Super**WISE** II a

Instructions for Use

Content

Symbol key

Symbols on the machine.

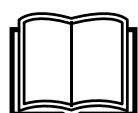This product complies with applicable EU directives

$C\epsilon$

Symbols in this user manual

Warning/Caution!

Electrical voltage

The document was originally written in Swedish.

Swegon

Application area

The product is a control unit designed for comfort ventilation within Swegon's system for demand controlled ventilation WISE.

The product is used to collect ventilation and climate data and to optimise the operation of the air handling unit. SuperWISE also provides data that is available via the web interface.

SuperWISE II IC offers a flexible cloud based service that permits communications between products, systems and users. By using INSIDE Connect the system can be monitored and controlled remotely.

General

Read through the entire instructions for use before you install/use the product and save the instructions for future reference. It is not permissible to make changes or modify this product other than what is specified in this document. Place the cabinet so that it is not accessible to unauthorised persons.

The packaging contains the following items:

1 SuperWISE II / 1 SuperWISE II 2K / 1 SuperWISE II IC (INSIDE Connect) / 1 SuperWISE II 2K IC (INSIDE Connect)

1 x Instructions for use

Electrical safety

Permitted voltage, see "Electrical data".

It is not permissible to insert foreign objects into the product's contactor connections or the electronics's ventilation openings; as this entails a risk for short circuiting.

Ensure that the product is disconnected from the power supply when working on products that are not required to run.

Always follow local/national regulations regarding who may carry out this type of electrical installation.

Handling

• The product must be handled with care.

Installation

• Moist, cold and aggressive environments must be avoided.

• Avoid installing the product near a heat source.

• Assemble the product according to applicable industry regulations.

• Install the product so that it cannot be accessed by unauthorized persons.

• Install the product for easy access during service and maintenance.

• Install the product so that the cabinet door can open unobstructed.

• Check to make sure that the product does not have any visible defects.

• Check that the product is properly secured after it has been installed.

• Check that all cables are properly secured in place after they have been installed.

• Avoid installing the product on metal walls or by steel beams.

Swegon

Installation dimensions and weights
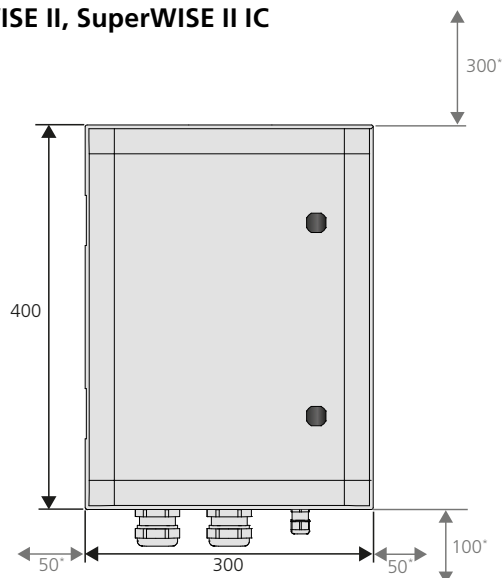
SuperWISE II, SuperWISE II IC

Figure 1. SuperWISE II, SuperWISE II IC, dimension figure (mm). *Minimum free clearance to nearby installations.

Figure 2. Holes for installation (mm), SuperWISE II, SuperWISE II IC. 4x installation screws (clearance hole Ø = 8 mm), screw selection based on the substrate.

Figure 3. SuperWISE II, SuperWISE II IC underside, dimension figure (mm).

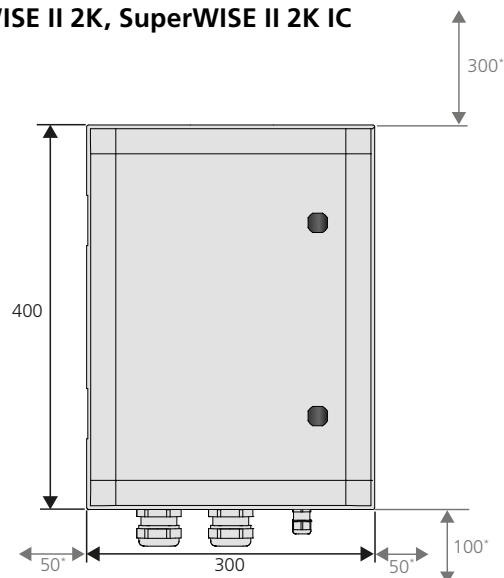| Weight (kg)	
SuperWISE II	5.8
SuperWISE II IC	6.3

SuperWISE II 2K, SuperWISE II 2K IC

Figure 4. SuperWISE II 2K, SuperWISE II 2K IC, dimension figure (mm). *Minimum free clearance to nearby installations.
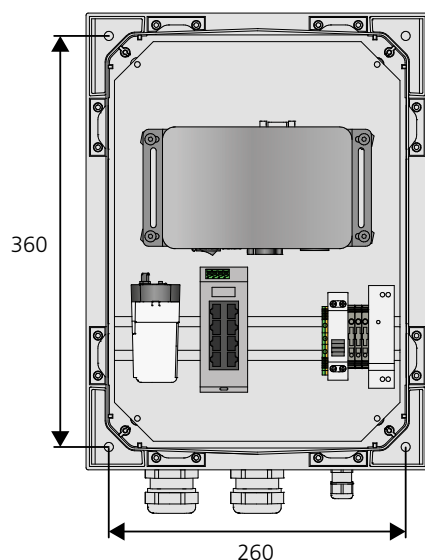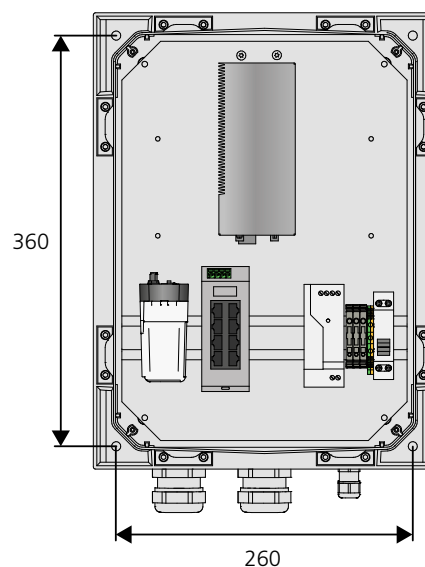

Figure 5. Holes for installation (mm), SuperWISE II 2K, SuperWISE II 2K IC. 4x installation screws (clearance hole Ø = 8 mm), screw selection based on the substrate.

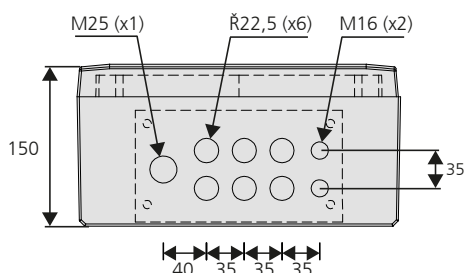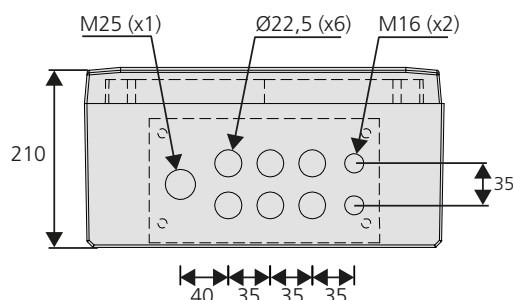Figure 6. SuperWISE II 2K, SuperWISE II 2K IC underside, dimension figure (mm).

Weight (kg)	
SuperWISE II 2K	7.1
SuperWISE II 2K IC	7.6

Connections

Connect the cables in the following order:

A. Communication cables (see item 3 below)
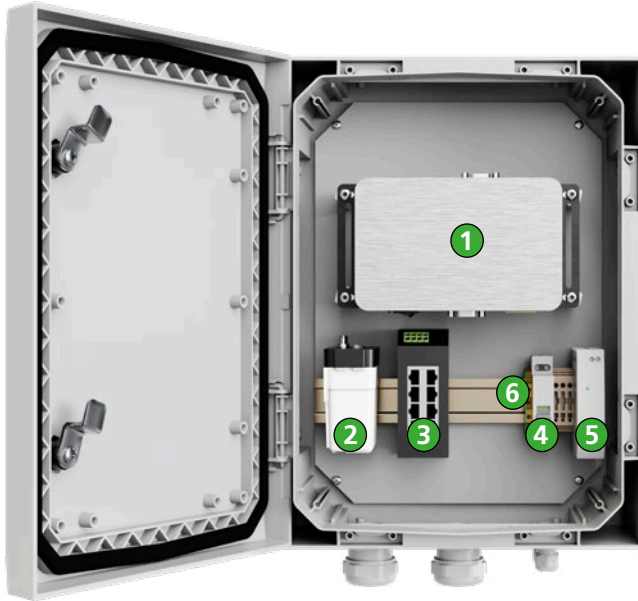
B. Power supply 230 V AC (see items 4 and 6 below)

Figure 7. SuperWISE II, SuperWISE II IC.
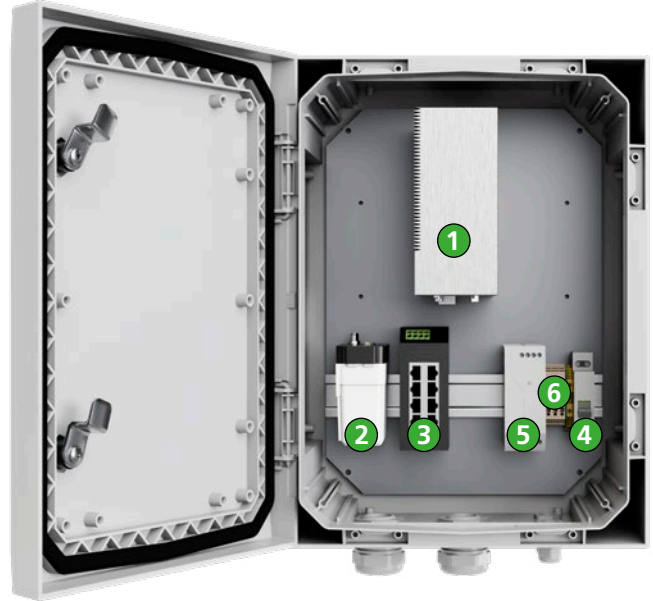*NOTE! INSIDE Connect (2) only included in SuperWISE II IC.*

Figure 8. SuperWISE II 2K, SuperWISE II 2K IC.
NOTE! INSIDE Connect (2) only included in SuperWISE II 2K IC.

1. SuperWISE control unit - Main communication unit

2. INSIDE Connect – Router (only included in SuperWISE II IC/SuperWISE II 2K IC). Communicates on the mobile network. If the cabinet contains INSIDE Connect, the cabinet must be placed so that it can receive mobile signals. The cabinet can be supplemented with an extra antenna for increased signal strength for improved mobile coverage. See the separate documentation for INSIDE Connect on www.swegon.com

3. Switch - 8 ports (if more ports are required, install a supplementary switch outside of the cabinet)
    *   Port 1: SuperWISE control unit
    *   Port 2: INSIDE Connect
    *   Port 3-8: Free for e.g. WISE DIR/AHU/BMS

4. Main switch - Connection of the power supply

5. Transformer

6. Earth connection

SuperWISE II / SuperWISE II IC

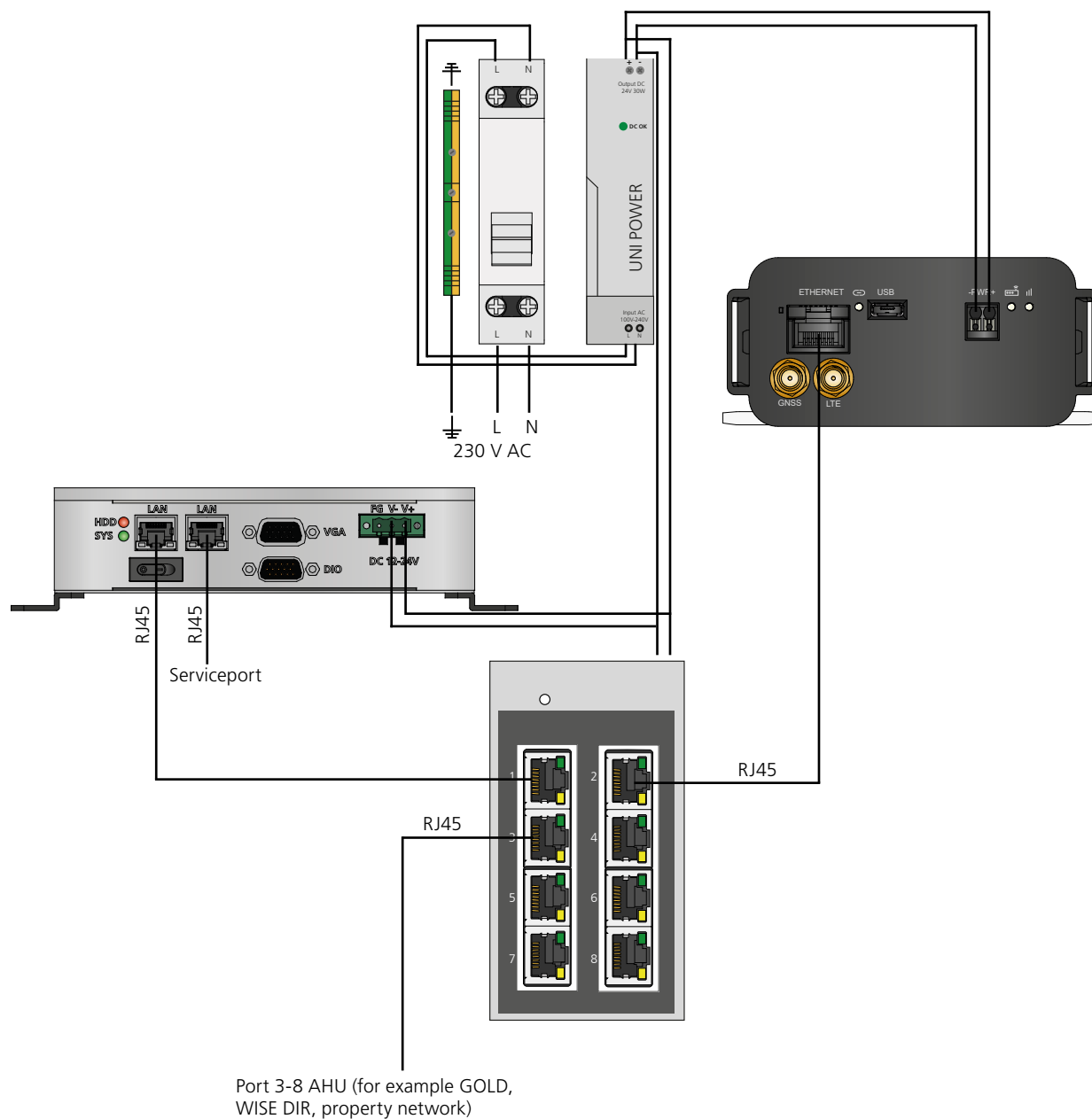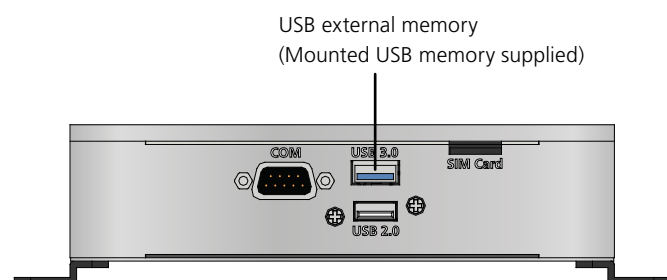*Figure 9. SuperWISE II, SuperWISE II IC, connection.*

USB external memory
(Mounted USB memory supplied)

Figure 10. SuperWISE II control unit, top, connection.

SuperWISE II 2K / SuperWISE II 2K IC
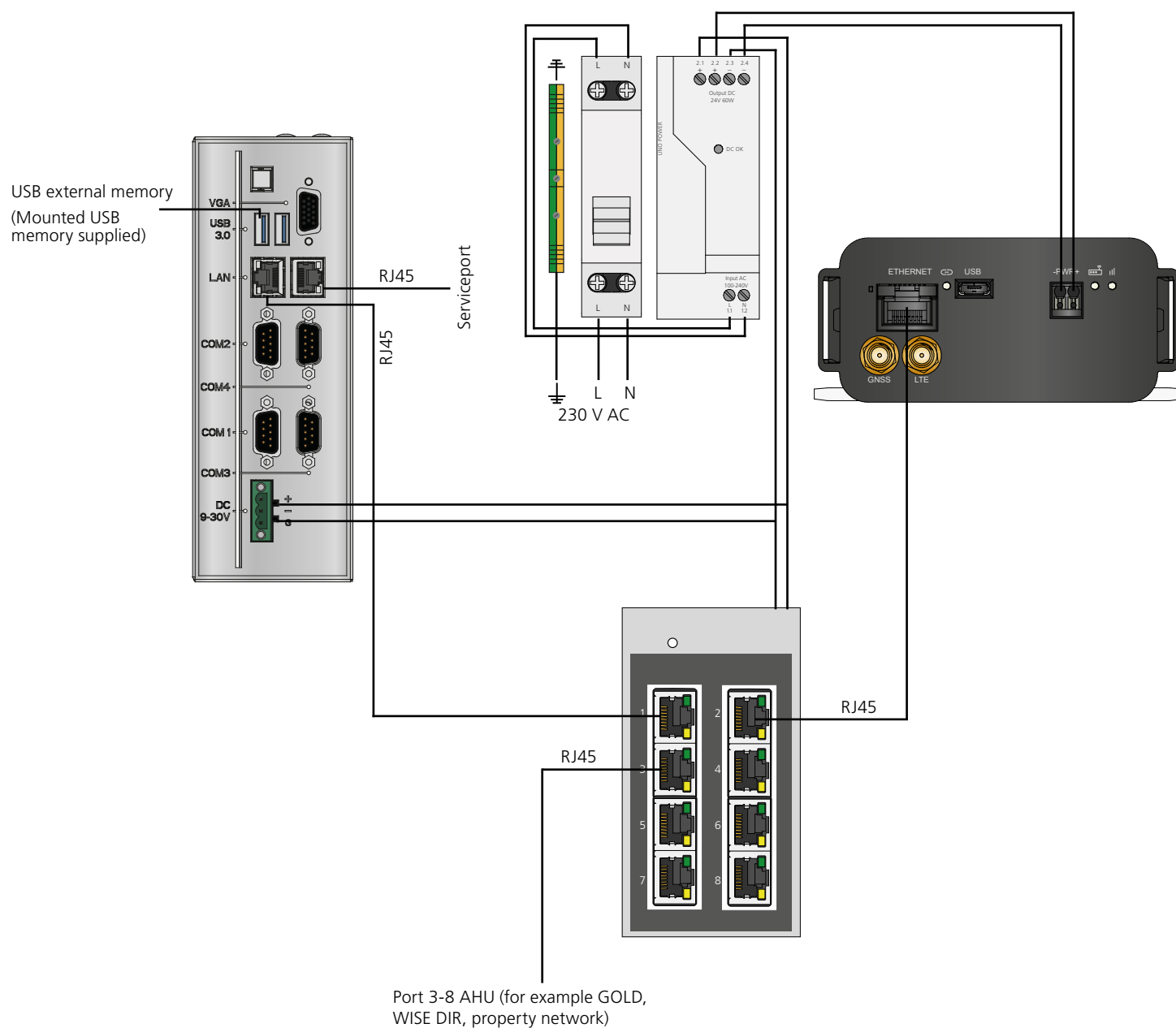
Figure 11. SuperWISE II 2K, SuperWISE II 2K IC, connection.
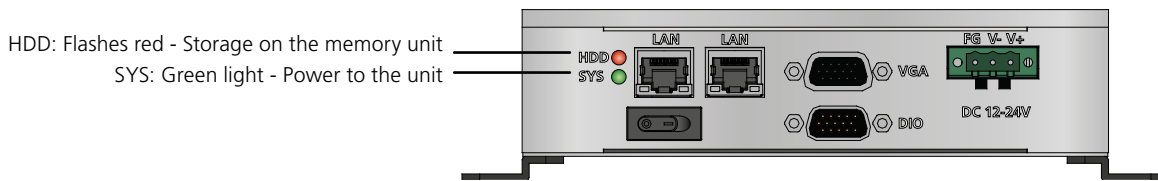
LED - Explanation

SuperWISE II control unit

HDD: Flashes red - Storage on the memory unit
SYS: Green light - Power to the unit

Figure 12. LED key SuperWISE II control unit.

Switch

Green light - power to the unit

Green light - data being sent
Orange diode denotes which communication rate is active
Lit: 100 Mbps
Not lit: 10 Mbps
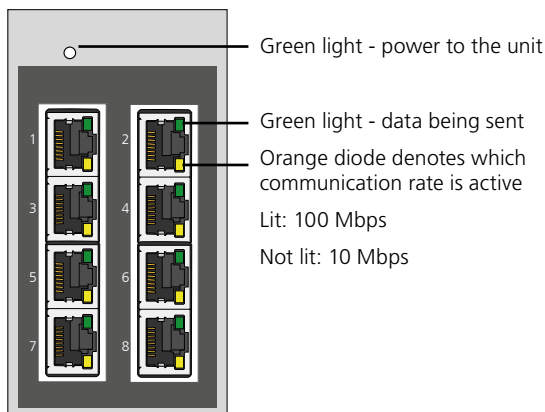
Figure 13. LED key switch.

DC power supply

Green light when the voltage is on, goes out when the output voltage drops below 21.5V DC
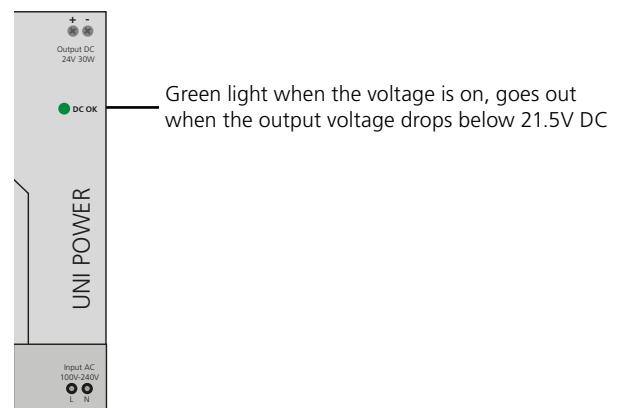
Figure 15. LED key DC power supply.

INSIDE Connect

Product connection   Device status
                    Cellular connectivity
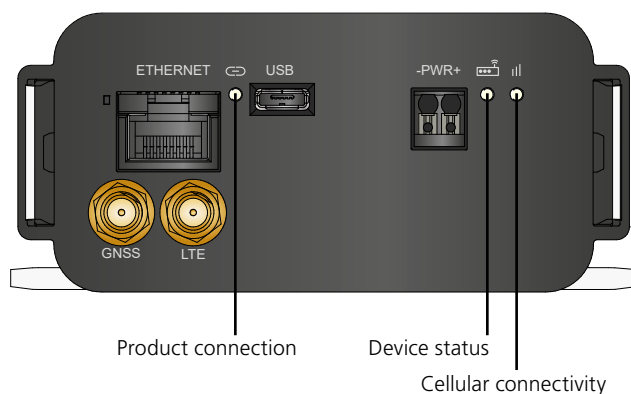
Figure 14. LED key INSIDE Connect control unit.

Product connection

Off	No connection
Green, fixed	Connection
Green, blinking	Connected, activity

Device status

Off	No power
Red, blinking	Device is booting
Red, fixed	Device is waiting for connectivity
Orange, blinking	Connectivity available, enrolment in progress
Orange, fixed	Local swap in progress
Green, fixed	Normal operation
Green, blinking	Firmware download in progress

Cellular connectivity

Off	No network
Red, blinking	Searching for network
Red, fixed	No network available
Orange, fixed	Connection established, low quality
Orange, blinking	Connection established, low quality, activity
Green, fixed	Connection established, good quality
Green, blinking	Connection established, good quality, activity

Use

Commissioning

Commissioning must be performed by qualified and trained WISE service engineers.

Trouble shooting

- Check that the cables are connected correctly.
- Make sure that the product is energized, the supply LED should be lit/flash green.
- Check the LED indications, see "LED key".
- Check the status on the SuperWISE user interface (web pages).
- Check that INSIDE Connect is connected correctly and that the SIM card is inserted correctly.

Maintenance

Cleaning of electrical components

- If needed, use a dry cloth to clean the components.
- Never use water, detergent and cleaning solvent or a vacuum cleaner.

External cleaning

- If necessary use tepid water and a well-wrung cloth.
- Never use solvents.

Service/maintenance

- The product does not require any maintenance, except for any cleaning when necessary.
- It is not permissible to open or repair electrical components.
- If you suspect that the product or a component is defective, please contact Swegon.
- A defective product or component must be replaced by an original spare part from Swegon.

Materials and surface treatment

The cabinet is made of polycarbonate (PC), colour code: RAL 7035 (Industrial grey).

Disposal

Waste must be handled according to local regulations.
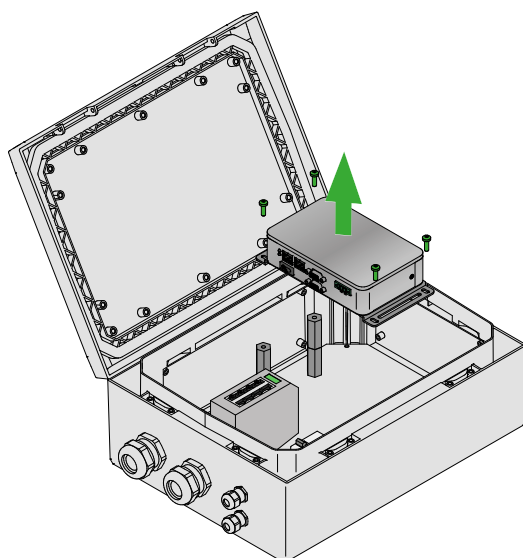
Product warranty

The product warranty or service agreement will not be in effect/will not be extended if: (1) the product is repaired, modified or changed, unless such repair, modification or change has been approved by Swegon AB; or (2) the serial number on the product has been made illegible or is missing.
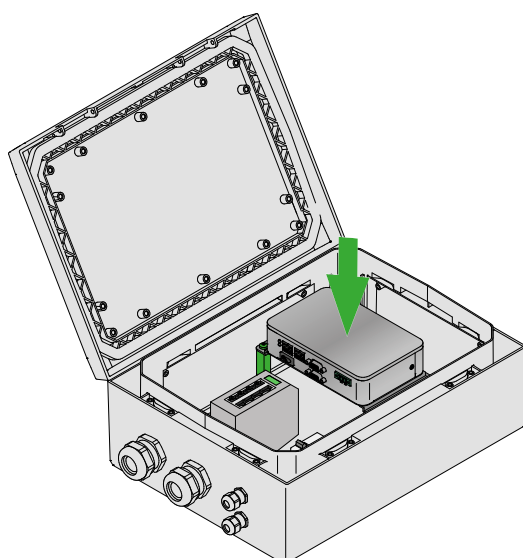
SuperWISE II / SuperWISE II IC

Control unit replacement
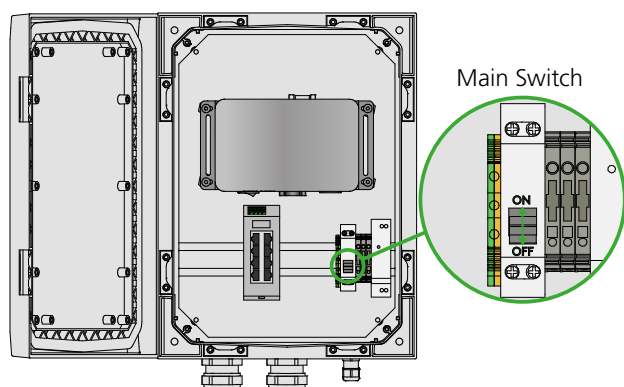
Main Switch

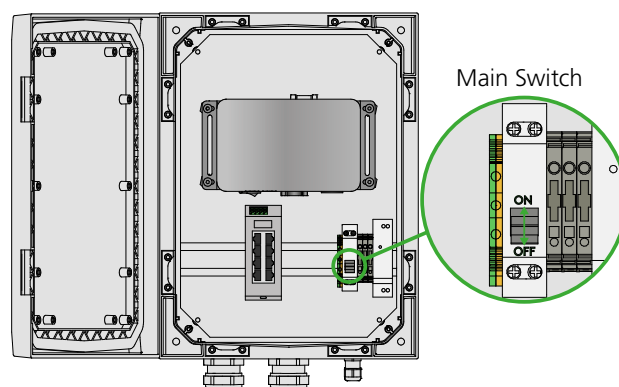*Turn off the power using the main switch before any work is started.*

Disconnect all the cables to the control unit, loosen the four screws and lift out the control unit.

Place the control unit on the 4 spacer bolts and screw back the screws. Reconnect the cables and switch on the power using the main power switch.

Figure 16. Control unit replacement.

Retro-fitting INSIDE Connect

Main Switch

Turn off the power using the main switch before any work is started.

Fit a DIN rail-mount on INSIDE Connect and mount on the DIN rail in the bottom of the cabinet. Connect the cables, see "Connection".

Switch on the power using the main power switch.

Figure 17. Retro-fitting INSIDE Connect.

SuperWISE II 2K / SuperWISE II 2K IC

Control unit replacement

Turn off the power using the main switch before any work is started.
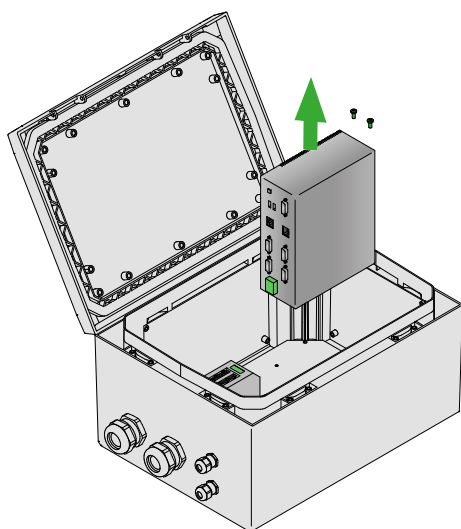
Disconnect all the cables to the control unit, loosen the two screws and lift out the control unit.
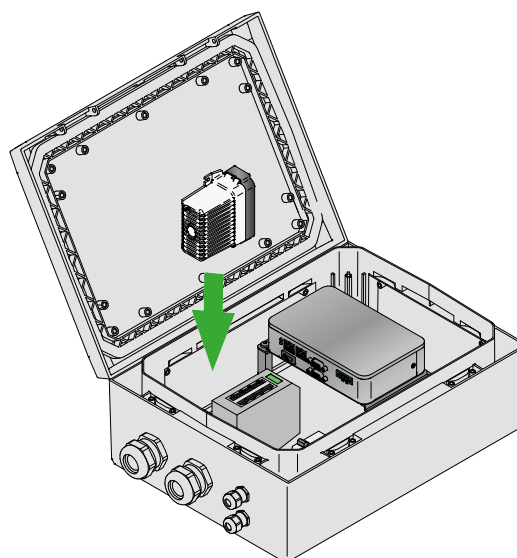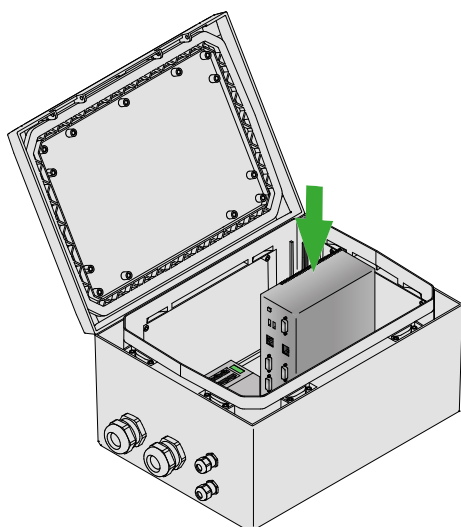

Place the control unit on the bottom of the cabinet and screw back the screws. Reconnect the cables and switch on the power using the main power switch.
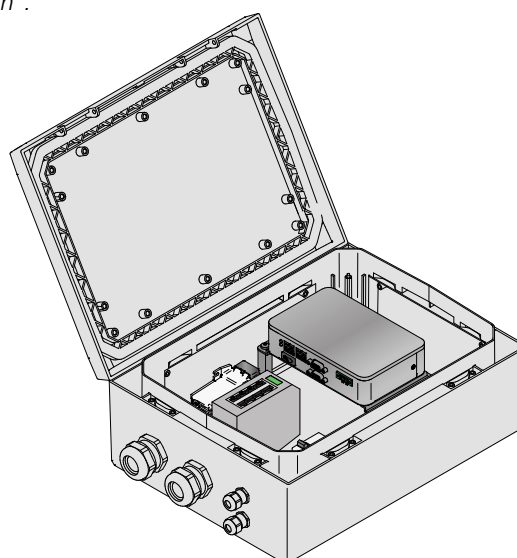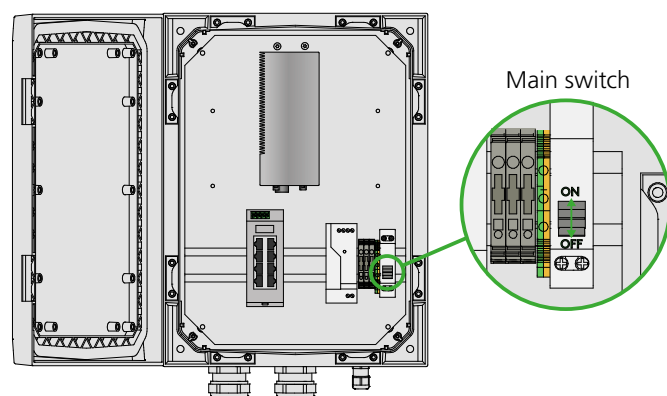
Figure 18. Control unit replacement.

Retro-fitting INSIDE Connect
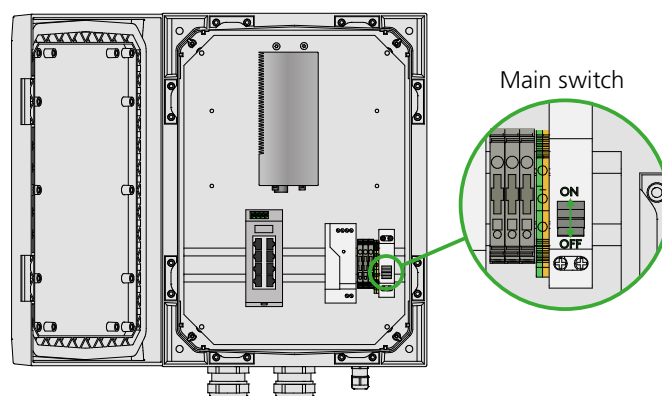
Turn off the power using the main switch before any work is started.
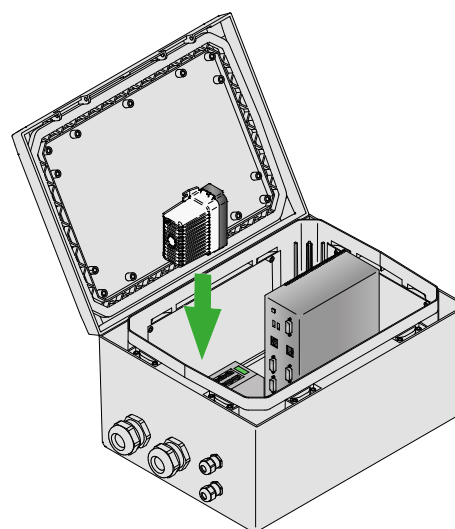
Mount the INSIDE Connect on the bottom of the cabinet.

Connect the cables, see "Connection". Switch on the power using the main power switch.

*Figure 19. Retro-fitting INSIDE Connect.*

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Technical data

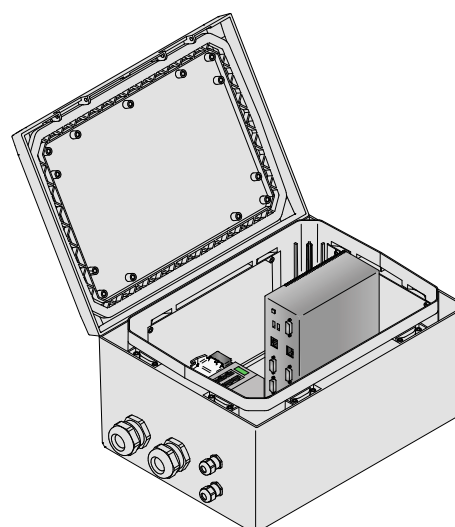Output power (ERP) SuperWISE II IC/SuperWISE II 2K IC

External mobile network:	Max. 2W (GSM mode)

Frequency band SuperWISE II IC/SuperWISE II 2K IC

External mobile network:	900/2100... MHz
USB:	Type A
Switch/ Ethernet:	Switch supports 3 (GOLD/AHU) + 3 outputs (WISE DIR)
IP class:	IP44

Ambient temperature

Operation:	-20 – +50°C
Storage:	-40 – +80°C
RH:	10-95% non-condensing
CE marking:	2014/53/EU (RED)
	2011/65/EU (RoHS2)

Electrical data

Power supply:	230V 10 A

Connections pipe dim.

Power terminals:	Max. 2.5 mm²
Suitable cable diameter through the chassis (screw terminals):	5-10 mm

Max. power consumption

SuperWISE II:	34W
SuperWISE II IC:	34W
SuperWISE II 2K:	60W
SuperWISE II 2K IC:	60W

Declaration of Conformity   C E

Swegon AB hereby declares that the radio equipment SuperWISE II / SuperWISE II IC / SuperWISE II 2K / SuperWISE II 2K IC conforms with the Directive 2014/53/EU and Directive 2011/65/EU.

The complete EU Declaration of Conformity is available at Swegon's website: www.swegon.com.

This declaration is applicable only if the product has been installed according to the instructions in this document and if no changes have been made on this product.

References

www.swegon.com

Building Materials Declaration

SuperWISE II product sheet

WISE System Guide

WISE User Manual

Digital Services

Connectivity

The product is equipped with functionality that, when enabled, will connect to the Swegon INSIDE Cloud when given access to the internet. Such connection is made either through the building's local internet access point or by using a supplied modem. When connecting through the building's internet access point, the local firewall must be configured to allow traffic according to the firewall settings. The functionality is by default disabled and can be enabled in the product. By enabling this functionality the customer agrees to the general terms and conditions for Digital Service, DS-23, which can be found on the Swegon website. The customer can disable the connection to the Swegon INSIDE Cloud in the product user interface at any time.

Which data is sent

Through the connection to Swegon INSIDE Cloud, the product will exchange data to Swegon INSIDE Cloud about certain actions and parameter settings of the product. Each data point has different thresholds for when to send data to Swegon, therefore the data sent depends on the data point type and configuration. The data is sent in intervals, at which point the data is aggregated together with other data from that interval.

Who has access to the data

The data sent to Swegon INSIDE Cloud is used by Swegon for purposes of performance, functionality and development of the product. Consequently, Swegon has the right to use the data sent from all products connected to Swegon INSIDE Cloud. The data is used in accordance with Swegon's DS-23 general terms and conditions, found on Swegons webpage, and our sales agreement with the customer.

Requirements

To connect a product to Swegon INSIDE Cloud, a secure internet connection via the property's internal network or via Swegon's external modem is required. In addition to a secure internet connection, a valid certificate for each individual product is also required to approve them to share data with INSIDE Cloud. Some products will come with a valid certificate out of the factory, while other products need to be equipped with a certificate to authorize the product to share data.

To find out whether or not your product meets the requirements to be INSIDE Ready (i.e. ready to share data) and learn more about our Digital Services, visit Connected products | www.swegon.com.

Security

The Swegon INSIDE product is connected to azure IoT Hub. The connection uses MQTT and is secured using TLS and client certificates (MTLS). DigiCert is used as registration authority and key management. The Swegon cloud platform uses Azure SaaS offerings for hosting of applications and APIs. Digital services communicate with Swegon Cloud using standard technologies such as Rest APIs and message Queues. Users and authorization is handled by an internal identity provider.

Firewall settings for Swegon Cloud

Swegon cloud solution is using Microsoft Azure services and certificates from DigiCert to secure the connection. If the firewall in front of the products is allowing outbound traffic to internet it will work. If the firewall is set up to control outbound traffic the following ports and destinations must be allowed. If only filtering on ports, 443 and 8883 are used.

Domain (including sub domain)	Port	Protocol	Note
*.azure-devices-provisioning.net (dps-SwegonCloud-common-we. azure-devices-provisioning.net global.azure-devices-provisioning.net)	443 8883	https mqtt	Azure Device Provisioning Service
*.azure-devices.net (iot-SwegonCloud-prod-we.azure-devices.net)	443 8883	https mqtt	Azure IoT Hub
*.blob.core.windows.net (stswciotfilestorageprod.blob.core. windows.net)	443	https	Azure storage
clientauth.one.digicert.com	443	https	DigiCert Enrolment over Secure Transport (EST) for certificate enrolment and reenrolment

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