REACT V SKNX

REACT V SKNXa (circular), REACT V SKNXb (rectangular)

17/09/2024 Art. 1546142

Symbol key

Symbols on the machine

This product complies with applicable EU directives

Symbols in this user manual

Warning/Caution!



Risk of crushing

Application area

The product is a variable flow damper or constant flow damper designed for comfort ventilation indoors. The product is used to regulate the supply air or extract air flow in ventilation ducts.

The product may not be used for anything other than its intended use.

General



Read through the entire instructions for use before you install/use the product and save the instructions for future reference. It is not permissible to make changes or modify this product other than those specified in this document.

The packaging contains the following items

1 x REACT V SKNX

1 x Instructions for use

Protective equipment



Always use appropriate personal protective equipment for the work in question, in the form of gloves, respirators and protective glasses during handling, installation, cleaning and service/maintenance.

Electrical safety

Permitted voltage, see "Electrical data". It is not permissible to insert foreign objects into the product's connectors or the electronics' ventilation openings; risk for short circuiting.

24 V isolation transformer to be connected should comply with the provisions of IEC 61558-1.

Cable sizing must be carried out for cabling between the product and the power supply source.

Disconnect the power supply when working on products that are not required to run in production.

Always follow the local/national rules for who shall be permitted to carry out this type of electrical installation.

Other risks



When the product is voltage fed, the damper will either open or close. This can entail a certain risk of pinch injuries to the fingers, for example, if these are placed between the damper blade and ventilation duct when the damper blade is rotating. The product's actuator is equipped with a release button that permits manual control of the damper blade. Always ensure this is activated before working on the internal parts of the damper.

Handling

- Always use appropriate transport and lifting devices when the product is to be handled to reduce ergonomic loads.
- The product must be handled with care.
- It is not permissible to carry the product by the measuring tubes.

Installation

- Moist, cold and aggressive environments must be avoided.
- Avoid installing the product near a heat source.
- Assemble the product according to applicable industry regulations.
- Install the product so that it is not accessible by unauthorised persons, for example above a suspended ceiling.
- Install the product for easy access during service/maintenance.
- Supplement the duct system with a cleaning hatch in the vicinity of the product to facilitate cleaning.
- If the product is mounted above a fixed ceiling, an inspection hatch must be available so that the product is accessible for inspection.
- If the product is mounted so that it is possible to gain access to the inside of the product, it must be supplemented with appropriate protection, for example, a ventilation unit.
- If the product is mounted in cold areas, the whole product must be insulated on the outside against condensation.
- For installation, the accessory FSR is recommended.
- The product can be installed position independent.
- It is recommended that the product be installed so that the front is visible.
- The product must be laid down prior to installation so that it cannot fall over.
- Check to make sure that the product does not have any visible defects.
- Make sure that the product is properly secured after it has been installed.
- Use the product's eyes to secure the cables with cable ties.
- Make sure all cables are properly secured after installation.
- Check that the actuator/controller is properly mounted.





Installation, torque, dimensions and weights Circular design

Dimensions

				_			Flow range				Tolerance Q [*] ±5%		
Size Ød (mm)	A (mm)	B (mm)	(mm)	E (mm)	lorque (Nm)	Weight Min.		Max =	Vnom ^{*)}	with at least $\pm x$			
						(Kg)	l/s	m³/h	l/s	m³/h	l/s	m³/h	
100	475	485	190	50	5	1.7	5	18	58	209	2	7	
125	475	485	215	50	5	1.9	9	32	95	342	2	7	
160	475	485	255	50	5	2.2	16	58	170	612	2	7	
200	475	485	300	50	5	2.8	25	90	280	1008	3	11	
250	525	535	350	50	5	3.5	40	144	445	1602	5	18	
315	560	570	415	50	10	4.6	63	227	730	2628	8	29	
400	695	705	505	60	10	6.6	102	367	1190	4284	13	47	
500	820	840	605	60	10	9.2	164	590	1870	6732	20	72	

*)Vnom at 120 Pa in pressure reading.

*Installed according to the instructions.



Figure 1. Dimensions (mm), REACT V SKNX circular. The damper can be installed at an optional angle.



Mounting

- 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.

Demand for straight section



Figure 2. Demand for a straight section in circular ducts, number Ø before product:

Images 1-5 require no straight duct section (image 3^{*} illustrates a T piece with cleaning hatch).

Image 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 3. Straight duct section requirement of $3 \times \emptyset$ for sound attenuator with baffle or centre body.

Installation in the duct system



Figure 4. 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

	-			Flow		Tolerance Q [*] ±5%		
SIZE BXH	Iorque (Nm)	vveight (kg)	М	in.	Max =	Vnom ^{*)}	with at	least ±x
	(1411)		l/s	m³/h	l/s	m³/h	l/s	m³/h
200 x 200	5	6.1	67	241	365	1314	8	29
300 x 200	5	7.3	100	360	548	1973	12	43
400 x 200	5	8.4	133	479	730	2628	17	61
500 x 200	5	9.6	167	601	913	3287	21	76
600 x 200	5	10.6	200	720	1095	3942	25	90
700 x 200	5	11.8	233	839	1278	4601	29	104
800 x 200	5	13.0	267	961	1460	5256	33	119
1000 x 200	10	15.2	333	1199	1825	6570	42	151
300 x 300	5	8.9	152	547	834	3002	19	68
400 x 300	5	10.1	203	731	1112	4003	25	90
500 x 300	5	11.4	254	914	1390	5004	32	115
600 x 300	5	12.7	305	1098	1668	6005	38	137
700 x 300	5	13.8	355	1278	1946	7006	44	158
800 x 300	5	15.,2	406	1462	2224	8006	51	184
1000 x 300	10	17.7	508	1829	2780	10008	63	227
400 x 400	5	12.1	273	983	1495	5382	34	122
500 x 400	5	13.5	341	1228	1869	6728	43	155
600 x 400	5	14.8	409	1472	2243	8075	51	184
700 x 400	5	16.4	478	1721	2616	9418	60	216
800 x 400	10	17.8	546	1966	2990	10764	68	245
1000 x 400	10	20.6	682	2455	3738	13457	85	306
500 x 500	5	15.3	429	1544	2347	8449	54	194
600 x 500	5	16.8	514	1850	2816	10138	64	230
700 x 500	10	18.5	600	2160	3286	11830	75	270
800 x 500	10	19.9	686	2470	3755	13518	86	310
600 x 600	10	19.1	618	2225	3388	12197	77	277
700 x 600	10	20.9	722	2599	3952	14227	90	324

^{*)}Vnom at 120 Pa in pressure reading. ^{*}Installed according to the instructions



Figure 5. Dimensions (mm), REACT V SKNX rectangular.



4

Mounting

- 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 6. Demand for straight duct section in rectangular ducts. E = Straight duct section W = Width of duct H = Height of duct

Straight duct section requirements in case of sound attenuator with baffle



Figure 7. Straight duct section requirement 3 x B in case of sound attenuator with baffle. Applies to both supply and extract air.



REACT V SKNX

Connection

Communication (green cable)

1 – KNX-TP CE+

2 – KNX-TP CE-

Communication is galvanically insulated. Load on communication: max 5 mA.



Figure 8. Communication (green cable).

Supply voltage (black cable)



Figure 9. Supply voltage (black cable).



Use



Figure 10. Siemens actuator.

LED lighting Off: No power or fault during operation On, green: Connection test has been carried out successfully* Flashing, orange: Reset in progress If a connection test has been enabled: wait* On, red: The actuator is in programming/addressing mode If a connection test has been enabled: the connection test failed*

Pushbutton

Enable/disable addressing mode	Button press <1 sec:	LED turns red or goes out
PL-Link connection test	Button press >1 sec but <20 sec*:	LED flashes orange once
Reset to base settings from subcontractor	Button press >20 sec:	LED flashes orange until the actuator restarts

Resetting to base settings from subcontractor

The actuator must not be reset with the pushbutton. This resets Vnom to the base settings from the subcontractor, which cannot be undone.

Addressing and bus test via pushbutton

The actuator can be set to addressing/programming mode with the pushbutton This is done by pressing the button for more than 0.1 seconds but less than 1 second

If the KNX bus connection is not OK, the LED light remains off If the KNX bus connection is OK, the LED light remains on until addressing/programming is completed

3 Service port

For connection of the hand-held terminal AST20

4

Release button

Pressed button:The actuator is disengaged, the motor stops, manual overriding possibleReleased button:Returns to standard mode

*The function or parts of the function are only accessible during PL-Link operation.





Figure 11. AST20 - Hand-held terminal for setting and reading the actuator's parameters.

1. Hand-held terminal AST20

- 2. Actuator
- 3. Service port
- 4. Connection cable (7-pole)*
- 5. Reset button for AST20
- 6. Cancels change/leaves sub menu
- 7. Browses up, and changes values/status
- 8. Browses down, and changes values/status
- 9. Confirms selected value/goes to selected sub menu

*If an incorrect connection cable is used (e.g. 6-pole cable on 7-pole connector), the actuator can be damaged.

Settings for actuator

Overview

AST20 <> VAV KNX		Online view		Description		
		Setpoint: flow	0%	Shows the set point as a percentage		
Field device configuration			0 m³/h	Shows the set point in the selected unit		
Diagnostics and maintenance		Actual flow	0%	Shows the actual value as a percentage		
AST20 settings) settings D m³/		0 m³/h	Shows the actual value in the selected unit		
		Diff. pressure	OPa	Differential pressure in pascal		
		Override ctrl	Off	Forced control		
			Off	Normal function		
			User value	The damper is regulated to the selected set point		
			Stop	The actuator stops at the current position		
			Fully close	Closes the damper fully		
			Fully open	Opens the damper fully		

Configuration

AST20 <> VAV KNX		Field device configu	ration	Description
Online view Field device configuration Diagnostics and maintenance	▲ ▼ ▼	Operating mode	VAV mode VAV mode Position control	Operating mode VAV control Control of position
AST20 setting		Opening dir	CCW CW CCW	Direction of rotation Clockwise Anti-clockwise (standard, may not be changed)
		Adaptive pos	Off Off On	Adaptive damper position Off On
		Vn	1.58	Coefficient for nominal differential pressure. Set at the factory.
		Vmin	0%	Adjustment to the desired min. value Min. value must be lower than the max. value
		Vmax	100%	Adjustment to the desired max. value Max. value must be higher than the min. value
		Vnom	0 m³/h	Shows the nominal air flow
		Altitude level	500m	Number of metres above sea level
		Unit vol. flow	m³/h m³/h l/s	Change of unit for air flow
		Unit Vmin&Vmax	%	Change of unit for Vmin & Vmax



Max. air flow Nominal air flow Number of metres above sea level

Service and maintenance

Information

AST20 setting

AST20 <> VAV KNX	Diag. and maintenar	nce	Field device info		Description
Online view	Field device info		FID type	VAV KNX	Damper designation
Field device configuration	Field device statistics		Firmware Base-PCB	123	Software version
Diagnostics and maintenance	OEM default settings		Running time	150s	Running time
AST20 setting					
Statistics					
AST20 <> VAV KNX	Diag. and maintenar	nce	Field device statist	ics	Description
Online view	Field device info		Cum. running time	0h 0m	Operation time
Field device configuration	Field device statistics		Cnt. Repositionings	0	Number of repositionings
Diagnostics and maintenance	OEM default settings				

Reset to OEM default settings

AST20 <> VAV KNX	Diag. and maintenar	nce	OEM default settings	Description
Online view	Field device info		Reset to OEM default settings	Reset to OEM default settings
Field device configuration	Field device statistics		Show OEM default settings	OEM default settings
Diagnostics and maintenance	OEM default settings			
AST20 cotting				

OEM default settings

AST20 <> VAV KNX	Diag. and maintenar	nce	OEM default settings		OEM default set	tings	Description
Online view	Field device info		Reset to OEM default settings	5	Operating mode	VAV mode	Operating mode
Field device configuration	Field device statistics		Show OEM default settings		Opening dir	CCW	Direction of rotation
Diagnostics and maintenance	OEM default settings				Adaptive pos	Off	Adaptive damper
AST20 setting							position
					vn value	1.58	Vn coefficient
					Vmin	0%	Min. air flow

Settings for hand-held terminal AST20

Authorisation level

AST20 <> VAV KNX	AST20 settings	Description
Online view	Authorisation level SVC	Authorisation level
Field device configuration	Handheld tool settings 🕨	Handheld tool settings
Diagnostics and maintenance	Enter OEM password 🕨	OEM Password

Handheld tool settings

AST20 <> VAV KNX	AST20 settings		Handheld tool setting	gs	Description
Online view	Authorisation level	SVC	Language	EN	Change of language
Field device configuration	Handheld tool settings	5 🕨		EN	English
Diagnostics and maintenance	Enter OEM password			TR	Turkish
				FR	French
AST20 settings				DE	German
			Backlight colour	Blue	Change of background colour
				Blue	Blue
				White	White
			Backlight turn off time	300s	Duration of background lighting
			Brightness	75	Change of brightness
			Contrast	60	Change of contrast
			AST20 FW Version	123	Software version



Trouble shooting

The product does not communicate over KNX

- Make sure that the product is energised.
- Check the product's KNX connection.

The product shows incorrect/no air flow

- Make sure that the product is energised.
- Check that the product's set size corresponds with the physical size.
- Make sure that the product is installed according to the recommended distance to disruptions, see "Installation".
- Check that there is an air flow.
- Make sure that the product is correctly oriented in terms of air direction. The air flow must follow the instructions on the product.
- Check that the measuring tubes are mounted correctly, plus to plus (red), minus to minus (blue).
- Check that the measuring tubes are undamaged and not creased.
- Check with the help of the k-factor and pressure difference between the red and blue measuring tubes that the flow is within the product's measurement range.

The product does not regulate the air flow

- Make sure that the product is energised.
- Check that the damper motor has not become detached from the damper spindle.
- Check that the damper motor works by pressing in the motor's release button, turn the damper spindle, release the release knob and then see whether the damper motor starts to move.
- Check that the product is connected correctly.
- Check that the product is not force controlled.

The product does not regulate on the desired air flow

- Check that the settings for Vmin and Vmax correspond with the required regulation range.
- Check that the KNX communication is correct.

Cleaning

Ideally, the product should be cleaned in connection with the cleaning of the rest of the ventilation system.

Cleaning of electrical components

- If needed, use a dry cloth to clean the components.
- Never use water, detergent and cleaning solvent or a vacuum cleaner.

External cleaning

- If necessary use tepid water and a well-wrung cloth.
- Never use detergent and cleaning solvent or a vacuum cleaner.

Internal cleaning

- When cleaning the ventilation system, the product must be dismantled if there are no cleaning hatches close to the product.
- Cleaning equipment such as whisks and the like must not be fed through the product.
- If necessary remove dust and other particles that can be present in the product.
- Never use detergent and cleaning solvent or a vacuum cleaner.

Service/maintenance

- The product does not require any maintenance, except for cleaning when necessary.
- In connection with a service, mandatory ventilation inspection or cleaning of the ventilation system, check that the general condition of the product appears to be good. Pay particular attention to the suspension, cables and that they sit firmly in place.
- It is not permissible to open or repair electrical components.
- If you suspect that the product or a component is defective, please contact Swegon.
- A defective product or component must be replaced by an original spare part from Swegon.

Materials and surface treatment

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

Disposal

Waste must be handled according to local regulations.

Product warranty

The product warranty or service agreement will not be valid/will not be extended if: (1) the product is repaired, modified or changed, unless such repair, modification or change has been approved in writing by Swegon AB; or (2) the serial number on the product has been made illegible or is missing.



Replacing the damper motor



Figure 12. Dismantling the damper motor.

- 1. Disconnect the cable.
- 2. Disconnect the measuring tubes.
- 3. Set damper motor to the open position.
- 4. Loosen the nuts on the spindle clamp (nut: 4 mm).
- 5. Remove 1 screw for the locking strip in the circular design and 2 screws for the locking strip in the rectangular design (screw: TX20).
- 6. Lift off the damper motor and spindle adapter (The rectangular design has a round damper spindle and no spindle adapter).
- 7. Reassemble in the reverse order. Note! Positioning of the damper blade and locking strip, see figures 13 and 14.



Figure 13. Recess in the damper spindle indicates the position of the damper.



Figure 14. Damper open. Jumper to the left.



REACT V SKNX

Technical data

IP class:	IP54
Corrosivity class:	C3
Pressure class:	А
Leakage classes according to SS-EN	1751
- Leakage class, casing:	C
- Leakage class circular damper, clos	sed: 4
- Leakage class rectangular damper	, closed: 3
Running times open/closed (90°):	
5 / 10 Nm:	150 sec (50Hz)
5 / 10 Nm:	125 sec (60Hz)
Ambient temperature	
Operation:	0-+50°C
Storage:	-5 – +45°C
RH:	5 – 95% (non condensing)
CE marking:	2006/42/EC (MD)
	2014/30/EU (EMC)
	2011/65/EU (RoHS2)

Electrical data

REACT V SKNX 10 Nm

Power supply:	24 V AC ±20% 50 - 60 Hz
Fixed connection cable, 900 mm with cable size	2 x 0.75 mm²
Communication:	
Fixed connection cable, 900 mm with cable size	2 x 0.75 mm ²
Power consumption, for transform	ner rating:
REACT V SKNX 5 Nm	2.5 W 3.0 VA

2.5 W

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



Declaration of Conformity

Swegon AB hereby affirms that:

REACT V SKNXa complies with the essential characteristic demands and relevant regulations specified in the directives, 2006/42/EC (MD), 2014/30/EU (EMC) and 2011/65/EU (RoHS2):

The following standards have been observed:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk mitigation
EN 60204-1:2006	Safety of machinery - Electrical equipment of machines - Part 1: Generic standards
EN 60730-1:2011	Automatic electrical controls and control units for household use - Part 1: Generic standards
EN 61000-6-2:2007	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments
EN 61000-6-3:2007	Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments

CE

Person responsible for this declaration: Name: Freddie Hansson, R&D Manager Tomelilla Address: Industrigatan 5, 273 21 Tomelilla, Sweden Date: 27/04/2023

aatto /fem

This declaration is applicable only if the product has been installed according to the instructions in this document and if no modifications or changes have been made on this product.

References

3.0 VA

www.swegon.com Building Materials Declaration REACT V SKNX Product data sheet REACT Siemens – KNX settings

