ADRIATIC AWC

Installation - Commissioning - Maintenance

23/12/2024
Art. 942428080

The document refers to version "d"

Content

The document was originally written in Swedish

Swegon

Application area

The product is a suspended climate beam with stepless air-flow control, equipped with functions for demand-control of the indoor climate. The product is used to ventilate, cool and heat premises.

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

1 x ADRIATIC AWC

1 x Instructions for use

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 are 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.

Cleaning

Ideally the product should be cleaned twice a year by vacuuming the coil to remove loose dust.

In fibre-dense environments such as hotels, an initial cleaning is recommended, about three months after use, as new textiles usually release more fibres. Thereafter, cleaning is recommended at an interval of one to two times per year.

A simple visual inspection of connections is recommended when cleaning.

For cleaning grilles and other painted surfaces: 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.

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.

Environment and waste disposal

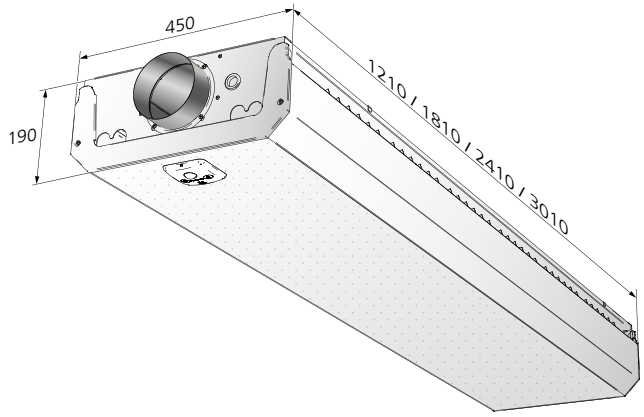
Help to protect the environment by ensuring correct disposal of the packaging and use the products in accordance with applicable environmental regulations.

Product warranty

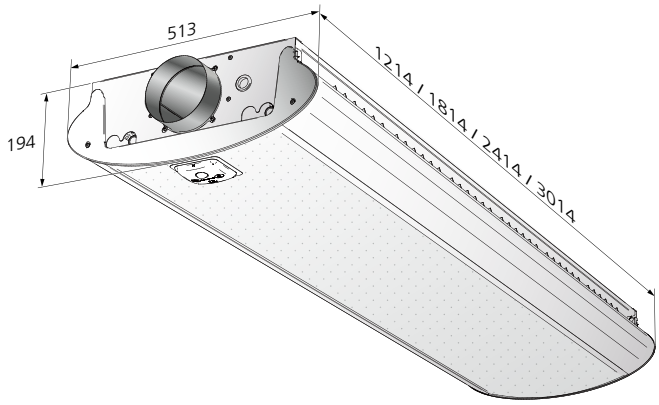
The product warranty or service agreement will not be in effect/will not be extended if: (1) The product is repaired, modified or changed, unless such repair, modification or change has been approved by Swegon AB; or (2) the serial number on the product has been made illegible or is missing.

Dimensions

ADRIATIC AWC Prisma



ADRIATIC AWC Ellips



Weight

ADRIATIC AWC with Prisma design section

Length	Dry weight*	Weight, filled with water* (kg)	
(m)	(kg)	A: Cooling	B: Cooling/Heating
1.2	20.1	21.1	21.3
1.8	28.8	30.3	30.7
2.4	37.1	39.2	39.7
3.0	44.8	47.4	48.1

ADRIATIC AWC with Ellips design section

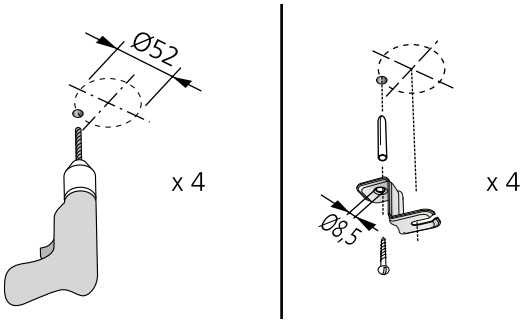
Length	Dry weight*	Weight, filled with water* (kg)	
(m)	(kg)	A: Cooling	B: Cooling/Heating
1.2	20.5	21.5	21.7
1.8	29.2	30.7	31.1
2.4	37.7	39.8	40.3
3.0	45.8	48.4	49.1

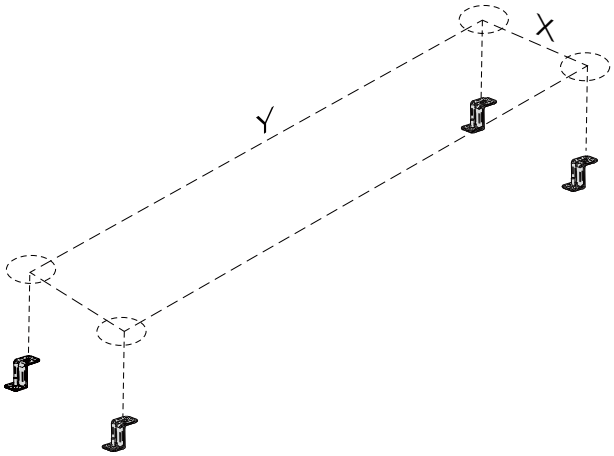
** excl. controller (VAV = 0.723 kg, WISE = 0.598 kg), valves, actuators and sensors.*

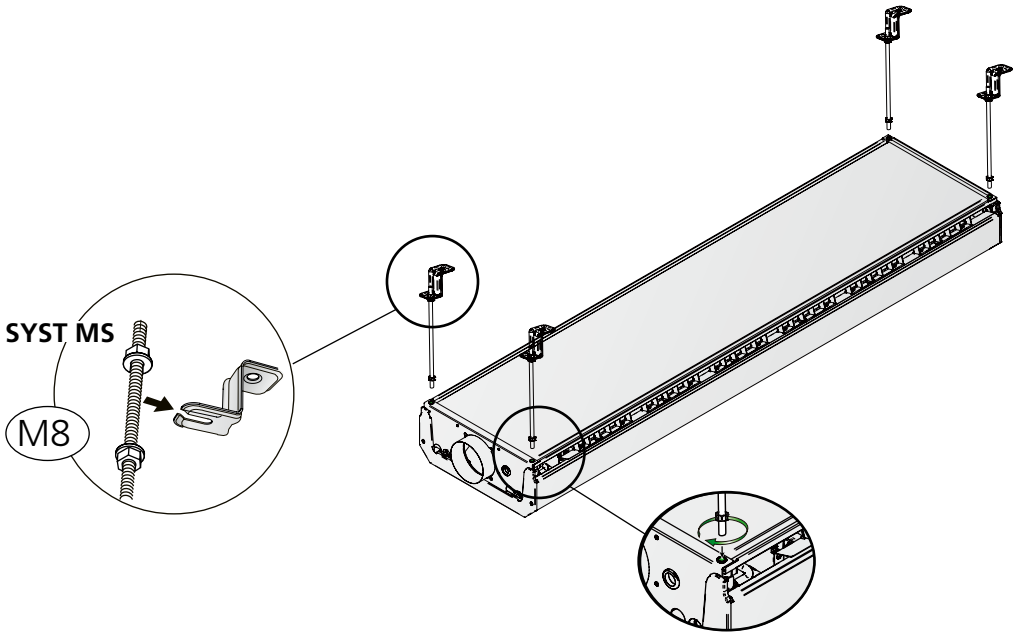
Installation

Suspended installation

The product is mounted on the ceiling using standard suspension bracket SYST MS-M8.







Suspended installation

The product is mounted on the ceiling using standard suspension bracket SYST MS-M8.

c-c dimensions

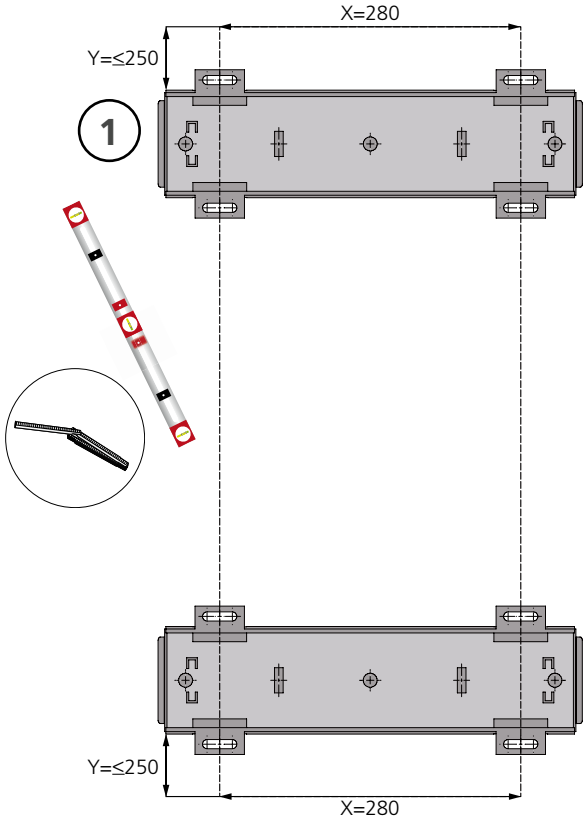
The c-c dimensions are the same for ADRIATIC AWC with both design module Prisma and design module Ellips. The examples to the right show Prisma.

Unit	Suspended installation	
	c-c (mm)	c-c (mm)
(m)	X - Short side	Y - Long side
1.2	392	1173
1.8	392	1773
2.4	392	2373
3.0	392	2973

Surface mounted installation

Surface-mounting the product on the ceiling using suspension bracket SYST MD-ADRIATIC.

- 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 dimensions in the table above. 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.
- Install the suspension bracket SYST MD-ADRIATIC 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.
- 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.
- Anchor the enclosed safety cord in the bracket and in the corner of the product.
- Then move the product straight up against the bracket.
- 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.
- Repeat this procedure for all the brackets.

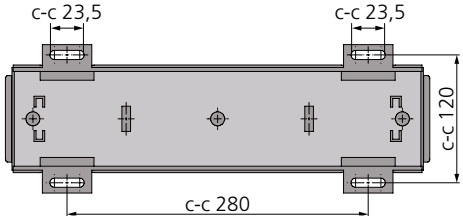


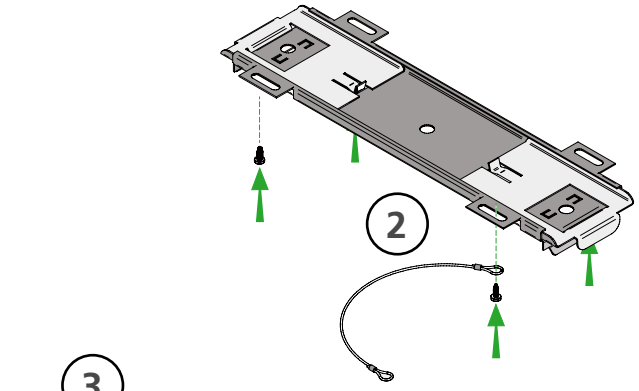
Installation

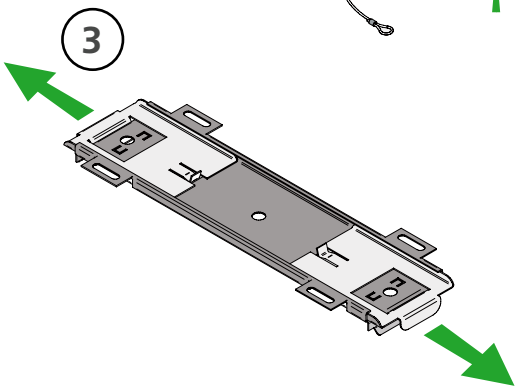
The c-c dimensions are the same for ADRIATIC AWC with both design module Prisma and design module Ellips. The examples to the right show Prisma.

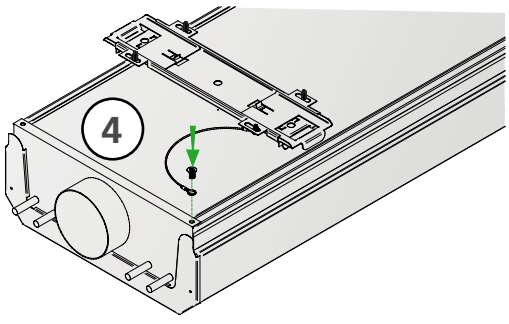
Unit	Surface mounted installation		
	Number of brackets	c-c (mm)	Max. (mm) *
(m)	pcs.	X - Short side	Y - Long side
1.2	2	280	250
1.8	2	280	250
2.4	3	280	250
3.0	3	280	250

** Max. distance from the end of the product.*



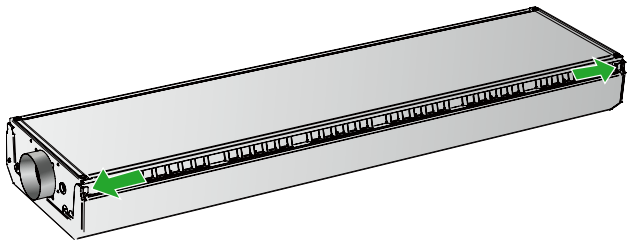


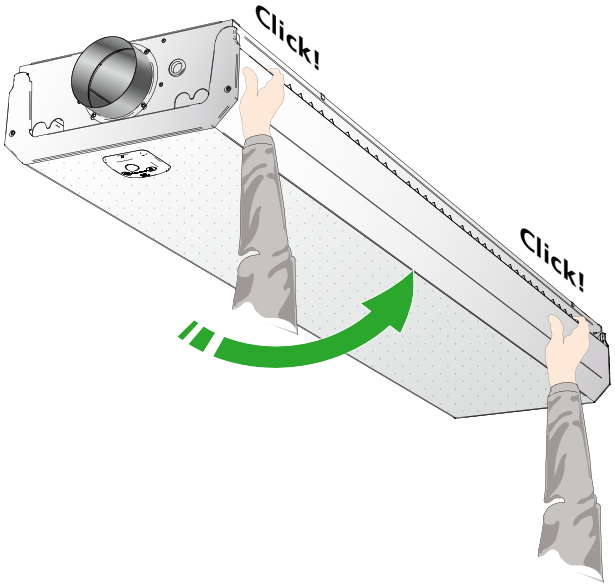




Secure design module

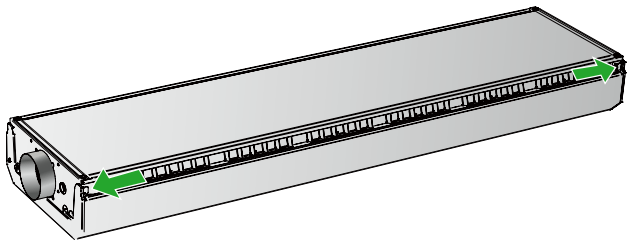
When fastening the design module from an open position, raise the design section until you hear a click, at which point it is secured in the base module.

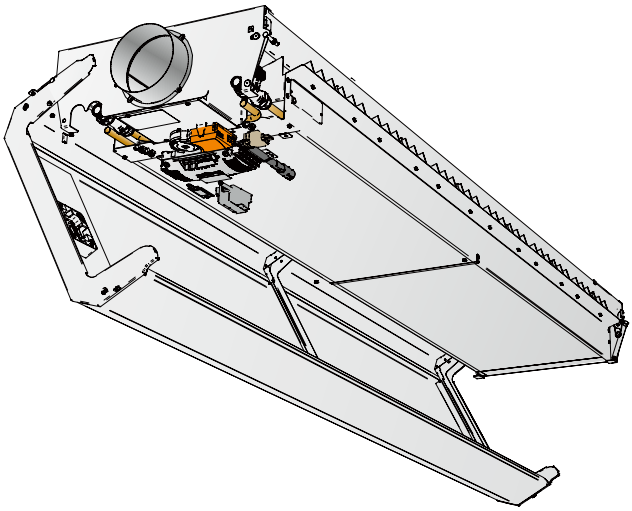




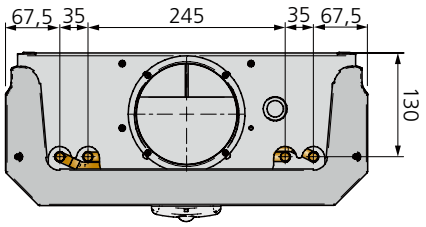
Fold down design module

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.

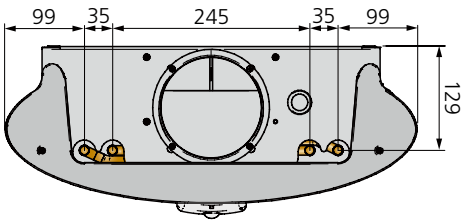




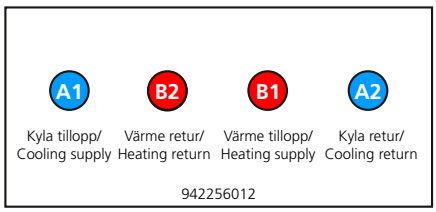
Water connection



Dimensions ADRIATIC AWC Prisma, end view, water connection



Dimensions ADRIATIC AWC Ellips, end view, water connection

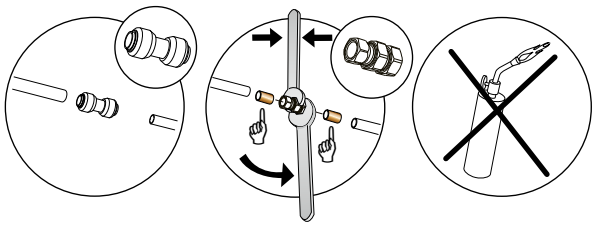


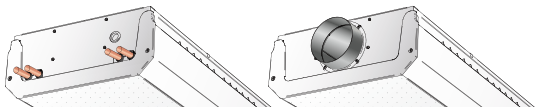
Water connection
A1 = Supply cooling water ø12x1.0 mm (Cu)
A2 = Return cooling water ø12x1.0 mm (Cu)
B1 = Supply heating water ø12x1.0 mm (Cu)
B2 = Return heating water ø12x1.0 mm (Cu)

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).





Variant TH with air and water connections on different short sides. The example shows both short sides with the TH connection on ADRIATIC AWC 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 for the pre-pressure in the expansion vessel to be dimensioned according to EN-12828 for both the heating and cooling systems and for regular checks to be 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.

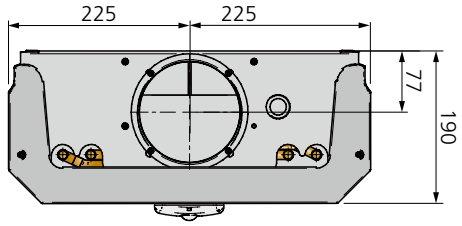
Connection sizes

Model	Length	Factory-fitted	Connection	Coupling type	Connection	Coupling type
A, B, Cooling, Cooling/Heating	1.2; 1.8	Actuator and valve	Return	DN15, male thread	Supply pipe	Plain pipe 12 x 1.0 mm
A, B, Cooling, Cooling/Heating	2.4; 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; 1.8	-	Return	Plain pipe 12 x 1.0 mm	Supply pipe	Plain pipe 12 x 1.0 mm
A, B, Cooling, Cooling/Heating	2.4; 3.0	-	Return	Plain pipe 12 x 1.0 mm	Supply pipe	Plain pipe 12 x 1.0 mm

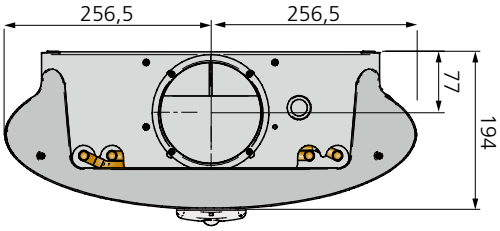
Air connection

To connect the air

ADRIATIC AWC comes with open air connection on one short side. The sleeve is connected to the primary air duct.



Dimensions ADRIATIC AWC Prisma, end view, air connection



Dimensions ADRIATIC AWC Ellips, end view, air connection

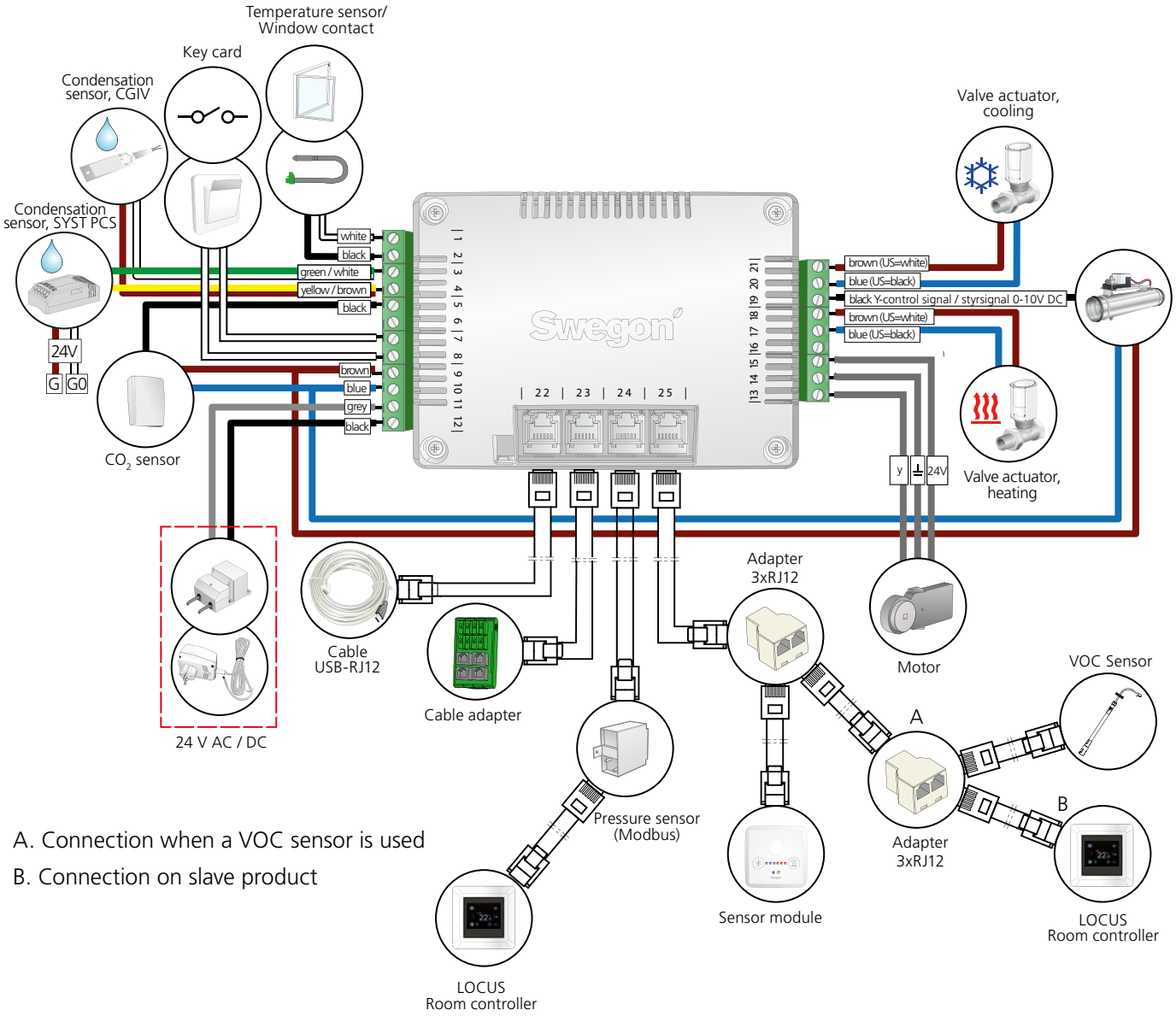
Connection dimensions

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

Wiring diagram

Connection for controller (URC1) with accessories.

The controller is placed on the coil adjoining the water pipe and air duct, and is easily accessible when lowering the face plate/design module.

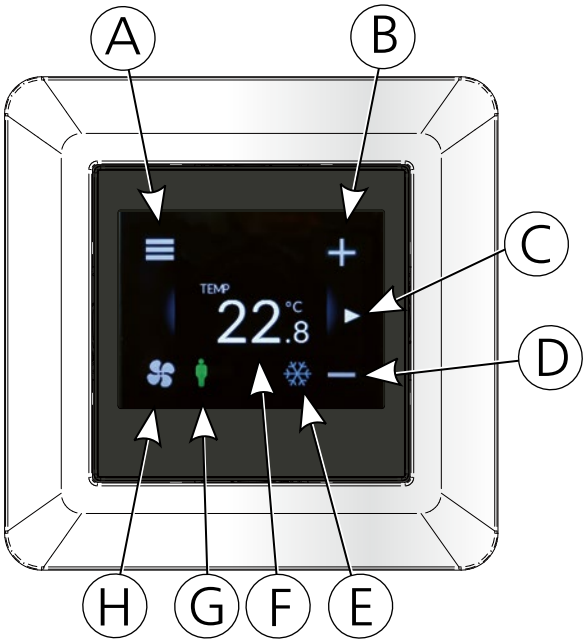


A. Connection when a VOC sensor is used

B. Connection on slave product

Room controller, LOCUS

Main menu and explanation of symbols



A. menu
B. increase
C. swipe left to go to the next page
D. decrease
E. symbol showing ongoing cooling or heating
F. shows programmed setpoint or measured temperature
G. shows occupancy in the room
H. press to activate boost flow

Technical data

Display	Capacitive touch TFT Display QVGA 2.3"
Screen resolution	320x240
Communication	Modbus RTU via RS-485
Temperature sensor	Internal 10K NTC sensor
Operating temperature	+5 ... +40°C
Degree of protection	IP20
Dimensions	88 x 88 x 35 mm
Operating voltage	12-40 VDC
Current requirement	0.5 W

Connection

LOCUS	Connection	Description
VDD	RJ12	12-40 VDC power supply
A+	RJ12	RS-485 bus connection
B-	RJ12	RS-485 bus connection
GND	RJ12	Earth for 12-40 VDC power supply
Memory card slot		The user panel's software can be updated via a Micro SD card

Standards and directives

The following standards have been observed:

EC Directive:	93/68/EEC
Low Voltage Directive:	2014/35/EU
Machinery Directive:	2006/42/EEC
EMC Directive:	2014/30/EU
RoHS Directive:	2002/95/EC
Vibrations:	EN-60721-3-3

Description of display

If the screen is in standby mode, it is activated again by clicking.

Display	Description	Explanation
	Display in standby mode	Activated with a click
	Active main menu	Increase/decrease the setpoint temperature by clicking on the + or – signs
	Activated boost mode	
	Swipe left for next page	Shows values from connected sensors
	Swipe right to go back to the main menu	

For more detailed information about LOCUS room controller. See documentation at www.swegon.com

- LOCUS Product datasheet
- LOCUS Instructions for Use (IOM)

Sensor module

Menu sensor module:

Press and hold the left and right-hand buttons for five seconds to access the menu.

Use the left-hand button (❄) to steps through the menus.
Use the right-hand button (♨) to confirm your selection.

Press the left-hand button and select:
1. Alarm list
2. Commissioning air
3. Commissioning water
6. Return to menu

Confirm selections by pressing the right-hand button

1. Alarm list: See the complete alarm list to the right.
In the commissioning menus:

- Navigate between the menus by pressing the left-hand button
- Confirm selections by pressing the right-hand button
- When a selection has been confirmed, the blue LED will flash for about 60 seconds.
- In order to return to normal operation, select "no adjustment"

2. Commissioning, air:

2.1. Min. airflow, no occupants
2.2. Min. airflow, occupancy
2.3. Max. air flow, occupancy
2.4. Min. airflow, holiday/longer period of no occupancy
2.5. No adjustment

3. Commissioning, water:

3.1. Open the chilled water valve
3.2. Open heated water valve
3.3. No adjustment

4, 5 are not used

6. Return to menu

Alarm list for the sensor module

Alarm no.	Type of alarm	32	16	8	4	2	1
Alarm 1	Supply voltage low						●
Alarm 2	Supply voltage critical low					●	
Alarm 3	Ext temp missing					●	●
Alarm 4	Ext temp error				●		
Alarm 5	Condensation sensor error				●		●
Alarm 6	SM temp sensor error				●	●	
Alarm 7	SM button error				●	●	●
Alarm 8	CO_2 sensor missing			●			
Alarm 9	VOC Error			●			●
Alarm 10	Low pressure			●		●	
Alarm 17	SM comm error		●				●
Alarm 18	Slave comm error		●			●	
Alarm 19	Pressure sensor comm error		●			●	●
Alarm 20	VOC sensor comm error		●		●		
Alarm 21	No master request (slave)		●		●		●
Alarm 22	Slave incompatible version		●		●	●	
Alarm 25	Heating comfort alarm		●	●			●
Alarm 26	Cooling comfort alarm		●	●		●	
Alarm 27	Temp. Set point overlap alarm		●	●		●	●
Alarm 28	Air quality comfort alarm		●	●	●		
Alarm 29	Condensation		●	●	●		●
Alarm 33	24 V Out 1 overload error	●					●
Alarm 34	24 V Out 2 overload error	●				●	
Alarm 35	24 V Out 3 overload error	●				●	●
Alarm 41	Slave input sum alarm	●		●			●
Alarm 42	Slave output sum alarm	●		●		●	

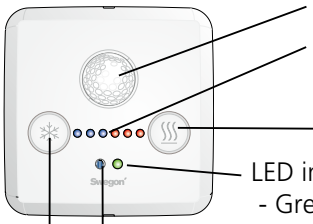
The alarm is shown with a number of LEDs when you select Alarm list (1) in the menu.

Each LED represents a number as per the table above and the numbers are added to form an alarm number.

E.g. Middle blue and the two last red are lit (xoxxoo)

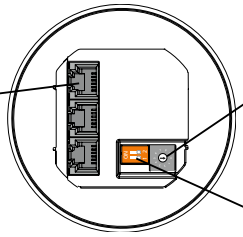
Middle blue corresponds to 16, next last red 2 and last red 1. The sum of these is 19, which is the alarm number.

Return to normal operation by pressing the right-hand button.



Presence sensor
LEDs for temperature, adjustment or alarm indication
Function keys
LED indicating function
- Green = OK
- Flashing Green = condensation alarm
- Yellow = Alarm
- Green/Yellow = Comfort alarm (not acute)

Temperature sensor
Function keys



3 parallel RJ12 ports (Modbus) for connections e.g. controller, additional sensor module or PC with the help of Cable converter USB-RJ12

Addressing the sensor module. 10 sensor modules can be connected to each master unit, each one must have a unique address to work.

Switch for termination resistance. On the last sensor module in the circuit switch 1 is set to On.

Recommendation for electrical installations

- Swegon recommends that all electrical installations are carried out by a qualified electrician.
- Swegon recommends that a 24 V power supply is connected with a 1.5 mm² copper cable to minimise the risk of voltage drops in the case of long cable runs.
- Swegon recommends the use of Swegon-marked transformers for supplying power to Swegon's products

Voltage drop table at different loads (amperes) with a 1.5 mm² cable

Metres	Current/Amperes					
(m)	1	2	3	4	5	6
10	0.24	0.48	0.72	0.96	1.20	1.44
20	0.48	0.96	1.44	1.91	2.39	2.87
30	0.72	1.44	2.15	2.87	3.59	4.31
40	0.96	1.91	2.87	3.83	4.78	5.74
50	1.20	2.39	3.59	4.78	5.98	7.18
60	1.44	2.87	4.31	5.74	7.18	8.61
70	1.67	3.35	5.02	6.70	8.37	10.05
80	1.91	3.83	5.74	7.65	9.57	11.48
150	3.59	7.18	10.76	14.35	17.94	21.53
160	3.83	7.65	11.48	15.31	19.13	22.96

The largest permitted voltage drop is 3.6 V

Description of problem:

Swegon's electrical units and machines are designed to work within specific voltage intervals. If the voltage drops below the nominal value, this can lead to impaired performance or even damage to the equipment.

Voltage drops also entail increased resistance in cables and
components, which generates heat. This heat represents a loss of electrical energy. Depending on the voltage drop, the energy losses can be significant.

A general guideline for a 24 V system is that a 15% voltage drop is acceptable (3.6 volts).

How is the voltage drop in the cable calculated:

Resistance (R) = (Resistivity (p) x Length (L)) / Area (a).

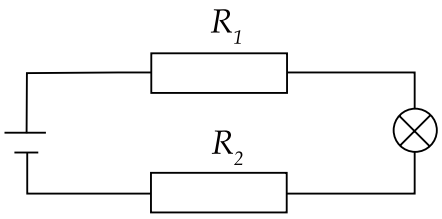
Voltage drop in wire (UL) = Resistance (R) x current (I)

$$R_1 = \frac{p \cdot L}{a}$$

$$R_2 = \frac{p \cdot L}{a}$$

$$R = R_1 + R_2$$

$$UL = R \cdot I$$



For example, the resistivity for copper is 0.0175 ohm mm²/m at 15°C. Bear in mind that the resistance increases by 0.4% per degree Celsius.

Examples of voltage drops in cables:

Input data	value	Unit
Supply voltage	24	Volts
Current (load)	1.25	Amperes
Cable area	1.5	mm
Cable length (phase + neutral wire)	50	M

Voltage drop	1.5	Volts

Example 1 at 22°C

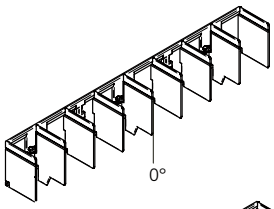
Input data	value	Unit
Supply voltage	24	Volts
Current (load)	1.25	Amperes
Cable area	1.5	mm
Cable length (phase + neutral wire)	200	M

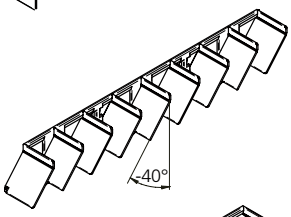
Voltage drop	6	Volts

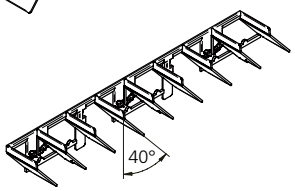
Example 2 at 22°C

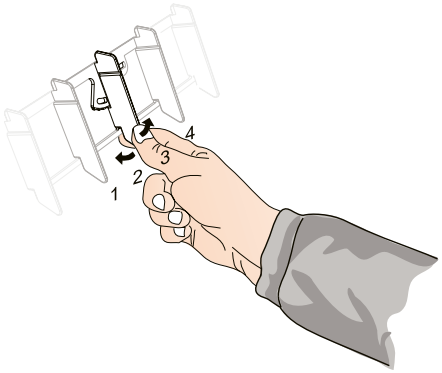
Commissioning

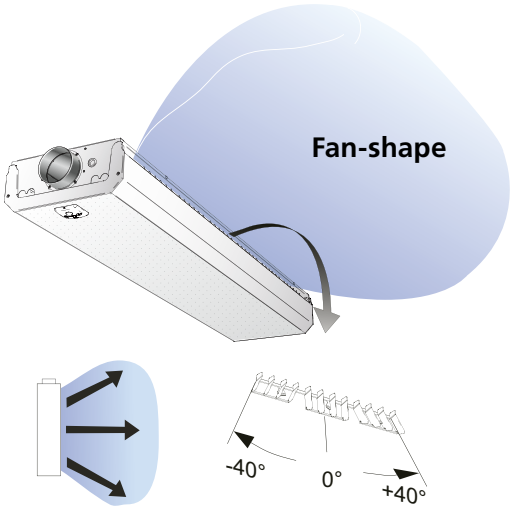
ADC

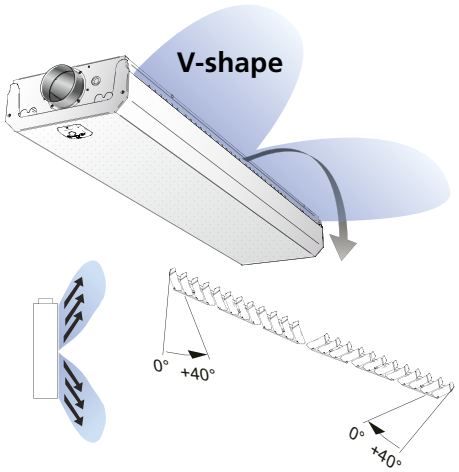




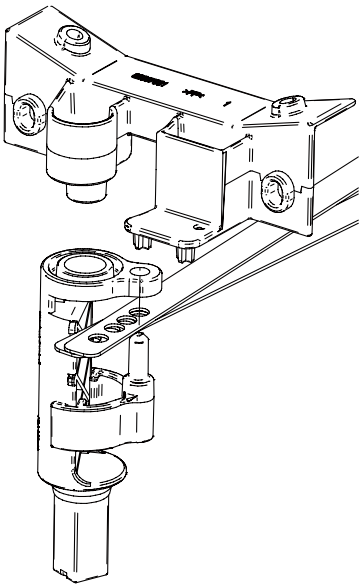


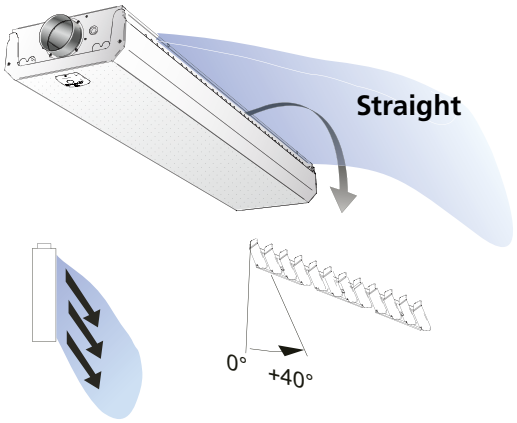




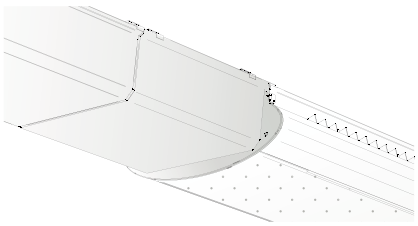


Lock one side





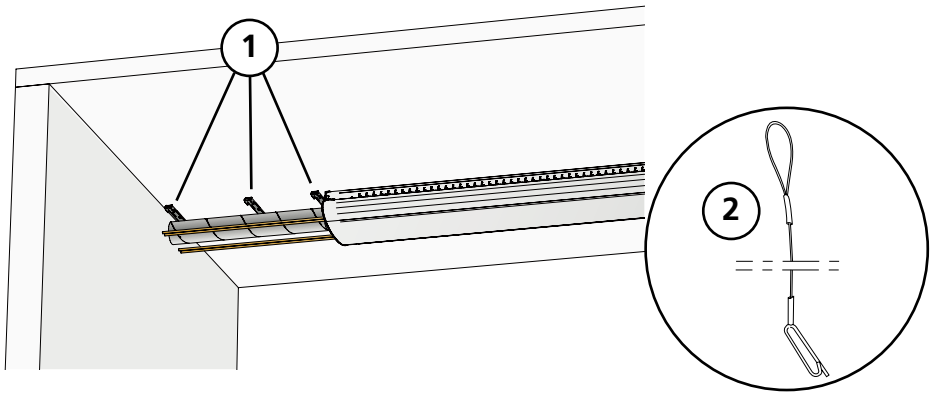
Installation of casing (accessory)

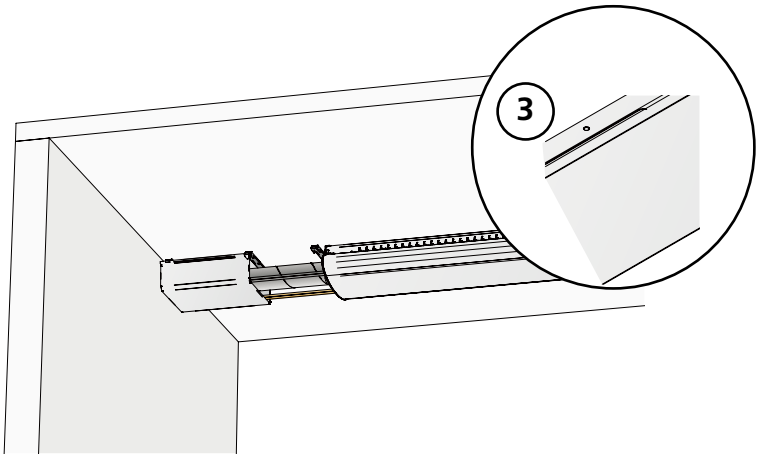


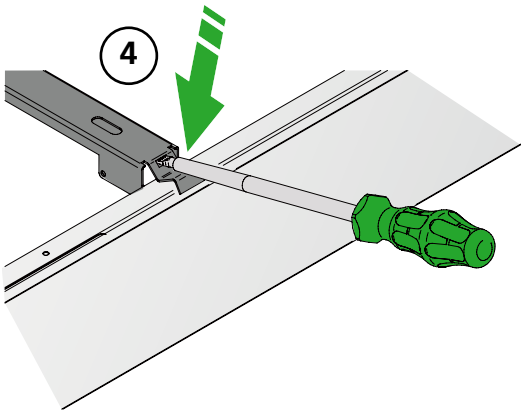
Connection to wall

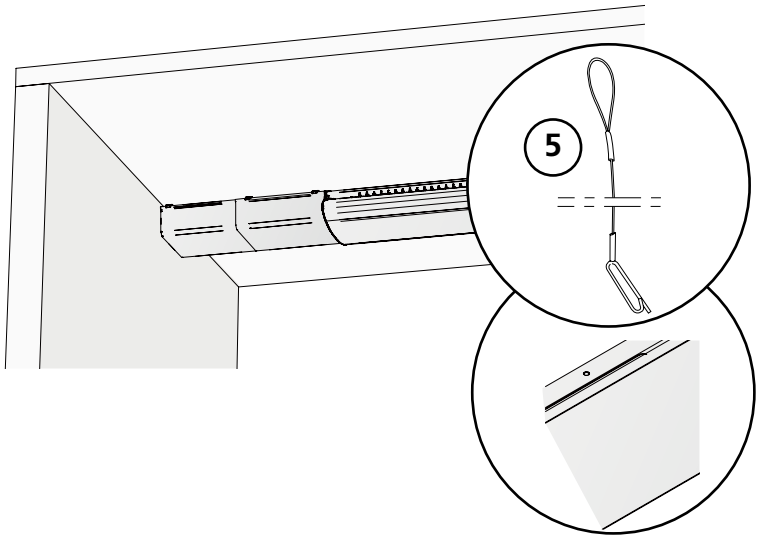
The connection casing is mounted in the extended section of the climate beam and beyond to a wall designed for concealing pipe and duct connections

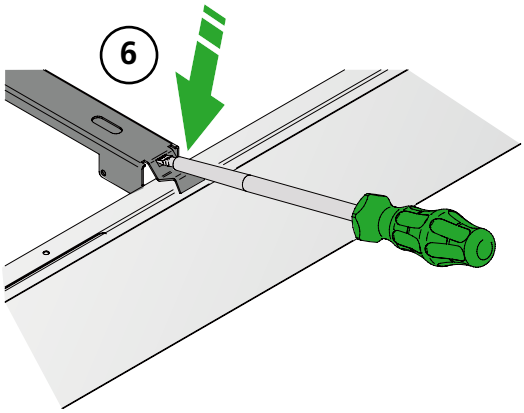
1. Install the enclosed ceiling brackets.
2. Two ceiling brackets for short casings and three ceiling brackets for casings measuring more than 1 m.
3. Install the enclosed safety cords in all ceiling brackets.
4. Anchor the casing nearest the wall in the safety cord in the intended hole.
5. Cover the 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.





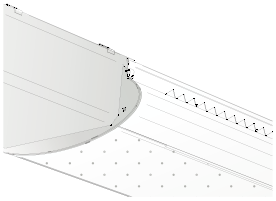




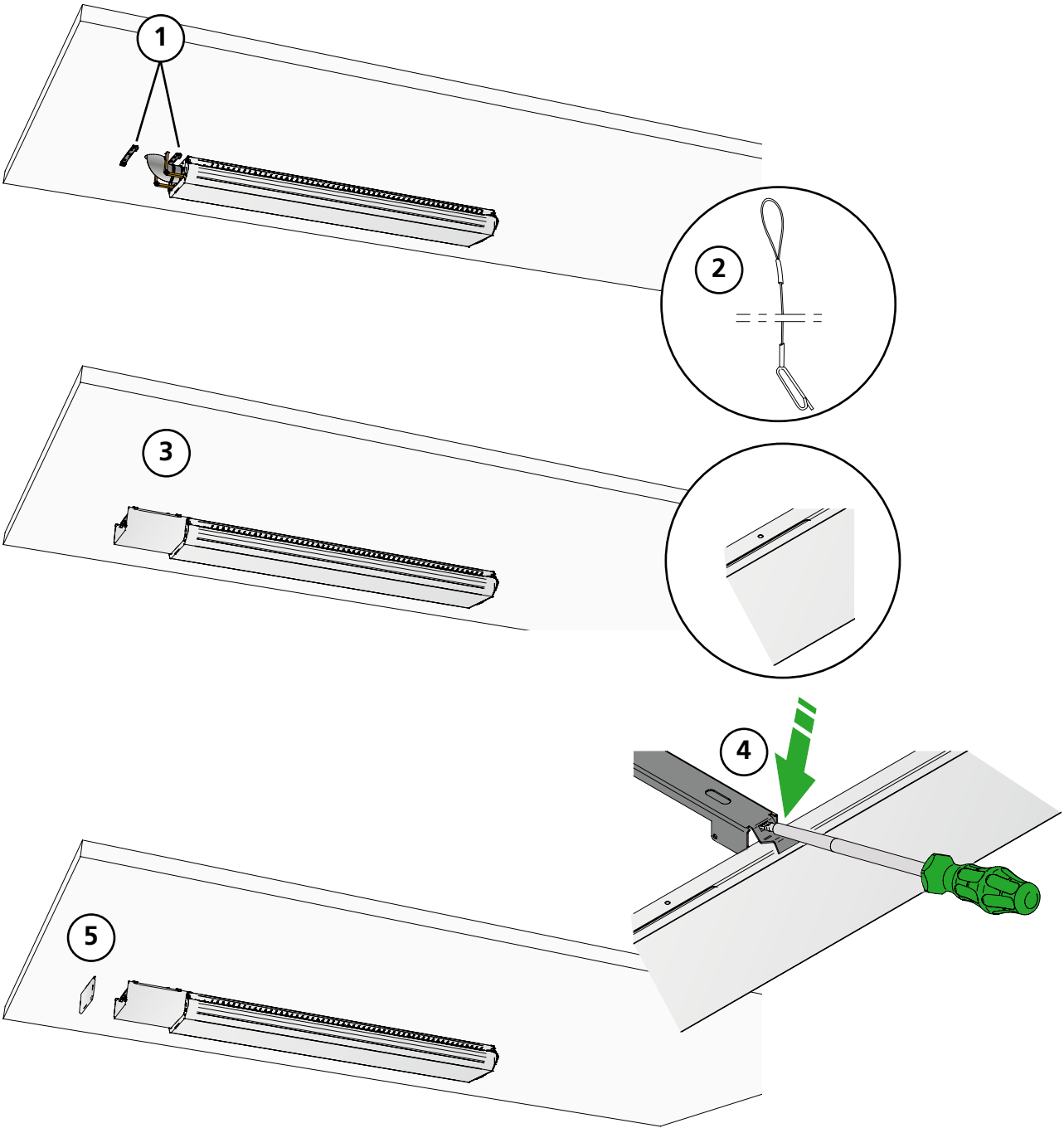


Connection to ceiling

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



Maintenance