REACT M GMBa

Instructions for Use

31/07/2025
Art. 1546067

Key to symbols

Symbols on the machine

This product complies with applicable EU directives CE

Symbols in these Instructions for Use

Warning/Caution! 

Application area

The product is a measurement unit designed for comfort ventilation indoors. The product is used to measure supply and extract air flow in ventilation ducts.

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's not permissible to make changes or modify this product other than those specified in this document.

The packaging contains the following items

1 x REACT M GMB

1 x Instructions for Use

Protective equipment

Always use appropriate personal protective equipment for the work in question, in the form of gloves, respirators and protective glasses 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 the electronics's 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 the product and it is not required to be running.

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.
- It is not permissible to carry the product by the measuring tubes.

Installation

- Moist, cold and aggressive environments must be avoided.
- Avoid installing the product near a heat source.
- Assemble the product according to applicable industry regulations.
- Install the product so that it is not accessible by unauthorized persons, for example above a suspended ceiling.
- Install the product for easy access during service/maintenance.
- Supplement the duct system with a cleaning hatch in the vicinity of the product to facilitate cleaning.
- If the product is mounted above a fixed ceiling, the inspection hatch must be located so that the product is accessible for inspection.
- If the product is mounted so that it is possible to gain access to the inside of the product, it must be supplemented with appropriate protection, for example, a ventilation unit.
- If the product is mounted in cold areas, the whole product must be insulated on the outside against condensation.
- For installation, the accessory FSR is recommended.
- The product can be installed position independent.
- It is recommended to mount the product so that the product's display is visible.
- The product must be laid down prior to installation so that it cannot fall over.
- Check to make sure that the product doesn't have any visible defects.
- Check that the product is properly secured after it has been installed.
- Use the product's eyes to secure the cables with cable ties.
- Check that all cables are properly secured in place after installation.
- Check that the actuator/controller is properly mounted.

The document was originally written in Swedish

Swegon

Installation, dimensions and weights

Circular design

Dimensions

Size ØD (mm)	A (mm)	B (mm)	C (mm)	Weight (kg)	Flow range				Tolerance Q* ±5% but at least ±x	
					Min.		Max = Vnom*)			
					l/s	m³/h	l/s	m³/h	l/s	m³/h
100	220	50	200	0.8	5	18	90	324	2	7
125	220	50	225	0.9	9	32	147	529	2	7
160	220	50	260	1.1	16	58	254	914	2	7
200	220	50	300	1.2	25	90	404	1454	3	11
250	220	50	350	1.4	40	144	658	2369	5	18
315	220	50	415	1.7	63	227	1054	3794	8	29
400	220	50	500	2.1	102	367	1732	6235	13	47
500	230	50	600	2.5	164	590	2670	9612	20	72
630	230	50	730	3.0	300	1080	4174	15026	32	115

*)Vnom at 250 Pa in pressure reading.

*Installed according to the instructions.

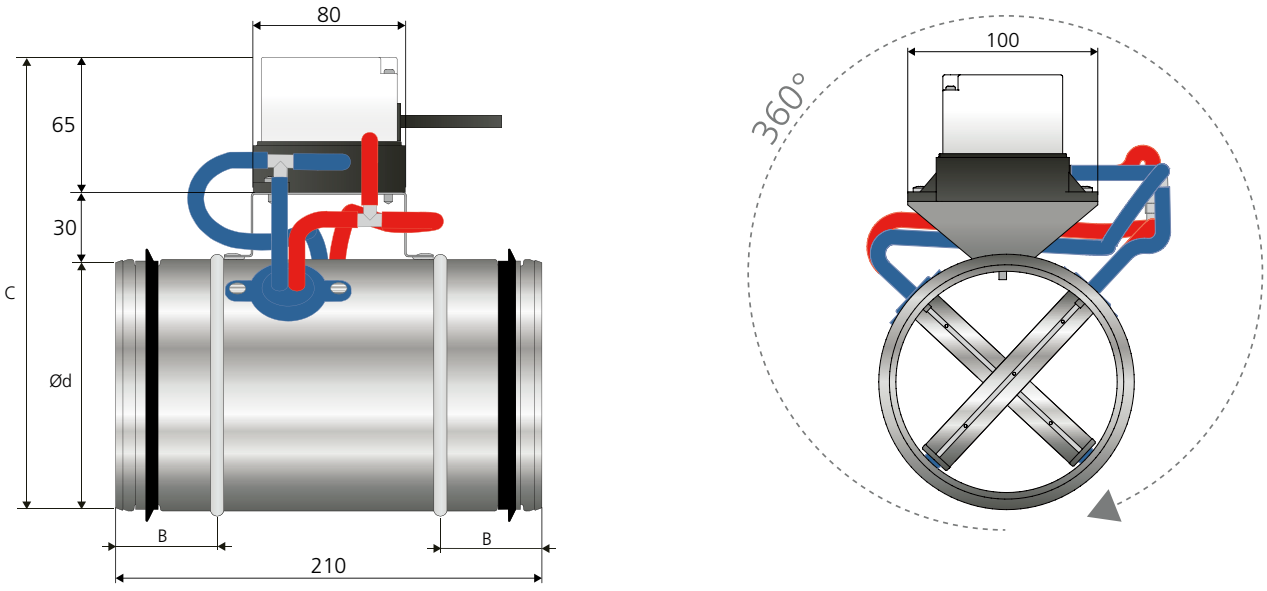


Figure 1. Dimensions (mm), REACT M GMB circular. The measurement unit can be installed at an optional angle.

Installation

- The product's air flow measurement requires a straight duct section as per the installation figures.
- In unfavourable conditions before or with disruption, the product's tolerances cannot be guaranteed.
- Installation is position independent.
- The product can be installed horizontally or vertically.
- Instructions for Use are supplied on delivery, but can also be downloaded from www.swegon.com.

Straight duct section requirements

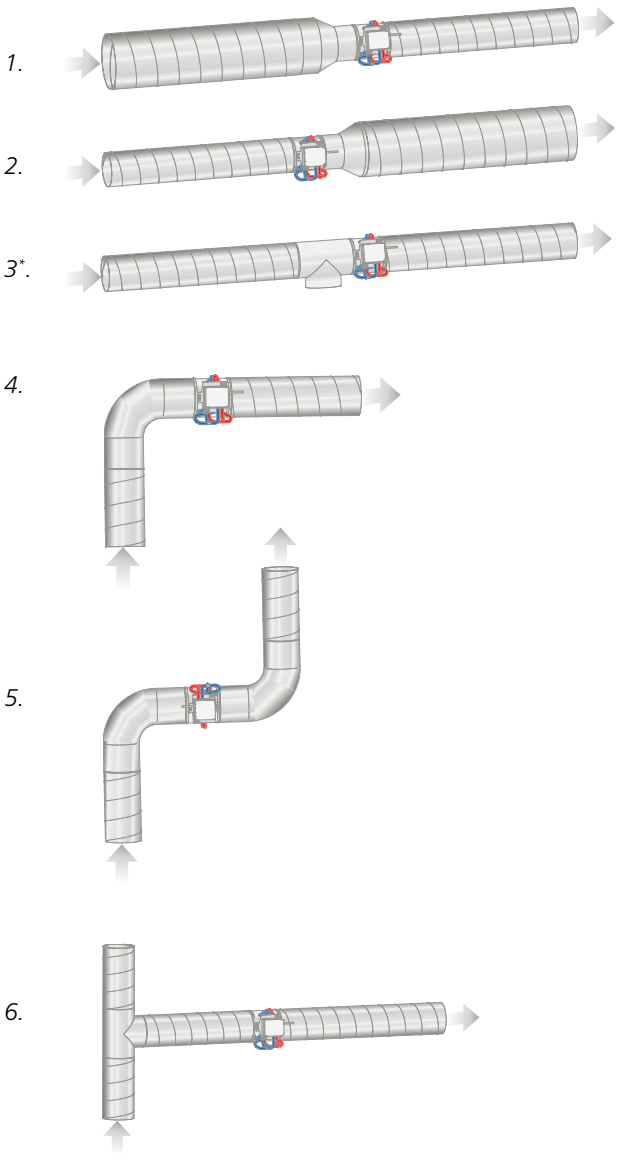


Figure 2. Straight duct section requirements in circular ducts, number of Ø before product:
Images 1-5 require no straight duct section (image 3 illustrates the T piece with cleaning hatch).*
Image 6 requires a straight duct section before the damper equivalent to 4 x the diameter of the duct.

Straight duct section requirements in case of sound attenuator with baffle

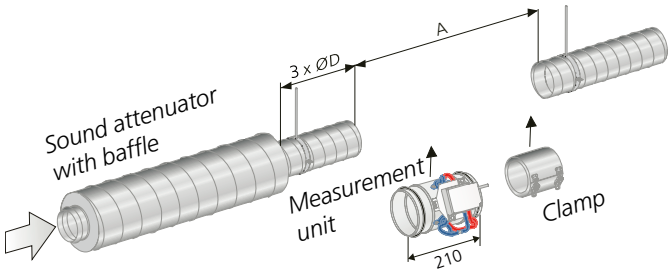


Figure 3. Straight duct section requirements 3 x Ø in case of sound attenuator with baffle or centre body.

Installation in the duct system

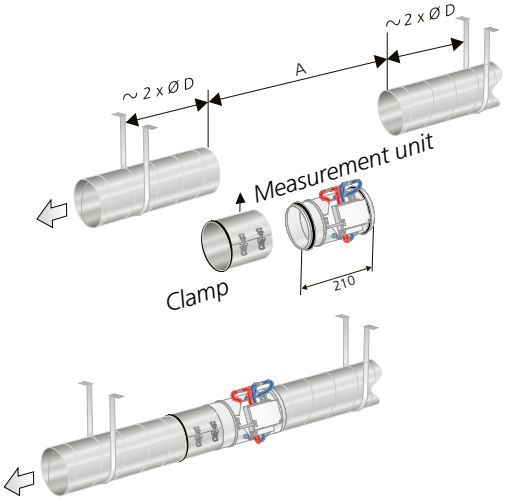


Figure 4. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of the product.

Rectangular design

Dimensions

Size BxH (mm)	Weight (kg)	Flow range				Tolerance Q* ±5% but at least ±x	
		Min		Max = Vnom*)			
		l/s	m³/h	l/s	m³/h	l/s	m³/h
200 x 200	2.5	67	240	527	1897	8	29
300 x 200	3.0	100	360	790	2845	12	43
400 x 200	3.4	133	480	1054	3793	17	61
500 x 200	3.9	167	600	1317	4742	21	76
600 x 200	4.3	200	720	1581	5690	25	90
700 x 200	4.8	233	840	1844	6638	29	104
800 x 200	5.3	267	960	2107	7586	33	119
1000 x 200	6.2	333	1200	2634	9483	42	151
300 x 300	3.4	152	548	1204	4334	19	68
400 x 300	3.8	203	731	1605	5779	25	90
500 x 300	4.3	254	914	2006	7223	32	115
600 x 300	4.8	305	1096	2408	8668	38	137
700 x 300	5.1	355	1279	2809	10113	44	158
800 x 300	5.7	406	1462	3210	11557	51	184
1000 x 300	6.6	508	1827	4013	14447	63	227
400 x 400	4.4	273	983	2158	7769	34	122
500 x 400	4.9	341	1228	2697	9711	43	155
600 x 400	5.3	409	1474	3237	11653	51	184
700 x 400	5.9	478	1720	3776	13595	60	216
800 x 400	6.4	546	1965	4316	15537	68	245
1000 x 400	7.3	682	2457	5395	19421	85	306
1200 x 400	8.3	819	2948	6474	23306	102	367
1400 x 400	9.2	955	3439	7553	27190	119	428
1600 x 400	10.2	1092	3931	8632	31074	136	490
500 x 500	5.3	429	1543	3388	12195	54	194
600 x 500	5.7	514	1851	4065	14634	64	230
700 x 500	6.3	600	2160	4743	17073	75	270
800 x 500	6.7	686	2468	5420	19513	86	310
1000 x 500	7.7	857	3085	6775	24391	107	385
1200 x 500	8.7	1028	3702	8130	29269	129	464
1400 x 500	9.7	1200	4319	9485	34147	150	540
1600 x 500	10.7	1371	4936	10840	39025	171	616
600 x 600	6.4	618	2227	4890	17602	77	277
700 x 600	7.0	722	2598	5704	20536	90	324
800 x 600	7.4	825	2969	6519	23470	103	371
1000 x 600	8.5	1031	3711	8149	29337	129	464
1200 x 600	9.5	1237	4453	9779	35204	155	558
1400 x 600	10.5	1443	5195	11409	41072	180	648
1600 x 600	11.6	1649	5937	13039	46939	206	742
700 x 700	7.4	844	3038	6671	24014	105	378
800 x 700	7.9	964	3472	7624	27445	121	436
1000 x 700	8.9	1205	4339	9530	34306	151	544
1200 x 700	9.9	1446	5207	11435	41168	181	652
1400 x 700	11.0	1688	6075	13341	48029	211	760

*) Vnom at 250 Pa in pressure reading.

*Installed according to the instructions.

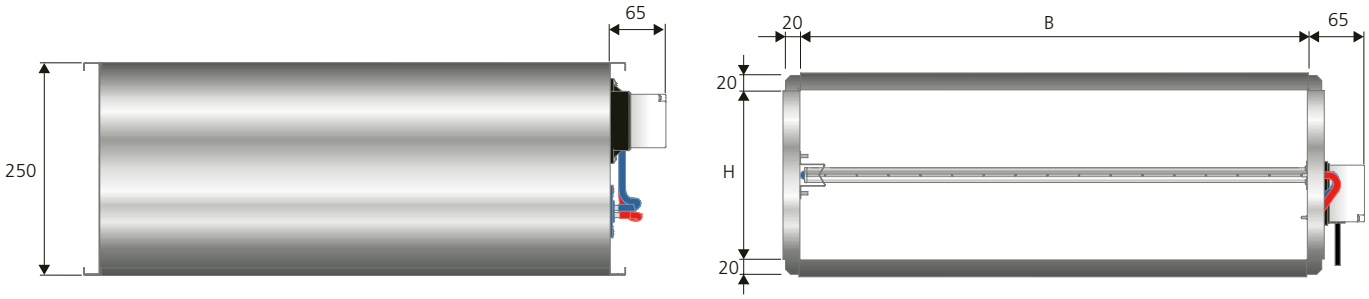


Figure 5. Dimensions (mm), REACT M GMB rectangular.

Installation

- The product's air flow measurement requires a straight duct section as per the installation figures.
- In unfavourable conditions before or with disruption, the product's tolerances cannot be guaranteed.
- Damper spindles must be installed horizontally.
- For rectangular ducts, always install the measurement unit so that the controller/actuator is placed along the side of the duct.
- Instructions for Use are supplied on delivery, but can also be downloaded from www.swegon.com.

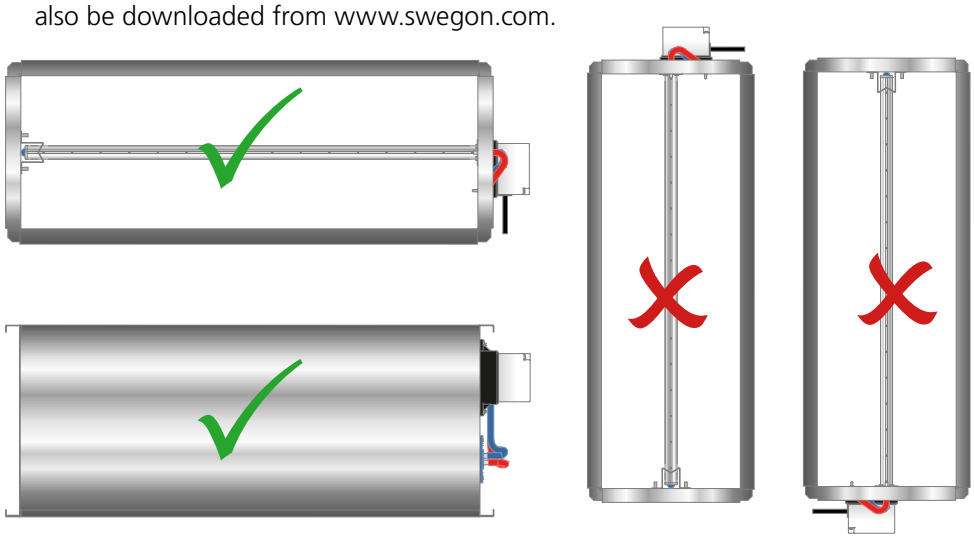


Figure 6. Installation - For rectangular ducts, always install the measurement unit so that the controller/actuator is placed along the side of the duct.

Straight duct section requirements

Type of obstruction	Tolerance Q ±5%	Tolerance Q ±10%
One 90° bend	E = 3 x B	E = 2 x B
T piece	E = 3 x B	E = 2 x B

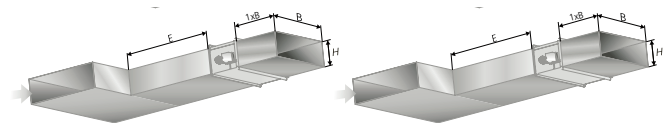


Figure 7. Straight duct section requirements in rectangular ducts.
E = Straight section
B = Width of duct
H = Height of duct

Straight duct section requirements in case of sound attenuator with baffle

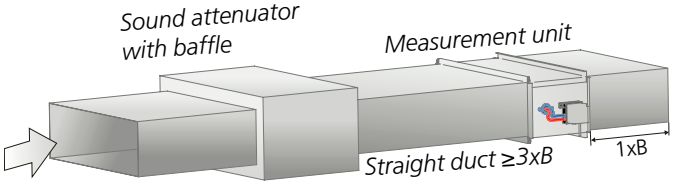


Figure 8. Straight duct section requirements 3 x B in case of sound attenuator with baffle. Applies to both supply and extract air.

Connection

1-2 – Supply voltage	24 V AC/DC
1-4 – Actual value signal (U)	0..10/(2..10) V DC

A – Modbus (-CA)

B – Modbus (+CB)

For further calculations of U, see the formulas page 10.

Load on output 4: max. 0.5 mA.

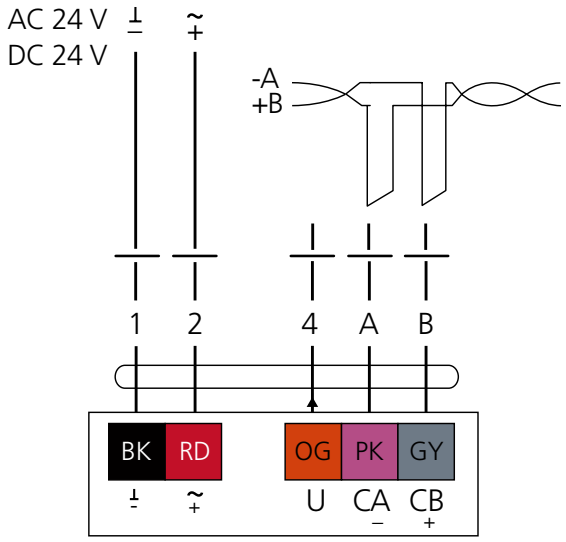


Figure 9. Wiring diagram.

Handling

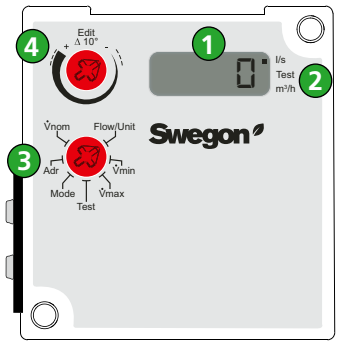


Figure 10. Gruner controller.

1 Display

Display for setting and changing values directly on the controller with a screwdriver. The display only shows three figures. In the case of larger values, apostrophes are shown and the remaining figures are hidden.

- 1000 = 1´00
- 10000 = 10´0
- 1278 = 1'27

2 Unit matrix

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

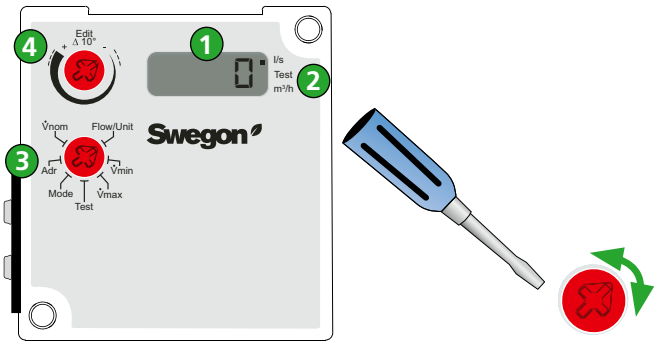
l/s:	Squares are shown in the top right corner of the display
m^3/h:	Squares are shown in the bottom right corner of the display

3 Function wheel

In order to select among the menus

4 Edit wheel

For choice of sub menu or to change the values that are shown on the display. The value flashes twice when a new value has been accepted.



Setting and reading of parameters

1. Select required menu by turning the Function wheel.
2. Set the values or select sub menus by turning the Edit wheel.
3. The value flashes twice when a new value has been accepted.

Settings for actuator

Menu	Display	Description
Flow/Unit	0 l/s Test m³/h	Shows actual value (flashes until set point is achieved) Change of unit
Vmin	0 l/s Test m³/h	Adjustment to required min. value (set point Y = 0/2 V DC) The min. value must be less than the max. value
Vmax	0 l/s Test m³/h	Adjustment to required max. value (set point Y = 10 V DC) The max. value must be greater than the min. value
Test	off l/s Test m³/h off 123	Forced control. Square on the display indicates active test mode. Disconnects automatically after 10 hours. Normal function Shows the current software version
Mode	0- l/s Test m³/h 0- 2-	Actuator control 0-10 V DC, Analogue 2-10 V DC, Analogue
Adr	1 l/s Test m³/h 1 ₀24	Bus communication, see How to use Modbus Modbus address 1…247 Communication settings ₀ 1…₀ 24
Vnom	100 l/s Test m³/h	Shows the nominal air flow The display only shows three figures. In the case of larger values, apostrophes are shown and the nominal value is rounded to the nearest zero or five

How to use Modbus

Modbus tables can be found in a separate document (REACT Gruner – Modbus settings).

By turning the Edit wheel, it is possible to set the actuator's Modbus address. It is possible to set the address from 1 to 247. If you turn the value selector to end stop "+", the display will show a "2". This makes it possible to select the second level. If you select the second level, this is indicated on the display by a small circle.

Display number	Baud Rate - Parity - Stop bit
1[3]	1200-None-2
2[3]	1200-Even-1
3[3]	1200-Odd-1
4	2400-None-2
5	2400-Even-1
6	2400-Odd-1
7	4800-None-2
8	4800-Even-1
9	4800-Odd-1
10	9600-None-2
11	9600-Even-1
12	9600-Odd-1
13	19200-None-2
14[4]	19200-Even-1
15	19200-Odd-1
16	38400-None-2
17	38400-Even-1
18	38400-Odd-1
19[3]	1200-None-1
20	2400-None-1
21	4800-None-1
22	9600-None-1
23	19200-None-1
24	38400-None-1

[3] Limited data length per reading of max. 8 addresses

[4] Default setting

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 energised.
- Check that the product's set size (Vnom) corresponds with the physical size, see "Handling".
- Make sure that the product is installed according to the recommended distance to disruptions, see "Installation".
- Check that there is an air flow.
- 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 tubes are 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.

Cleaning

Ideally, the product should be cleaned in connection with the cleaning of the rest of the ventilation system.

Cleaning of electrical components

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

External cleaning

- If necessary use tepid water and a well-wrung cloth.
- Never use detergent and cleaning solvent or a vacuum cleaner.

Internal cleaning

- When cleaning the ventilation system, the product must be dismantled if there are no cleaning hatches close to the product.
- Cleaning equipment such as whisks and the like must not be fed through the product.
- If necessary remove dust and other particles that can be present in the product.
- Never use detergent and cleaning solvent or a vacuum cleaner.

Service/maintenance

- The product does not require any maintenance, except for any cleaning when necessary.
- In connection with a service, mandatory ventilation inspection or cleaning of the ventilation system, check that the general condition of the product appears to be good. Pay particular attention to the suspension, cables and that they sit firmly in place.
- It's 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

All sheet-metal parts are galvanized sheet steel (Z275).

Disposal

Waste must be handled according to local regulations.

Product warranty

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

Performance checks

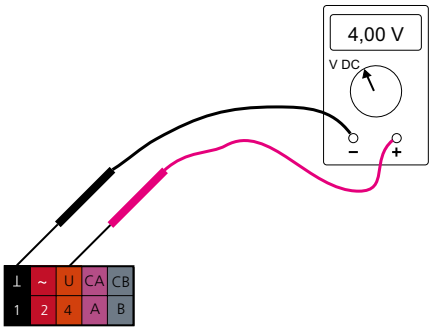


Figure 11. Shows how to connect a voltmeter for checking the actual value.

Formulas for calculating air flow

The following applies for analogue control.

Control signal 0..10 V DC give the following formulas:

- Calculation of the current actual value (U) when you know the value of the current flow (V_{act}):

$$U = 10\ V\ DC \bullet \frac{V_{act} - V_{min}}{V_{max}}$$

- Calculation of the current actual value (U) when you know the value of the current flow (V_{act}):

$$U = 2\ V\ DC + 8\ V\ DC \bullet \frac{V_{act} - V_{min}}{V_{max}}$$

Key to formulas opposite:
U = actual value signal in [V] DC
V_{act} = current air flow in [l/s, m³/h]
V_{min} = set min. flow in [l/s, m³/h]
V_{max} = set max. flow in [l/s, m³/h]

Technical data

IP class:	IP42
Corrosivity class:	C3
Leakage classes according to SS-EN 1751	
- Leakage class, casing:	C
Ambient temperature	
Operation:	0 – +50 °C
Storage:	-20 – +50°C
RH:	10 - 95% (non-condensing)
CE marking:	2014/35/EU (LVD)
	2014/30/EU (EMC)
	2011/65/EU (RoHS2)

Electrical data

Power supply:	24 V AC/DC ±15% 50 - 60 Hz
Fixed connection cable, 1000 mm with cable size.	
Supply voltage	3 x 0.75 mm^2
Modbus	2 x 0.38 mm^2

Power consumption, for transformer rating:

REACT M GMB	0.6 W	1.3 VA

Declaration of Conformity

Swegon AB hereby affirms that:

REACT M GMBa complies with the essential characteristic demands and relevant regulations specified in the directives, 2014/35/EU (LVD), 2014/30/EU (EMC) and 2011/65/EU (RoHS2):

The following standards have been observed:

EN 60730-1:2011	Automatic electrical control and control unit for household use - Part 1: Generic standards
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

CE

Person responsible for this declaration:

Name: Freddie Hansson, R&D Manager Tomelilla

Address: Industrigatan 5, 273 21 Tomelilla, Sweden

Date: 15/12/2023

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

REACT M GMB Product Data Sheet

REACT Gruner – Modbus settings

REACT Gruner – Description of functions & wiring diagrams