
domogik-plugin-rfxcom

Release 0.1

February 18, 2016

Plugin rfxcom

1.1 Purpose

The rfxcom plugin handle the following Rfxcom hardware devices:

- RFXtrx433 USB 433.92MHz Transceiver



- RFXLAN Transceiver 433.92 MHz with xPL interface



You will get more informations on these devices on the [official RFXCOM website](#)

1.2 Dependencies

There is no dependency.

1.3 Install the RFXCOM usb device

1.3.1 Create an udev rule

You may create a udev rule for this device. You can find sample udev rules in the **udev/** folder of this plugin.

You just need to copy the choosen sample file in the folder **/etc/udev/rules.d/** and unplug/plug the device.

1.4 Install the RFXCOM xPL LAN device

Set up your RFXCOM lan with the xPL firmware (check the RFXCOM LAN module documentation). Plug your RFXCOM lan on the same network as your Domogik server.

1.5 Plugin configuration

Here is the global configuration:

Key	Type	Description
device	string	For the usb model, the path to the RFXCOM serial device. Example : <i>/dev/rfxcom</i>

1.6 Create the devices

If your device is already listed in the products list, select it. Some fields will be automatically prefilled.

1.7 How to get a device address ?

All the devices detected by the plugin are listed in Domogik administration. To see them, make sure that the plugin is started, wait a few minutes to let the plugin see all sensors, activate manually the open/close sensors, switch on or off the lights, ... Then, you can look for detected devices in the *Domogik devices* part.

1.8 How to set a device to an address ?

Depending of the device (brand, model), there are various way to set up the hardware device address. The device documentation may help you to find how to do.

Here are the steps to set an address to a device, for example a Switch plug :

- create the related device in Domogik and set it some address, for example : *address = 0x0038abfc, unit = 11*.
- put the hardware device in learning mode (thanks to the device documentation)
- in Domogik administration, on the device details, click on the “On” button
- the device light should blink to tell it is ok

1.9 Start the plugin

You can now start the plugin (start button) and use the created devices.

1.10 Set up your widgets on the user interface

You can now place the widgets of your devices features on the user interface.

Temperature and humidity devices

2.1 Overview

These devices are able to send the temperature and the humidity. There are many models of them. You can find the list of all the compliant models in the products list of the user interface.



2.2 Features

These devices have several features:

- temperature
- humidity

- battery level
- RSSI (signal strength)

2.3 Configuration

When you create such a device, you will have to set this parameter:

Key	Type	Description
address	string	The device address. Example: th9 0xFFFF

You can find the value of *address* for your device in the list of the *detected devices* in Domogik administration.

Temperature devices

3.1 Overview

These devices are able to send the temperature. There are many models of them. You can find the list of all the compliant models in the products list of the user interface.



3.2 Features

These devices have several features:

- temperature
- battery level
- RSSI (signal strength)

3.3 Configuration

When you create such a device, you will have to set this parameter:

Key	Type	Description
address	string	The device address. Example: temp1 0xFFFF

You can find the value of *address* for your device in the list of the *detected devices* in Domogik administration.

Switch devices : AC, HomeEasy EU, ANSLUT

4.1 Overview

These devices are able to switch on and off some appliances. There are many models in various brands.

These devices can have several addresses set.



4.2 Features

These devices are not dimmer devices. They have only one feature :

- switch

4.3 Configuration

When you create such a device, you will have to set the parameters for both the command and the sensor part. For a common usage, you will set the same values for the *xPL command parameters* and the *xPL stat parameters*.

4.3.1 xPL command parameters

Key	Type	Description
address	string	The device address (0x00000000 to 0x03ffffff). Example: 0x0038abfe
unit	integer	The device unit (1..16). Example: 3

4.3.2 xPL stat parameters

Key	Type	Description
address	string	The device address (0x00000000 to 0x03ffffff). Example: 0x0038abfe
unit	integer	The device unit (1..16). Example: 3

For both address and unit, you can use multiple values. This can be needed if you are controlling the light with several commands :

- a switch
- a remote control
- an open/close sensor

If you don't set all the possible addresses, the device sensor status may not be updated on Domogik side!

Here is an example for the **0x0011223344 : 10** and **0x0044332211 : 8** :

- address = 0x0011223344|0x0044332211
- unit = 10|8

4.4 Configure the hardware device

You can set up the *address* and *unit* values for this kind of hardware devices. Here are the instructions for several models. Before doing this, you will have to create a Domogik device with the values you can freely choose for both *address* and *unit* parameters.

4.4.1 DI.O PDR-2300

Delete the learned addresses

Be careful, this will delete **all** the addresses learned by the hardware device!

- Plug the module.
- Call this command before the led stop blinking (there is currently no way to do this from Domogik administration):

```
dmg_send xpl-cmnd ac.basic "address=0x1,unit=1,command=group_off"
```

- The plugged light should blink twice for acknowledgment.

Learn a new address

- Plug the module.
- Do this action before the led stop blinking : in Domogik administration, on your device details, for the command part, click on the **On** button of the switch command.
- The plugged light should blink twice for acknowledgment.

4.4.2 Chacon 54561, 54565, 54566, 54567, 54581, 54582, 54585, 54585

Delete the learned addresses

- Plug the module. Press the button until the led blinks (about 6 seconds).
- Press the button one more time.
- The plugged light should blink twice for acknowledgment.

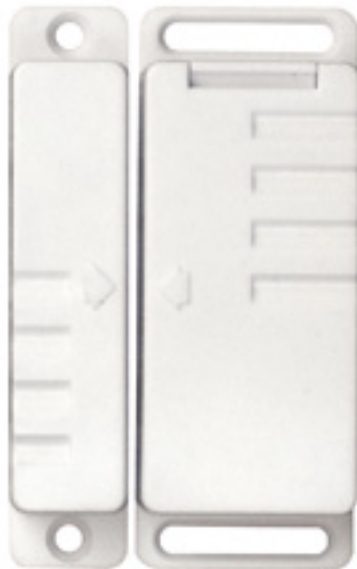
Learn a new address

- Plug the module.
- Press the button.
- Do this action before the led stop blinking : in Domogik administration, on your device details, for the command part, click on the **On** button of the switch command.
- The plugged light should blink twice for acknowledgment.

Doors and windows open/close sensors : Chacon, ...

5.1 Overview

These devices are open sensors and are able to detect when a door or a window (or whatever else) is opened and closed.



5.2 Features

These devices acts as switch commands. If they are open they send an *on* event. If they are closed, they send an *off* event. They have the following features :

- Open/close sensor
- RSSI (signal strength)

Sadly there is no way to get the battery level information.

5.3 Configuration

When you create such a device, you will have to set these parameters:

Key	Type	Description
address	string	The device address (0x00000000 to 0x03ffffff). Example: 0x0038abfe
unit	integer	The device unit (1..16). Example: 3

5.4 Configure the hardware device

5.4.1 Chacon 54581

You can't set up the *address* and *unit* on the hardware.

You can find the value of both *address* and *unit* for your device in the list of the *detected devices* in Domogik administration.

Smoke sensor devices

6.1 Overview

These devices will raise an alarm when some smoke is detected or when the *test button* is pressed.



6.2 Features

These devices have one feature:

- raising an alarm

6.3 Configuration

When you create such a device, you will have to set this parameter:

Key	Type	Description
device	string	The device address. Example: temp1 0xFFFFF

You can find the value of *device* for your device in the list of the *detected devices* in Domogik administration after having pushed the **Test** button on the smoke sensor.

Development informations

Developments are based on 2 documents:

- RFXtrx SDK.pdf: the SDF for the usb model. It describes all handled hardware and how to use them with the rfxcom device. This file can be ask to RFXCOM support.
- RFXCOM implementation xPL.pdf: the specification of the used xPL messages for the lan model. To be compliant, we used these messages also for the usb model. This file is available on the official website.

7.1 Timeout on sensors

7.1.1 type 50 - temperature sensors

The timeout is set to 10 minutes. Most of the sensors send data each minute, but it may happen that some data are lost from time to time, so we choose to set the timeout to 10 minutes to allow several errors.

7.1.2 type 52 - temperature and humidity sensors

The timeout is set to 10 minutes. Most of the sensors send data each minute, but it may happen that some data are lost from time to time, so we choose to set the timeout to 10 minutes to allow several errors.

7.2 How to disable processing on some messages during development ?

In the file `lib/rfxcom.py`, you can edit the following list :

```
RESTRICT_TO_TYPE = [11]
```

This will for example, restrict all messages processed to type 11 (and also system types) and will avoid too much spam in the logs due to other sensors.

Don't forget to empty it after your upgrades!

Tests summary

Some automated tests are used to validate this plugin. They use some fake serial devices.

Here is a summary of the implemented tests and also of the features which have been tested with the RFXCOM device and some real devices.

Feature	Automated tests	Tests with real devices
type 11 - switch plug	yes	yes (fritz, Chacon, DIO)
type 11 - open close sensor	yes	yes (fritz, Chacon open/close sensor)
type 50 - temperature	yes	yes (fritz, Lacrosse)
type 52 - temperature and humidity	yes	yes (fritz, Oregon device)

Changelog

9.1 1.68.4

- New datatype : DT_Battery. It is used for all Battery sensors now (previously : DT_Scaling).

9.2 1.68.3

- Add support for KD-101 smoke sensors (Chacon, ...). No battery support :(
- Add 'nbz-rfxcomrx' as compliant xPL client (this is the xpl-perl library)
- Doc upgrade for open close sensors

9.3 1.68.2

- New feature : lighting 2 (type 11) : AC, HomeEasy EU, ANSLUT. AC is the protocol used by different brands with units having a learning mode button: KlikAanKlikUit, NEXA, CHACON, HomeEasy UK.
 - Switches
 - Open/close windows and doors sensors
- Upgrade devices detection to be Domogik 0.4.1 compliant.

9.4 1.68.1

- New feature : temperature sensors (type 50)

9.5 1.68.0

- Plugin reboot for Domogik 0.4
- The second number of the plugin release will now be the compliant firmware
- Only one feature in the plugin currently : temperature and hygro sensors (type 52)

9.6 0.1

- Plugin creation