Universal Dimmer for Flush Mounting - 1 Output (250W@230VAC / 200W@110V) / 2 A/D inputs

ZDI-IBD **Technical Documentation**

FEATURES

- 1 channel 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.
- 2 inputs configurable as
  - Binary input.
  - Temperature probe.
  - Motion sensor.
- 10 logical functions.
- External 110/230VAC 50/60Hz power supply.
- Total data saving on KNX bus failure.
- Integrated KNX BCU.
- Dimensions Ø50 x 26mm.
- Can be mounted within distribution boxes, junction boxes or wall back boxes.
- Conformity with the CE directives (CE-mark on the back side).

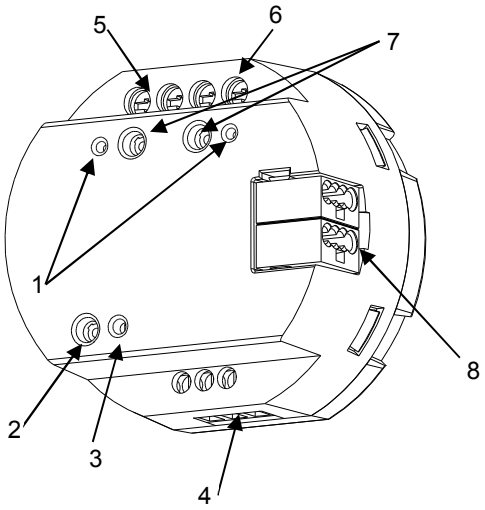


Figure 1. inBOX DIM

1. Output status LEDs	**2**. Programming/Test button	**3**. Programming/Test LED	**4**. Inputs
5. External power supply	**6**. Output	**7**. Output control buttons	**8**. KNX connector

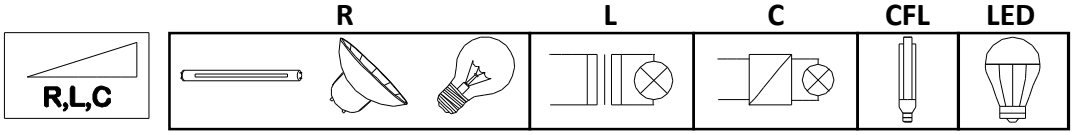
Programming/test button: short press to set programming mode. If this button is held while plugging the device into the KNX bus, it enters the safe mode. If this button is held for more than 3 seconds, the device enters the test mode.

Programming/Test LED: programming mode indicator (red). When the device enters into 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)	8.2	237.8
		24VDC(1)	10	240
	Connection type		Typical bus connector TP1 for rigid cable 0.80mm Ø	
External power supply			110/230VAC 50/60Hz	
Operation temperature			0ºC to +40ºC	
Storage temperature			-20ºC to +55ºC	
Operation humidity			5 to 95% RH (no condensation)	
Storage humidity			5 to 95% RH (no condensation)	
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 distribution boxes, junction boxes or wall back boxes.	
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 = dimming error)	
Weight			43g	
PCB CTI index			175V	
Housing material			PC FR V0 halogen free	

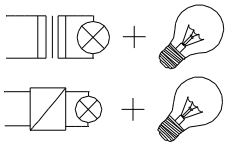
(1) Maximum consumption in the worst case scenario (KNX Fan-In model)

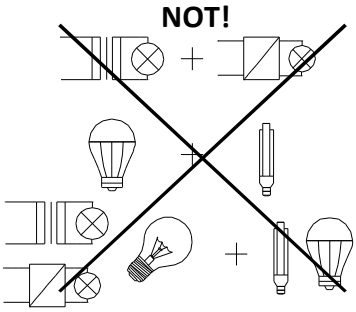
SUPPORTED LOADS



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

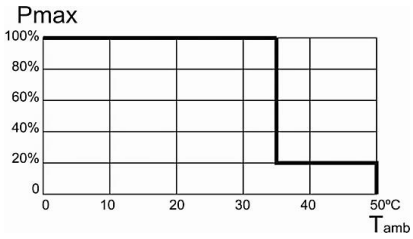
LOAD COMBINATION





- If combining resistive (R) with inductive (L) loads, please do not exceed a 50% share for the resistive load.
- If combining resistive (R) with capacitive (C) loads, please 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 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 same channel since correct operation can be affected.

OVERHEATING PROTECTION

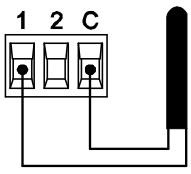


- When the ambient temperature is too high the universal dimmer actuator will regulate itself, at a maximum of 20%.
- Once the ambient temperature decreases, the dimmer will resume normal operation. Please, refer to user manual.

INPUTS SPECIFICATIONS AND CONNECTIONS	
CONCEPT	**DESCRIPTION**
Number of inputs	2
Inputs per common	2
Operation voltage	+3.3VDC in the common
Operation current	1mA @ 3.3VDC (per input)
Maximum impedance	Approx. 3.3kΩ
Switching type	Dry voltage contacts between input and common
Connection method	Screw terminal block
Maximum cable length	30m
NTC probe length	1.5m (up to 30m)
NTC accuracy (@ 25ºC)	±0.5ºC
Temperature resolution	0.1ºC
Cable cross-section	0.5mm² to 1mm² (20-16AWG)
Maximum response time	10ms

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

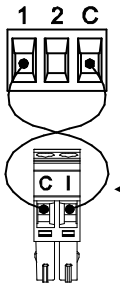
Temperature Probe



Temperature probe references:

ZN1AC-NTC68E
ZN1AC-NTC68F
ZN1AC-NTC68S
ZAC-SQAT-W/S/A

Motion Sensor

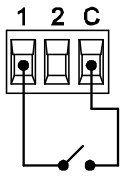


Up to two motion sensors can be plugged into the same device input (parallel wiring)

Motion sensor cable screw terminal.

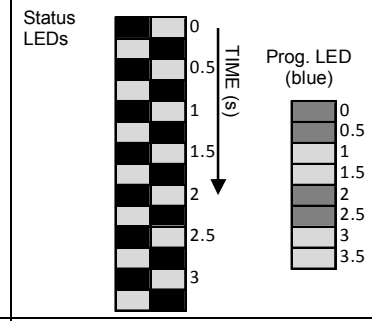
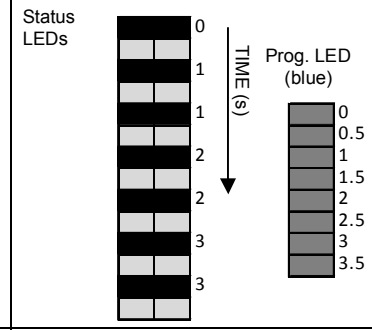
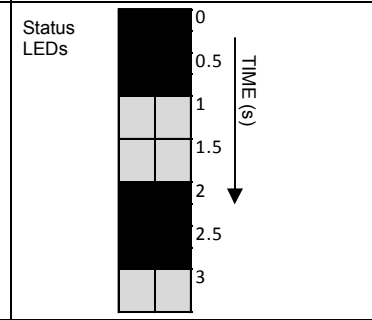
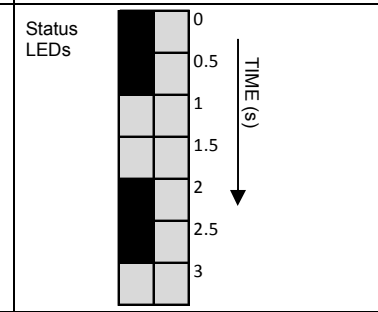
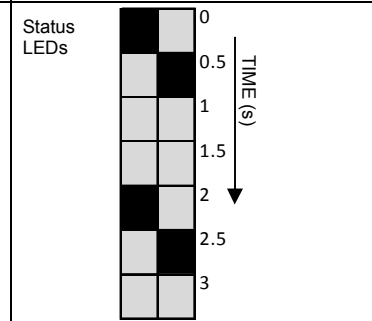
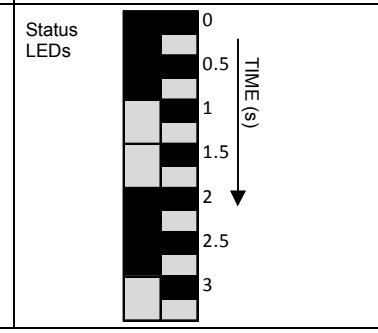
Motion sensor reference:
ZN1IO-DETEC-P(1)
ZN1IO-DETEC-X

Switch/Sensor/ Push Button



(1) The micro switch number 2 in the ZN1IO-DETEC-P sensor **must be in Type B position** to work properly.

ERROR NOTIFICATIONS

ERROR	LED BEHAVIOR	VISUAL NOTIFICATION
Short circuit	The two LEDs blink alternately each 0.25 seconds. When the output is locked, the programming LED blinks in blue (please, refer to user manual).	
Voltage Surge	The two LEDs o blink simultaneously each 0.25 seconds. When the output is locked, the programming LED lights in blue (please, refer to user manual).	
Overheating	The two LEDs blink each second.	
Supply Voltage Failure	One LED blinks each second.	
Anomalous Frequency	The two LEDs blinks (during 1 second) sequentially and they remain 1 second turned off.	
Parameterization Error	One LED blink each second while the other LED blinks each 0.25 seconds.	

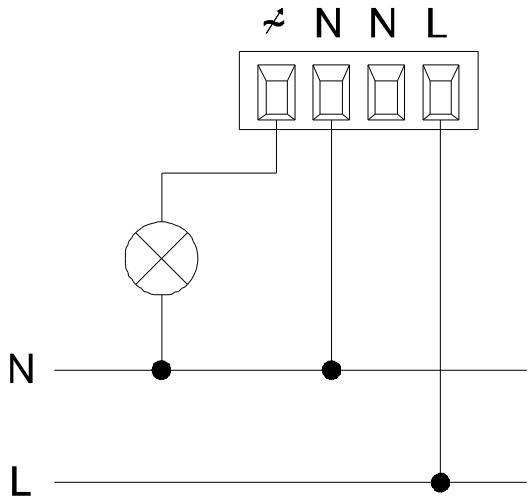
SPECIFICATIONS AND CONNECTIONS OF EXTERNAL POWER SUPPLY		
Fuse protection of supply to power source	Voltage	250V
	Current	10A
	Response type	F (Fast acting)
Connection method		Screw terminal block
Cable cross-section		0.5mm² to 4mm² (20-12AWG)

OUTPUT SPECIFICATIONS AND CONECTIONS	
Contact type	Solid state switching device
Load protection	Yes; overheating, voltage surge and short-circuit protection
Dropping voltage	Negligible
Connection type	Screw terminal block
Recommended cable section	0.5mm² to 4mm² (20-12AWG)
Cable type	Stranded or solid wire
Response time	Negligible

LOADS AND POWER (@ 25ºC ambient temperature around the device)		
	230VAC	**110-125VAC**
RLC	Up to 250W	Up to 200W
CFL and LED(1)	Up to 250W	Up to 200W

(1) for leading edge, the maximum load could change depending on the load type. Please refer to the link http://zennio.com/download/technical_note_inBOX_DIM_list_en.

DIMMER OUTPUT WIRING DIAGRAM



SAFETY INSTRUCTIONS

- 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.
- Once the device is installed (in the panel or box), it must not be accessible from outside.
- Keep the device away from water 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 http://zennio.com/weee-regulation.