Fan-Coil controller for 2/4-pipe units with 2 individual outputs and 6 A/D inputs

ZCL-HP126 **Technical Documentation**

FEATURES

- 7 outputs:
    - 3 fan speed control outputs.
    - 2 valve control outputs.
    - 2 individual outputs*.
    *Suitable for capacitive loads, maximum **140 µF**. Possibility to connect different phases in adjoining outputs.*
- 6 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 80 mm (4.5 DIN units).
- KNX BCU integrated.
- DIN rail unit assembly (EN 50022), with snap fit clamp.
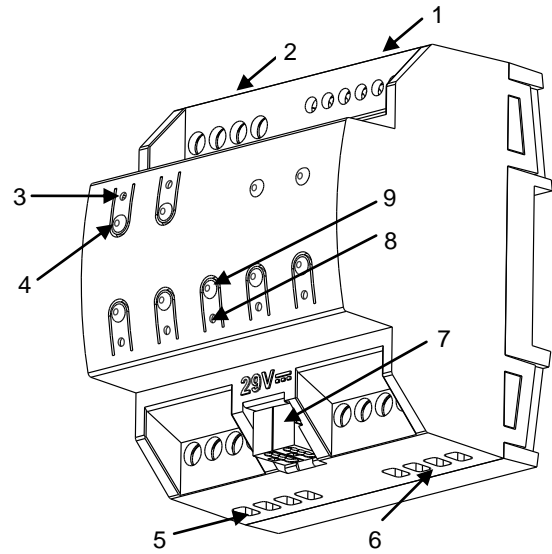- CE directives compliant.

Figure 1. MAXinBOX Hospitality

1. Analog/Digital inputs	**2**. Fan outputs	**3**. Output status LED indicator	**4**. Output control button	**5.** Valve outputs
6. Individual outputs	**7**. KNX connector	**8**. Programming/Test LED		**9**. Programming/Test button

Programming/test button: short button press to set the 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)	10	290
		24VDC	12.5	300
		Starting	25	725
	Bus connection		Typical bus connector TP1, 0.50 mm² section	
External power supply			No	
Ambient temperature			from 0ºC to +55ºC	
Storage temperature			from -20ºC to +70ºC	
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			200 gr.	
PCB CTI index			175 V	
Enclosure			PC FR V0 halogen free	

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OUTPUT SPECIFICATIONS AND CONNECTIONS

Contact type		Potential free outputs through bistable relays with tungsten pre-contact.
Disconnection type		Micro-disconnection
Outputs per common	Individual/Valve outputs	1 output per common
	Fan outputs	3 outputs per common
Different phase connection (valve and individual outputs)		Possibility to connect different phases in adjoining outputs
Connection type		Terminal block (screw)
Recommended cable section		0.25 mm² to 4 mm² (26-10 AWG)
Cable type		Stranded or solid wire
Maximum response time		50 ms

INDIVIDUAL OUTPUTS

Rated current by output		$\sim$16A (6) * 250V AC (4000 VA) $=$16A (6) * 30V DC (480W)
Maximum Power	Resistive load	4000W
	Inductive load	1500VA
Maximum inrush current		800A/200µs or 165A/20ms
Expected life	Mechanical	3 million operations (60cpm)
	Electrical	100.000 cycles (6cpm/resistive load)

FAN AND VALVE OUTPUTS

Rated current by output		$\sim$8A (4) * 250V AC (2000 VA) $=$8A (4) * 30V DC (240W)
Maximum Power	Resistive load	2000W
	Inductive load	1000VA
Expected life	Mechanical	1 million operations (180cpm)
	Electrical	50.000 cycles (6cpm/resistive load)

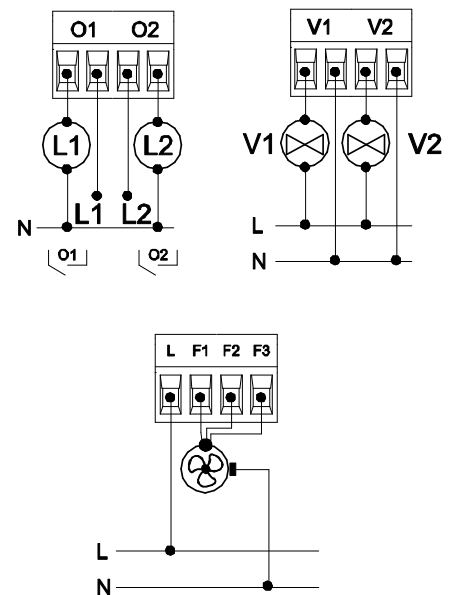## WIRING AND ASSEMBLY DIAGRAMS

Figure 2: (From up to down and from left to right) Two individual outputs with different phases, two valve fan-coil and three-speed fan.

INPUT SPECIFICATIONS AND CONNECTIONS

CONCEPT	DESCRIPTION
Number of inputs per common	6
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 (@ 25ºC)	0.5ºC
Temperature measure precision	0.1ºC
Cable cross-section	0.15 mm² to 2.5 mm² (26-12 AWG)
Response time	Max 10ms.

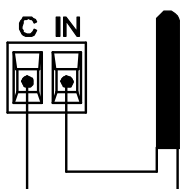**Attaching MAXinBOX Hospitality to DIN rail:**
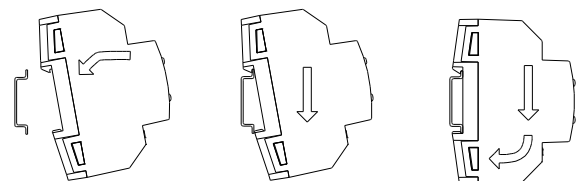
Removing MAXinBOX Hospitality from DIN rail:
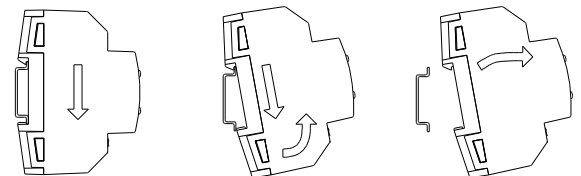
Any combination of the next **accessories** is allowed in the inputs:

Temperature Probe

Temperature probe references:
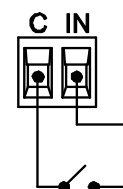
ZN1AC-NTC68E
ZN1AC-NTC68F
ZN1AC-NTC68S

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[1]
ZN1IO-DETEC-X

Switch/Sensor/ Push button

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

⚠ SAFETY INSTRUCTIONS

- 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.

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