Multifunction actuator with 24 (16A) outputs
ZIO-MB24

Technical Documentation

FEATURES

- 6 configurable blocks:
  - Shutter channels (up to 12).
  - Individual outputs (up to 24).
  - 2-pipe fan coil control (up to 6 fan coils).
- Manual output operation with push button and LED status indicator.
- Suitable for capacitive loads, maximum **140 µF**.
- Possibility of connecting different phases in adjoining outputs.
- 30 logic functions.
- Total data saving on KNX bus failure.
- Integrated KNX BCU.
- Dimensions 69 x 96 x 210mm (12 DIN units).
- DIN rail mounting (EN 50022), through pressure.
- Conformity with the CE directives (CE-mark on the right side).

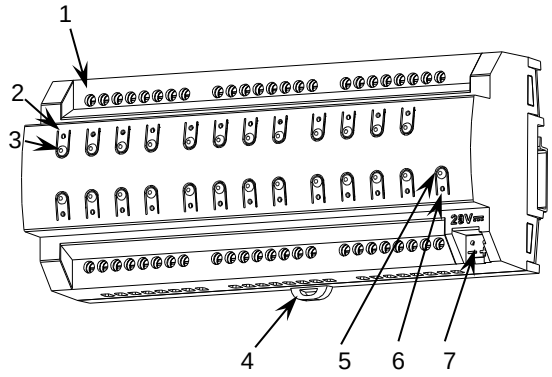


Figure 1. MAXinBOX 24

1. Output	**2**. Output status LED	**3**. Output control button	**4**. Fixing clamp
5. Programming/Test button	**6**. Programming/Test LED		**7**. 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 the 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 starts a blue blinking sequence.

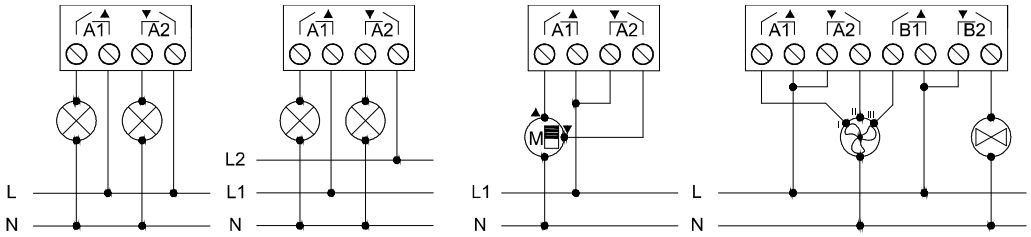
GENERAL SPECIFICATIONS

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)	3.92	113.68
		24VDC[(1)]	10	240
	Connection type		Typical bus connector TP1 for 0.80mm Ø rigid cable	
External power supply			Not required	
Operation temperature			0ºC to +45ºC	
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 electrical panels with DIN rail (EN 50022)	
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 (green)	
Weight			700g	
PCB CTI index			175V	
Housing material			PC FR V0 halogen free	

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

OUTPUTS SPECIFICATIONS AND CONNECTIONS		
CONCEPT		**DESCRIPTION**
Contact type		Potential-free outputs through bistable relays with tungsten pre-contact.
Disconnection type		Micro-disconnection
Rated current per output		~ 16(6)A * 250VAC (4000VA) ⎓ 16(6)A * 30VDC (480W)
Maximum power per output	Resistive	4000W
	Inductive	1500W
Maximum inrush current		800A/200µs (fluorescent lamps) 165A/20ms (resistive lamps)
Number of outputs		24 outputs
Outputs per common (Channel)		1 individual output
Different phases connection		Possibility to connect different phases in adjoining outputs
Total maximum current in device		40A per block
Connection type		Screw terminal block
Recommended cable section		0.5mm² to 4mm² (26-10 AWG)
Maximum response time		50ms
Lifetime	Mechanical (min)	3 million cycles (60cpm)
	Electrical (min.)	100.000 cycles at max. current (6cpm and resistive load)

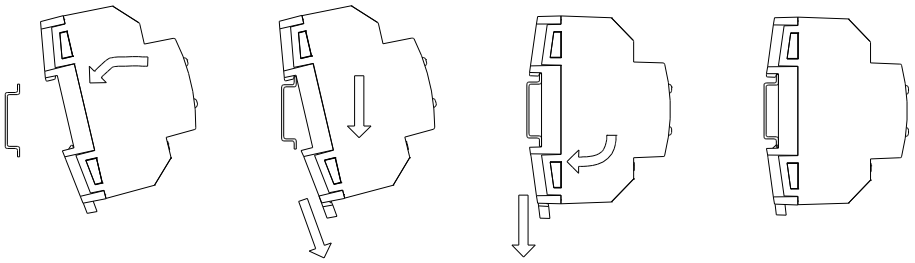
WIRING AND ASSEMBLY DIAGRAMS



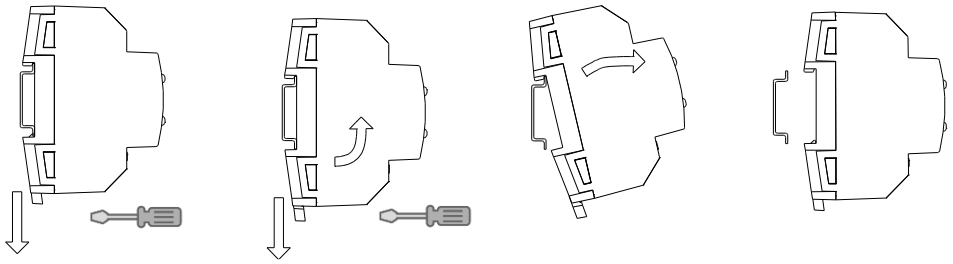
⚠ In order to ensure the expected status of the relays, please check that the device is connected to the KNX bus before energizing the power circuit.

Figure 2. Wiring examples (from left to right): individual outputs in channel A with the same and different phases, channel A as shutter channel, and channel A and B as fan coil controller (2 pipe and three-speed fan).

Attaching MAXinBOX 24 to DIN rail:



Removing MAXinBOX 24 from DIN rail:



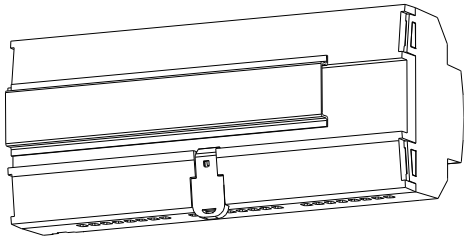


Figure 3. Mounting MAXinBOX 24 on a DIN rail

⚠ 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.