Technical Manual

State 08/2024 - Version 1.1

KNX Rain Sensor

SCN-RS1R.01

Further Documents:

Datasheet:
https://www.mdt.de/EN_Downloads_Datasheets.html

Assembly and Operation Instructions:
https://www.mdt.de/EN_Downloads_Instructions.html

Solution Proposals for MDT products:
https://www.mdt.de/en/for-professionals/tips-tricks.html

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1 Content

2 Overview

2.1 Overview Devices

This manual refers to the following devices (order number in bold).

- **SCN-RS1R-01** KNX Rain Sensor

2.2 Functions

The Rain Sensor reports rainfall to the KNX bus immediately or after an adjustable time in order to move blinds, shutters or the awning into a protective position or to close roof windows. The integrated heating automatically dries the sensor surface in the event of rainfall or if the outside temperature falls below 3 °C.

2.3 Wiring diagram

The following figure shows an exemplary wiring diagram:

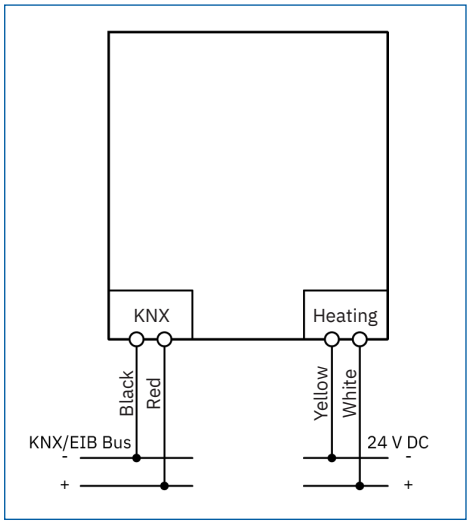


Figure 1: Wiring Diagram

2.4 Structure & Handling

The following picture shows the structure of the device:

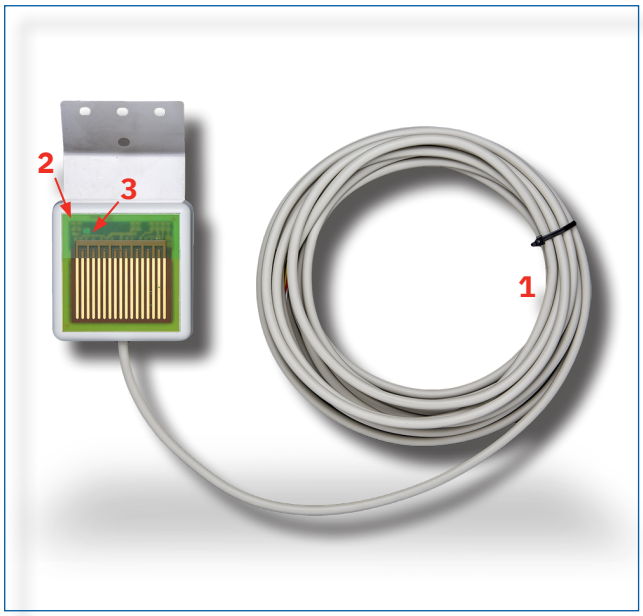


Figure 2: Structure & Handling

1 = Connection cable
2 = Programming button (Reed contact)
3 = Programming LED

2.5 Commissioning

1. Connect the device according to the wiring diagram.
2. Connect programming interface to the bus.
3. Switch on bus voltage.
4. Activate programming mode on the device using the magnet supplied (red programming LED lights up permanently).
5. Set and programme the individual address in the ETS. (Programming LED turns off)
6. Configure and programme the settings in the application programme.

3 Communication objects

3.1 Standard settings of the communication objects

Standard settings – General								
No.	Name	Object Function	Length	C	R	W	T	U
0	Rain	Status: Rain ON/OFF	1 Bit	■	■		■	
1	In operation	Send status	1 Bit	■			■	
2	Heating	Status: Heating ON/OFF	1 Bit	■	■		■	

Table 1: Communication objects – Standard settings

The preset default settings of the communication objects can be taken from the respective table. The priority of the individual communication objects and the flags can be adjusted by the user as required. The flags assign the communication objects their respective task in the programming, whereby C stands for communication, R for read, W for write, T for transmit and U for update.

4 ETS Parameter

4.1 General Settings

The following table shows the available settings:

ETS Text	Dynamic range **[Default value]**	Comment
Startup time	0 ... 60 s **[1 s]**	Setting the time between restart and functional start-up of the device.
Send “In-operation” cyclically	**not active** 10 min - 24 h	Activation of a cyclical “In-operation” telegram.
Send object “Rain”	■ not active, only request ■ **at changes** ■ cyclic ■ at changes and cyclic	Setting the sending condition of the “Rain” object.
Send cyclically every ...	10 s – 60 min **[30 s]**	Setting the transmission interval for the “Rain” object. **Only if “Send object “Rain”” → “cyclic” or “on change and cyclic”.**
Sensitivity of sensor	■ low ■ **high** ■ very high	Setting the sensor sensitivity.
Send object “Heating”	■ **not active, only request** ■ on change	Setting the sending condition of the “Heating” object.
Delay of message “Rain ON”	1 – 60 s **[20 s]**	Switch-on delay of the rain message.
Delay of message “Rain OFF”	10 s – 20 min **[5 min]**	Switch-off delay of the rain message.

Table 2: General settings

Startup time
This time defines when the device starts after a restart (reset, reprogramming, bus power return). This can be important if, for example, a bus reset is carried out. If there are many devices on a line, every device would “start up” at the same time and put a load on the bus. With a variable time, the devices can start differently.

„In-Operation“
The “In operation” object is used to send a signal on the bus that the device is “alive”. If activated, an “ON” telegram is sent cyclically.

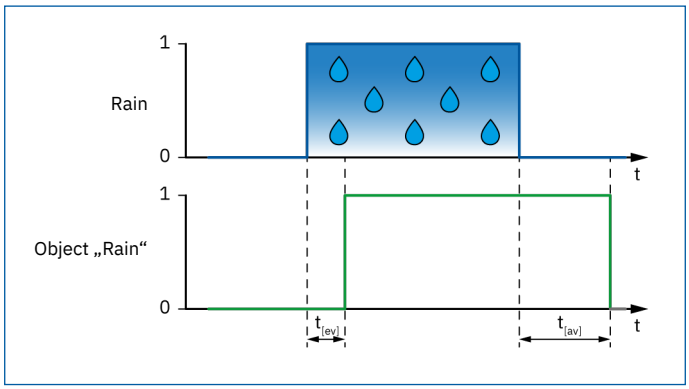
Sensitivity of sensor
If the rain sensor detects rainfall too early or too late in the standard setting, the sensitivity of the sensor can be set with this parameter. The more sensitive the sensor is set, the earlier rainfall is detected.

Send object "Heating"
The heating of the sensor surface switches ON when rain is detected and when the temperature falls below the 3 °C threshold. The temperature-related switch-off is carried out at 7°C.

Delay of message "Rain ON" (advanced function - possible from hardware R1.1)
A delay time can be used to set the "Rain" object to "ON" after the start of precipitation. This can be used to ensure that the rain signal is not output even after a short shower.

Delay of message "Rain OFF" (advanced function - possible from hardware R1.1)
This delay time is used to set the "Rain" object to "OFF" with a delay after the end of the precipitation. This ensures that the end of the precipitation is not signalled even if there is a short break in the rain.

Note: The two parameters "Delay of message 'Rain ON'" and "Delay of message 'Rain OFF'" are only possible as of hardware version R1.1.



$t_{[ev]}$: Delay on message "Rain ON"
$t_{[av]}$: Delay on message "Rain OFF"

Figure 3: Diagram – Delay of the "Rain ON / OFF" object

The following table shows the associated communication objects:

No.	Name / Object function	Length	Usage
0	Rain – Status: Rain ON/OFF	1 Bit	Reports whether rain has been detected
1	In operation – Send status	1 Bit	Sending a cyclic "In operation" telegram
2	Heating – Status: Heating ON/OFF	1 Bit	Indicates whether the sensor surface heating is activated

Table 3: Communication objects – General settings

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5 Index

5.1 List of figures

5.2 List of tables

6 Appendix

6.1 Legal provisions

The devices described above must not be used in conjunction with devices which directly or indirectly serve human, health, or life-safety purposes. Furthermore, the devices described must not be used if their use may cause danger to people, animals, or property.
Do not leave the packaging material carelessly lying around. Plastic foils/ bags etc. can become a dangerous toy for children.

6.2 Disposal

Do not dispose of the old devices in the household waste. The device contains electrical components that must be disposed of as electronic waste. The housing is made of recyclable plastic.

6.3 Assembly

Danger to life from electric current!

The device may only be installed and connected by qualified electricians. Observe the country-specific regulations and the applicable KNX guidelines

The devices are approved for operation in the European Union and in the United Kingdom. The products are respectively marked with the CE and UKCA symbols.

Use in the USA and Canada is prohibited!

6.4 History

V1.0	First version of the manual	DB V1.1 09/2012
V1.1	Revision, new languages (DB)	DB V1.1 08/2024