SpaceLogic KNX BMS IP Gateway

LSS100300

User guide

10/22 - SpaceLogic KNX BMS IP Gateway





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Warnings

Read through the following instructions carefully and familiarise yourself with the Hybrid Module prior to installation, operation and maintenance. The warnings listed below can be found throughout the documentation and indicate potential risks and dangers, or specific information that clarifies or simplifies a procedure.



The addition of a symbol to "Danger" or "Warning" safety instructions indicates an electrical danger that could result in serious injuries if the instructions are not followed.



This symbol represents a safety warning. It indicates the potential risk of personal injury. Follow all safety instructions with this symbol to avoid serious injuries or death.



DANGER indicates an imminently hazardous situation that will inevitably result in serious or fatal injury if the instructions are not observed.



WARNING

WARNING indicates a possible danger that could result in death or serious injuries if it is not avoided.



CAUTION indicates a possible danger that could result in minor injuries if it is not avoided.

NOTE

NOTE provides information about procedures that do not present any risk of physical injury.

Symbols



Additional information



The information provided must be complied with, otherwise program or data errors may occur.

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1 For your safety

🚺 WARNING

Risk of serious damage to property and personal injury due to incorrect electrical installation.

Safe electrical installation can only be ensured if the person in question can prove basic knowledge in the following areas:

- Connection to installation networks
- Connecting several electrical devices
- Laying electric cables
- · Connecting and establishing KNX networks
- Commissioning KNX installations

These skills and experience are normally only possessed by certified specialists who are trained in the field of electrical installation technology. If these minimum requirements are not met or are disregarded in any way, you will be personally liable for any damage to property or personal injury.

HAZARD OF INCORRECT INFORMATION

- Do not incorrectly configure the software, as this can lead to incorrect reports and/or data results.
- Do not base your maintenance or service actions solely on messages and information displayed by the software.
- Do not rely solely on software message and reports to determine if the system is functioning correctly or meeting all applicable standards and requirements.
- Consider the implications of unanticipated transmission delays or failures of communications links.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Qualified personnel

This document is aimed at personnel who are responsible for setting up, installing, commissioning and operating the device and the system in which it is installed.

Detailed expertise gained by means of training in the KNX system is a prerequisite.

2 Introduction

SpaceLogic KNX BMS IP Gateway (hereinafter referred to as **Gateway**) is a multifunctional device that allows you to integrate KNX installation with building automation devices.

The main communication interface is KNX TP and IP supporting BACnet protocol.

There are three components combined in one device:

- KNX IP router (max 500 objects)
- KNX IP interface
- DPSU choke

The Gateway allows professional installers to deploy KNX installations more cost and time effectively thanks to features combination.

The architecture is simpler because it is no longer necessary to use KNX routers and KNX power supplies with respect to given parameters.

The Gateway is designed for commercial installations.

This document describes the Gateway application software, device features, and user interface.

2.1 Security recommendation

- Network security must be set up at the appropriate level. Gateway should be part of a secure network with limited access. In case of Internet connection, it is strictly recommended to use VPN or HTTPS channel.
- Use secure protocol access HTTPS://IP:Port.
- The security method is determined by the ability of other network elements (firewall, protection against viruses and malware threats).
- It is strictly recommended to store the files containing your backups in a safe place without access of unauthorized persons.
- Make sure your Gateway does not have a publicly accessible IP address.
- Do not use port forwarding to access your Gateway from the public Internet.
- The Gateway should be located on its own network segment.
- If your router supports a guest network or VLAN, it is preferable to locate your Gateway there.

In case you find cyber security incidents or vulnerabilities, please contact us through this page:

<u>https://www.se.com/ww/en/work/support/cybersecurity/security-notifications.jsp</u>. You can read more on system hardening here:

https://www.se.com/ww/en/download/document/AN002_107/.



MATERIAL DAMAGE THROUGH UNAUTHORIZED ACCESS TO THE KNX INSTALLATION

As soon as you access the KNX installation via the Internet, the data traffic can be read by third parties.

- Only use a VPN access for this connection with a secure encryption for all data packages.
- The required hardware (VPN router) and the features offered by mobile service providers differ significantly with regard to the settings and technical possibilities depending on the country or region.
- Always have the VPN access set up and commissioned by a specialist VPN service provider. The VPN service provider selects a suitable mobile service provider and suitable hardware for the VPN access and ensures that the VPN is set up by a qualified specialist.

Schneider Electric cannot be held responsible for performance problems and incompatibilities caused by applications, services or devices from third-party providers. Schneider Electric offers no technical support when setting up a VPN access.

Failure to follow these instructions can result in equipment damage.



The VPN access (VPN = Virtual Private Network) authorises the portable device to access the local network, and therefore also the KNX installation, via the Internet.

Benefits of VPN:

- Only authorised users have access to the local network.
- All data is encrypted.
- The data is not changed, recorded or diverted during the transfer. This is often referred to as a VPN tunnel.

Requirements for setting up a VPN connection:

- Internet connection.
- The portable device and the router are enabled for a VPN connection (VPN client installed).
- The Gateway should be located on its own network segment.
- If your router supports a guest network or VLAN, it is preferable to locate your Gateway there.

2.2 Create a strong password

- Your password can be any combination of upper case and lower case characters, numbers, and special characters.
- Use a minimum of 8 characters.
- Make your password hard to guess or find in the cybercriminal dictionaries.
- Prefer phrases.
- Change your password frequently, at least once a year.
- Change a default Admin password immediately after you get it and after a factory reset.
- Never re-use your passwords.

3 Device specification

| Specification | Description | Note |
|-----------------------------|--|---|
| Terminals, Inter- | 1 x RJ45 – ethernet | |
| face | 10BaseT/100BaseTx | |
| | 1 x KNX TP | |
| | 1 x Reset push-button | |
| Connectivity | IP LAN connection 10/100 Mbit | |
| | KNX / EIB TP Bus | |
| LED indicators | 2 x LED, CPU, (Operation + Reset) | |
| KNX IP routing | 500 objects | You can use up to 4000 BACnet |
| | (automatically disabled when over this limit) | points. See <u>Performance \rightarrow 10.</u> |
| KNX IP tunneling | For commissioning of KNX devices via ETS | |
| KNX TP limitation | The bandwidth limit of the KNX TP medium is limited to 9.6 kbits/s. Between 20 – 40 telegrams per second can be transferred on each single KNX TP line. | |
| OS (firmware) | Flashsys | |
| Applications | Embeded configuration application with webserver. | |
| IP interface setting | By default – static IP | |
| | 192.168.0.10/255.255.255.0 | |
| BACnet Protocol Revision | 22 | |
| BACnet Device Profile | B – ASC, B – GW | |

4 Compatibility

The Gateway is compatible with the following standards:

- KNX/EIB TP
- KNXnet/IP
- BACnet IP

5 Performance

| Parameter | Note | |
|---|-----------------|---|
| Number of BACnet objects | 4000 | Maximum number of points that can be defined in the virtual BACnet device inside the Gateway. Objects exceeding limit are silently discarted. |
| Number of BACnet subscriptions (COV) requests | 4000 (1500*) | Maximum number of BACnet subscriptions (COV) requests accepted by the Gateway. |
| KNX group objects | 4000 | Maximum number of different KNX group addresses that can be imported/defined. |

*BACnet COV support provides fast data communication while reducing BACnet network traffic.

*1500 for SXWAUTSVR10001 – Automation server by Schneider Electric.

6 Getting started

Before you start, make sure that the Gateway is properly connected according to the installation instructions.

You need a standard web browser to work with the application and set up the Gateway. Google Chrome or Mozilla Firefox web browsers are recommended.

When acccessing for the first time:

Default IP address 1. Type the default IP address 192.168.0.10 in the address bar of your web browser and click *Enter*.

The Gateway uses a self-signed certificate, and the following message shows:

| Your conne | ction is not private | |
|-----------------------------------|--|----------------|
| Attackers might messages, or c | be trying to steal your information from 192.168.0.10 (for example, redit cards). Learn more | passwords, |
| NET::ERR_CERT_ | AUTHORITY_INVALID | |
| | | |
| Advanced | | Back to safety |
| | | |

Pic. 1 Warning: Your connection is not private

By default, the gateway uses an HTTPS communication mode. Because of the used self-signed certification, you have to confirm the exception to proceed. HTTPS provides encrypted communication between the Gateway and the client.

2. Click Advanced > Proceed to 192.168.0.10.

| Your connection is not private | | |
|--|---------------------------------|--|
| Attackers might be trying to steal your information from 192.168.0.10 (for example, messages, or credit cards). Learn more | passwords, | |
| NET::ERR_CERT_AUTHORITY_INVALID | | |
| | | |
| | | |
| Hide advanced | Back to safety | |
| | | |
| This server could not prove that it is 192.168.0.10; its security certificate is not trust computer's operating system. This may be caused by a misconfiguration or an atta your connection. | ed by your cker intercepting | |
| Proceed to 192.168.0.10 (unsafe) | | |
| | | |
| | | |

Pic. 2 Warning: Proceed to 192.168.0.10

| Username and password | 3. Enter the default login details and click Enter. |
|------------------------|---|
| | username: admin |
| | password: admin |
| Password change prompt | 4. You will get prompted to change your password. Type it and click Save. Your new password has to contain at least 8 characters as following: one uppercase letter lowercase letter |

• a digit

Start page 5. The next step gets you to the start page.

| English V SpaceLogic KNX BMS IP Gateway | | | | | ∽ ● × | |
|---|-----------------------|------------------------------|-----------------|------------|--------------------|-------------|
| Group addresses - All group addresses - | Name or group address | Date type - All data types - | ~ * | Add object | Limport KNX object | 🏟 Actions 👻 |
| Group address [▲] | Name ≑ | Date type 🌩 | Current value 🗘 | | Updated at ≑ | |

Pic. 3 Start page

You can find there:

- Language settings
- The Gateway settings (
- Tool for filtering and working with objects
- Import KNX project button

Language settings First, select your preferred application language from the drop-down menu.

| Language: | English | ~ |
|-----------|---------|---|
| | | |

Pic. 4 Select your language

In the following steps, you will import your KNX project and set the device parameters.

7 Import KNX project

Import KNX project button top right allows you to import the *.knxproj file directly to the Gateway. It preserves the structure of the project and DPTs of the group addresses, including automatic units and suffixes.



Objects with the same name are considered duplicates and might not be imported and marked as discarded.

You can add objects without data types defined and also add structure level names to objects.

Password protected *.knxproj files requests password set in ETS. You cannot import the project without knowing correct password.

Import your project by following these steps:

Import KNX project 1. Click Import KNX project button and choose your file.

- 2. Type the correct password if applicable.
- 3. Check *Add level names to objects* if you want to import also object names and their structure location designation.
- 4. You can check the *Overwrite existing objects* if you want to overwrite existing objects.
- 5. Click Next.

Filtering tables are filled in automatically according to the imported KNX project and can be further modified.

The backbone key is also automatically imported from the KNX project.

| Import KNX project |
|---|
| Project file |
| Choose file No file chosen |
| Password |
| |
| Add level names to objects Overwrite existing objects |
| Set KNX/IP backbone key automatically if present in the project Create filtering table automatically based on the project data |
| The maximum allowed project size is 4000 objects. Objects exceeding the limit will not be imported |
| You will be able to select which objects to import during the next step. Objects with incompatible data types will be skipped. |

Pic. 5 Import your KNX project.

i

KNX routing cannot be enabled for projects larger than 500 objects.

Select objects to import In the next step, you choose which objects from the KNX project you want to export to BACnet. Only selected objects are imported to the Gateway database.

You can filter objects by name, group address, or data type to make it easier to find your object. See more in Filtering and changing object properties $\rightarrow 16$.

Choose your objects and click Next.

| Group address 🔺 | Name ≑ | Data type 羮 |
|-----------------|--|---------------|
| ☑ 1/0/0 | Switch light central | 01.001 switch |
| ☑ 1/0/10 | Living room Light room switch | 01.001 switch |
| 1/0/13 | Kitchen Light room switch | 01.001 switch |
| 1/0/14 | Dining room Light room switch | 01.001 switch |
| « 1 2 3 4 5 55 | » 1-4 / 220 Selected objects for import: 218 | Next Cancel |

Pic. 6 Choosing objects to import.

Finish importing objects A pop-up window appears informing you how many objects are being imported.

| Import KNX project | |
|--------------------------------------|--|
| Project import finished successfully | |
| Imported objects: 218 | |
| ок | |

Pic. 7 Import KNX project final dialog.

Click OK and your import process is complete.

7.1 Add object

The *Add object* function is handy when you need to add an individual object later and, you do not want to import the entire *.knxproj file again.

Add objects Follow the steps below to add new object:

- 1. Click on Add object.
- 2. Fill in the object details.
- 3. Click Save.

| Object | | | × |
|---------------|------|------|--------|
| Group address | Name | | |
| Data type | | | |
| Description | | | ~ |
| | | | |
| | | | |
| | | Save | Cancel |

Pic. 8 Adding objects.

7.2 Actions

Mass delete

The Mass delete feature allows you to delete objects in bulk.

You have two options:

- Delete all objects
- Delete objects from the current filter

In the next step, the objects are deleted the way you select.

| Select mass delete mode | × |
|--|--------|
| Delete all objects | |
| Delete objects from the current filter | |
| | Cancel |

Pic. 9 Deleting objects in bulk

Mass edit

You can edit units and COV increments of your objects in bulk.

- 1. Filter the objects you want to edit.
- 2. Click on Actions > Mass edit.
- 3. Select parameters units and/or COV increment value and click Save.

Export CSV

You can export objects to a .csv file.

Click Actions > Export to CSV.

The .csv file with all the objects is automatically downloaded to your local *Downloads* folder, from where you can open it in MS Excel.

7.3 Filtering and changing object properties

Filtering objects

You can filter objects by name, group address, or data type. You can either select from the drop-down menu or type what you are looking for.

| Group addresses | Name or group address | Data type | |
|----------------------|--------------------------------|---------------------|-----|
| - 0/5 | switch | 01. 1 bit (boolean) | ~ Q |
| Group address 🔷 Name | A 7 | Data type | |
| 0/5/0 main_0 | group - SL master - Switch1 | 01.1 bit (boolean) | |
| 0/5/3 main_0 | group - SL master - FB_switch1 | 01.1 bit (boolean) | |
| 0/5/5 main_g | group - SL master - Switch2 | 01.1 bit (boolean) | |
| 0/5/8 main_c | group - SL master - FB_switch2 | 01.1 bit (boolean) | |

Pic. 10 Filtering objects

Changing object properties

You can edit properties of objects and their values later as needed. Or you can delete them individually.

Edit the object properties by following these steps:

Editing the object properties

1. Click 🗹.

2. Edit object properties.

3. Click Save.

| Object | |
|--------------------|-------------------------------------|
| Group address | Data type |
| 0/5/0 | main_group - SL master - FB_switch1 |
| Data type | |
| 01.1 bit (boolean) | 、 、 |
| Description | |
| | |
| | |
| | |
| | Save Cancel |

Pic. 11 Editing object properties

Setting the object value You can set the value of your object.

- 1. Click 🔳.
- 2. Select in the drop-down Value list.
- 3. Click Set.

| Set value | × |
|----------------------------------|--------|
| Group address | |
| 0/5/0 | |
| Main_group - SL_master - Switch1 | |
| Data type | |
| 01. 1 bit (boolean) | |
| Value | |
| 0 | ~ |
| | |
| Set | Cancel |

Pic. 12 Setting the value of the object

Deleting the object

If you want to delete an object, click 🗾 . Click Yes to confirm.

| Are you sure you want to delete this object? |
|--|
| Yes No |

Pic. 13 Deleting the object

8 Application settings

After you set up the user interface of the application and import the ETS project, you can set the individual parameters of your Gateway.

In the main menu you have the following options:

- Backup
- Restore
- Change password
- Hostname
- BACnet configuration
- KNX configuration
- Network configuration
- HTTP server configuration
- HTTP SSL certificate
- NTP client configuration
- Date and time
- System log
- Ping
- Toggle device identification
- Upgrade firmware
- Factory reset
- Reboot
- Shutdown

8.1 Backup

The purpose of the backup is to create a copy of data that can be recovered in the event of a primary data failure.

To create a backup file, go to and select the *Backup* option from the drop-down menu.

Your backup file is immediately downloaded to the browser *Downloads* folder. The name of the backup file consists of the following data:

Hostname-backup-yyyy.mm.dd-hh.mm.bckp

Actual Gateway time and date is used when the backup is generated. You can later rename the file and save it to another folder.

8.2 Restore

A restore is performed to return data that has been lost, stolen or damaged to its original condition or to move data to a new location. Use backup files to restore your Gateway data to an earlier point in time.

To restore your data, do the following:

Data restore

2. Click Restore.

1. Go to 📃 .

3. Click Choose File and find your backup file.

If you also want to restore the configuration files, check the *Restore configuration files* option.

| Restore | × |
|---|-------------|
| Backup file Choose file No file chosen Restore configuration files (System, Network, KNX, BACnet, HTTP, password) | |
| | Save Cancel |

Pic. 14 Restoring application configuration

After you click *Save*, a pop-up window appears asking if you want to reboot the system. Select *Yes* or *No*. If you select *No*, nothing is imported.

| Reboot system now? | | |
|--------------------|-----|----|
| | Yes | No |

Pic. 15 Rebooting the system

8.3 Change password

For changing your password, do the following:

- 1. Go to 🧮.
- 2. Click Change password.
- 3. Enter your current password and the new password.
- 4. Click Save.

| Change password × | |
|--|--|
| Current password | |
| | |
| New password | |
| | |
| Repeat password | |
| | |
| Password must contain at least one uppercase letter, lowercase letter and a digit. | |
| Save | |

Pic. 16 Changing the password

8.4 Hostname

You can change the hostname of your Gateway for easy identification. It displays in backup file name.

To change the hostname, do the following:

Changing the hostname

- 1. Go to 📃.
- 2. Select Hostname.
- 3. Type your hostname.
- 4. Click Save.

8.5 BACnet configuration

BACnet server The Gateway acts as a BACnet server. It serves data readable for BACnet client devices, and BACnet client devices can write data to the server.

BACnet protocol allows the information exchange for building automation devices, regardless of the particular building service they perform. The devices are connected via Ethernet physical layer.

The connection to the BACnet network comes from KNX group objects, which are exported to BACnet.

Binary objects appear as binary values, numeric values will appear as analogue values. Other data types are not supported.

BACnet configuration

1. Go to 📃.

| BACnet configuration | on | | 2 |
|------------------------|-----------|-------------|----------------------|
| Enable BACnet service | ver | | |
| Device ID | | Port | |
| 127001 | | 47808 | |
| Device name (optional) | | Device pase | sword |
| | | mybacp | wd |
| Object priority | | Maximum C | COV subscriptions |
| 16 | ~ | 512 | |
| | | | |
| BBMD IP | BBMD port | | Lease time (seconds) |
| | | | |
| | | | Save Cancel |

Pic. 17 BACnet configuration

| Parameter | Note |
|--------------------------------|--|
| Enable BACnet server | Disabled by default |
| Device ID | Choose unique network ID |
| Port | BACnet port, 47808 by default |
| Device name (optional) | Controller's hostname_Device ID by default |
| | If you fill in the device name here, then BACnet name = device name. |
| Device password | BACnet password |
| | The password will be used for BACnet services (e.g., "DeviceCom- municationControl" and "ReInitializeDevice" – re-initialization of the device). |
| | If a password is not defined, it is not sent to the BACnet device. |
| Object priority | Default priority array position |
| Maximum COV subscrip- tions | 4000 (See <u>Performance \rightarrow 10)</u> |
| BBMD IP | BACnet router IP |
| BBMD port | BACnet router port |
| Lease time (seconds) | BBMD registration resend interval |

3. Configure the following BACnet parameters and click *Save*.

8.6 KNX configuration

In the *KNX configuration* menu, you can configure detail setting of KNX when The Gateway is used in a role of KNX IP interface or router.

| KNX configuration | | | |
|--|-----------------------------|---|--|
| KNX address | | | |
| 15.15.255 | | | |
| ACK all group telegrams | | | |
| Enable tunnelling | | | |
| Enable routing (multicast) | | | |
| Multicast IP | | Multicast TTL | |
| 224.0.23.12 | | 1 | |
| | | | |
| Backbone key (32 hexadecimal char | acters) (disable tunneli | ng and non-secure routing) | |
| Backbone key (32 hexadecimal char | acters) (disable tunneli | ng and non-secure routing) TP bus to IP group address filter | |

Pic. 18 KNX configuration

1. Go to 📃 .

KNX configuration

3. Configure the following BACnet parameters and click Save.

| Parameter | Note |
|--|--|
| KNX address | KNX individual address of the device. 15.15.255 by default. |
| ACK all group telegrams | If the Gateway communicates directly with another KNX device it must acknowledge received telegrams. Uncheck if the Gateway operates as a sniffer of group addresses only. |
| Enable tunneling | Allows multiple devices to connect to public network using the same public IPv4 address. It modifies the IP address information in the IPv4 headers while in transit across a traffic routing device. IP connection, is 1000x faster than TP-UART. The Gateway as a server. Unicast, acknowledged data exchange, additional individual address per tunneling connection. |
| Enable routing (multicast) | Multicast, unacknowledged data transfer. The Gateway as a Line or Backbone Coupler. |
| Multicast IP | Multicast IP address, 224.0.23.12 by default. |
| Multicast TTL | Default value is 1; it allows communication between different sub-networks. |
| Backbone key (32 hexadecimal characters) | Backbone key for encrypting and decrypting secured telegrams for IP routing. |
| Enable only secure communi- cation - | Tunnelling and non-secure routing are disabled. |
| IP to TP bus group address filter | No filter |
| TP bus to IP group address filter | Accept selected group addresses |
| | Drop selected group addresses |
| | Filter entry exemples |
| | Filter entry examples: |
| | - Single address $(1/1/1)$ |
| | - Range (1/1/1-1/1/100) |
| | |

8.7 Network configuration

Network configuration is the process of setting a network's controls, flow and operation to support the network communication. After setting the network parameters, it is necessary to restart the system for the changes to take effect.

Network configuration

1. Go to 📃.

| Network configuration | | × |
|-------------------------------|----------------------------|-------------|
| Current IP | MAC address | |
| 10.154.20.50 Protocol | 00:1B:C5:00:42:FD | |
| DHCP | | ~ |
| DNS 1 | DNS 2 | МТО |
| 10.154.16.3 | 10.154.24.3 | |
| System reboot is required for | or changes to take effect. | |
| | | |
| | | Save Cancel |

Pic. 19 Network configuration

3. Configure the following network parameters and click Save.

| Parameter | Note |
|--------------|--|
| Current IP | The IP address given by the DHCP server or the static IP address. This field appears only if the IP address is given otherwise it is hidden. |
| MAC address | Each device has its own unique MAC address. |
| Protocol | Specific protocol used for addressing: |
| | Static IP |
| | DHCP |
| IP address | 192.168.0.10 by default |
| Network mask | 255.255.255.0 by default |
| Gateway IP | None by default |
| DNS 1 | Primary DNS server IP address. |
| DNS 2 | Secondary DNS server IP address. |
| MTU | Maximum transmission unit, the largest size of the packet which could be passed in the communication protocol. (Default 1500). |

In the pop-up window, click Yes and confirm the system reboot for the changes to take effect.

| Reboot system now? | | |
|--------------------|-----|----|
| | Yes | No |

Pic. 20 Rebooting the system

1. Go to 📃.

8.8 HTTP server configuration

In this section you set the security level of the Gateway's communication with the web server and additional HTTP/S ports.

HTTP server configuration

| 2. Select HTTPS server configuration. | | |
|--|------|--------|
| HTTPS server configuration | | > |
| HTTPS Mode | | |
| HTTPS only, redirect HTTP to HTTPS | | ~ |
| Additional HTTP port | | |
| 1077 | | |
| Additional HTTPS port | | |
| | | |
| Default HTTP port: 80, default HTTPS port: 443 | | |
| | | |
| | Save | Cancel |

Pic. 21 Configuration of HTTP server

- 3. Configure the following HTTPS server parameters and click Save.
- 4. Reboot for the changes to take effect.

| Parameter | Note |
|-----------------------|---|
| HTTPS mode | HTTP and HTTPS enabled |
| | HTTPS only, redirect to HTTPS |
| | HTTPS only, HTTP port is disabled |
| Additional HTTP port | Select the number. (Default HTTP port: 80.) |
| Additional HTTPS port | Select the number. Default HTTPS port: 443. |

HTTPS modes:

- HTTP and HTTPS enabled both HTTP and HTTPS communication is allowed
- HTTPS only, redirect HTTP to HTTPS all communication on HTTP ports will be redirected to HTTPS
- HTTPS only, HTTP port is disabled only secured communication is enabled



For security reasons, HTTPS communication mode is recommended.

8.9 HTTP SSL certificate

SSL certificates are data files that digitally bind a cryptographic key to a device's details. When installed on a web server, it activates the padlock and the HTTPS protocol and allows secure connections from a web server to a browser.

- HTTP SSL certificate settings
- 1. Go to 📃 .
- 2. Click HTTP SSL certificate.
- 3. Choose your Mode:
 - Upload new private key/certificate: upload existing RSA key/SSL certificate
 - Generate new private key/certificate: generate RSA key/SSL certificate from one already installed
- 4. Click Save and reboot for changes to take effect.

| Node | |
|---|--|
| Upload new private key / certificate | |
| Private key (RSA) | |
| | |
| | |
| | |
| Certificate (SHA256) | |
| | |
| | |
| | |
| | |
| System reboot is required for changes to take effect. | |
| | |

Pic. 22 HTTP SSL certificate

8.10 NTP client configuration

NTP (Network Time Protocol) is intended to synchronize all participating devices to within a few milliseconds of Coordinated Universal Time (UTC). It is designed to mitigate the effects of variable network latency.

If the NTP client is enabled, the Gateway can collect data from up to 4 selected servers (priority 1 to 4 in a row).

Define the server from which date and time is obtained.

| NTP client configuration | × |
|--------------------------|--------------------------|
| Enable NTP client | |
| Server 1 | Server 2 |
| 0.schneider.pool.ntp.org | 1.schneider.pool.ntp.org |
| Server 3 | Server 4 |
| 2.schneider.pool.ntp.org | 3.schneider.pool.ntp.org |

Pic. 23 NTP client configuration

You need to reboot after NTP client configuration. Check availability of NTP server with ping tool if necessary.

8.11 Date and time

Network time protocol (NTP) is implemented. Along with the internet connection, The Gateway automatically updates time from an NTP server.

Date and time setting 1. Go to \equiv .

- 2. Click Date and time.
- 3. If there is no internet connection, click on *Get from system* to adopt time from your PC.
- 4. Select your time zone and click Save.

| Date and time | × |
|---|----|
| Date 2 V October V 2021 V | |
| Time 22 10 10 Get from system Timezone | |
| Europe/Prague | ~ |
| A NTP client is enabled, changing date and time manually is not recommended. | |
| Save | el |



8.12 System log

The Gateway records each system start and TP / KNX disconnection. Transactions are recorded chronologically in a simple log file. Log file is automatically created and maintained by the Gateway.

The system log displays when you go to \blacksquare and click on *System log*.

At the bottom you can see the CPU load information.

| System log | Reload | × |
|--|--------|---|
| 2021.10.22 15:17:42 KNX/TP: Disconnected | | * |
| 2021.10.22 15:17:29 System start | | |
| 2021.10.22 15:11:35 KNX/TP: Disconnected | | |
| 2021.10.22 15:11:23 System start | | |
| 2021.10.22 14:45:35 KNX/TP: Disconnected | | |
| 2021.10.22 14:11:20 System start | | |
| 2021.10.22 10:46:11 KNX/TP: Disconnected | | |
| 2021.10.22 09:09:08 System start | | |
| 2021.10.22 09:00:11 KNX/TP: Disconnected | | |
| 2021.10.21 18:28:50 System start | | |
| 2021.10.21 15:46:11 KNX/TP: Disconnected | | |
| 2021.10.21 14:28:20 System start | | |
| | | - |
| CPU: 1% | Close | |

Pic. 25 Log file

8.13 Ping

Ping is a tool to test the reachability of a host on an Internet Protocol (IP) network. Ping measures the round-trip (path) time for packets sent from the originating host to a destination that are echoed back to the source.

Ping the host To r

To ping the host, do the following:

- 1. Go to 📃 .
- 2. Select Ping.
- 3. Type the IP or hostname.
- 4. Click Run.

| Ping × |
|--|
| IP or hostname |
| 10.154.20.50 |
| PING 10.154.20.50 (10.154.20.50): 56 data bytes |
| 64 bytes from 10.154.20.50: seq=0 ttl=64 time=0.242 ms |
| 64 bytes from 10.154.20.50: seq=1 ttl=64 time=0.235 ms |
| 64 bytes from 10.154.20.50: seq=2 ttl=64 time=0.239 ms |
| 64 bytes from 10.154.20.50: seq=3 ttl=64 time=0.247 ms |
| 10.154.20.50 ping statistics |
| 4 packets transmitted, 4 packets received, 0% packet loss round-trip min/avg/max = 0.235/0.240/0.247 ms |
| |
| Run Cancel |

Pic. 26 Ping statistics.

8.14 Toggle device identification

Toggle device identification is a feature for searching the individual the Gateway devices on a network. Turning on the identification flashes the LED 2 (red/green) on the specific device.

Toggle device identification Go to =, click *Toggle device identification*. Check the device signaling.

8.15 Upgrade firmware

A firmware upgrade updates your the Gateway with advanced operational instructions without needing any upgradation in the hardware. Upgrade does not change the Gateway configuration.

During the firmware upgrade, the device does not respond and restarts several times.

LED1 is flashing red/green during the upgrade. Do not unplug the Gateway while LED1 flashes.

- Firmware upgrade
- 1. Go to 📃.
 - 2. Click Upgrade firmware,
 - 3. Choose your firmware file.
 - 4. Choose your signature file.
 - 5. Click Save.

| Upgrade firmware | 1 |
|--|---|
| Current version: 2.0.1 | |
| Firmware file | |
| Choose File No file chosen | |
| Signature file Choose File No file chosen | |
| A Warning: Firmware downgrade is not supported. | |
| It will take about 2 minutes for upgrade to complete. The device configuration will be kept unchanged. Do not unplug your device while upgrade is in progress! | |
| | |
| Save Cancel | |

Pic. 27 Upgrading firmware.

After each upgrade, it is strongly recommended to clean the browser cache.





You cannot upgrade without a signature file. The firmware is always distributed with the appropriate signature file.

8.16 Factory reset

A factory reset erases all of the information on the Gateway and restores the software to its original state.

There are two ways you can factory reset your Gateway:

- In the application
- With the hardware reset button

Application factory reset

To reset your device via the application, go to \equiv , click *Factory reset* and confirm. The system automatically reboots.

| Are you sure you want to p | perform a factory reset? |
|----------------------------|--------------------------|
| System will be rebooted an | utomatically. |
| | Yes No |

Pic. 28 Application factory reset.

The device parameters after factory reset:

| Parameter | Result | |
|-------------|---|--|
| Device name | LSS100300 | |
| IP address | IP is preserved after the factory reset | |
| No objects | Configuration as BACnet, KNX | |

Hardware factory reset

Hardware factory reset is suitable for situations when the Gateway is unavailable due to incorrect settings.

Long press (10 s) on the red RESET button on the front side. Release and press again for 10 seconds.

IP address after HW factory reset with hardware button is always 192.168.0.10.

 3 types of HW button press
 Press and hold for <10 sec – reboot the device</td>

 Press and hold for >10 sec – reset networking with IP to factory default

 Press and hold for >10 sec and again press and hold for >10 sec – full reset of configuration to factory defaults

8.17 Reboot

You can reboot (restart) the Gateway if the device does not act as you expect. A reboot is a single step that involves both shutting down and then powering on.

Reboot the Gateway To restart the device, go to \equiv , select *Reboot* and click Yes.

| Reboot system now? | | |
|--------------------|-----|----|
| | Yes | No |

Pic. 29 Rebooting the Gateway.

8.18 Shutdown

Shutdown is to power off the Gateway in a way that ensures that no data is lost and that the system is not corrupted. All the settings will be saved.

Shutting down To properly shut down your device, go to =, select Shutdown, click Yes to confirm.

Do not disconnect the power until LED 1 (green) stops flashing! Otherwise, the database may not be saved securely.

The only way how to switch the Gateway back on is to disconnect and re-connect power supply.

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