WRF06 INC RS485 Modbus

Flush mounting room operating panel

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
Issue date: 26.09.2018 • A006

Application

The WRF06INC RS485 Modbus is a room operating panel with Modbus functionality. It is designed for set point adjustment and release of a ECO-Mode function in the Master. The set point can be changed as you like by rotating the encoder in a predefined range, e.g. -3K...+3K. The current status of the set point change is visualized by LEDs. By pushing the encoder, the ECO-Mode function can be triggered.

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.

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

Notes on Disposal

As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

Technical Data

Measuring values	temperature
Network technology	RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%)
Power consumption	typ. 0,3 W (24 V =) | 0.9 VA (24 V ~)
Measuring range temp	0..+50 °C
Accuracy temperature	typ. ±0,3 K (typ. at 21 °C)
Input	1x input for additional external sensor NTC10k
Switch range Merten	M-Smart (default)
LED (D)	7 LEDs for display of set point adjustment and 1 LED for display of ECO-mode function
Control function	Encoder for set point adjustment, heating and cooling, with pushbutton function for ECO Mode
Enclosure	PA6.6
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm², pluggable
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=60 mm)
Notes	additional switch ranges on request

Declaration of conformity

The declaration of conformity of the products can be found on our website https://www.thermokon.de/.

Configuration

Dip switch configuration

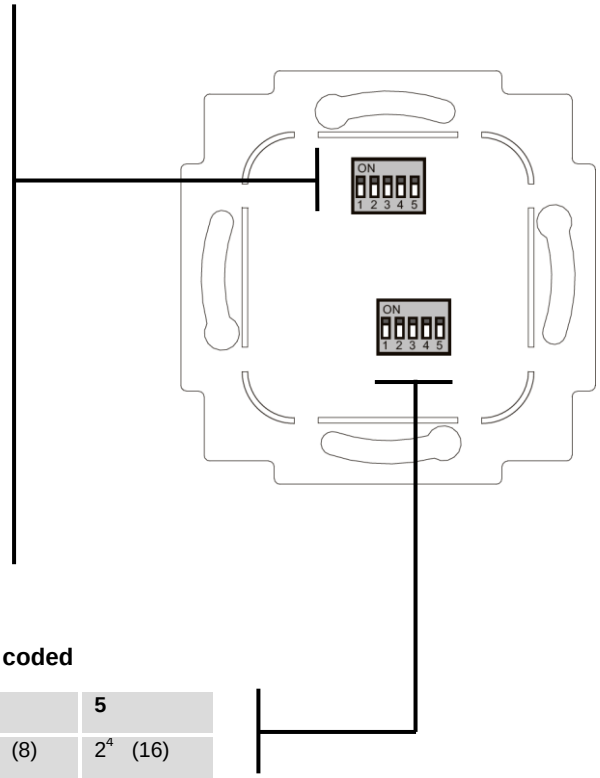
To get to the dip switches, remove the top with the control from the unit.

Modbus Options (Switch block 1, above)

1	Mode
off	RTU (default)
on	ASCII

2	3	Baud rate
off	off	9600
on	off	19200 (default)
off	on	38400
on	on	57600

4	5	Parity
off	off	None - 2 stopbits
on	off	even (default)
off	on	odd
on	on	None - 1 stopbit



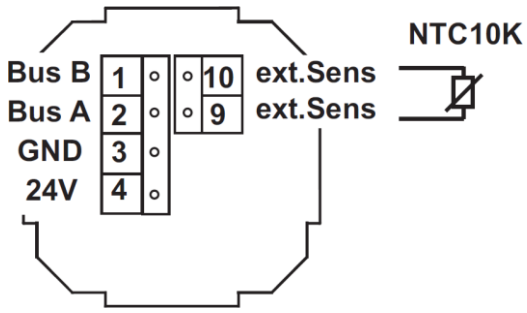
Modbus Address (Switch block 2, below) binary coded

Dip switch	1	2	3	4	5
Priority	2^0 (1)	2^1 (2)	2^2 (4)	2^3 (8)	2^4 (16)

Connection Plan

In addition to the internal sensor, an external sensor (NTC10K) can be connected, The value can be read out via a separate Modbus register.

1	Modbus B
2	Modbus A
3	GND
4	15..24 V = (±10%) or 24 V ~ (±10%)
9	Terminal for external sensor, NTC10K
10	Terminal for external sensor, NTC10K



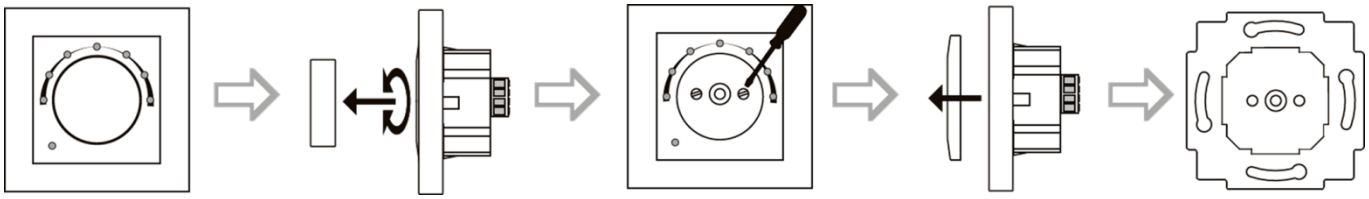
Mounting Advices

The device is designed for mounting on a flush box. The bus cable is connected to the device by a terminal screw. For pre-wiring, the terminal screw can be drawn from the device.

Due to the extended retaining capacity for the cabling, the use of deep installation boxes is recommended.

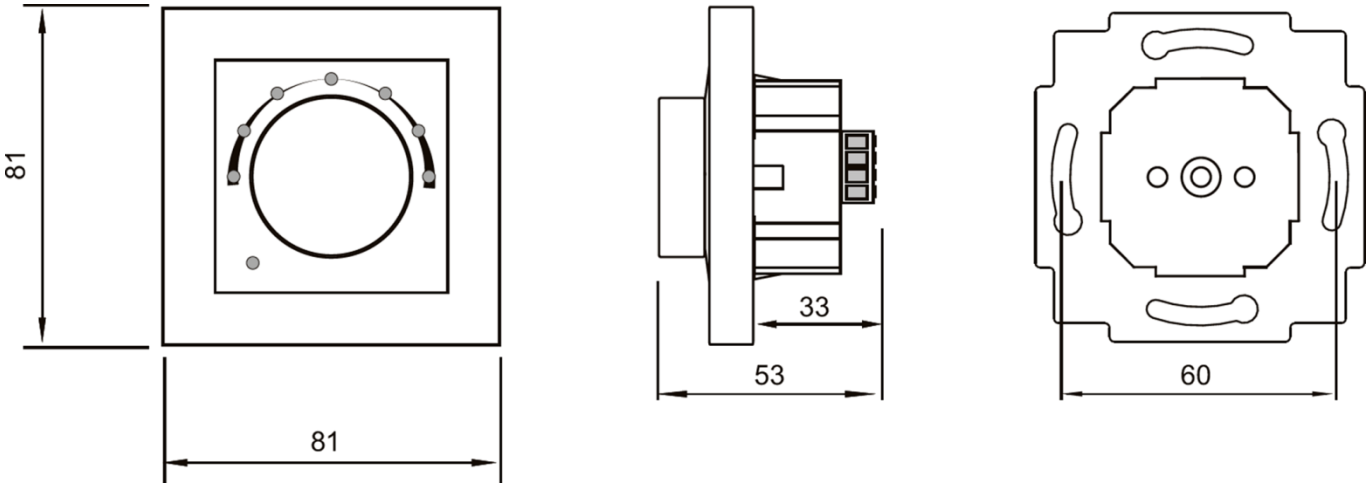
The fastening of the base plate can be made by the screws of the installation box, (max. torque of screws 0,8 Nm). The jumper ring of the RS485-Interface must smoothly rest on the wall and must not be painted over or decorated over.

Installation must be made on representative places for the room temperature to avoid a falsification of the measuring result. Solar radiation and draught should be avoided. The end of the installation tube in the flush box must be sealed to avoid any draught in the tube falsifying the measuring result. In order to guarantee a smooth and accurate mounting, it is absolutely necessary that the installation boxes used do not stand away from the wall. The box shall end with the wall or should be lightly inserted into the wall.



Dimensions (mm)

WRF06 INC + Merten M-Smart



Accessories (optional)

Converter RS485 Modbus-USB incl. driver CD Item No. 668293