

REACT Parasol Zenith

Installation - Commissioning - Maintenance

28/05/2025

Article NA-942428092

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The document was originally written in Swedish

Swegon 

Application area

The product is a chilled beam 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.

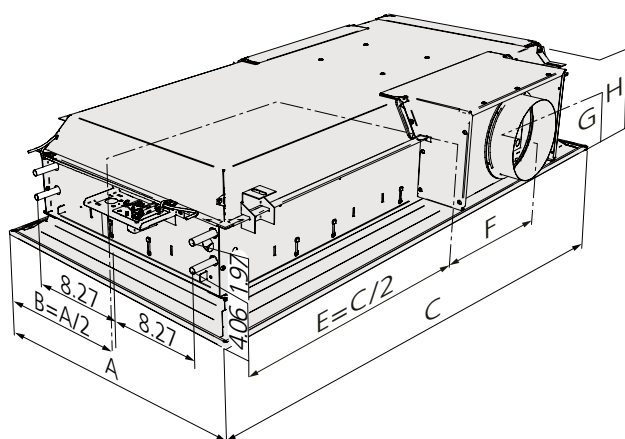
Environment and waste disposal

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

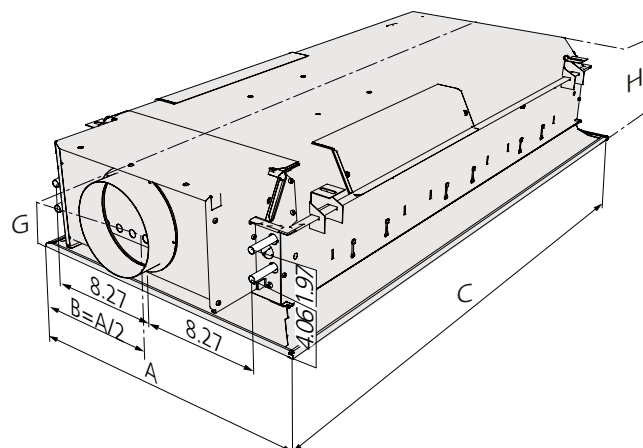
Product warranty

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



Dimensional drawing - long side connection (the length 4 ft.) with air connection on side 2 is shown in the example).



Dimensional drawing - short side connection (the length 4 ft.) with air connection on side 1 is shown in the example).

Dimensions

Length, 2 ft.

Dimensions (in.)							
A	B	C	ØD*	E	F	G*	H*
23.7	11.9	23.7	5 in / 6 in	11.9	7	5.39/6.02	8.66/9.84

* Dimensions refer to products with air connection ø5 or ø6

Length, 4 ft.

Dimensions (in.)							
A	B	C	ØD*	E	F	G*	H*
23.7	11.9	47.8	5 in / 6 in	23.9	7	5.39/6.02	8.66/9.84

* Dimensions refer to products with air connection ø5 or ø6

Length, 6 ft.

Dimensions (in.)							
A	B	C	ØD	E	F	G	H
23.7	11.9	71.8	8	35.9	18.8	6.8	11.4

Weight

Length, 2 ft.

Length	Coil type	Inlet	Dry weight	Water volume, cooling	Water volume, heating
ft.		Ø in.	lb	gal	gal
2	A	5	28.4	4.1	
2	B	5	28.7	3.2	1.3
2	A	6	29.8	4.1	
2	B	6	30	3.2	1.3

Length, 4 ft.

Length	Coil type	Dim.	Dry weight	Water volume cooling	Water volume heating
ft.		Ø in.	lb	gal	gal
4	A	5	52	9.1	
4	B	5	52	6.8	2.6
4	A	6	53.8	9.1	
4	B	6	53.8	6.8	2.6

Length 6 ft.

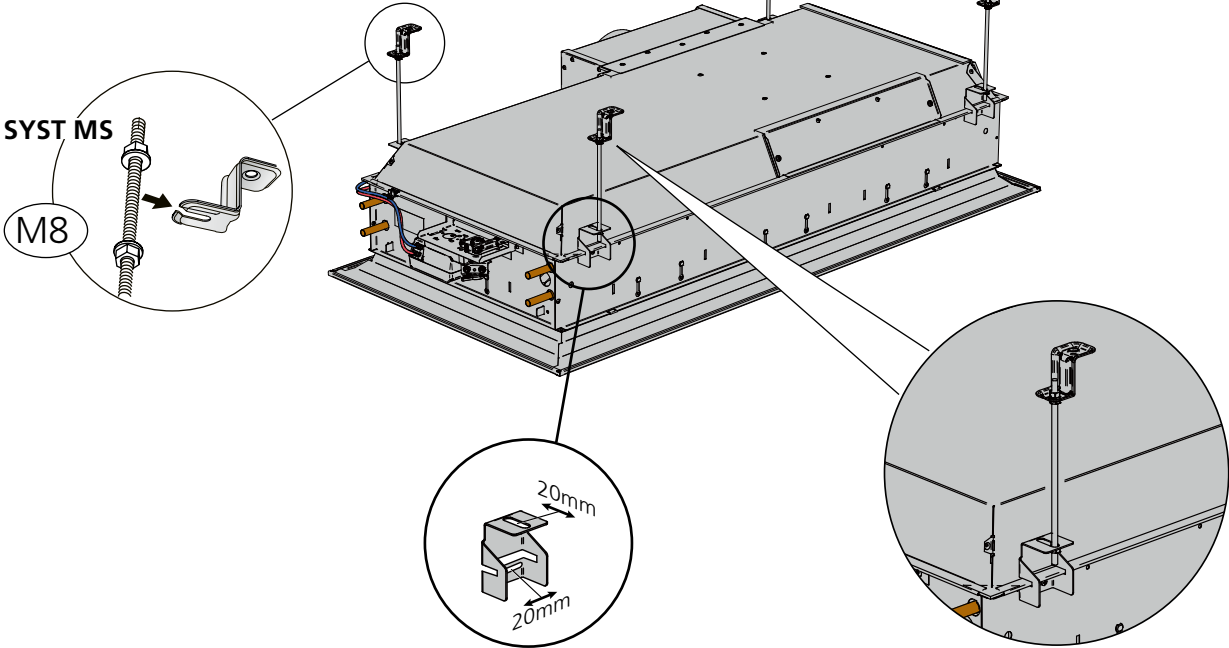
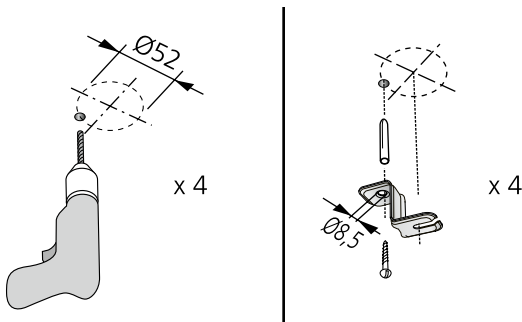
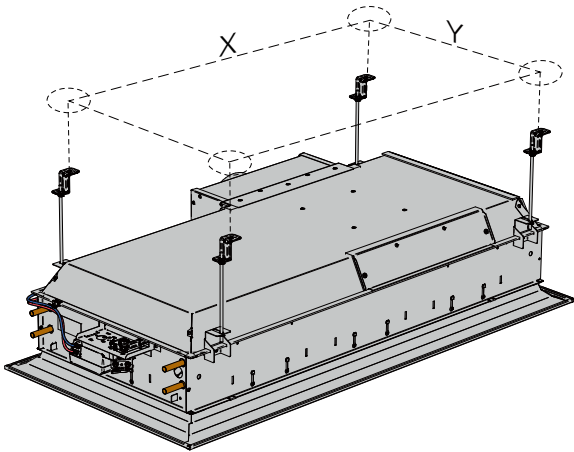
Length	Coil type	Dim.	Dry weight	Water volume cooling	Water volume, heating
ft.		Ø in.	lb	gal	gal
6	A	8	78.7	14.4	
6	B	8	78.7	10.2	4.2

Weights above are excl.:
Control plate (0.265 lb)

Mounting

Suspension bracket

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



c - c measurement

Placement of the bracket on delivery		
Length of the unit (ft.)	c - c (in.) X	c - c (in.) Y
2	13 ±0.4	20 ±0.4
4	36.6 ±0.4	20 ±0.4
6	60.2 ±0.4	20 ±0.4

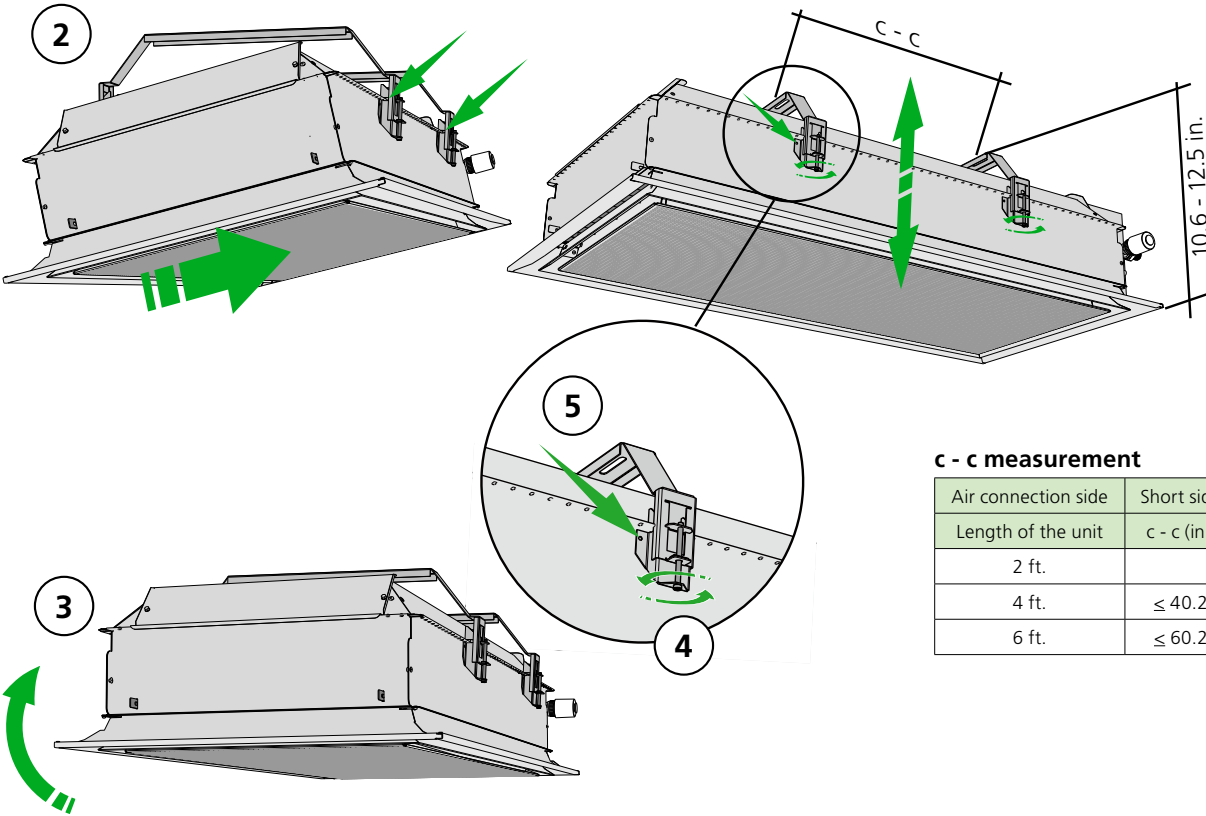
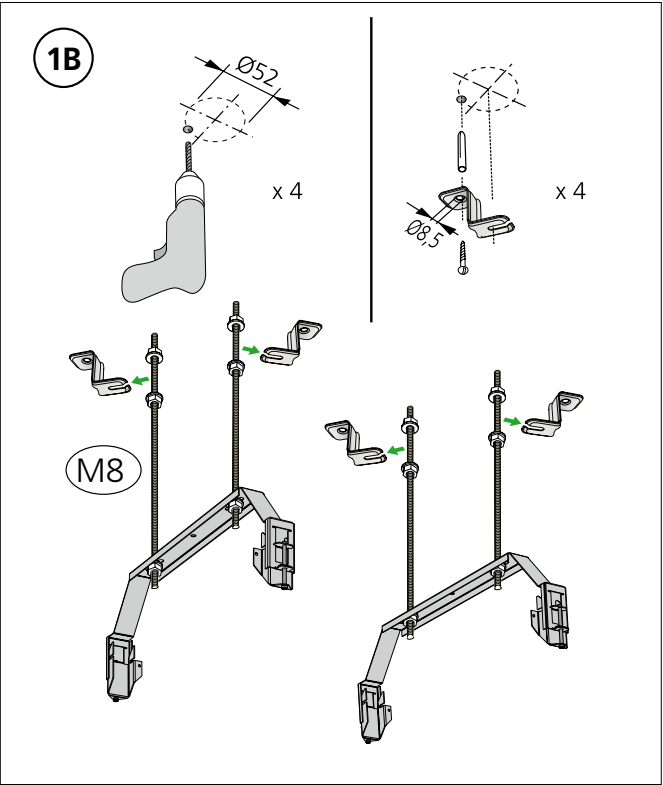
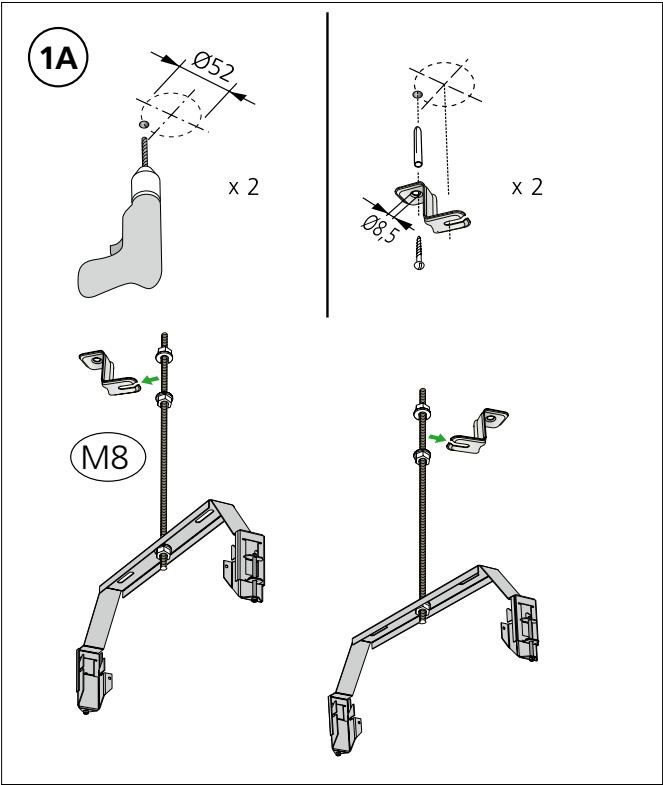
Alternative placement of the suspension bracket		
Length of the unit (ft.)	Out towards the corner	In towards the centre
	c - c (in.) X (A1)	c - c (in.) X (A2)
2	15.7 ±0.4	10.3 ±0.4
4	39.3 ±0.4	33.9 ±0.4
6	62.9 ±0.4	57.6 ±0.4

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

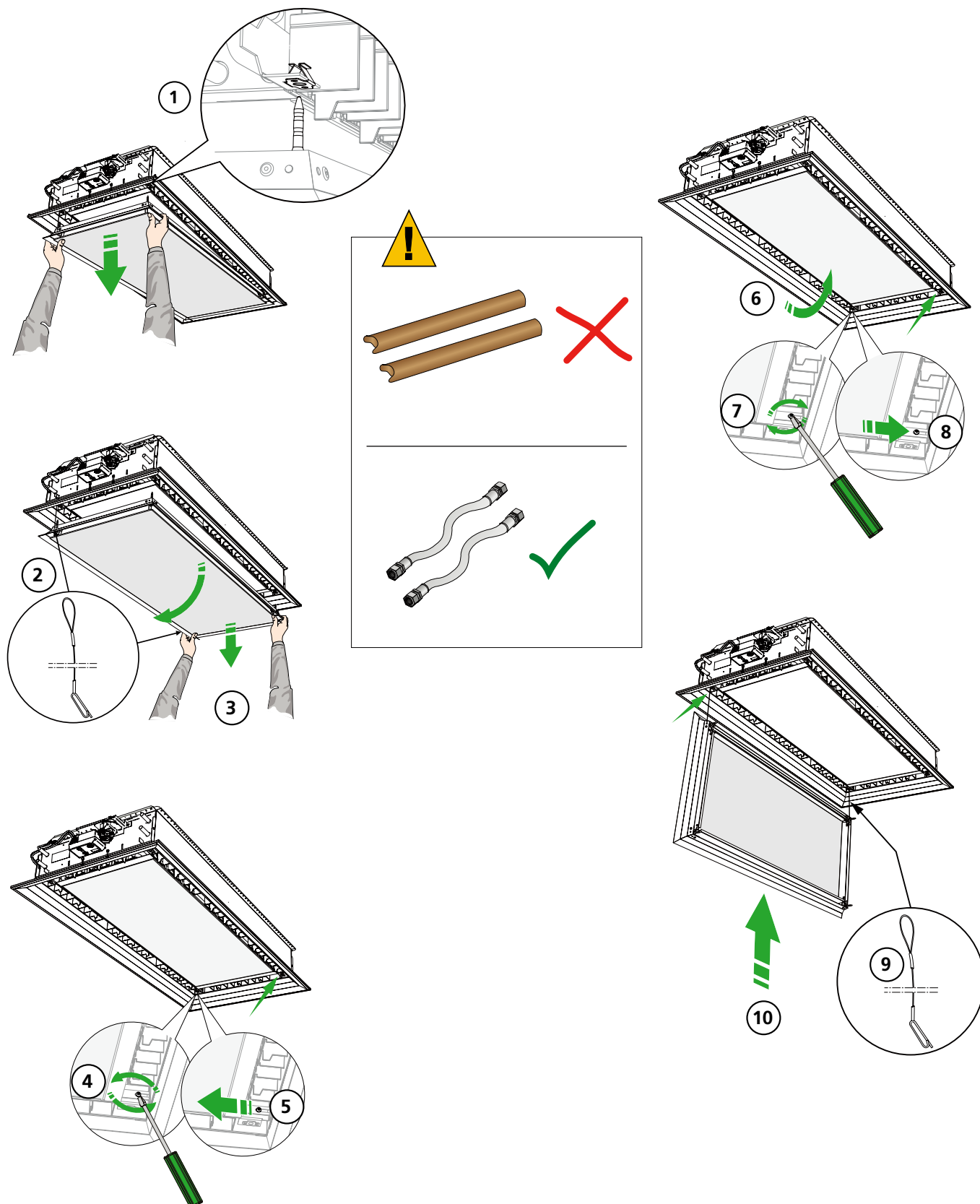


c - c measurement

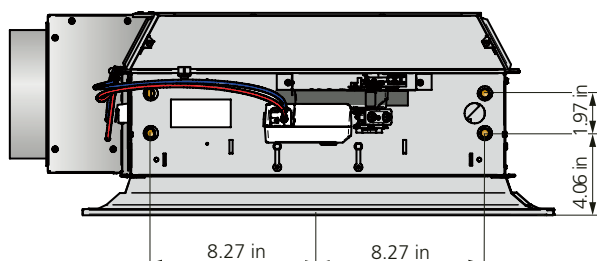
Air connection side	Short side	Long side
Length of the unit	c - c (in.)	c - c (in.)
2 ft.	≤ 12.6	
4 ft.	≤ 40.2	35.4-40.2
6 ft.	≤ 60.2	35.4-60.2

Accessory - Fold-out coil

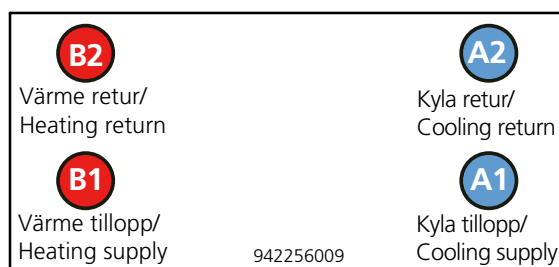
REACT PARASOL Zenith with fold-out coil (accessory) for easy access and cleaning when stringent demands are made regarding hygiene. The accessory, a fold-out coil, requires flexible connecting hoses on the water side.



Water connection



Dimensions, water connection length 2, 4 and 6 ft.



Water connection - Length 2, 4, 8 ft*

A1 = Supply cooling water Ø12x1.0 mm (Cu)

A1 = Supply cooling water Ø15x1.0 mm (Cu) *(Size 6 ft.)

A2 = Return cooling water Ø12x1.0 mm (Cu)

A2 = Return cooling water Ø15x1.0 mm (Cu) *(Size 6 ft.)

B1 = Supply heating water Ø12x1.0 mm (Cu)

B2 = Return heating water Ø12x1.0 mm (Cu)

Connections

Connection dimensions

Unit	Cooling	Heating
(ft.)	Supply and return	Supply and return
2, 4	plain pipe ends	plain pipe ends
	(Cu) Ø 12 x 1.0 mm	(Cu) Ø 12 x 1.0 mm
6	plain pipe ends	plain pipe ends
	(Cu) Ø 15 x 1.0 mm	(Cu) Ø 12 x 1.0 mm

Adapters and connectors (accessories)

Unit	Adapter/connector	Cooling	Heating
(ft.)	(type)	Supply/return	Supply/return
2, 4	Flexible hose	Ø 12mm to "1/2" NPT	Ø 12mm to "1/2" NPT
	Nominal pipe thread connection	Ø 12mm to "1/2" NPT	Ø 12mm to "1/2" NPT
6	Flexible hose	Ø 15mm to "1/2" NPT	Ø 12mm to "1/2" NPT
	Nominal pipe thread connection	Ø 15mm to "1/2" NPT	Ø 12mm to "1/2" NPT

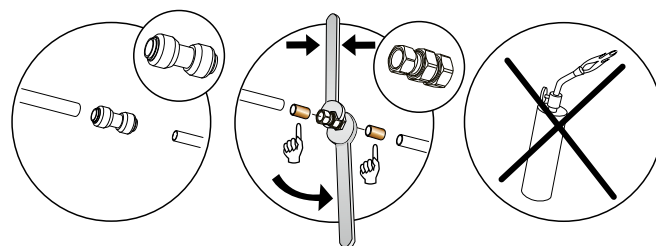
Adapters/connectors are sold as accessories.

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 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.

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. 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.

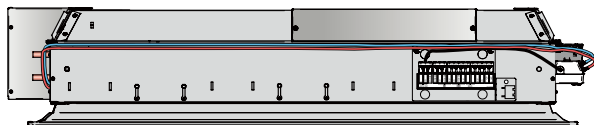
Flexible connecting hoses for water can be ordered separately.

Wiring diagram

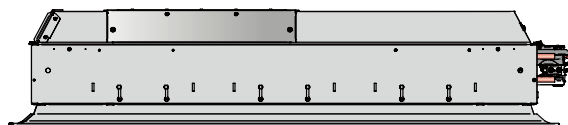
Wiring diagram for control

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

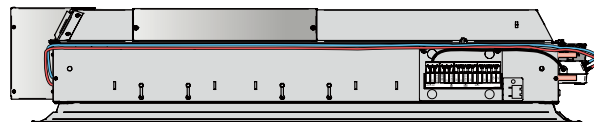
Air connection on side 1



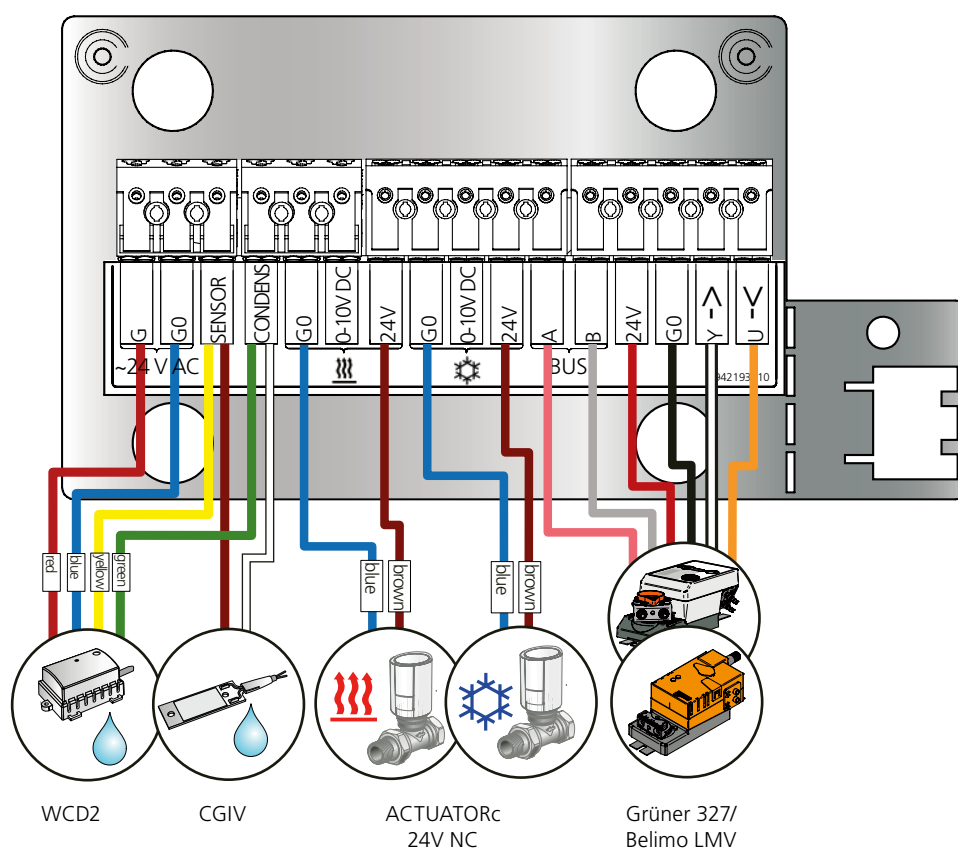
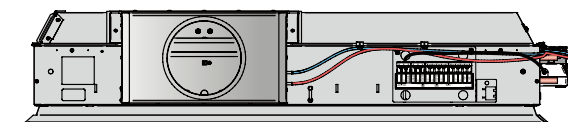
Air connection on side 2



Air connection on side 3



Air connection on side 4



Air connection

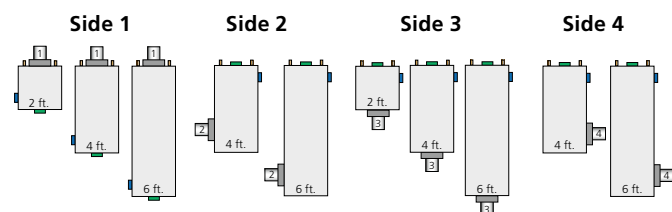
Connection sizes

Length of the unit	Dim. Ø in.		
	5	6	8
2 ft., 4 ft.	Yes	Yes	No
6 ft.	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
2 ft.	Yes	No	Yes	No
4 ft.	Yes	Yes	Yes	Yes
6 ft.	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.

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 2 ft.)
- From side 2 to side 3 or 4.
- From side 3 to side 2 or 4. (Does not apply to length 2 ft.)
- 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 ø5, 6 and 8 in.

Swegon®			
K-factor REACT $q=k\sqrt{p}$			
	Metric	Imperial	
Size	K-factor	K-factor	
ø 5	125	6.5	225
ø 6	160	12.5	420
ø 8	200	19.4	680

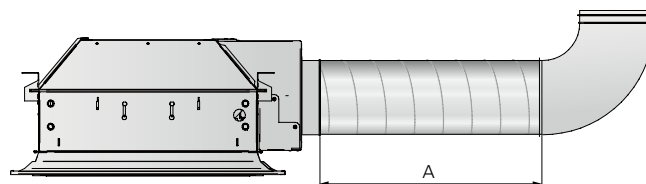
The right to design changes is reserved.
Current data according to product selection program.

82220501

Label with the K-factor values.

REACT Parasol Zenith with bend

We recommend a straight section of at least 1xØ for the product's built-in airflow measurement to function correctly and 3xØ to maintain the tolerances specified in the table below.



Dimensional drawing, long side connection with bend

Recommendation for accurate flow measurement

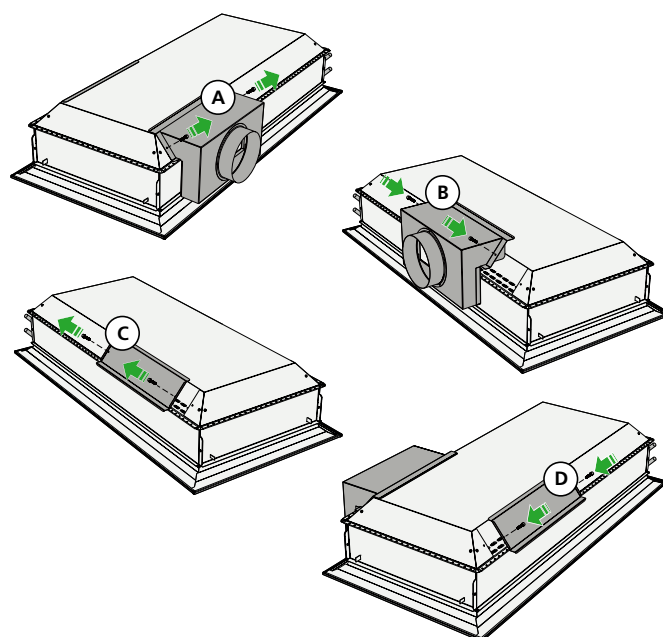
Air connection size (in.)	A (in.)
5	15
6	18
8	24

Flow tolerance

Air connection Ø	Minimum flow**			Tolerance Q* ±5 % but at least ±x		
	l/s	m³/h	cfm	l/s	m³/h	cfm
5	5	18	10	2	7	4
6	10	36	21	2	7	4
8	15	54	32	2	7	4

* Installed according to instructions

** For flows below the lowest specified level, we cannot guarantee the tolerances.



Changing the air connection side

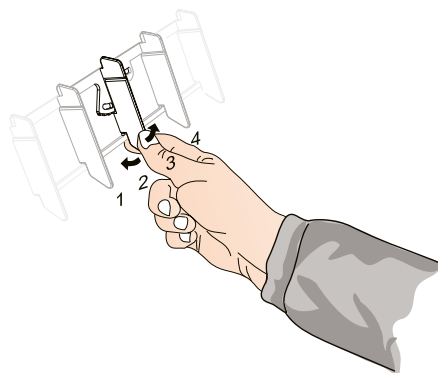
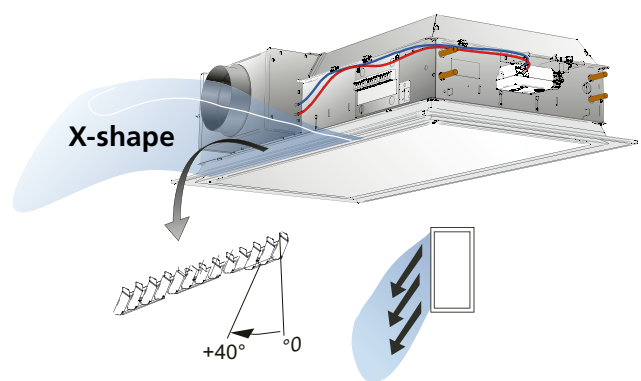
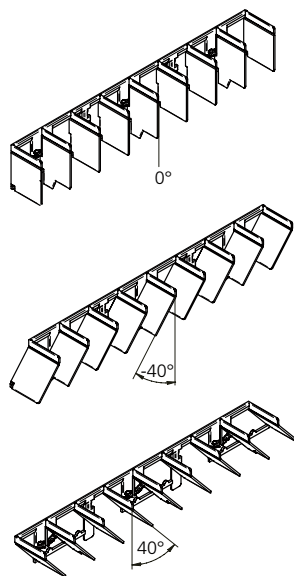
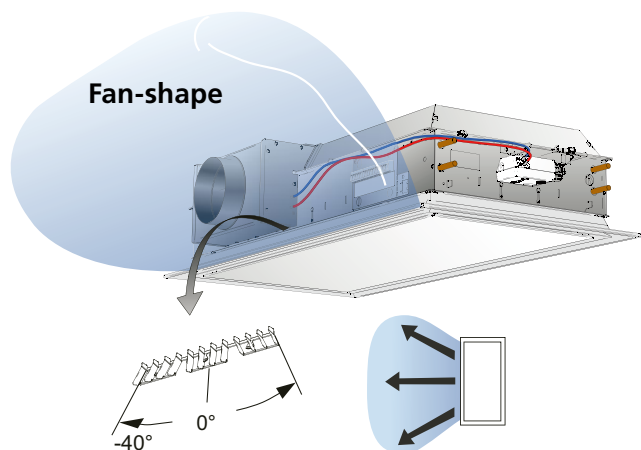
A. Unscrew two screws each from the sleeve and cover

B. Change the location of the sleeve and cover

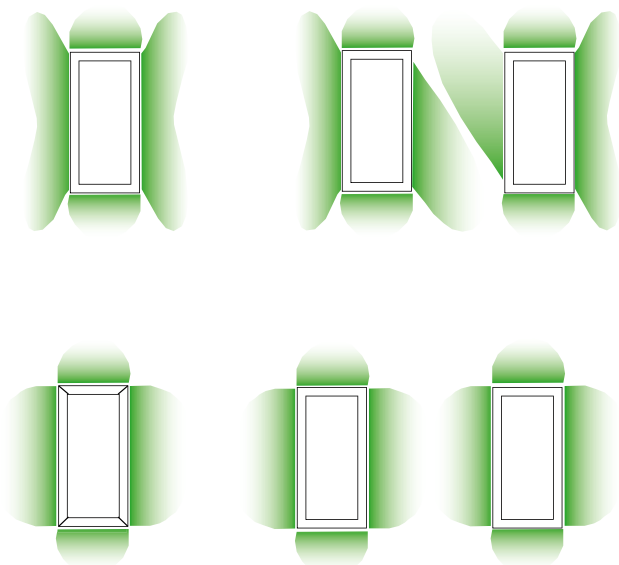
C - D. Screw the sleeve and cover in position each with two screws on the new side.

Commissioning

ADC



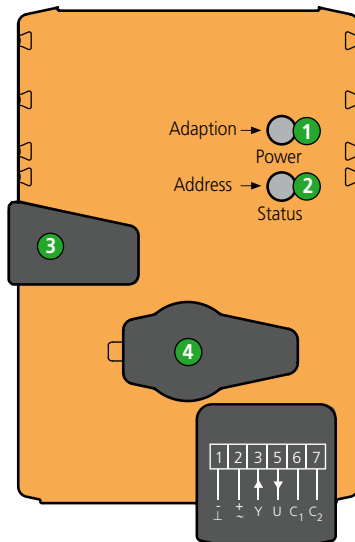
Examples of ADC settings



Actuator

Belimo LMV

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	

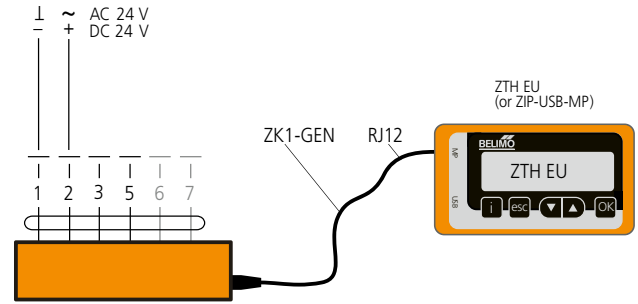
Quick addressing Modbus

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 LMV 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

