

# REACT P

Pressure regulation damper



## QUICK FACTS

- Pressure measurement up to 300 Pa, recommended regulation area 20-290 Pa
- Rapid access to readings via the controller display
- Quick setting of parameters
- Analogue controls or Modbus control
- Can be easily anti-condensation insulated in the duct system
- Variants:
  - Circular connections: Ø100-630 mm
  - Rectangular connections: 200x200-1400x700 mm

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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

- Analogue controls 0(2)-10 V or Modbus control.
- Motor: Normal.
- Integrated pressure controller.
- Pressure measurement via measuring tube.
- Measuring tube Ø8/5 mm included, length see table on pages 8 and 9.

### Circular variant:

- Connection: Ø100-630 mm.
- Always supplied with dust protection.
- Motor shelf with 30 mm spacer to facilitate condensation insulation of the duct system.
- A factory-insulated model available on request.

### Rectangular variant:

- Connection 200x200-1400x700 mm.
- Other sizes are also 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 Description of functions & Wiring diagram", available for download via [www.swegon.com](http://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](http://www.swegon.com).

## Environment

The Building Materials Declaration is available from [www.swegon.com](http://www.swegon.com).

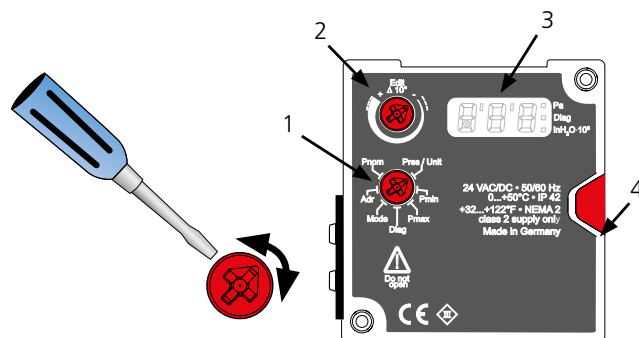
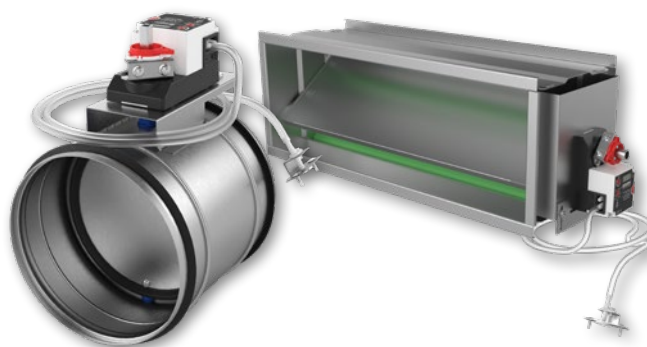


Figure 1. REACT P-controller.

1. Function wheel
2. Edit wheel
3. Display
4. Release button

## Accessories

- REACT P COVER – Cover panel for visible installation, circular design with 2 sizes for Ø100-125 and Ø160-630.
- FSR – Clamp/quick coupling for easy dismantling in a circular design for cleaning and inspection.
- Extra measuring tube available on request.

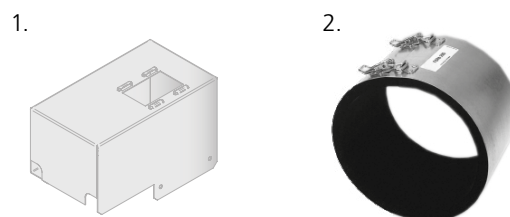


Figure 2. Accessories:

1. REACT P COVER
2. FSR

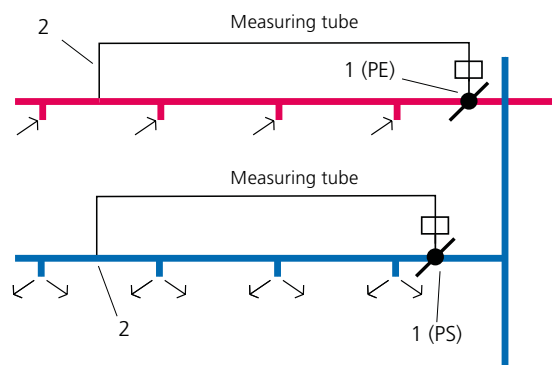


Figure 3. Constant pressure regulation.

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

## Technical data

IP class:	IP42
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 – +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 ±20% 50 - 60 Hz	
Fixed connection cable,	4 x 0.75 mm <sup>2</sup>	
1000 mm with cable size.	2 x 0.38 mm <sup>2</sup>	
	<i>See figure 4 below.</i>	
Power consumption, for transformer rating:		
REACT P 10 Nm	2.5 W	5.0 VA
REACT P 15 Nm	3.0 W	4.5 VA
	<i>See torque in table pages 8-9.</i>	

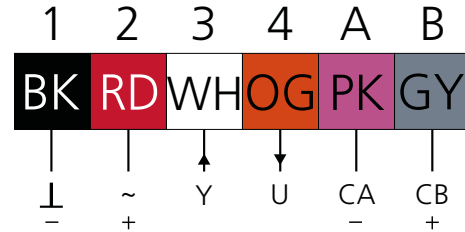


Figure 4. Electrical connections.

## Connections

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

# Sizing

## Air flows – all designs

- Important! Increased air flow gives increased duct velocity and increased sound level.

## Acoustic data – circular design

### 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

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

### 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

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

### Correction factor $K_{trans}$

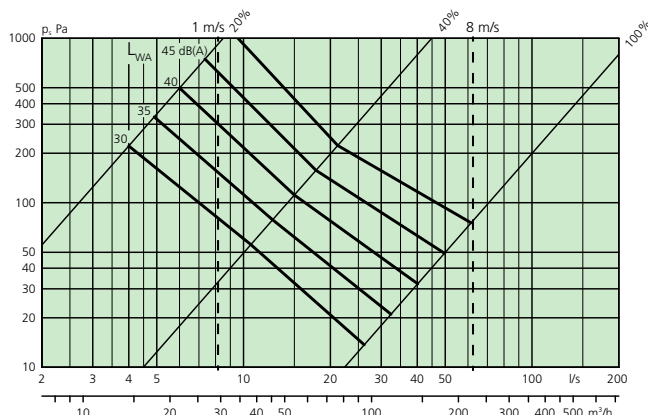
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	-2	-9	-7	-10	-9	-10	-15	-22
125	-4	-9	-8	-13	-9	-12	-19	-27
160	-7	-9	-10	-15	-12	-15	-20	-28
200	-9	-11	-13	-16	-14	-16	-23	-32
250	-8	-18	-17	-19	-17	-17	-23	-31
315	-14	-19	-18	-21	-18	-19	-25	-34
400	-13	-23	-22	-22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

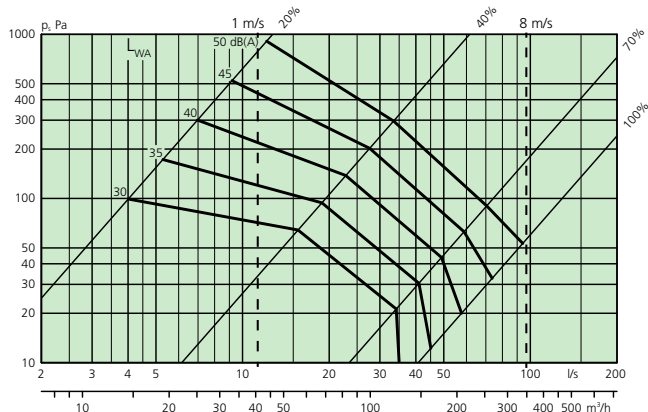
### Air flow – Pressure drop – Sound level

- 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.

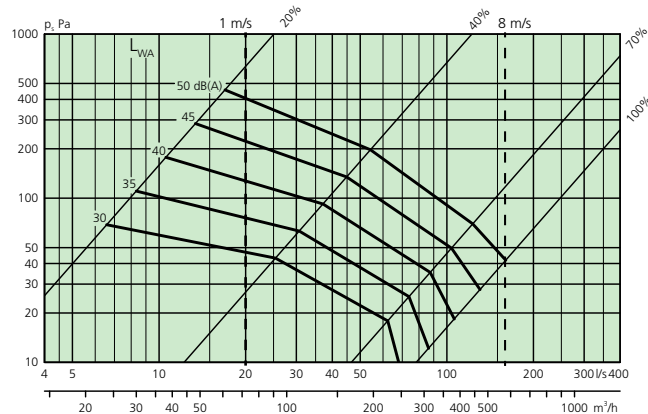
### REACT P 100



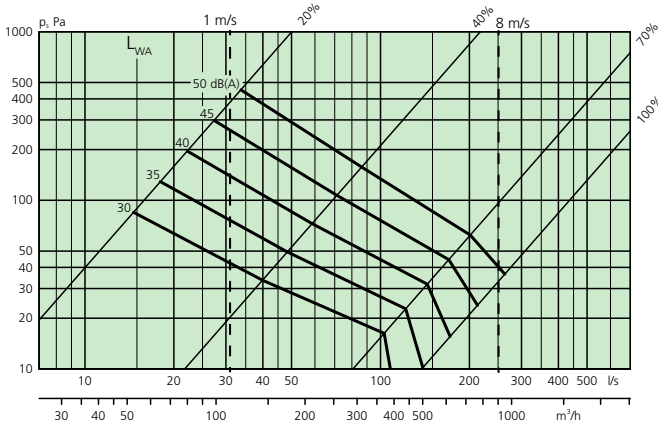
### REACT P 125



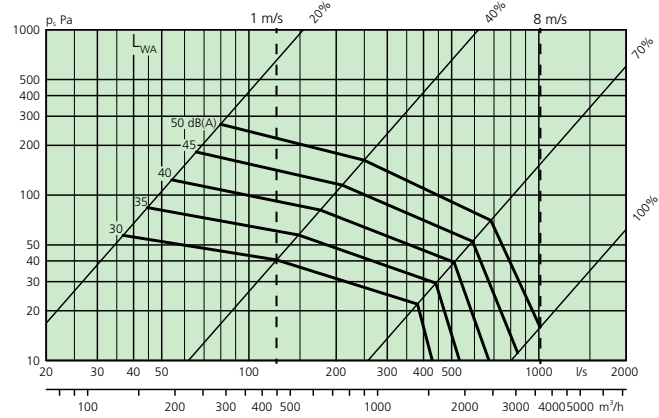
### REACT P 160



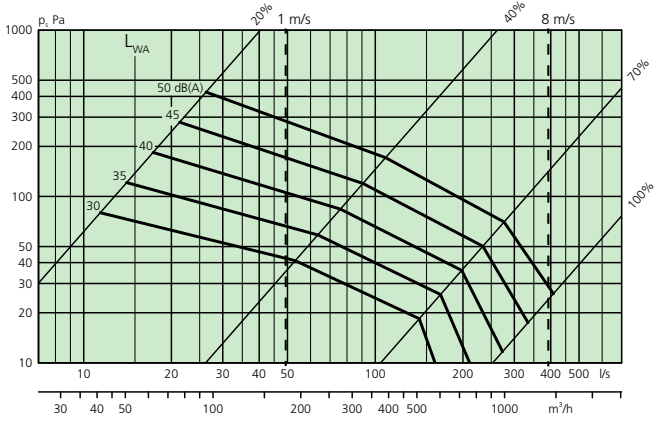
## REACT P 200



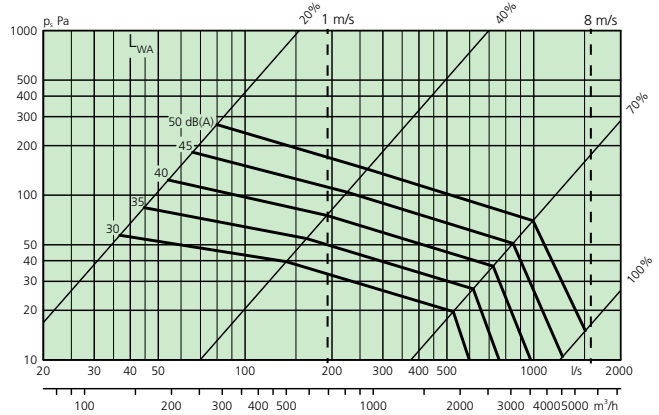
## REACT P 400



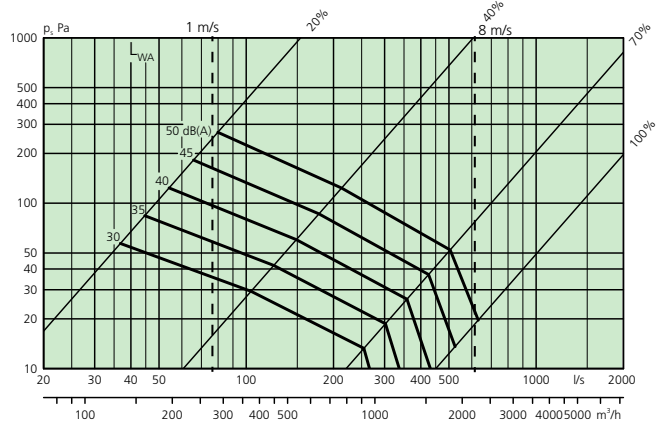
## REACT P 250



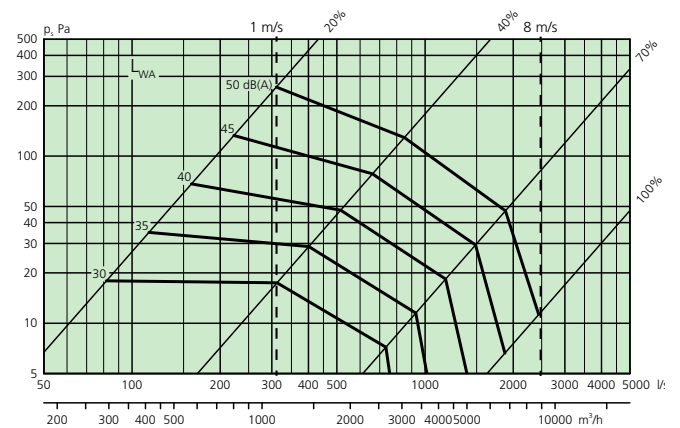
## REACT P 500



## REACT P 315



## REACT P 630



## Acoustic data – rectangular design

### 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. ±	4	4	3	2	2	2	2	2

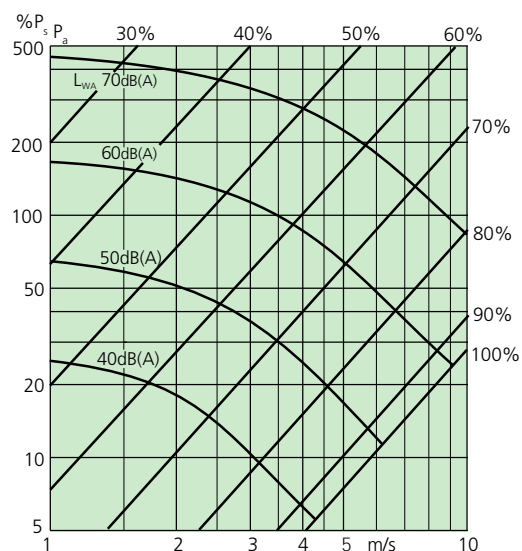
#### Correction factor $K_k$ for the damper's face area

Correction factor – face area								
Area m <sup>2</sup>	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 – rectangular design

### Velocity - Pressure drop - Sound level

- The data is for the sound created in ducts.
- 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

Size ØD (mm)	Tube length (meters)	A (mm)	B (mm)	C (mm)	E (mm)	F (mm)	Weight (kg)	Motor
								Torque (Nm)
100	2	210	27	190	220	50	1.3	10
125	2	210	27	220	220	50	1.4	10
160	2	210	27	260	220	50	1.5	10
200	2	210	27	300	220	50	1.7	10
250	2	210	27	355	220	50	1.9	10
315	4	210	27	415	220	50	2.4	10
400	4	255	5	505	265	50	3.4	10
500	6	255	5	605	275	50	4.9	10
630	6	255	5	735	275	50	6.5	15

### Installation – all designs

- 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.
- Instructions for Use are supplied with the product on delivery, but can also be downloaded from [www.swegon.com](http://www.swegon.com).

### Installation – circular version

- Installation is position dependent.
- Can be installed horizontally or vertically.

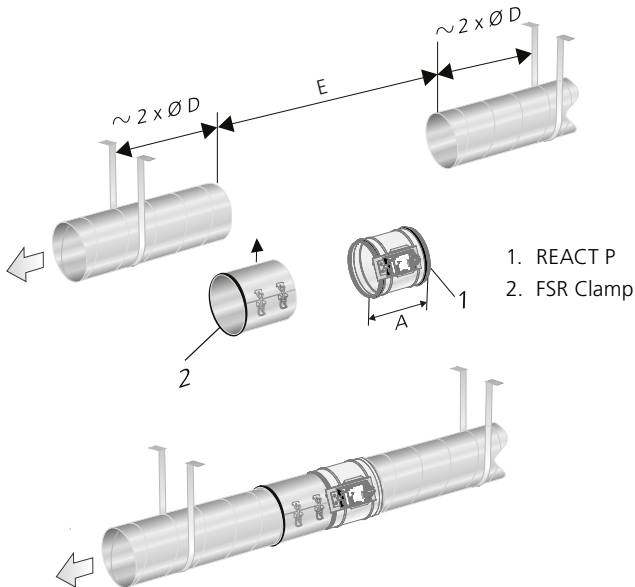


Figure 5. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of REACT P.

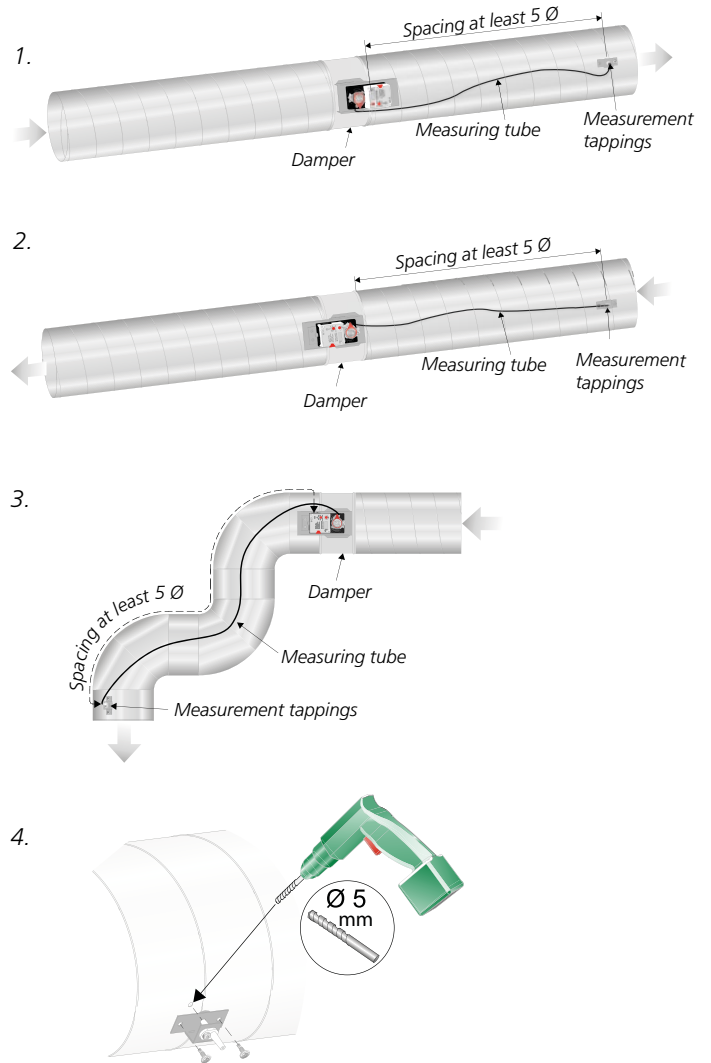


Figure 6. Spacing requirements, circular ducts, quantity Ø before and after the product:

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 toppings.

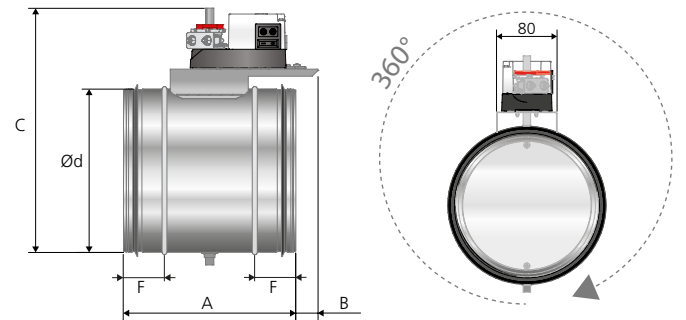


Figure 7. Dimensions (mm), REACT P circular. The damper can be installed at an optional angle.



### Rectangular design

Size WxH (mm)	Tube length (meters)	Weight (kg)	Motor
			Torque (Nm)
200 x 200	2	7.2	10
300 x 200	4	8.4	10
400 x 200	4	9.9	10
500 x 200	6	11.4	10
600 x 200	6	12.9	10
700 x 200	8	14.4	10
800 x 200	8	15.4	10
1000 x 200	12	18.4	10
300 x 300	4	10.9	10
400 x 300	4	12.4	10
500 x 300	6	13.9	10
600 x 300	6	15.4	10
700 x 300	8	16.8	10
800 x 300	8	18.4	10
1000 x 300	12	21.4	10
400 x 400	4	14.0	10
500 x 400	6	16.0	10
600 x 400	6	17.4	10
700 x 400	8	19.6	10
800 x 400	8	21.1	10
1000 x 400	12	24.2	10
1200 x 400	12	27.2	15
1400 x 400	16	30.3	15
1600 x 400	16	33.3	15
500 x 500	6	18.5	10
600 x 500	6	20.5	10
700 x 500	8	22.6	10
800 x 500	8	24.6	10
1000 x 500	12	28.6	15
1200 x 500	12	32.7	15
1400 x 500	16	36.8	15
1600 x 500	16	40.8	15
600 x 600	6	22.7	10
700 x 600	8	24.8	10
800 x 600	8	26.8	15
1000 x 600	12	30.9	15
1200 x 600	12	35.0	15
1400 x 600	16	39.2	15
1600 x 600	16	43.3	15
700 x 700	8	27.6	15
800 x 700	8	30.3	15
1000 x 700	12	34.9	15
1200 x 700	12	40.6	15
1400 x 700	16	45.7	15

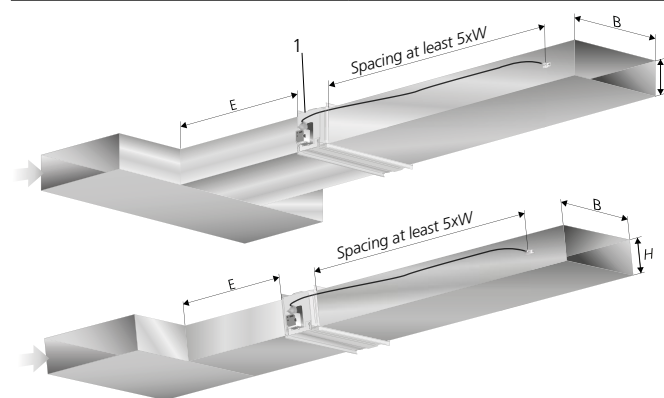
### Installation – rectangular design

Dimension B in the figure and table below is found in the table “Rectangular design” to the left.

NOTE! Damper spindles must be installed horizontally.

#### Straight section before REACT P in rectangular ducts

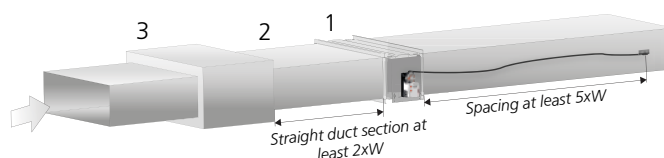
Type of disruption	E
One 90° bend	$E = 2 \times B$
T piece	$E = 2 \times B$



1. Controller/Actuator always on the side of the rectangular damper.  
 E = Straight section.  
 W = Width, duct.  
 H = Height, duct.

Figure 8. Straight section requirements and spacing, rectangular ducts.

#### Straight duct section before/after REACT P – sound attenuator with baffle



1. = Rectangular REACT P.  
 2. = Straight duct  $\geq 2 \times B$ .  
 3. = Sound attenuator with baffle.

Figure 9. Straight duct section and spacing requirements, rectangular REACT P and sound attenuator with baffle. Installation with a straight duct section applies to both the supply air and the extract air.

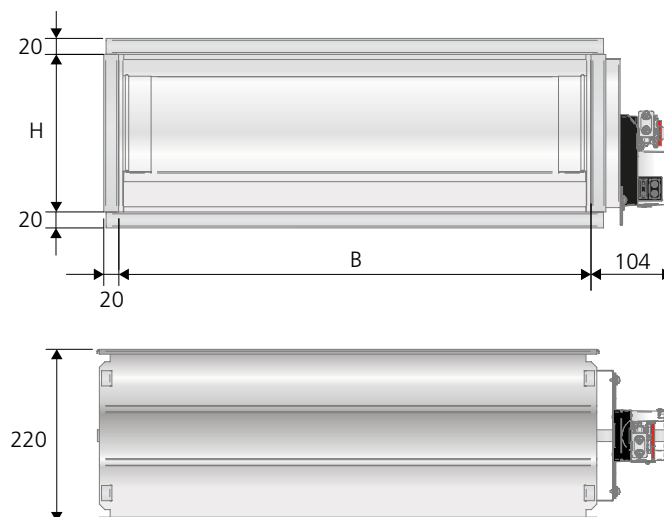


Figure 10. Dimensions (mm), REACT P rectangular.

# Specification

## Product

### Circular design

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

### Rectangular design

Rectangular pressure regulation damper REACT P a bbb-ccc  
 Version:  
 Size:  
 Dimension: W x H (See table on page 9)

## Accessories

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

Cover panel for visible installation REACT P COVER aaa-bbb  
 Version:  
 Ø Dimension: 100-125, 160-630  
 For normally circular design, two sizes

# Specification text

Example of a specification text according to VVS AMA.

**QJB.11** Circular rotary damper with single blade

Make: Swegon  
Type: REACT P

Pressure regulating damper 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  
Air tightness class closed damper: 4  
Corrosivity class: C3  
Pressure class: A  
Tolerance pressure measurement: Recommended min. 20 Pa

Type: REACT Pa                      bbb-cc, xx pcs

Accessories

Clamp for ventilation ducts      FSR                                      xx items  
Cover panel for visible installation      REACT P COVER

**QJB.41** Louvre damper with counter-rotating blade

Make: Swegon  
Type: REACT P

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 Pa                      bbb-ccc-dd xx pcs