JOY SR FC 5DO RS485 Modbus

Electronic Fan Coil Thermostat (from Version 4.x)

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
Issue date: 22.07.2026 • A200

» APPLICATION

Modern design, flush mounting fan coil room thermostat. Used for individual control of temperature in commercial and residential buildings. It is tailored for two-pipe and four-pipe fan coil units with two-wire electric valves. The device combines a modern design with a 2,5" LCD and a touch-sensitive surface, 3-time program options each with 4-time period options.

This product is intended for use as part of an automation solution for (functional) buildings. It transmits sensor data within a building over short distances unencrypted by radio to suitable receivers. No personal data or location data is transmitted.

The product cannot communicate directly with the Internet and is not intended for applications that use the Internet to forward unprocessed sensor data. Automation stations that forward data via the Internet, e.g. to visualise the building status, must ensure that the data to be forwarded is encrypted as required by law.

» 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. Unauthorized modifications are prohibited! The product must not be used in relation to any equipment that in case of 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 installation. 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

» MOUNTING ADVICE ROOM SENSORS

The accuracy of the room sensors is influenced by their technical specifications as well as their installation position and mounting method.

During installation, observe the following:

- Seal the flush-mounted wall box (if applicable).
- Air drafts, heat sources, radiant heat, or direct sunlight at the installation location may affect the measurement.
- The building material at the installation location (e.g. brick, concrete, stud walls, or cavity walls) may affect the measurement.

Installation is not recommended in the following locations:

- Areas exposed to air drafts (e.g. near windows, doors, or ventilation outlets)
- Near heat sources
- In direct sunlight
- In niches or behind/between furniture

» MOUNTING ADVICE JOY

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

» TECHNICAL DATA

Measuring values	Temperature, humidity* *(optional)*, CO2* *(optional)*
Network technology	RS485 Modbus RTU, **Fail-safe Biasing required**
Radio technology	EnOcean (IEC 14543-3-10), transmission power <10 mW
Measuring range temp.	0..+50 °C
Accuracy temperature	±1 K (typ. at 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

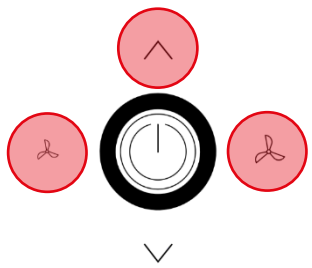
*Humidity and CO2 measured values are not processed internally. The values are displayed and can be read out by higher-level systems for evaluation and further use.

Functions	Integrated PI-controller, 2nd control loop: 2-point controller, MSG server for 2nd control loop via radio	
Enclosure	PC and glass, optional black or white	
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)	
Notes	There are 20 EnOcean transmit / receive channels available for various functions	

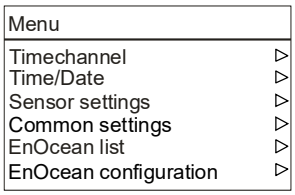
Output switch contact	3 x normally open contacts (fan speed), 240 V, load max. 3 A	2 x normally open contacts (heating/cooling), 240 V, load max. 500 mA
Power supply	85..260 V ~	
Power consumption	max. 3 VA (260 V ~)	
Inputs	**DI1** input for NTC10K or floating contact	**DI2** digital input for non-floating contact

» CONFIGURATION

» Parameter menu



Access to parameter menu:
press buttons for 3 seconds simultaneously



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

» 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

»PRODUCT TESTING AND CERTIFICATION

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

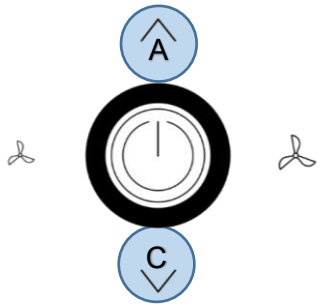
»JOY MODBUS SOFTWARE MANUAL

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

»PARAMETER MENU – MODBUS 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 Modbus 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!



Modbus settings		
Address	◂ -/+ ▸	32
Baudrate	◁ -/+ ▷	19200
Parity	◁ -/+ ▷	Even

Address (default: 32)
Adjustable address (1-247)

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

Parity (default: even)
Non | odd | even

»CONFIGURATION VIA UCONFIG | MICRO-SD CARD OR MODBUS

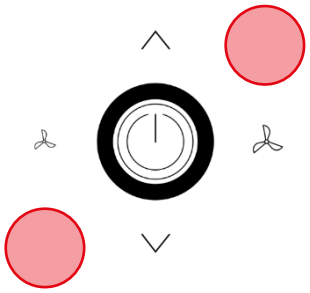
Configuration software:
uConfig | Microsoft Windows is required to use the uConfig configuration software.

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. For BUS devices, a live configuration can also be performed via the BUS interface.

The online installer for the configuration software can be found in our download centre. 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 Online Installer** https://www.thermokon.de/download

»CO2 FACTORY SETTINGS

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



»MENU → ENOCEAN CONFIGURATION

The access to the menu <**EnOcean configuration**> can be protected with a password via Modbus. The login remains unlocked in the EnOcean menu until 10 minutes after the last key press. Default password: 0000 (deactivated)

More detailed information for the configuration of the EnOcean channels can be found in the specification.

»INFORMATION ABOUT EASYSENS® (RADIO) / AIRCONFIG GENERAL USAGE

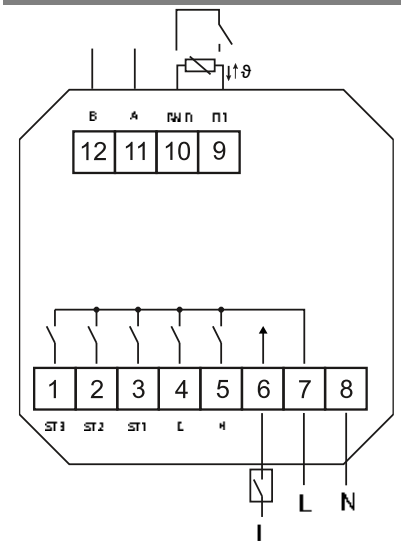
EasySens® - airConfig
Basic information about EasySens® radio and about general usage of our airConfig software, please download from our website: https://www.thermokon.de/direct/files/airconfig-software-manual-en.pdf

»OVERVIEW OF THE RADIO TELEGRAMS

EEP
The structure of the data contained in the telegram can be found in the EEP (EnOcean equipment profile) list provided by the EnOcean Alliance. http://tools.enocean-alliance.org/EEPViewer/

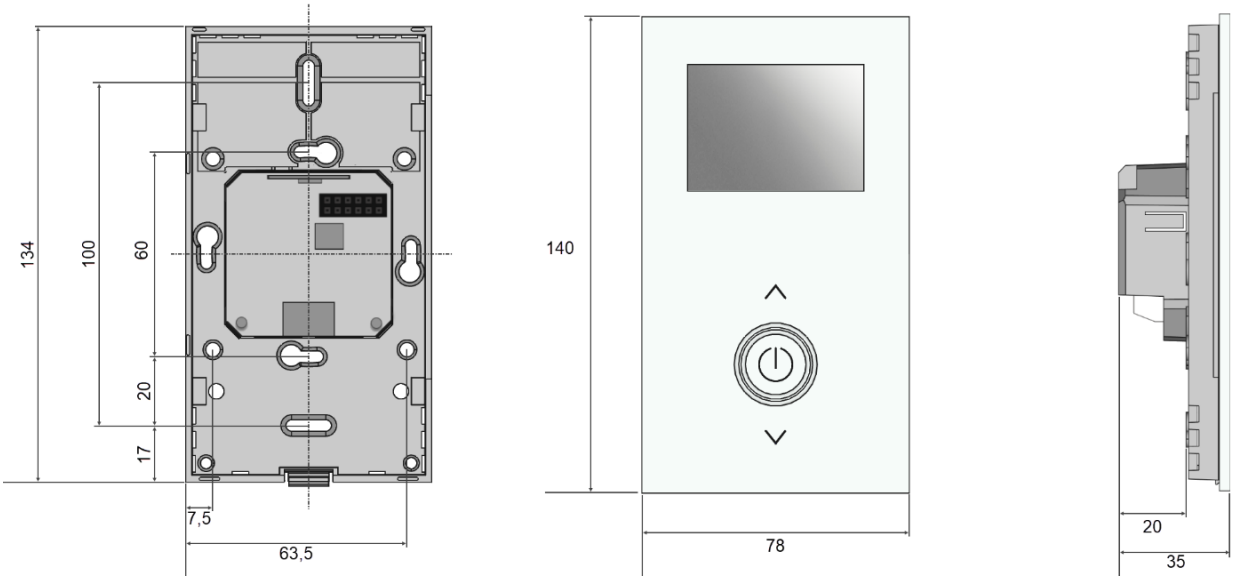
»CONNECTION PLAN

JOY Fan Coil 5DO (85..260 V ~)



1 Fan Speed 3	No parallel connection of inputs. Exception: DI2.
2 Fan Speed 2	
3 Fan Speed 1	For multiple devices connected: AC power supply: connect with the same phase.
4 Cooling	
5 Heating	
6 Digital Input 2 (230 V)	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 Modbus B	RS485 is a 3-wire interface. Connect GND (10) terminals to each other as reference potential.
11 Modbus 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
Micro-SD card 2 GB	Item No. 500098
RS485 Biasing adapter	Item No. 811378
USB RS485 Modbus RTU Logger	Item No. 809917
Converter RS485 Modbus - USB	Item No. 668293