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DATA SHEET

rH- R3S3

Three-channel relay with three inputs
of the F&Home RADIO system.

The rH-R3S3 is a combination of three relays and three contact inputs. The module sends information about opening or closing of the contacts to the system and controls the relays that can activate any electrical circuits. Communication with the server is done via radio. The module has three physical inputs for connecting three momentary potential-free contacts and three inputs of the relay. The load of power input can be resistive, inductive and capacitive, both in direct and alternating current circuits. Pressing the button on the housing for less than 1 second switch on or switch off all relays simultaneously.

AUTONOMOUS MODE

If the module is disconnected from the server, it goes into autonomous mode. Short press of the button connected to contact 1, 2 or 3 switches on or off the first, second or third relay respectively.

Conditions for autonomous mode to activate:

1. Correct connection of S1 contact with the button;
2. Option *Offline: autonomous mode* is enabled in the *Installer settings.*

The rH-R3S3 module is represented by an object, which consist of three binary inputs and three binary (bistate) outputs of the relay, separate for each physical input. The input of the object is used for controlling the relay channels, and the information about operating state of the relay is feed on the output. The element has also three binary (bistate) inputs and three binary outputs, separate for each physical input. Closing or opening the contact causes the logical state to change at the output. The object has two modes - in second one it acts similarly to the first one as a two-channel relay with two-channel transmitter (mode for compatibility with the withdrawn rH-R2S2 DIN module).

Inputs		
Figure	Name	Type
	Control of relay 1, 2, 3	binary
	Channel 1, 2, 3	Binary

Outputs		
Figure	Name	Type
	Confirmed status of relay 1, 2, 3	binary
	Channel 1, 2, 3	binary

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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	
Relay 1, 2, 3 mode	Sets the operating mode of the relay in the standby mode	Normally open (NO)	Applying logical state '1' on the input causes closing of the contact and applying logical state '0' its opening
		Normally closed (NC)	Applying logic state '1' on the input causes opening of the contact and applying logical state '0' its closing
Relay 1, 2, 3 offline: autonomous mode	Sets the behavior of the module when there is no connected to the server	Enabled	When there is no connection to the server, the module operates as a normal bistable relay.
		Disabled	When there is no connection to the server, the module is inactive.
Channel 1, 2, 3 offline: enable for [minutes] after switching the power on	Sets the operation time of the module when there is no connection to the server	0-240	minute
Contact 1, 2, 3 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*).

The simplest use of the object is the use of D-type flip-flop (bistable relay) and control of the relay outputs (executive relays) using the buttons connected to the inputs of the relay. This connection method is correct if we want to use autonomous mode.

Technical specifications table	
Rated supply voltage	230V AC
Supply voltage tolerance	-20%, +10%
Rated power consumption	<1 W
Radio link (operating frequency)	868 MHz
Signal strength	9 mW
Transmission type	two-way
Coding	yes
Range in open space	100 m
Period of logging in the system	30 seconds
Relay number	3
Relay contact current	4 A / 230 V AC
Input triggered with level L or N	two-contact
Input current	<250 uA
Storing temperature	-20^{O}C to +50^{O}C
Working temperature	+10^{O}C, +45^{O}C
Humidity	<=85% (without condensation and aggressive gases)
Dimensions	52.5 x 90 x 65 mm
Ingress protection	IP20
Operating position	any
Enclosure type	on a DIN rail
Built-in security	against overheating
Autonomous mode	yes

- Disconnect the power supply circuit; make sure using the appropriate device if there is no voltage on the supply lines.
- Mount the module on a DIN rail in the switchboard.
- Connect the wires according to the diagram above.
- Do not apply voltage to the control inputs!
- 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.

Registration in the system
1. Select the registration method in the configurator.
2. Press and hold button on the housing.
3. After 5 seconds the module will register itself in the system or the program will report an error in case of failure.

Module operation indication (green LED)	
Mode	Description
Online (registered)	LED lights, dims during radio transmission
Registration	LED pulsating quickly
Offline	LED flashes every half a second - a module has lost the radio connection to the server or is not registered
Not programmed	LED flashes: lights, dims for 100 ms every 1 second - the module should be returned to the

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.