



Industrial IoT Gateway

Installation and user manual



INTRODUCTION

Thank you for purchasing the SWYCS Industrial IoT Gateway. The SWYCS Industrial IoT Gateway connects all your edge systems, sensors and other intelligent devices to one another to enable smart buildings, smart homes and other smart applications. The multi-protocol gateway is fully open and can be easily adapted to the specific needs of any application, supporting all open standards.

As an interoperable gateway with an internal data backup up to one month and a cloud API, it's the most advanced gateway to support connectivity and compatibility.

It can be easily integrated with ERP systems, IWMS systems and other building and maintenance software applications.

The Industrial Gateway runs on a custom Linux distribution, has a local API, cloud API and is compatible with all open standards.

It is well known for its ease of installation with a pre-installed three-steps wizard for each protocol. SWYCS Industrial IoT Gateway is the preferred choice for installation engineers who seek an interoperable, vendor-neutral and easy-to-use IoT solution for any smart application.

This document comes with the purchase or installation of the SWYCS Industrial IoT Gateway. In the document you will find general information about the gateway, technical specifications, installation and warranty/service guidelines.

Keep this manual for future reference.

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INCLUDED

- SWYCS Industrial IoT Gateway (1 pcs)
- User manual (1 pcs)
- PI cable 2m (1 pcs)
- USB-C service dongle (1 pcs)
- Connectors (6 pcs)
 - 2 x two-way connector
 - 3 x three-way connector
 - 1 x five-way connector

SAFETY

To prevent and reduce any risk for possible physical injury be sure to follow the instructions written in this manual to correctly install the Industrial Gateway.

Do not install when the Industrial Gateway is defective, broken or missing any original parts. If the Industrial Gateway is damaged, broken or defective be sure to remove the Industrial Gateway immediately and dispose of it correctly.

Do not tamper with the Industrial Gateway by opening it, adding parts

that are not provided with the Industrial Gateway or are not made and distributed by SWYCS. Be sure to install the Industrial Gateway in a dry and clean area with no risk of water or dust getting inside of the Industrial Gateway. The Industrial Gateway is intended to be used indoors only.

SWYCS is not responsible for any injury or damages caused by misuse of the Industrial Gateway and only supports installation conducted by following this manual.

TECHNICAL SPECIFICATIONS

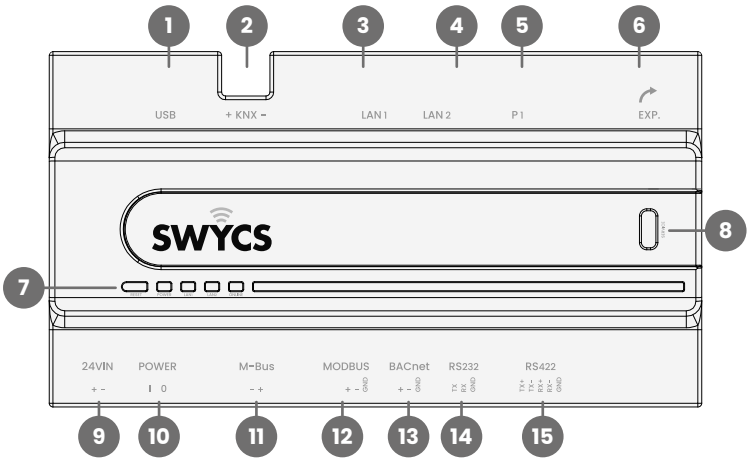
Specification	
Memory	512 MB
Storage	8 GB flash
Processor	ARM Cortex-A8 AM3358
Wireless modules (optional)	Zigbee & Z-wave, LoRa & EnOcean, GSM modem, WiFi

Interfaces	
Serial interface	Modbus, BACnet, RS232, RS422
Industrial interface	2x Ethernet connection (1 Gbps)
	2x USB 2.0 type A connectors
	1x USB-C port (service port)
	M-Bus
	PI (smart meter) connection

Hardware	
Dimensions	170 x 90 x 53mm
Mounting type	DIN rail housing
Protection rating	IP20
Protocols	KNX TPI, Modbus RTU, BACnet MS/TP, DSMR PI
Status LED	Running mode, Network status, Online Status
Other	Real-time clock (RTC), on/off switch, reset button

Power	
Operating voltage	24V DC
Operating temperature	0 °C to 50 °C
Back up battery	Li-Po, 1300 mAh
Other	Automatic reboot after power failure

TECHNICAL SPECIFICATIONS



- | | | | |
|---|--|----|-----------------------|
| 1 | 2x USB 2.0 port | 8 | Service port |
| 2 | KNX connections | 9 | 24VIN |
| 3 | LAN 1 | 10 | Power ON / OFF switch |
| 4 | LAN 2 | 11 | M-Bus |
| 5 | P1 (smart meter) connection | 12 | Modbus |
| 6 | Expansion connector | 13 | BACnet |
| 7 | Status LEDs:
RESET, POWER, LAN1, LAN2, ONLINE | 14 | RS232 |
| | | 15 | RS422 |

LED INDICATORS

LED strip	
On	Running
Off	Not runing

LAN 1&2		
Color	Description	Implication
Green	Connected to the internet	Ethernet link established
Red	Not connected to the internet	Ethernet link established
Red blink (slow)	Connection to the internet dropped	Ethernet link not interrupted during internet connection failure
Off	Ethernet link not established	

Power		
Color	Description	Implication
Green	Running on AC power source	
White	Power switch to "OFF"	Immediate shutdown
Blue	Power failure; Running on internal battery power source	Will shut down after configured delay
Red	Power failure / Battery timeout expired	Immediate shutdown
Purple	Internal battery undervoltage	Immediate shutdown
Any blink	Gateway starting or shutting down	
Off	Not running / Just powered up	

Online		
Color	Description	Implication
Green	Connected to SWYCS Cloud with valid license	Connected to the internet
Blue	Connected to SWYCS Cloud, with limitations, no valid license	Connected to the internet
Green/blue blink	Connecting to SWYCS Cloud	
White	Gateway not registered	Limited feature set enabled
White blink	Determining registration status, or missing factory keys	
Off	No internet connection	

Note: POWER, LAN1, LAN2, ONLINE all WHITE means firmware upgrade in progress.

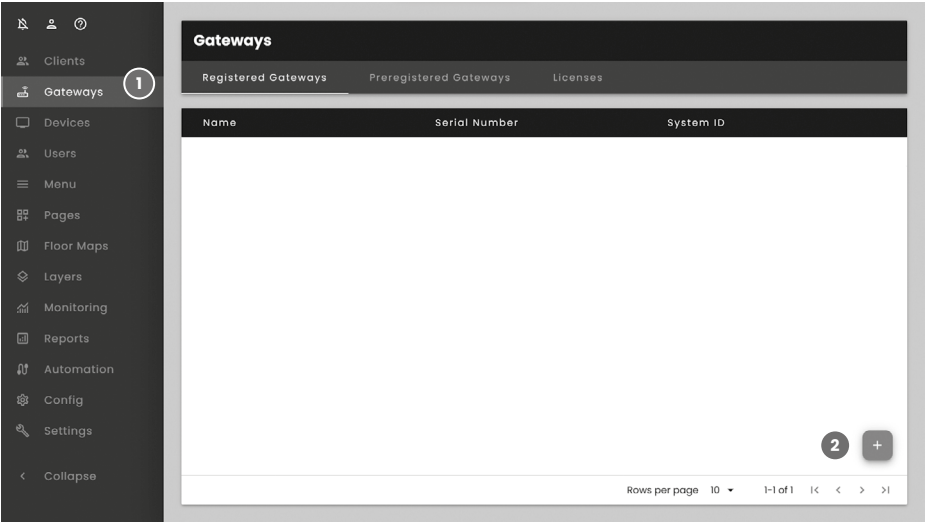
INSTALLATION

Before installing the Industrial Gateway it is advised to first register the gateway to your account by using the following steps and information found on the back of the gateway. There are two ways to register the Industrial Gateway to your account, through the SWYCS web portal and through the SWYCS Tools app.

Registering through the SWYCS web portal

Use the following steps to register the Industrial Gateway through the SWYCS web portal.

1. Go to <https://swycs.io/admin> and go to 'gateways'.
2. Click on the yellow plus button on the bottom right.



3. Select 'Industrial Gateway'.
4. Fill in the Hardware ID, you can find this on the back of the gateway.
5. Optional: Select a layer to attach the gateway too. You can edit this later.
6. Click 'save'.

The screenshot displays the 'Gateways' management interface. On the left is a dark sidebar with navigation links: Clients, Gateways, Devices, Users, Menu, Pages, Floor Maps, Layers, Monitoring, Reports, Automation, Config, Settings, and a Collapse button. The main content area is titled 'Gateways' and has three tabs: 'Registered Gateways' (active), 'Preregistered Gateways', and 'Licenses'. Below the tabs is a table with columns 'Name', 'Serial Number', and 'System ID'. A modal window titled 'Add gateway' is open in the center. It has two tabs: 'Office Gateway' and 'Industrial Gateway', with the latter selected and marked with a circled '3'. The modal contains three numbered steps: '4' for the 'Hardware ID' text input field, '5' for the 'Layer' dropdown menu (showing '- No layer -'), and '6' for the 'SAVE' button. At the bottom right of the modal is a close button (X). The bottom of the main interface shows a footer with 'Rows per page 10', '1-1 of 1', and navigation arrows.

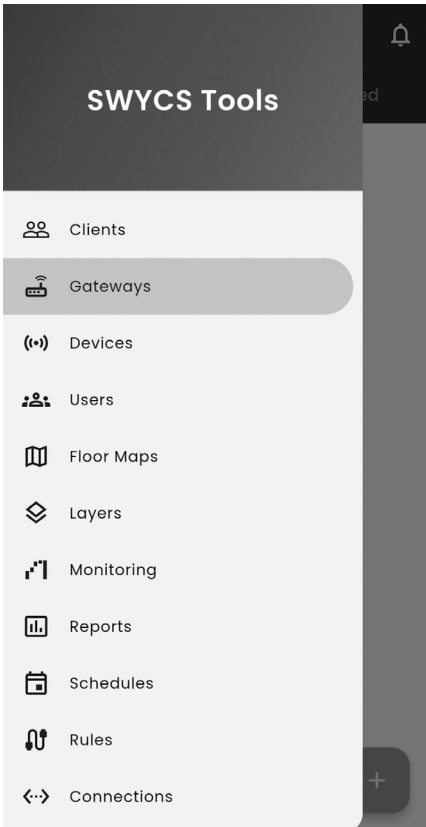
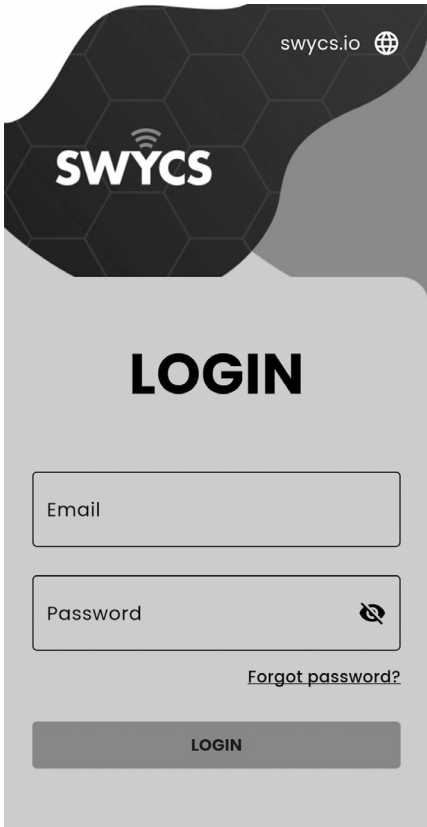
The Industrial Gateway is now registered to your account.

Do you wish to register the Industrial Gateway by using the SWYCS Tools app?
Please use the instructions on the next page.

Registering through the SWYCS Tools app

Use the following steps to register the Industrial Gateway through the SWYCS Tools app.

1. Go to the SWYCS Tools app and log in.
2. Navigate to 'gateways'.



3. Select the plus button on the bottom right.



4. Select 'Industrial Gateway' in the pop-up.



5. Scan the QR-code on the back of the gateway.



The gateway is now registered to your account.

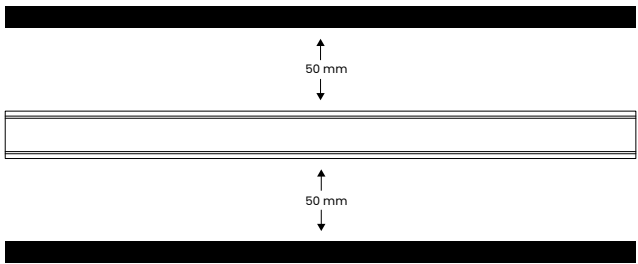
Hardware installation

Use the following instructions to correctly install the Industrial Gateway.

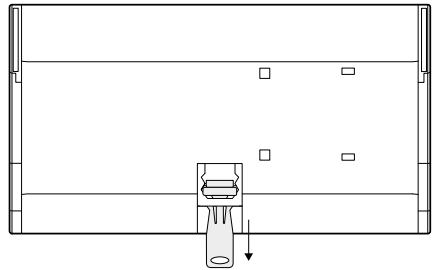
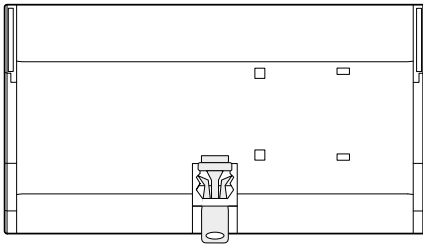
1. Prepare a DIN rail (IEC/EN 60715) of at least 170 mm wide.



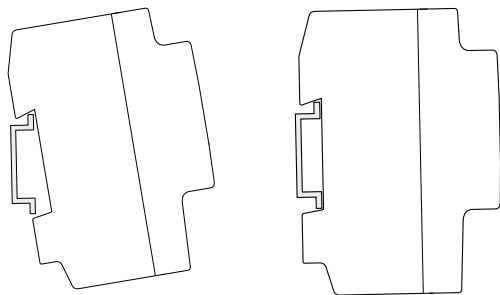
2. Ensure at least 50 mm clearance above and below.



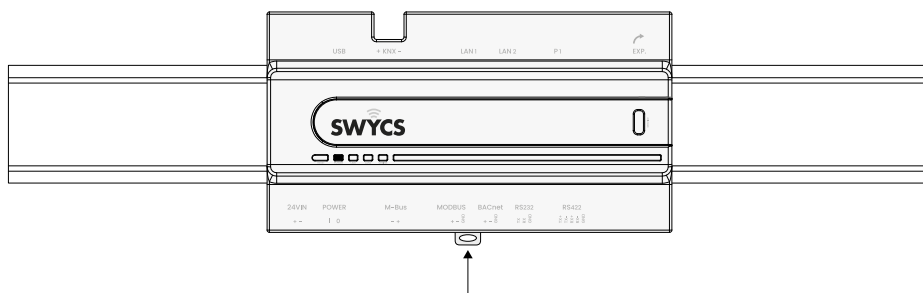
3. Take the Industrial Gateway and pull the connector clip on the back outwards.



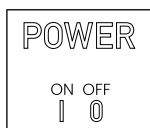
4. Hook it on the DIN rail.



5. Press the connector clip inwards.



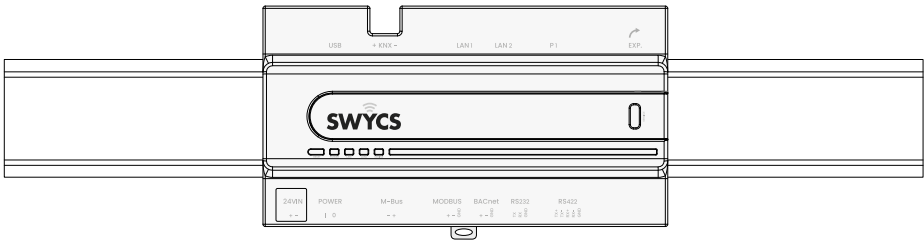
7. Verify that the gateway cannot easily be lifted from the DIN rail.
8. Ensure the power switch is set in the 'OFF' position.



- 9. Take a 2-pin terminal block from the accessory bag.
- 10. Prepare the terminal block by screw-clamping the wires of the 24V power supply.

Notice: 24V power supply not included with the SWYCS Industrial IoT Gateway. Please note the polarity of the wires.

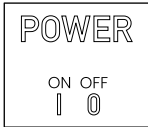
- 11. Press the terminal block in the gateway '24VIN' port.



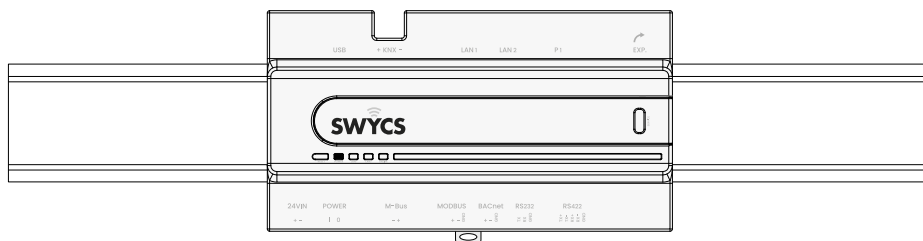
Software installation

Use the following instructions to access the local web-based configuration interface.

- 12. Ensure the power supply is ready.
- 13. Move the power switch to the 'ON' position.



14. Wait for the 'POWER' LED to stop blinking. This may take a while.



15. Determine the IP address of the gateway:

- A.** If either LAN port is connected, the IP address is automatically assigned through DHCP. Both LAN ports may be connected to the same or different networks. They function independently and will be assigned unique IP addresses. If DHCP is not available, please continue through **(B)**; you can configure a static IP address later.
 - A1.** Look up the IP address in the DHCP router.
Alternatively, use the SWYCS Gateway Discovery tool from <https://swycs.tools> to scan for gateways on the network.
 - A2.** Assuming your computer is connected to the same network as the gateway, navigate to '<https://<IP address>:8080>'.
- B.** If there is no LAN connection available, or DHCP is not supported, use the service dongle.
 - B1.** Plug the USB-C connector of the service dongle in the front panel of the gateway.
 - B2.** Plug in a UTP network cable in the RJ45 port of the service dongle.
 - B3.** Connect the network cable to your computer.

B4. Configure the network interface of your computer to use static IP communication.

1. IP address: 10.10.10.2

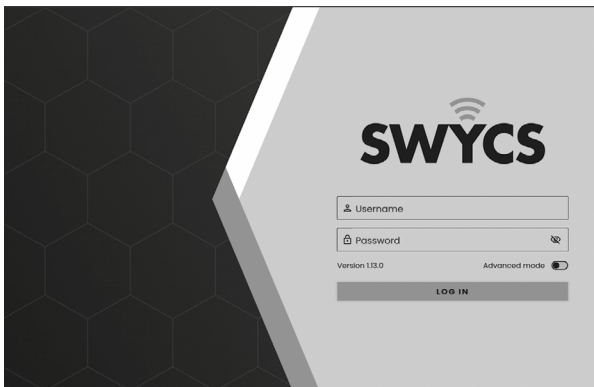
2. Network mask: 255.255.255.0

B5. Navigate to '<https://10.10.10.1:8080>'.

16. There will be a warning about an insecure connection. To proceed, please accept the risk. You may need to click a button such as 'Advanced'.

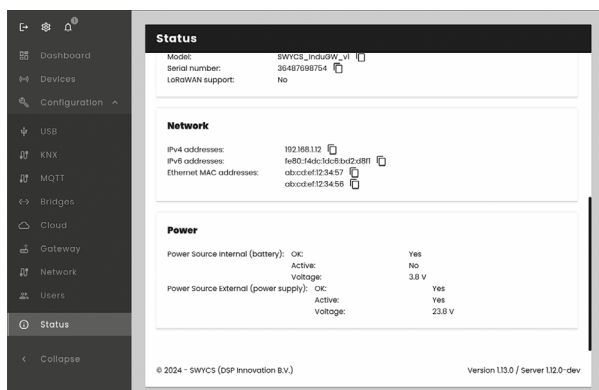
Notice: While it is true that the connection is insecure; this is not a problem because the gateway generates its own encryption certificate independent of common trust chains and hence cannot prove authenticity. This is inherent to local HTTPS connections.

17. Sign in with username: 'admin' and password: 'password'.



Notice: It is recommended to immediately change the password. You can do this under 'Configuration' > 'Users'. Remember to safely store the password after changing it.

18. Verify the gateway status at the 'Status' page. Here you can also view the serial number and verify network connectivity of the gateway.

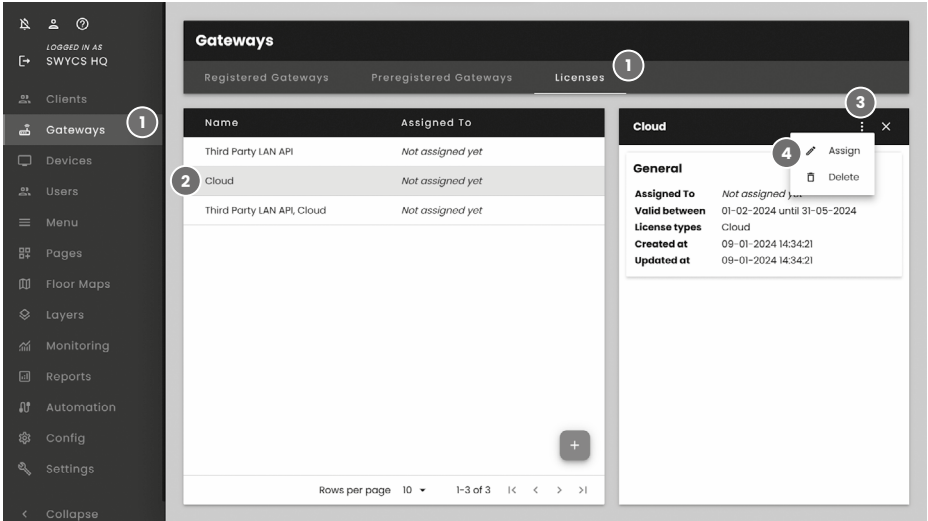


Optional steps

19. Configure a recognizable name and back-up power behavior at 'Configuration' > 'Gateway'.
20. Configure network settings at 'Configuration' > 'Network'.

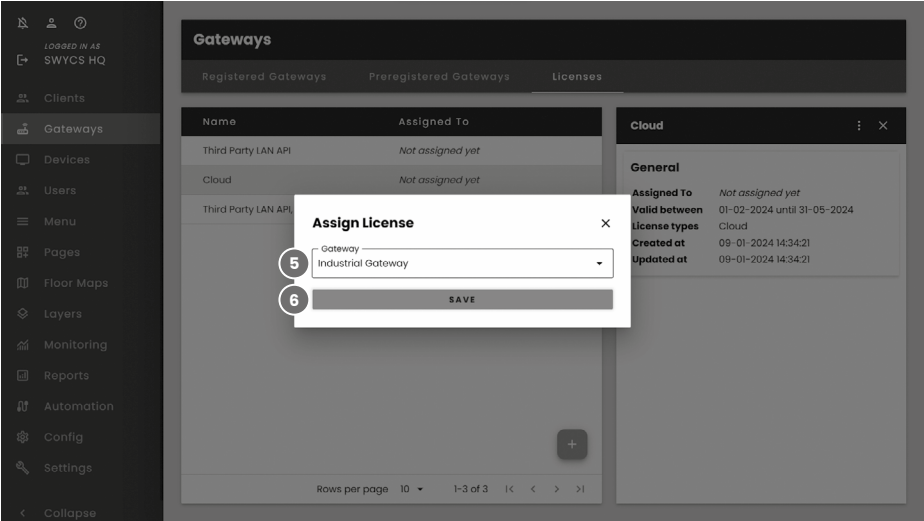
To fully use the SWYCS Industrial IoT Gateway a SWYCS license needs to be added to the Industrial Gateway. Before the gateway is connected to a license the 'online' LED will be white, when a SWYCS license is added it will automatically switch to green. The license will be premade by SWYCS, use the following steps to add a license to your Industrial Gateway.

1. Go to <https://swycs.io/admin/gateways/licenses>
2. Select a license. The information panel on the right will show you when the license will be valid.
3. To assign the license to the gateway click on the three dots on the top right.
4. Select 'Assign'.



- 5. Select your gateway.
- 6. Click 'save'.

The Industrial Gateway is now connected to a license, the 'online' LED should now be green.



Online manual

Scan the QR-code to go to swycs.com/industrial-gateway-manual for more detailed and up-to-date information about adding, configuring and managing of devices through the built in web interface of the Industrial Gateway.



MAINTENANCE AND STORAGE

Cleaning

Cleaning should only be done using a damp cloth, be careful to NOT use any solvents or abrasive cleaning agents.

Deactivation

If you no longer wish to use the Industrial Gateway, it is recommended to properly deactivate it to reduce the risk of unintended leaking of measurements and configuration. This is best achieved by performing the factory reset procedure. This can be initiated by holding the “RESET” button pressed for at least 10 seconds, after which all LEDs should light up white.

Storage

When not in use store the Industrial Gateway in a dark dry place away from children. The Industrial Gateway is for indoor use only and is therefore not suited to be stored outdoors.

Replacement parts

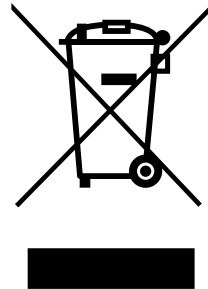
In case you need replacement or spare parts for any of the cables or connectors, please contact:

info@swycs.com and be sure to mention the part and needed quantity.

Disposal

(In accordance with 2012/19/EU)

This product is NOT to be discarded together with other regular household waste. Please bring it to a recycling facility or collection point for electronic waste.



MALFUNCTIONS

Front panel

<i>Observation</i>	<i>Potential cause</i>	<i>Solution/action</i>
'POWER' LED lights up purple, gateway shuts down.	Internal battery is not charged sufficiently to safely be able to start.	Wait for the battery to be charged, this may take a while. If that does not work, replace the battery.
'POWER' LED does not stop blinking after a few minutes.	Software malfunction.	Contact SWYCS support: https://swycs.support or send an e-mail to support@swycs.com .
'ONLINE' LED keeps blinking white fast.	Device corruption.	Contact SWYCS support: https://swycs.support or send an e-mail to support@swycs.com .

Third Party LAN API

<i>Observation</i>	<i>Potential cause</i>	<i>Solution/action</i>
HTTP 403 Forbidden 'license missing'.	The 'X-SWYCS-License' HTTP header is not set.	Retrieve a Third Party LAN API license from the Admin Portal and set the 'X-SWYCS-License' HTTP header accordingly.
HTTP 401 Unauthorized 'token invalid' on all requests.	The license provided in the 'X-SWYCS-License' HTTP header does not belong to this gateway.	Retrieve the correct license key from the Admin Portal and update the 'X-SWYCS-License' HTTP header accordingly.
HTTP 401 Unauthorized 'token invalid' on all requests.	The license provided in the 'X-SWYCS-License' HTTP header has expired.	Renew the license key in the Admin Panel and update the 'X-SWYCS-License' HTTP header accordingly.
HTTP 429 too many requests received occasionally or frequently.	More than 10 HTTP requests have been performed in this second.	Reduce the amount of HTTP requests you perform.

GWCI

<i>Observation</i>	<i>Potential cause</i>	<i>Solution/action</i>
Browser displays error 'ERR_EMPTY_RESPONSE'.	The connection to GWCI is performed using HTTP not HTTPS.	Ensure you are using HTTPS by verifying that the URL starts with: https:// if not replace it.
Browser displays a blocking security warning.	The secure connection cannot be verified by your browser.	Click 'advanced' > 'accept the risk'. This is the only solution, because the gateway is not hosted on a website with a domain adres.
Stuck on 'application is loading'.	Gateway is overloaded OR Software malfunction	Wait a while and retry. Reboot the Gateway. Contact SWYCS support if the issue persists.

This is a list of the most common Industrial Gateway malfunctions. If the solution does not work, always contact SWYCS support: <https://swycs.support> or send an e-mail to support@swycs.com.

If you have a problem or malfunction that is not listed here please also contact SWYCS support.

WARRANTY

The SWYCS Industrial IoT Gateway has a full replacement warranty period of two years. The date of your invoice is the start of this warranty period. We therefore advise you to keep the invoice somewhere safe and secure.

If in this period your Industrial Gateway encounters any defects or damages that were not caused by human error or tampering, the Industrial Gateway will be fully replaced by SWYCS.

SUPPORT

If after reading this manual you still have any questions or concerns you can contact us at:

<https://swycs.support> or send an e-mail to **support@swycs.com**.



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