

## FEATURES

- 4 outputs configurable as:
  - 2 shutter channels.
  - 4 individual outputs\*.
- \*Suitable for capacitive loads, maximum 140 µF.
- 5 analog/digital inputs.
- Manual output operation with push button and LED status indicator.
- Logical functions included.
- Output timing facilities.
- Total data saving on power failure.
- Size 67 x 90 x 35 mm (2 DIN units).
- Integrated KNX BCU.
- DIN rail mounting (EN 50022), through pressure.
- Possibility to connect different phases in adjoining outputs.
- Compliant with the CE directives (CE-mark on the right side).

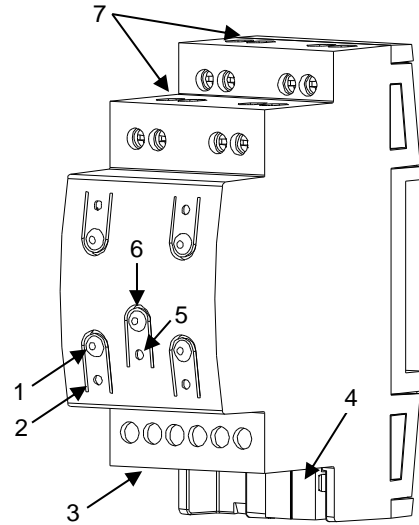


Figure 1. MINiBOX 45

1. Output control button	2. Output status LED indicator	3. Analog/Digital inputs	4. KNX connector
5. Programming/Test LED	6. Programming/Test button	7. Outputs	

**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 blue blinking sequence.

## GENERAL SYSTEM 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)	7.5	217.5
24VDC <sup>(1)</sup>	10	240		
Bus connection		Typical TP1 bus connector for rigid cable 0.80mm Ø		
External power supply		No		
Operation temperature		from 0°C to +55°C		
Storage temperature		from -20°C to +55°C		
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 electrical panels with DIN rail (EN 50022)		
Response on KNX bus failure		Data saving and relays action according to parameterization.		
Response on KNX bus restart		Data recovering and output status change according to parameterization.		
Operation indication		Programming LED indicates programming mode (red) and test mode (green). Output status LED indicators reflect current output state.		
Weight		148g		
PCB CTI index		175V		
Housing material		PC FR V0 halogen free		

<sup>(1)</sup> Maximum consumption in the worst case scenario (KNX Fan-In model)

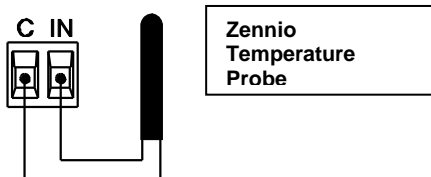
OUTPUTS SPECIFICATIONS AND CONNECTIONS		
Contact type		Potential free outputs through bistable relays with tungsten pre-contact.
Disconnection type		Micro-disconnection
Rated current per output		$\sim$ 16(6)A * 250V AC (4000 VA) $\text{---}$ 16(6)A * 30V DC (480W)
Maximum power per output	Resistive	4000W
	Inductive	1500W
Maximum inrush current		800A/200 $\mu$ s (fluorescent lamps) 165A/20ms (resistive lamps)
Number of outputs		4 outputs
Outputs per common (Channel)		1 individual output
Total maximum current in device		40A
Connection type		Screw terminal block
Recommended cable section		0,5mm <sup>2</sup> to 2.5mm <sup>2</sup> (24-12 AWG)
Cable type		Stranded or solid wire.
Maximum response time		50ms
Lifetime	Mechanical (min)	3 million operations (60cpm)
	Electrical (min.)	100.000 cycles at max. current (6cpm and resistive load)

**⚠** In order to ensure the expected status of the relays, please check that the device is connected to the KNX bus before energizing the power circuit.

INPUT SPECIFICATIONS AND CONNECTIONS	
CONCEPT	DESCRIPTION
Number of inputs per common	5
Input voltage	+3.3VDC for the common
Input current	1.0mA @ 3.3VDC (each input)
Input impedance	Aprox. 3.3k $\Omega$
Switching type	Dry voltage contacts between input and common
Connection method	Screw terminal block
Max. cable length	30m
NTC probe length	1.5m (up to 30m)
NTC accuracy (@ 25°C)	0.5°C
Temperature measure precision	0.1°C
Cable cross-section	0.5mm <sup>2</sup> to 2.5mm <sup>2</sup> (24-12AWG)
Maximum response time	10ms

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

#### Temperature Probe



#### Motion Sensor

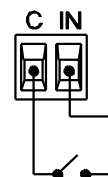


Up to two motion sensors can be plugged into the same device input (parallel wiring)

Motion sensor screw terminal.

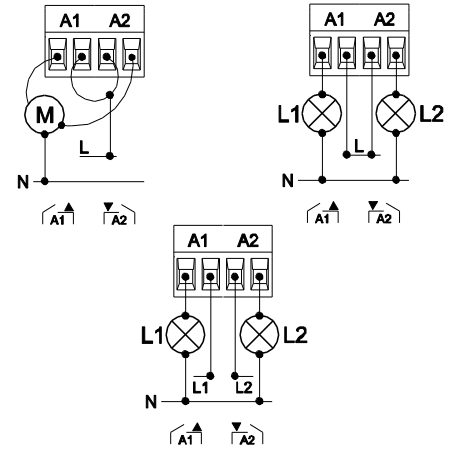
**Motion sensor references:**  
ZN1IO-DETEC-P<sup>(2)</sup>  
ZN1IO-DETEC-X

#### Switch/Sensor/ Push button



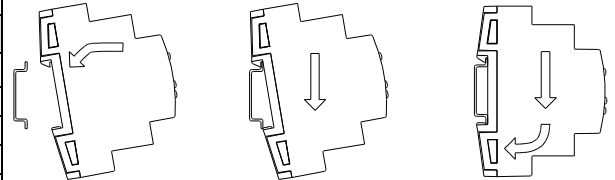
(2) The micro switch number 2 in the ZN1IO-DETEC-P **must be in Type B position** to work properly.

## WIRING AND ASSEMBLY DIAGRAMS

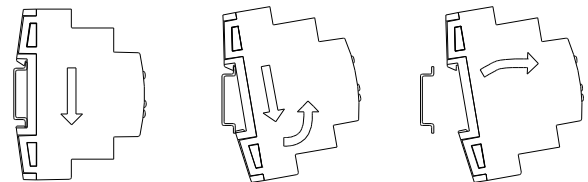


**Figure 2:** wiring example for outputs configured as shutter channel or as two individual outputs with the same or different phases

### Attaching MINIBOX 45 to DIN rail:



### Removing MINIBOX 45 from DIN rail:



## **⚠** 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.
- 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>.

