4-Channel Universal Dimmer (210W@230VAC/160W@110VAC). 4.5 DIN units

ZDINDX4

FEATURES

- 4 channels for R L C loads and for dimmable CFL and LED lamps

- Automatic detection of R L C load type

- Automatic frequency detection

- Dimming pattern selection for CFL and LED lamps

- Optional manual dimming control

- Total data saving on KNX bus failure

- Integrated KNX BCU

- Dimensions 67 x 90 x 79mm (4.5 DIN units)

- DIN rail mounting according to IEC 60715 TH35, with fixing clamp

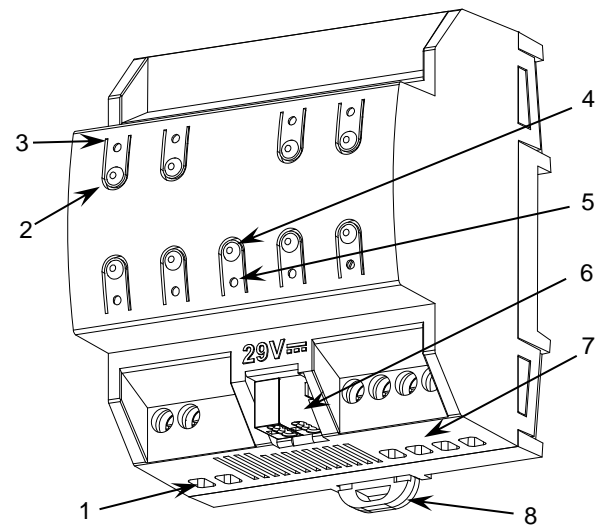- Conformity with the CE directives (CE-mark on the right side)

Figure 1: NarrowDIM X4

1. Power supply input	2. Output control button	3. Output status LED	4. Programming/Test button
5. Programming/Test LED	6. KNX connector	7. Output channels	8. Fixing clamp

Programming/Test 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. If this button is held for more than 3 seconds, the device enters the test mode.

Programming/Test LED: programming mode indicator (red). When the device enters the safe mode, it blinks (red) every half second. The manual mode is indicated by the green color. During the start-up (reset or after KNX bus failure) and if the device is not in safe mode, it emits a red flash.

GENERAL SPECIFICATIONS

CONCEPT			DESCRIPTION	
Type of device			Electric operation control device	
KNX supply	Voltage (typical)		29VDC SELV	
	Voltage range		21..31VDC	
	Maximum consumption	Voltage	mA	mW
		29VDC (typical)	13.3	385.7
		24VDC[1]	20	480
	Connection type		Typical TP1 bus connector for 0.80mm Ø rigid cable	
External power supply			110/240VAC 50/60Hz	
Operation temperature			0°C .. +55°C	
Storage temperature			-20°C .. +55°C	
Operation humidity			5 .. 95%	
Storage humidity			5 .. 95%	
Complementary characteristics			Class B	
Protection class			II	
Operation type			Continuous operation	
Device action type			Type 1	
Electrical stress period			Long	
Degree of protection			IP20, clean environment	
Installation			Independent device to be mounted inside electrical panels with DIN rail (IEC 60715)	
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) and test mode (green). Each output LED indicates its status (fixed = active output; flashing = overload or short-circuit error)	
Weight			238g	
PCB CTI index			175V	
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	4
Output type	Solid state switching device
Short-circuit protection	YES
Overload protection	YES
Connection method	Screw terminal block
Cable cross-section	1.5-4mm² (IEC) / 26-10AWG (UL)

LOADS AND ALLOWED POWER (@ 35°C ambient temperature around the device)

		230VAC	110VAC
RLC	Individual channel	Up to 210W	Up to 160W
	Double channel ²	Up to 400W	Up to 300W
	Quadruple channel ²	Up to 750W	Up to 600W
CFL and LED ¹	Individual channel	Up to 210W	Up to 160W
	Double channel ²	Up to 400W	Up to 300W
	Quadruple channel ²	Up to 750W	Up to 600W

¹ For leading edge, the maximum load could change depending on the load type. Please refer to the link
https://zennio.com/download/technical_note_diminbox-dx_list_process_en.
Also, for load characterization process, please refer to the link https://www.zennio.com/download/technical_note_diminbox-dx2_tests_en.
² The load must be connected like is shown in the Figure 2, making a parameterization consistent with the connexion.

EXTERNAL POWER SUPPLY SPECIFICATIONS AND CONNECTIONS

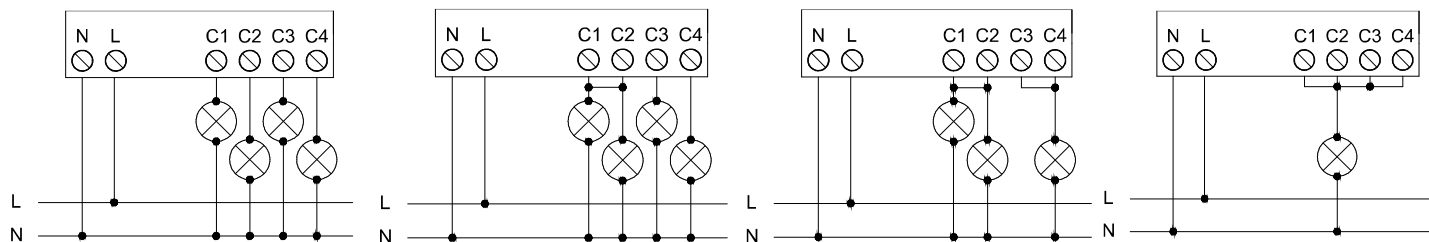| CONCEPT		DESCRIPTION
Power supply protection fuse	Voltage	250V
	Current	10A
	Response type	T (time-lag)
Connection method		Screw terminal block
Cable cross-section		1.5-4mm² (IEC) / 26-10AWG (UL)

WIRING DIAGRAMS



Figure 2: Wiring example (from left to right):

- 4 individual channels,
- 1 double channel + 2 individual channels,
- 2 double channels,
- 1 quadruple channel

⚠ 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 10A mini-circuit-breaker is recommended. To prevent accidents, it must remain open in case of manipulation of the device.
- The device has a short-circuit protection fuse that, in case of activation, should only be rearmed or replaced by the Zennio technical service.
- 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.
- This device contains software subject to specific licences. For details, please refer to http://zennio.com/licenses.

SUPPORTED LOADS

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

	R	L	C	CFL	LED
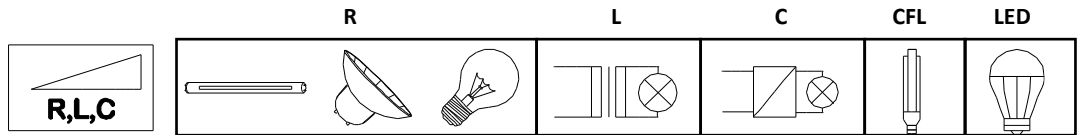
⚠️ Please, make sure that the loads used are dimmable.

LOAD COMBINATION

- In case of combining resistive (R) with inductive (L) loads, the resistive loads must not exceed the 50% of the total power.

- In case of combining resistive (R) with capacitive (C) loads, the resistive loads must not exceed the 50% of the total power.

- **Combination of capacitive loads with inductive loads in the same channel is NOT ALLOWED.**

- Do not combine in the same channel CFL or LED lamps with R L C loads.

- It is not advisable to combine different models of CFL lamps, LED lamps or transformers in the shame channel since correct operation can be affected.
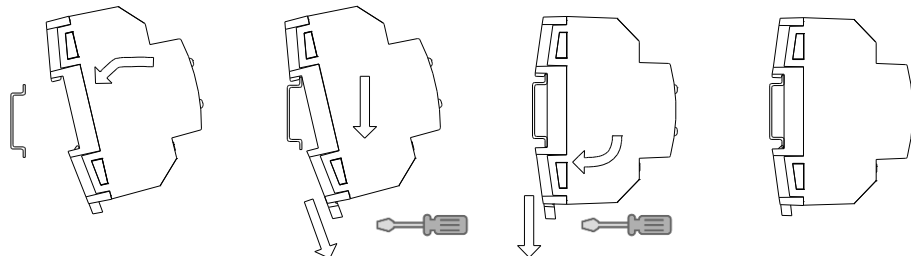
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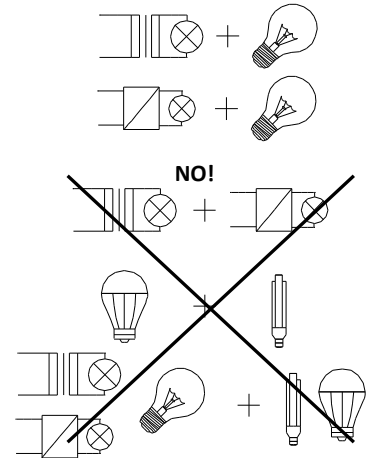
OVERHEATING PROTECTION

- 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. Please, refer to user manual.
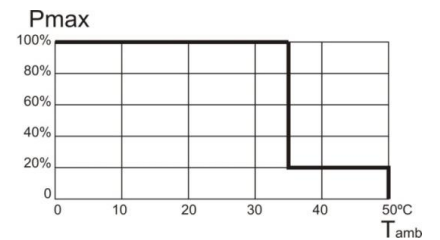
Attaching NarrowDIM X4 to DIN rail:

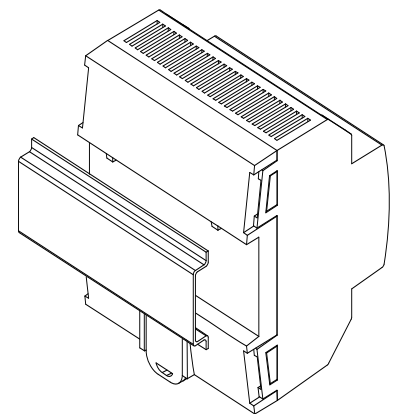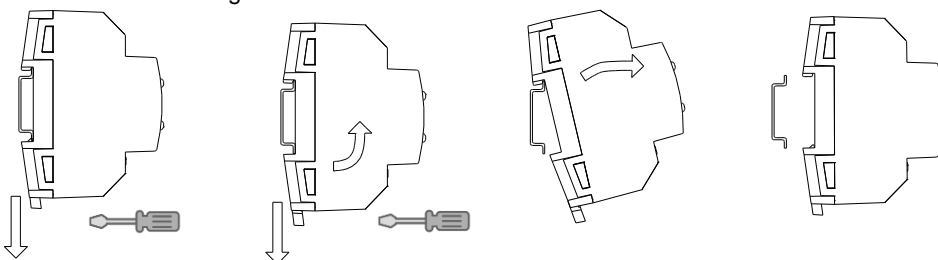Removing NarrowDIM X4 from DIN rail:

Figure 3: Mounting NarrowDIM X4 on DIN rail

ERROR NOTIFICATIONS

ERROR	LEDS DESCRIPTION	VISUAL NOTIFICATION
Short circuit	The two LEDs of the channel alternate every 0.25 second. When the output is locked, the programming LED blinks in blue.	
Voltage Surge	The two LEDs of the channel blink simultaneously every 0.25 second. When the output is locked, the programming LED lights in blue	
Overheating	The LEDs of all the channels blink every second.	
Supply Voltage Failure	One LED of each channel blinks every second.	
Anomalous Frequency	All the LEDs of each channel blink (during 1 second) sequentially	
Parameterization Error	One LED of the channel blinks every second while the other LED blinks every 0.25 second.	