

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).
- KNX BCU integrated.
- DIN rail unit assembly (EN 50022), with snap fit clamp.
- Possibility to connect different phases in adjoining outputs.
- CE directives compliant.

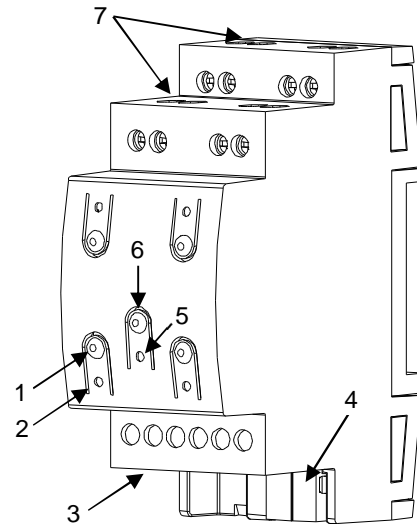


Figure 1. MINIBOX 45

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 button press to set programming mode. If this button is held while plugging the device into the KNX bus, it goes into safe mode. If this button is held more than 3 seconds, the device goes into manual mode (test mode).

LED: programming mode indicator (red). When the device goes into safe mode, it blinks (red) every half second. The manual mode is indicated by the green color. During start up (after reset or power failure) and if the device is not in safe mode, LEDs indicators blink blue for a few seconds.

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 ⁽¹⁾	10	240		
Bus connection		Typical bus connector TP1, 0.50 mm ² section		
External power supply		No		
Ambient temperature		from 0°C to +55°C		
Storage temperature		from -20°C to +55°C		
Ambient humidity		5 to 95% RH (no condensation)		
Storage humidity (relative)		5 to 95% RH (no condensation)		
Complementary characteristics		Class B		
Safety class		II		
Operation type		Continuous operation		
Device action type		Type 1		
Electrical solicitations period		Long		
Type of protection		IP20, clean environment		
Assembly		Independent control assembly device to be mounted inside of electrical panels with DIN rail (EN 50022).		
KNX bus failure response		Data saving and relays action according to parameterization.		
Response when restarting KNX bus		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		148 gr.		
PCB CTI index		175 V		
Enclosure		PC FR V0 halogen free		

⁽¹⁾ 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		~ 16(6)A * 250V AC (4000 VA) - - - 16(6)A * 30V DC (480W)
Maximum power per output	Resistive	4000W
	Inductive	1500W
Maximum inrush current		800A/200µs (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		Terminal block (screw)
Recommended cable section		0,5 mm ² to 4 mm ² (20-12 AWG)
Cable type		Stranded or solid wire.
Maximum response time		50 ms
Expected life	Mechanical (min)	3 million operations (60cpm)
	Electrical (min.)	100.000 cycles at max. current (6cpm and resistive load)

WIRING AND ASSEMBLY DIAGRAMS

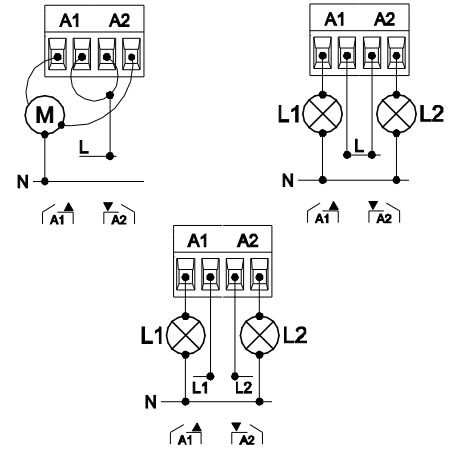
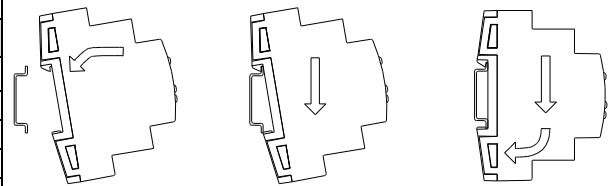


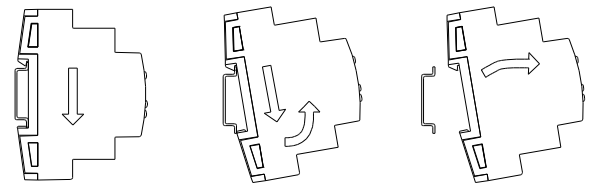
Figure 2: wiring example for outputs configured as shutter channel or as two individual outputs with the same or different phases

INPUT SPECIFICATIONS AND CONNECTIONS	
CONCEPT	DESCRIPTION
Number of inputs per common	5
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. (up to 30m.)
NTC accuracy (@ 25°C)	0.5°C
Temperature measure precision	0.1°C
Cable cross-section	0.5 mm ² to 2.5 mm ² (26-12AWG)
Response time	Max 10ms.

Attaching MINiBOX 45 to DIN rail:

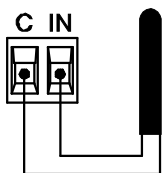


Removing MINiBOX 45 from DIN rail:



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

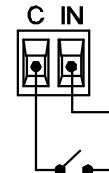
Motion Sensor



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

Motion sensor cable screw terminal.
Motion sensor references:
ZN1IO-DETEC-P⁽²⁾
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.



SAFETY INSTRUCTIONS

- Installation should only be performed by qualified electricians following applicable regulations on preventing accidents, as required by law
- Do not connect Main Voltage (230 VAC) or any other external voltages to any point of the BUS. Connecting an external voltage might put the entire KNX system at risk.
- Make sure during the installation that there is always sufficient insulation between the mains voltage 230VAC and the bus or the extension inputs.
- Once the device is installed, it must not be accessible from the outside.
- Keep away from water and do not cover the device with clothes, paper or any other material when in use.
- The WEEE logo means that this device contains electronic parts and it must be discarded properly following the instructions of <http://zennio.com/weee-regulation>.