REACT P GMBa

Instructions for Use

23/07/2025
Art. 1546162

Key to symbols

Symbols on the machine

This product complies with applicable EU directives

Symbols in this user manual

Warning/Caution!

Risk of crushing

Application area

The product is a pressure regulating damper designed for comfort ventilation indoors. The product is used to regulate the supply air or extract air pressure 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 P GMB

1 x Measuring tube

1 x Measuring nipple

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' 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.

Other risk

When the product is voltage fed, the damper will either open or close. This can entail a certain risk of pinch injuries, for example, on the fingers if these are placed between the damper blade and ventilation duct when the damper blade rotates. The product's actuator is equipped with a release button that permits manual control of the damper blade, always ensure this is activated before working on the internal parts of the damper.

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.
- 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

Installation, torque, dimensions and weights

Circular design

Dimensions

Size Ød (mm)	Tube length (m)	A (mm)	B (mm)	C (mm)	E (mm)	F (mm)	Torque (Nm)	Weight (kg)
100	2	210	42	190	220	50	10	1.4
125	2	210	42	220	220	50	10	1.5
160	2	210	42	260	220	50	10	1.6
200	2	210	42	300	220	50	10	1.8
250	2	210	42	355	220	50	10	2.0
315	4	210	42	415	220	50	10	2.5
400	4	255	20	505	265	50	10	3.5
500	6	255	20	605	275	50	10	5.0
630	6	255	20	735	275	50	15	6.6

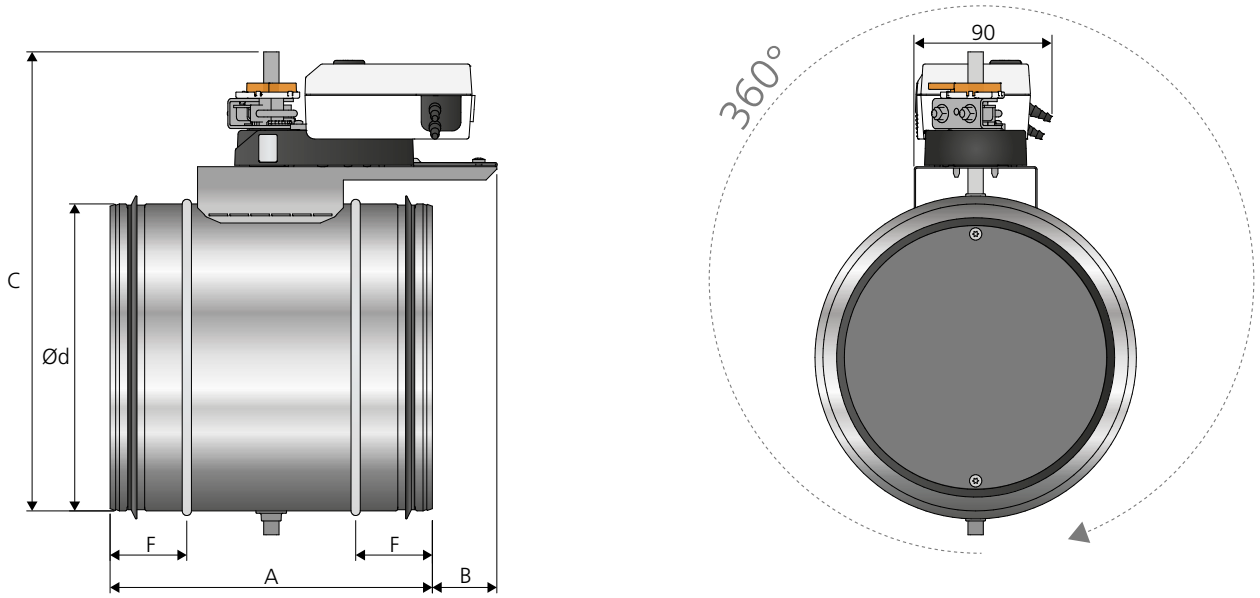


Figure 1. Dimensions (mm), REACT P GMB circular. The damper can be installed at an optional angle.

Installation

- The product's pressure measurement requires spacing 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.

Distance requirements

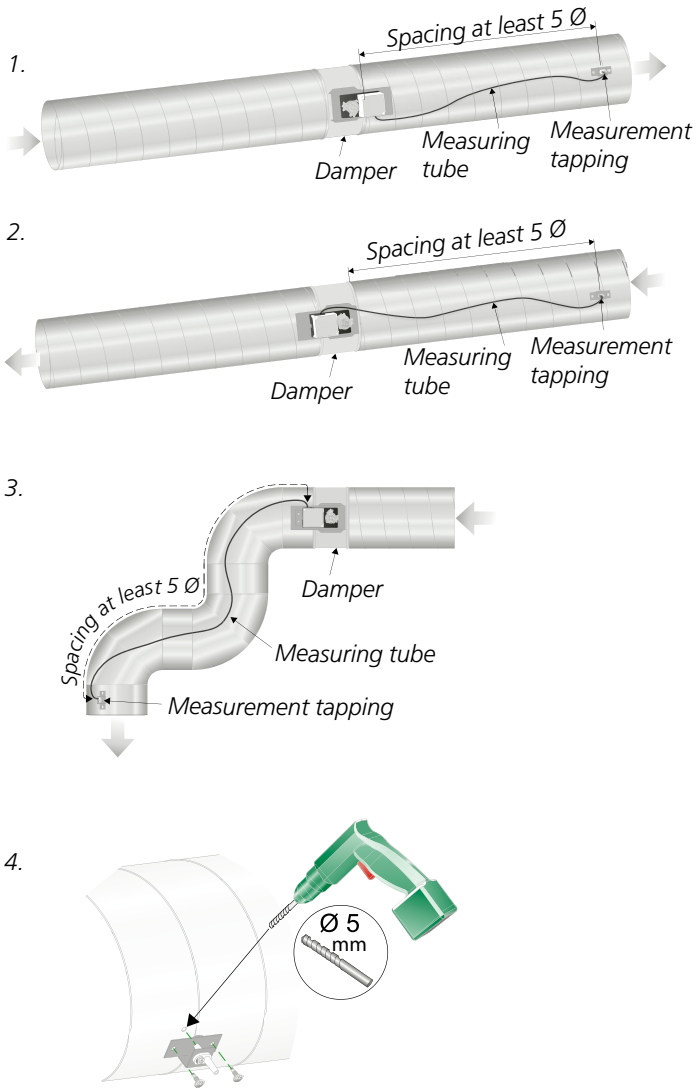


Figure 2. Distance requirements in circular ducts, number of Ø before and after product:
1. At least 5 x Ø after the damper (supply air).
2. At least 5 x Ø before the damper (extract air).
3. Examples of how spacing can be measured.
4. Installation of measurement tapping.

Installation in the duct system

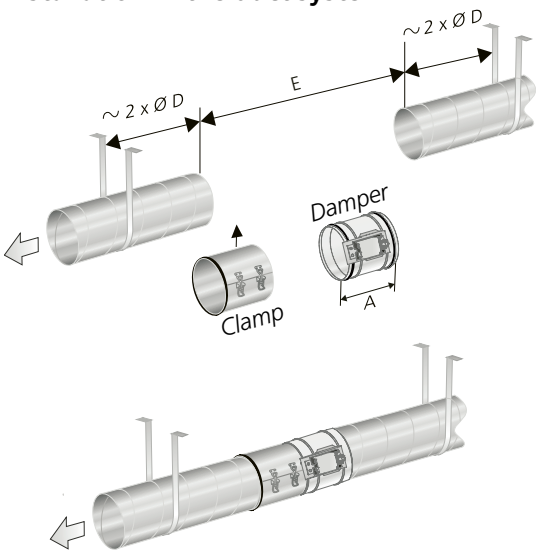
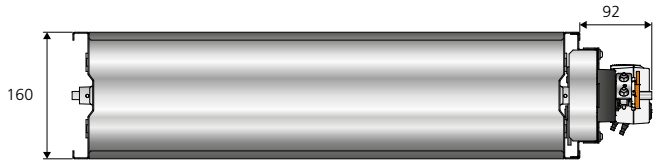


Figure 3. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of the product.

Rectangular design

Dimensions

Size BxH (mm)	Tube length (m)	Torque (Nm)	Weight (kg)
200 x 200	2	10	3.7
300 x 200	4	10	4.4
400 x 200	4	10	5.1
500 x 200	6	10	5.8
600 x 200	6	10	6.5
700 x 200	8	10	7.1
800 x 200	8	10	7.8
1000 x 200	12	10	9.2
300 x 300	4	10	5.6
400 x 300	4	10	6.4
500 x 300	6	10	7.2
600 x 300	6	10	8.0
700 x 300	8	10	8.8
800 x 300	8	10	9.6
1000 x 300	12	10	11.3
400 x 400	4	10	7.8
500 x 400	6	10	8.7
600 x 400	6	10	9.6
700 x 400	8	10	10.6
800 x 400	8	10	11.6
1000 x 400	12	10	13.5
1200 x 400	12	10	15.3
1400 x 400	16	10	17.2
1600 x 400	16	10	19.1
500 x 500	6	10	10.1
600 x 500	6	10	11.2
700 x 500	8	10	12.3
800 x 500	8	10	13.4
1000 x 500	12	10	15.5
1200 x 500	12	10	17.7
1400 x 500	16	10	19.8
1600 x 500	16	10	21.9
600 x 600	6	10	12.8
700 x 600	8	10	14.0
800 x 600	8	10	15.2
1000 x 600	12	10	17.6
1200 x 600	12	10	20.0
1400 x 600	16	10	22.7
1600 x 600	16	10	24.8
700 x 700	8	10	15.8
800 x 700	8	10	17.0
1000 x 700	12	10	19.7
1200 x 700	12	10	22.3
1400 x 700	16	10	25.0



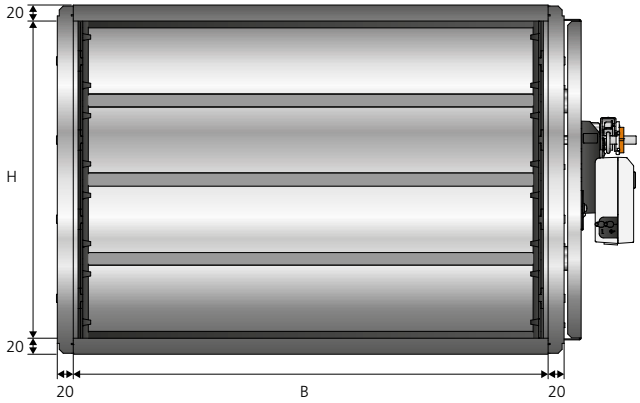


Figure 4. Dimensions (mm), REACT P GMB rectangular.

Installation

- The product's pressure measurement requires spacing 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 damper 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.

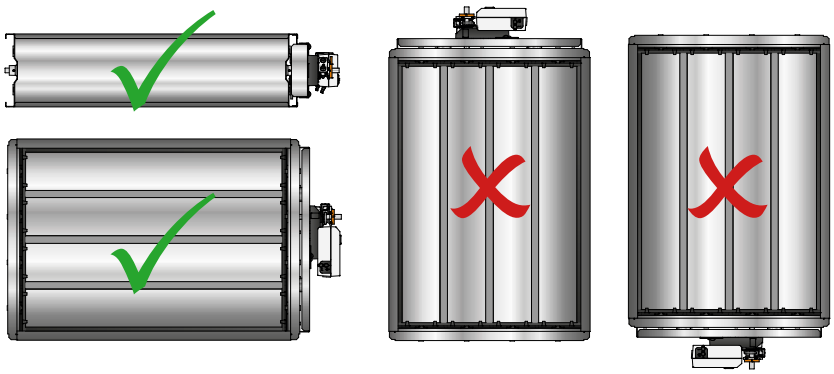


Figure 5. Installation - For rectangular ducts, always install the damper so that the controller/actuator is placed along the side of the duct.

Requirements for straight duct section and distance

Type of obstruction	E
One 90° bend	E = 2 x B
T piece	E = 2 x B

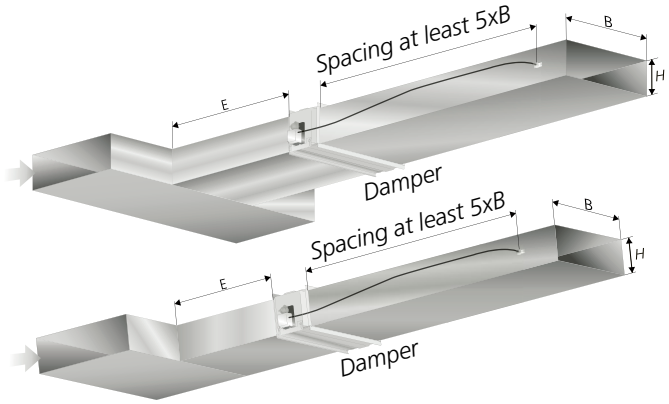


Figure 6. Requirements for straight duct section and distance in rectangular ducts.
E = Straight section
B = Width of duct
H = Height of duct

Connection

1-2 – Supply voltage	24 V AC/DC
1-3 – Control signal (Y)	0..10/(2..10) V DC
1-4 – Actual value signal (U)	0..10/(2..10) V DC

A – Modbus (-CA)

B – Modbus (+CB)

For further calculations of Y and U, see the formulas on page 11.

Load on output 4: max. 0.5 mA.

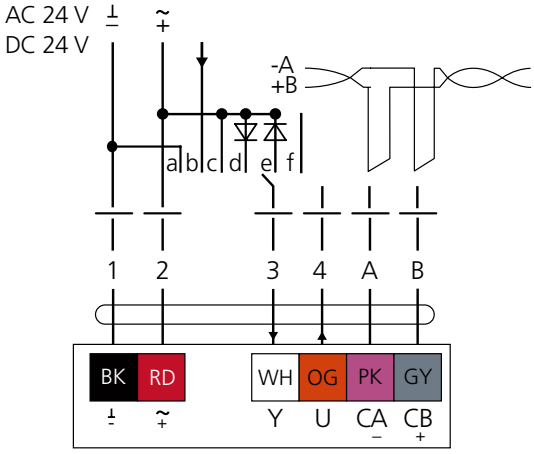


Figure 7. Wiring diagram.

Regulation and forced control via analogue control signal

See connection in the wiring diagram, figure 7.

	a	b	c	d	e	f
Signal	⊥ − 3	3	~ + 3	~ 3	~ 3	3
Mode 2...10 V	Closed	Pmin[1]	Pmax	Open[2]	Closed[3]	Pmin
Mode 0...10 V	Pmin	Pmin[1]	Pmax	Open[2]	Closed[3]	Pmin

[1]Control signal 0-10 V DC / 2-10 V DC
[2]Positive half-wave, AC only
[3]Negative half-wave, AC only

Mode 2-10 V: Damper closed < 0.8 V

Pressure tube

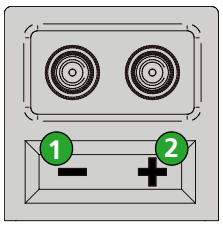


Figure 8. Tube couplings actuator.

1. *Pressure tube for extract air installation.*
2. *Pressure tube for supply air installation.*

Handling

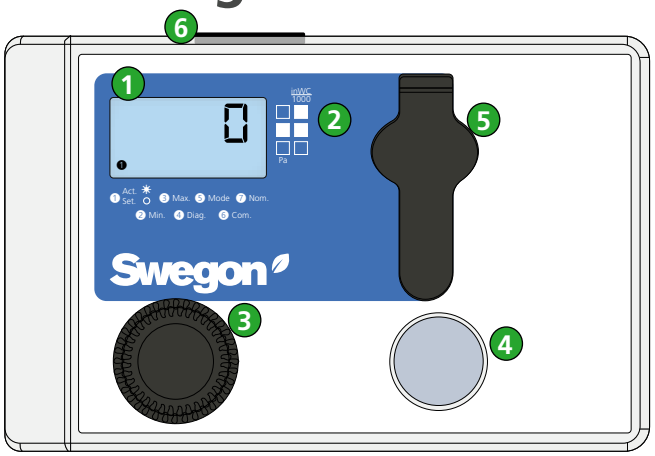


Figure 9. Gruner actuator.

1 Display

Display for setting and changing values directly on the actuator without external tools, with backlighting that goes out automatically. 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

Pa:	The middle square is shown on the display
inWC/1000:	The upper and middle squares are shown on the display

3 Value selector

To change the values shown on the display

4 Pushbutton and LED lighting

Off:	No power
On:	Required set point achieved
Flashing:	Required set point not achieved
Button press:	Select between the menus

5 Service port

For connection of the hand-held terminal Gruner GUIV3-M

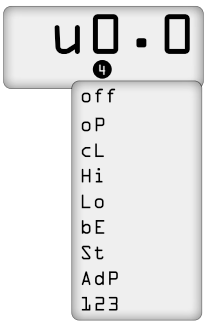
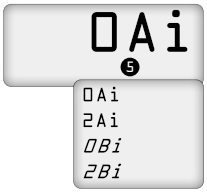
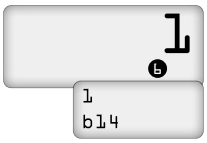
6 Release button

Pressed button:	Actuator disconnected, the motor stops, manual overriding possible
Released button:	Returns to standard mode

Setting and reading of parameters

1. Select required menu by pressing the Pushbutton.
2. Press and hold the Pushbutton for more than 2 seconds (the value will flash in the display) to make it possible to make changes in the selected sub menu.
3. To save the selected value, press the Pushbutton once (the value flashes three times when a new value has been accepted).

Settings for actuator

Menu	Display	Description
1 Act.✳ Set.○		Alternately shows actual value / set point Change of unit
2 Min.		Adjustment to required min. value (set point Y = 0/2 V DC) The min. value must be less than the max. value Min. value is greater than the max value = forced to min. value
3 Max.		Adjustment to required max. value (set point Y = 10 V DC) The max. value must be greater than the min. value
4 Diag.		Alternately shows set point (y) / feedback signal (u) Forced control Normal operation Opens the damper fully Closes the damper fully Damper regulates to selected max. value Damper regulates to selected min. value Damper regulates to selected intermediate value, 50% of nominal value Actuator stops in the current position End position calibration (Applies to 15 Nm or Modbus version) Shows the current software version
5 Mode		Actuator control 0-10 V DC, Analogue, Inverted direction of rotation 2-10 V DC, Analogue, Inverted direction of rotation *0-10 V DC, Bus, Inverted direction of rotation. Can only be changed via Modbus.* *2-10 V DC, Bus, Inverted direction of rotation. Can only be changed via Modbus.*
6 Com.		Bus communication, see Handling Modbus Modbus address 1…247 Communication settings b1…b32
7 Nom.		Shows nominal pressure

How to use Modbus

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

Menu 6 (Com) makes it possible to set Modbus address and communication settings. The Modbus address can be set between 1 and 247. Communication settings can be set between b1 and b32, see table below.

Display number	Baud Rate - Parity - Stop bit
1	1200-None-2
2	1200-Even-1
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[1]	19200-Even-1
15	19200-Odd-1
16	38400-None-2
17	38400-Even-1
18	38400-Odd-1
19	1200-None-1
20	2400-None-1
21	4800-None-1
22	9600-None-1
23	19200-None-1
24	38400-None-1
25	76800-None-1
26	115200-None-1
27	76800-None-2
28	76800-Even-1
29	76800-Odd-1
30	115200-None-2
31	115200-Even-1
32	115200-Odd-1

[1] Standard setting

Trouble shooting

The product does not communicate over Modbus

- Make sure that the product is energised.
- 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 incorrect/no air pressure

- Make sure that the product is energised.
- Make sure that the product is installed according to the recommended distance to disruptions, see "Installation".
- Check that there is air pressure.
- Check that the measuring tube is mounted correctly, plus for supply air function or minus for extract air function.
- Check that the measuring tubes are undamaged and not creased.
- Check the pressure in the measuring tube. Check the pressure in the measuring nipple.

The product does not regulate the air pressure

- Make sure that the product is energised.
- Check that the damper motor has not become detached from the damper spindle.
- Check that the damper motor works by pressing in the motor's release button, turn the damper spindle, release the release knob and then see whether the damper motor starts to move.
- Check that the product is connected correctly.
- Check that the product is not force controlled.

The product does not regulate the desired air pressure

- Check that the settings for Pmin and Pmax correspond with the desired regulation range.
- Check the electrical connection for the required function, see wiring diagrams in the document "REACT Gruner Description of functions & wiring diagrams".

Product does not exit test mode

- Check that the product is connected correctly, check the "Y" signal and the polarity on "G" and "G0". See "Connection".
- Check the set point settings for Pmin and Pmax. The value of Pmax must be higher than Pmin in order for the product to be in automatic mode.
- If Modbus communication is used for the damper, test mode can be active via the communication. Try disconnecting the Modbus cables and attempt to set the motor in automatic mode. See "Handling".

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 by Swegon AB; or (2) the serial number on the product has been made illegible or is missing.

Performance checks

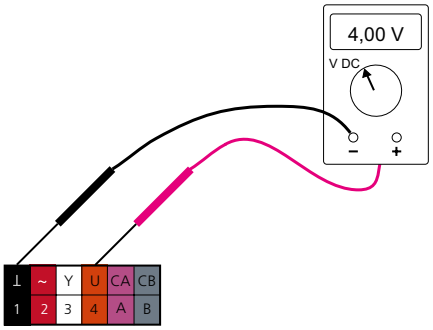


Figure 10. Shows connection to a voltmeter for checking the actual value.

Formulas for calculating air pressure

The following applies for analogue control.

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

- Calculations of current pressure (P_{act}) when you know the value of the control signal (Y) :

$$P_{act} = P_{min.} + \frac{Y}{10\ V\ DC} \bullet (P_{max.} - P_{min.})$$

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

$$U = 10\ V\ DC \bullet \frac{P_{act}}{300}$$

Control signal 2..10 V DC gives the following formulas:

- Calculations of current pressure (P_{act}) when you know the value of the control signal (Y):

$$P_{act} = P_{min.} + \frac{Y - 2\ V\ DC}{8\ V\ DC} \bullet (P_{max.} - P_{min.})$$

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

$$U = 2\ V\ DC + 8\ V\ DC \bullet \frac{P_{act}}{300}$$

Key to formulas above:

Y = control signal in [V] DC
U = actual value signal in [V] DC
P_{act} = current air pressure in [Pa, inWC/1000]
$P_{min.}$ = set min. pressure in [Pa, inWC/1000]
$P_{max.}$ = set max. pressure in [Pa, inWC/1000]

Replacing the damper motor

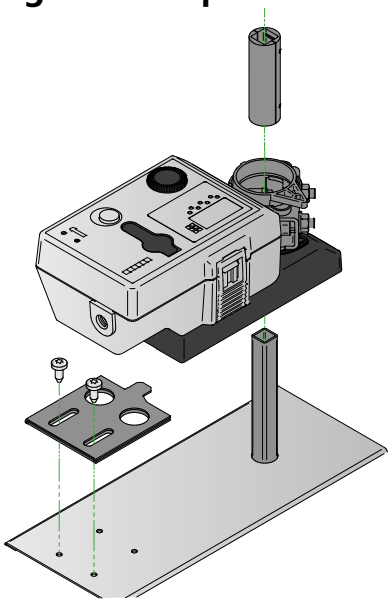


Figure 11. Dismantling the damper motor.

1. *Disconnect the cable.*
2. *Disconnect the measuring tubes.*
3. *Set damper motor to the open position.*
4. *Loosen the nuts on the spindle clamp (nuts: 8 mm).*
5. *Remove 1 screw for the locking strip on the circular design and 2 screws for the locking strip on the rectangular design (screw: TX20).*
6. *Lift off the damper motor and spindle adapter*
   (The rectangular design has a round damper spindle and no spindle adapter).
7. *Reassemble in the reverse order.*
   Note: Positioning of damper blade and locking strip, see figures 12 and 13.

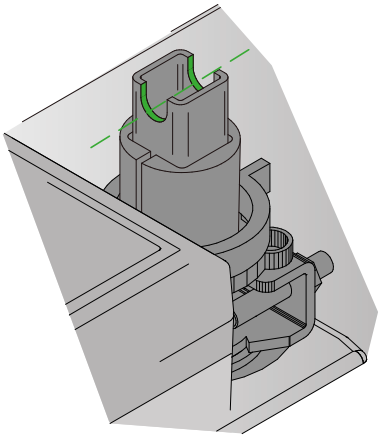


Figure 12. Recess in the damper spindle indicates the position of the damper.

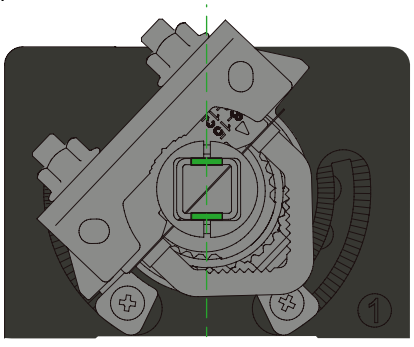


Figure 13. Damper open. Jumper to the left.

Technical data

IP class:	IP42 (cable installed downwards)
Corrosivity class:	C3
Pressure class:	A
Leakage classes according to SS-EN 1751	
- Leakage class, casing:	C
- Leakage class circular damper, closed:	4
- Leakage class rectangular damper, closed:	3
Running times open/close (90°):	
10 / 15 Nm:	150 s
Ambient temperature	
Operation:	0 – +50 °C
Storage:	-20 – +80 °C
RH:	5 – 95% (non condensing)
CE marking:	2006/42/EC (MD)
	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/control signal	4 x 0.75 mm^2
Modbus	2 x 0.38 mm^2

Power consumption, for transformer rating:

REACT P GMB 10 Nm	2.0 W	3.5 VA
REACT P GMB 15 Nm	2.0 W	4.0 VA

Declaration of Conformity

Swegon AB hereby affirms that:

REACT P GMBa complies with the essential characteristic demands and relevant regulations specified in the directives, 2006/42/EC (MD), 2014/30/EU (EMC) and 2011/65/EU (RoHS2):

The following standards have been observed:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk mitigation
EN 60204-1:2006	Safety of machinery - Electrical equipment of machines - Part 1: Generic standards
EN 60730-1:2011	Automatic electrical control and control unit for household use - Part 1: Generic standards
EN 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: 20/11/23

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 P GMB Product data sheet

REACT Gruner – Description of functions & wiring diagrams

REACT Gruner – Modbus settings