KNX Gateway for AJAX Alarm Systems

User Manual



Document Reference: AJAX-KNX-UM

Revision: 1.00

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1. Introduction

The KNX gateway module AJAX-KNX is a bidirectional KNX gateway for AJAX alarm systems. It enables real-time communication with the alarm system over Ethernet, bridging one of the fastest-growing alarm platforms in Europe with the KNX building automation ecosystem.

It allows integrators to take advantage of a fully integrated alarm system including KNX scenario recall, arming/disarming or monitoring the system using any KNX visualization, touch panel, or push-button.

Main Features

- Control up to 4 areas (arm / partial arm / disarm)
- 6 status feedbacks per area (alarm, armed, disarmed, fire, panic, intrusion)
- Automatic recall of KNX scenes for each area status
- Up to 96 zone statuses (when armed or for Always Active zones)
- Battery and AC failure monitoring
- Connected to the alarm system over Ethernet (local network)
- Galvanic insulation from the KNX bus
- DIN rail mounted (2 SU)
- Auxiliary power supply 12–30 VDC

ETS Application Concept

The AJAX-KNX Gateway follows the exact same ETS application concept for all alarm gateways. The parameter structure, group objects, and commissioning workflow are consistent across all models. The AJAX gateway uses the **NXG-KNX Interface** application program.

Compatible AJAX Systems

The AJAX-KNX Gateway is compatible with AJAX Hub systems that support SIA event transmission over the local network. This includes all AJAX Hub, Hub Plus, and Hub 2 models.

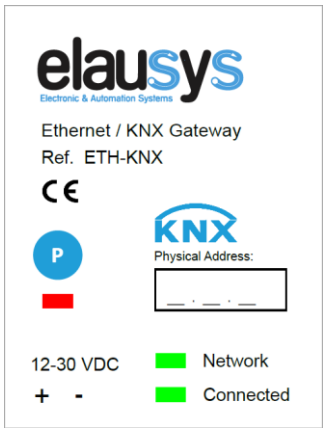
2. Overview

2.1 Connection Diagram

The KNX bus is connected on the **top side** of the gateway. An external power supply (12–30 VDC) is required and connected on the **bottom side** of the module, beside the RJ45 connector for the Ethernet cable.

The gateway communicates with the AJAX Hub over the **local network** via Ethernet to receive events from the Hub. Arming and disarming commands from the gateway require **internet access**, when enabled only. The connection is established through the AJAX secured cloud using a fully encrypted protocol, identical to the one used by the AJAX mobile application.

2.2 Front Panel



The front panel is equipped with two green status LEDs:

LED	Meaning
Network	Physical connection to the Ethernet network is established
Connected	Communication with the AJAX alarm system is established

Additional front panel elements:

Element	Function
Button “P”	KNX programming mode button
Red LED	KNX programming status LED

3. Configuring the AJAX Alarm System

Before configuring the gateway in ETS, the AJAX alarm system must be prepared. Follow the steps below in order.

3.1 Configure the AJAX Hub for SIA Events

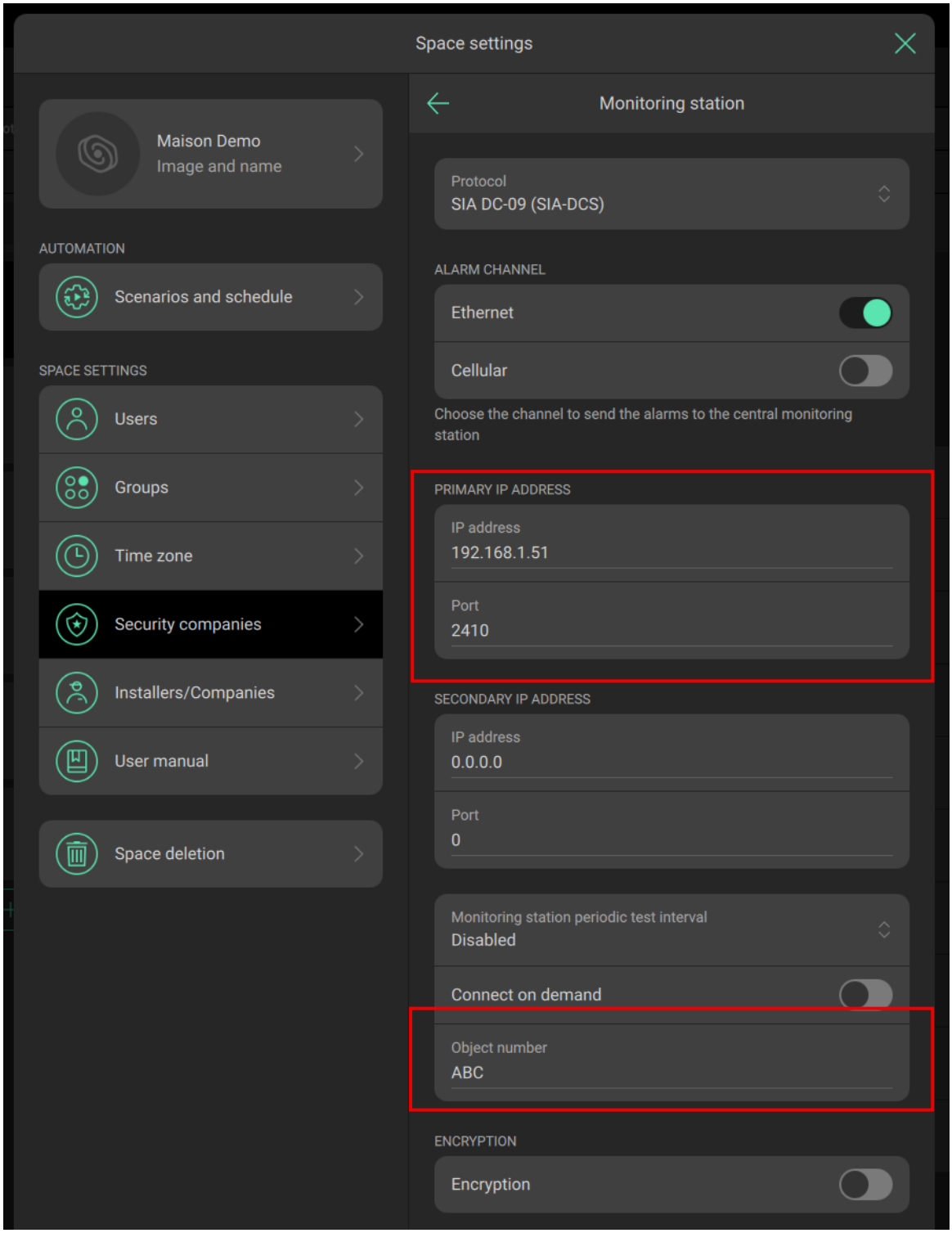
On the AJAX side, configure your AJAX Hub to send **SIA Events** to the KNX Gateway's IP address. This is the communication protocol the gateway uses to receive alarm statuses and zone events in real time.

The SIA heartbeat event is used by the gateway to update the **Module Status** communication object (GO 1), confirming active communication between the gateway and the AJAX Hub.

Open the Space Settings, then Security Companies, then **Monitoring Station** and set:

- IP Address of the Gateway and port 2410.
- Object number : 3 letters of your choice (not relevant).

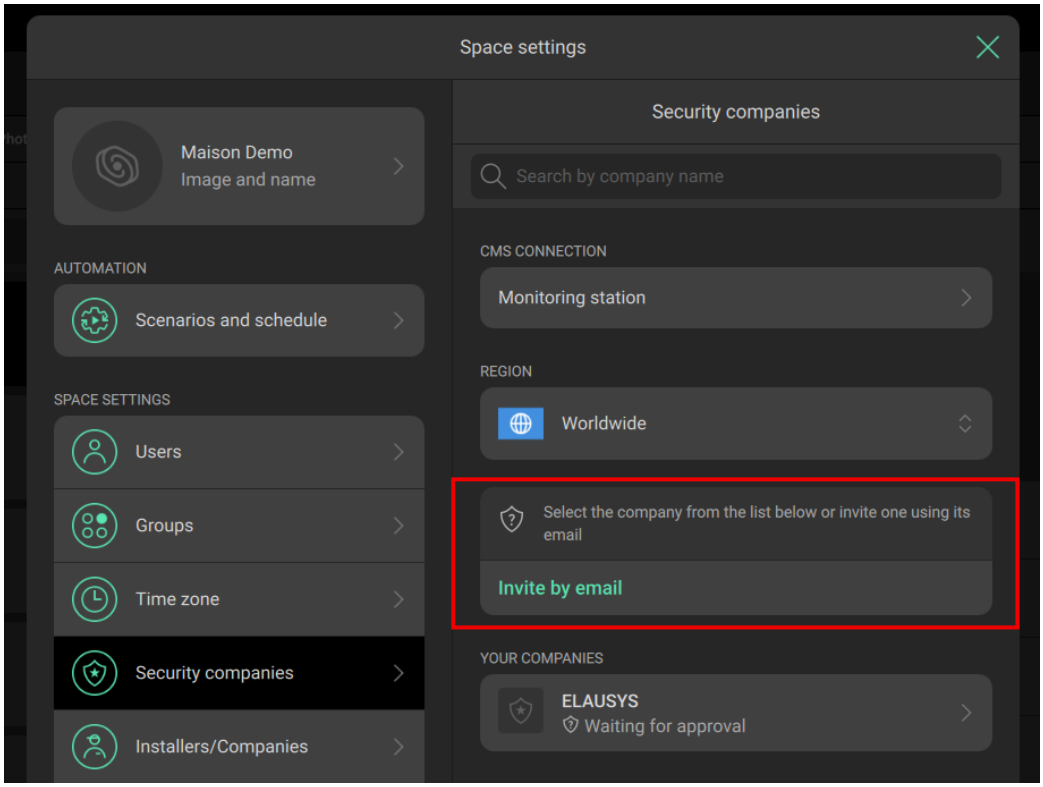
> **Important:** The AJAX Hub can only send SIA events to a single destination. If the Hub is already configured to report SIA events to a monitoring station or security company, you will need to redirect SIA event reporting to the AJAX-KNX Gateway instead. The gateway and an external SIA-based monitoring service cannot operate simultaneously on the same AJAX Hub.


Space settings
Maison Demo
Image and name
AUTOMATION
Scenarios and schedule
SPACE SETTINGS
Users
Groups
Time zone
Security companies
Installers/Companies
User manual
Space deletion
Monitoring station
Protocol
SIA DC-09 (SIA-DCS)
ALARM CHANNEL
Ethernet
Cellular
Choose the channel to send the alarms to the central monitoring station
PRIMARY IP ADDRESS
IP address
192.168.1.51
Port
2410
SECONDARY IP ADDRESS
IP address
0.0.0.0
Port
0
Monitoring station periodic test interval
Disabled
Connect on demand
Object number
ABC
ENCRYPTION
Encryption

3.2 Invite Elausys as Security Company

If you need **bidirectional control** — meaning you want to arm or disarm AJAX areas from KNX — you must use button to **invite by email** Elausys as a **Security Company** using the email address info@elausys.be in the AJAX app. This grants the gateway the necessary permissions to send commands back to the AJAX Hub.

Arming and disarming commands from the gateway require **internet access**. The connection is established through the AJAX secured cloud using a fully encrypted protocol, identical to the one used by the AJAX mobile application.



The security company ELAUSYS will remain in “Waiting for approval” state.

> **Note:** If you only need zone monitoring and status feedback (one-way communication), this step is optional.

3.3 Understanding Zone Reporting Behaviour

By default, AJAX motion detectors (MotionProtect) and door/window contacts (DoorProtect) only report zone status to the gateway **when the system is armed or in night mode**. This means that in the disarmed state, motion and door events are not transmitted to KNX.

If you want zone status available on KNX at all times — for example, motion-triggered lighting during the day or door-triggered welcome scenes — you can configure individual devices as **Always Active (24hrs)** in the AJAX app.

> **Important:** Setting a device to Always Active means it will also trigger the alarm even when the system is not armed. This is by design in the AJAX platform. Use this setting selectively and only on zones where permanent reporting is genuinely needed.

3.4 Understanding Night Mode (Partial Arming)

The **Partial Arm** function on the KNX gateway corresponds to the **global Night Mode** in the AJAX system. Night Mode operates independently from the arming or disarming of individual groups. This has several important consequences:

- **Activating** Partial Arm (ON) on **any** area will activate Night Mode for the **complete Hub**, not just the selected area.
- **Disarming** a group does **not** disable Night Mode. Night Mode remains active until explicitly disabled.
- To **disable** Night Mode, you must send the Partial Arm (OFF) command using the corresponding group object.

Plan your KNX logic accordingly: use the Partial Arm (ON) object to enable Night Mode and the Partial Arm (OFF) object to disable it. Do not rely on group disarm commands to exit Night Mode.

3.5 Understanding Groups Configuration

The behaviour of the gateway depends on whether **groups** are configured in the AJAX system:

- **No groups configured in AJAX:** Configure only **Area 1** (partition 1) in ETS. This corresponds to the global arming/disarming commands of the alarm system.
- **Groups enabled in AJAX:** At least **two areas** must be enabled in ETS. This switches the gateway from global commands to individual group commands. Each ETS area then maps to the corresponding AJAX group.

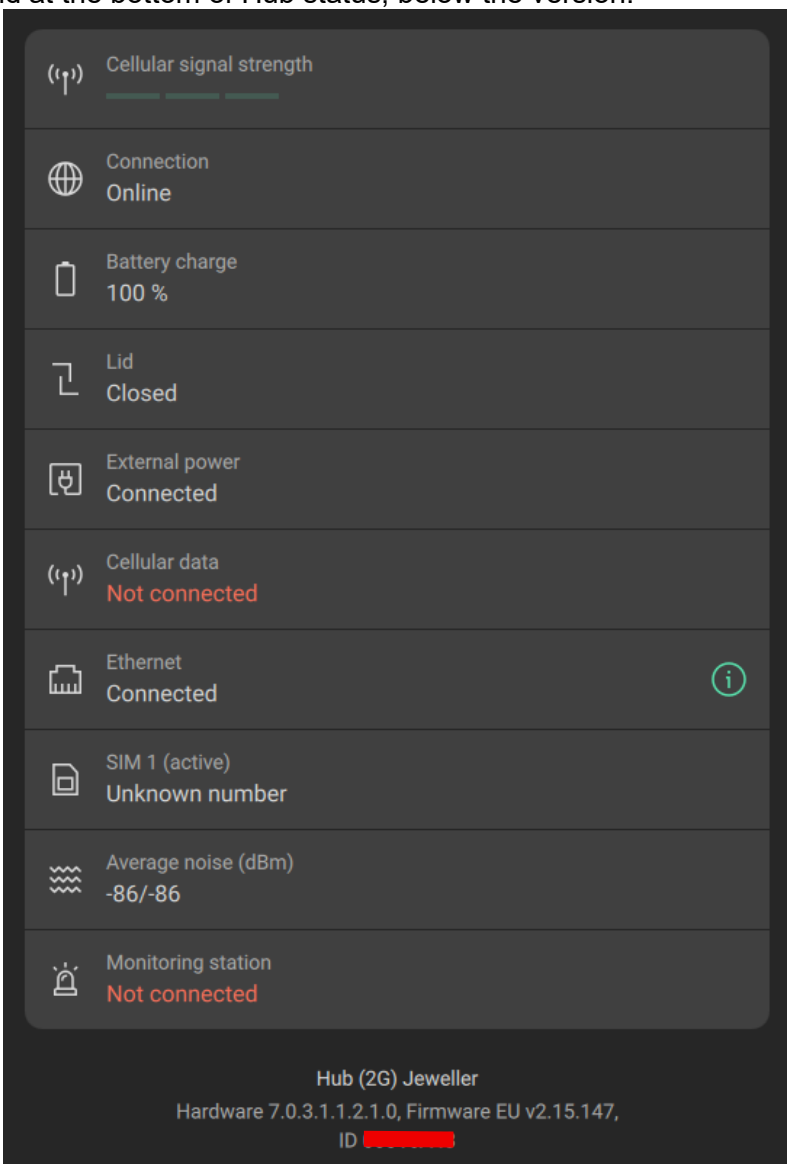
Areas are configured for AJAX groups 1 to 4 by default, but a parameter allows changing the area mapping to cover groups 5 to 8 if required.

4. Parameters

The KNX interface parameters are defined in the “Parameters” tab of the device in the ETS project.

4.1 General Settings

The AJAX Hub ID must be set in the **Device Options**. The hub ID is made of 8 characters and can be found at the bottom of Hub status, below the version.



> **Note:** If you only need zone monitoring and status feedback (one-way communication), this step is optional.

Parameter	Values	Description
Use PG Control	Not used (default) / Used	Must be set to “Not used” for the AJAX interface. PG Control is not available on this device.
Use PG Status	Not used (default) / Used	Must be set to “Not used” for the AJAX interface. PG Status is not available on this device.
Number of PG	16 (default) / 32	PG are not available on this device.
Use Zone Status	Not used / Used (default)	When set to “Used”, zone status group objects are made available.
Number of zones	16 (default) / 32 / 48 / 64 / 72 / 96	Number of zone status group objects to be used. Maximum 96 zones per gateway.
Zones offset	0 (default) / 96	Offset of 0 uses zones 1–96; offset of 96 uses zones 97–192.
Use Virtual inputs	Not used (default) / Used	Must be set to “Not used” for the AJAX interface.
Number of areas	1 (default) / 2 / 3 / 4	Number of areas to control/monitor. Set to 1 when no AJAX groups are configured. Set to 2+ when groups are enabled.
Send area status	ON / OFF / ON/OFF (default)	Area status objects can send only ON changes, only OFF changes, or both.
User code	Text field (format 123456)	Not used for the AJAX interface.
User code length	4–6	Not used for the AJAX interface.
Use Power supply status	Not used (default) / Used	When set to “Used”, power supply status group objects are made available.
PG and Zone startup behavior	Switch OFF (default) / Switch ON / Memory	Internal status of group objects after restart. Memory restores the state from before power loss.
Device Options	Text string	**The AJAX Hub ID must be set here. This is mandatory for the gateway to communicate with the AJAX Hub.**

4.2 Zone

Depending on the general parameter “Number of zones”, up to 96 zones are listed in the group objects. The status of each zone from the alarm system can be monitored by a group object.

Remember that zone statuses are only reported when the system is armed, in night mode, or when individual devices are set to Always Active in the AJAX app (see Section 3.3).

4.3 Area

Depending on the general parameter “Number of areas”, up to 4 areas are listed in the group objects. Each area can be controlled using 3 group objects: Arm, Partial Arm, and Disarm.

Control Objects

Control Object	Value ON	Value OFF
Arm (switch)	Arm	Disarm
Partial arm (switch)	Partial Arm (activates Night Mode for complete Hub)	Disable Night Mode
Disarm (trigger)	Disarm	Disarm

For each area, a configuration tab is made visible in ETS. Areas are configured for AJAX groups 1–4 by default, but the “Area mapping” parameter allows covering groups 5–8 instead.

Scene Assignment per Area Status

A KNX scene can be assigned to each area status. The scene number is recalled each time the corresponding status becomes active (ON). Leave the scene number at 0 to disable scene control for that status.

Status	Scene Range
Disarmed	0–64
Entry (NOT USED)	0–64
Exit (NOT USED)	0–64
Armed	0–64
Partial armed	0–64
Fire alarm	0–64
Siren ON (NOT USED)	0–64
Panic alarm (Silent alarm)	0–64
Intrusion alarm	0–64

Intrusion Alarm Behaviour

The Intrusion Alarm status is activated when the partition is armed (either partial or total) and a detector from that group sends an alarm event. The Intrusion Alarm is automatically reset when the partition is disarmed.

5. Communication Objects

5.1 General

GO	Name	Description
1	Module status	Sends 0 when operating normally; sends an error code when applicable. Updated by the SIA heartbeat event.
2	Firmware	Sends the firmware version of the device at startup.
233	Call scene	The scene number configured for each area status is sent to KNX whenever the area status is activated.

5.2 Power Supply

GO	Name	Description
163	AC Failure	Active when the main power supply of the alarm system is down.
164	Battery Failure	Active when the battery is low.

5.3 Zone

Each zone has 1 group object for status to KNX:

GO	Name	Description
67	Zone x Status	Zone status (x = 1 to 96)

The same group object structure applies to all zones.

5.4 Area

Each area has 12 group objects: 3 for area control and 9 for area status to KNX.

GO	Name	Description
185	Area x – Arm	Arm the group
186	Area x – Partial arm	Enable/Disable Night Mode for the complete Hub
187	Area x – Disarm	Disarm the group
188	Area x – State disarmed	Area x status
189	Area x – Entry delay	Area x status (NOT USED for AJAX)
190	Area x – Exit delay	Area x status (NOT USED for AJAX)
191	Area x – State armed	Area x status
192	Area x – State partial armed	Area x status (Night Mode)
193	Area x – Fire alarm	Area x status
194	Area x – Siren ON	Area x status (NOT USED for AJAX)
195	Area x – Panic alarm	Area x status
196	Area x – Intrusion alarm	Activated when armed partition + detector alarm (BA); auto-reset on disarm

The same group object structure applies to all areas (x = 1 to 4).

6. Configuration

6.1 Network Configuration

By default, the IP address of the KNX gateway is set to **192.168.1.51**.

Using a laptop connected to the gateway, open a web browser and navigate to the IP address of the gateway. Set a fixed IP address of your choice.

6.2 Physical Device

Elausys devices are configured using the ETS tool. You should first download and install ETS before you continue.

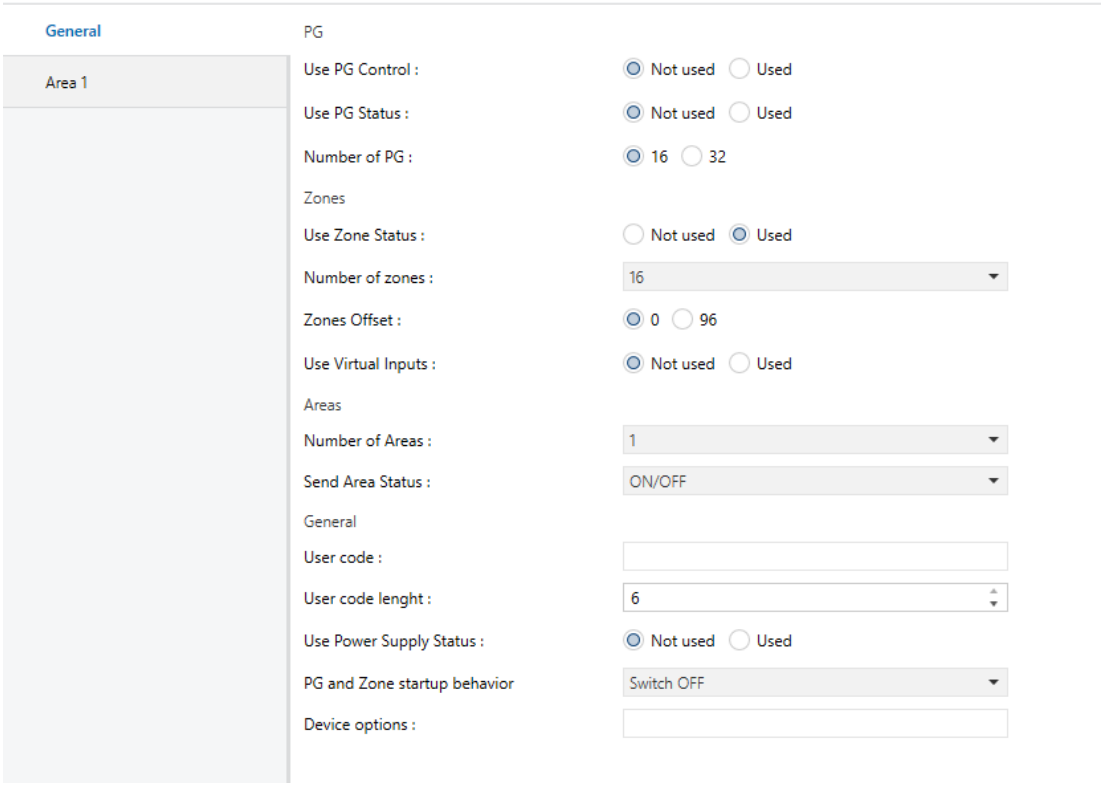
The AJAX gateway uses the **NXG-KNX Interface** application program. It must be assigned a physical address on the KNX network. Assign a free address to the module.

6.3 Parameters

Once a KNX physical address is set, open the “Parameters” tab to configure the interface. The parameters are grouped into sections: a General section and a section for each area configured.

General Settings

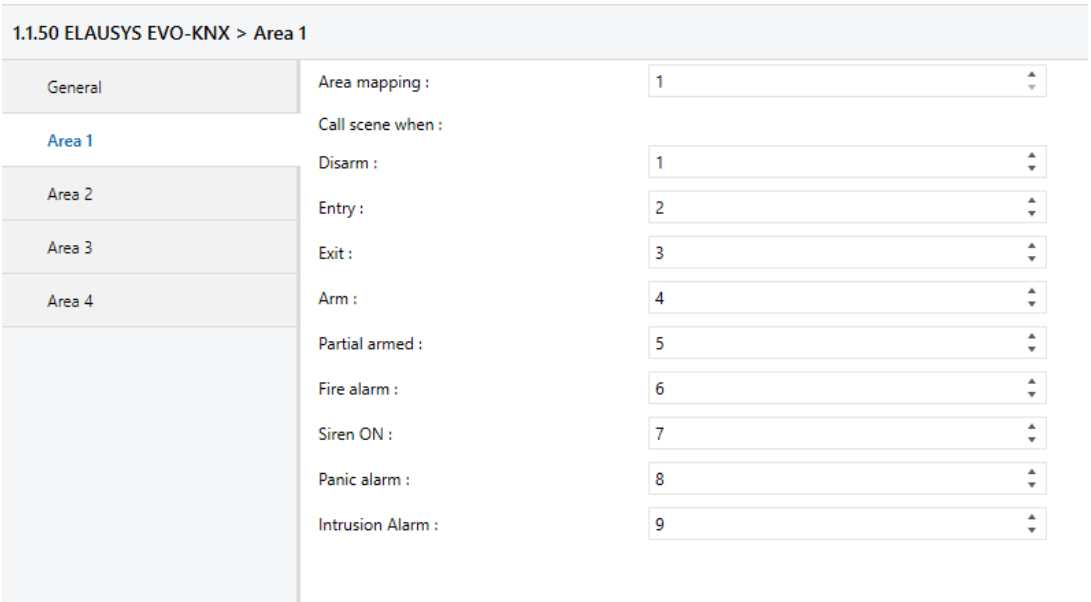
1. In the **Device Options** field, enter the **AJAX Hub ID**. This is mandatory.
2. Set the **Number of zones** to match the zones you want to monitor (up to 96).
3. Set the **Number of areas** according to your AJAX configuration: set to **1** if no groups are configured in AJAX (global arming/disarming only); set to **2 or more** if groups are enabled in AJAX (individual group commands).
4. Enable **Power supply status** if you want AC failure and battery failure monitoring on KNX.
5. Ensure **PG Control**, **PG Status**, and **Virtual inputs** are all set to “Not used”.



Area Configuration

For each area, a tab is available in the left side menu:

1. Open the first area parameters by selecting “Area 1”.
2. By default, Area 1 is mapped to group 1 of the alarm system. Change the **Area mapping** value if needed (e.g., set to 5 to link Area 1 of the KNX interface to group 5 in the alarm system).
3. For each status of the area, set the **scene number** to be recalled (0–64). Leaving the scene number at 0 disables scene control for that status.
4. Repeat for each area in your project.



6.4 Group Objects

Open the “Group Objects” tab of the device and assign a group address (GA) to each group object (GO) needed by the application. Assign group addresses to:

- **Scene object** (GO 233) — for automatic KNX scene recall
- **Zone status objects** (GO 67+) — for each zone you want to monitor on KNX
- **Area control objects** (GO 185–187 per area) — for arm/partial arm/disarm commands
- **Area status objects** (GO 188–196 per area) — for status feedbacks to KNX visualisation
- **Power supply objects** (GO 163–164) — for AC failure and battery failure monitoring
- **Module status** (GO 1) — for gateway health monitoring

Example for Area 1:

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
185	Area 1 - Arm	On/Off	Arm	2/1/1	1 bit	C	-	W	-	-	switch	Low
186	Area 1 - Partial Arm	On/Off	Partial Arm	2/1/2	1 bit	C	-	W	-	-	switch	Low
187	Area 1 - Disarm	On	Disarm	2/1/3	1 bit	C	-	W	-	-	trigger	Low
188	Area 1 - Disarmed	On/Off	State disarmed	2/1/13	1 bit	C	R	-	T	-	switch	Low
189	Area 1 - Entry delay	On/Off	Entry	2/1/9	1 bit	C	R	-	T	-	switch	Low
190	Area 1 - Exit delay	On/Off	Exit	2/1/10	1 bit	C	R	-	T	-	switch	Low
191	Area 1 - Armed	On/Off	State armed	2/1/12	1 bit	C	R	-	T	-	switch	Low
192	Area 1 - Partial Armed	On/Off	State armed parti...	2/1/11	1 bit	C	R	-	T	-	switch	Low
193	Area 1 - Fire Alarm	On/Off	Fire	2/1/5	1 bit	C	R	-	T	-	switch	Low
194	Area 1 - Siren ON	On/Off	Audible alarm	2/1/14	1 bit	C	R	-	T	-	switch	Low
195	Area 1 - Panic Alarm	On/Off	Panic Alarm	2/1/0	1 bit	C	R	-	T	-	switch	Low
196	Area 1 - Intrusion Alarm	On/Off	Intrusion alarm	2/1/4	1 bit	C	R	-	T	-	switch	Low

Power supply status:

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
163	AC Failure	On/Off	Power supply	0/0/3	1 bit	C	R	-	T	-	switch	Low
164	Battery Failure	On/Off	Battery	0/0/2	1 bit	C	R	-	T	-	switch	Low

Download

When all group objects and parameters are configured, download the KNX Interface application to the device. The first download requires pressing the **programming button** on the device to enter KNX programming mode, then performing a full download.

6.5 Verification and Commissioning

After downloading the application, verify the gateway operation:

1. Check the front panel LEDs: **Network** LED confirms Ethernet connectivity; **Connected** LED confirms active communication with the AJAX Hub.
2. Test zone triggers from the AJAX system and verify that the corresponding KNX group objects update correctly.

3. Test area commands from ETS or your KNX visualization (arm, partial arm, disarm) and verify that the AJAX system responds.
4. Verify scene recall by changing area statuses and confirming the expected KNX scenes are activated.

7. Troubleshooting & Common Mistakes

Not understanding zone reporting behaviour

AJAX sensors only report zone status to KNX when the system is armed or in night mode. Setting devices to Always Active enables daytime reporting, but also means those zones will trigger the alarm when the system is disarmed. Plan which zones genuinely need 24/7 KNX reporting.

Not inviting Elausys as Security Company

Area control (arm/disarm from KNX) will not work without inviting Elausys as a Security Company in the AJAX app. Internet access is also required for arming/disarming commands.

Skipping the scene assignment

The gateway supports automatic scene recall, but scenes default to 0 (disabled). You must configure them manually in ETS for every area status you want to automate.

Incorrect area count with AJAX groups

When groups are enabled in AJAX, at least two areas must be configured in ETS to switch from global to individual group commands. Configuring only one area when groups are active will result in incorrect behaviour.

Expecting disarm to exit Night Mode

Disarming a group does not disable Night Mode. You must explicitly send a Partial Arm (OFF) command to disable Night Mode. Design your KNX logic to handle this independently.

Ethernet connection loss

If the Ethernet connection between the gateway and the AJAX Hub drops, the Connected LED will turn off. The Module Status group object (GO 1) will send an error code to KNX, allowing your visualisation to display a connectivity fault. Zone statuses will hold their last known state until communication is restored.

8. Firmware Version

This user manual and related ETS application is valid for firmware versions **V1.00 and above**.

A “Firmware” group object (GO 2) is available on the device to read the firmware version as a string.

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
1	Module status	Status code	ModuleStatus	0/0/1	1 byte	C	R	-	T	-	system error class	Low
2	Firmware version	Text string	Firmware	0/0/4	14 bytes	C	R	-	T	-	Character String (AS...	Low

The firmware version can also be read from the gateway web page using a web browser. It is displayed on the top right of the page.

If a new firmware version is available, the device can be updated from the **FW Update** page on the gateway’s web interface. Select the binary file and press the Update button.

9. Datasheet

Technical Data	Value
Auxiliary power supply terminal	Screw terminal 12–30 VDC / GND
Power consumption KNX bus (typ.)	< 16 mA @ 29 VDC
Operating temperature	+5 °C to +45 °C
Enclosure dimensions	2 SU
Mounting	DIN rail
KNX terminal	Pluggable micro terminal, Red/Black, 4-pole PUSH WIRE for solid conductor wire 0.6–0.8 mm²
KNX bus voltage	29 VDC
Ethernet	RJ45 connector
Communication protocol (events)	SIA over local Ethernet
Communication protocol (commands)	Encrypted AJAX cloud protocol (internet required)
Maximum zones	96 per gateway
Maximum areas	4 per gateway
Galvanic isolation	Yes (KNX bus)