

REACT P GMB

Pressure regulation damper – Gruner Modbus



QUICK FACTS

- Pressure measurement up to 300 Pa, recommended regulation area 20-290 Pa
- Rapid setting/reading of parameters via the controller's lit display
- Analogue control and Modbus control
- Can be easily insulated against condensation in the duct system
- Commissioning without power possible with hand-held terminal Gruner GUIV3-M
- Variants:
 - Circular connections: Ø100-630 mm
 - Rectangular connections: 200x200-1400x700 mm

Content

Technical description 3

General..... 3

Design 3

 Circular design 3

 Rectangular design 3

Functions..... 3

Materials and surface treatment..... 3

Project design / Typical room..... 3

Maintenance..... 3

Environment 3

Accessories 3

Technical data..... 4

Electrical data 4

 Connection..... 4

Sizing 5

 Circular design 5

 Sound data..... 5

 Sizing diagram 5

 Rectangular design 7

 Sound data..... 7

 Sizing diagram 7

Installation, torque, dimensions and weights.. 8

 Circular design 8

 Dimensions..... 8

 Installation..... 9

 Rectangular design 10

 Dimensions..... 10

 Installation 11

Specification..... 12

Specification text..... 13

Technical description

General

- Intended for pressure control of comfort ventilation.
- Moist, cold and aggressive environments must be avoided.
- Can be installed in both supply and extract air systems.
- Pressure dependent and recommended minimum duct pressure 20 Pa.

Design

- Analogue control and Modbus control.
- Integrated pressure controller.
- Pressure measurement via measuring tube.
- Measuring tube Ø8/5 mm included, length see table on pages 8 and 10.

Circular design

- Connection: Ø100-630 mm.
- Always supplied with dust protection.
- Raised motor shelf to facilitate condensation insulation of the duct system.
- A factory-insulated model is available on request.

Rectangular design

- Slip-clamp connection.
- Connection 200x200-1400x700 mm.
- Other sizes are also available on request.

Functions

- Pressure regulation.
- Illuminated display for direct reading.
- Settings can be made directly on the controller without external tools.
- Setting and reading of parameters can be performed on the controller even when the actuator is without power via the external hand-held terminal Gruner GUIV3-M.

Materials and surface treatment

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

Project design / Typical room

See separate documentation "REACT Gruner Description of functions & wiring diagrams", available for download via www.swegon.com.

Maintenance

The product does not require any maintenance/service, except for any cleaning when necessary. See the separate Instructions for Use, available on www.swegon.com.

Environment

The Building Materials Declaration is available from www.swegon.com.

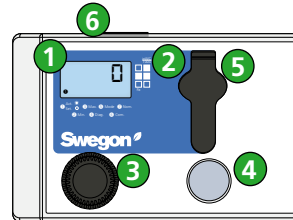


Figure 1. REACT P GMB regulator.

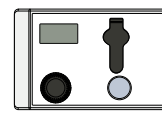
1. Display
2. Unit matrix
3. Value selector
4. Pushbutton and LED lighting
5. Service port
6. Release button

Accessories

FSR	Clamp for easy dismantling of a circular design for cleaning and inspection
Gruner GUIV3-M	Hand-held terminal for setting of parameters on the actuator
Measuring tube	Extra measuring tube that is available on request



FSR



Gruner GUIV3-M



Measuring tube

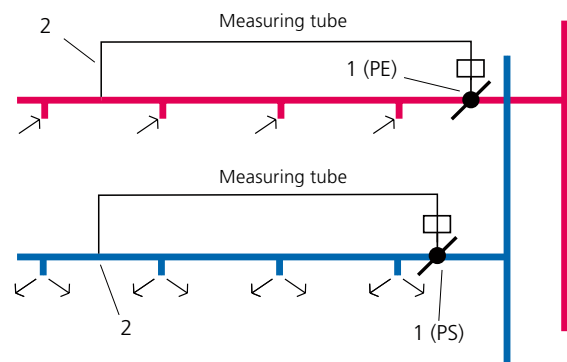


Figure 2. Constant pressure regulation.

1. REACT P GMB.
2. Pressure measurement via measuring tube.

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
See figure 3 below.	
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
See torque in table, pages 8 and 10.	

Connection

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

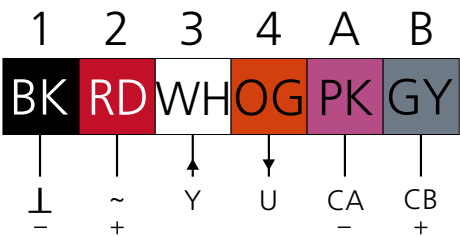


Figure 3. Connection.

Sizing

Circular design

- Note: Increased air flow gives increased duct velocity and increased sound level.

Sound data

Sound power level

- The diagrams show the a-weighted sound power (L_{WA} -dB), as a function of the air flow and pressure drop across the damper.
- Correct L_{WA} with correction factor K_{ok} from the tables below to obtain the sound power levels for each octave band ($L_W = L_{WA} + K_{ok}$).

Correction factors for conversion to sound power in octave bands:

L_{WA} = Sound level with A-filter but without room attenuation in the sizing diagram for duct product.

K_{ok} = Correction factor in octave bands.

K_{trans} = Correction factor in octave bands for transmitted sound.

Sound power in octave bands

$$L_W = L_{WA} + K_{ok} \text{ [dB]}$$

Correction factor, K_{ok}

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	7	7	5	-1	-5	-10	-17	-22
125	7	9	6	-2	-4	-10	-19	-25
160	5	10	6	-3	-5	-11	-18	-24
200	5	10	5	-2	-5	-11	-19	-27
250	8	5	2	-3	-6	-10	-18	-24
315	4	6	3	-3	-6	-10	-18	-25
400	6	3	1	-3	-5	-10	-17	-26
500	3	0	-1	-3	-5	-10	-17	-28
630	3	-1	-2	-3	-5	-9	-17	-27
Tol. ±	6	3	2	2	2	2	2	2

Transmitted sound through uninsulated casing

$$L_W = L_{WA} + K_{trans} \text{ [dB]}$$

Correction factor, K_{trans}

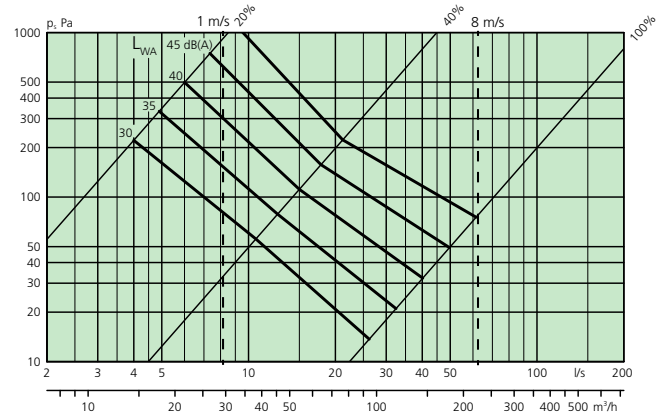
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	-2	-9	-7	-10	-9	-10	-15	-22
125	-4	-9	-8	-13	-9	-12	-19	-27
160	-7	-9	-10	-15	-12	-15	-20	-28
200	-9	-11	-13	-16	-14	-16	-23	-32
250	-8	-18	-17	-19	-17	-17	-23	-31
315	-14	-19	-18	-21	-18	-19	-25	-34
400	-13	-23	-22	-22	-19	-21	-26	-37
500	-18	-28	-27	-24	-21	-22	-28	-40
630	-18	-27	-27	-24	-21	-21	-29	-38
Tol±	6	3	2	2	2	2	2	2

Sizing diagram

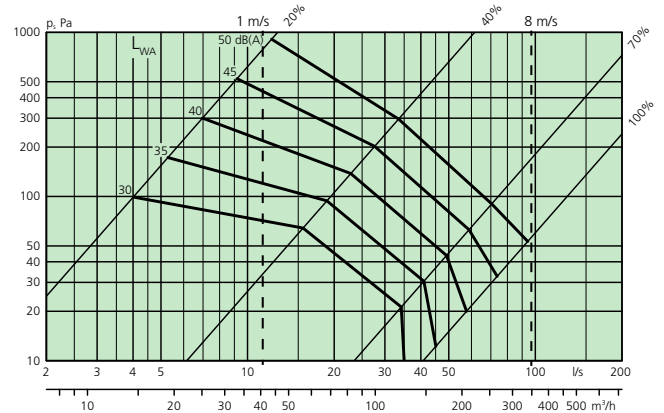
Air flow – Pressure drop – Sound level

- Specified sound levels, L_{WA} : 30, 35, 40, 45 and 50 dB.
- Data is for the sound created in the duct.
- 100% corresponds to the damper being fully open.

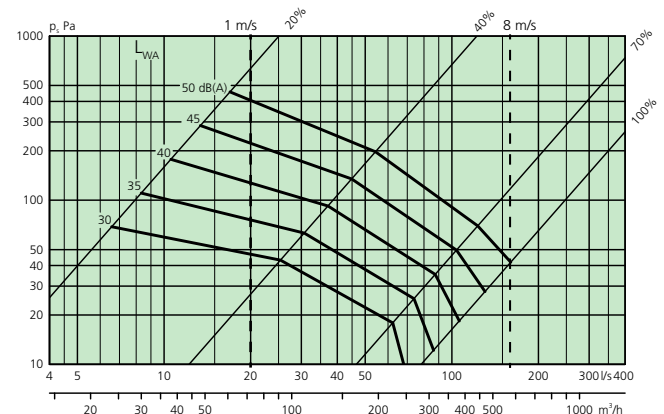
REACT P GMB 100



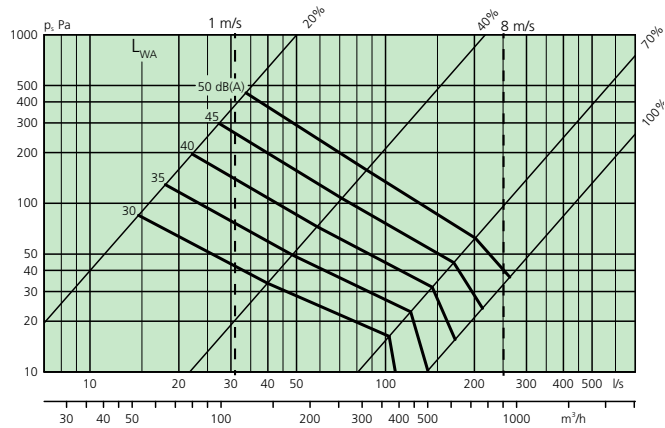
REACT P GMB 125



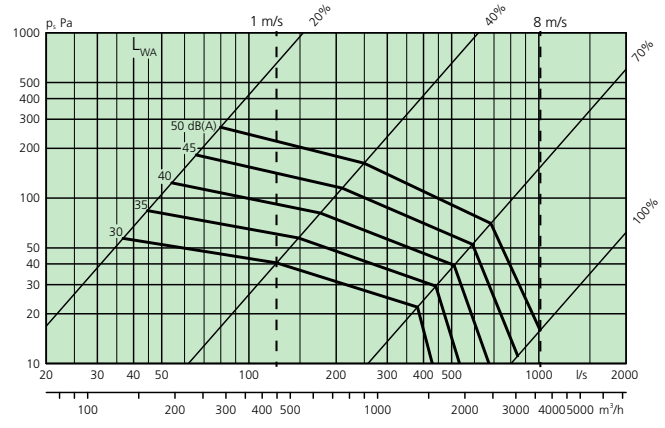
REACT P GMB 160



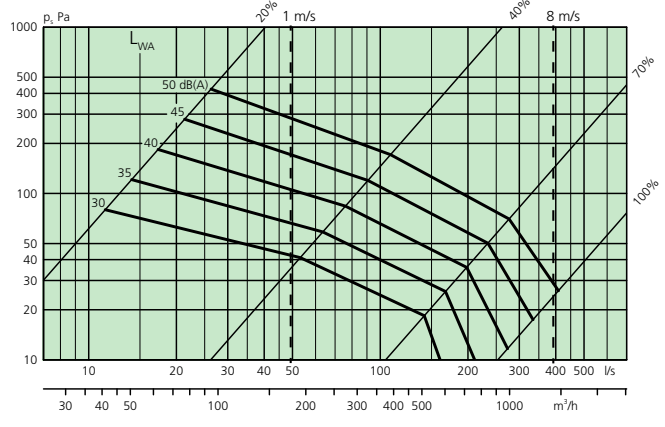
REACT P GMB 200



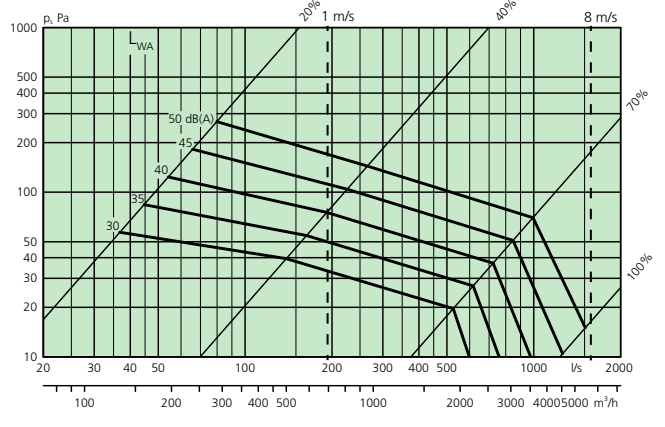
REACT P GMB 400



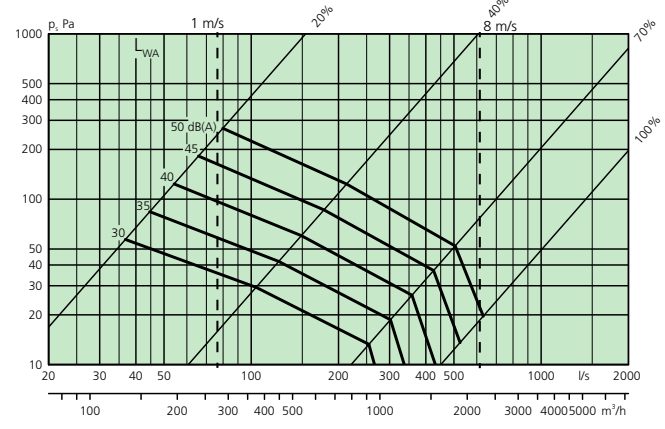
REACT P GMB 250



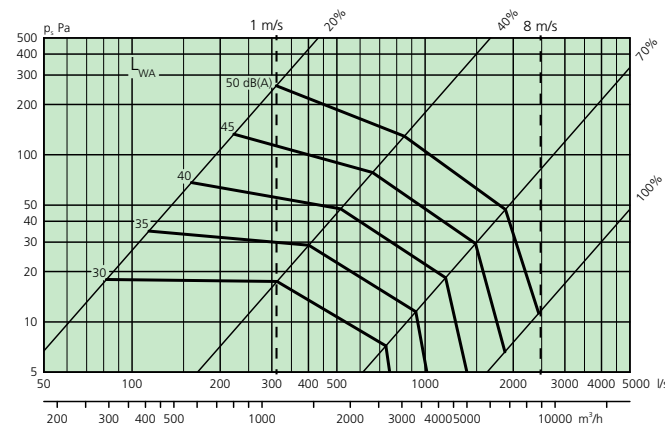
REACT P GMB 500



REACT P GMB 315



REACT P GMB 630



Rectangular design

- Note: Increased air flow gives increased duct velocity and increased sound level.

Sound data

Sound power level

- The diagram shows the a-weighted sound power (L_{WA} -dB), as a function of the air flow and pressure drop across the damper.
- Correct L_{WA} with correction factor K_{ok} from the tables below to obtain the sound power levels for each octave band ($L_W = L_{WA} + K_k + K_{ok}$).

Sound power in octave bands

$$L_W = L_{WA} + K_k + K_{ok}$$

Correction factor, K_{ok}

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
All	7	3	1	0	-5	-14	-23	-22
Tol. $\pm$	4	4	3	2	2	2	2	2

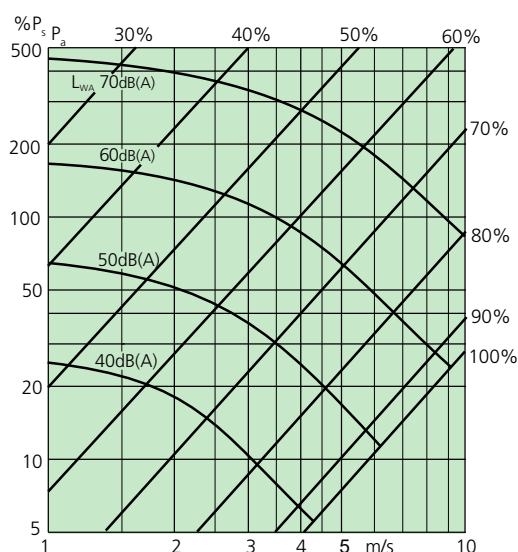
Correction factor, K_k for the front surface of the damper

Correction factor – front surface								
Area m ²	0.1	0.15	0.25	0.4	0.6	1.0	1.6	2.5
K_k	-3	-2	0	2	4	6	8	10

Sizing diagram

Velocity - Pressure drop - Sound level

- Data is for the sound created in the duct.
- Specified sound levels, L_{WA} : 40, 50, 60 and 70 dB.
- Calculate the face velocity across the damper and read the sound data and pressure drop at an appropriate damper position.
- 100% corresponds to the damper being fully open.



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

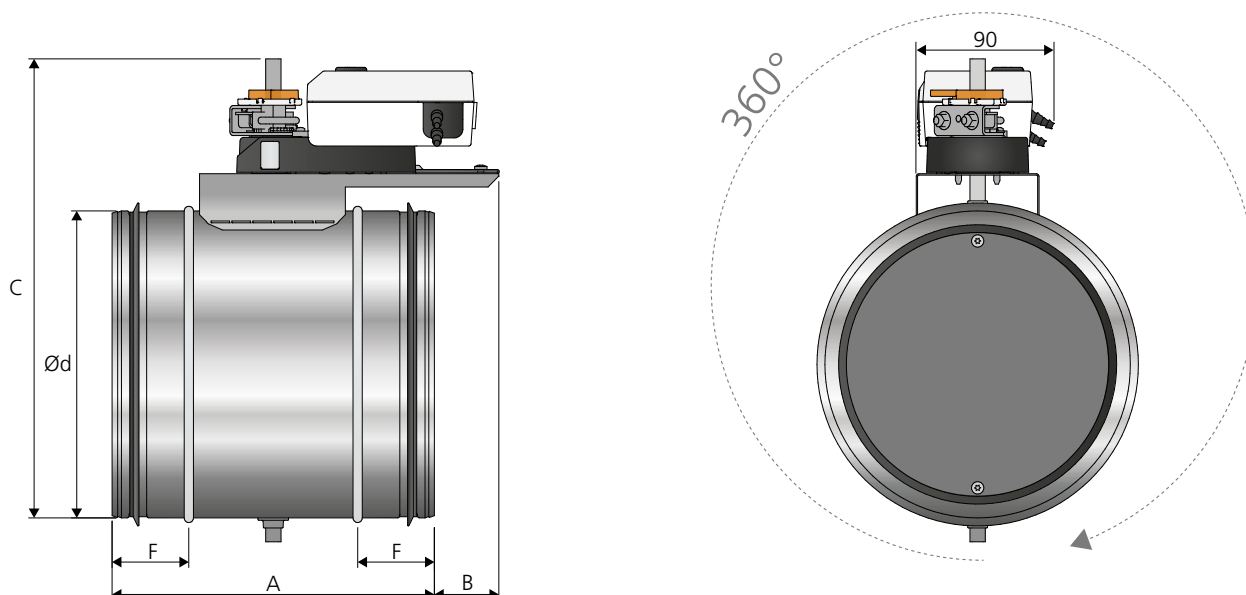


Figure 4. Dimensions (mm), REACT P GMB circular. The damper can be installed at an optional angle.

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

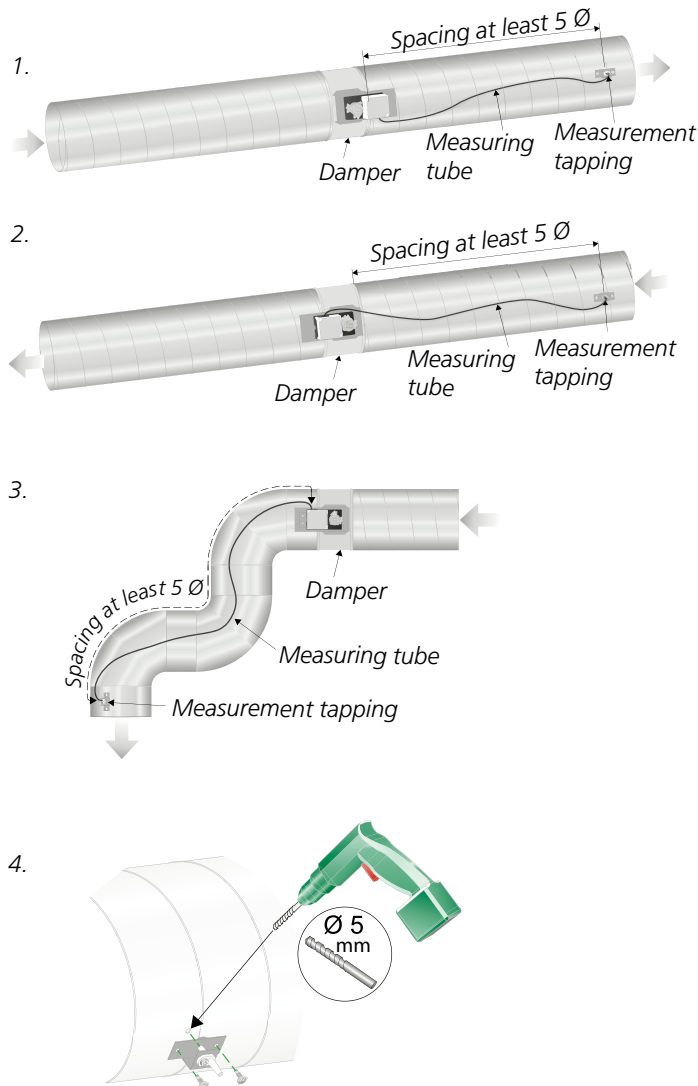


Figure 5. Distance requirements in circular ducts, number of Ø before and after product:

1. At least $5 \times \text{Ø}$ after the damper (supply air).
2. At least $5 \times \text{Ø}$ before the damper (extract air).
3. Examples of how spacing can be measured.
4. Installation of measurement tapping.

Installation in the duct system

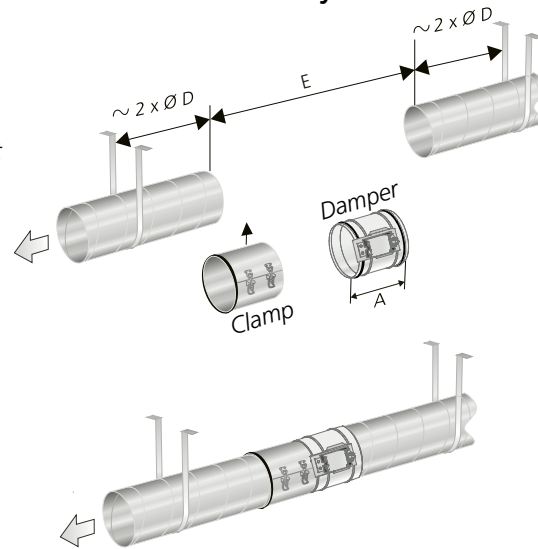


Figure 6. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of the product.

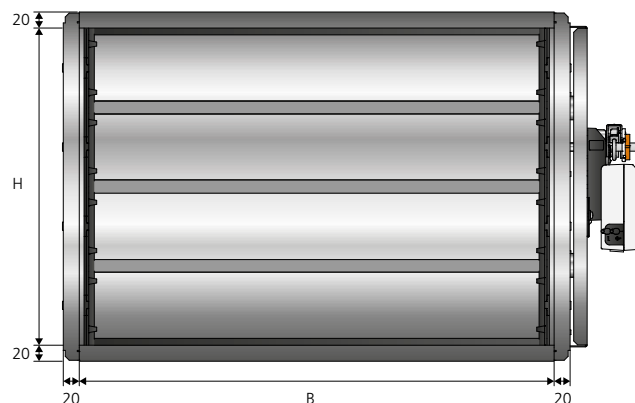
Rectangular design

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 7. 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.

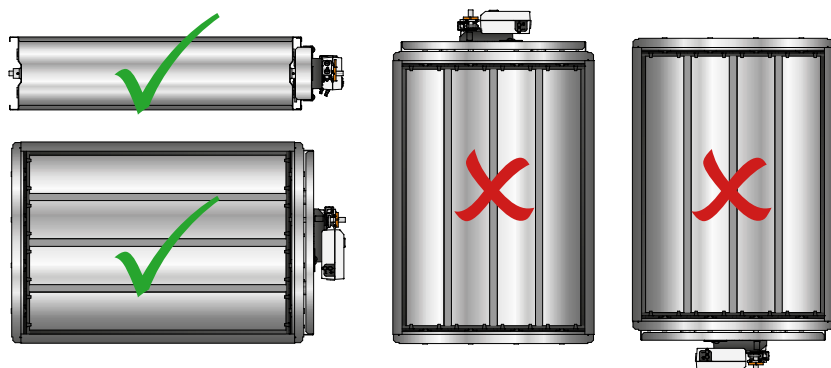


Figure 8. Installation - For rectangular ducts, always install the damper so that the controller/actuator is placed along the side of the duct.

Requirements for straight duct section and distance

Type of obstruction	E
One 90° bend	$E = 2 \times B$
T piece	$E = 2 \times B$

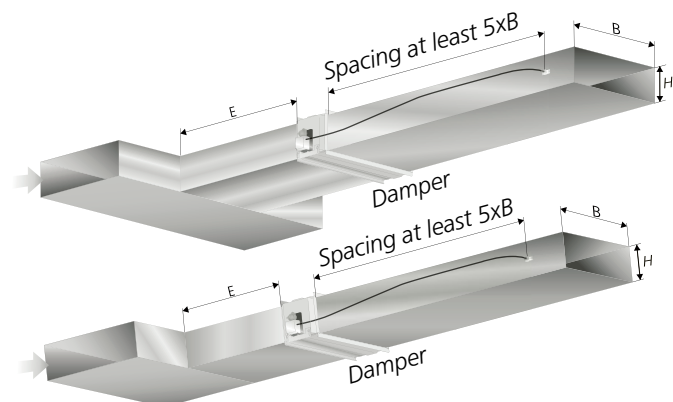


Figure 9. Requirements for straight duct section and distance in rectangular ducts.
 E = Straight section
 B = Width of duct
 H = Height of duct

Specification

Product

Circular design

Circular pressure regulation damper	REACT P GMB	a	bbb
Version:			
Size: 100, 125, 160, 200, 250, 315, 400, 500, 630			

Rectangular design

Rectangular pressure regulation damper	REACT P GMB	a	bbb-ccc
Version:			
Size: Dimension: B x H (See table page 10)			

Accessories

FSR

Clamp for circular ventilation ducts	FSR	c	aaa
Version:			
Dimension: 100, 125, 160, 200, 250, 315, 400, 500, 630			

Gruner GUIV3-M

Hand-held terminal for actuator	Gruner GUIV3-M
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Specification text

Example of a specification text according to VVS AMA.

QJB.11 Circular rotary damper with single blade

Make: Swegon

Type: REACT P GMB

Pressure regulating damper with the following functions:

- Integrated pressure measurement, max. 300 Pa.
- Integrated controller, pressure regulating.
- The damper can be ordered with factory fitted external insulation.

Must be installed with a minimum spacing as per the product sheet.

Size: Ø 100 to Ø 630

Specification

Standard SS-EN 1751: 2014, Annex C
 Power supply: 24 V AC ±15% 50 - 60 Hz
 Air tightness class, casing: C
 Air tightness class closed damper: 4
 Corrosivity class: C3
 Pressure class: A
 Tolerance pressure measurement: Recommended min. 20 Pa

Type: REACT P GMBa bbb-cc xx pcs

Accessories

Clamp for ventilation ducts FSRc xx pcs
 Hand-held terminal for actuator Gruner GUIV3-M

QJB.41 Louvre damper with counter-rotating blade

Make: Swegon

Type: REACT P GMB

Pressure regulating damper with the following functions:

- Integrated pressure measurement, max. 300 Pa.
- Integrated controller, pressure regulating.

Must be installed with a minimum straight duct section as per the product sheet.

Size: 200 x 200 to 1400 x 700

Specification

Standard SS-EN 1751: 2014, Annex C
 Power supply: 24 V AC ±15% 50 - 60 Hz
 Air tightness class, casing: C
 Air tightness class closed damper: 3
 Corrosivity class: C3
 Pressure class: A
 Tolerance pressure measurement: Recommended min. 20 Pa

Type: REACT P GMBa bbb-ccc-dd xx pcs

Accessories

Hand-held terminal for actuator Gruner GUIV3-M