

REACT PX-SR GMB

Pressure regulation damper with spring return – 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 display
- Analogue control and Modbus control
- Can be easily insulated against condensation in the duct system
- Variants:
 - Circular connections: Ø100-630 mm
 - Rectangular connections: Available on request

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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

- External controller with integrated pressure sensor.
- Signal cable (4 conductor) connects between the components, not included.
- Analogue control and Modbus control.
- Alternative options (Order item):
 - De-energised closed (NC), standard.
 - De-energised open (NO), ordered as Special.

Circular design

- Connection: Ø100-630 mm.
- Always supplied with dust protection.
- Raised motor shelf to facilitate condensation insulation of the duct system.

Rectangular design

- Rectangular design available on request.

Functions

- Pressure regulation.
- Display for direct reading.
- Settings can be made directly on the controller with the help of a screwdriver.

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.

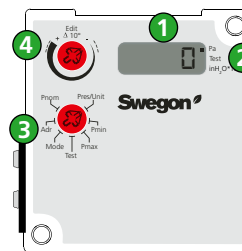


Figure 1. REACT PX-SR GMB controller.
1. Display
2. Unit matrix
3. Function wheel
4. Edit wheel

Accessories

FSR

Clamp for easy dismantling of a circular design for cleaning and inspection

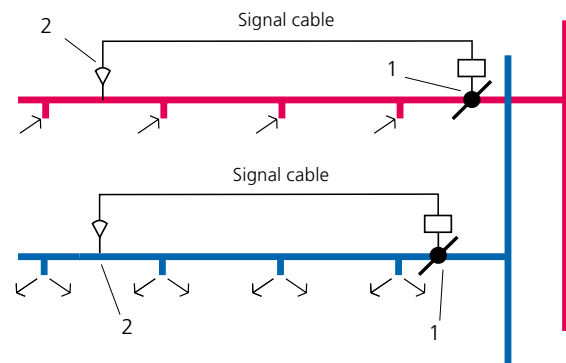


Figure 2. Pressure regulation.

1. REACT actuator connected with a signal cable to controller (2).
2. REACT PX-SR GMB controller with integrated pressure sensor.

Technical data

IP class:	IP42
Corrosivity class:	C3
Pressure class:	A
Leakage classes according to SS-EN 1751	
- Leakage class, casing:	C
- Leakage class damper, closed:	4
Running time, electric (90°):	
5 Nm:	100 s
10 / 20 Nm:	150 s
Return time spring:	max. 20 s (90°)
Ambient temperature	
Operation:	0 – +50 °C
Storage:	-20 – +50°C
RH:	10 - 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
Connection to screw terminals, cable size	6 x 0.5-2.5 mm ² <i>See Figure 3.</i>
Power consumption, for transformer rating:	
REACT PX-SR GMB 5 Nm	5.0 W 6.5 VA
REACT PX-SR GMB 10 Nm	5.0 W 8.0 VA
REACT PX-SR GMB 20 Nm	8.0 W 11.5 VA
<i>See torque in table on page 7.</i>	

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)	

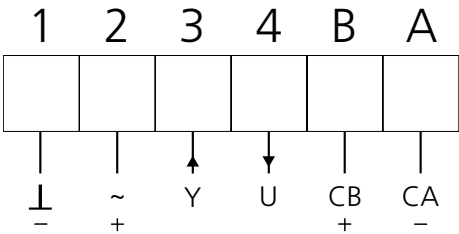


Figure 3. Connection.

Electrical connection actuator

A signal cable is connected between the actuator and controller's connection cables as per the numbers/colour coding. For example, 1 to 1, or black to black. See figure 4.

Connection points and signal cable not included.

Controller

Fixed connection cable, 1000 mm with cable size	4 x 0.75 mm ²
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Actuator

Fixed connection cable, 1000 mm with cable size	4 x 0.75 mm ²
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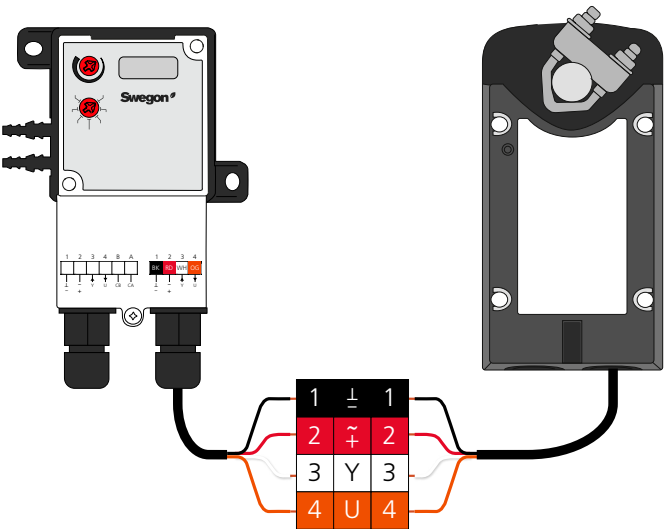


Figure 4. Connection between actuator and controller.

Length of signal cable

Max cable length between controller and actuator.

Cable area	Max. cable length
0.75 mm ²	20 m
1.0 mm ²	30 m
1.5 mm ²	45 m
2.5 mm ²	75 m

Sizing

- 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 products.

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}

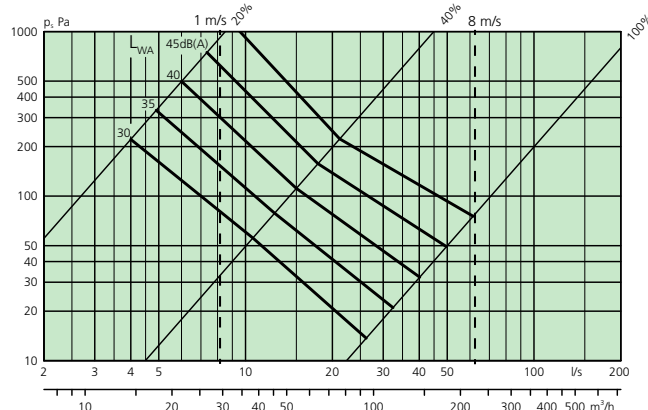
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	-2	-9	-7	-10	-9	-10	-15	-22
125	-4	-9	-8	-13	-9	-12	-19	-27
160	-7	-9	-10	-15	-12	-15	-20	-28
200	-9	-11	-13	-16	-14	-16	-23	-32
250	-8	-18	-17	-19	-17	-17	-23	-31
315	-14	-19	-18	-21	-18	-19	-25	-34
400	-13	-23	-22	-22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

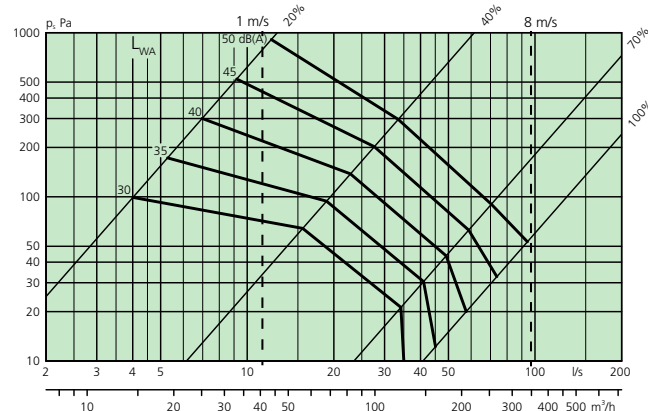
Air flow – Pressure drop – Sound level

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

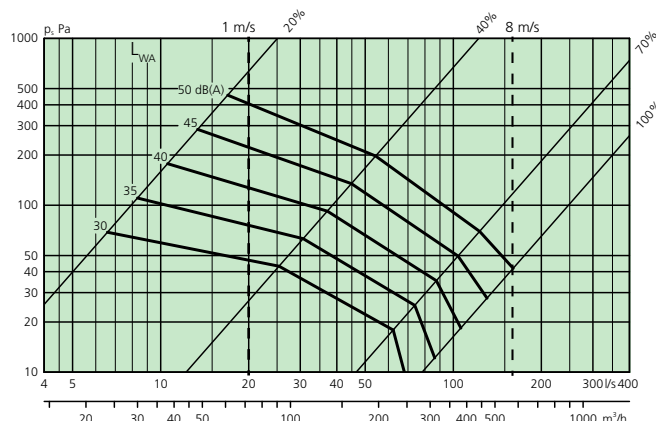
REACT PX-SR GMB 100



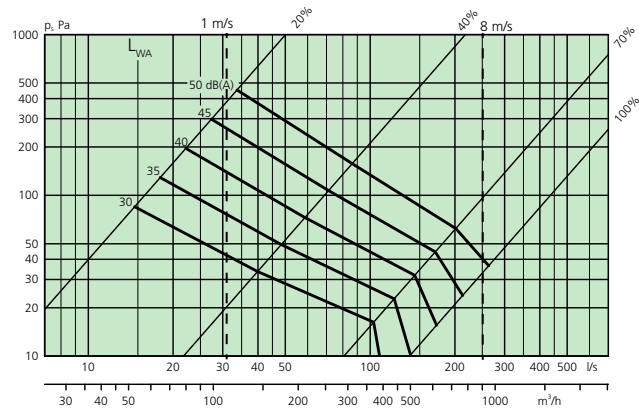
REACT PX-SR GMB 125



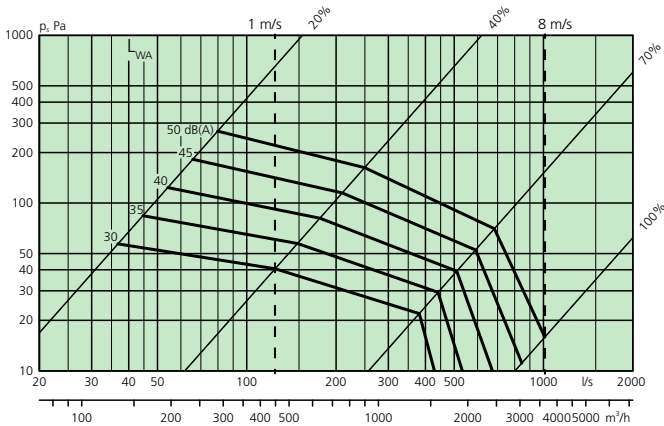
REACT PX-SR GMB 160



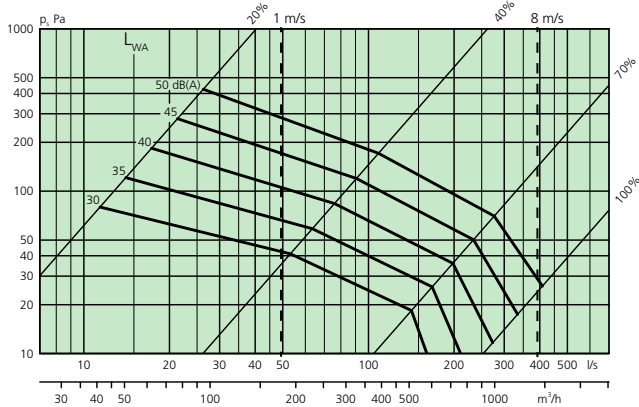
REACT PX-SR GMB 200



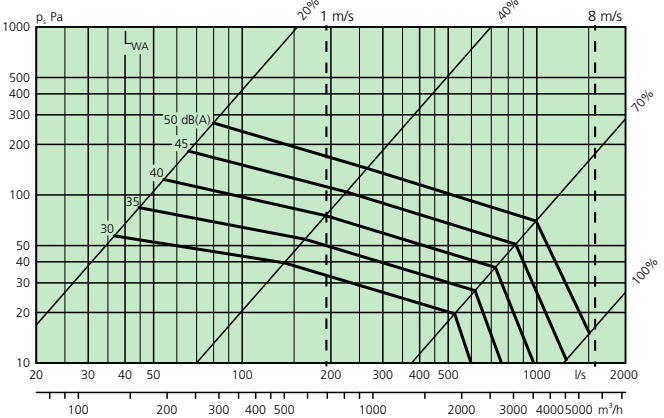
REACT PX-SR GMB 400



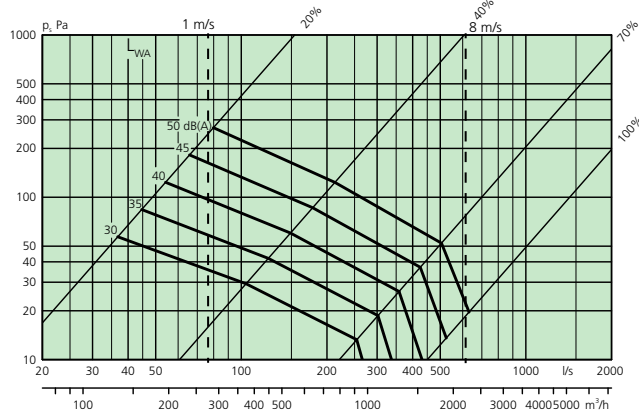
REACT PX-SR GMB 250



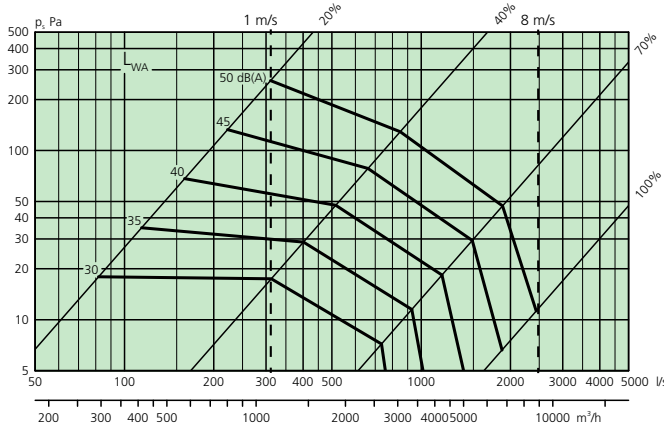
REACT PX-SR GMB 500



REACT PX-SR GMB 315



REACT PX-SR GMB 630



Installation, torque, dimensions and weights

Dimensions

Size Ød (mm)	A (mm)	B (mm)	C (mm)	E (mm)	F (mm)	G (mm)	Torque (Nm)	Weight (kg)
100	210	45	190	220	50	80	5	1.9
125	210	45	220	220	50	80	5	2.0
160	210	45	260	220	50	80	5	2.1
200	210	45	300	220	50	80	5	2.4
250	210	45	355	220	50	80	5	2.6
315	210	70	415	220	50	100	10	3.1
400	255	70	505	265	50	100	10	4.1
500	255	70	605	275	50	100	10	5.6
630	255	70	735	275	50	100	20	7.2

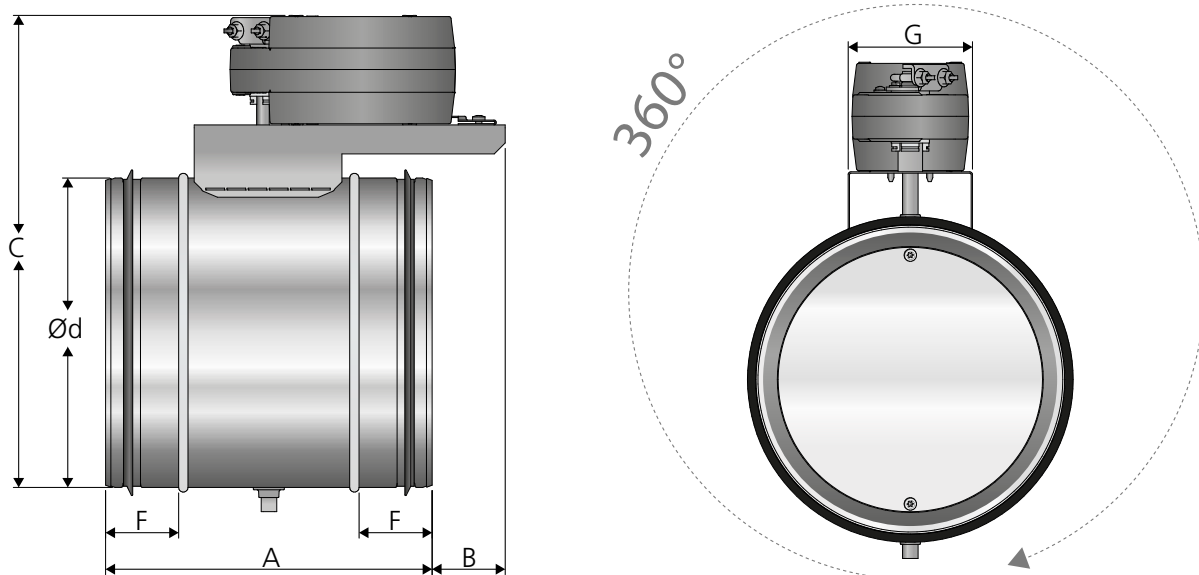


Figure 5. Dimensions (mm), REACT PX-SR GMB. The damper can be installed at an optional angle.

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 dependent.
- The product can be installed horizontally or vertically.
- The user manual is supplied on delivery, but can also be downloaded from www.swegon.com.

Distance requirements

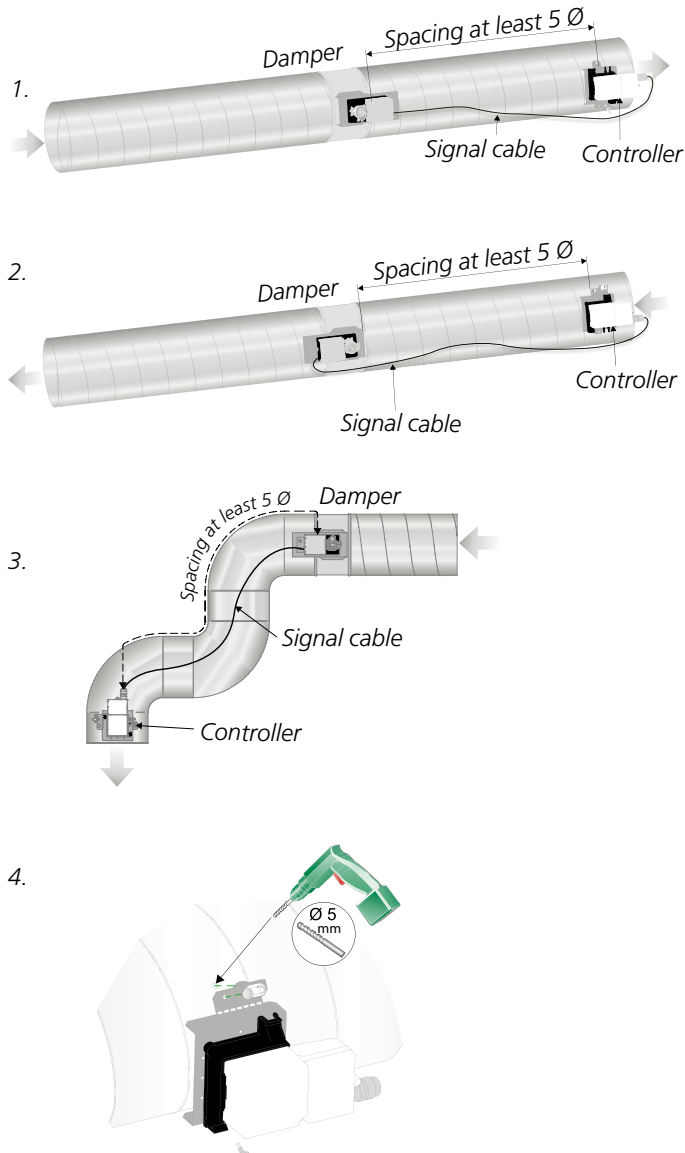


Figure 6. Distance requirements, number of Ø before and after product:

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. Controller installation.

Installation in the duct system

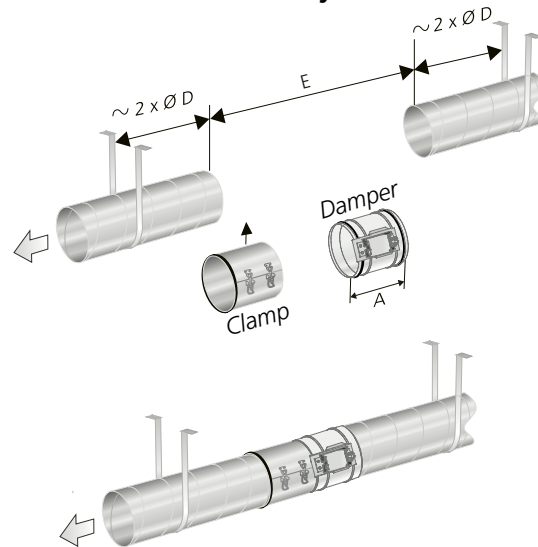


Figure 7. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of the product.

Specification

Product

Circular pressure regulation damper	REACT PX-SR GMB	a	bbb
Version:			
Size: 100, 125, 160, 200, 250, 315, 400, 500, 630			
NC = De-energised closed, standard NO = De-energised open, ordered as special			

Accessories

FSR

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

Specification text

Example of a specification text according to VVS AMA.

QJB.11	Circular rotary damper with single blade		
Make:	Swegon		
Type:	REACT PX-SR GMB		
Pressure regulating damper and external pressure controller with the following functions:			
• Integrated pressure measurement, max. 300 Pa. • Integrated controller, pressure regulating.			
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		
Leakage class damper, closed:	4		
Corrosivity class:	C3		
Pressure class:	A		
Tolerance pressure measurement:	Recommended min. 20 Pa		
Type:	REACT PX-SR GMBa	bbb	xx pcs
Accessories			
Clamp for ventilation ducts	FSRc		xx pcs