

 Switch/Sensor/
 Push Button

⁽¹⁾ The micro switch number 2 in the ZN1IO-DETEC-P must be in ON position (3.3V in common terminal) to work properly.

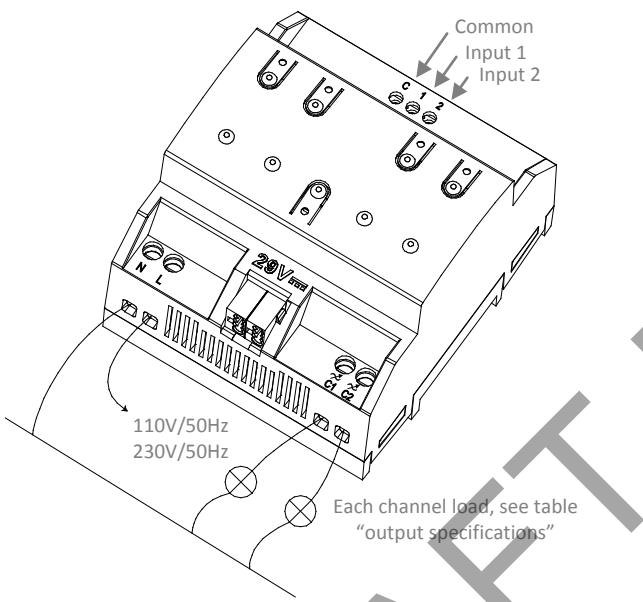
ERROR NOTIFICATIONS

ERROR	LED BEHAVIOR	VISUAL NOTIFICATION														
Short circuit	The two LED of the channel with the error blink alternately each 0.5	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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Voltage Surge	Continuous “down” LED lighting and “up” LED blinking each 0.5 seconds.	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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Overheating	The four LED light continuously.	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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Anomalous Frequency	The four LED alternately blink each 0.5 seconds.	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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Supply Voltage Failure	“Up” LED of the two channels blinks each second.	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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Open circuit	The two LED of the channel with the error blink each second.	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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Parameterization Error	The “up” LED of the channel with the error lights continuously and the “down” channel blinks each 0.25 seconds.	 <p>Channel A B</p> <table border="1"> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>1.5</td><td>1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>2.5</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> </table> <p>Time (s)</p>	0	0	0.5	1	1	0	1.5	1	2	0	2.5	1	3	0
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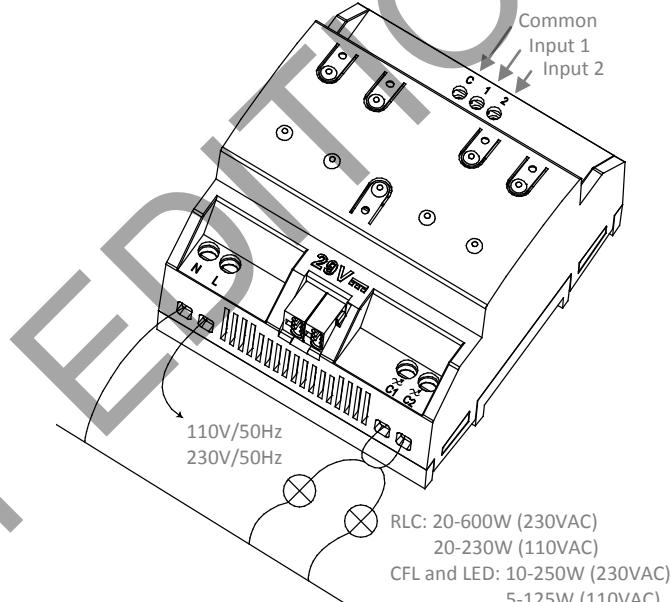
OUTPUT SPECIFICATIONS

OUTPUT SPECIFICATIONS	
Contact type	Semiconductor switching device
Load protection	Yes; overheating, voltage surge and short-circuit protection.
Switching capacity per output	RLC: 310W (230VAC) or 160W (110VAC) @ 25°C (50-60Hz) CFL and LED lamps: 125W (230VAC) or 65W (110VAC) @ 25°C (50-60Hz)
Dropping voltage	Negligible
Connection type	Cable screw terminal
Recommended cable section	0,25 mm ² to 2,5 mm ²
Cable type	Stranded or solid wire
Response time	Negligible

Independent channel connection



Common channel connection



SAFETY INSTRUCTIONS

- Do not connect the mains voltage (110-230VAC) or any other external voltages to any point of the KNX bus. Connecting an external voltage might put the entire KNX system at risk.
- Once installed, the device must not be accessible from the outside.
- In case of changing load, disconnect the main voltage (110-230VAC).
- Installation should only be performed by qualified electricians following applicable regulations on preventing accidents, as required by law.
- Ensure there is enough insulation between the AC voltage cables and the KNX bus cables.
- Keep away from water or humidity and do not cover the device with clothes, paper or any other material when in use.
- Not observing these safety instructions may cause fire or other hazards.