# Installation manual

# RFGSM-220M




**Congratulations on purchasing your multifunction door communicator RFGSM-220M, an element of the RF Control wireless system.**

**Made in Czech Republic**

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**Before you begin:**
The instruction manual provides information on installing and operating the device. The instruction manual is always a part of the supply.
Only employees with the necessary qualification may perform installation and connection while upholding all valid regulations, who have become thoroughly familiar with this manual and device function. Problem-free function of the device also depends on the way it was shipped, stored and handled. If you notice any signs of damage, deformation, malfunction or a missing part, do not install this product and return it to the point of sale.
At the end of its service life, the product and its parts must be treated as electronic waste.
Before starting the installation, make sure that no wires and connected parts or terminals are under voltage. When assembling and performing maintenance, you must uphold safety regulations, standards, directives and special provisions for working with electrical equipment.

## 1. Main features / characteristics

- The multi-function GSM communicator is used for remote switching of heating, lights, gate, garage door, etc.
- GSM communicator can be used in several ways, which can be combined:
  a) control by telephone, where a sent SMS or ringing through once switches an internal relay.
  b) reacts to 1 of 4 potential free wired inputs (detectors, switches), where it is possible to set a consequent reaction.
  c) offers the option of ascertaining the status of units iNELS RF Control (ON/OFF, temperature).
  d) control by telephone, where a sent SMS or ringing through once transmits an RF command to the switching unit within range, which then switches something (e.g. heating).
  e) security function (switching on the ALARM) in combination with wireless detectors OASIS, where activation / deactivation takes place by ringing through once or by key alarm.
- The three-module design of the unit into a switchboard enables connection of a switched load 2x 8 A (2x 2000 W).
- Settings are performed by SW Connect 1 via mini USB connector.
- Li-Ion battery for 30 minute function backup.
- The GSM communicator is powered in the range 11-30V DC.
- The package includes an internal antenna AN-I, in case of locating the communicator in a metal switchboard, you can use the external antenna AN-E for better signal reception.
- Range up to 200 m (in open space), if the signal is insufficient between the controller and unit, use the signal repeater RFRP-20 or protocol component RFIO$^2$ that support this feature.
- Communication frequency with bidirectional protocol iNELS RF Control.
- Package includes:

  2x internal antenna AN-I

  mini USB connector

  SW Connect 1

## 2. Technical parameters

| | |
|---|---|
| Power | |
| Supply voltage: | 11-30V DC; backup power Li-Ion battery/ wire/ max. 10 m |
| Maximum power: | at rest 1W/ charging 18 W max. |
| Current consumption: | 90 mA AC1 /12 V DC |
| Consumption during communication: | max. 1.5 A at 12 V DC |
| Working band of GSM module: | 850/900/1800/1900 MHz |
| Transmitter output power: | 2 W for GSM 900, 1 W for GSM 1800 |
| Inputs IN1, IN2, IN3, IN4 | |
| Control voltage: | AC 12 – 230 V or DC 12 – 230 V (separated by optocoupler) |
| Control input power: | AC 0.025 VA / DC 0.1 W |
| Length of control impulse: | min. 50 ms / max. unlimited |
| Inputs RF: | unidirectionally / bidirectionally addressed message<br>866 MHz, 868 MHz, 916 MHz |
| Outputs | |
| Number of contacts: | 2x switching ($AgSnO_2$) |
| Nominal current: | 8 A / AC1 |
| Switching capacity: | 2500 VA, 240 W |
| Min. switching capacity DC: | 500 mW |
| Mechanical service life (AC1): | $1 \times 10^7$ |
| Electrical service life: | $1 \times 10^5$ |
| Outputs RF: | unidirectionally addressed message<br>866 MHz, 868 MHz, 916 MHz |
| Output for antenna: | SMA connector* |
| Further data | |
| PC operating system: | MS Windows XP and higher |
| RF module range in open space: | up to 150 m |
| Working temperature: | -15 to +50°C |
| Working position: | any |
| Mounting: | DIN rail EN 60715 |
| Protection: | IP 20 from front panel |
| Overvoltage category: | II |
| Pollution degree: | 2 |
| Connecting conductor diameter ($mm^2$): | max. 1 x 2.5; max. 2 x 1.5 / with sleeve max. 1 x 2.5 |
| Dimensions: | 90 x 52 x 65 mm |
| Weight: | 198 g |
| Related standards: | EN 60730-1 |

* Max Tightening Torque for antenna connector is 0.56 Nm.
Due to its service life, there is a 12-month warranty on the internal Li-Ion battery.

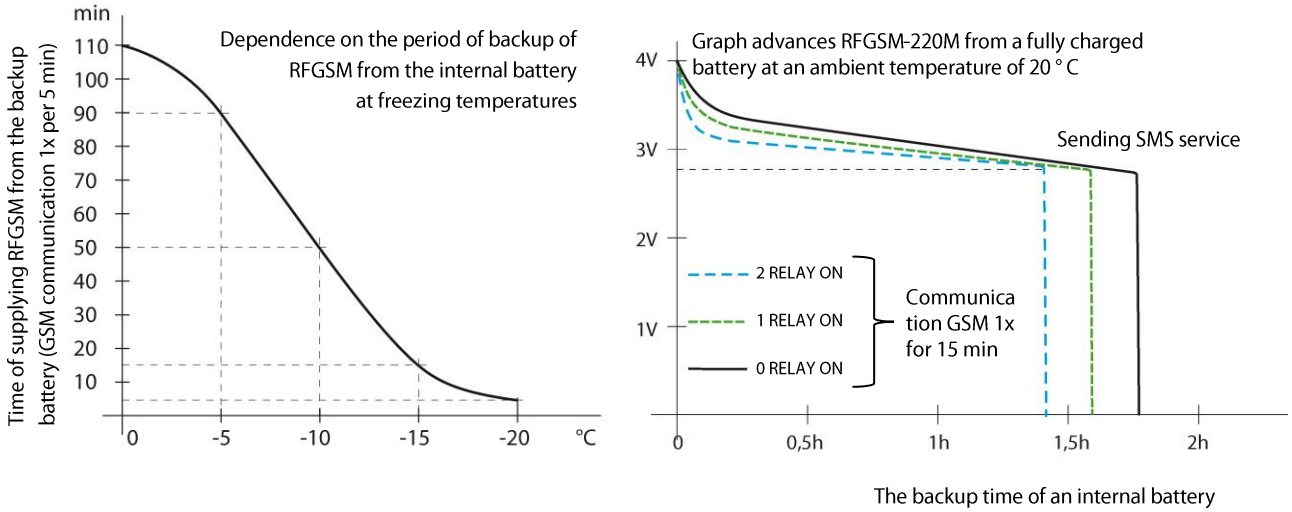



*Image 1.*

# 3. Unit installation

## *3.1 Location and connection of supply*

The RFGSM-220M is designed for mounting in a control panel on a DIN rail EN60715. Keep in mind however that the range of the radio signal as well as the availability of the GSM network depends on the building construction, materials used and the method of positioning other RF units.
Connect to the RFGSM-220M unit outputs those devices that you want to control (ex. contactor, lights, water heater, heating cycle command, etc). Connect to the inputs those devices, to whose status change you want to react or whose status you want to monitor (ex. smoke detectors, etc.).
Attention:
When you instal iNELS RF Control system, you have to keep minimal distance 1 cm between each units.
Between the individual commands must be an interval of at least 1s.

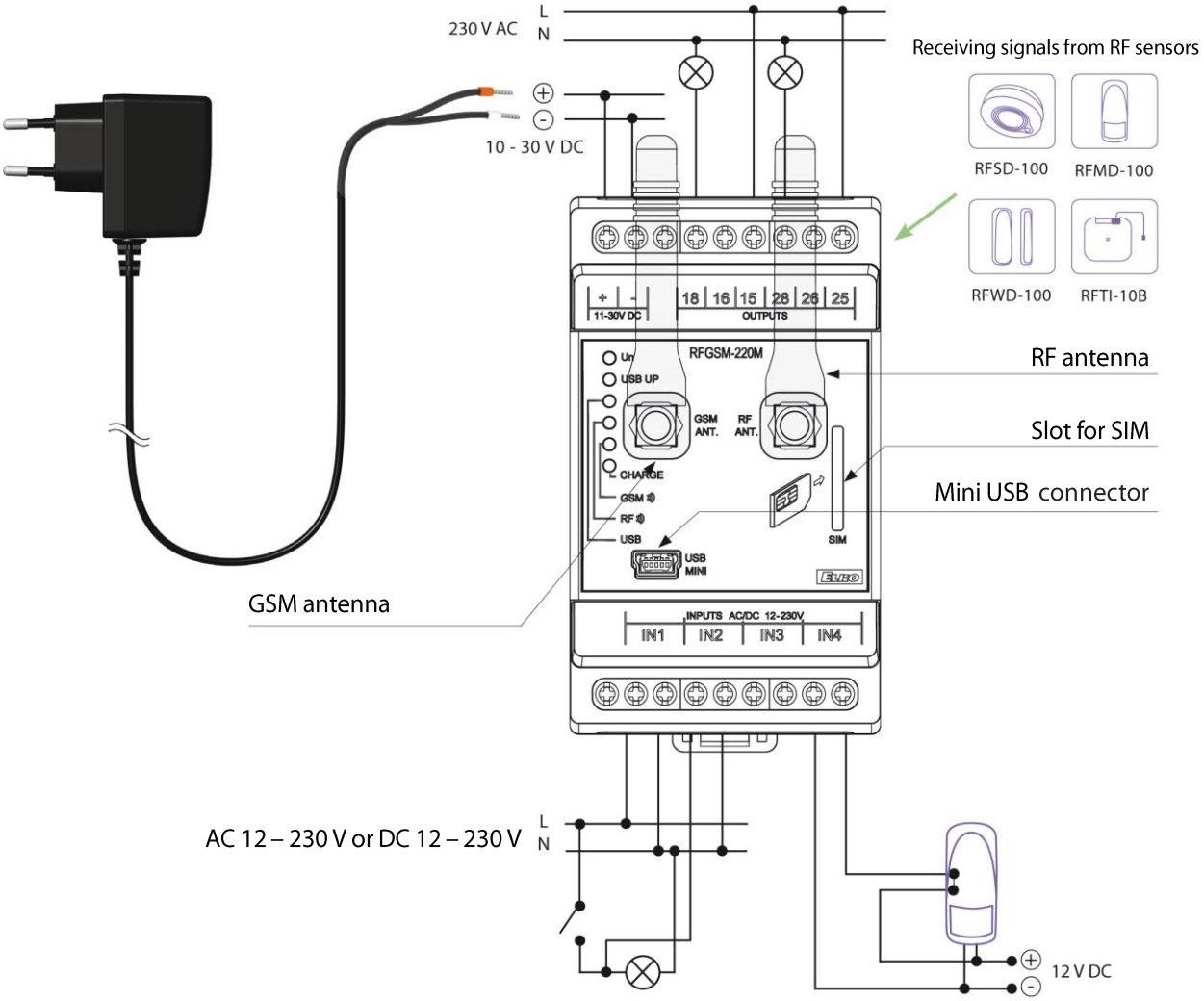



*Image 2: Connecting inputs and outputs RFGSM-220M.*

It is furthermore necessary to screw in the antenna for RF (wireless) communication on the front of the unit and an antenna for connecting to the GSM network (both included in the packaging).
The SIM card is inserted at the front of the unit into the Push-Push type SIM card connector.
*Note: To hinder unauthorized handling the SIM card, the connector is slightly sunken into the unit cover, and it will probably be necessary to use a narrow, non-conducting object to slide in the SIM card. Similarly when removing, it is necessary to gently press the SIM card with a narrow, non-conducting object to release it. The SIM card slides out a bit and can be removed.*

The used SIM card cannot be allowed use of a PIN, or the PIN may be set to the value 1234, ex. in a different mobile phone.
After performing these steps, you can connect the unit to the power supply.
The RFGSM-220M can be powered via the "+" and "-" supply terminals on the top of the unit. Note the polarity: orange crimping sleeve "+", white crimping sleeve.

*Note: After first connecting the unit to the power supply, the backup Li-Ion battery begins to charge, as indicated by LED CHARGE on the front panel. After disconnection or a power failure, the RFGSM-220M unit is still supplied from this backup battery. After the Li-Ion battery drains, unit shutoff control is performed with the possible sending of SMS service messages. After restoring the power supply, the Li-Ion battery begins charging again.*

### *3.2 Front panel indication*

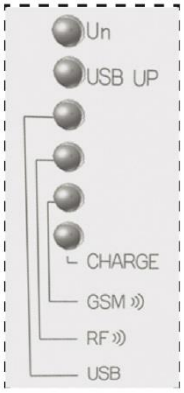



*Image 3: Indicator on front panel.*

On the unit front panel, 6 LEDs indicate unit status RFGSM-220M:

- **Un** – supply voltage indicator,
- **USB UP** – active USB interface indicator,
- **USB** – indicator of connection of the unit to a USB bus,
- **RF** – wireless operation indicator (or slow flashing indicates malfunction in the unit),
- **GSM** – GSM module indicator on connection status to GSM network,

| Status | GSM module function |
|---|---|
| not illuminated | module not running |
| 64 ms On/800 ms Off | module not synchronized with GSM network |
| 64 ms On/2000 ms Off | module is synchronized with GSM network |

- **CHARGE** – backup Li-Ion battery charge indicator.

# 4. Setting the unit

## *4.1 Connecting the unit to the PC*

Setting the RFGSM-220M unit is performed using the configuration SW Connect-1 from the PC. You must connect the unit with the PC using the USB cable with Mini-B connector. The connector for connecting is located on the unit front panel.
After connecting, the unit is detected in the PC as a USB Input device – HID standard device. This can be verified in: **The menu Start – Control panels – Hardware and sound – Device manager** (see Image 4).

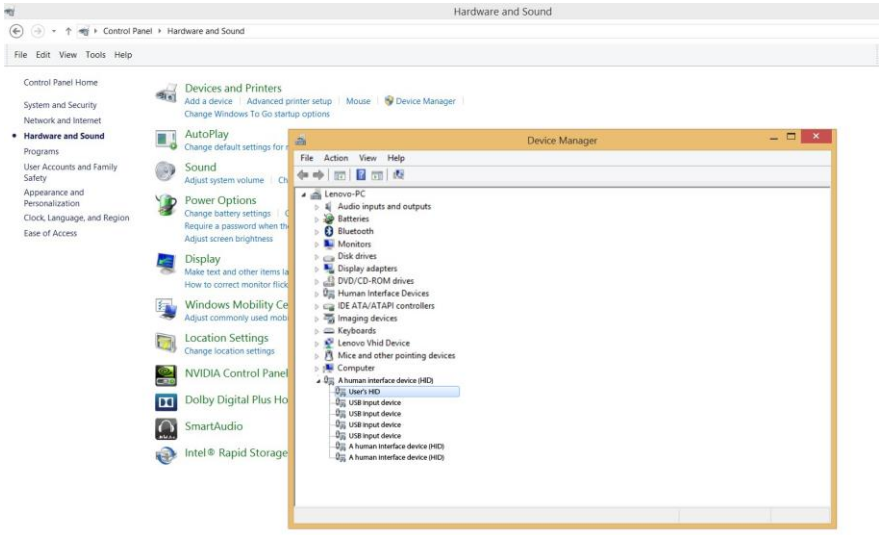



*Image 4: Device manager.*

## *4.2 Configuration SW Connect-1*

The software Connect-1 is a single-file application for configuring the RFGSM-220M unit. It is not necessary to install it, simply run it.
*Note: The initial password for configuring the RFGSM-220M is "**1111**".*

Connect-1 enables in several tabs to perform:

- entering incoming numbers from which receiving SMS messages will be permitted, or incoming calls (ringing through) assigning numbers to priority groups
- entering outgoing numbers, to which sending SMS messages or creating calls (ringing through) will be permitted. These numbers also automatically have the rights of incoming numbers for sending commands in the form of SMS messages, or ringing through the number of RFGSM-220M; assigning numbers to priority groups
- entering service numbers selected from outgoing numbers and selection of service functions to be used
- entering names for devices connected to contacts of output relays of the RFGSM-220M unit, entering commands, by which it will be possible to control the outputs
- entering names of inputs of the RFGSM-220M unit, entering reactions to changes in these inputs and entering telephone numbers, which will be informed about changes
- entering RF actuators, entering text commands in SMS messages, by which it will be possible to control actuators via the RFGSM-220M
- entering RF inputs, entering reactions to changes in these inputs and entering telephone numbers, which will be informed about changes
- entering actions on outputs/RF outputs upon changes in inputs/RF inputs

- entering an inquiry sample regarding the status of inputs and outputs, and selection of inputs and outputs for reporting the status via SMS

*Note: For the commands sent via SMS from a mobile phone to GSM gateway please do not use the predictive text T9.*

- entering actions for performing in the RF Touch wireless control unit

### 4.2.1 Tab "Incoming numbers"

The tab "**Incoming numbers**" is designed for entering telephone numbers, from which it will be permitted to send commands to the RFGSM-220M unit via SMS, or ringing through (see. Image 5). The period for ringing through is set internally at around 6 seconds (2 ring tones audible to the calling party), after which the RFGSM-220M ends the call.

*Note: Indication of ending the call passed to the calling party differs in the GSM networks of varying operators, and may be indicated by a confusing message on unavailability of the party being called.*

Telephone numbers are entered in international format without the initial '**+**' sign, which is already there in the form. Each telephone number must then be assigned to one of three priority groups, thus enabling various rights to telephone numbers for performing actions. It is possible to enter up to 30 telephone numbers.

*Note: Telephone numbers can be added in group form as well, by entering only as many initial numbers as the intended telephone numbers have in common.*

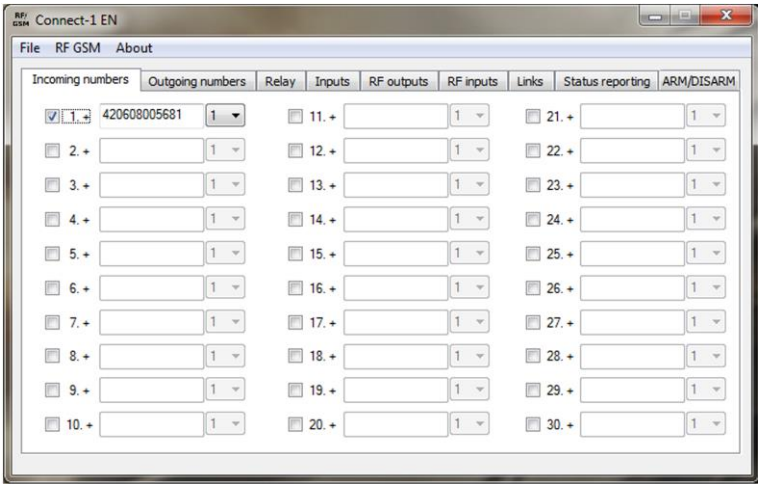



*Image 5: Tab "Outgoing numbers".*

### 4.2.2 Tab "Outgoing numbers"

The tab **"Outgoing numbers"** is determined for entering telephone numbers, which will be permitted to send SMS messages or create calling (ringing through) based on entered reactions to changes in inputs (see Image 6). For the purposes of this device, ringing through means dialing a telephone number, letting it ring for 20 seconds and hanging up. These numbers also have automatic rights of incoming numbers for sending commands to the RFGSM-220M unit in the form of an SMS message, or ringing through, further specified by assigning to priority groups 1 to 3.

Telephone numbers are entered in international format without the initial '+' sign, which is already there in the form. It is possible to enter up to 6 telephone numbers.

In the entered outgoing telephone numbers, you can select service numbers and service functions to them, which will be used to inform on operating details of the RFGSM-220M unit.

Service functions include:

- sending an SMS message (with text entered by the user) upon restoration of the GSM signal after a power failure
- sending an SMS message after restoration of power after full shutdown of the unit
- sending an SMS message upon a drop in battery voltage to a level of 2.7V, when controlled shutdown of the unit occurs
- sending an SMS message when prepaid credit of the telephone number drops below the entered value

To check the credit amount, you must enter the code used by the given operator, (ex. *22# in the Vodafone company network).

*Note: If you want to be informed about a power failure, it is possible to bring supply voltage to one of the inputs IN1 – IN4 and set in the tab "Inputs" SMS message sending regarding a change in status to "Open".*

*Note: The SMS texts entered by the user should be without any diacritics. This limitation is mainly given by the used basic GSM alphabet. This measure prevents possible diacritical errors when sending SMS messages with commands.*

In this tab, it is possible to further name the RFGSM-220M unit, thereby differentiating multiple units and their settings from each other.

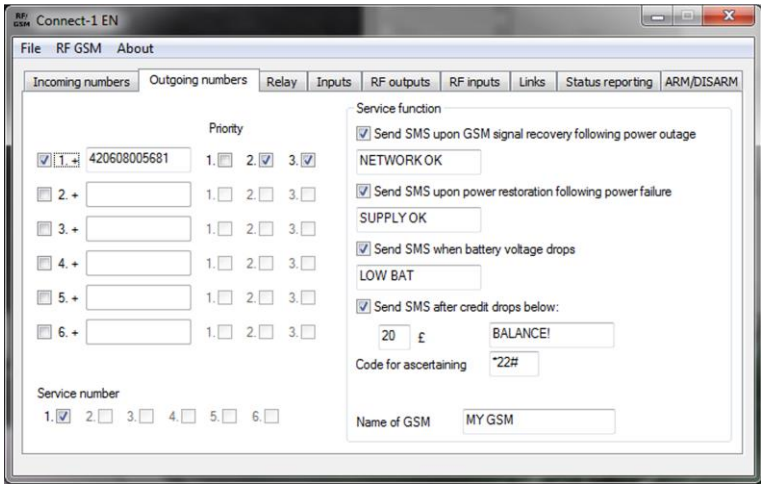



*Image 6: Tab "Outgoing numbers".*

### 4.2.3 Tab "Relay"

This tab is designed for entering commands, by which it will be possible to control outputs of the RFGSM-220M unit. Each of the selected outputs can perform an action for ringing through from the telephone number from the permitted priority group (see Image 7).

Settable actions include:

- ON (closed relay)
- OFF (open relay)
- Impulse relay (switching relay)
- Delay OFF (delayed switching off)
- Delay ON (delayed switching on)

For the Delay OFF and Delay ON functions, you must set the time of delay within a range of 1 s – 59 min 59 s.

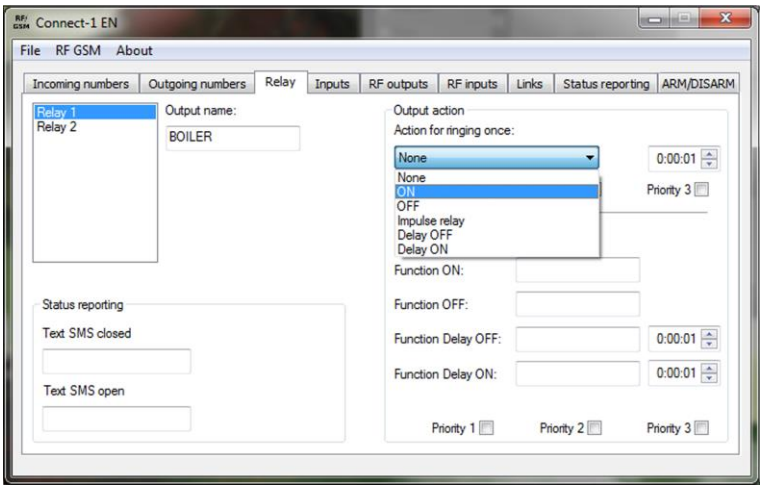



*Image 7:"Relay" – Select action for ringing through to the RFGSM-220M unit.*

Each of the selected outputs can perform an action for an incoming SMS message from the telephone number from the permitted priority group (see Image 9). The user may choose any texts for individual actions and outputs.

Settable actions include:

- ON (closed relay)
- OFF (open relay)
- Delay OFF (delayed switching off)
- Delay ON (delayed switching on)

For the Delay OFF and Delay ON functions, you must set the time of delay within a range of 1 s – 59 min 59 s.

If the reporting of the status of inputs and outputs is used (see chapter 4.2.8), you must also enter in the "Relay" tab the texts to be used during status reporting (see Image 8).

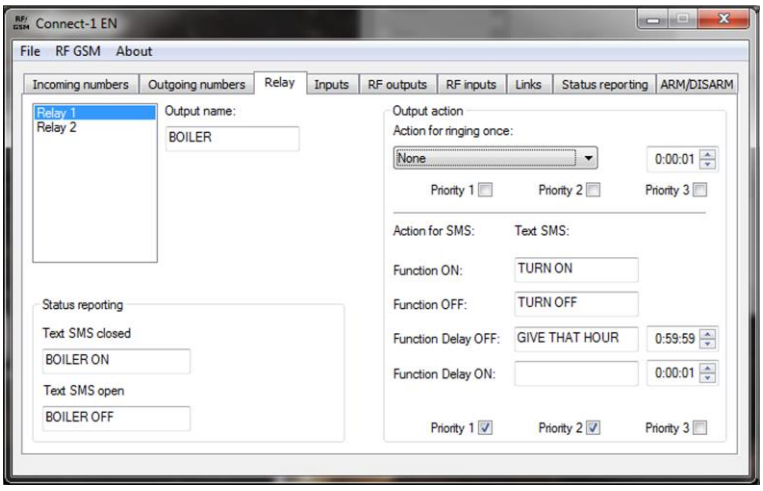



*Image 8: Tab "Relay" – selection of action for a received SMS message, and selection of text for reporting on the status of outputs.*

### 4.2.4 Tab "Inputs"

This tab is designed for entering actions for changes in voltage inputs of the RFGSM-220M units and selection of outgoing telephone numbers that will be informed of changes (see Image 9). Considered changes at inputs are: Opening; Closing; Change in status (i.e. closing and opening). Selected outgoing telephone numbers may be informed either by ringing through (i.e. dialing a telephone number, ringing 20 s and hanging up), or via SMS message with entered text. Each of the inputs may be named according to its actual use.

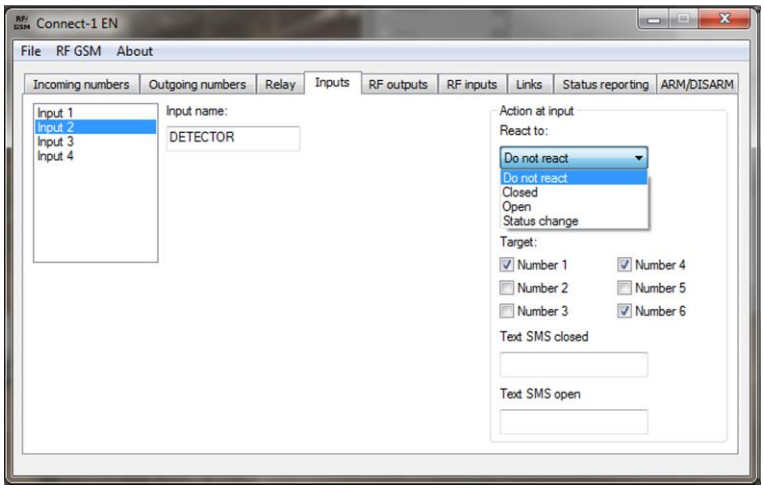



*Image 9: Tab "Inputs" - selection of change at the input, based on which SMS messages will be sent.*

### 4.2.5 Tab "RF outputs"

This tab is used for entering commands, by which the RF outputs (RF actuators) of the RF Control system can be controlled, within range of the RFGSM-220M unit.

For each RF actuator, you must enter its type and RF address.

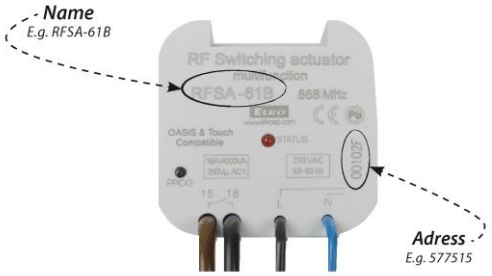



*Image 10: Highlighting type and address of RF actuator.*

Each of the selected outputs can perform an action for ringing through from the telephone number from the permitted priority group (see Image 6).

Settable actions include:

- ON (closing output)
- OFF (opening output)
- Impulse relay (switching output)
- Delay OFF (delayed switching off)
- Delay ON (delayed switching on)

For the Delay OFF and Delay ON functions, you must set the time of delay within a range of 1 s – 59 min 59 s.

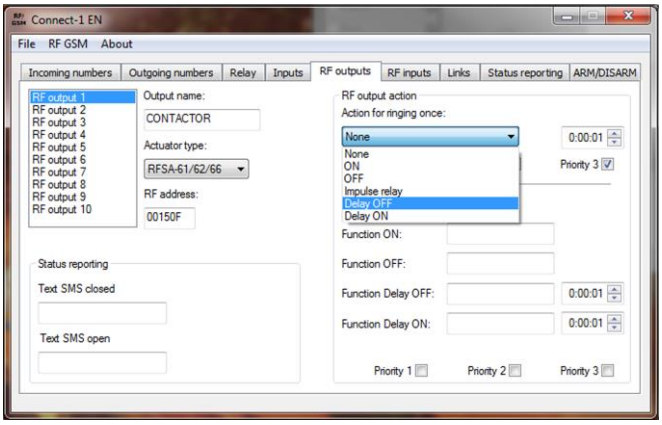



*Image 11:"Relay" – Select action for ringing through to the RFGSM-220M unit.*

Each of the selected outputs can perform an action for an incoming SMS message from the telephone number from the permitted priority group (see Image 12). The user may choose any texts for individual actions and outputs.

Settable actions include:

- ON (closing output)
- OFF (opening output)
- Delay OFF (delayed switching off)
- Delay ON (delayed switching on)

For the Delay OFF and Delay ON functions, you must set the time of delay within a range of 1 s – 59 min 59 s.

If the reporting of the status of inputs and outputs is used (see chapter 4.2.8), it is necessary to enter in the "Relay" tab also the texts, which will be used during status reporting (see Image 12).

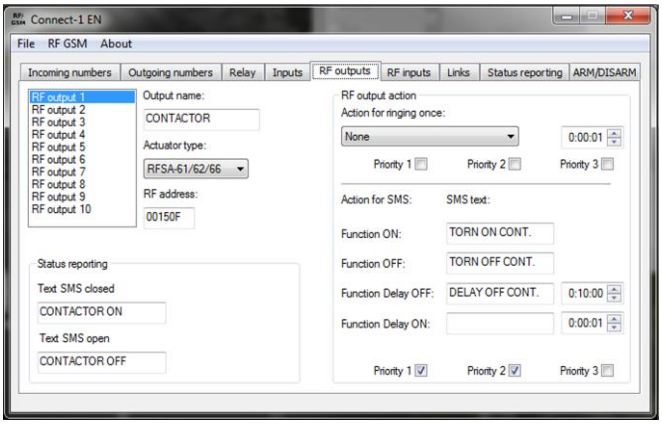



*Image 12: Tab "Relay" – selection of action for a received SMS message, and selection of text for reporting on the status of outputs.*

### 4.2.6 Tab "RF inputs"

This tab is designed for assigning RF inputs to the RFGSM-220M unit, for entering actions for changes indicated by the RF inputs (transmitters) and for selecting outgoing telephone numbers, which will be informed of changes. The assigned RF inputs can be RF detectors, RF key alarm, or temperature sensors (where the RFGSM-220M unit will monitor the indicated temperature).

By selecting the type of RF detector (see Images 13, 14) and entering the password for configuring the RFGSM-220M (see chapter 4.2.11 Pull-down menu RF GSM), the detector search process begins.

*Note: The initial password for configuring the RFGSM-220M is "**1111**".*

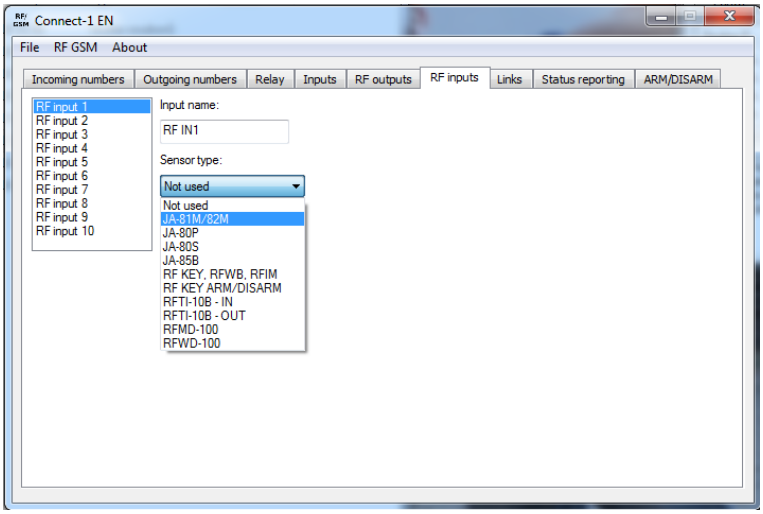



*Image 13: Tab "RF inputs" – selection of type of RF detector assigned to the RFGSM-220M unit.*

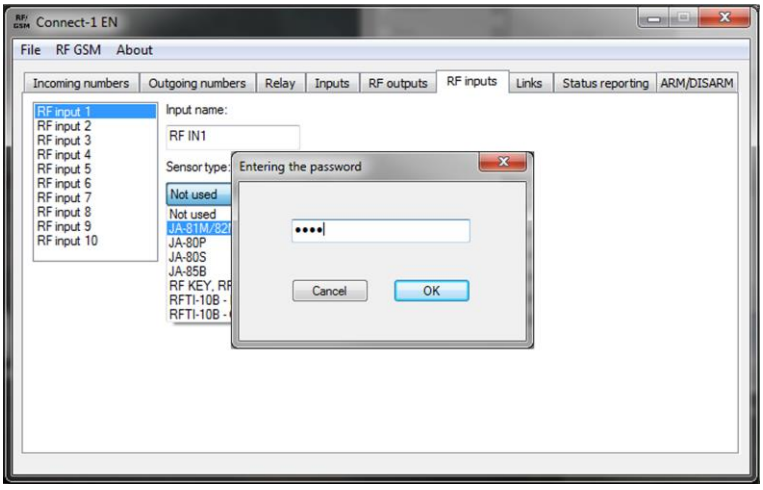



*Image 14: Tab "RF inputs" – entering the password upon assigning the RF detector to the RFGSM-220M unit.*

The detector search process is indicated by the window "Searching for detector" (see Image 15).




*Image 15: Window indicating RF detector search process.*

You must next insert a battery in the RF detector. The transmitting detector is then assigned by its address to the RFGSM-220M unit (see Image 16).

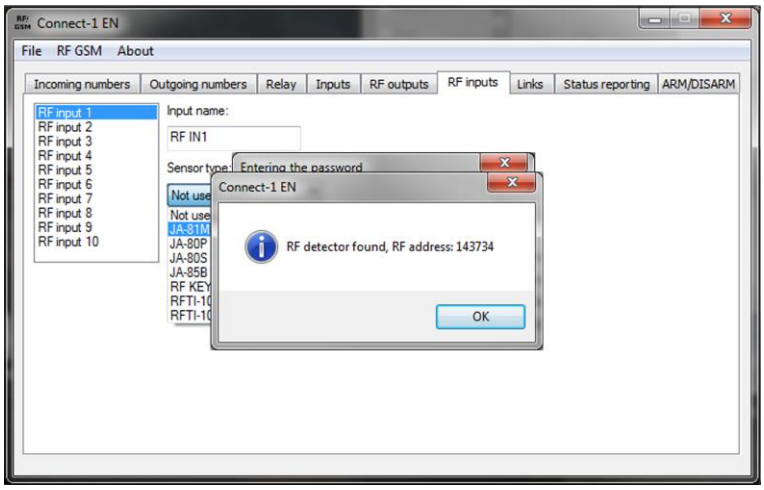



*Image 16: Window indicating discovered RF detector.*

By selecting the RF key alarm (see Image 14) and entering the password for configuring the RFGSM-220M (see chapter 4.2.11 Pull-down menu RF GSM), the RF key alarm search process begins the same as for RF detectors. For discovering the RF key alarm, you must press the button on the left or right half of the key alarm, according to which part will be used for control.

Temperature sensors are entered by selecting the type and use of the sensor (ex. RFTI-10B – OUT represents an external sensor of the RFTI-10B unit), and by entering the address displayed on the sensor box.
The RFMD-100 and RFWD-100 detectors are entered by selecting the type and entering the address on the detector box.




*Image 17: Address and name on sensor box.*

For detectors and RF key alarms, you can set actions caused by changes indicated in these detectors and RF key alarms (see Image 18). Intended changes for detectors and RF key alarms are Opening, Closing and Status change (i.e. closing and opening). Selected outgoing telephone numbers may be informed either by ringing through (i.e. dialing a telephone number, ringing 20 s and hanging up), or via SMS message with entered text.
Each of the inputs may be named according to its actual use.

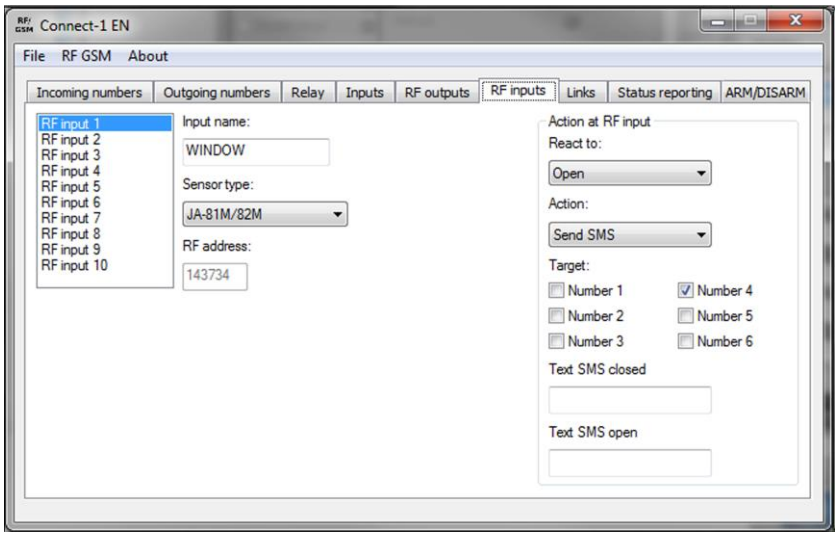



*Image 18: Tab "RF Inputs" - selection of change at the input, based on which SMS messages will be sent.*

### 4.2.7 Tab "Links"

This tab is designed for entering actions at local/RF outputs upon changes at local/RF inputs. For each status change (closing or opening) of each of the local inputs IN1 – IN4 and 10 RF inputs, you can select 3 actions that are performed at local or RF outputs. It is first necessary to perform entering or assigning RF inputs and RF outputs by their address at the tabs "RF outputs" and "RF inputs".

It is possible in this tab to successfully use naming of inputs and outputs, entered at the applicable tabs for either inputs or outputs.

Settable actions include:

- ON (closing output)
- OFF (opening output)
- Impulse relay (switching relay)
- Delay OFF (delayed switching off)
- Delay ON (delayed switching on)

For the Delay OFF and Delay ON functions, you must set the time of delay within a range of 1 s – 59 min 59 s.

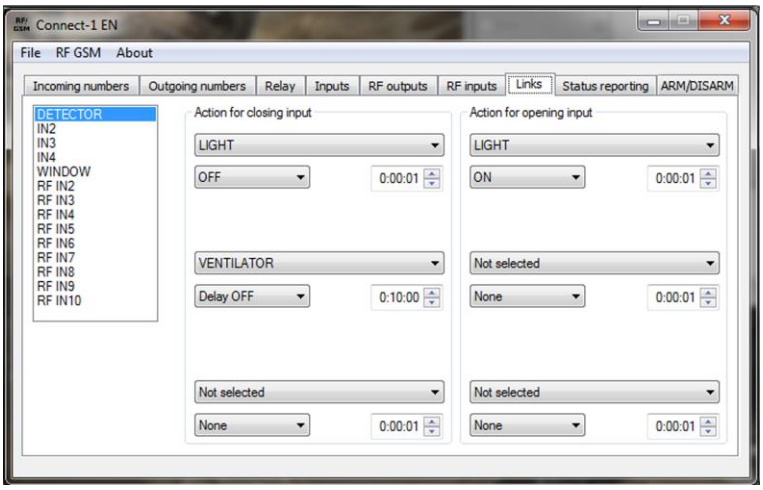



*Image 19: Tab "Links" – selection of actions at local/RF outputs.*

### 4.2.8 Tab "Status reporting"

This tab is designed for entering samples of SMS inquiries regarding the status of inputs and outputs, and selection of the actual inputs and outputs for reporting the status via SMS message. If the RFGSM-220M unit receives an SMS with the entered text, it compiles a report on the status of entered inputs and outputs and sends it back to the user. For each report, it is possible to select up to 5 inputs or outputs (see Image 20).

Maximum number of characters entered in an SMS to report status is 31. The characters over the 31-character limit will be deleted after saving settings.

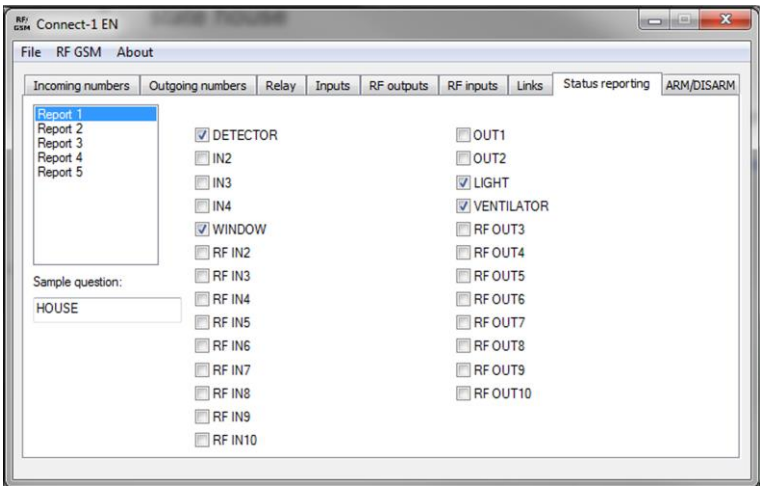



*Image 20: Tab "Reporting status" – entering inquiry sample and selection of inputs and outputs for reporting the status.*

The user's telephone number must be entered in the tab "Outgoing numbers", because it must have the rights of these numbers so that on it, a report can be sent via SMS.

The statuses of outputs are indicated by texts entered on tabs "Relay" and "RF outputs" in the box "Reporting status" (see Image 21).

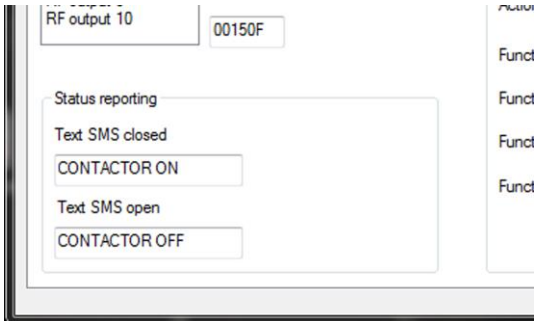



*Image 21: Tab "RF outputs" – entering texts for reporting status.*

Status of inputs are indicated by texts entered for SMS messages on the tabs "Inputs" and "RF inputs" (see Image 22).

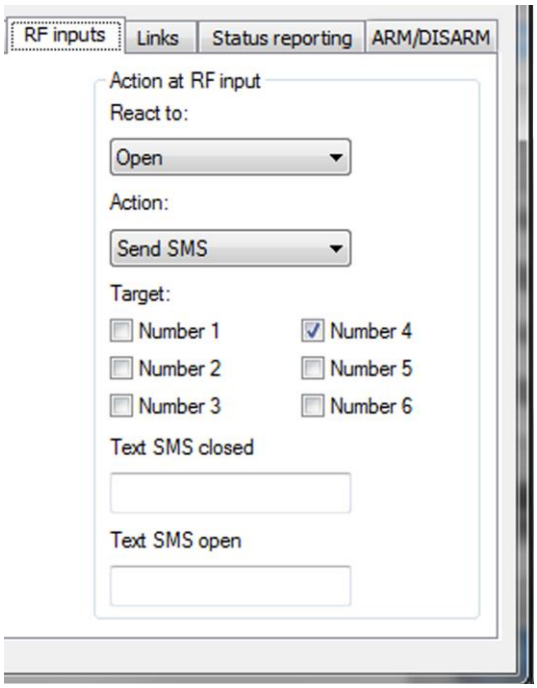



*Image 22: Tab "RF inputs" – entering texts for indicating changes of inputs and for reporting the status of the SMS inquiry.*

The status of temperature sensors is indicated by the name of the input entered in the tab "RF inputs" (see Image 23) and the last recorded temperature in °C.

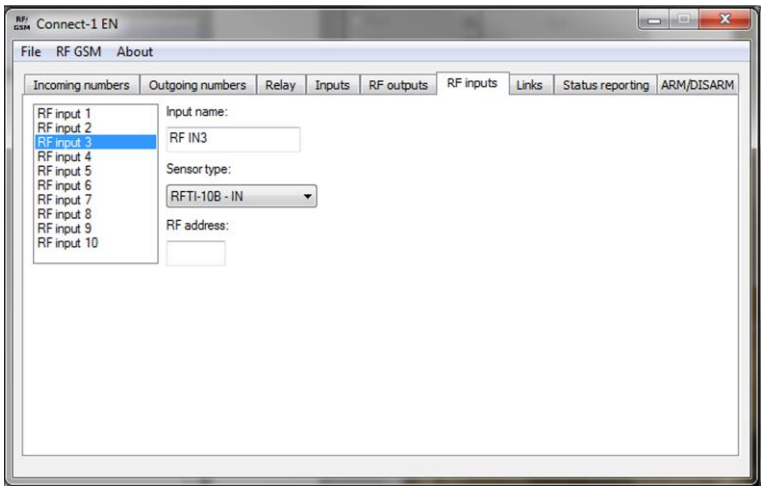
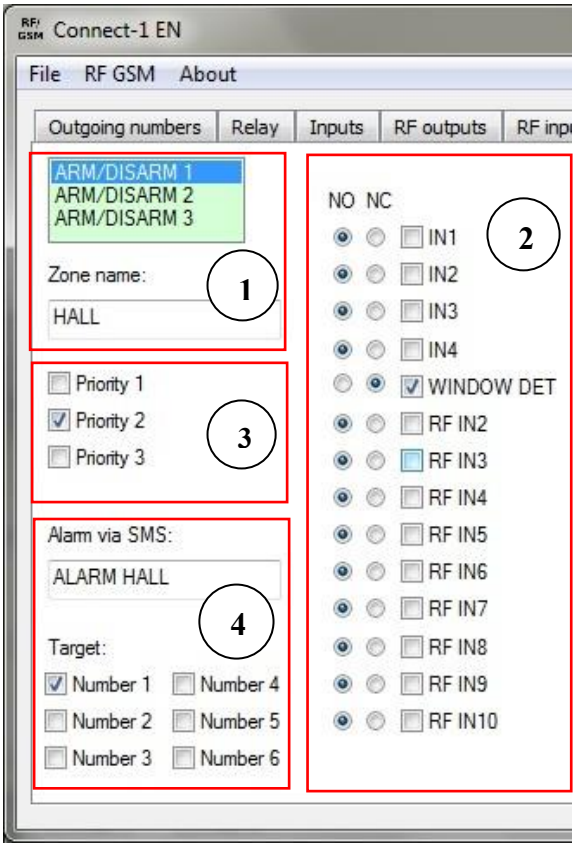



*Image 23: Tab "RF inputs" – entering the temperature sensor.*

### 4.2.9 Tab "ARM/DISARM"




The tab is used for grouping voltage inputs and RF inputs into guarded zones and for setting parameters of such created zones.

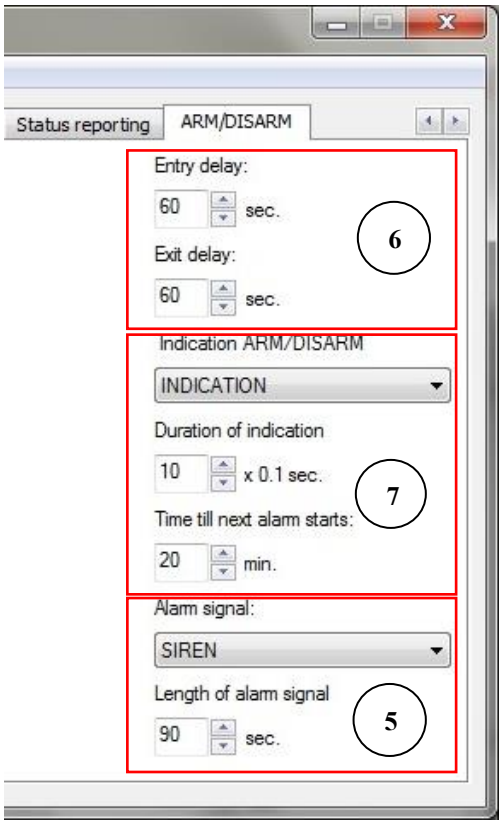
1. The unit RFGSM-220M enables creation of 3 guarded zones.

2. Check marks are used to select inputs that will form one guarded zone. For each input, it is possible to select whether it is a positive or negative (NO, NC) input (see image 24).

3. For each zone it is necessary to select priority groups, which are authorized to perform arming and disarming of the guarded zone. Arming and disarming can be performed using an RF key alarm (from a correctly selected priority group) and/or by ringing through to the RFGSM-220M unit from Incoming calls or Outgoing calls (from a correctly chosen priority group). Button 1 or 3 of the RF key alarm is used for arming, and button 2 or 4 is used for disarming.

4. If a guarded zone is breached, an SMS alarm is sent to chosen telephone numbers from the tab "Outgoing calls".

*Image 24: Tab "ARM/DISARM" – selection of inputs in the guarded zone and entering zone parameters.*




5. The alarm can signal locally as well on the unit output or RF output as selected in the menu Alarm signaling. You can also choose the alarm signaling duration.

6. For each zone you can set the entrance and exit delay, after which the zone does not yet become armed.

7. Receipt of a command for arming or disarming may be indicated by closing one of the outputs of the unit or from the RF outputs. At the selected output, the "disarmed" indication length can be set to tenths of seconds. The "armed" indication length is implicitly chosen as three times the selected length. Besides this, while arming via ringing through, receipt of the command is indicated by ringing back through.

Note: The actual arming of a zone after expiration of the exit delay is not immediate. The battery RF detectors send their status at definite intervals lasting several minutes, thus the alarm may go off also with a delay in the guarded zone that his been breached.

*Image 25: Tab "ARM/DISARM" – selection of inputs for indication of armed or disarmed status.*

***Example of setting guarded zone with a single wireless window detector with control using the RF KEY key alarm and alarm signal call to a single telephone number:***

1. At the tab "Outgoing numbers" enter the telephone number and select the priority group to which the number will belong.




*Image 26: Tab "Outgoing numbers".*

2. On the tab "RF outputs", select the type of sensor and perform assignment of the detector according to the chapter 4.2.6. The detector can be named based on its actual use.

*Note: Settings in the section Event at the input in the right part of the tab stop being available after assigning an input to a guarded zone (see below).*

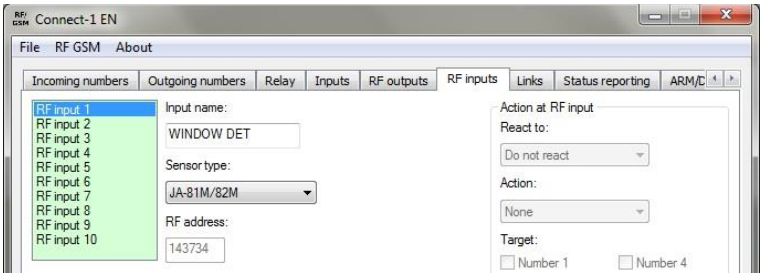



*Image 27: Tab "RF inputs" – assigning a detector to RFGSM-220.*

3. On the tab "RF outputs", select the type of sensor and perform assignment of the detector according to the chapter 4.2.6. Select the priority group to which the key alarm RF KEY will be assigned.

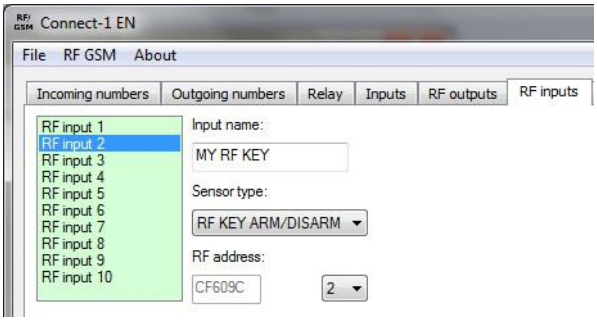



*Image 28: Tab "RF inputs" – assigning a RF KEY key alarm to RFGSM-220.*

4. At the tab "ARM/DISARM" select one of three zones and enter the name of the zone.

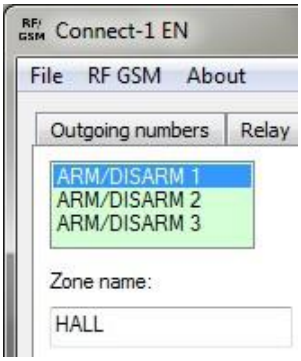



*Image 29: Tab "ARM/DISARM" – select and name the guarded zone.*

5. By checking, assign an input to the guarded zone. Enter it as a negative input (NC – normally-closed).

*Note: Detectors are generally designed with negative input.*




*Image 30: Tab "ARM/DISARM" – selection of inputs of the guarded zone and their standby mode.*

6. Select the priority group that will be able to perform arming and disarming of the guarded zone.

*Note: In the example, it is possible to perform arming or disarming of the guarded zone also by ringing through to the unit RFGSM-220M from a telephone number entered in step 1, because it also belongs in priority group 2.*

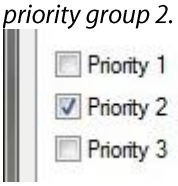



*Image 31: Tab "ARM/DISARM" - select the priority group that will be able to perform arming and disarming of the guarded zone.*

7. Enter the text of an SMS message for the alarm signal and select from the outgoing numbers the numbers that will be informed of the alarm.




*Image 32: Tab "ARM/DISARM" – entering the SMS text and selecting telephone numbers.*

8. Set the entrance and exit delay, after which the zone does not yet become armed.

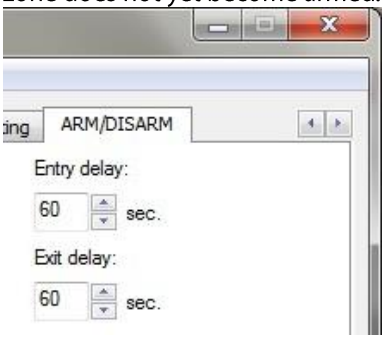



*Image 33: Tab "ARM/DISARM" – set the entrance and exit delay.*

9. On the tab "RF outputs", enter the RF actuators to be used for indicating on/off of the alarm of the zone and for alarm signaling.

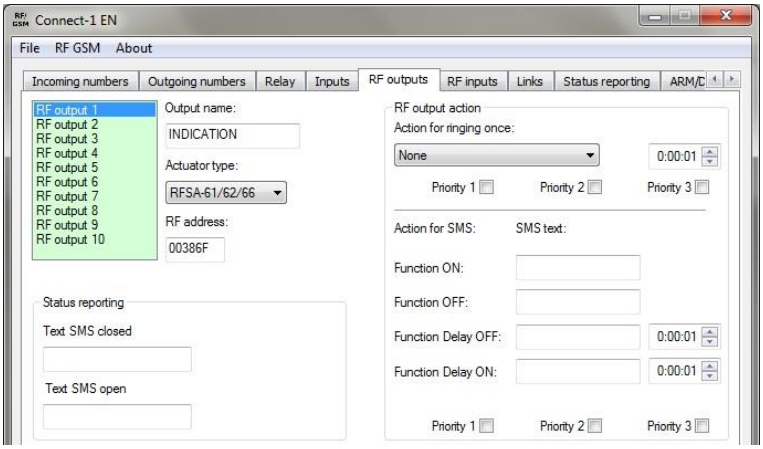



*Image 34: Tab "RF outputs" - entering RF actuators to be used for indicating armed or disarmed alarm status of the zone and for alarm signaling.*

10. On the tab "ARM/DISARM" in the role menu select the output to be used to indicate receipt of the command for arming/disarming the zone alarm. At the selected output, the "disarmed" indication length can be set to tenths of seconds. The "armed" indication length is implicitly chosen as three times the selected length.

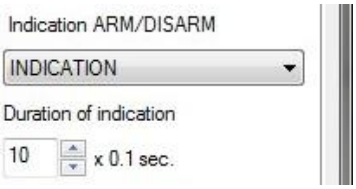



*Image 35: Tab "ARM/DISARM" – selection of outputs for indication of armed or disarmed status of the zone.*

11. On the tab "ARM/DISARM in the role menu select the output to be used for signaling the alarm and choose the signal length. If the zone is constantly interrupted, a new SMS will be sent and the alarm will be signaled after entering Time until the start of the next alarm.

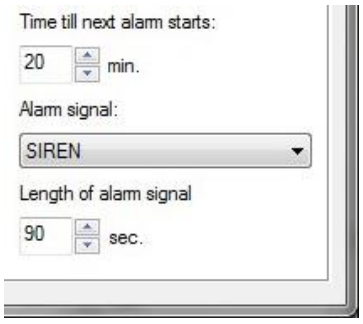



*Image 36: Tab "ARM/DISARM" – select the output for signaling the alarm.*

### 4.2.10 Pull-down menu File

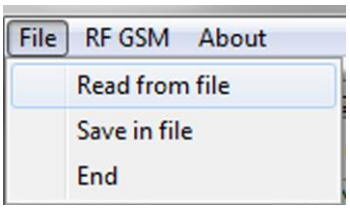



*Image 37: Pull-down menu "File".*

Item "Read from file" enables reading a previously read configuration of the RFGSM-220M unit from the file in the PC with the extension *.gsm.
The item "Save to file" enables saving the created configuration into a file in the PC with the extension *.gsm, enabling its further future modifications and additions.
After pressing End, the application closes.

### 4.2.11 Pull-down menu RF GSM

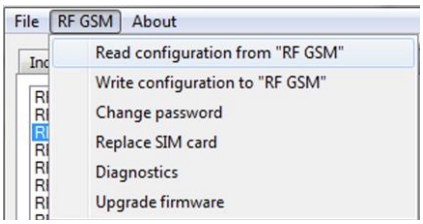



*Image 38: Pull-down menu "RF GSM".*

Operations performed in this menu are protected by user password preventing unauthorized change to the configuration the RFGSM-220M unit. The password is required always upon the first operation after connecting the unit via USB interface to the PC (see Image 39). The password may be any combination of letters without diacritics, numbers and other characters on an English keyboard (so-called ascii characters) up to a length of 20 characters. The factory-set initial password is "1111". The password can be changed by selecting the item "Change password" (see later in this chapter).

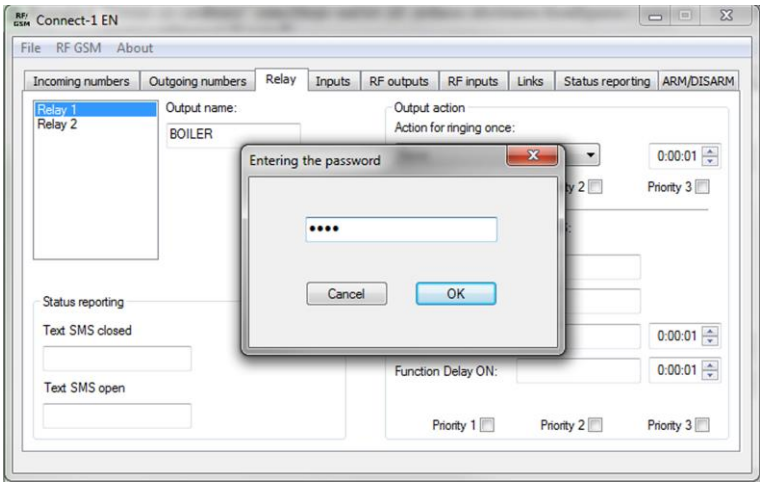



*Image 39: Entering password upon recording configuration into the RFGSM-220M.*

The item "Read configuration from RF GSM" enables reading the configuration from the RFGSM-220M unit connected via USB interface to the PC. The read configuration is automatically read into the applicable fields in the tabs of the application. This enables you to perform only partial modifications in an already formed configuration (ex. change to one of the telephone numbers) and saving the configuration back.
The item "Write configuration to RF GSM" enables writing a created configuration to the RFGSM-220M unit. Recording the configuration into the unit is confirmed by the message "configuration was written into RF GSM" (see Image 40).

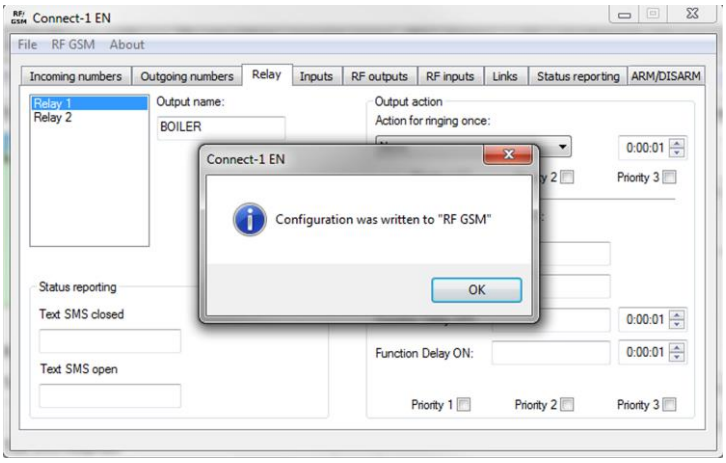



*Image 40: Confirmation of recording configuration into the RFGSM-220M unit.*

After processing the configuration in the RFGSM-220M unit, the settings already function without any need to reset the unit. Operations relating to GSM communication taking place at the moment of a change of the configuration will be completed the same as in the function Delayed OFF and Delayed ON at the unit outputs.

The item "Change password" enables the user to enter a password, which prevents an unauthorized change in the unit configuration. When entering a new password, it is necessary to enter the old password, the new password and confirm the new password by reentering (see Image 41).

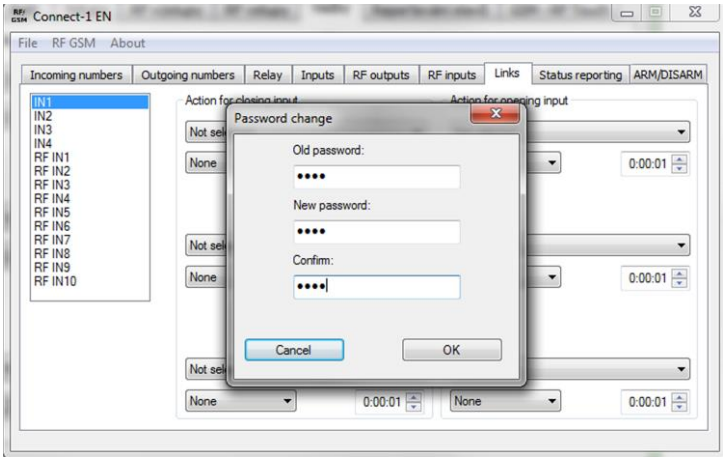



*Image 41: Window "Changing the password".*

The performed password change is reported in the window "The password was successfully changed" (see Image 42).




*Image 42: Window "The password was successfully changed".*

The item "Replace SIM card" is designed for safe removal, insertion or replacement of the SIM card in the RFGSM-220M unit. Selecting the item begins logoff of the unit from the GSM network and switching off the GSM module (see Image 43).




*Image 43: Window "Logging off from the GSM network".*

Logging off from the GSM network may take around 20 s. Permission to change the SIM card is indicated by the message "You may now remove the SIM card" (see Image 44).




*Image 44: Message "You may now remove the SIM card".*

After physical replacement of the SIM card, by clicking on OK, the SIM card is read and the GSM module initializes (see Image 45), which takes around 40 s.




*Image 45: Window "Reading SIM card after replacement".*

*Note: The unit RFGSM-220M is capable of working as well without an inserted SIM card (functional links remain between local /RF inputs and local/RF outputs). Then of course SIM card reading does not take place, and you must cancel reading by clicking on Cancel.*

Completion of initialization of the new SIM card is indicated by the window "SIM card read" (see Image 46).




*Image 46: Window "SIM card read".*

The item "Diagnostics" enables simple control of the status of the connected RFGSM-220M unit. Problem-free status is indicted by the window according to Image 47. Any other status signals an error either with the SIM card or in connecting to the GSM network, or possibly with initializing the RF circuit.

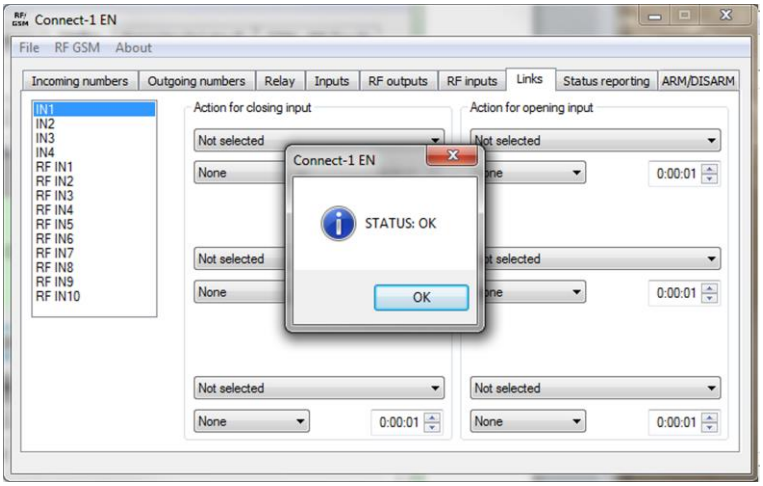



*Image 47: Item "Diagnostics" – RFGSM-220M unit status.*

The last item "Upgrade firmware" enables recording the current firmware into the RFGSM-220M unit. By selecting this item, the window "Open" opens for selecting a file with the extension *.bin with the updated firmware.
The file name should be in the form of RF GSM-220_vvvv.bin, where vvvv is the version number. The current firmware version is available for downloaded at the website http://www.elkoep.com/products/inels-rf-control-wireless-control/system-units/multifunctional-gsm-communicator-rfgsm-220m-3600/.

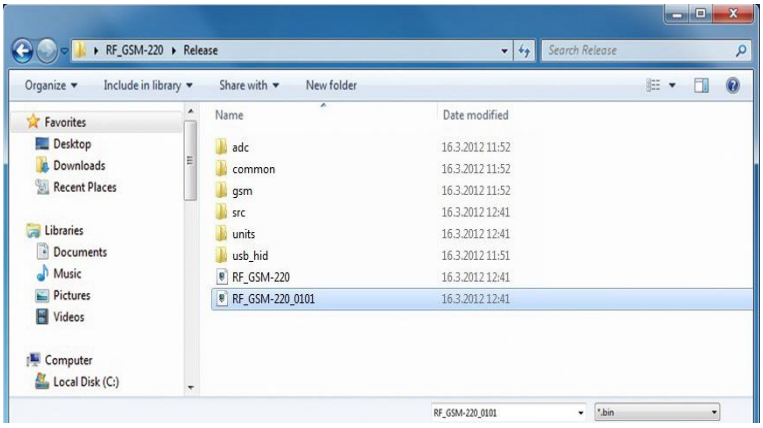



*Image 48: Item "Upgrade firmware" – select file with updated firmware.*

After selecting the file and clicking on Open, the firmware starts downloading into the RFGSM-220M unit and the course of the download is indicated in the appearing window pane (see Image 49).

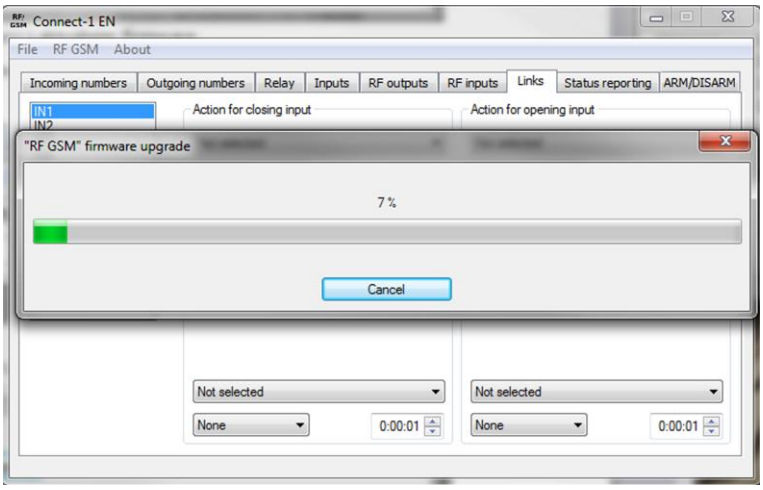



*Image 49: Item "Upgrade firmware" – download status indicator.*

When the firmware has been successfully downloaded to the RFGSM-220M unit, a window appears according to Image 50.

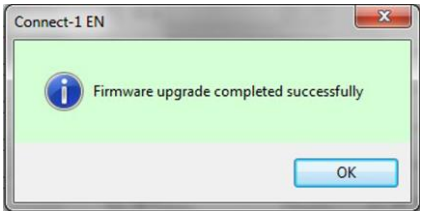



*Image 50: Indication of successful download of the firmware to the RFGSM-220M.*

After saving the new firmware to the program memory, the RFGSM-220M begins its own reset. After resetting, it performs a new initialization and new connection to the GSM network lasting around 40 s.
*Note: It is then possible to verify the correction function by selecting the item "Diagnostics" in the menu RF GSM (see above in this chapter).*
*Note: The stored configuration of the RFGSM-220M unit remains unchanged upon firmware upgrade.*

### 4.2.12 Pull-down menu About the program

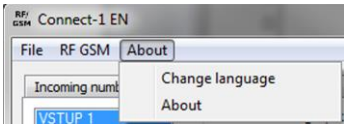



*Image 51: Pull-down menu "About the program".*

The item "Change language" enables changing the program language.
After clicking on the item "About the program", a pane is displayed with the version SW Connect-1, with version of firmware in the RFGSM-220M unit and with the name of the connected unit entered in the tab "Outgoing numbers" (see Image 52).




*Image 52: Pane "About the program".*