

REACT P-X

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
 - Available with spring return actuator

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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 or spring return.
- Options for selection of spring return (Order item):
 - Normally closed (NC).
 - Normally open (NO).
- External controller with integrated pressure sensor.
- Signal cable (4 conductor) connects between the components, not included.

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.

Maintenance

The product does not require any maintenance/service, except for 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.

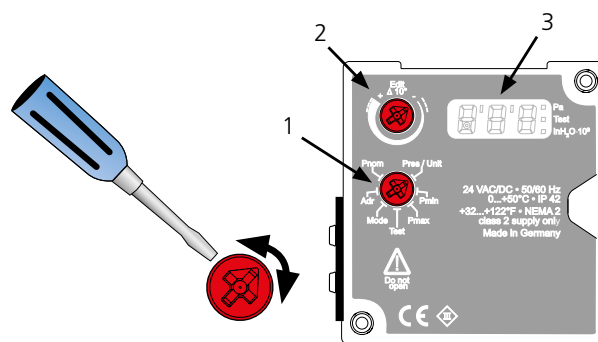
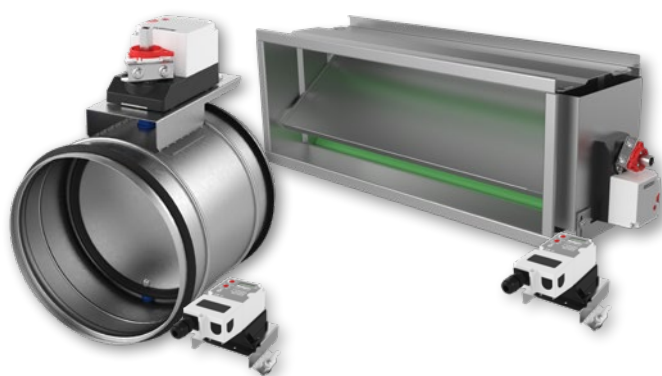


Figure 1. REACT P-X controller.

1. Function wheel
2. Edit wheel
3. Display

Accessories

- REACT P COVER – Cover panel for visible installation, circular design damper (normal motor).
- REACT GUAC COVER – Cover panel for the external controller, for visible installation.
- FSR – Clamp/quick coupling for easy dismantling in a circular design for cleaning and inspection.

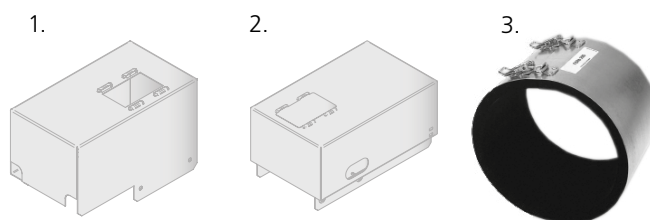


Figure 2. Accessories:

1. REACT P COVER
2. REACT GUAC COVER
3. FSR

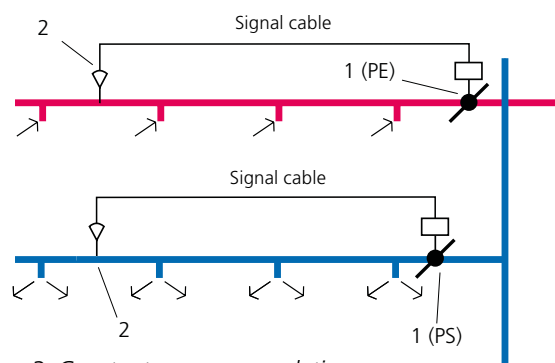


Figure 3. Constant pressure regulation.

1. REACT actuator connected with a signal cable to controller (2).
2. 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 circular damper, closed:	4
- Leakage class rectangular damper, closed:	3
Running times open/close (90°):	
10 / 15 Nm:	150 s
Spring return actuator, running time electricity (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

Normal

Power supply:	24 V AC/DC ±20% 50 - 60 Hz
Connection to screw terminals:	6 x 0.5-2.5 mm ²

See figure 4

Power consumption, for transformer rating:		
REACT P-X 10 Nm	2.6 W	4.8 VA
REACT P-X 15 Nm	2.6 W	4.8 VA

See torque in table pages 8-9.

Spring return

Power supply:	24 V AC/DC ±20% 50 - 60 Hz
Connection to screw terminals:	6 x 0.5-2.5 mm ²

See figure 4

Power consumption, for transformer rating:		
REACT P-X-SR 5 Nm	7.1 W	8.8 VA
REACT P-X-SR 10 Nm	5.6 W	9.3 VA
REACT P-X-SR 20 Nm	8.6 W	9.3 VA

See torque in table pages 8-9.

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	

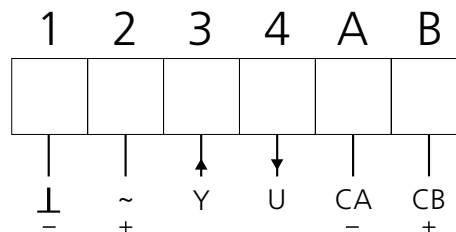


Figure 4. Electrical connections.

Signal cable connection

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.

Connection points and signal cable not included.

Module Controller

Fixed connection cable, 1000 mm with cable size.	4 x 0.75 mm ²
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See figure 5 below

Actuator

Fixed connection cable, 1000 mm with cable size.	4 x 0.75 mm ²
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See figure 5 below



Figure 5. Connection cable controller and actuator.

Length of 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

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

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

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}

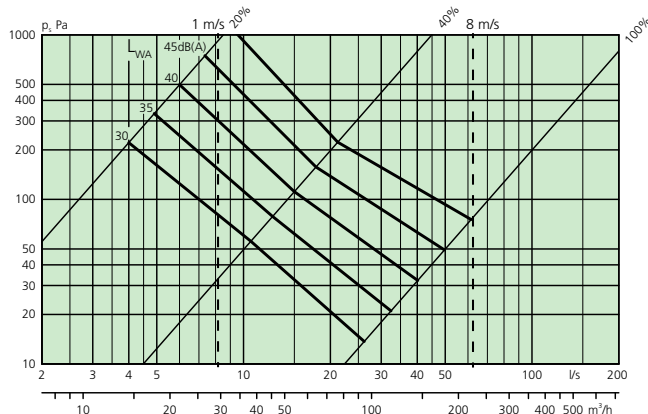
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	-2	-9	-7	-10	-9	-10	-15	-22
125	-4	-9	-8	-13	-9	-12	-19	-27
160	-7	-9	-10	-15	-12	-15	-20	-28
200	-9	-11	-13	-16	-14	-16	-23	-32
250	-8	-18	-17	-19	-17	-17	-23	-31
315	-14	-19	-18	-21	-18	-19	-25	-34
400	-13	-23	-22	-22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

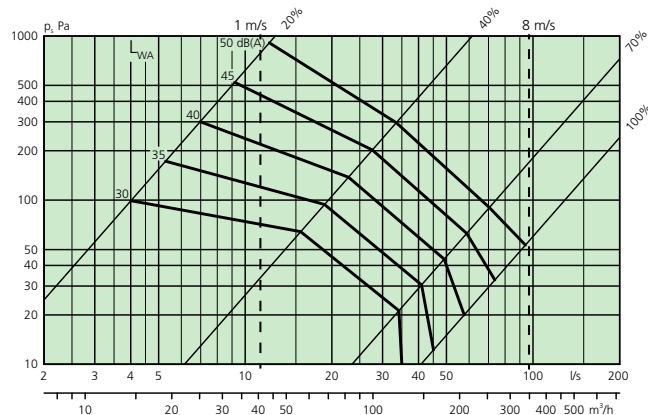
Air flow – Pressure drop – Sound level

- 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.

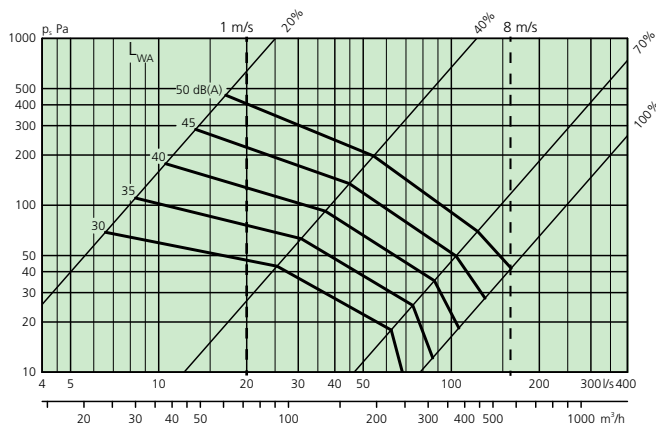
REACT P-X 100



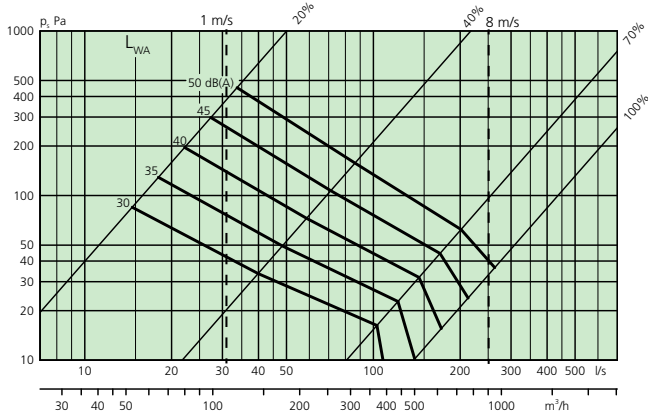
REACT P-X 125



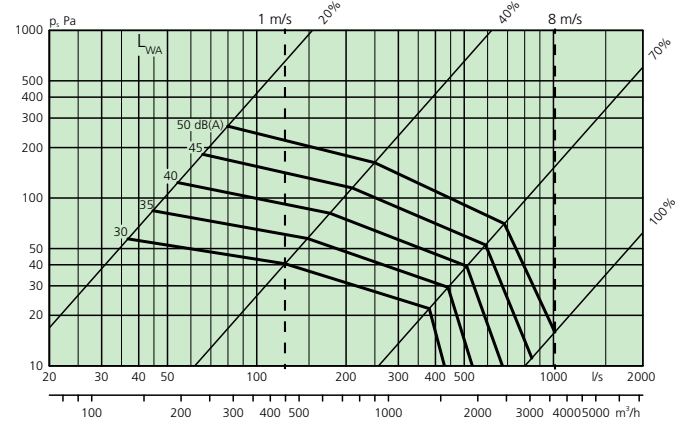
REACT P-X 160



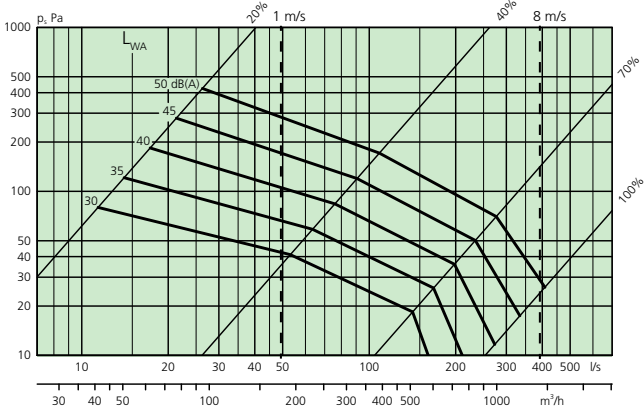
REACT P-X 200



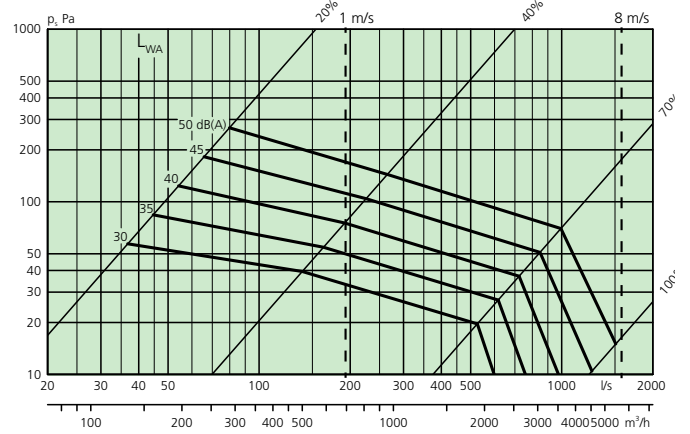
REACT P-X 400



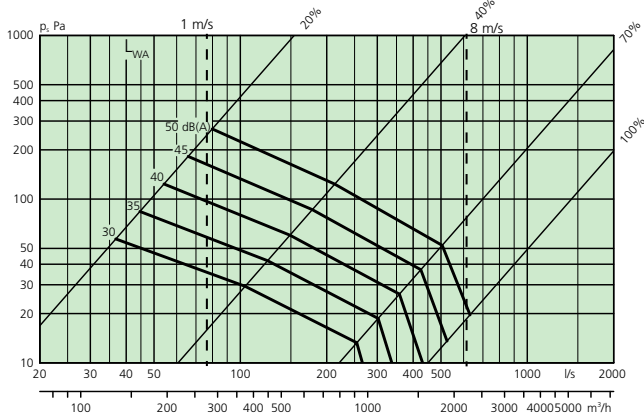
REACT P-X 250



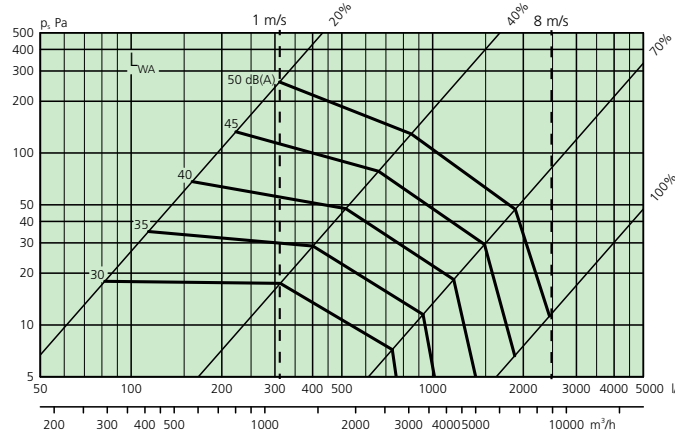
REACT P-X 500



REACT P-X 315



REACT P-X 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

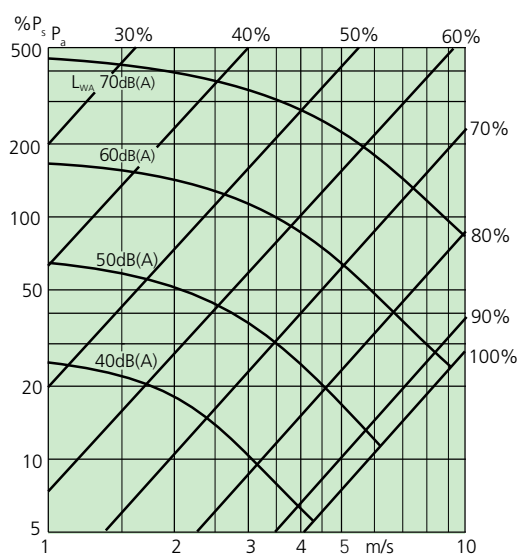
Correction factor K_k for the damper's face area

Correction factor – face area								
Area m 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 – 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

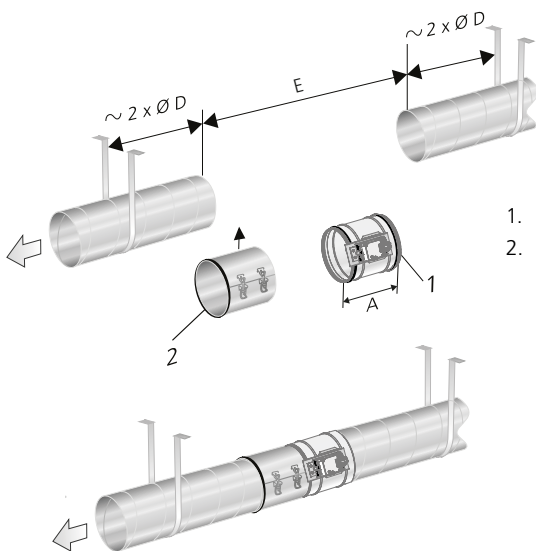
Size ØD (mm)	A (mm)	C (mm)	E (mm)	F (mm)	Normal motor				Spring return			
					B (mm)	G (mm)	Torque (Nm)	Weight (kg)	B (mm)	G (mm)	Torque (Nm)	Weight (kg)
100	210	190	220	50	27	80	10	1.4	45	70	5	1.9
125	210	220	220	50	27	80	10	1.5	45	70	5	2
160	210	260	220	50	27	80	10	1.6	45	70	5	2.1
200	210	300	220	50	27	80	10	1.9	45	70	5	2.4
250	210	355	220	50	27	80	10	2.1	45	70	5	2.6
315	210	415	220	50	27	80	10	2.6	70	95	10	3.1
400	255	505	265	50	5	80	10	3.6	70	95	10	4.1
500	255	605	275	50	5	80	10	5.1	70	95	10	5.6
630	255	735	275	50	5	80	15	6.7	70	95	20	7.2

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.

Installation – circular version

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



1. REACT P-X
2. FSR Clamp

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

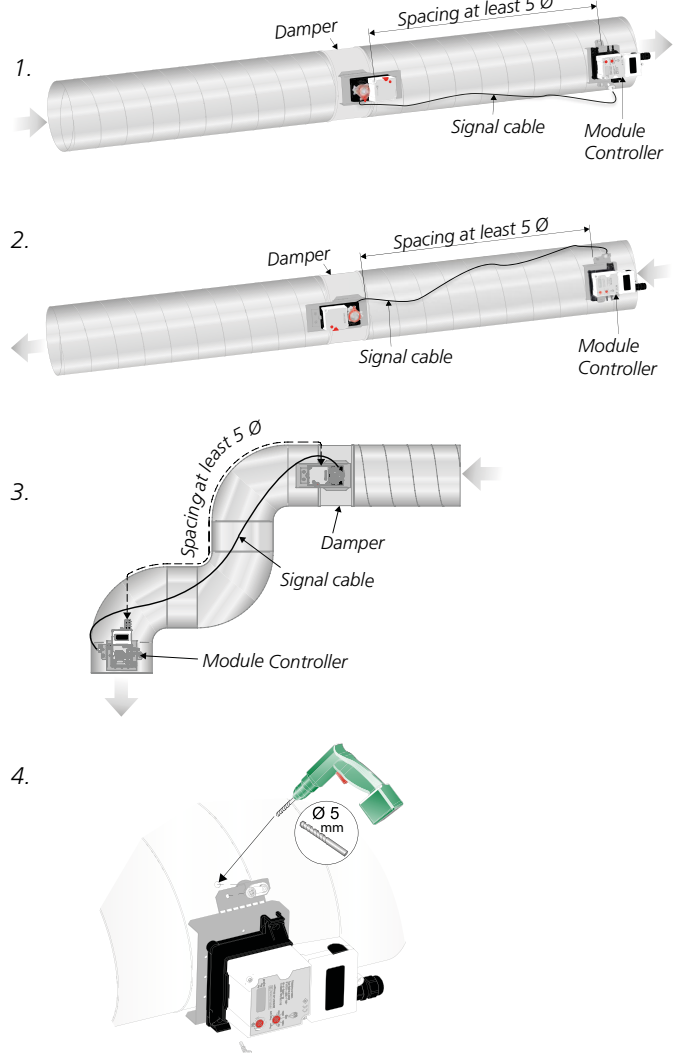


Figure 7. Spacing requirements, circular ducts, quantity Ø before and after the product:

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. Controller installation.

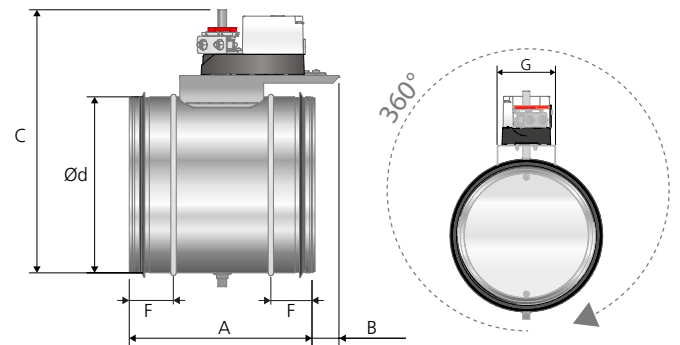


Figure 8. Dimensions (mm), REACT P-X circular and REACT P-X circular with spring return. The damper can be installed at an optional angle.

Rectangular design

Size WxH (mm)	Normal motor		Spring return	
	Torque (Nm)	Weight (kg)	Torque (Nm)	Weight (kg)
200 x 200	10	7.2	5	8.0
300 x 200	10	8.4	5	9.2
400 x 200	10	9.9	5	10.7
500 x 200	10	11.4	5	12.2
600 x 200	10	12.9	5	13.7
700 x 200	10	14.4	5	15.2
800 x 200	10	15.4	5	16.2
1000 x 200	10	18.4	10	19.9
300 x 300	10	10.9	5	11.3
400 x 300	10	12.4	5	12.9
500 x 300	10	13.9	5	14.4
600 x 300	10	15.4	5	15.9
700 x 300	10	16.8	10	17.8
800 x 300	10	18.4	10	19.4
1000 x 300	10	21.4	10	22.4
400 x 400	10	14.0	5	14.5
500 x 400	10	16.0	10	18.0
600 x 400	10	17.4	10	18.5
700 x 400	10	19.6	10	20.6
800 x 400	10	21.1	10	22.2
1000 x 400	10	24.2	10	25.2
1200 x 400	15	27.2	20	29.2
1400 x 400	15	30.3	20	32.2
1600 x 400	15	33.3	20	35.3
500 x 500	10	18.5	10	19.5
600 x 500	10	20.5	10	21.6
700 x 500	10	22.6	10	23.6
800 x 500	10	24.6	10	25.6
1000 x 500	15	28.6	20	30.6
1200 x 500	15	32.7	20	34.6
1400 x 500	15	36.8	20	38.7
1600 x 500	15	40.8	20	42.8
600 x 600	10	22.7	10	23.7
700 x 600	10	24.8	10	25.8
800 x 600	15	26.8	20	27.8
1000 x 600	15	30.9	20	32.9
1200 x 600	15	35.0	20	37.0
1400 x 600	15	39.2	20	41.1
1600 x 600	15	43.3	20	45.2
700 x 700	15	27.6	20	29.5
800 x 700	15	30.3	20	32.2
1000 x 700	15	34.9	20	36.8
1200 x 700	15	40.6	20	42.6
1400 x 700	15	45.7	20	47.7

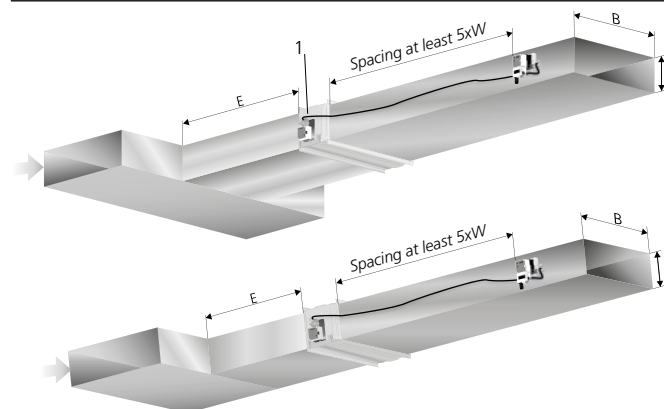
Installation – rectangular design

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 duct section before REACT P-X in rectangular ducts

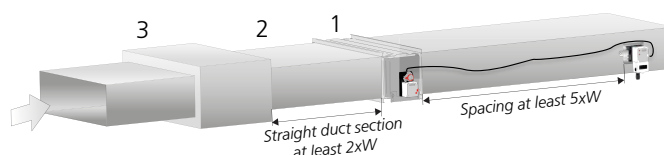
Type of disruption	E
One 90° bend	$E = 2 \times B$
T piece	$E = 2 \times B$



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

Figure 9. Straight section requirements and spacing, rectangular ducts.

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



- 1. = Rectangular REACT P-X.
- 2. = Straight duct $\geq 2xB$.
- 3. = Sound attenuator with baffle.

Figure 10. Straight duct section and spacing requirements, rectangular REACT P-X and sound attenuator with baffle. Installation with a straight duct section applies to both the supply air and the extract air.

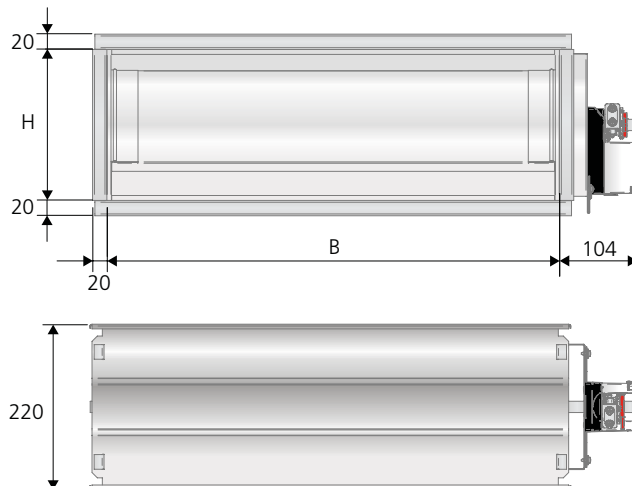


Figure 11. Dimensions (mm), REACT P-X rectangular, REACT P-X rectangular with spring return.

Specification

Product

Circular design

Circular pressure regulation damper REACT P-X a bbb -cc

Version:

Size:
100, 125, 160, 200, 250, 315, 400, 500, 630

No code = Normal design
SR = Spring return actuator, (On request specify NO/NC)

NO = Normally open
NC = Normally closed

Rectangular design

Rectangular pressure regulation damper REACT P-X a bbb-ccc -dd

Version:

Size:
Dimension: W x H (See table on page 9)

No code = Normal design
SR = Spring return actuator, (On request specify NO/NC)

NO = Normally open
NC = Normally closed

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

Cover panel controller section REACT GUAC COVER

Specification text

Example of a specification text according to VVS AMA.

QJB.11 Circular rotary damper with single blade

Make: Swegon

Type: REACT P-X

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

Type: REACT P-Xa bbb-cc, xx pcs

Accessories

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

QJB.41 Louvre damper with counter-rotating blade

Make: Swegon

Type: REACT P-X

Regulating damper and separate pressure controller 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-Xa bbb-ccc-dd xx pcs