

REACT Parasol Zenith d

Installation - Commissioning - Maintenance

01/09/2023
Article 942428087

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The document was originally written in Swedish

Application area

The product is a comfort module with VAV dampers. 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 REACT Parasol Zenith

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 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.

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.

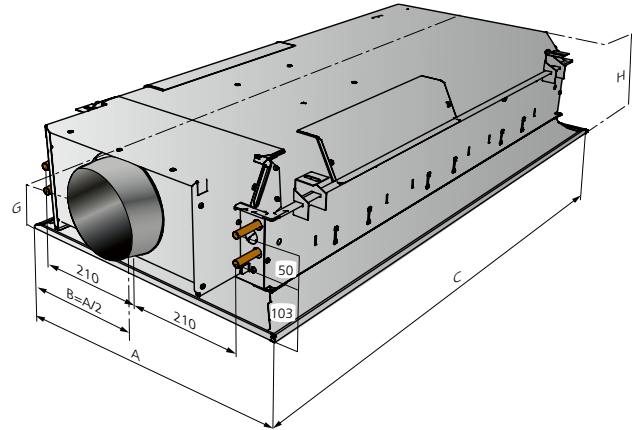
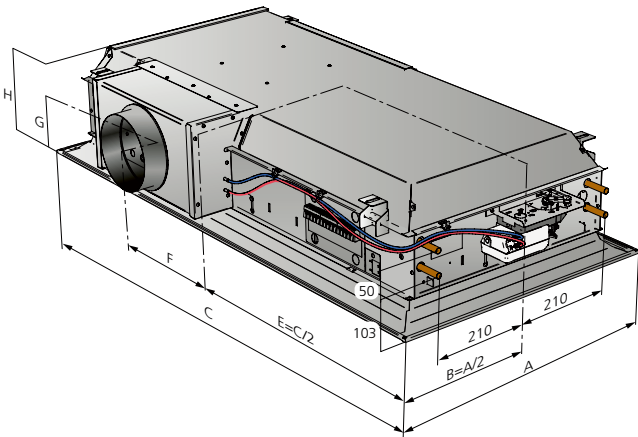
Environment and waste disposal

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 and weight



Dimensions

REACT Parasol Zenith 600

Dimensions (mm)							
A	B	C	ØD*	E	F	G*	H*
584	292	584	125/160	292	178	137/153	220/250
592	296	592	125/160	296	178	137/153	220/250
598	299	598	125/160	299	178	137/153	220/250
617	308.5	617	125/160	308.5	178	137/153	220/250
623	311.5	623	125/160	311.5	178	137/153	220/250
642	321	642	125/160	321	178	137/153	220/250
667	333.5	667	125/160	333.5	178	137/153	220/250

REACT Parasol Zenith 1200

Dimensions (mm)							
A	B	C	ØD*	E	F	G*	H*
584	292	1184	125/160	592	178	137/153	220/250
592	296	1192	125/160	596	178	137/153	220/250
598	299	1198	125/160	599	178	137/153	220/250
617	308.5	1242	125/160	621	178	137/153	220/250
623	311.5	1248	125/160	624	178	137/153	220/250
642	321	1292	125/160	646	178	137/153	220/250
667	333.5	1342	125/160	671	178	137/153	220/250

REACT Parasol Zenith 1800

Dimensions (mm)							
A	B	C	ØD	E	F	G	H
584	292	1784	200	892	478	173	290
592	296	1792	200	896	478	173	290
598	299	1798	200	899	478	173	290
617	308.5	1823	200	911.5	478	173	290
623	311.5	1867	200	933.5	478	173	290
642	321	1873	200	936.5	478	173	290
667	333.5	1942	200	971	478	173	290

* Dimensions refer to products with air connection Ø125/Ø160.

Weight

REACT Parasol Zenith 600

Length mm	Type	Dim. Ø	Dry weight (kg)	Water volume (l)	
				cooling	heating
600	A	125	12.9	1.08	-
600	B	125	13.0	0.84	0.34
600	A	160	13.5	1.08	-
600	B	160	13.6	0.84	0.34

REACT Parasol Zenith 1200

Length mm	Type	Dim. Ø	Dry weight (kg)	Water volume (l)	
				cooling	heating
1200	A	125	23.6	2.4	-
1200	B	125	23.6	1.8	0.7
1200	A	160	24.4	2.4	-
1200	B	160	24.4	1.8	0.7

REACT Parasol Zenith 1800

Length mm	Type	Dim. Ø	Dry weight (kg)	Water volume (l)	
				cooling	heating
1800	A	200	35.7	3.8	-
1800	B	200	35.7	2.7	1.1

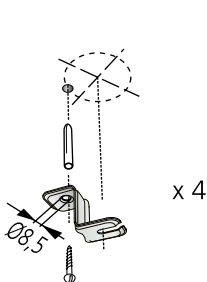
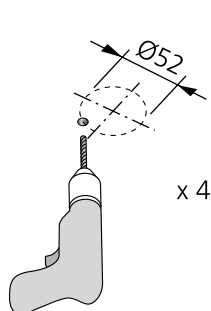
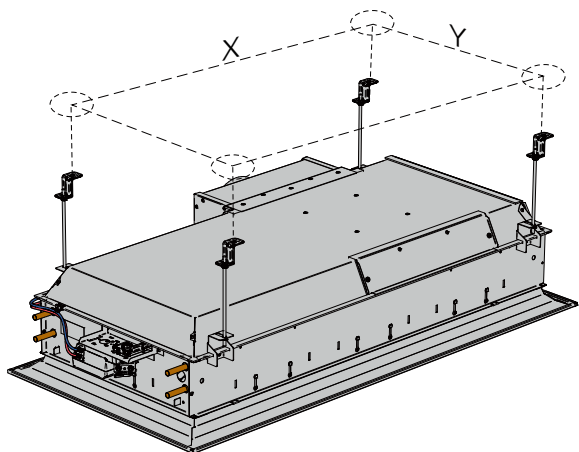
Weights above are excl. control plate (0.12 kg).

These are examples of the most common sizes of REACT Parasol Zenith. For the other variants, refer to ProSelect or IC Design at www.swegon.com.

Mounting

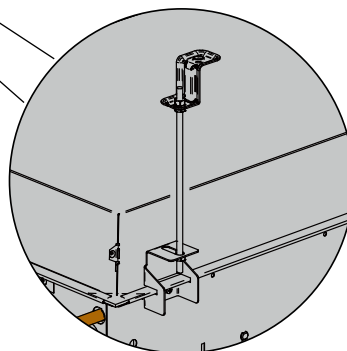
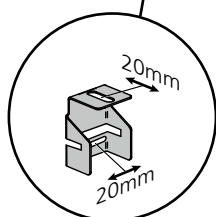
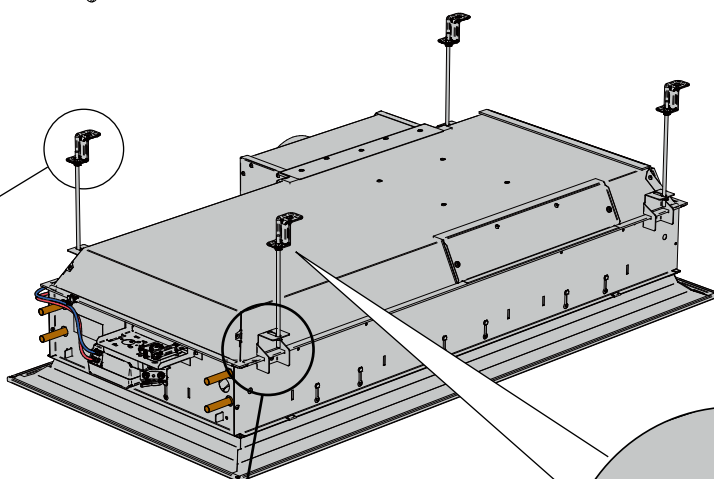
Suspension bracket

To mount the product on the ceiling using standard suspension bracket SYST MS



SYST MS

M8



c/c measurement

Placement of the bracket on delivery		
Length of the unit	c - c (mm) X	c - c (mm) Y
600	330 ±10	508 ±10
1200	930 ±10	508 ±10
1800	1530 ±10	508 ±10

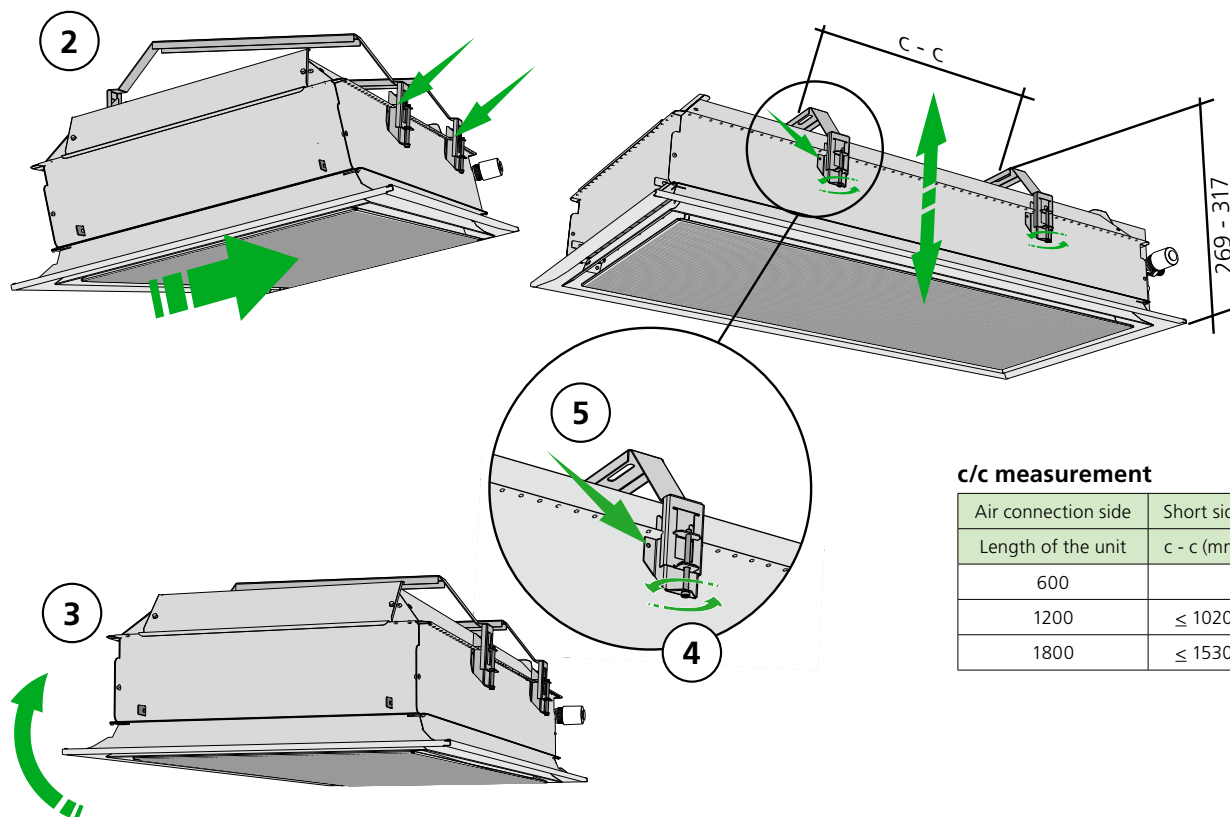
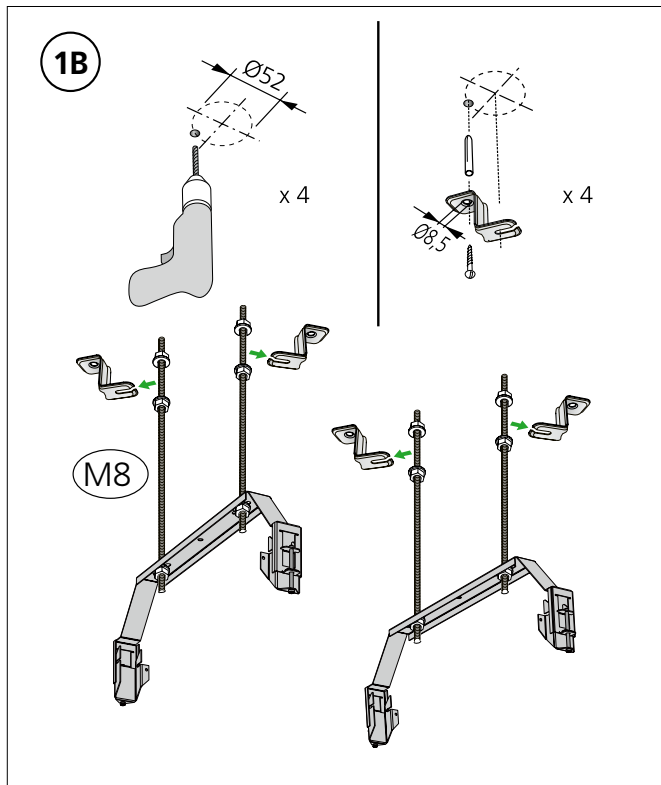
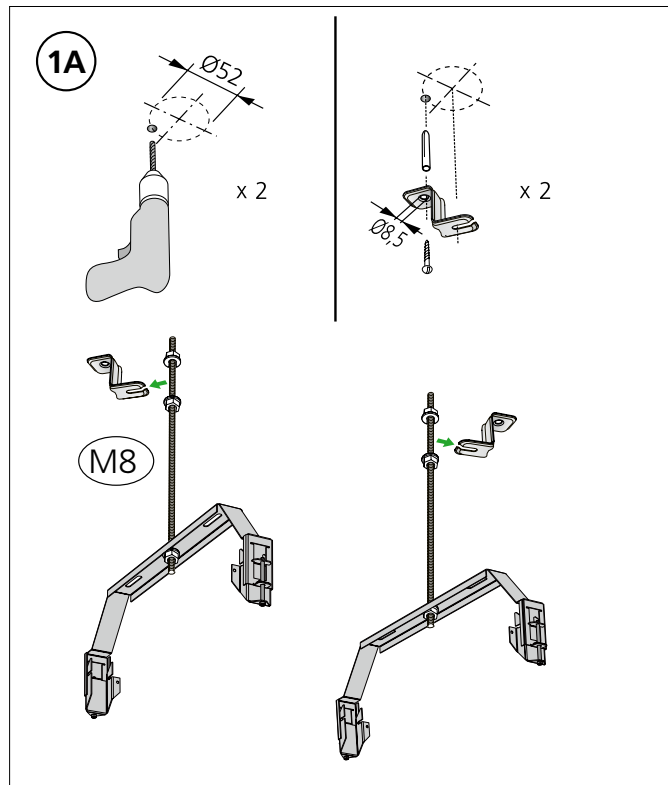
Alternative placement of the suspension bracket		
Length of the unit	Out towards the corner	In towards the centre
	c - c (mm) X (A1)	c - c (mm) X (A2)
600	398 ±10	262 ±10
1200	998 ±10	862 ±10
1800	1598 ±10	1462 ±10

Accessory - Quick bracket

To mount the product on the ceiling with the accessory, quick bracket

1A: Installation with one centred threaded rod per quick bracket

1B: Installation with two threaded rods per quick bracket

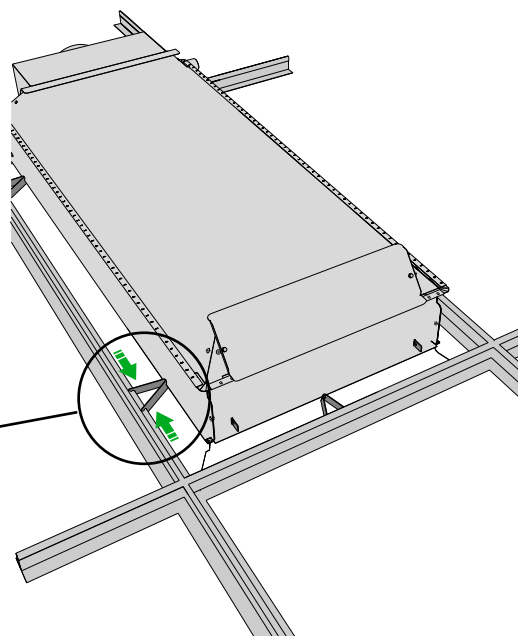
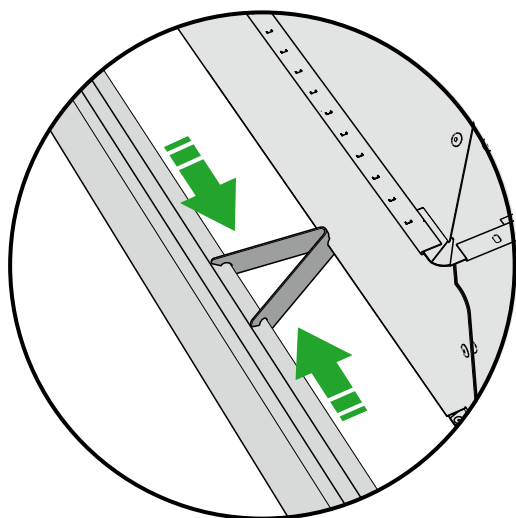
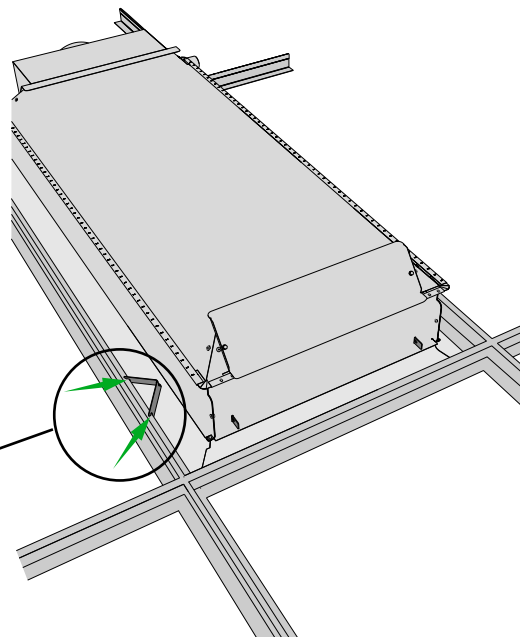
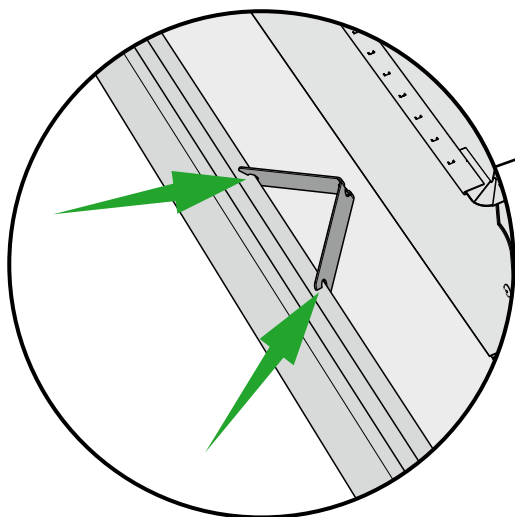
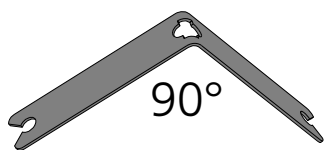
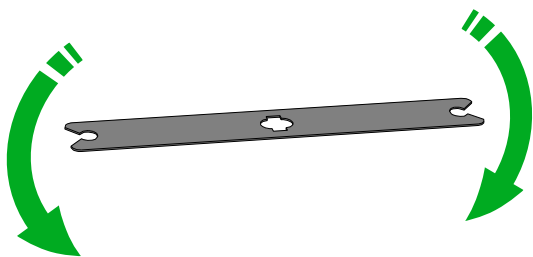



c/c measurement

Air connection side	Short side	Long side
Length of the unit	c - c (mm)	c - c (mm)
600	≤ 320	
1200	≤ 1020	900-1020
1800	≤ 1530	900-1530

Accessory - Mounting in concealed T-bars

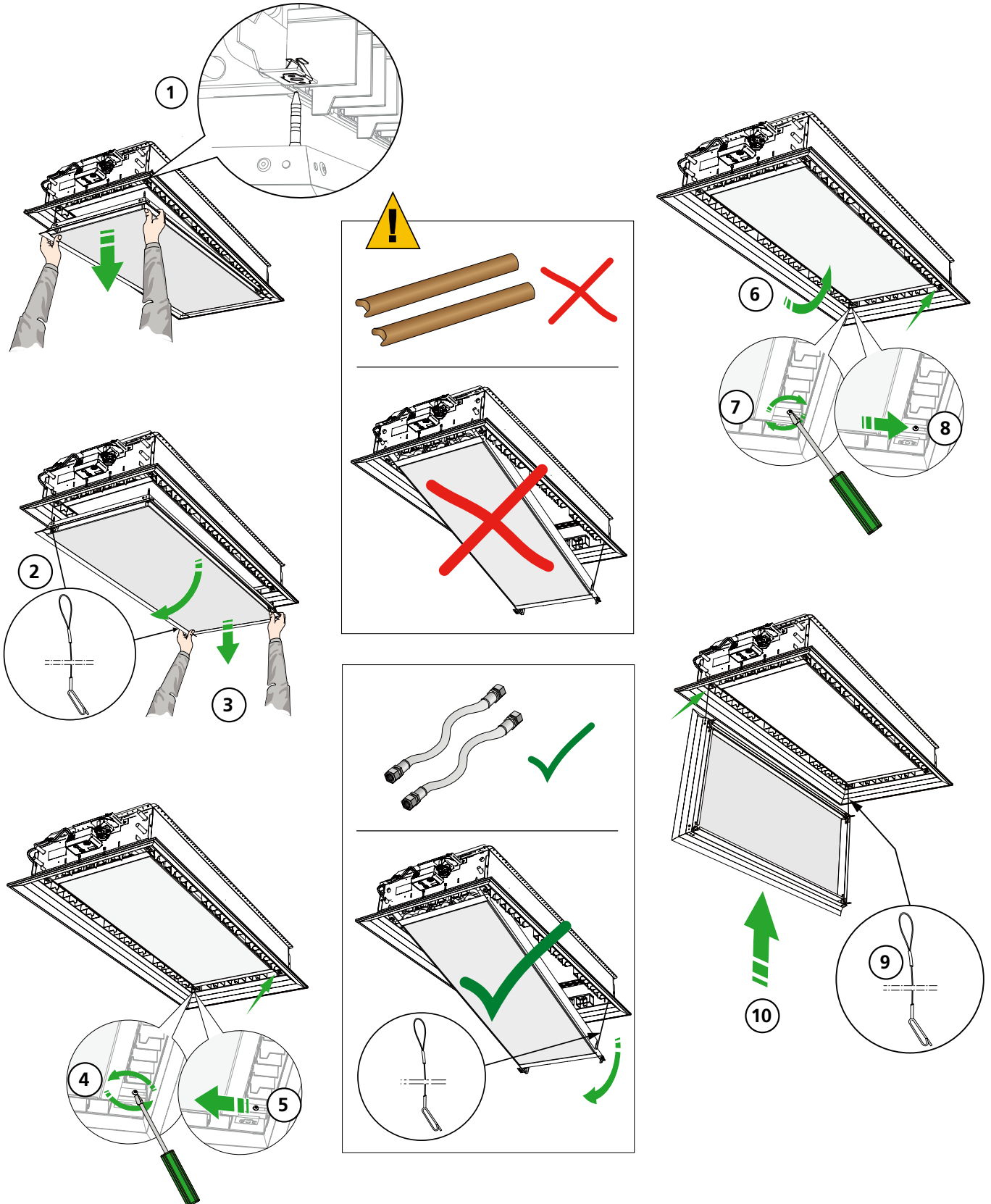
To centre the product when mounting in concealed T-bars.



Recommended number of plates per product.	
Length of the unit	
600	4
1200	6
1800	6-8

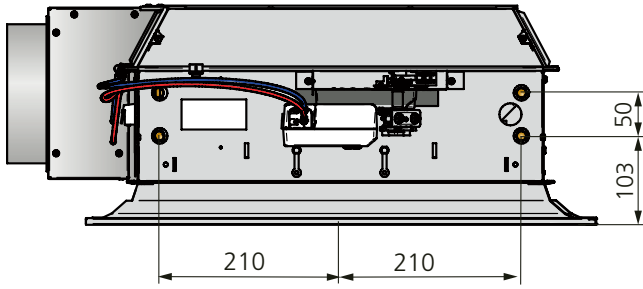
Accessory - Fold-out coil

REACT PARASOL Zenith with fold-out coil (accessory) for easy access and cleaning when stringent demands are made regarding hygiene. The accessory, a fold-out coil, requires flexible connecting hoses on the water side.

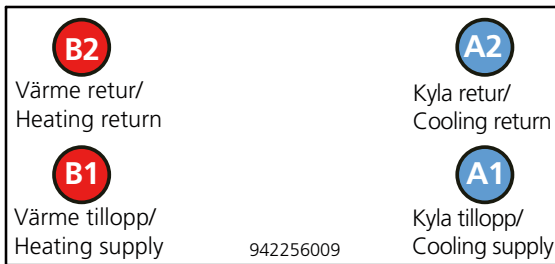


Water connection

REACT Parasol Zenith 600 / 1200 / 1800



Dimensions, water connection length 600, 1200, 1800



- Water connection - Length 600, 1200 and 1800*
- A1 = Inlet, cooling water $\varnothing 12 \times 1.0 \text{ mm}$ (Cu)
 - A1 = Inlet, cooling water $\varnothing 15 \times 1.0 \text{ mm}$ (Cu) *(Size 1800)
 - A2 = Return, cooling water $\varnothing 12 \times 1.0 \text{ mm}$ (Cu)
 - A2 = Return, cooling water $\varnothing 15 \times 1.0 \text{ mm}$ (Cu) *(Size 1800)
 - B1 = Inlet, heating water $\varnothing 12 \times 1.0 \text{ mm}$ (Cu)
 - B2 = Return, heating water $\varnothing 12 \times 1.0 \text{ mm}$ (Cu)

Connecting water

The water pipes are always placed on the product's short side, regardless of the air connection side of the product.

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.

Connection dimensions

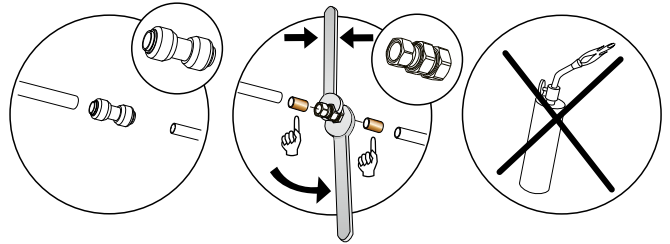
Model	Length	Factory-fitted	Connection	Coupling type	Connection	Coupling type
A cooling only	600, 1200	Actuator and valve	Return	DN15, male thread	Supply pipe	Plain pipe 12 x 1.0 mm
B Cooling/heating	600, 1200	Actuator and valve	Return	DN15, male thread	Supply pipe	Plain pipe 12 x 1.0 mm
A cooling only	1800	Actuator and valve	Return	DN20 external threads	Supply pipe	Plain pipe 15 x 1.0 mm
B Cooling/heating	1800	Actuator and valve	Return	DN20/DN15 external threads	Supply pipe	Plain pipe 15/12 x 1.0 mm
A cooling only	600, 1200	-	Return	Plain pipe 12 x 1.0 mm	Supply pipe	Plain pipe 12 x 1.0 mm
B Cooling/heating	600, 1200	-	Return	Plain pipe 12 x 1.0 mm	Supply pipe	Plain pipe 12 x 1.0 mm
A cooling only	1800	-	Return	Plain pipe 15 x 1.0 mm	Supply pipe	Plain pipe 15 x 1.0 mm
B Cooling/heating	1800	-	Return	Plain pipe 15/12 x 1.0 mm	Supply pipe	Plain pipe 15/12 x 1.0 mm

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 ($< 0.1 \text{ mg/l}$) prescribed in VDI 2035-2, it is recommended to install a vacuum degasser, particularly in the cooling system where it's more challenging to dissolve 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.



Note:

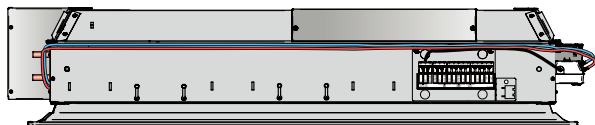
Use support sleeves inside the pipes together with compression ring couplings.

Wiring diagram

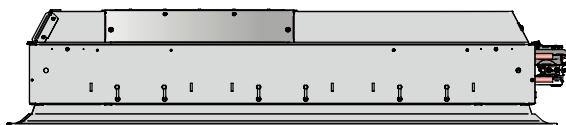
Wiring diagram for control

Placement of the control plate for connection of the control equipment (In cases the product is ordered with control equipment)

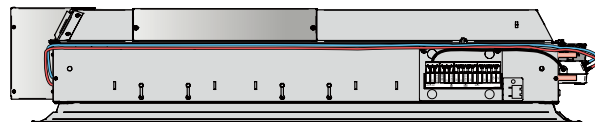
Air connection on side 1



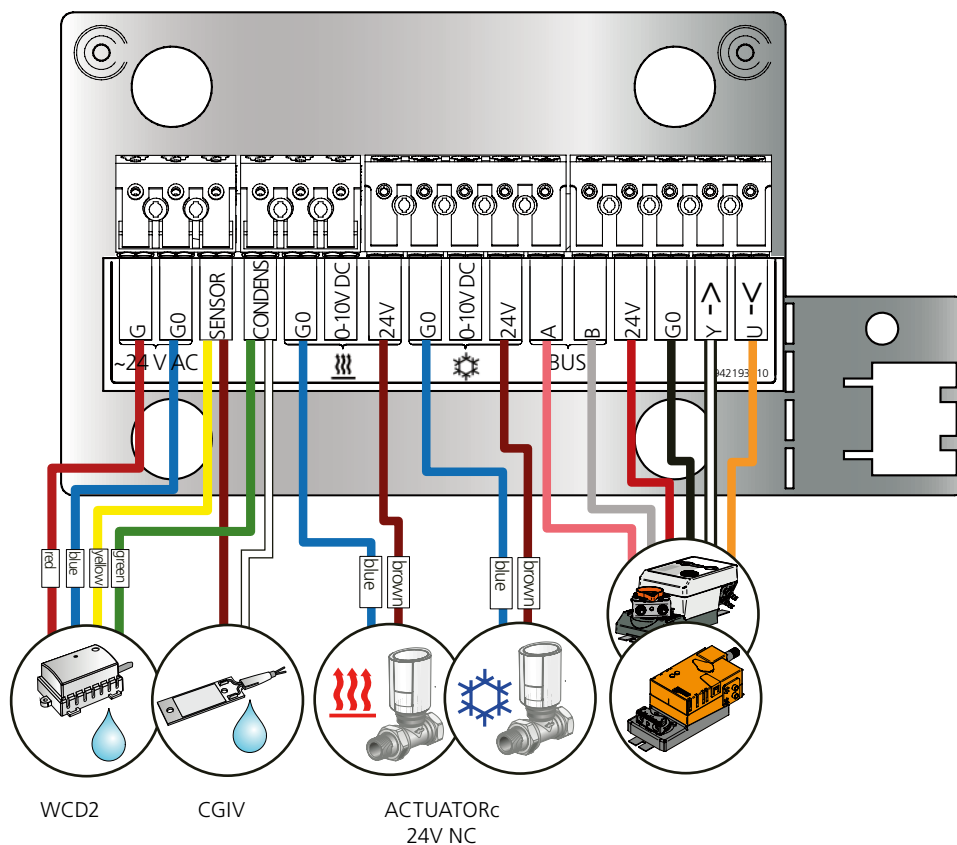
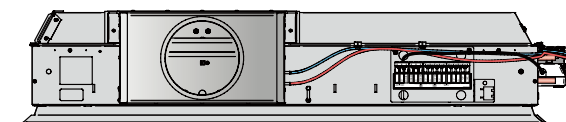
Air connection on side 2



Air connection on side 3



Air connection on side 4



Air connection

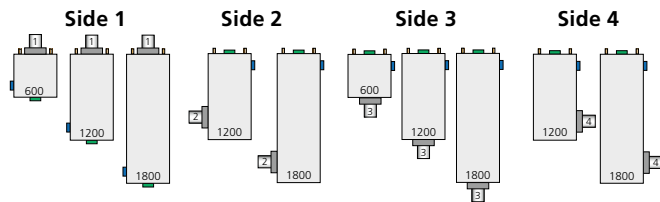
Connection dimensions

Length of the unit	Dim. Ø		
	125	160	200
600, 1200	Yes	Yes	No
1800	No	No	Yes

Selectable air connection sides.

When ordering, depending on the length, it is possible to choose connection side 1, 2, 3 or 4, see the table and figure below (view from above).

Length of the unit	Side			
	1*	2	3	4
600	Yes	No	Yes	No
1200	Yes	Yes	Yes	Yes
1800	Yes	Yes	Yes	Yes



To connect the air

REACT Parasol Zenith comes with open air connection on the selected side 1, 2, 3 or 4.

On delivery the sleeve faces inwards. During installation, the sleeve is turned outwards and is secured with the enclosed screws to then be connected to the primary air duct.

When installing with a 90° bend before the product, 3 diameters of straight section are required before the product.

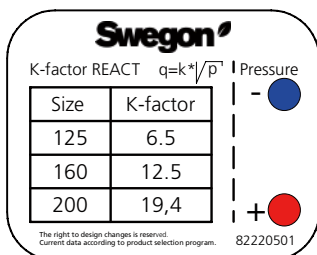
If you subsequently want to change the air connection side than that ordered, you can change the positions of the cover and connection sleeve as set out below.

Possibility to change the connection side

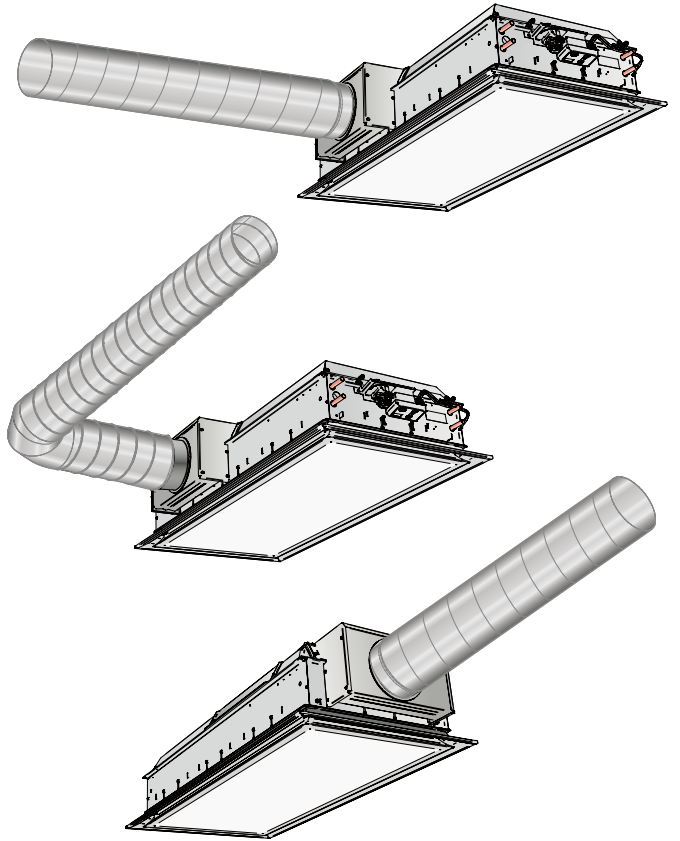
- From side 1 to side 2 or 4. (Does not apply to length 600)
- From side 2 to side 3 or 4.
- From side 3 to side 2 or 4. (Does not apply to length 600)
- From side 4 to side 2 or 3.

K-factor

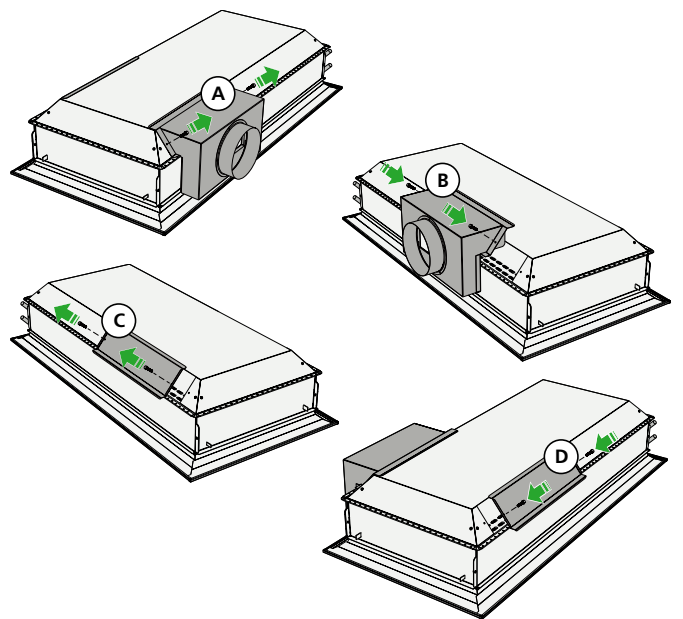
At the air connection, there is a label showing the K-factor for the product with air connection ø125/160/200.



Label with the K-factor values.



Installation with straight air connection, alternative with 90° bend. Note: When installing with a 90° bend before the product, 3 diameters of straight section are required before the product.

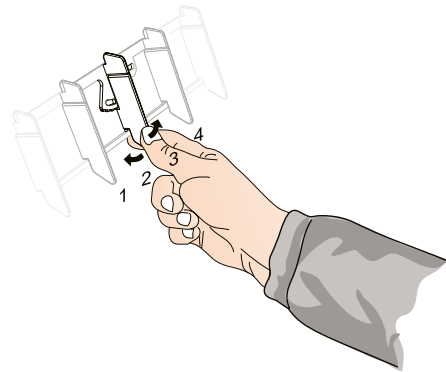
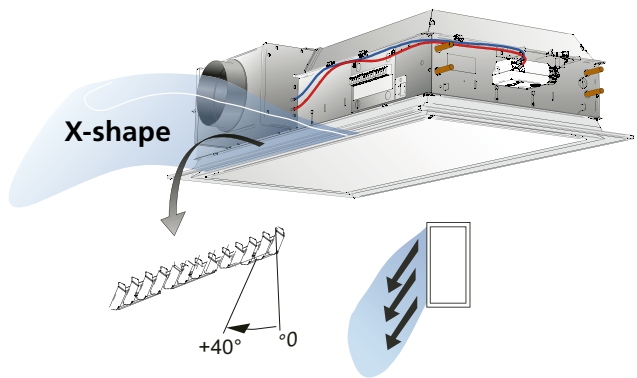
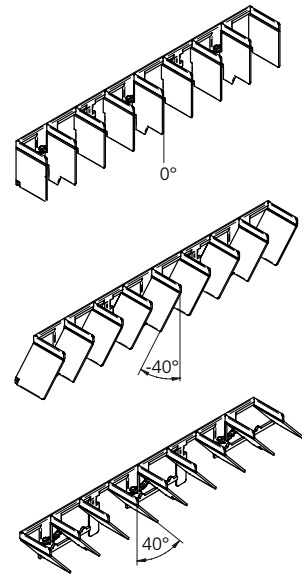
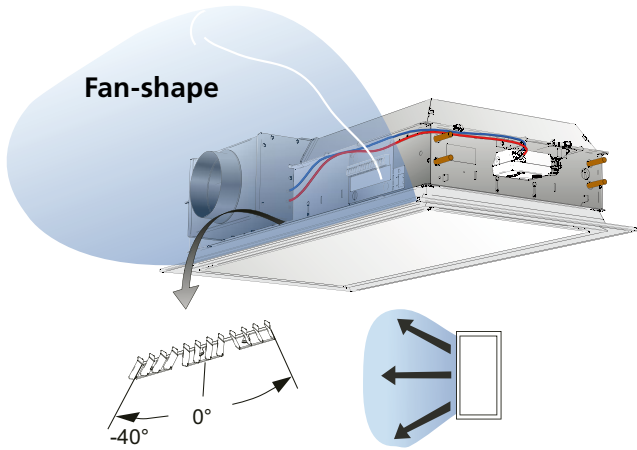


Changing the air connection side

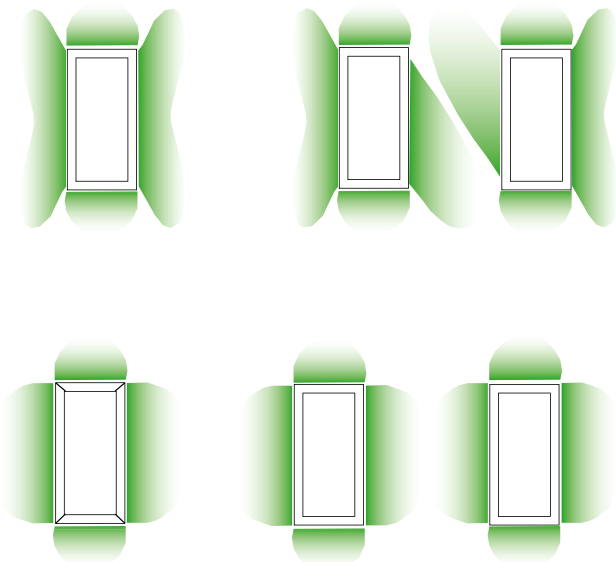
- A. Unscrew two screws each from the sleeve and cover
- B. Change the location of the sleeve and cover
- C - D. Screw the sleeve and cover in position each with two screws on the new side.

Commissioning

ADC



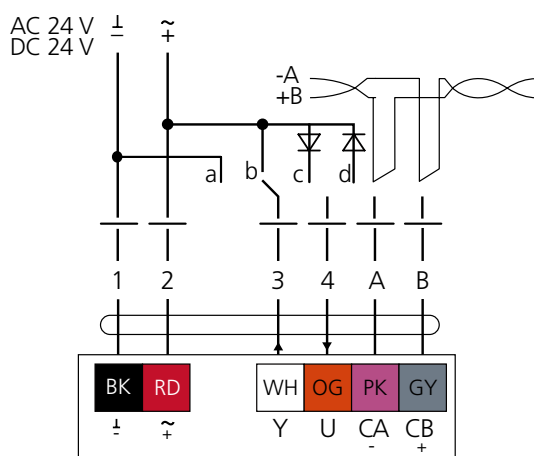
Examples of ADC settings



Actuator, Grüner 327

Connection

- 1-2 – Power supply 24 V AC/DC
- 1-3 – Setpoint signal (Y) 0..10/(2..10) V
- 1-4 – Feedback signal (U) 0..10/(2..10) V
- A – Modbus (-CA)
- B – Modbus (+CB)
- Load on output 4: max 0,5 mA



Wiring diagram.

Regulation and forced control via analog control signal

Note! Only valid with AC.

See connection in wiring diagram.

Signal

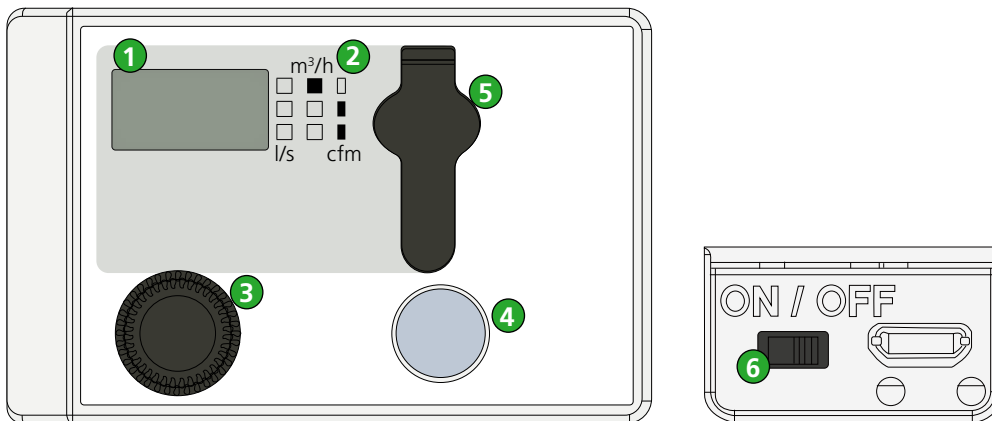
a	b	c	d
⊥	~	~	~
-	+	⏏	⏏
3	3	3	3
Mode 2...10 V	Closed	Vmax	Open ²
Mode 0...10 V	Vmin	Vmax	Open ²

¹ Neg. Half-wave

² Pos. Half-wave

Closed - Vmin - Vmax. Shutdown Level Closed: 0,1 V

Handling



Actuator - Grüner.

1 Display

Display to set and change value directly on the actuator without external tools, with backlight that turns off automatically. The display can only show three numbers, larger values show apostrophes.

- 1000 = 1'00
- 10000 = 10'0

2 Unit matrix

The unit matrix can be read on the label/checked against the desired values in the display

l/s (Volumetric): No square is shown in display

m³/h (Volumetric): Only upper square is shown in display

Cfm: Middle & lower square are shown in display

3 Rotary selector switch

The rotary selector can be used to change the values shown in the display

4 LED push button

To select from the menus

LED off: no power supply

LED on: actuator is on position

LED blinks: actuator drives on position, hasn't reached his desired values

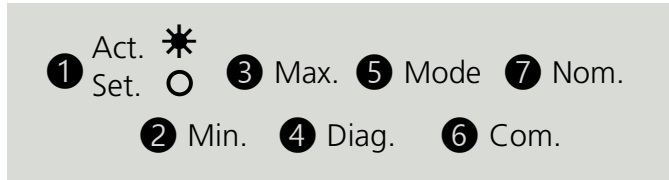
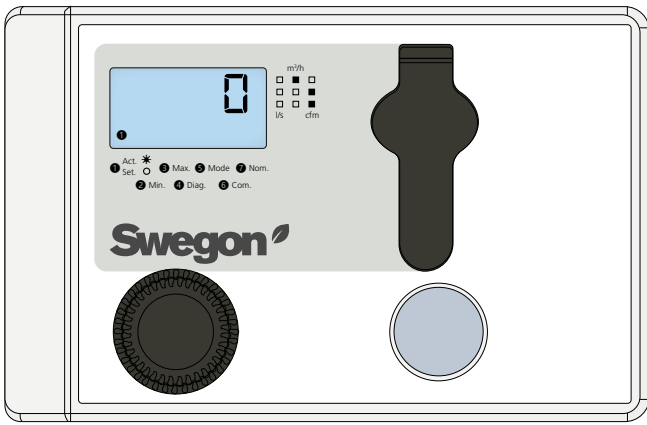
5 Port for service-plug

For factory configuration/handheld terminal

6 On/off Switch and Micro-USB Interface

Pressed button Actuator disengaged, motor stops, manual override possible

Released button Return to default mode



Display for setting and reading the actuator's parameters.

Display for setting and reading the actuator's parameters

1. Select the desired function by pressing the Push button.
2. Hold down the Push button for more than 2 seconds (the value should flash in the display) to enable changes in the selected sub-menu.
3. To save the selected value, press the Push button once (the value flashes three times when a new value is accepted).

Settings for actuators

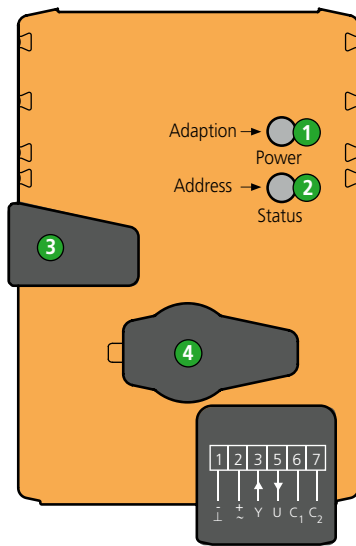
Display	Description
1 Act.* Set.○	Shows actual value / setpoint (override function). Hold push button to access Ui, change unit (l/s, m3/h, cfm)
2 Min.	Adjust the desired min value (setpoint Y = 0 / 2 V DC). Min. value must be lower than max. value.
3 Max.	Adjust the desired max value (setpoint Y = 10 V DC). Max. value must be higher than min. value.
4 Diag. y u off oP c1 Hi Lo bE St AdP 111b	Forced control shows setpoint feedback signal Normal function opens the damper closes the damper activates max. value activates min. value activates between value diagnostic mode on, motor off adaption drive (only 15 Nm or Modbus version) software version
5 Mode 0Ai 2Ai 0Bi 2Bi	Actuator control 0-10 V DC, Analog, Inverted rotation direction 2-10 V DC, Analog, Inverted rotation direction 0-10 V DC, Bus, Inverted rotation direction. Can only be changed via Modbus. 2-10 V DC, Bus, Inverted rotation direction. Can only be changed via Modbus
6 Com. 1 b14	Bus communication Modbus address 1...247 Communication settings b1...b14
7 Nom.	Shows the nominal air flow

Modbus settings

For Modbus settings, see REACT Parasol Zenith-Modbus

Actuator, Belimo VAV-Compact MOD

Display and operation



The actuator's buttons and connection

1

Pressure button and LED display green

Off:	No power supply or fault	
On:	Operation	
Flashing:	In address mode:	Pulses that correspond to the set address (1...16)
	Near start:	Reset to the factory setting (communication)
Press the button:	In standard mode:	Turn on rotation angle adaptation
	In address mode:	Confirmation of set address (1...16)

2

Push-button and LED display, yellow

Off:	Standard mode	
On:	The adaptation or synchronisation process is active	
	Or actuator in address mode (LED display flashes green)	
Flickering:	BACnet/Modbus communication active	
Press the button:	In operation (>3 s):	Turn the address mode on and off
	In address mode:	Address setting by pressing several times
	When starting (>5 s):	Reset to the factory setting (Communication)

3

Button for disengaging the gear

Press the button:	The gear is disengaged, the engine stops, manual overriding possible
Release the button:	Gear engaged, synchronisation starts, followed by standard mode

4

Service contact

For connection of parameterisation and service tools

Check the mains connection

1 On	Possible fault in the power supply
2 Off	

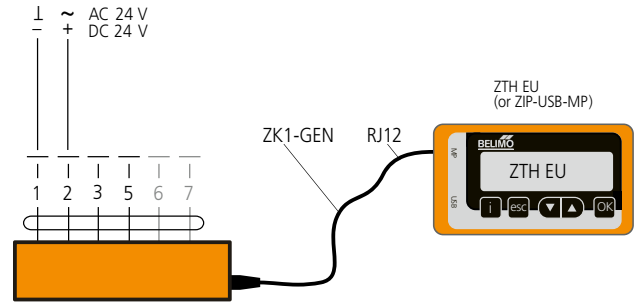
Quick addressing Modbus

1. Press the "Address" button until the green "Power" LED display is not longer lit. The green "Adaptation" LED display flashes in accordance with the previously set address.
2. Set the address by pressing the "Address" button a corresponding number of times (1...16).
3. The green LED display flashes in accordance with the address that has been specified (1...16). If the address is incorrect, this can be reset in accordance with step 2.
4. Confirm the address setting by pressing the green "Adaptation" button.

If no confirmation is given within 60 seconds, the address procedure is terminated. The addresses that have been initiated but not confirmed will then be ignored. The resulting BACnet MS/TP and Modbus RTU address consists of the set basic address plus the short address (e.g. 100+7 = 107)

Modbus settings

For Modbus settings, see REACT Parasol Zenith-Modbus



Connection of the supply to the actuator and connection of ZTH-EU commissioning tool/service tool.

ZTH EU / PC-Tool - Local service connection

Setting and diagnostics of VAV-Compact can be carried out quickly and easily using the Belimo PC-Tool or the ZTH EU service tool. When the PC tool is used, ZTH EU works as an interface converter.

Trouble shooting

The product does not communicate over Modbus

- Make sure that the product is energized.
- Check the product's Modbus connection.
- Check the product's communication settings.
- Check that the product has the right and unique Modbus address.

The product shows the incorrect/no air flow

- Make sure that the product is energized.
- Check that the motor's set size (Vnom) corresponds with the physical size of the product, see "Use".
- Make sure that the product is installed according to the recommended distance to disruptions, see "Installation".
- Check that there is an air flow in the system.
- Make sure that the product is correctly oriented in terms of air direction. The air flow must follow the instructions on the product.
- Check that the measuring tube is mounted correctly, plus to plus (red), minus to minus (blue).
- Check that the measuring tubes are undamaged and not creased.
- Check with the help of the K-factor and the pressure difference between the red and blue measuring tubes that the flow is within the product's measurement range.

The product does not regulate the air flow

- Make sure that the product is energized.
- Check that the product is connected correctly.
- Check that the product is not force controlled.

The product does not regulate on the desired air flow

- Check that the settings for Vmin and Vmax correspond with the required regulation range.
- Check the electrical connection for the required function, see the wiring diagram in the document "Description of functions & wiring diagram".

Product does not exit test mode

- Check that the product is connected correctly, check the "Y" signal and polarity on "G" and "GO". See "Connection".
- Check setpoint settings for Vmin and Vmax. The value of Vmax must be higher than Vmin for the product to be in automatic mode.
- If modbus communication is used for the damper, the test mode can be active via the communication. Try disconnecting the mod bus cables and try setting the engine to automatic. See "Management".

Maintenance

