

**FEATURES**

- 8 configurable outputs: shutter channels (up to 4), individual outputs (up to 8) and 2-pipe fan coil control (up to 2)
- Possibility of controlling blinds/shutters with 2 or 3 dry contacts
- Outputs suitable for capacitive loads, maximum 140  $\mu$ F
- Supports KNX Data Secure
- 8 analog/digital inputs
- 2 Master Light controls
- Manual output operation with push button and LED status indicator
- 10 logic functions
- Output timing
- Total data saving on KNX bus failure
- Integrated KNX BCU (TP1-256)
- Dimensions 67 x 90 x 70 mm (4 DIN units)
- DIN rail mounting according to IEC 60715 TH35, with fixing clamp
- Possibility of connecting different phases in adjacent outputs
- Conformity with the CE, RCM directives (marks on the right side)

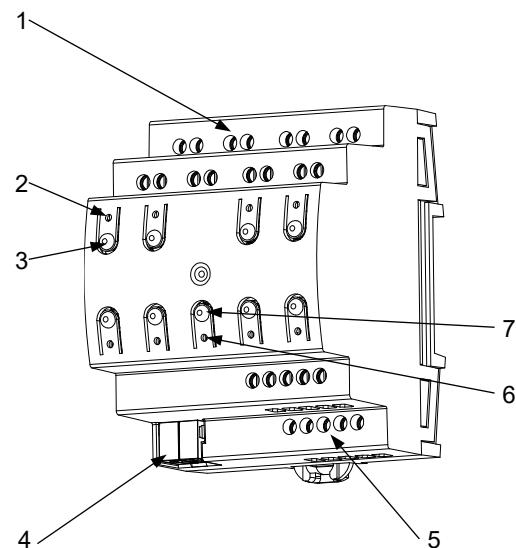


Figure 1: MAXinBOX 88

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

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. In order to perform a KNX Secure factory reset, while the device is in safe mode, press the button for 10 seconds until the programming LED changes its state.

Programming/Test LED: programming mode indicator (red). When the device enters the safe mode, it blinks (red) every half second. The test 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 starts a blue blinking sequence.

**GENERAL SPECIFICATIONS**

CONCEPT	DESCRIPTION				
Type of device	Electric operation control device				
KNX supply	Voltage (typical)	29 VDC SELV			
	Voltage range	21-31 VDC			
	Maximum consumption	Voltage	mA		
		29 VDC (typical)	4.85		
	24 VDC <sup>1</sup>	10	240		
Connection type		Typical TP1 bus connector for 0.8 mm Ø rigid cable			
External power supply	Not required				
Operation temperature	0 .. +55 °C				
Storage temperature	-20 .. +55 °C				
Operation humidity	5 .. 95%				
Storage humidity	5 .. 95%				
Complementary characteristics	Class B				
Protection class / Overvoltage category	II / III (4000 V)				
Operation type	Continuous operation				
Device action type	Type 1				
Electrical stress period	Long				
Degree of protection / Pollution degree	IP20 / 2 (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				
Weight	334 g				
PCB CTI index	175 V				
Housing material / Ball pressure test temperature	PC FR V0 halogen free / 75 °C (housing) - 125 °C (connectors)				

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

OUTPUTS SPECIFICATIONS AND CONNECTIONS	
CONCEPT	DESCRIPTION
Number of outputs	8
Output type / Disconnection type	Potential-free outputs through bistable relays with tungsten pre-contact / Micro-interruption
Rated current per output	AC 16(6) A @ 250 VAC (4000 VA) DC 7 A @ 30 VDC (210 W)
Maximum load per output	Resistive 4000 W Inductive 1500 VA
Maximum inrush current	800 A/200 µs 165 A/20 ms
Connections in adjacent outputs	Possibility of connecting different phases. It is not allowed to connect power supplies of different order, SELV with NO SELV, in the same block.
Maximum current per block	32 A
Short-circuit protection	NO
Overload protection	NO
Connection method	Screw terminal block (0.4 Nm max.)
Cable cross-section	0.5-2.5 mm <sup>2</sup> (IEC) / 26-12 AWG (UL)
Outputs per common	1
Maximum response time	10 ms
Mechanical lifetime (min. cycles)	3 000 000
Electrical lifetime (min. cycles) <sup>1</sup>	100000 @ 8 A / 25000 @ 16 A (VAC)

<sup>1</sup> Lifetime values could change depending on the load type.

## WIRING DIAGRAMS

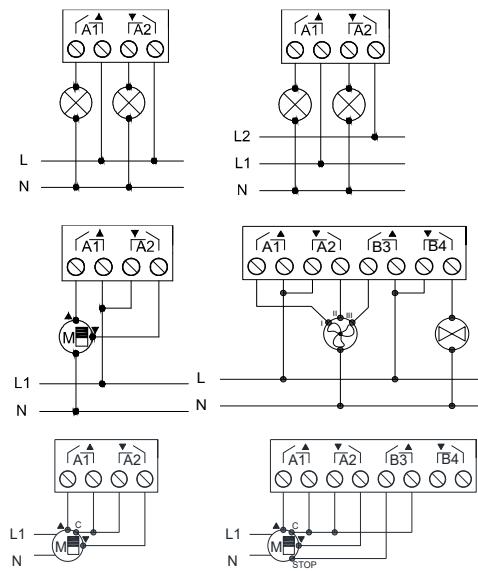


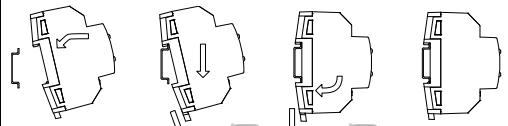
Figure 2: Wiring example (from left to right, and up to down): 2 loads, 2 loads connected to different phases, shutter, fan coil, shutter with 2 dry contacts, shutter with 3 dry contacts.

INPUTS SPECIFICATIONS AND CONNECTIONS	
CONCEPT	DESCRIPTION
Number of inputs	8
Inputs per common	4
Operation voltage	3.3 VDC in the common
Operation current	1 mA @ 3.3 VDC (per input)
Switching type	Dry voltage contacts between input and common
Connection method	Screw terminal block (0.4 Nm max.)
Cable cross-section	0.5-2.5 mm <sup>2</sup> (IEC) / 26-12 AWG (UL)
Maximum cable length	30 m
NTC probe length	1.5 m (extensible up to 30 m)
NTC accuracy (@ 25 °C) <sup>2</sup>	±0.5 °C
Temperature resolution	0.1 °C
Maximum response time	10 ms

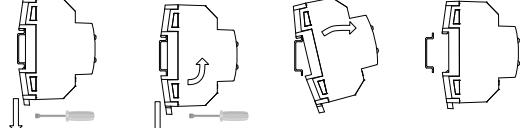
<sup>2</sup> For Zennio temperature probes.

⚠ 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.

### Attaching MAXinBOX 88 to DIN rail:



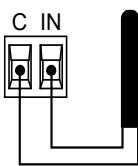
### Removing MAXinBOX 88 from DIN rail:



## INPUTS CONNECTION

Any combination of the following accessories is allowed on the inputs:

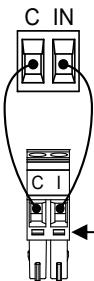
### Temperature Probe\*\*



Zennio temperature probe.

⚠ Commons of different devices must not be connected together.

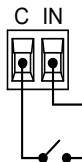
### Motion Sensor



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

Screw terminal for connecting Zennio motion sensors\*

### Switch/Sensor/ Push button



\* In case of using ZN1IO-DETEC-P sensor, its micro switch number 2 must be in **Type B** position.

\*\* Zennio temperature probe or any NTC with known resistance values at three points in the range [-55, 150 °C].



## 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 home automation facility must be equipped with a device that ensures the omnipolar sectioning. Installation of a 10 A 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 (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>.