DATA SHEET

rH- S4Tes

Battery four-channel transmitter with external sensor for
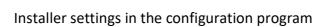temperature measurement
of the F&Home RADIO system.

The rH-S4Tes module has wires to connect four momentary and potential-free contacts (buttons). The module sends information about closing or opening of the contacts to the server of F&Home RADIO system. The module has an ambient temperature sensor (built-in). Communication is done via radio. The rH-S4Tes module is particularly suited for controlling lighting, roller blinds or light scenes and is used in heating systems. In areas where 230 V power supply is available it is recommended to use a transmitter powered from the mains, for example rH-S4Tes AC.

The module is represented in configurator by an object, which consist of four binary inputs and four binary outputs (bistate), separate for each physical input. Closing or opening of the contact causes a change in logic state of the corresponding output.
Additionally the module has an output "Measured temperature", which displays the current ambient temperature.

Inputs		
Figure	Name	Type
	Channel 1, 2, 3, 4	binary

Outputs		
Figure	Name	Type
	Status of contacts 1, 2, 3, 4	binary
	Measured temperature	temperature

Installer settings in the configuration program

Feature name	Description	Range	Unit / Description
Connection monitoring	Sets action in case of loss of connection to the server (information about the modules out of reach).	Standard module	Information on the standard output SX 752
		Alarm module	Information on the alarm output SX 752
		Unmonitored module	No connection correctness control
The delay in signaling a lack of coverage	Sets the delay after which the module is reported that it is beyond the coverage range of the server	1 - 5	
Temperature calibration	Adjusts the measured actual temperature	-50.0, +50.0	0.1°C
Update of the output after the time	Sets the time after which the measured temperature is updated. PLEASE NOTE! Frequent updates shorten battery life.	15-300	second
Contact 1, 2, 3, 4 active, when	Defines the status of contacts on the output for which the status is to be set active, which means logical state 1	Closed	Logical state '1' is generated on the output when the contacts are closed.
		Open	Logical state '1' is generated on the output when the contacts are open.
Maximum activity time (0 - unlimited)	Sets the time after which the output status will be changed to logical state '0' in the absence of a response from the module.	0 - 600	second

Contact active when feature: the system adopted positive logic. This means that the idle state is '0', and the active state (unstable) is '1'. For momentary button (bell button) the stable state is an inactive state - at the output of the object we have logical state '0'. Regardless of the selected *Contact active* option and the actual status of contacts, shortly after the project starts the outputs have the logical state '0'. It takes a minute to synchronize with the module and the object outputs are updated. If you choose the *Contact active, when open* option, which means the contact inputs are permanently open, then on the appropriate output of the object will cyclically appear logical state '1' for the time specified in the *Installer Settings*, then the logical state '0' before syncing. If you choose *Contact active, when closed* option and contact inputs are permanently closed, then the appropriate output object will appear cyclically logical state of '1' for the time specified in the *Installer Settings*, then the logical state '0' before syncing. *Maximum activity time* feature: setting the parameter to '0' disables the auto-zeroing of the output. This is usually the case when the contact is treated as a bistable (for example as a limit switch). The maximum activity time has been introduced so that the logic state '1' did not last non-stop, when communication with the module is lost (except in the case where a user himself forced such a situation in *Installer Settings*).

If you connect any element to the binary input of the object, then the signal from this element will be summed up with the signal from physical contact and shared at the corresponding logic output.

output   input   output

= summed up information about the state of the contacts number 1 from both transmitters

The system also allows for connection of signals of different types, performing for this purpose an automatic conversion before summing up.

A simple way to display the temperature measured by the module is to create a panel with the icon 706: Temperature display.

Technical specifications table	
Battery	CR123 (lithium) or SL861/S
Battery operating time	12 - 36 months (depending on the battery)
Supply voltage range	2.5 - 3.5 V
Radio link (operation frequency)	868 MHz
Signal strength	9 mW
Transmission type	One-way with confirmation
Coding	Yes
Range in open space	100 m
Period of logging in the system	Up to 5 minutes
Inputs	4 x potential-free contact
Contact voltage	3 V
Contact current	250 uA
Temperature measuring range	$-30^{O}C$ to $+65^{O}C$
Temperature measuring resolution	$0.1^{O}C$
Temperature measuring accuracy	$+/- 0.5^{O}C$
Storing temperature	$-20^{O}C$ to $+50^{O}C$
Working temperature	$+10^{O}C$, $+40^{O}C$ for CR123A battery, $-30^{O}C$, $+40^{O}C$ for SL861/S battery
Humidity	<=85% (without condensation and aggressive gases)
Dimensions	51 x 37 x 20 mm
Ingress protection	IP20
Operating position	any
Enclosure type	in-wall
Battery monitoring	yes

- Insert the batteries according to shown polarity and mount the housing of the module.
- Connect the rH-S4Tes wires to terminals of the button in accordance to the above scheme.
- If there are uninsulated wires in the installation box, then disconnect the power supply circuit, make sure using the appropriate device if there is no voltage on the supply lines and perform adequate insulation.
- Screw down the button and place the module in an installation box.
- Place the antenna of the module parallel to one of the antennas of the server and move it away as far as possible from other wires.
- Register the module in the system.

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Registration in the system
1.   Select the registration method in the configurator.
2.   Press and hold the left key of the button (close the circuit by closing the wires S1 and C).
3.   After 5 seconds the module will register itself in the system or the program will report an error in case of failure.
4.   The module will be registered in the system as rH-S4T. Letters "es" at the end mean external temperature sensor and have no effect on the identification in the configurator.

WARNING

The connection method is specified in this manual. Any activities related to installation, connection and regulation should be carried out by persons with electrical qualifications who are familiar with this manual and features of the module. Manner of transport, storing and using the module affects its proper operation. Installation of the module is not recommended in the following cases: missing components, damage to the module or its deformation. In case of malfunction the module should be returned to the manufacturer.