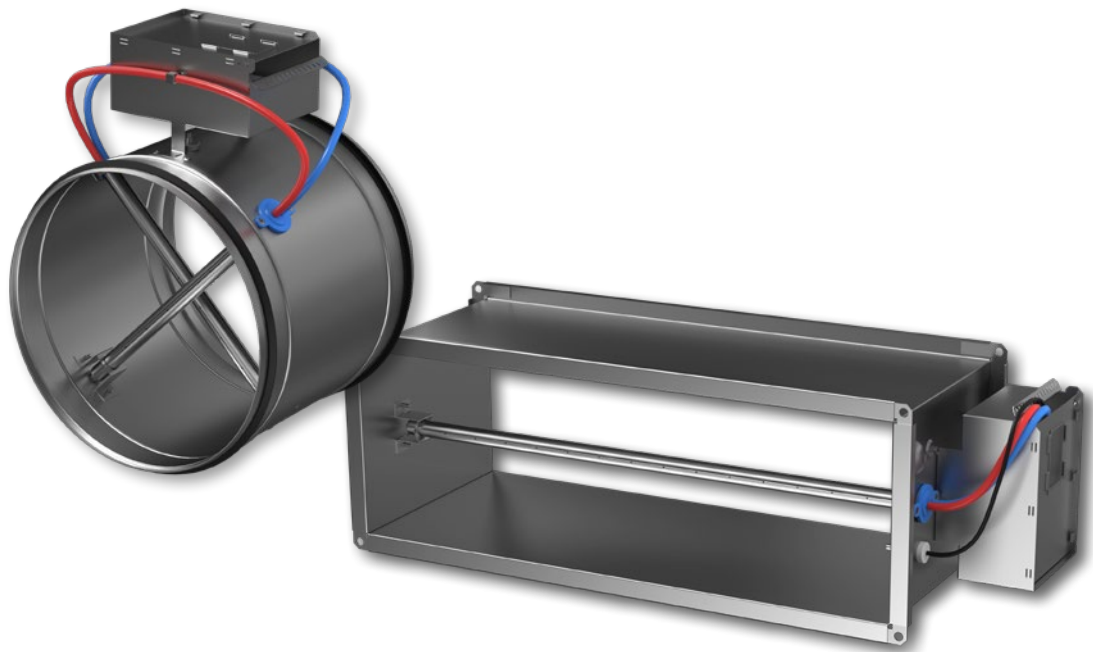


WISE Measure

Measurement unit for Swegon's WISE System for demand-controlled ventilation



QUICK FACTS

- Measurement of air flows
- Wireless communication via radio
- Integrated sensor
- Variants:
 - Circular connections: Ø100-630 mm
 - Rectangular connections: 200x200-1600x700 mm

WISE Measure Size	FLOWRANGE			
	Min. (0.6m/s)*		Max. (10 m/s)*	
	l/s	m ³ /h	l/s	m ³ /h
100	5	18	79	285
125	7	26	123	443
160	11	40	202	728
200	18	65	315	1134
250	30	108	491	1768
315	50	180	780	2808
400	87	314	1257	4526
500	135	486	1964	7071
630	187	674	3118	11225

*The product can measure below Min. but the measurement accuracy cannot be guaranteed, for tolerances see page 5.

Technical description

General

- Designed for demand-controlled ventilation of premises with a varying load.
- Designed for comfort ventilation.
- Moist, cold and aggressive environments must be avoided.
- Can be installed in both supply and extract air systems.

Design

- Integrated air flow sensor.
- Integrated duct temperature sensor.

Circular variant:

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

Rectangular variant:

- Connection 200x200-1600x700 mm.
- Other sizes are also available on request.

Functions

- Measurement of air flow and temperature.
- Wireless communication via radio.

Materials and surface treatment

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

Accessories

- FSR, clamp/quick coupling for easy dismantling of circular WISE Measure for cleaning and inspection.
- POWER Adapt, transformer for power supply.

Project design / Typical room

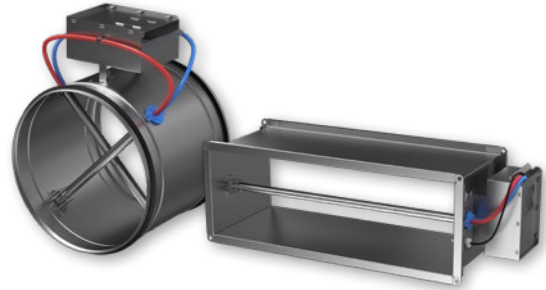
See the separate documentation "WISE System Guide", which is available for download via www.swegon.com.

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.



Technical data

Output (ERP):	50 mW
Frequency band:	2.45 GHz, IMS band (2400-2483 MHz)
Temperature sensor:	0 - 50°C ± 0.5°C
Pressure sensor:	0 - 300 Pa
IP class:	IP20
Corrosivity class:	C3
Leakage class according to SS-EN 1751, casing:	C
Ambient temperature	
Operation:	0 – 50°C
Storage:	-20 – +50°C
RH:	10 - 95% (non condensing)
CE marking:	2014/53/EU (RED) 2011/65/EU (RoHS2)

Electrical data

Power supply:	24V AC ±15% 50 - 60Hz
Cable rating, connector:	Power: max. 2.5mm ²
Max. power consumption:	3 VA

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 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

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

Correction factor, K_{ok}

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	-15	0	-5	-8	-3	-9	-17	-22
125	-15	0	-6	-9	-3	-7	-17	-23
160	-14	0	-7	-9	-4	-9	-11	-22
200	-16	1	-7	-9	-4	-7	-14	-22
250	-10	-1	-5	-8	-4	-6	-12	-19
315	-9	1	-3	-8	-4	-6	-14	-23
400	-4	1	-4	-8	-4	-7	-16	-24
500	-4	-3	-2	-3	-5	-10	-17	-28
630	-4	-3	-2	-3	-5	-10	-17	-28
Tol. ±	6	3	2	2	2	2	2	2

Rectangular design

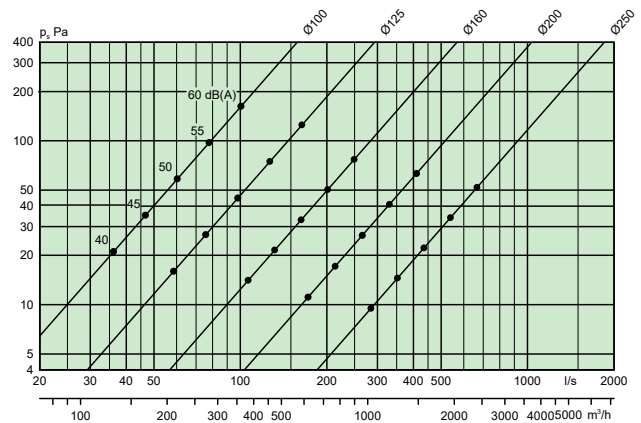
No increased pressure drop by rectangular design.

Sizing diagram – Circular, all designs

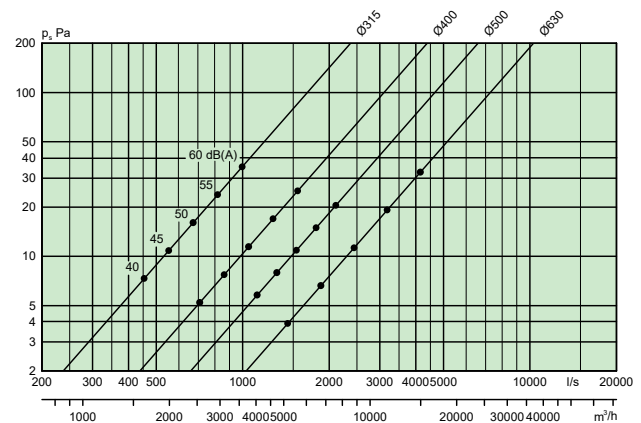
Air flow – Pressure drop – Sound level

- Specified sound levels, L_{WA} : 40, 45, 50, 55 and 60 dB.
- The data is for the sound created in ducts.

WISE Measure 100, 125, 160, 200, 250



WISE Measure 315, 400, 500, 630



Installation, torque, dimensions and weights

Circular design

Size Ø (mm)	Installation dimensions (mm)	Weight (kg)	Flow range				Tolerance Q [*] ±5% with at least ±x l/s
			Min. (0.6 m/s)		Max. (10 m/s)		
			l/s	m ³ /h	l/s	m ³ /h	
100	293	1.4	5	18	79	285	2
125	293	1,5	7	26	123	443	2
160	293	1.7	11	40	202	728	2
200	293	1.9	18	65	315	1134	3
250	293	2.1	30	108	491	1768	5
315	293	2.4	50	180	780	2808	8
400	293	2.8	87	314	1257	4526	13
500	293	3.3	135	486	1964	7071	20
630	293	3.9	187	674	3118	11225	32

*Installed according to the instructions

Installation – all designs

- WISE Measure air flow measurement requires a straight section before the product according to the installation figures.
- 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.

1. WISE Measure
2. FSR Clamp
3. Sound attenuator

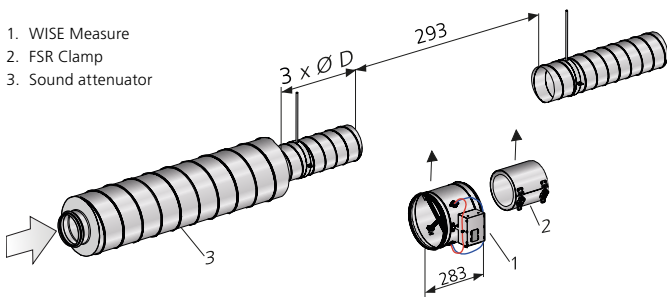


Figure 1. Requires a straight section of 3 x Ø for sound attenuators with baffle or centre body.

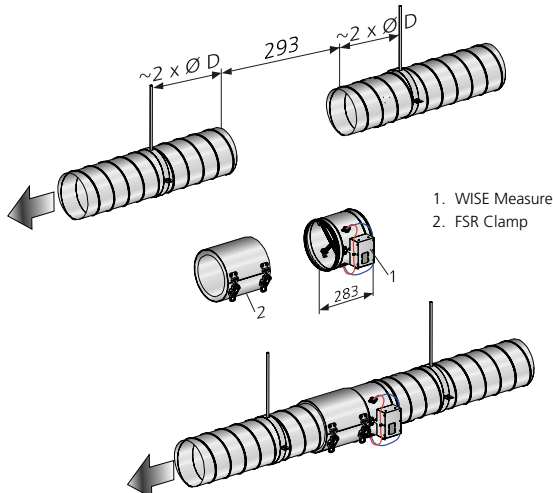


Figure 2. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of WISE Measure.

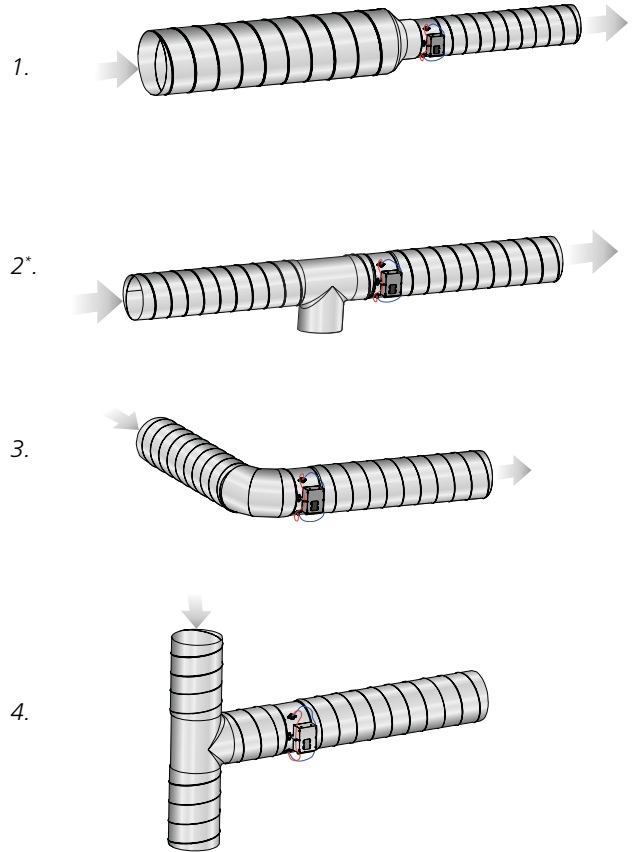


Figure 3. Straight section requirements, circular ducts.
1-3: Number of Ø before product: 0 x Ø.
4: Number of Ø before product: 2 x Ø.
*Cleaning hatch

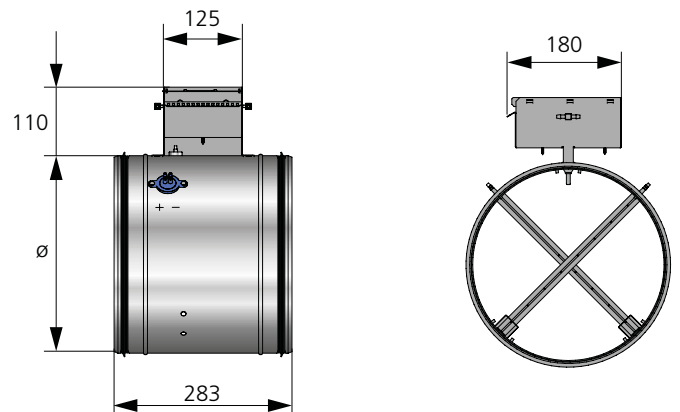


Figure 4. Dimensions, WISE Measure circular.

Rectangular design

Size BxH (mm)	Weight (kg)	Flow range				Tolerance Q' ±5% with at least ±x l/s
		Min. (1 m/s)		Max. (10 m/s)		
		l/s	m³/h	l/s	m³/h	
200 x 200	2.5	34	123	400	1440	4
300 x 200	3.0	50	180	600	2160	6
400 x 200	3.4	67	242	800	2880	8
500 x 200	3.9	84	303	1000	3600	10
600 x 200	4.3	100	360	1200	4320	12
700 x 200	4.8	117	422	1400	5040	14
800 x 200	5.3	133	479	1600	5760	16
1000 x 200	6.2	167	602	2000	7200	20
300 x 300	3.4	76	274	900	3240	9
400 x 300	3.8	102	368	1200	4320	12
500 x 300	4.3	127	458	1500	5400	15
600 x 300	4.8	152	548	1800	6480	18
700 x 300	5.1	178	641	2100	7560	21
800 x 300	5.7	203	731	2400	8640	24
1000 x 300	6.6	254	915	3000	10800	30
400 x 400	4.4	136	490	1600	5760	16
500 x 400	4.9	171	616	2000	7200	20
600 x 400	5.3	205	738	2400	8640	24
700 x 400	5.9	250	900	2800	10080	28
800 x 400	6.4	273	983	3200	11520	32
1000 x 400	7.3	341	1228	4000	14400	40
1200 x 400	8.3	409	1473	4800	17280	48
1400 x 400	9.2	478	1721	5600	20160	56
1600 x 400	10.2	546	1966	6400	23040	64
500 x 500	5.3	214	771	2500	9000	25
600 x 500	5.7	257	926	3000	10800	30
700 x 500	6.3	300	1080	3500	12600	35
800 x 500	6.7	343	1235	4000	14400	40
1000 x 500	7.7	429	1545	5000	18000	50
1200 x 500	8.7	514	1851	6000	21600	60
1400 x 500	9.7	600	2160	7000	25200	70
1600 x 500	10.7	686	2470	8000	28800	80
600 x 600	6.4	309	1113	3600	12960	36
700 x 600	7.0	361	1300	4200	15120	42
800 x 600	7.4	412	1484	4800	17280	48
1000 x 600	8.5	515	1854	6000	21600	60
1200 x 600	9.5	618	2225	7200	25920	72
1400 x 600	10.5	722	2600	8,400	30240	84
1600 x 600	11.6	825	2970	9600	34560	96
700 x 700	7.4	422	1520	4900	17640	49
800 x 700	7.9	482	1736	5600	20160	56
1000 x 700	8.9	603	2171	7000	25200	70
1200 x 700	9.9	723	2603	8,400	30240	84
1400 x 700	11,0	844	3039	9800	35280	98
1600 x 700	12.0	964	3471	11200	40320	112

*Installed according to the instructions

Installation – rectangular design

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

Straight section before WISE Measure in rectangular ducts

Type of disruption	E (m ₂ =5%)	E (m ₂ =10%)
One 90° bend	E = 3 x B	E = 2 x B
T piece	E = 3 x B	E = 2 x B

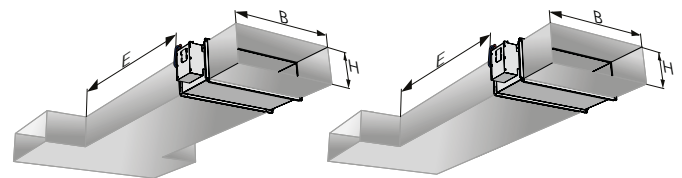


Figure 5. Straight section requirements, rectangular ducts.

Straight section before/after WISE Measure – sound attenuator with baffle

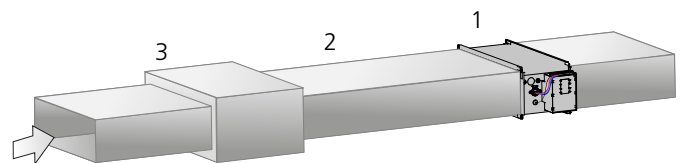


Figure 6. Straight section requirements, rectangular WISE Measure and sound attenuator with baffle. Installation with straight section applies both to supply and extract air.

- 1 = Rectangular WISE Measure.
- 2 = Straight duct ≥3xB.
- 3 = Sound attenuator with baffle.

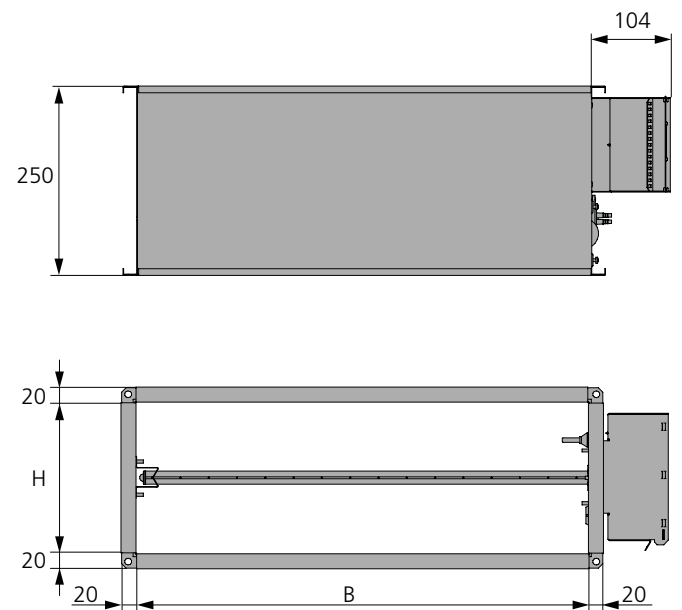


Figure 7. Dimensions, WISE Measure rectangular.

Specification

Product

Circular design

Circular measurement unit WISE Measure a xxx

Version:

Size:

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

Rectangular design

Rectangular measurement unit WISE Measure a xxx-xxx

Version:

Size: W x H (see table page 4)*

*Other rectangular sizes than those in the table on page 4 are ordered as Special.

Accessories

Clamp for circular ventilation ducts FSR c -aaa

Version:

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

1-Phase protective transformer POWER A a xxx

Version:

Size (VA): 20*, 60 **, 150**

*Plug contact

**Permanent installation

Specification text

Example of a specification text according to VVS AMA.

QJJ Flow measurement unit in the ventilation duct

Swegon's measurement unit of the type WISE Measure with the following functions:

- Must be installed with a minimum straight duct section on the inlet side as stated in relevant catalogue data, designed for temperatures between 0–50°C.
- Built-in sensors for channel temperature and flow measurement.
- Built-in communication unit for communication in Swegon WISE radio network.

Size circular: Ø 100

...

Ø 630

Size rectangular: 200 x 200

...

2000 x 1500

Specification:

Standard SS-EN1751:2014, Annex C

- Air tightness class, casing: C
- Corrosivity class: C3
- Tolerance flow measurement: ±5%, however at least ±X l/s according to the table in the catalogue.

Type: WISE Measure a xxx xx items

WISE Measure a xxx-xxx xx items

Accessories:

Clamp for ventilation ducts (only for circular variant) FSR xx items

Transformer for power supply POWER A a xxx xx items