FEATURES

- 12 configurable outputs: shutter channels (up to 6), individual outputs (up to 12) and 2-pipe fan coil control (up to 3)
- Possibility of controlling blinds/shutters with 2 or 3 dry contacts
- Outputs suitable for capacitive loads, maximum 140 µF
- Supports KNX Data Secure
- 12 analog/digital inputs (maximum 8 temperature probes or motion detectors)
- 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 105 mm (6 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, UKCA, RCM directives (marks on the right side)
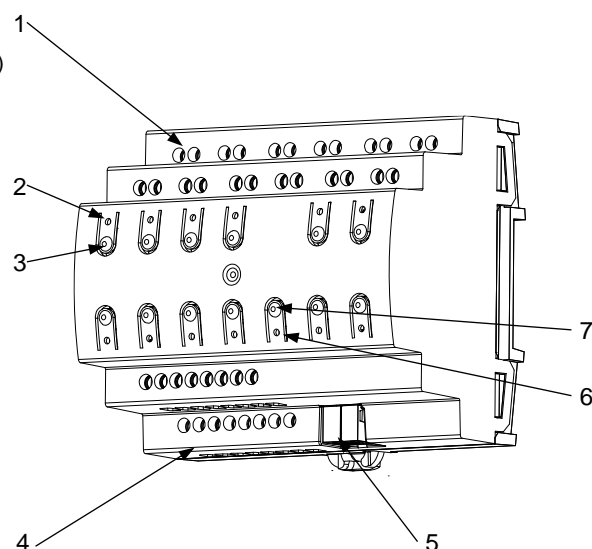

Figure 1: MAXinBOX 1212

1. Outputs	2. Output indicator LEDS	3. Output control buttons	4. Analog/Digital inputs
5. KNX connector	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		mW
		29 VDC (typical)	6.3		182.7
		24 VDC¹	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			454 g		
PCB CTI index			175 V		
Housing material / Ball pressure test temperature			PC FR V0 halogen free / 75 °C (housing) - 125 °C (connectors)		

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

OUTPUTS SPECIFICATIONS AND CONNECTIONS

CONCEPT		DESCRIPTION
Number of outputs		12
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		40 A
Short-circuit protection		NO
Overload protection		NO
Connection method		Screw terminal block (0.4 Nm max.)
Cable cross-section		0.5-2.5 mm² (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)[1]		100000 @ 8 A / 25000 @ 16 A (VAC)

[1] Lifetime values could change depending on the load type.

INPUTS SPECIFICATIONS AND CONNECTIONS

CONCEPT	DESCRIPTION
Number of inputs	12
Inputs per common	3
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 mm² (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) [2]	±0.5 °C
Temperature resolution	0.1 °C
Maximum response time	10 ms

[2] For Zennio temperature probes.

INPUTS CONNECTION

Any combination of the following accessories is allowed on the inputs 1 .. 8. The inputs 9 ..12 only can be of binary type:
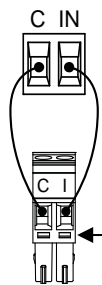
Temperature Probe*
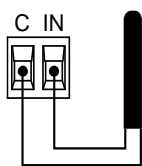
Zennio temperature probe.

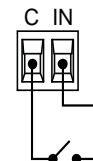⚠ Commons of different devices must not be connected together.

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

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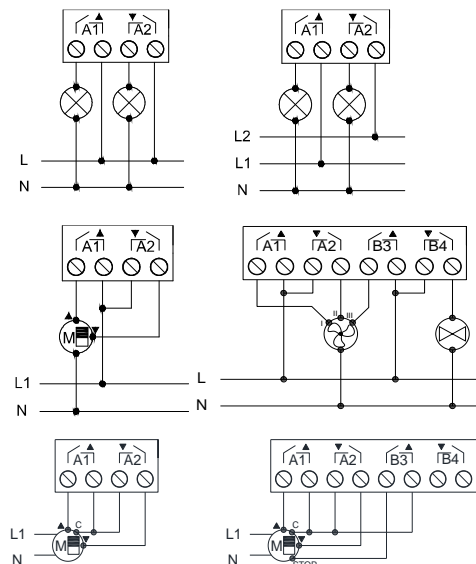
WIRING DIAGRAMS

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.

⚠ 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 1212 to DIN rail:
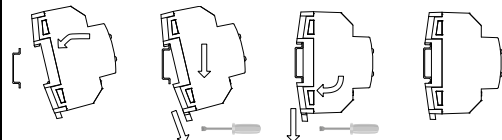
Removing MAXinBOX 1212 from DIN rail:
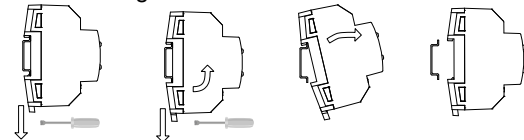
⚠ SAFETY INSTRUCTIONS AND ADDITIONAL NOTES

- 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.
- 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 https://zennio.com/licenses.