
State 09/2012

Technical Manual



MDT Rain sensor

SCN-RS1R1.01

Further Documents:

Datasheet:

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

Assembly and Operation Instructions:

https://www.mdt.de/EN_Downloads_Instructions.html

1.1. Settings at the ETS-Software

Selection at the product database:

Manufacturer: MDT Technologies

Product family: Weather sensors

Product type: Rain sensor

Medium Type: Twisted Pair (TP)

Product name: SCN-RS1R1.01 Rain sensor

Order number: SCN-RS1R1.01

1.2 Starting Up

After wiring the allocation of the physical address and the parameterization of every channel follow:

- (1) Connect the interface with the bus, e.g. MDT USB interface
- (2) Set bus power up
- (3) Activate the programming mode by closing the reed contact with the provided magnet → red programming LED lights
- (4) Loading of the physical address (red LED goes out, as soon as this process was completed successfully)
- (5) Loading of the application
- (6) Switch the power supply on
- (7) If the device is enabled you can test the requested functions(also possible by using the ETS-Software)

2 Parameterization

The Rain Sensor SCN-RS1R1.01 is used for the detection of rain and send messages if rain was detected. For faster drying after rain and at low temperatures, a heating is integrated below the sensor area. This enables also the detection of two contiguous rain periods.

The following illustration shows the available settings of the rain sensor:

Rain sensor	
Startup timeout	1 s
cyclic send "Operating" telegram	not active
Send object rain	at changes
Sensitivity of rain sensor	high
Info object for heating is active	no sending, possible request

The following chart shows the dynamic range for all parameters:

ETS-Text	Dynamic range [default value]	Comment
Startup timeout	1-60s [1s]	Time between programming and functional start of the device
cyclic send "Operating" telegram	not active , 10min, 30min, 1h, 3h, 6h, 12h, 24h	cyclic sending behavior, if sensor answers at the bus
Send object rain	<ul style="list-style-type: none"> only request at change cyclic at change and cyclic 	Sending behavior for the object rain
sensitivity of rain sensors	<ul style="list-style-type: none"> low high 	defines the sensitivity of the detection threshold
Info object for heating is active	<ul style="list-style-type: none"> no sending, only request send at changes 	sending behavior for the state object, if heating is active at the moment

The rain sensor contains of 5 adjustable parameters:

- Startup timeout**
 The startup timeout defines the time between an application download and the functional start of the.
- cyclic send „Operating“ telegram**
 Via this parameter can be adjusted if an "Operating" telegram shall be sent and the time steps can be defined. The "Operating" telegram indicates at the adjusted cyclic distance if the sensor still answers at the bus. By activation and connecting this telegram, the error detection becomes much easier and helps finding broken devices instantly.

The chart shows the relevant communication object:

Number	Name	Function	Length	Usage
1	Operating	Info	1 Bit	Notification, if sensor answers at the bus

- Send object rain**
 The sending behavior of the object "0 – Rain" can be defined via this parameter. The communication sends a logical "1" as soon as rain was measured and a logical "0" if no rain was measured.

The chart shows the relevant communication object:

Number	Name	Function	Length	Usage
0	Rain	Message Rain Yes/No	1 Bit	Output for detected rain

- **Sensitivity of rain sensor**

If the rain sensor detects rain too early at the default value for the sensitivity (high), this can be adapted via this parameter.

- **Info object for heating is active**

The info object for the heating indicates when the heating is active. Via this parameter can be adjusted, if the object for the heating shall report an active heating or send its state only on request.

The heating is switched on at rain, so if the object “0 – rain” sends a logical “1”, to speed up the drying process. Additional the heating will be switched on, if the temperature falls below 3°C. The temperature related cutoff is at 7°C. So, there is a hysteresis of 4°C.

The chart shows the relevant communication object:

Number	Name	Function	Length	Usage
2	Heating	Message Heating On/Off	1 Bit	Notification, if the heating is active