WISE Adriatic d

Instructions for Use

Contents

Key to symbols

Symbols on the machine

This product complies with applicable
EU directives

$C\epsilon$

Symbols in these Instructions for Use

Warning/Caution!

The document was originally written in Swedish

Swegon

Application area

The product is a comfort module with integrated radio transmitter designed for demand-controlled climate indoors within Swegon's ventilation system WISE. The product is used to ventilate, cool and heat premises exactly as needed.

The product may not be used for anything other than its intended use.

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 those specified in this document.

Contents

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Protective equipment

Always use appropriate personal protective equipment for the work in question, in the form of gloves, respirators, protective glasses and helmets during handling, installation, cleaning and service/maintenance.

Electrical safety

Permitted voltage, see Electrical data.

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

24 V isolation transformer to be connected should comply with the provisions of IEC 61558-1.

Cable sizing must be carried out for cabling between the product and the power supply source.

Disconnect the power supply when working on products that are not required to run.

Always follow the local/national rules for who shall be permitted to carry out this type of electrical installation.

Handling

Always use appropriate transport and lifting devices when the product is to be handled to reduce ergonomic loads.

The product must be handled with care.

Installation

- Moist, cold and aggressive environments must be avoided.
- Assemble the product according to this instruction and applicable industry regulations.
- Install the product for easy access during service/maintenance.
- Avoid installing the product near a heat source.
- 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.
- Secure cables with cable ties.
- Check that all cables are properly secured in place after installation.

Swegon

Dimensions and weight

WISE Adriatic Prisma
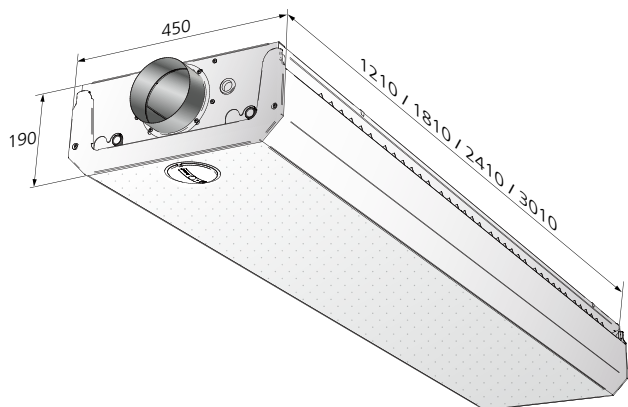
WISE Adriatic Ellips
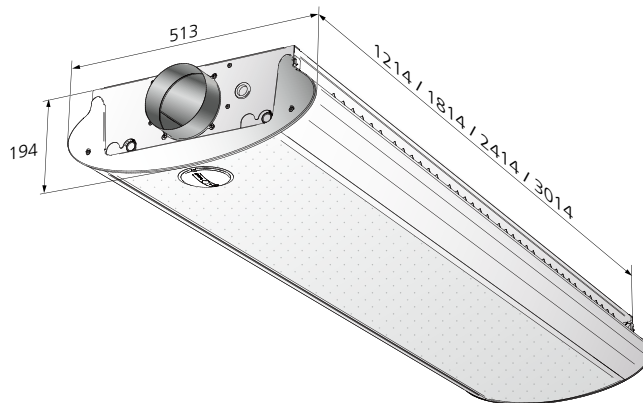
Weight

Weight incl. controller, excl. valves, actuators and sensors.

WISE Adriatic with Prisma design section

Length	Dry weight	Weight, filled with water (kg)	
(m)	(kg)	A: Cooling	A/B: Cooling/ Heating
1.2	20.3	21.3	21.5
1.8	28.9	30.4	30.8
2.4	37.2	39.3	39.8
3.0	44.9	47.5	48.2

Weight

Weight incl. controller, excl. valves, actuators and sensors.

WISE Adriatic with Ellips design section

Length	Dry weight	Weight, filled with water (kg)	
(m)	(kg)	A: Cooling	A/B: Cooling/ Heating
1.2	20.6	21.6	21.9
1.8	29.3	30.8	31.2
2.4	37.3	39.4	39.9
3.0	45.9	48.5	49.2

Installation

Suspended installation

### Suspension with accessory SYST MS
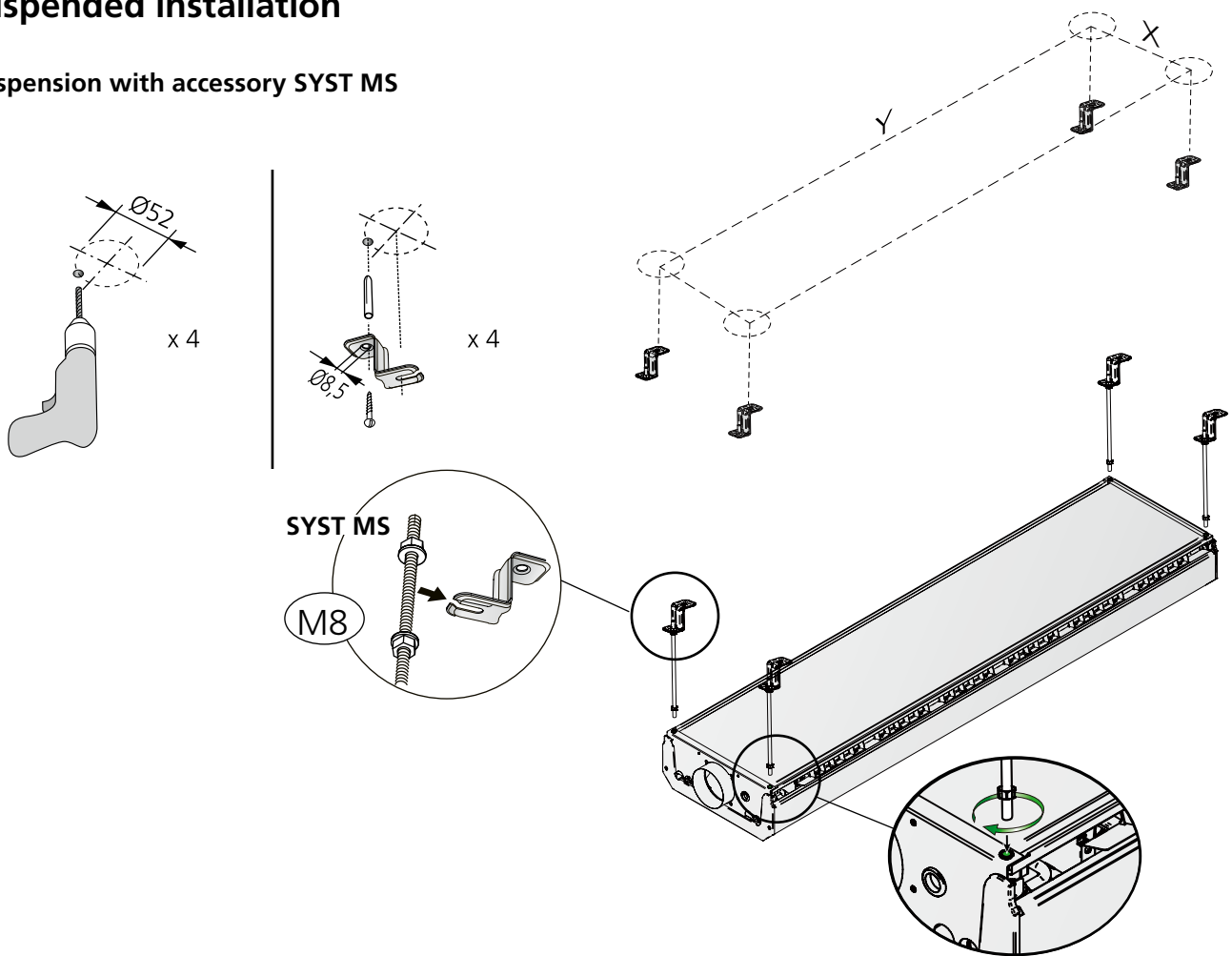
Installation

The c-c dimensions are the same for WISE Adriatic with both design module Prisma and design module Ellips. The example shows Prisma.

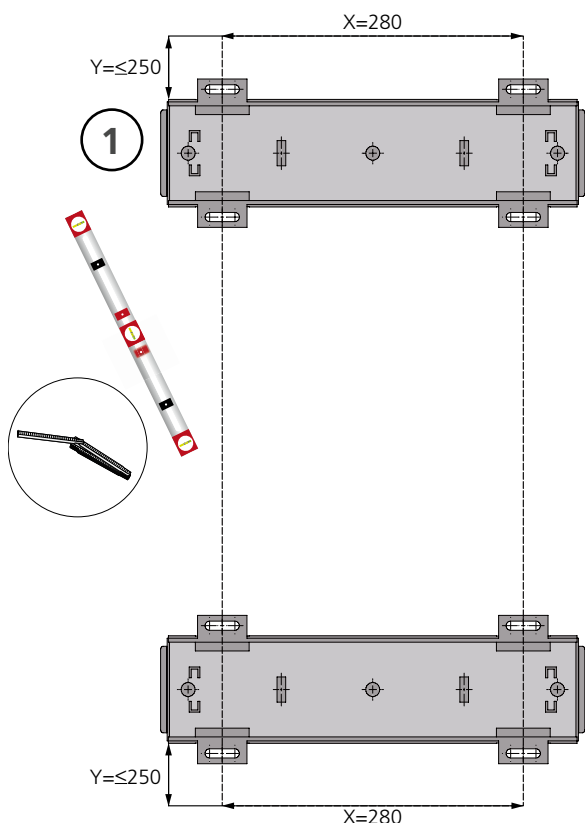| ADRIATIC	Suspended installation	
Length	c-c (mm)	c-c (mm)
(m)	Short side	Long side
1.2	392	1173
1.8	392	1773
2.4	392	2373
3.0	392	2973

suspended installation with assembly piece SYST MS-M8.

17/01/2024

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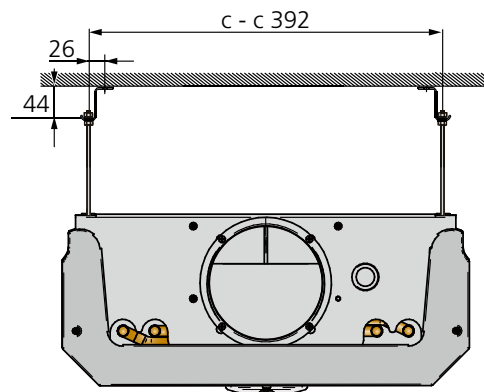
Surface mounted installation

Surface-mounting the product on the ceiling using suspension bracket ADRIATIC d-T-MD-4S.

1. Carefully measure where the bracket is to be placed so that all the brackets are in a perfectly straight line in relation to each other according to the c-c table. The bracket's distance to the edge of the short side may not exceed 250 mm, in order for the safety cord to be able to be anchored.

2. Install the suspension bracket ADRIATIC d-T-MD-4S in the ceiling. Use two brackets per product for lengths 1.2 and 1.8. For lengths 2.4 and 3.0, use three brackets. Anchor the safety cord under the suspension bracket when installing the bracket. Use a suitable screw for the ceiling in question.

3. When all the brackets have been screwed into place with four screws each, fold out the moving sections at either end of the bracket to the out position.

4. Anchor the enclosed safety cord in the bracket and in the corner of the product.

5. Then move the product straight up against the bracket.

6. Lock the product in the bracket by pressing the folded out sections on the ends of the bracket in towards the product on both sides.

7. Repeat this procedure for all the brackets.

Installation

The c-c dimensions are the same for WISE Adriatic with both design module Prisma and design module Ellips. The examples below show Prisma.
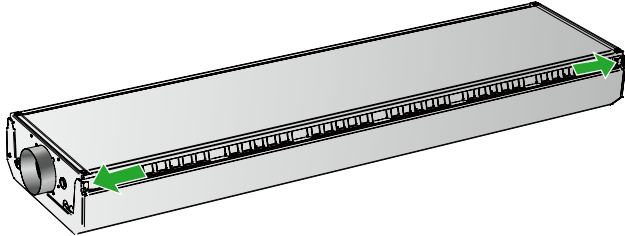
	Surface mounted installation		
Unit	Number of brackets	c-c (mm)	Max. (mm) *
(m)	pcs.	X - Short side	Y - Long side
1.2	2	280	250
1.8	2	280	250
2.4	3	280	250
3.0	3	280	250

* Max. distance from the end of the product.
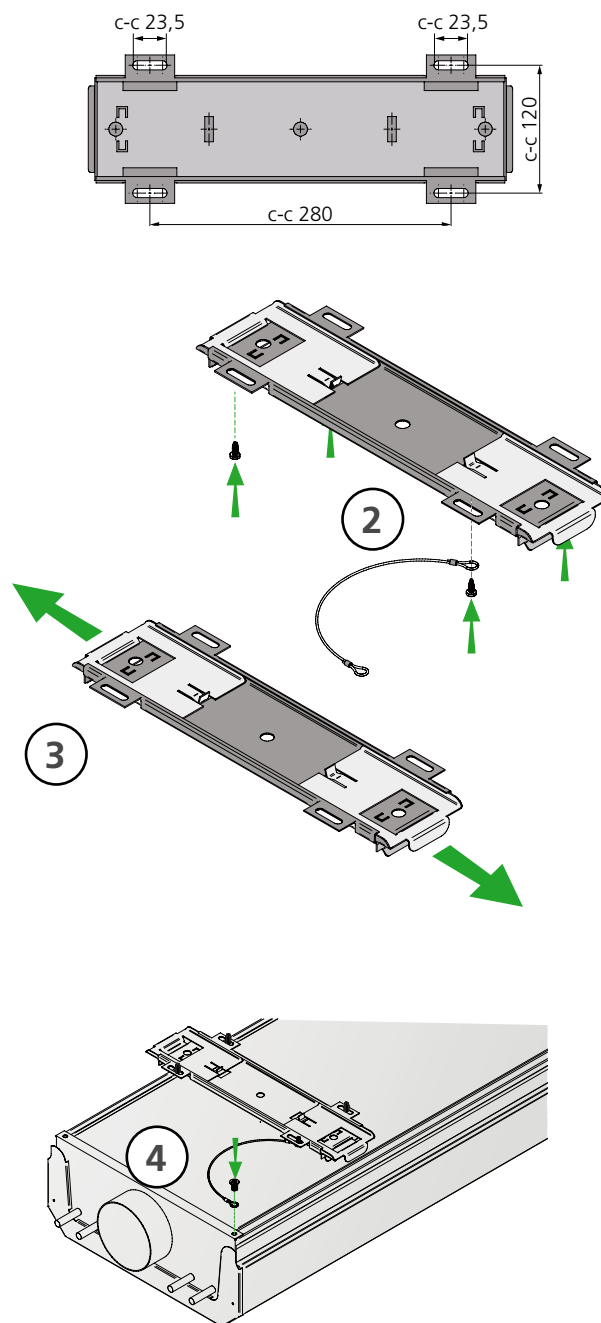
Secure design module

When fastening the design module from an open position, raise the design section until you hear a click, at which point it is secured in the base module.

Fold down design module

The unit is equipped with a pushbutton at either end of one of the long sides, for simple lowering of the design section and access to e.g. control equipment. When lowering, one long side is opened and the design section is suspended from the opposite long side.

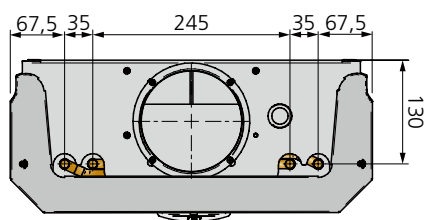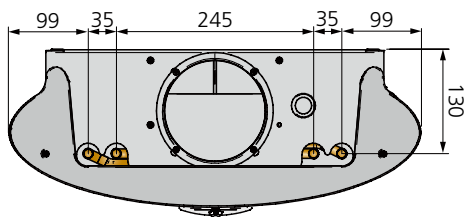Swegon reserves the right to alter specifications.   17/01/2024

Swegon
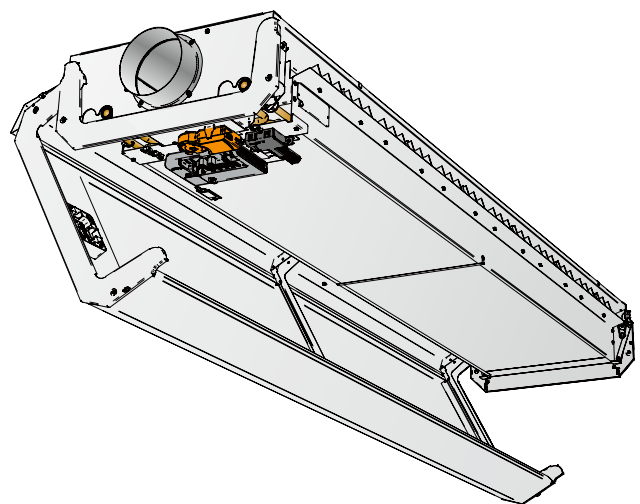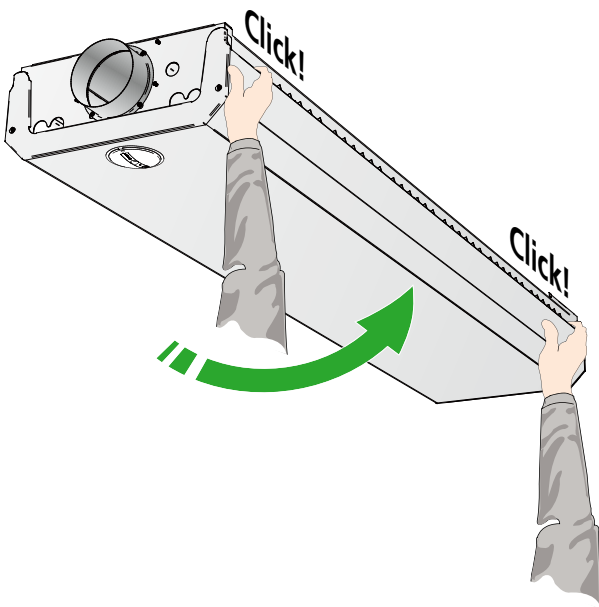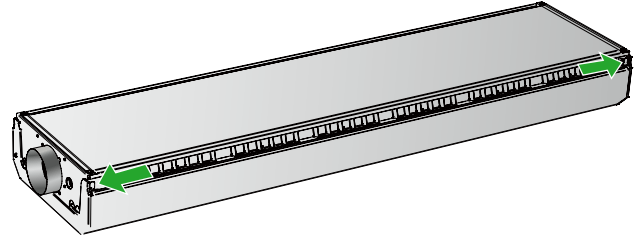
Water connection

Water

Connection dimensions

Unit	Cooling and Heating
(m)	Supply and return
1.2 1.8 2.4 3.0	plain pipe ends
	(Cu) Ø 12 x 1.0 mm

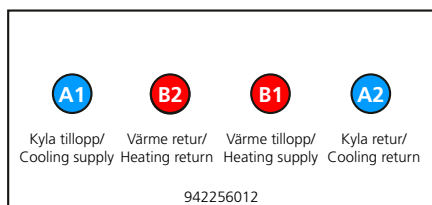*Alternative to factory-fitted valves*

Unit	Cooling and Heating
(m)	Return
1.2 1.8 2.4 3.0	DN15 male thread

Dimensions WISE Adriatic Prisma, end view, water connection

Dimensions WISE Adriatic Ellips, end view, water connection

Water connection
A1 = Supply cooling water ø12x1.0 mm (Cu)
A2 = Return cooling water ø12x1.0 mm (Cu)
B1 = Supply heating water ø12x1.0 mm (Cu)
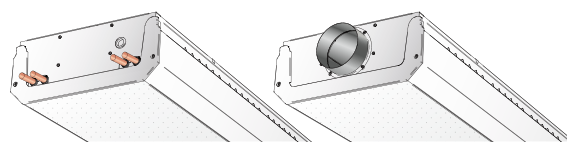B2 = Return heating water ø12x1.0 mm (Cu)

Variant TH

If you want water and air connections on different short sides, Variant TH is available. The dimensions for connecting water and air are the same as for the standard variant.

Note: When ordering valves and actuators for Variant TH, these are enclosed and placed adjacent to the water pipes. They are connected, but installation on the relevant water pipes is required (see label and colour marking on the actuators).

Connection dimensions

Variant TH with air and water connections on different short sides. The example shows both short sides with the TH connection on WISE Adriatic Prisma.

Connecting water

The water pipes are placed as standard on the same side as the air connection on one of the product's short sides. If you want water and air connections on different short sides, Variant TH is available (see Variant TH).

Connect the water pipes using push-on couplings or compression ring couplings when the product is ordered without valves.

Note that compression ring couplings require support sleeves inside the pipes.

Do not use solder couplings to connect the water pipes. High temperatures can damage the unit's existing soldered joints.
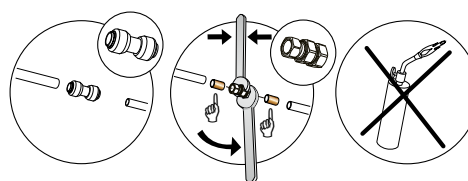
Flexible connecting hoses for water are available for flat-end pipes and valves, and can be ordered separately.

Water quality

Swegon recommends water quality according to VDI 2035-2 for both the heating and cooling systems. In order to maintain the oxygen content in the water below the levels (<0.1 mg/l) prescribed in VDI 2035-2, it is recommended to install a vacuum degasser, particularly in the cooling system where it's more challenging to dissolved gas. It is also important that the pre-pressure in the expansion vessel is dimensioned according to EN-12828 for both the heating and cooling systems and that regular checks are made of the pre-pressure. The cooling and heating systems must be designed to prevent oxygen from entering the system, this is particularly important to consider when selecting flex hose, pipes and expansion vessels.

When the system is filled with fresh water, it has an oxygen content of approximately 8 mg/l, however, this oxygen is consumed quickly through corrosion processes and within a few days the oxygen in the water should be consumed. Nevertheless, it is important to avoid filling the system with fresh water unnecessarily.

Automatic deaerators are often installed to facilitate filling of the system. It is recommended that the automatic deaerators are turned off once the system has been fully vented to avoid these drawing in air in the system if the pre-pressure in the expansion vessel should drop.

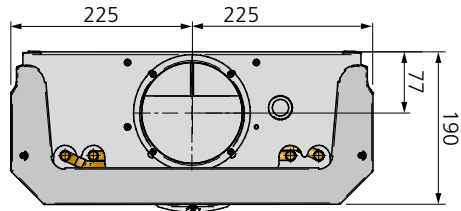| Model	Length	Factory-fitted	Connection	Coupling type	Connection	Coupling type
A, B, Cooling, Cooling/Heating	1.2 - 3.0	Actuator and valve	Return	DN15, male thread	Supply pipe	Plain pipe 12 x 1.0 mm
A, B, Cooling, Cooling/Heating	1.2 - 3.0	-	Return	Plain pipe 12 x 1.0 mm	Supply pipe	Plain pipe 12 x 1.0 mm

Air connection

To connect the air
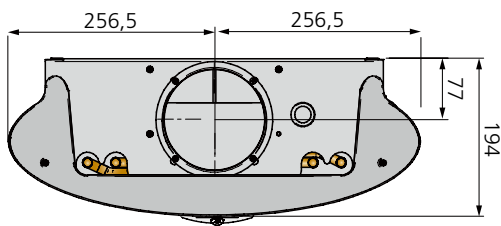
WISE Adriatic comes with air connection on one short side. The sleeve is connected to the primary air duct.

Dimensions WISE Adriatic Prisma, end view, air connection

Dimensions WISE Adriatic Ellips, end view, air connection

Connection dimensions

Unit	Air connection, diameter
(m)	Ø
1.2 1.8 2.4 3.0	125

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Commissioning

The water and air connection is always placed on the end of the product.

Measuring tubes are placed on the product's two long sides adjoining the water and air connection.
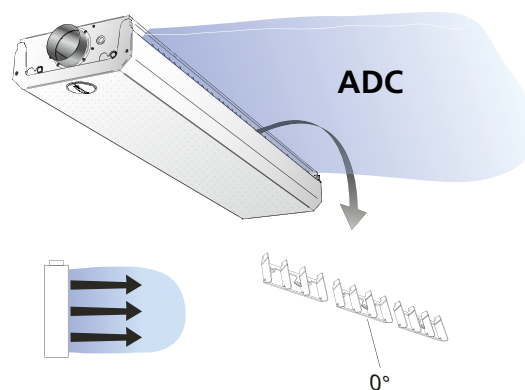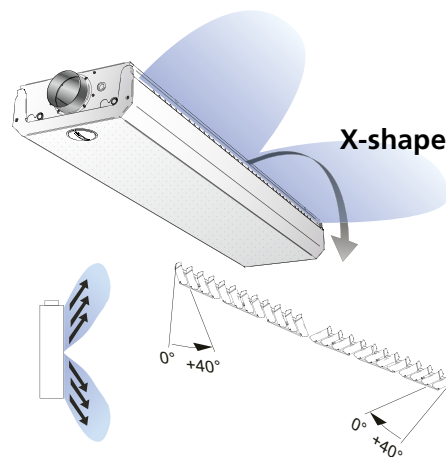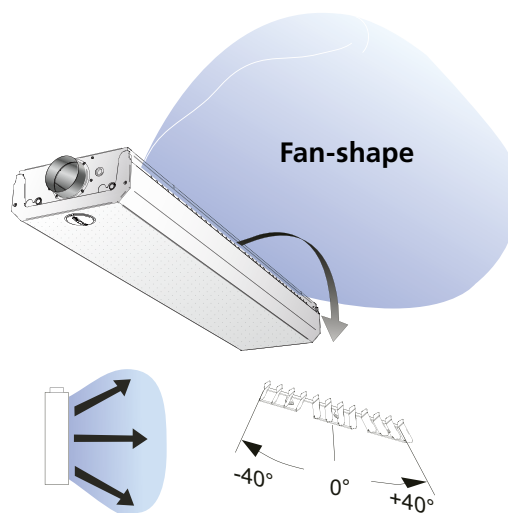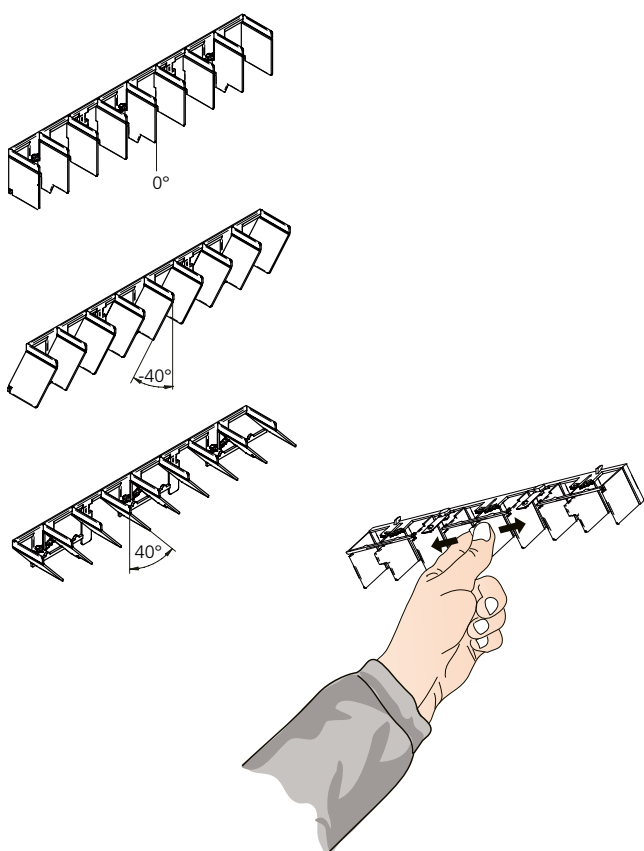
$$p_i = \left(\frac{q}{k}\right)^2 \ [Pa]$$
$$q = k \cdot \sqrt{p_i} \ [l/s]$$
pi [Pa]
q [l/s]
k = [k-factor]

Fan-shape

-40° 0° +40°

X-shape

0° +40°   0° +40°

ADC

0°

0°

-40°

40°

Installation of casing (accessory)
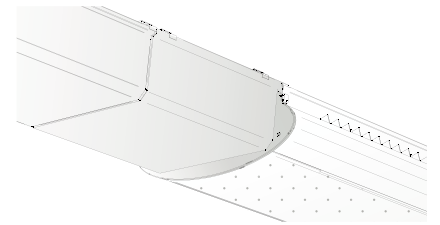
Connection to wall

The connection casing is mounted in the extended section of the climate beam and beyond to a wall designed for concealing pipe and duct connections

1. Install the enclosed ceiling brackets.

2. Two ceiling brackets for short casings and three ceiling brackets for casings measuring more than 1 m.

3. Install the enclosed safety cords in all ceiling brackets.

4. Anchor the casing nearest the wall in the safety cord in the intended hole.

5. Cover the remaining opening with the cover by first anchoring the safety cord in the intended hole.

6. Lock the casing in place by folding down the ceiling bracket's locking hooks on both sides. Use a screwdriver.

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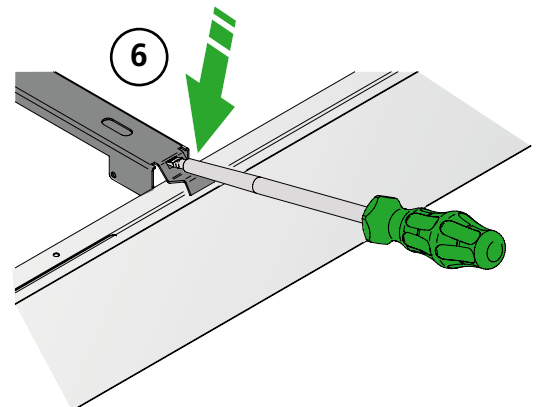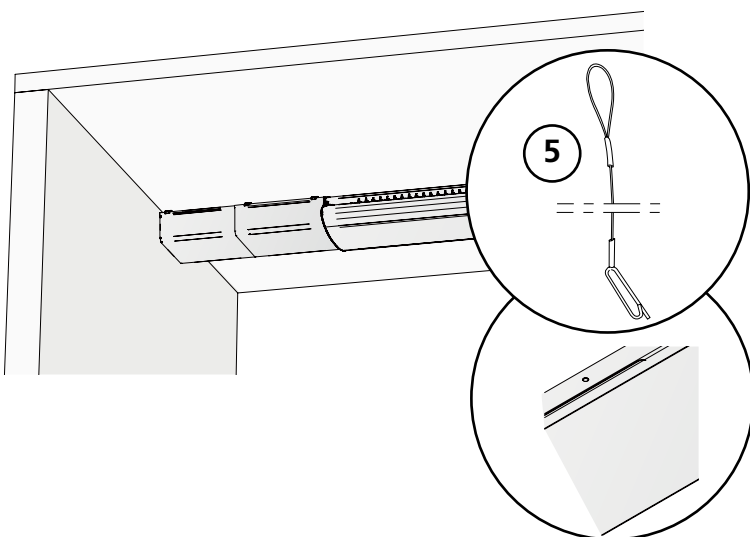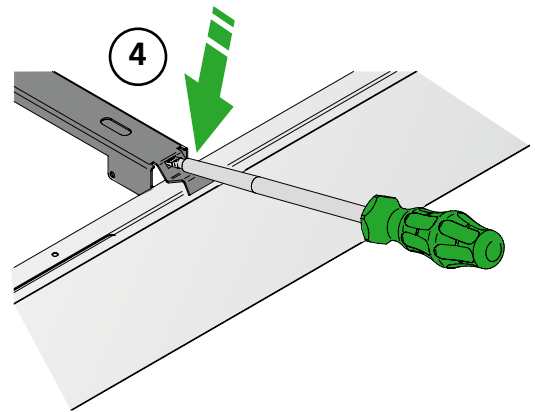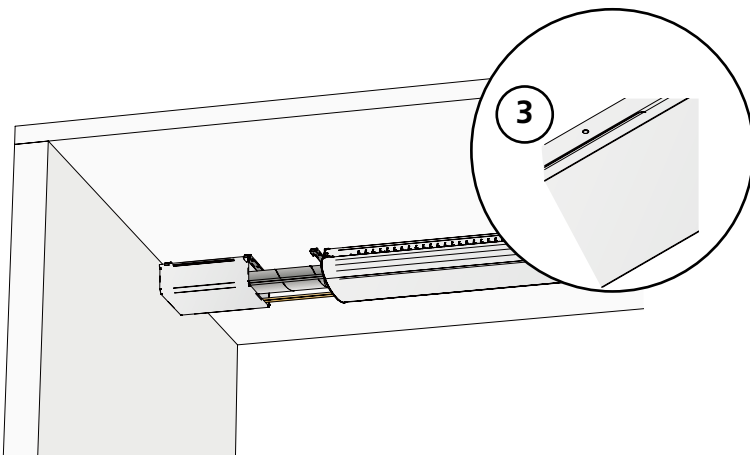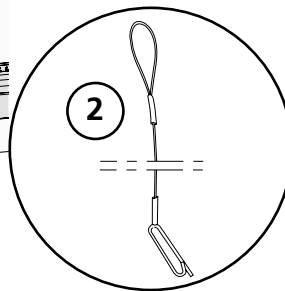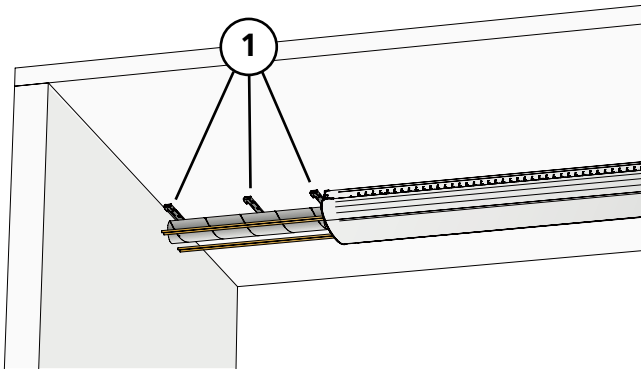
Connection to ceiling

The connection casing is mounted in the extended section of the climate beam and beyond to the ceiling designed for concealing pipe and duct connections
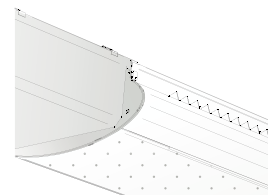
1. Install the enclosed ceiling brackets. Two ceiling brackets for short casings and three ceiling brackets for casings measuring more than 1 m.
2. Install the enclosed safety cords in all ceiling brackets.
3. Anchor the casing in the safety cord in the intended hole.
4. Lock the casing in place by folding down the ceiling bracket's locking hooks on both sides. Use a screwdriver.
5. Install the end connection panel
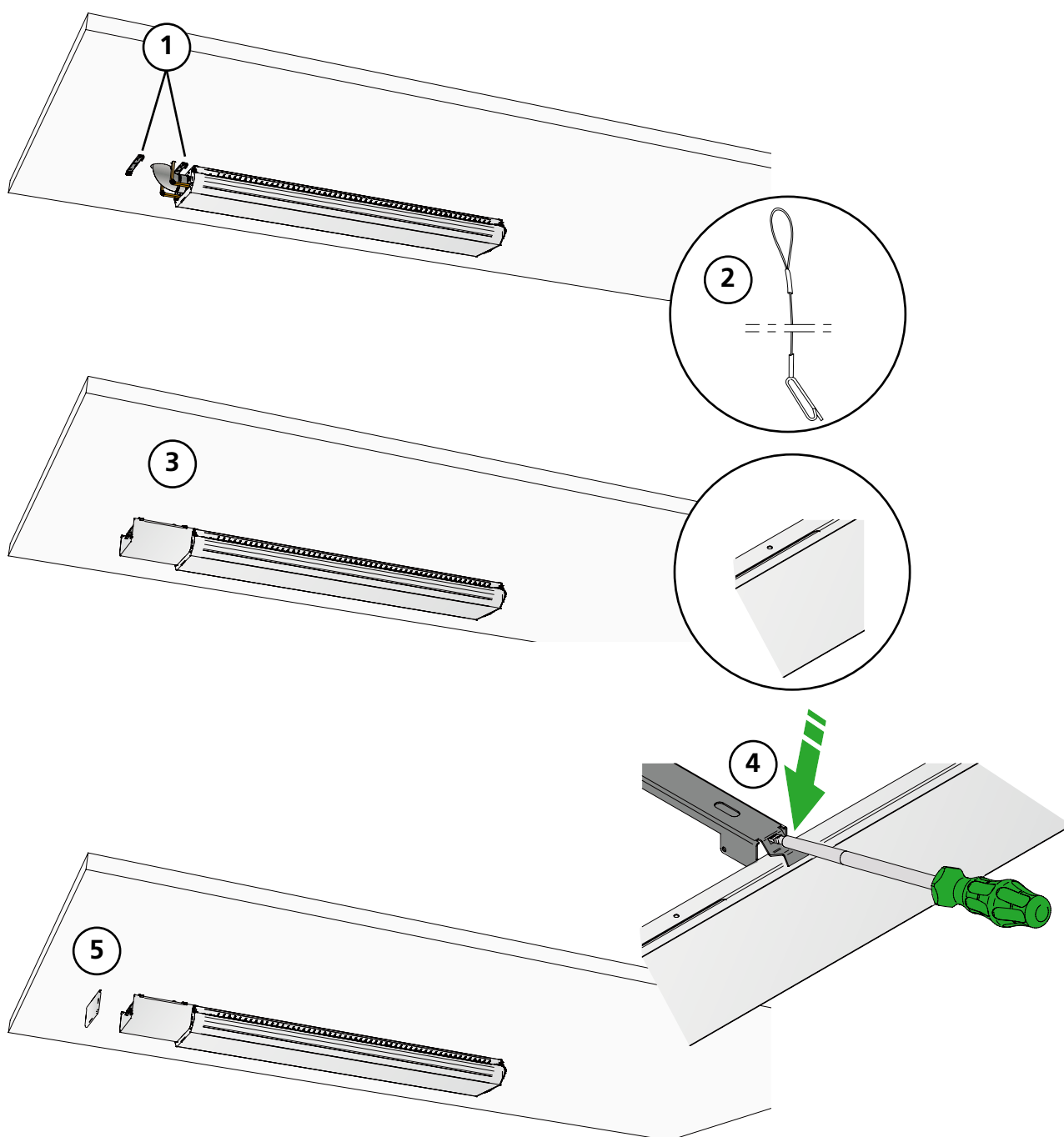
Connection
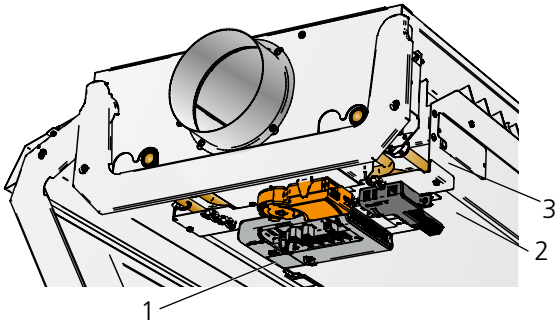
WISE Adriatic with factory-fitted components

1. WISE CU (Controller Unit)
2. Motor for integrated air damper
3. Sensor for measuring supply air temperature

Factory fitted components as an option

- Sensor Module Advanced (WISE SMA), (Optional)
- Sensor Module Basic (WISE SMB), (Optional)
- Valves and actuators for cooling
- Valves and actuators for heating
- Temp. sensor
- Condensation sensor
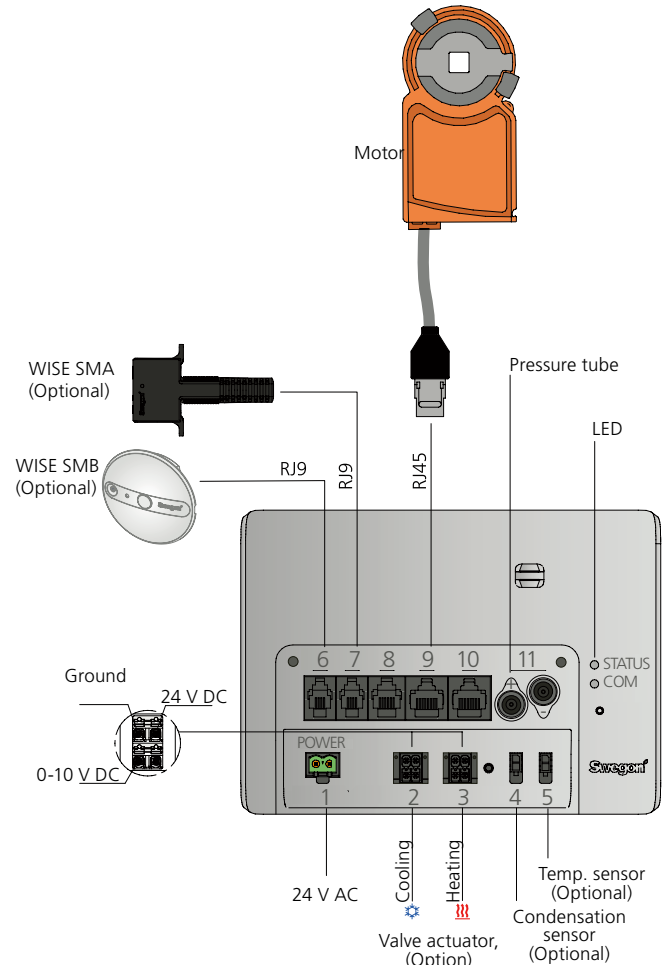
WISE Adriatic, connection.

LED - Explanation

Not connected "paired"

|	Colour	Type
Energized	White	Permanent
Selected in TuneWISE	White	Flashing, fast
Prepared to be added to the system	White	Flashing, slowly
To be added to the system	White	Flashing, fast for 5 s

Connected "paired"

	Colour	Type
Normal operation	Green	Permanent
Restart	Blue	Permanent for 10 s
Initiation	Blue	Flashing
Boosted max. flow	Orange	Permanent
Boosted min. flow	Orange	Permanent
Boosted water flow	Violet	Permanent
Boosted water flow/air flow	Violet/Orange	Alternating
Comfort alarm	Red	Permanent
Function alarm	Red	Flashing
Emergency mode	Green/Red	Alternating
Test mode	Green/Orange	Alternating

There are different types of actuators

- For connection of the thermal actuator such as Swegon's actuator ACTUATORc, see figure a.
- When connecting the relay for connection of three or more actuators, see figure b.
- When connecting of the actuator with 0-10 V control signal (NOTE! 24 V DC supply) see figure c.
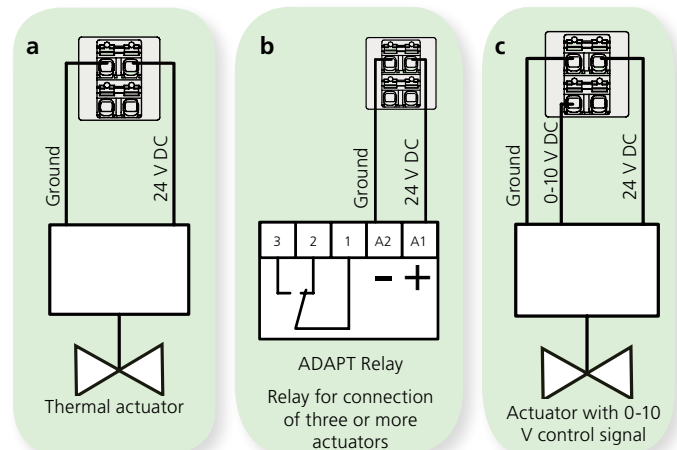
Use

Use TuneWISE for commissioning. Commissioning must be performed by qualified and trained WISE service engineers.

Use SuperWISE for settings, reading alarms, etc. refer to the documentation for SuperWISE II / SuperWISE II SC.

Trouble shooting

The product is not shown in the system:

- Make sure that the product is energized. (e.g. diode)
- Make sure that the product is paired.
- Make sure the product is in the right network.

The product shows incorrect/no air flow/pressure

- Make sure that the product is installed according to the recommended distance.
- Check that there is air flow/pressure.
- Check that the measuring tube is mounted correctly.
- Check that the measuring tube is undamaged.

The product does not regulate the air flow/pressure

- Check that the motor has not become detached from the damper spindle.
- Check that the motor works by turning the motor's release button, turn the damper spindle, release the knob and then see whether the motor starts to move.

The product shows incorrect/no temperature

- Make sure the temperature sensor is not missing.
- Make sure that the temperature sensor does not hang outside the product.
- Check that the temperature sensor is connected to the right input.

The product shows incorrect/no VOC/CO2

- Make sure the VOC/CO2 sensor (WISE SMA) is not missing.
- Check that the VOC/CO2 sensor is connected to the right input.

Cleaning

Ideally the product should be cleaned twice a year by vacuuming the coil to remove loose dust. In fibre dense environments a more frequent interval is recommended.

A simple visual inspection of connections is recommended when cleaning.

Avoid aggressive cleaning agents which may harm painted surfaces. Normally a mild soap or alcohol solution is fully adequate for cleaning. See also the maintenance section in this instructions for use.

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.

Service/maintenance

- In connection with a service, mandatory ventilation inspection or cleaning of the ventilation system, check that the general condition of the products looks ok. Pay particular attention to the suspension, cables and that they sit firmly in place.
- 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

Sheet parts are made of galvanised sheet steel (Z275) and pre-painted sheet SS-EN 10143+10346 - DX52D + ZA95, NCS S 0500-N gloss 30+/-6%.

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.

Technical data

Max. radio frequency output:	50 mW
Frequency band:	2.45 GHz, IMS band (2400--2483 MHz)
Temperature sensor:	0 - 50°C ± -0.5°C
Dynamic pressure sensor:	0 - 300 Pa
With WISE SMA	
VOC sensor	450 - 2000 ppm
RH sensor:	0 - 100 RH%
IP class:	IP20
Running time open/close (90°):	120 s
Ambient temperature	
Operation:	0 – 50°C
Storage:	-20 – +50°C
RH:	10 - 95% (non condensing)
CE marking:	2006/42/EC (MD)
	2014/53/EU (RED)
	2011/65/EU (RoHS2)

Electrical data

Power supply:	24V AC ±15% 50 - 60Hz
Connections pipe dim.	
Power:	Screw terminal max. 2.5mm^2
Valve actuator:	Push-in spring force connections, max. 1.5 mm^2
Max. power consumption:	See table below

WISE Parasol Zenith in standard design:	VA / unit	Standard VA total
WISE CU	2.3	4.8
Damper motor (UM24)	2,5	

Option:	VA / unit		
	x 1	x 2	x 3
Valve actuator, ACTUATORc	6	12	18*
WISE SMA	0.8		
WISE SMB	0.6		

Example:
WISE Adriatic in standard design with the following options:
Actuator for cooling and heating as well as WISE SMA, gives a total power consumption of 4.8 + 6 + 0.8 = 11.6 VA
*Valid for products with CU ver. 2, delivered from 01/10/2019

Swegon

Declaration of Conformity

Swegon AB hereby affirms that

WISE Parasol Zenith with integrated radio, complies with the essential characteristic demands and relevant regulations specified in the following directives: 2006/42/EC (MD), 2014/53/EU (RED) and 2011/65/EU (RoHS2):

The following standards have been observed:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk mitigation
EN 60204-1:2006	Safety of machinery - Electrical equipment of machines - Part 1: Generic standards
EN 60730-1:2011	Automatic electrical control and control unit for household use - Part 1: Generic standards
EN 60730-2-14:2009	Automatic electrical controls for household and similar use - Part 2 Particular requirements for electric actuators
IEC 60529:1992+A2:2013	Degrees of protection provided by enclosures (IP code)
EN 61000-6-2:2007	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments
EN 61000-6-3:2007	Electromagnetic compatibility (EMC) - Generic standards - Emission standard for residential, commercial and light-industrial environments
EN 300 328 V1.9.2, V1.9.1, V1.8.1	Electromagnetic compatibility and Radio spectrum Matters (ERM) - Wideband Transmission systems - Data transmission equipment operating in the 2.4 GHz ISM band and using spread spectrum modulation techniques
EN 60335-1:2012+A11:2014 EN 60335-2-30:2009+A11 EN 62233:2008	Electric household appliances and similar appliances - Safety - Part 1: Generic standards

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Person responsible for this declaration:

Name: Per Eriksson, R&D Director Room Units

Address: Fallebergsvägen, 671 34 Arvika, Sweden

Date: Arvika 23/03/2023

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

References

www.swegon.com

Building Materials Declaration

WISE Adriatic product data sheet

WISE System Guide

SuperWISE II / SuperWISE II SC User Manual

WISE Project Planning Guide - Heating, Cooling & Ventilation and Electricity & Control

Maintenance

Fold down design module
The unit is equipped with a pushbutton at either end of one of the long sides, for simple lowering of the design section and access to e.g. control equipment. When lowering, one long side is opened and the design section is suspended from the opposite long side.

Secure design module
When fastening the design module from an open position, raise the design section until you hear a click, at which point it is secured in the base module.