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HOME AND BUILDING AUTOMATION

# **DW-GSM EXPANSION MODULE**

## User Guide

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## 1 INTRODUCTION

The DW-GSM expansion module for Iddero HC1-KNX, HC2-KNX, and HC2L-KNX touch panels allows remote access to a KNX-based installation from any GSM terminal, providing functions such as notification of technical alarms and incidents, or remote control of devices connected to the KNX bus.

This manual provides instructions for the configuration and use of the DW-GSM module in conjunction with Iddero touch panels.

KNX<sup>®</sup> is a registered trademark of the KNX Association cvba, Brussels.

## 2 MAIN FEATURES

The main functions of the GSM expansion module are as follows:

- **Execution of actions:** Actions are defined in the project configuration (see section 4, Parametrization). They allow you to send arbitrary values to KNX communication objects by means of SMS text messages or through the “missed call” feature. This lets you remotely operate any KNX device in the installation. For example, you can turn on the heating or turn all lights off with a simple SMS message, or open the garage door when you are arriving home with a “missed call”.
- **Activation of scenes:** You can trigger any scene by name with a SMS message.
- **Notifications:** The system can be configured to send notifications (SMS messages) when an alarm condition is detected, or when a specific logic function is activated.
- **Status requests:** Check the current value of KNX communication objects. This lets you check the state of devices and appliances in the installation. For example, you can check the current status of a presence detector, flooding sensor, or smoke sensor, or perhaps the temperature measured by a room thermostat.
- **Access control:** A list of authorized phone numbers can be defined, and the permissions assigned to each one can be configured separately.

## 3 HOW TO USE

### 3.1 Triggering actions and scenes

Send a SMS message to the GSM module in order to execute actions or to activate scenes. The SMS message format should be as follows:

<code>action_name</code>	Executes an action with the default value
<code>action_name = value</code>	Executes an action with the specified value
<code>!scene_name</code>	Activates a scene by name



**Please note:**

When sending an SMS message to activate a scene, do not forget to put the “!” symbol before the actual scene name.

Once the command is processed, the system will respond with a confirmation or error message, if such response messages are enabled (please refer to section 3.5, GSM module settings).

**Example 1:**

Send the following SMS message to the GSM module to request that a value of “0” is written to the communication object linked to the “Heating” action.

```
heating = 0
```

Once the command is processed successfully, and assuming that confirmation messages are enabled, the system will respond with the following text:

```
OK: heating
```

**Example 2:**

Send the following SMS message to the GSM module to request that the scene with name “All off” is activated:

```
!all off
```

Once the command is processed successfully, and assuming that confirmation messages are enabled, the system will respond with the following text:

```
OK: all off
```

Please refer to section 4.2, Actions for more information on how to configure GSM actions.

### 3.2 Triggering actions with “missed calls”

It is possible to setup an action that will be executed when the system receives an incoming phone call (see section 4.2, Actions).

In order to execute this action, just initiate a voice call to the telephone number associated to the GSM module. When the call is detected, the associated action is executed, and the call is disconnected without ever picking up. This makes it possible to execute a remote action without sending a SMS message, and thus without any cost.

### 3.3 Notifications

The system can be configured to send SMS messages to the user when certain events or incidents occur; for example, alert messages can be sent when an alarm condition is detected. Please refer to section 4.3, Notifications for further information on how to set up notifications.

When an event associated with a notification occurs, the system automatically sends a SMS message to all phone numbers registered and enabled for notifications. The notification message contains a configurable text, or a generic text (*notification\_name = value*) if no text has been explicitly configured.

**Example:**

A “Smoke alarm” notification has been set up and linked to a communication object which shows the status of a KNX-enabled smoke detector. The notification is configured to send a SMS message when the value of the associated communication object changes. No notification text has been explicitly configured.

When the value of the communication object changes from 0 to 1, the system sends the following SMS message to all phone numbers enabled for notifications:

```
smoke alarm = 1
```

When the value of the communication object changes back to 0, the following SMS message is sent:

```
smoke alarm = 0
```

### 3.4 Status requests

You can check the current value of the communication object associated with an action or a notification at any time, by sending a SMS message to the GSM module with the following format:

```
action_name = ?           For actions  
notification_name = ?    For notifications
```

The system will send back a message indicating the current value of the communication object.

**Example:**

To check the status of the communication object associated to the “Smoke alarm” notification from the previous example, send the following SMS message to the GSM module:

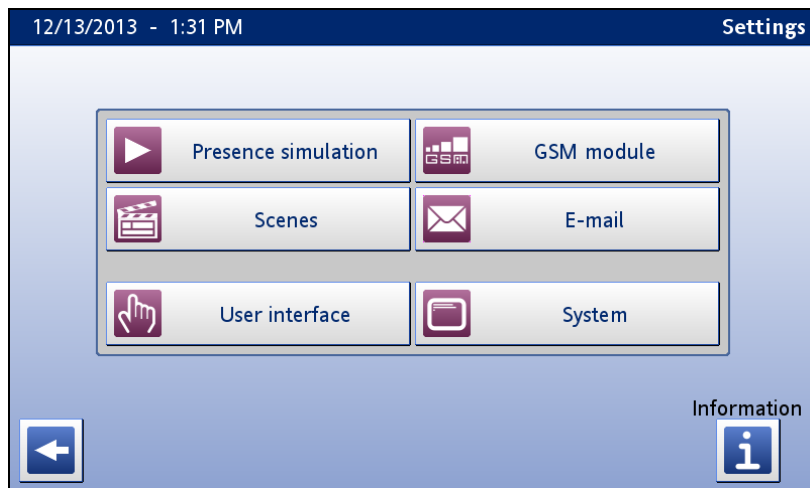
```
smoke alarm = ?
```

The system will respond with the following SMS message:

```
smoke alarm = 0
```

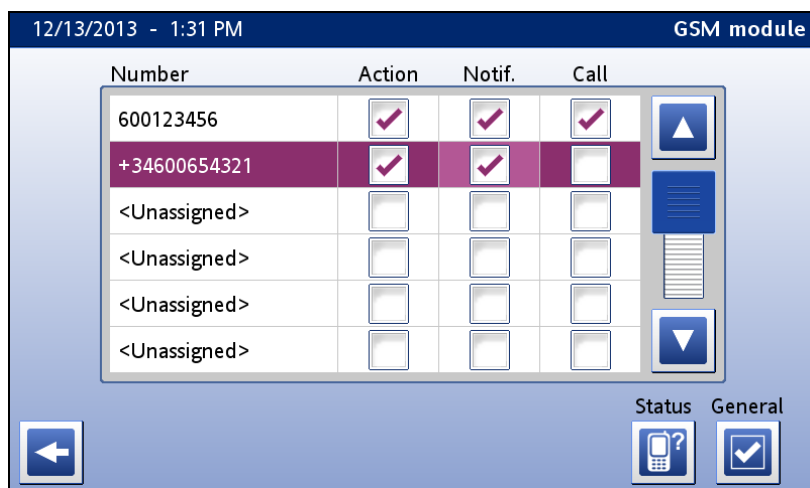
### 3.5 GSM module settings

You can manage the list of authorized phone numbers and adjust other GSM module settings from the touch panel itself. For this, go to the Settings page, then press the “GSM module” button.



### Authorized numbers and permissions

The GSM module settings page shows a list of registered phone numbers, and permissions assigned to each one.

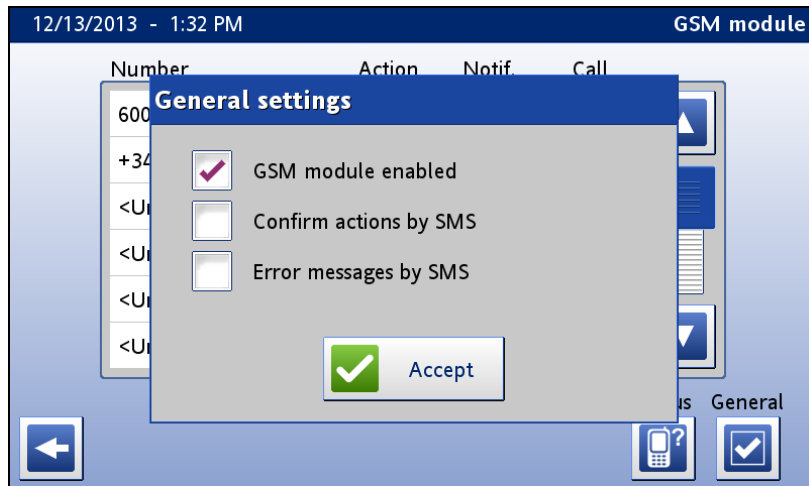


Up to 10 phone numbers (users) can be registered, with the following settings:

- **Number:** Phone number. You can use the “+” symbol if you want to include an international prefix in the phone number.
- **Action:** Allow this user to execute actions, activate scenes, and make status requests.
- **Notif.:** Notification messages should be sent to this user when the corresponding events occur.
- **Call:** Allow this user to execute the action associated with the “missed call” function. Otherwise, any voice calls from this phone number are ignored.

## General settings

Press the “General” button to show general settings for the GSM module.



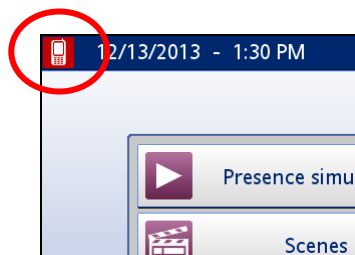
The following settings are available:

- *GSM module enabled*: Enables or disables communication with the GSM module. This settings is enabled by default.
- *Confirm actions by SMS*: Indicates whether the system should respond with a SMS confirmation message when a SMS command is sent by a registered user to execute an action or activate scene, and the command is processed successfully. This setting is disabled by default.
- *Error messages by SMS*: Indicates whether the system should respond with a SMS error message when a SMS command is sent by a registered user to execute an action or activate scene, and the command cannot be processed. This setting is disabled by default.

**Please note:**  
 The “Confirm actions by SMS” and “Error messages by SMS” settings are only applicable to SMS commands sent by registered users. Any messages received from a GSM number that is not registered is just ignored and no response message is ever generated.

## GSM module status

If there is a problem with the GSM module, an error icon is shown in the status bar. Press the “Status” button in the GSM module settings page to get additional information about the problem.



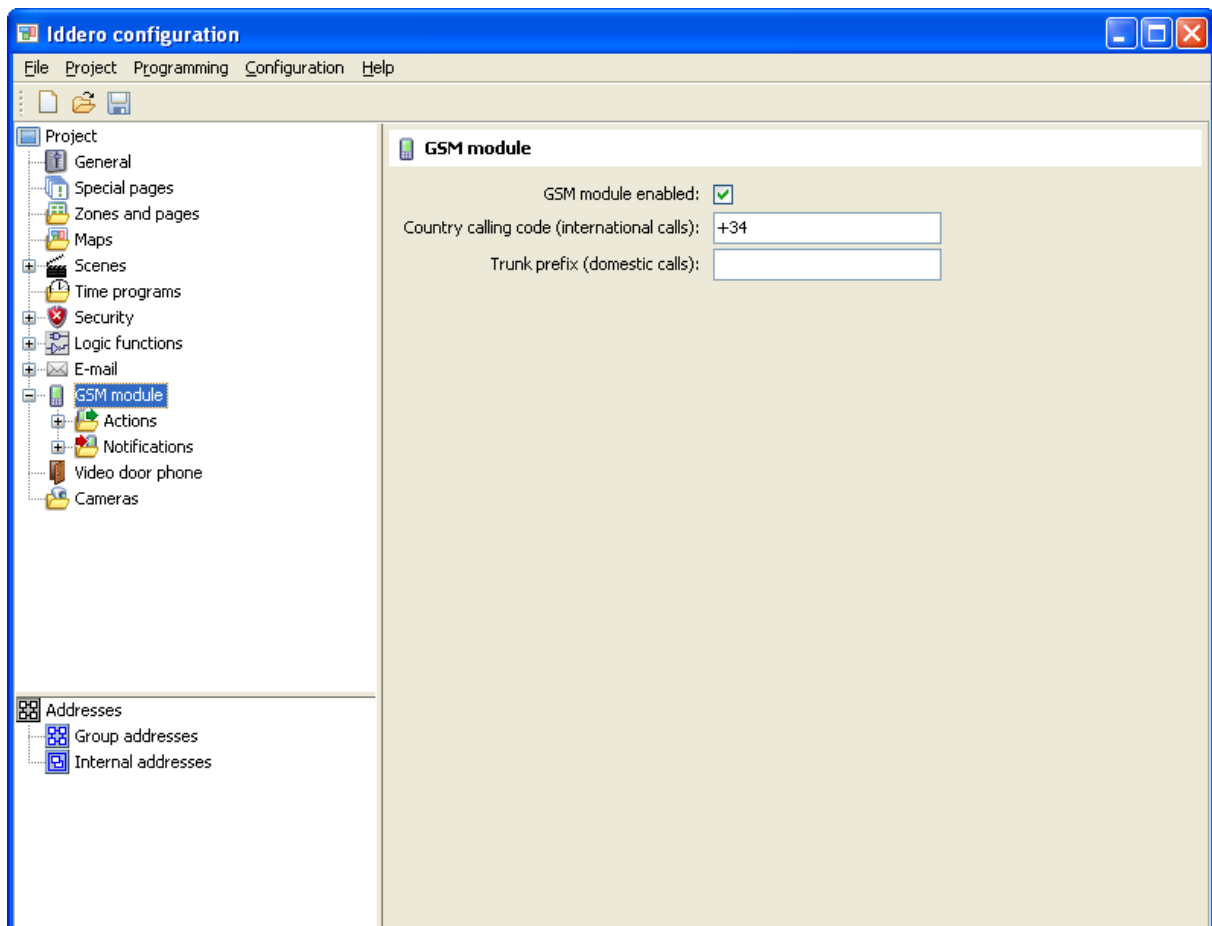
## 4 PARAMETRIZATION

### 4.1 General parameters

Configuration of the GSM module is done through the Iddero configuration software, in the “GSM module” section of the project tree. Make sure you are using a recent release (1.3 or later) of both the configuration software and the touch panel’s firmware.

The “GSM module” section provides the following parameters:

- *Enable GSM module:* This checkbox must be checked in order to enable support for the GSM module in this project.
- *Country calling code (international calls):* Specify the international calls prefix corresponding to the country where the system will be installed (for example, for Spain this would be “+34”). This is needed in order to correctly recognize phone numbers in incoming calls and messages, which may or may not include this prefix.
- *Trunk prefix (domestic calls):* Specify the prefix to use for national (domestic) calls, if needed. Not required in many countries.

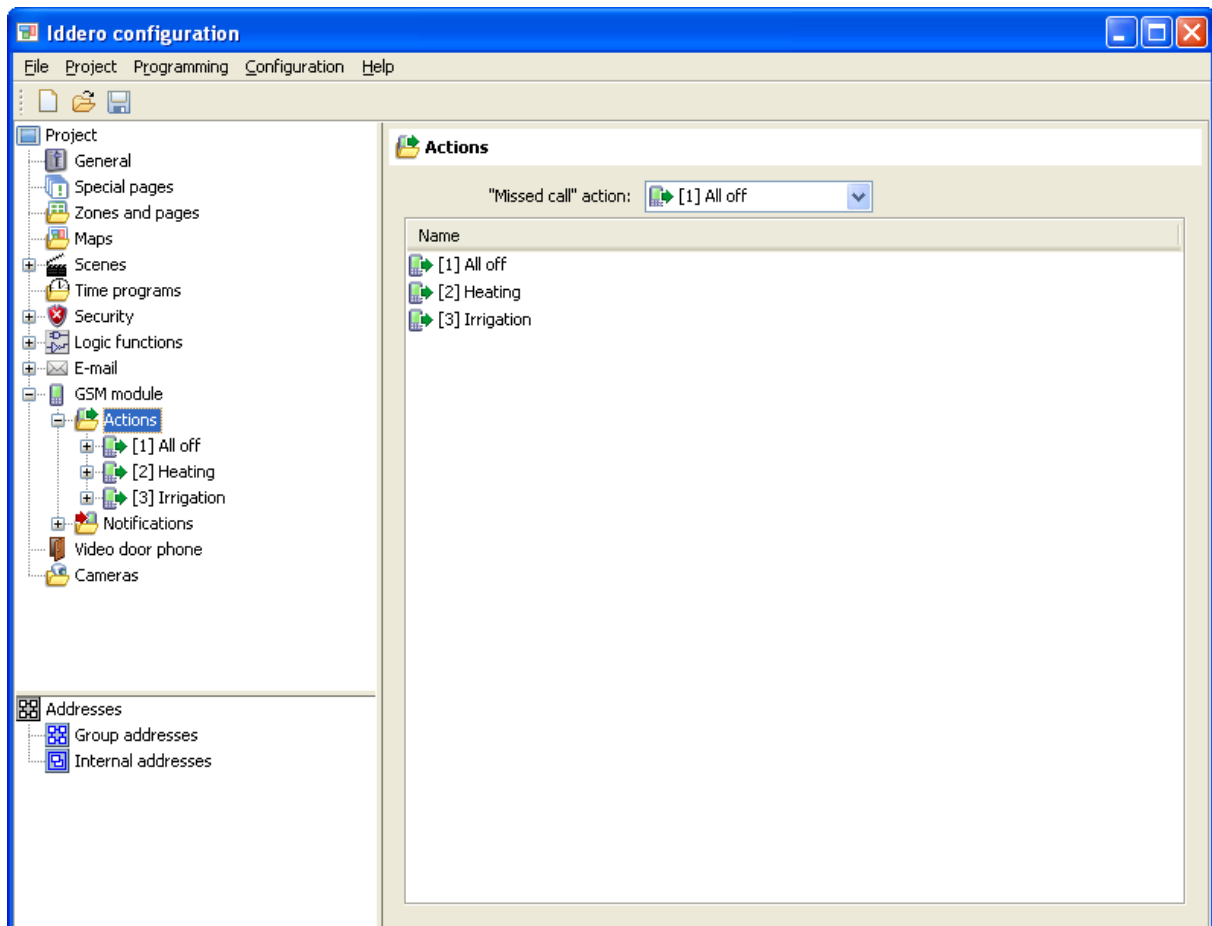




## 4.2 Actions

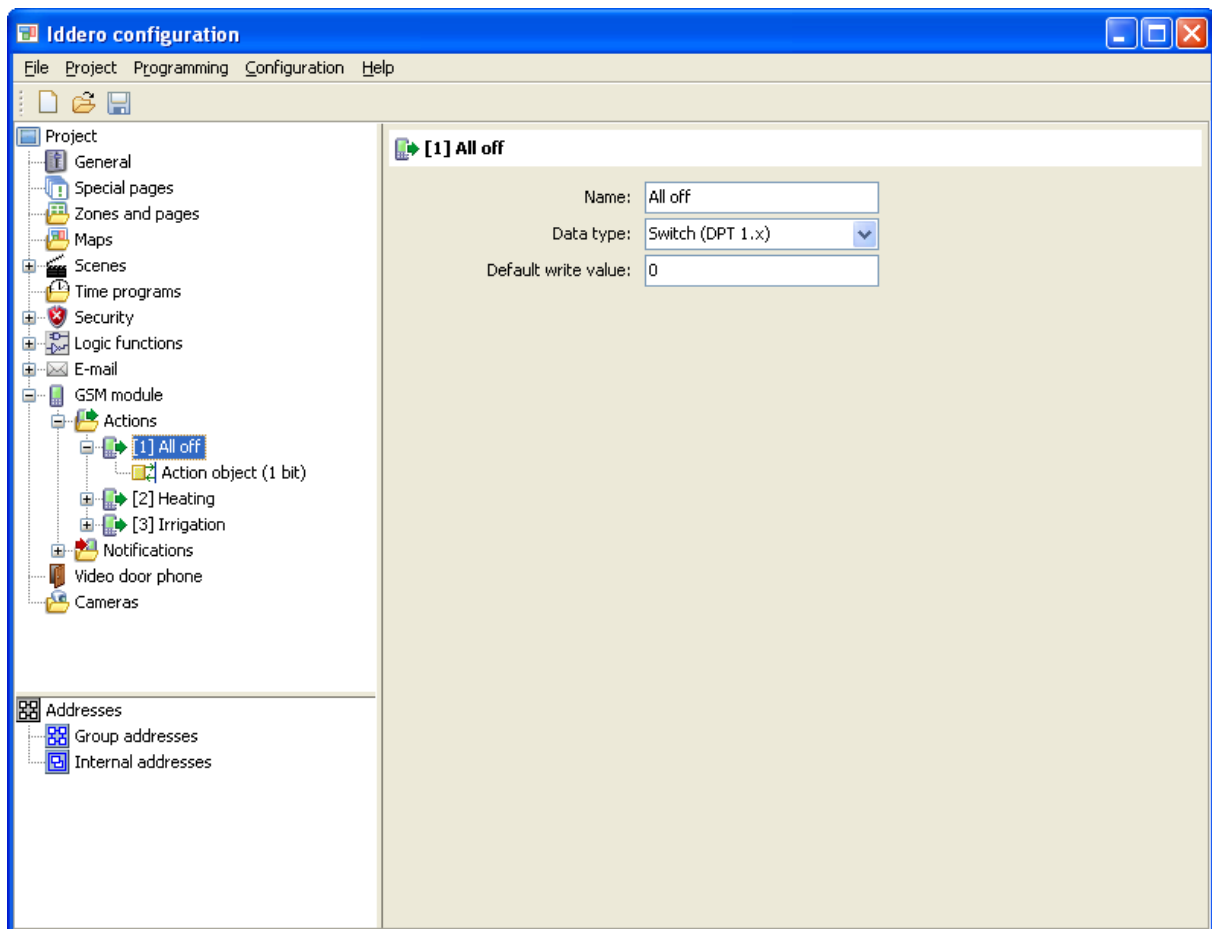
In order to define a new action, right-click on the “Actions” section in the project tree, under “GSM module”, and select “Insert action” from the pop-up menu.

The “Missed call action” drop-down list in this section lets you select which of the available actions will be executed when the system receives an incoming call from an authorized number.



For each action, the following parameters can be configured:

- *Name*: Name of this action, as used in SMS messages sent to the GSM module.
- *Data type*: Data type of the KNX communication object associated with this action. Supported data types include 1-bit switch (DPT 1.x), 1-byte unsigned (DPT 5.x), and 16-bit float (DPT 9.x).
- *Default write value*: Default value that will be written to the communication object if a SMS message is received for this action without explicitly specifying a value, or if this action is executed via the “missed call” function.

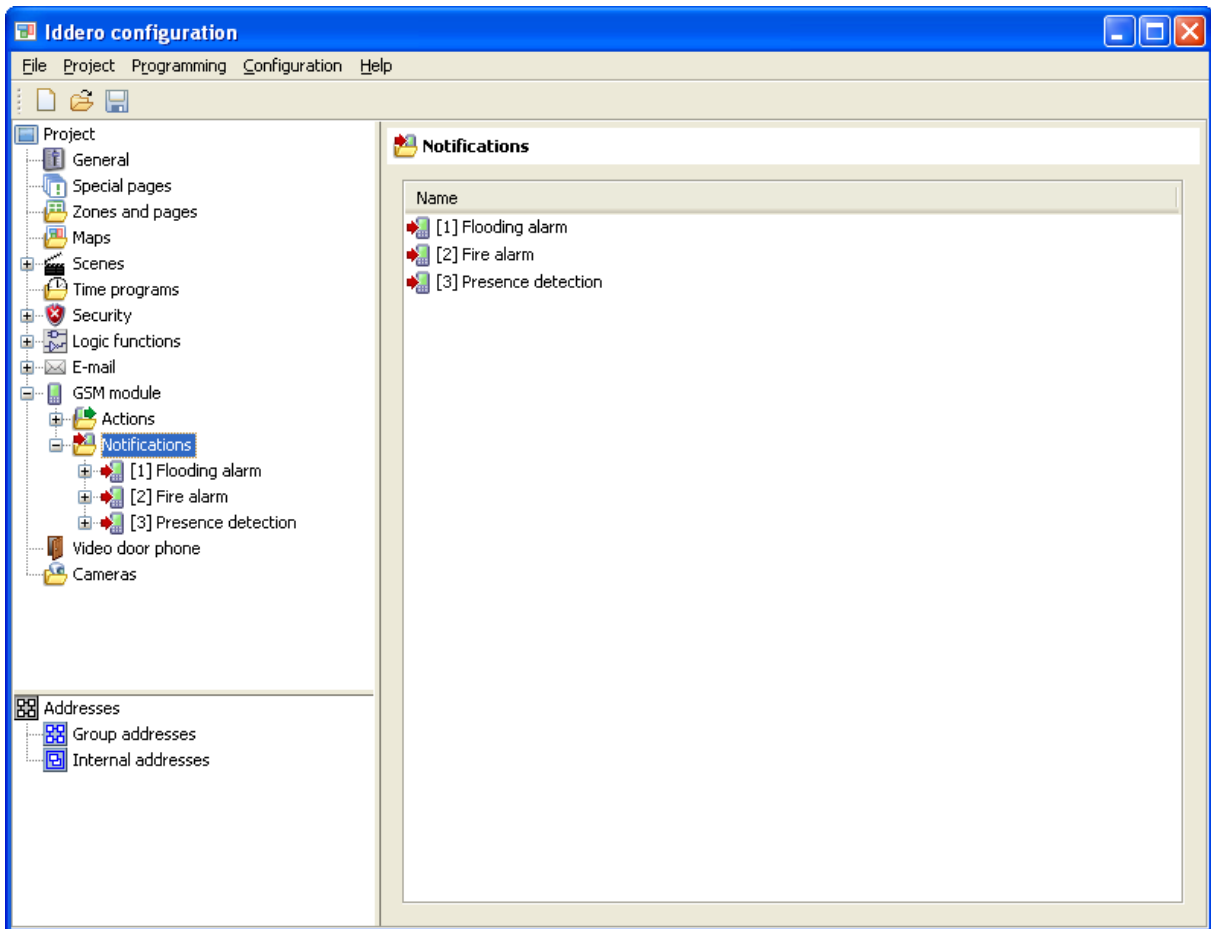


### 4.3 Notifications

In order to define a new notification, right-click on the “Notifications” section in the project tree, under “GSM module”, and select “Insert notification” from the pop-up menu.

For each notification, the following parameters can be configured:

- *Name*: Name of this notification.
- *Data type*: Data type of the KNX communication object associated with this action. Supported data types include 1-bit switch (DPT 1.x), 1-byte unsigned (DPT 5.x), and 16-bit float (DPT 9.x).
- *Notification text*: Text that is used in SMS notification messages related to this notification. If left blank, a message will be sent including the notification name and the current value of the communication object.
- *Notification trigger*: Specifies when the notifications should be sent:
  - a) When the value of the communication object changes
  - b) Each time the communication object is written (regardless of whether this result in a value change)



#### 4.4 Scenes

No special configuration is required in order to support remote activation of scenes.

## APPENDIX I: SMS MESSAGE FORMAT SUMMARY

### Command messages

<i>action_name</i>	Execute the named action with the default value
<i>action_name = value</i>	Execute the named action with the specified value
<i>!scene_name</i>	Activate the named scene
<i>action_name = ?</i> <i>notification_name = ?</i>	Request the current state of the communication object linked to the named action or notification

### Response messages

<i>ERRxx error_description</i>	Error: The operation could not be completed The following error codes are defined:  ERR01: No permission to execute commands ERR02: Invalid message format ERR03: Invalid scene name ERR04: Invalid action name ERR05: Invalid action value ERR06: Invalid action / notification name (for status requests)
OK: <i>action_name</i> OK: <i>scene_name</i>	Action executed or scene activated successfully
<i>action_name = value</i> <i>notification_name = value</i>	Response to a status request

### Notification messages

<i>notification_text</i>	Notification message, when the “notification text” parameter is defined
<i>notification_name = value</i>	Notification message, when the “notification text” parameter is not defined

## APPENDIX II: TROUBLESHOOTING

Please check the datasheet of the DW-GSM module for installation and handling instructions. If the unit does not work properly, please check if the problem is described in the following list of common problems. If this does not help, please contact your authorized distributor.

Problem description	Possible cause and solutions
The "GSM module" section is not shown in the Iddero configuration software	You are using an old version of the Iddero configuration software. Please upgrade to a more recent version.
The "GSM module" button is not shown in the Settings page of the touch panel	<p>The GSM module is not enabled in the project configuration. Open the project in the Iddero configuration software, go to the "GSM module" section, make sure that the "Enable GSM module" checkbox is checked, and upload the project to the touch panel.</p> <p>Also make sure you are using a recent version of the touch panel firmware (1.3 or later)</p>
The GSM error icon is shown in the status bar. When you press the "Status" button in the GSM module settings page, a communications problem is reported.	Check the power connection to the GSM module, and the communications connection between the GSM module and the touch panel.
The GSM error icon is shown in the status bar. When you press the "Status" button in the GSM module settings page, the system reports that no SIM card is inserted.	Check that a SIM card has been inserted in the GSM module, that the SIM card is inserted properly in the SIM card holder, and that the SIM card itself works properly (for example, by testing it on a regular mobile phone)
The GSM error icon is shown in the status bar. When you press the "Status" button in the GSM module settings page, the system reports that the SIM card PIN code is enabled.	The PIN code of the SIM card must be disabled. You can disable it using a standard mobile phone.
The GSM error icon is shown in the status bar. When you press the "Status" button in the GSM module settings page, the system reports that the GSM module is not yet registered into the network, or that the signal level is very low.	This may indicate a weak mobile phone signal in the location where the GSM module is installed. Check the position and orientation of the antenna. If this does not solve the problem, please consider installing the GSM module on an alternate location.
No GSM error icon is shown, but nothing happens when SMS messages are sent to the GSM module, and no response messages are generated.	<p>Ensure that the communications with the GSM module are enabled in the touch panel itself (GSM module settings page)</p> <p>Check that the phone number of the GSM phone you are using is registered with the touch panel, and that you have enough permissions for the operation you are trying to perform.</p> <p>Please note that by default, no confirmation or error messages are sent when action or scene commands are processed. Response messages must be explicitly enabled. Please check the current settings in the GSM module settings page of the touch panel.</p> <p>Double-check the project configuration in the Iddero configuration software, including the country code for international calls.</p>
All seems to work properly but no response messages are generated.	Check the remaining balance of the SIM card.