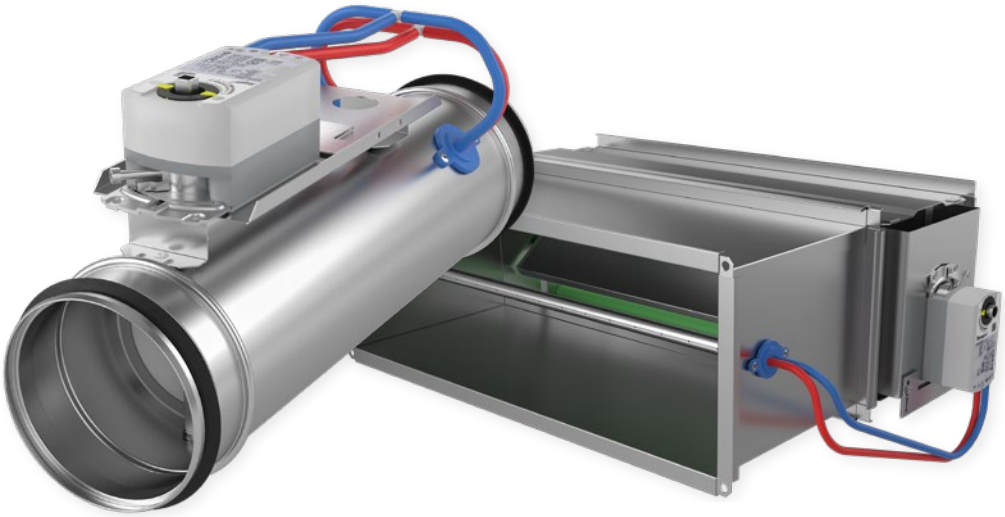
REACT V SKNX

Variable flow damper – Siemens KNX



QUICK FACTS

- Variable or constant flow regulation
- Can be mounted directly at bends and duct transitions/ reductions (circular)
- Setting/reading of parameters via the hand-held terminal AST20 or KNX
- KNX control
- Can be easily anti-condensation insulated in the duct system
- Variants:
  - Circular connections: Ø100-500 mm
  - Rectangular connections: 200x200-700x600 mm

FLOW RANGE						
REACT V SKNX Size	Min.			Max.*		
	l/s	m³/h	cfm	l/s	m³/h	cfm
100	5	18	11	58	209	123
125	9	32	19	95	342	201
160	16	58	34	170	612	360
200	25	90	53	280	1008	593
250	40	144	85	445	1602	943
315	63	227	133	730	2628	1547
400	102	367	216	1190	4284	2521
500	164	590	347	1870	6732	3962

** Nominal flow (Vnom), based on 120 Pa in pressure reading.*

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Swegon reserves the right to alter specifications.

Technical description

General

- Intended for flow regulation of comfort ventilation.
- Moist, cold and aggressive environments must be avoided.
- Can be installed in both supply and extract air systems.
- Pressure independent but recommended working range between minimum pressure drop of 10 Pa to 300 Pa over the damper.
- The minimum air flow must be considered during planning.
- For good regulation, a minimum difference between Vmin and Vmax of 20% of the product's Vnom is recommended.

Design

- Integrated air flow sensor.
- KNX control (KNX S-Mode, LTE-Mode and PL-Link).

Circular design

- Connection: Ø100-500 mm.
- Always supplied with dust protection.
- Motor shelf with 25 mm spacer to facilitate condensation insulation of the duct system.
- A factory-insulated model is available on request.

Rectangular design

- Connection 200x200-700x600 mm.
- Other sizes are also available on request.

Functions

- Variable or constant flow regulation.
- Measurement of air flow.
- Setting and reading of parameters on the controller via the external hand-held terminal AST20.

Materials and surface treatment

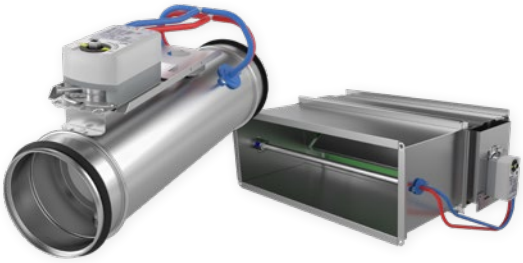
- All sheet-metal parts are galvanised sheet steel (Z275).
- Measuring rods are aluminium.

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.



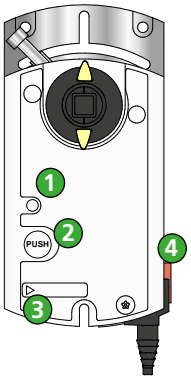
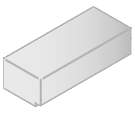


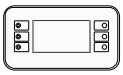
Figure 1. REACT V SKNX controller.
1. LED lighting
2. Pushbutton
3. Service port
4. Release button

Accessories

REACT V COVER CIRCULAR	Cover panel for circular design in case of visible installation
FSR	Clamp for easy dismantling of a circular design for cleaning and inspection
AST20	Hand-held terminal for setting of parameters on the actuator


REACT V COVER CIRCULAR

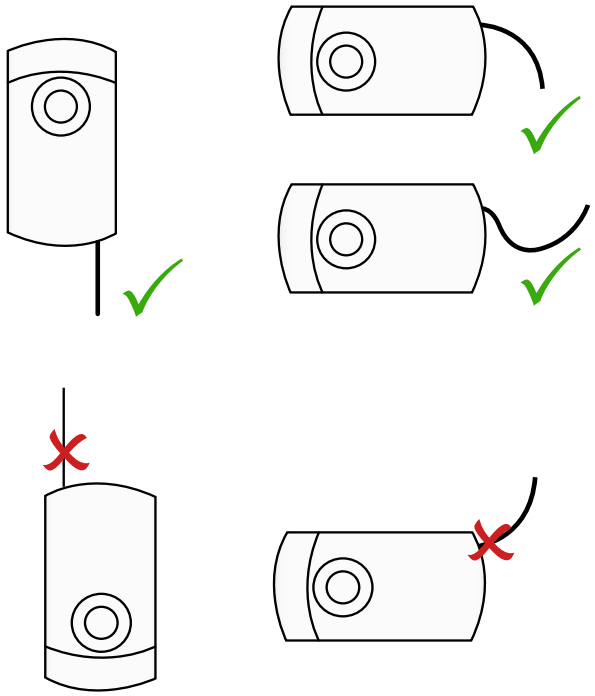
FSR


AST20

Technical data

IP class:	IP54
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/closed (90°):	
5 Nm / 10 Nm:	150 s (50 Hz)
5 Nm / 10 Nm:	125 s (60 Hz)
Ambient temperature	
Operation:	0 – +50°C
Storage:	-5°C – +45°C
RH:	5 – 95% (non condensing)
CE marking:	2006/42/EC (MD)
	2014/30/EU (EMC)
	2011/65/EU (RoHS2)

To retain enclosure class (IP54), the actuator must be installed as follows.



Electrical data

Power supply:	24 V AC ±20% 50 - 60 Hz	
Fixed connection cable, 900 mm with cable size	2 x 0.75 mm²	
	See figure 2 below.	
Communication:		
Fixed connection cable, 900 mm with cable size	2 x 0.75 mm²	
	See figure 2 below.	
Power consumption, sizing of transformer:		
REACT V SKNX 5 Nm	2.5 W	3.0 VA
REACT V SKNX 10 Nm	2.5 W	3.0 VA

See torque in tables on pages 8 and 10.

Connection

Communication (green cable)

1 – KNX-TP CE+

2 – KNX-TP CE-

Communication is galvanically insulated.

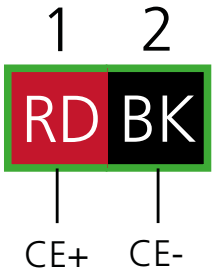


Figure 2. Communication (green cable).

Supply voltage (black cable)

1 – G	24 V AC
2 – G0	24 V AC

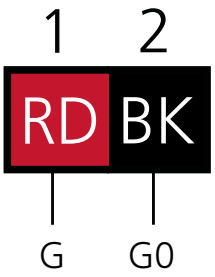


Figure 3. Supply voltage (black cable).

Sizing

Circular design

- Important: 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

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

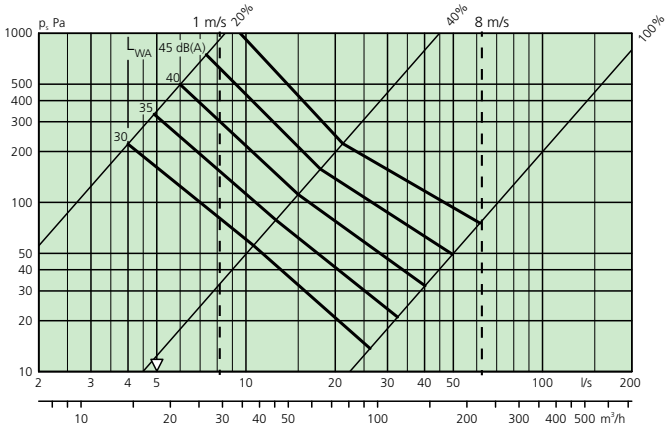
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	-2	-9	-7	-10	-9	-10	-15	-22
125	-4	-9	-8	-13	-9	-12	-19	-27
160	-7	-9	-10	-15	-12	-15	-20	-28
200	-9	-11	-13	-16	-14	-16	-23	-32
250	-8	-18	-17	-19	-17	-17	-23	-31
315	-14	-19	-18	-21	-18	-19	-25	-34
400	-13	-23	-22	-22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

Sizing diagram

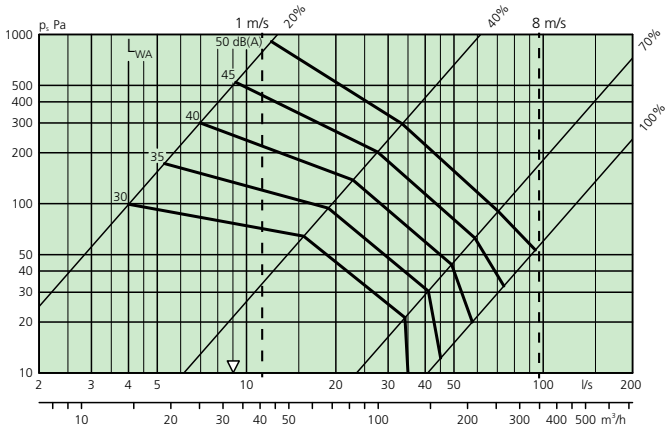
Air flow – Pressure drop – Sound level

- Specified sound levels, L_{WA}: 30, 35, 40, 45 and 50 dB(A).
- Data is valid for sound created in the ducts.
- 100% corresponds to the damper being fully open.
- ∇ = Min. air flow.

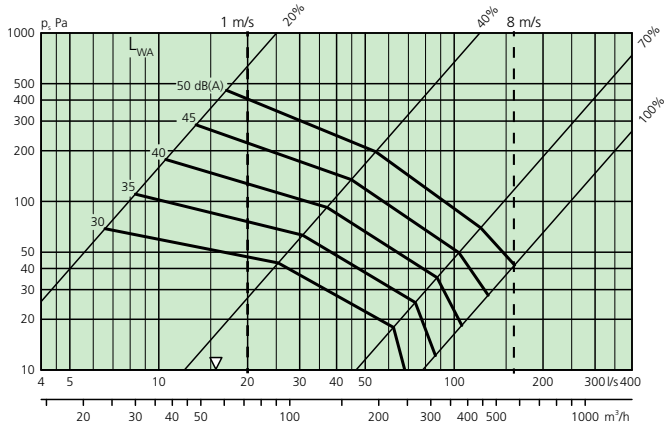
REACT V SKNX 100



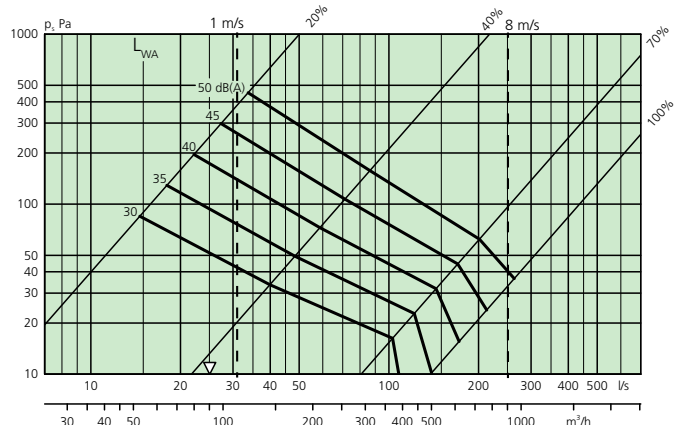
REACT V SKNX 125



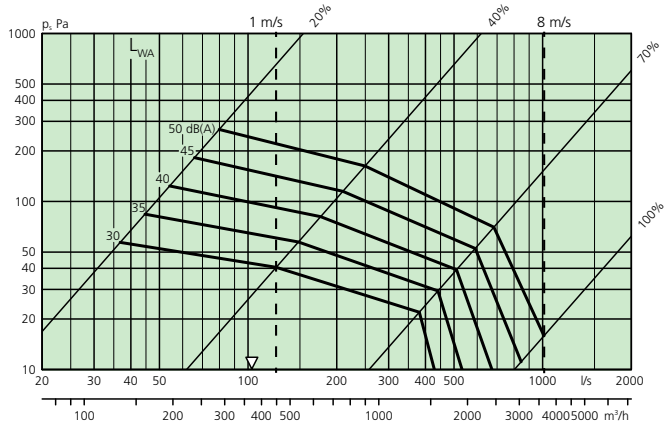
REACT V SKNX 160



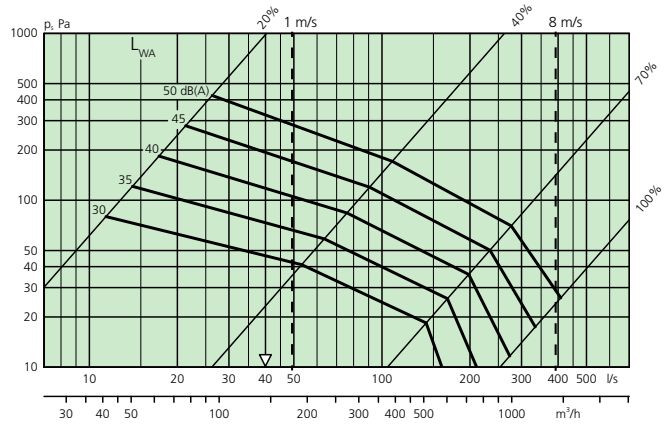
REACT V SKNX 200



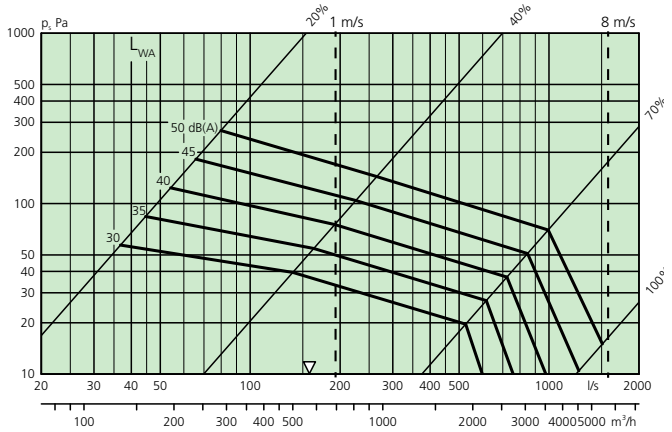
REACT V SKNX 400



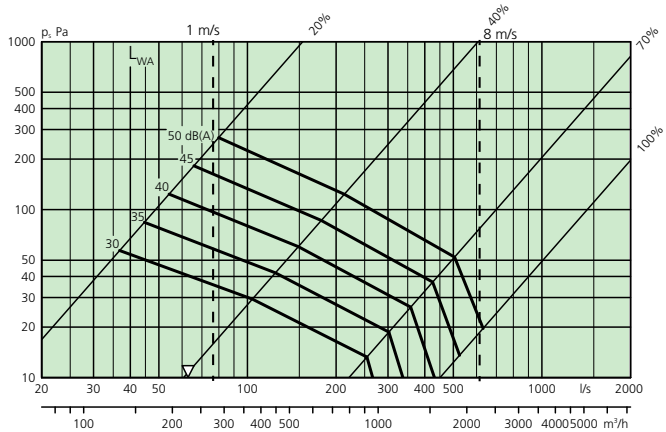
REACT V SKNX 250



REACT V SKNX 500



REACT V SKNX 315



Swegon reserves the right to alter specifications.

Rectangular design

- Important: 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. ±	4	4	3	2	2	2	2	2

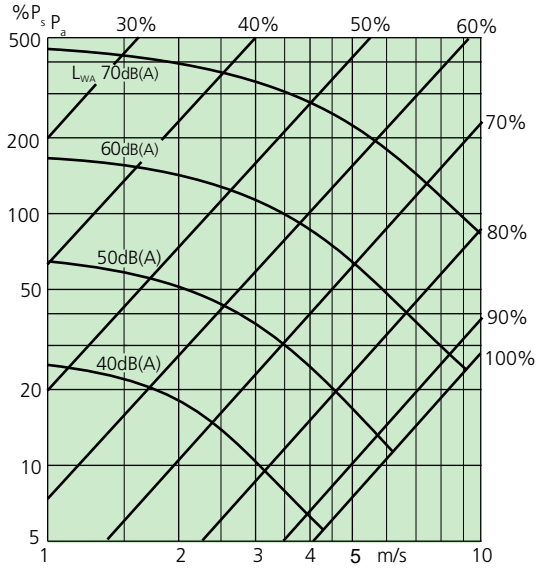
Correction factor K_K for the damper's face area

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

Velocity – Pressure drop – Sound level

- Data is valid for sound created in the 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

Dimensions

Size Ød (mm)	A (mm)	B (mm)	C (mm)	E (mm)	Torque (Nm)	Weight (kg)	Flow range						Tolerance Q* ±5% with at least ±x		
							Min.			Max = Vnom*)					
							l/s	m³/h	cfm	l/s	m³/h	cfm	l/s	m³/h	cfm
100	475	485	190	50	5	1.7	5	18	11	58	209	123	2	7	4
125	475	485	215	50	5	1.9	9	32	19	95	342	201	2	7	4
160	475	485	255	50	5	2.2	16	58	34	170	612	360	2	7	4
200	475	485	300	50	5	2.8	25	90	53	280	1008	593	3	11	6
250	525	535	350	50	5	3.5	40	144	85	445	1602	943	5	18	11
315	560	570	415	50	10	4.6	63	227	133	730	2628	1547	8	29	17
400	695	705	505	60	10	6.6	102	367	216	1190	4284	2521	13	47	28
500	820	840	605	60	10	9.2	164	590	347	1870	6732	3962	20	72	42

*)Vnom at 120 Pa in pressure reading.

*Installed according to the instructions.

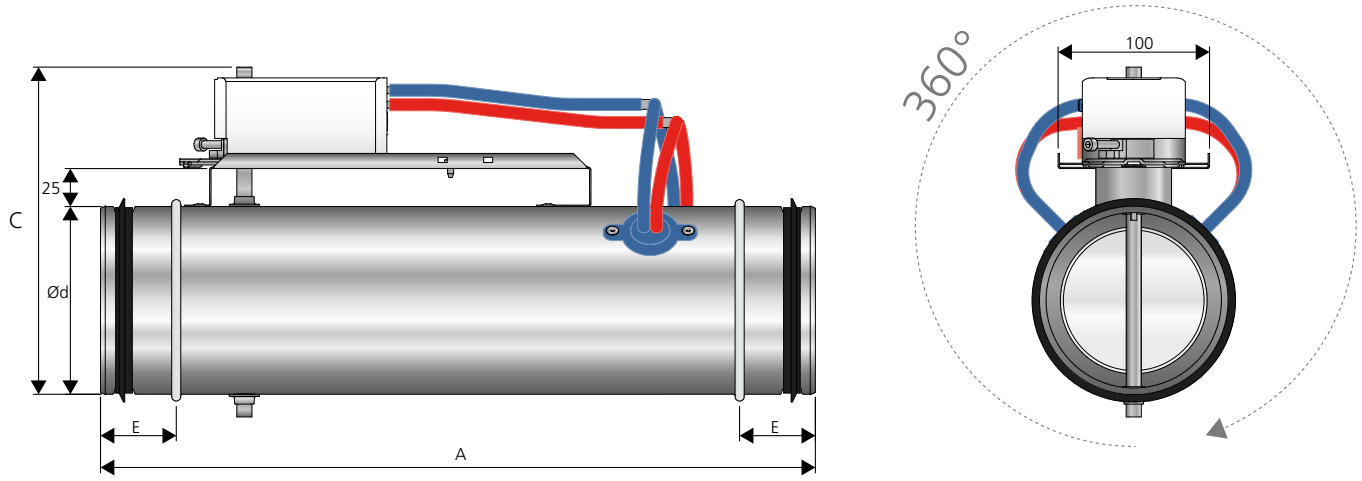


Figure 4. Dimensions (mm), REACT V SKNX circular. The damper can be installed at an optional angle.

Swegon reserves the right to alter specifications.

Installation

- The product's air flow measurement requires a straight duct section 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.

Straight duct section requirements

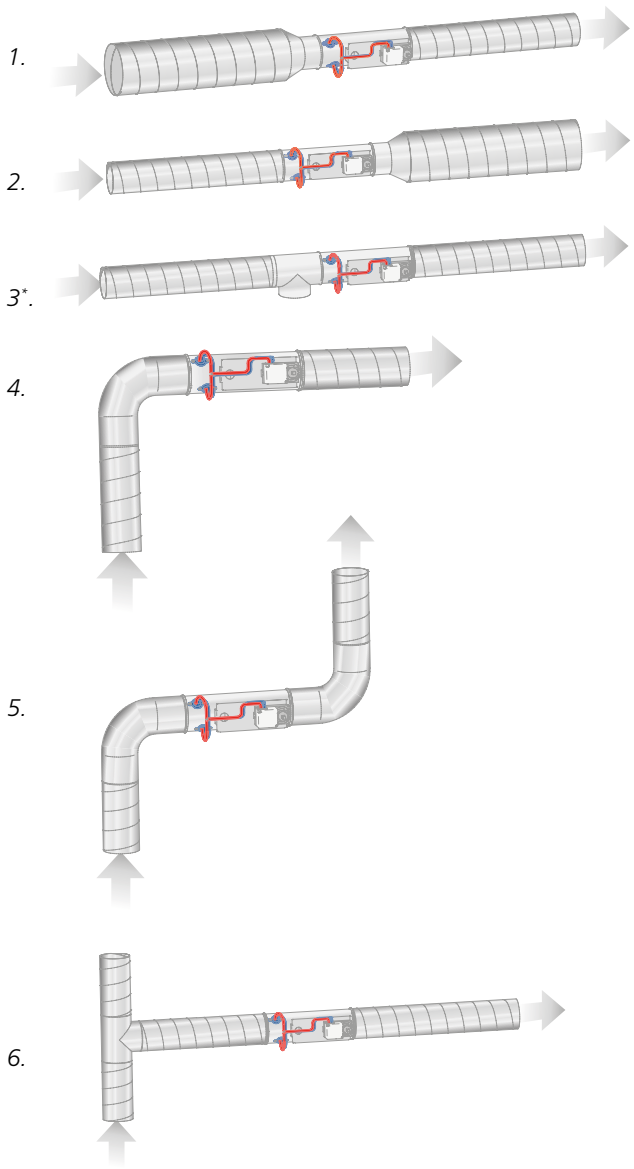


Figure 5. Straight duct section requirements in circular ducts, number of Ø before product:
Images 1-5 require no straight duct section (image 3 illustrates a T piece with cleaning hatch).*
Images 6 requires a straight duct section before the damper equivalent to 4 x the diameter of the duct.

Straight duct section requirements in case of sound attenuator with baffle

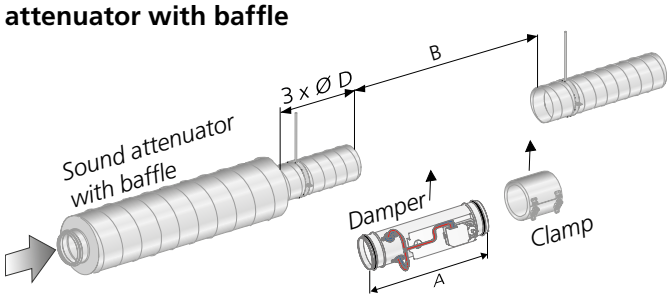


Figure 6. Straight duct section requirement of 3 x Ø for sound attenuator with baffle or centre body.

Installation in the duct system

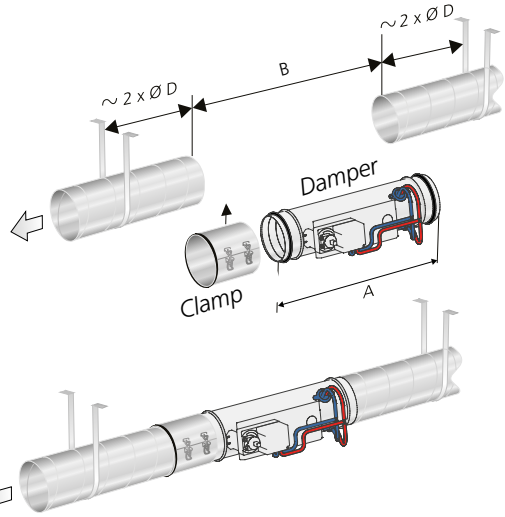


Figure 7. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of the product.

Rectangular design

Dimensions

Size BxH (mm)	Torque (Nm)	Weight (kg)	Flow range						Tolerance Q* ±5% with at least ±x		
			Min.			Max = Vnom*)					
			l/s	m³/h	cfm	l/s	m³/h	cfm	l/s	m³/h	cfm
200 x 200	5	7.3	67	241	142	365	1314	773	8	29	17
300 x 200	5	8.5	100	360	212	548	1973	1161	12	43	25
400 x 200	5	10.0	133	479	282	730	2628	1547	17	61	36
500 x 200	5	11.5	167	601	354	913	3287	1934	21	76	44
600 x 200	5	13.0	200	720	424	1095	3942	2320	25	90	53
700 x 200	5	14.5	233	839	494	1278	4601	2708	29	104	61
800 x 200	5	15.5	267	961	566	1460	5256	3093	33	119	70
1000 x 200	10	18.5	333	1199	706	1825	6570	3867	42	151	89
300 x 300	5	11.0	152	547	322	834	3002	1767	19	68	40
400 x 300	5	12.5	203	731	430	1112	4003	2356	25	90	53
500 x 300	5	14.0	254	914	538	1390	5004	2945	32	115	68
600 x 300	5	15.5	305	1098	646	1668	6005	3534	38	137	81
700 x 300	10	16.9	355	1278	752	1946	7006	4123	44	158	93
800 x 300	10	18.5	406	1462	860	2224	8006	4712	51	184	108
1000 x 300	10	21.5	508	1829	1076	2780	10008	5890	63	227	133
400 x 400	5	14.1	273	983	578	1495	5382	3168	34	122	72
500 x 400	10	16.1	341	1228	723	1869	6728	3960	43	155	91
600 x 400	10	17.5	409	1472	867	2243	8075	4752	51	184	108
700 x 400	10	19.7	478	1721	1013	2616	9418	5543	60	216	127
800 x 400	10	21.2	546	1966	1157	2990	10764	6335	68	245	144
1000 x 400	10	24.3	682	2455	1445	3738	13457	7920	85	306	180
500 x 500	10	18.6	429	1544	909	2347	8449	4973	54	194	114
600 x 500	10	20.6	514	1850	1089	2816	10138	5967	64	230	136
700 x 500	10	22.7	600	2160	1271	3286	11830	6962	75	270	159
800 x 500	10	24.7	686	2470	1453	3755	13518	7956	86	310	182
600 x 600	10	22.8	618	2225	1309	3388	12197	7178	77	277	163
700 x 600	10	24.9	722	2599	1530	3952	14227	8373	90	324	191

*)Vnom at 120 Pa in pressure reading.

*Installed according to the instructions

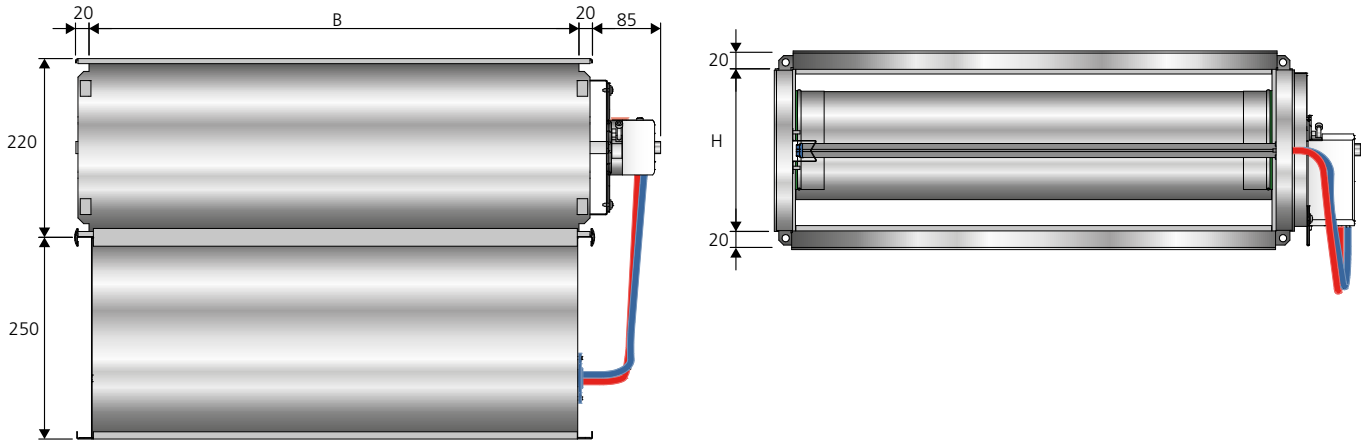


Figure 8. Dimensions (mm), REACT V SKNX rectangular.

Swegon reserves the right to alter specifications.

Installation

- The product's air flow measurement requires a straight duct section 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, the damper is always installed 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.

Straight duct section requirements

Type of disruption	Tolerance Q ±5%	Tolerance Q ±10%
One 90° bend	E = 3 x B	E = 2 x B
T piece	E = 3 x B	E = 2 x B

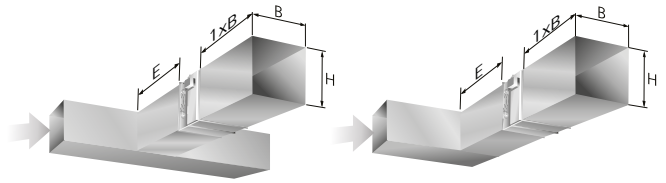


Figure 9. Straight duct section requirements in rectangular ducts.
E = Straight duct section
B = Width of duct
H = Height of duct

Straight duct section requirements in case of sound attenuator with baffle

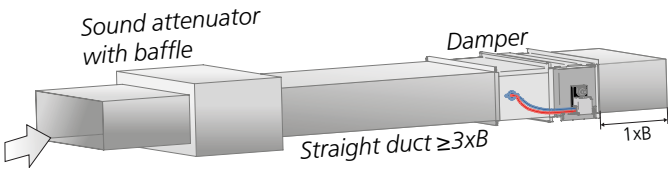


Figure 10. Straight duct section requirements 3 x B in case of sound attenuator with baffle. Applies to both supply and extract air.

Specification

Product

Circular design

Circular variable flow damper	REACT V SKNX	a	bbb
Version:			
Size: 100, 125, 160, 200, 250, 315, 400, 500			

REACT V SKNX factory setting -
Vmax = Vnom l/s and Vmin = 0 l/s

Rectangular design

Rectangular variable flow damper	REACT V SKNX	a	bbb-ccc
Version:			
Size: Dimensions: B x H (see table on page 10)			

REACT V SKNX factory setting -
Vmax = Vnom l/s and Vmin = 0 l/s

Accessories

FSR

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

REACT V COVER CIRCULAR

Cover panel for visible installation	REACT V COVER CIRCULAR

For circular design, all sizes

AST20

Hand-held terminal for actuator	AST20

Swegon reserves the right to alter specifications.

Specification text

Example of a specification text according to VVS AMA.

QJB.11 Circular rotary damper with single blade

Make: Swegon

Type: REACT V SKNX

Variable flow damper with the following functions:

- Pressure independent VAV unit for demand-controlled ventilation.
- Integrated flow measurement.
- Integrated controller, flow regulating.
- The damper can be ordered with factory fitted external insulation.

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

Size:	Ø 100 to Ø 500	
Specification		
Standard SS-EN 1751:	2014, Annex C	
Power supply:	24 V AC ±20% 50 - 60 Hz	
Air tightness class, casing:	C	
Air tightness class, closed damper:	4	
Corrosivity class:	C3	
Pressure class:	A	
Tolerance, flow measurement:	±5%, however at least ±X according to the table in the product sheet	
Type:	REACT V SKNXa	bbb-cc xx pcs
Accessories		
Clamp for ventilation ducts	FSR	xx pcs
Cover panel for visible installation	REACT V COVER CIRCULAR	
Hand-held terminal for actuator	AST20	

QJB.41 Louvre damper with counter-rotating blade

Make: Swegon

Type: REACT V SKNX

Variable flow damper with the following functions:

- Pressure independent VAV unit for demand-controlled ventilation.
- Integrated flow measurement.
- Integrated controller, flow regulating.

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

Size:	200 x 200 to 700 x 600	
Specification		
Standard SS-EN 1751:	2014, Annex C	
Power supply:	24 V AC ±20% 50 - 60 Hz	
Air tightness class, casing:	C	
Air tightness class, closed damper:	3	
Corrosivity class:	C3	
Pressure class:	A	
Tolerance, flow measurement:	±5%, however at least ±X according to the table in the product sheet	
Type:	REACT V SKNXa	bbb-ccc-dd xx pcs
Accessories		
Hand-held terminal for actuator	AST20	