JOY FC EC AO2DO RS485 BACnet

Fancoil Regulator (from Version 4.x)

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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» APPLICATION

Modern fan coil room thermostat to control fan coil units with EC fans. It is suitable for 2- and 4-pipe systems. It has 2 relays and 1 analogue output 0-10V (heating valve, cooling valve and EC fan). The device combines a modern design with a 2,5" LCD and a touch-sensitive surface, 3-time program options each with 4-time periods options.

» SECURITY ADVICE – CAUTION

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.
CAUTION! Risk of electric shock due to live components within the enclosure, especially devices with mains voltage supply (usually between 90..265 V).

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» TECHNICAL DATA

Measuring values	temperature, humidity* *(optional)*, CO2* *(optional)*
Network technology	RS485 BACnet MS/TP, **Fail-safe Biasing required**
Measuring range temp.	0..+50 °C
Accuracy temperature	±1 K (typ. bei 21 °C)
Measuring range humidity *(optional)*	0..100% rH non-condensing
Accuracy humidity *(optional)*	±2% between 10..90% rH (typ. at 21 °C)
Measuring range CO2 *(optional)*	0..2.000 ppm
Accuracy CO2 *(optional)*	(5% of measuring value) + 50 ppm
Control function	setpoint adjustment +0..+50 °C, fan stages
Display	LCD 2,5", 240x160 px, white backlighting
Functions	integrated PI- and 2-point-/ 3-point-controllers, 2nd control loop: 2-point controller
Enclosure	PC and glass, optional black or white

*Humidity and CO2 measured values are not processed internally. The values are displayed and can be read out by higher-level systems for evaluation and further use.

Protection	IP30 according to EN 60529	
Connection electrical	**Terminal 1..8** terminal block max. 1,5 mm²	**Terminal 9..12** terminal block max. 1.0 mm²
Ambient condition	0..+50 °C, max. 85% rH non-condensing	
Weight	195 g	
Mounting	flush mounted with standard EU box (Ø=60 mm)	

Output voltage	1x 0..10 V, max. load 5 mA, EC FAN control	
Output switch contact	2x normally open contacts (heating/cooling), 240 V max. load 500 mA	
Power supply	85..260 V ~	
Power consumption	max. 3 VA (260 V ~)	
Inputs	**DI1** input for NTC 10 K or floating contact	**DI2** digital input for non-floating contact (230 V ~)

» MOUNTING ADVISE ROOM SENSORS

The Accuracy of the room sensors are influenced by the technical specifications as well as the positioning and the installation type.

During Assembly:

- Seal mounting box (if present).
- Installation type, air draught, heat source, radiation heat or direct sunlight can affect the measurement.
- Bulding material specific properties of the installation place *(brick-, concrete-, partition wall, cavity wall, …)* can affect the measurement.

Assembly not recommendet in…

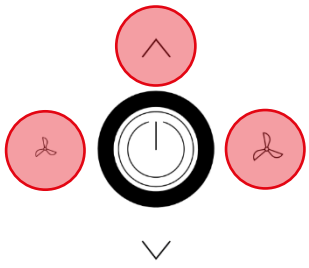
- Air draught (e.g.: close to windows / doors / fans …)
- Near heating sources,
- Direct sunlight
- Niches / between furniture / …

» MOUNTING ADVICES JOY

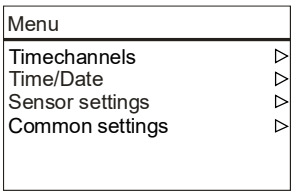
Plasterboard boxes shall be covered by wallpaper or paint to avoid the plasterboard box's front rim will be partially visible underneath JOY. Maybe consider using white plasterboard boxes (i.e. Kaiser 9063-77).

» CONFIGURATION

» Parametermenu



Access to Parametermenu:
Press buttons for 3 seconds simultaneously



If no entry is made for 8 minutes, the parameter menu is left automatically.

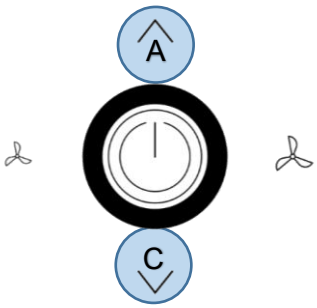
»JOY BACNET SOFTWARE MANUAL

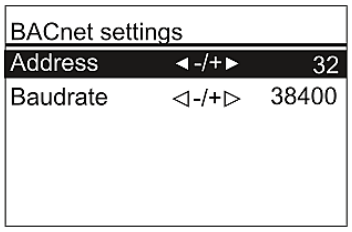
Detailed information on device functions and software
https://www.thermokon.de/direct/files/joy-rs485-bacnet-manual.zip

»PARAMETER MENU – BACNET INTERFACE

The configuration menu is activated by simultaneously pressing the buttons “up” (A) and “down” (C) for at least 5 seconds.

The menu is enabled during the first 60 minutes after switching on the supply voltage as long as the device is not actively involved in BACnet communication. As soon as the device receives a valid request addressed to the device from a DDC, access to the menu is blocked. Without valid communication, access is blocked after 60 minutes!





Address (default: 32)
Adjustable address (1-127)

Baud rate (default: 19200 Bd)
9600 Bd | 19200 Bd | 38400 Bd | 57600 Bd | 76800 Bd | 115200 Bd

»CONFIGURATION VIA UCONFIG | MICROSD-CARD OR BACNET

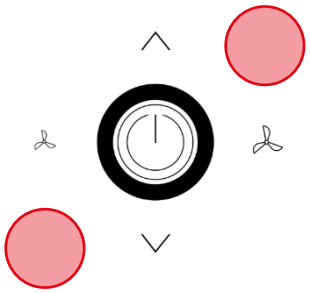
Configuration software:
uConfig | Microsoft Windows is required to use the uConfig configuration software

The JOY room thermostat can be parameterised using the uConfig configuration software. An SD card is used to transfer the created configuration file to the device.

The installer for the configuration software can be found in the Download-Section on our website. The installer retrieves all necessary files and plug-ins from our web server. In this version an update function is integrated in the software.
Download-Section https://www.thermokon.de/en-gb/download

»CO2 FACTORY SETTING

To reset the sensor to factory settings, use the key combination.
This key combination only works in the CO2 sensor settings menu.

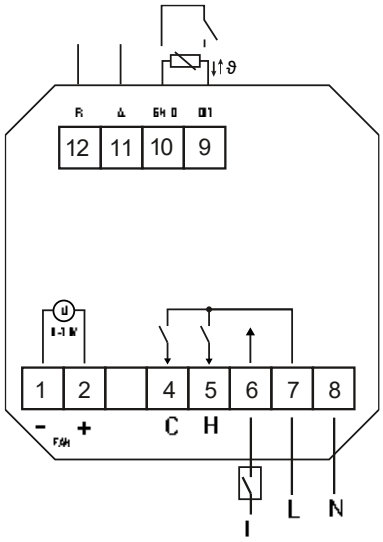


»PRODUCT TESTING AND CERTIFICATION

Declaration of conformity
The declaration of conformity of the products are available on our website
https://www.thermokon.de/direct/en-gb/categories/joy-fancoil

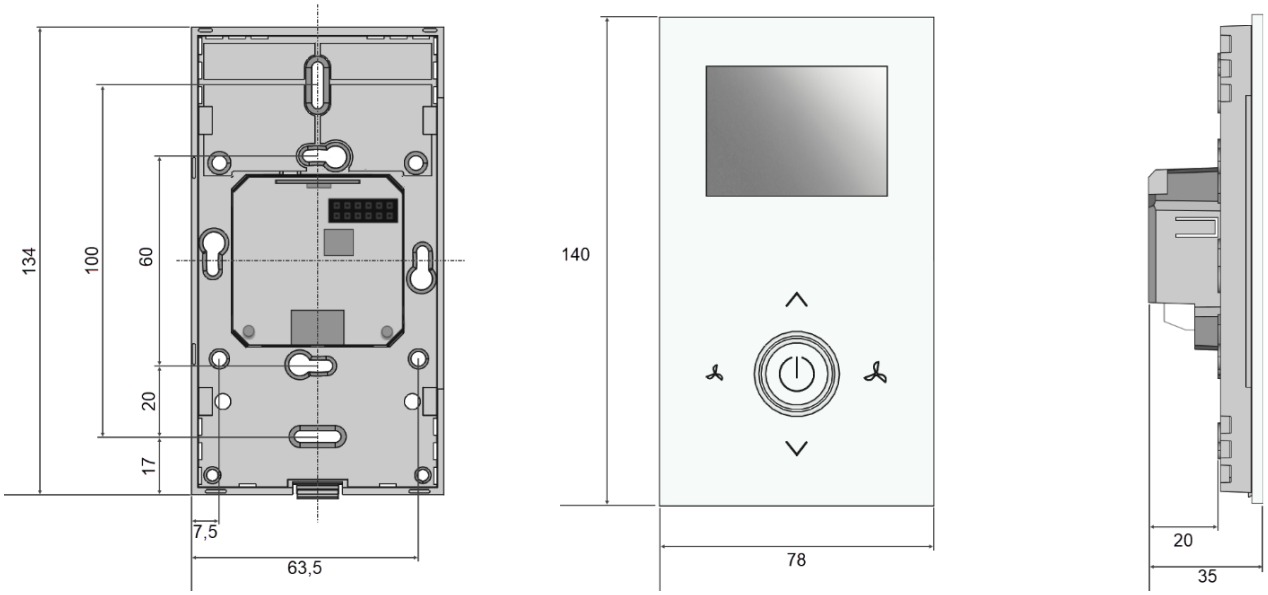
»CONNECTION PLAN

JOY Fancoil EC AO2DO (85..260 V ~)



1 EC-Fan GND	No parallel connection of inputs. Exception: DI2.
2 EC-Fan (0..10 V)	
4 Cooling	For multiple devices connected: AC power supply: connect with the same phase.
5 Heating	
6 Digital Input 2 (230V)	Switching element contacts (changeover, window contact, dew point, etc.) must be designed in accordance with EN/IEC 60947-5-1 (precious metal).
7 L	
8 N	
12 B	RS485 is a 3-wire interface. Connect GND (10) terminals to each other as reference potential.
11 A	
10 GND DI 1	
9 Digital Input 1 (or NTC10K)	

»DIMENSIONS (MM)



»ACCESSORIES (OPTIONAL)

Frame for surface mounting JOY pure white	Item No. 760201
Frame for surface mounting JOY black	Item No. 760195
Decorative frame pure white for JOY	Item No. 681452
Decorative frame black for JOY	Item No. 740951
MicroSD card 2GB	Item No. 500098
RS485 Biasing Adapter	Item No. 811378
USB-Interface RS485	Item No. 668293

»NOTES ON DISPOSAL

The cross-out wheelie bin symbol indicates that the product or removable batteries must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: www.thermokon.com