

WISE Measure d

Instructions for Use

20190924
Art. 1546022

Symbol key

Symbols on the machine.

This product complies
with applicable EU directives



Symbols in this user manual

Warning/Caution!



Application area

The product is a measurement unit with integrated radio transmitter designed for comfort ventilation indoors within Swegon's system for demand-controlled ventilation WISE. The product is used to measure supply and extract air flow.

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 WISE Measure
- 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".

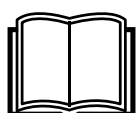
It is not permissible to insert foreign objects into the product's contactor connections or the electronics's ventilation openings; risk for short circuiting.

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.



The document was originally written in Swedish.

Swegon

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 tube.

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 unauthorized 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, the inspection hatch must be located so that the product is accessible for inspection.
- 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 to mount the product so that the product's cover is visible from the floor.
- 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.
- Check that the product is properly secured after it has been installed.
- Use the product's eyes to secure the cables with cable ties.
- Check that all cables are properly secured in place after installation.
- Check that the cover is properly mounted in place.

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	m³/h	l/s	m³/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.

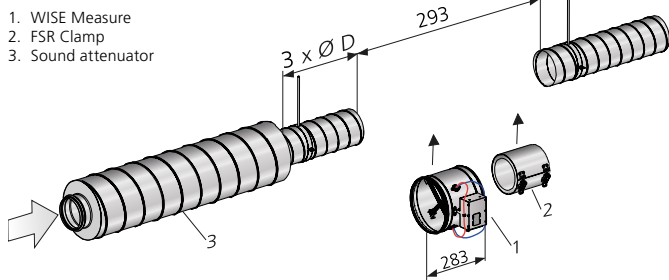


Figure 1. Requires a straight section of 3 x Ø for sound attenuators with baffle or centre body.

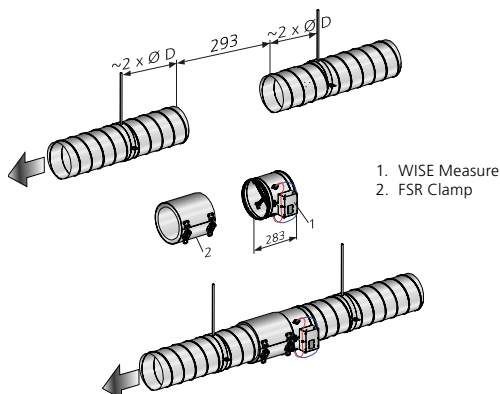


Figure 2. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of WISE Measure.

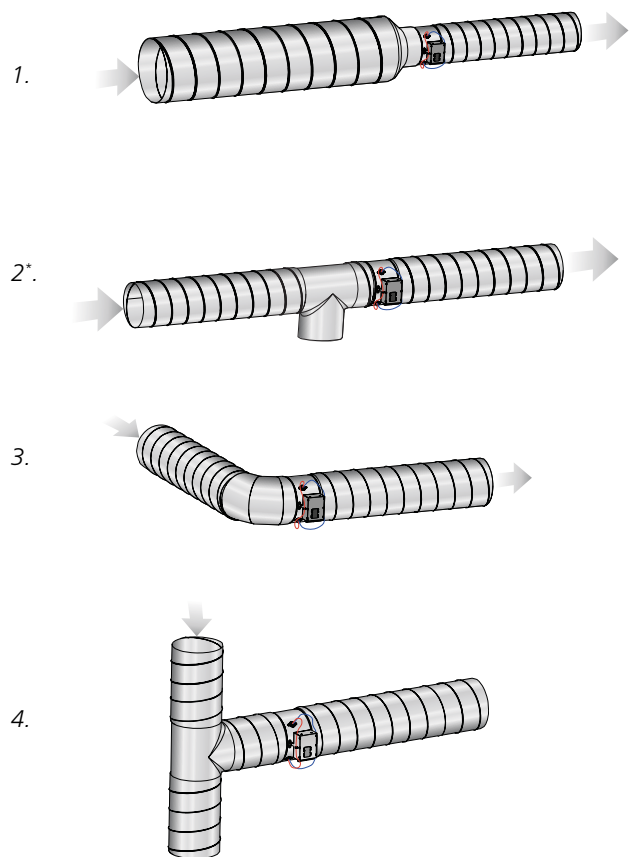


Figure 3. Straight section requirements, circular ducts.
1-3: Number of Ø before product: 0 x Ø.
4: Number of Ø before product: 2 x Ø.
*Cleaning hatch

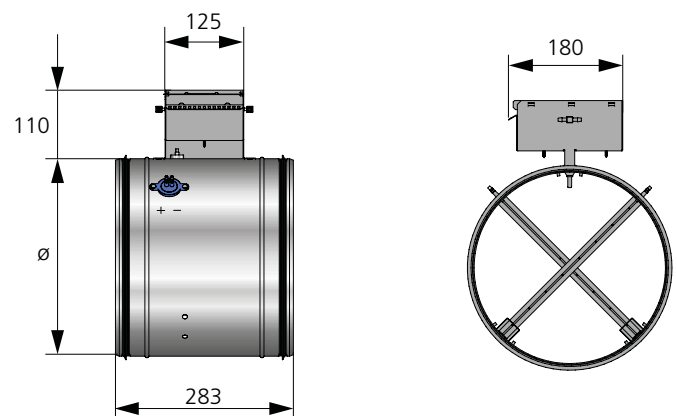


Figure 4. Dimensions, WISE Measure circular.

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

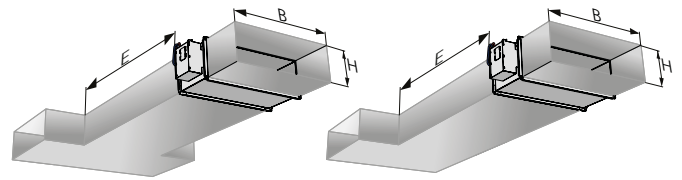


Figure 5. Straight section requirements, rectangular ducts.

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

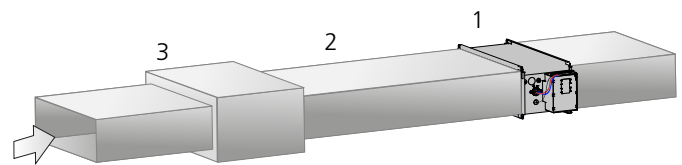


Figure 6. Straight section requirements, rectangular WISE Measure and sound attenuator with baffle. Installation with straight section applies both to supply and extract air.

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

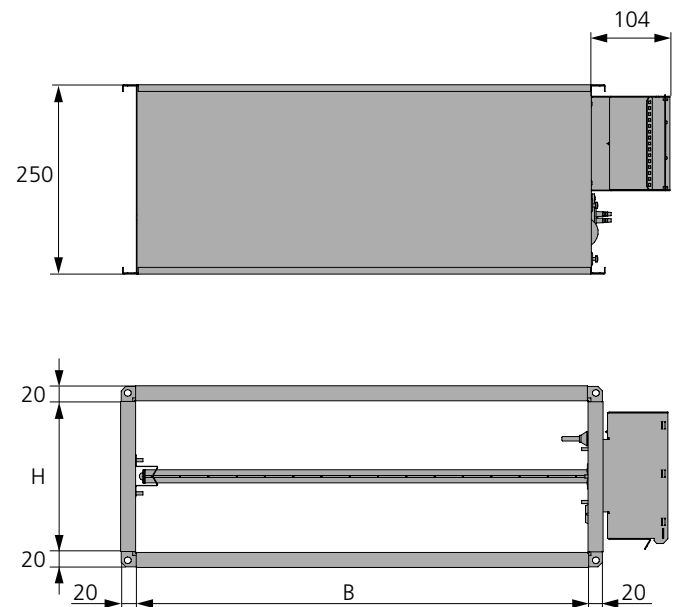


Figure 7. Dimensions, WISE Measure rectangular.

Connections

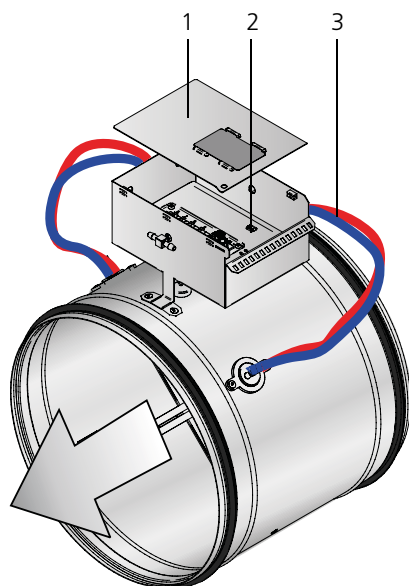


Figure 8. WISE Measure
 1. Cover
 2. WISE CU (Controller Unit)
 3. Measuring tubes

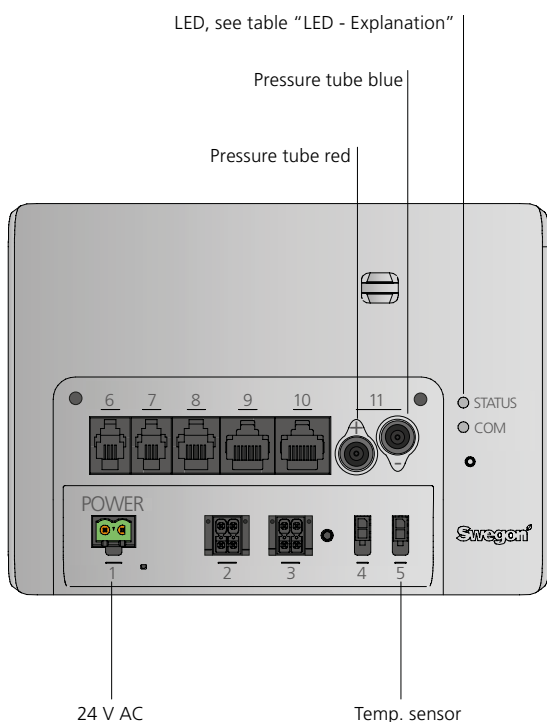


Figure 9. WISE Measure, connection.

LED - Explanation

Not paired

	Colour	Type
Energized	White	Permanent
Selected in TuneWISE	White	Flashing, fast
Prepared to be added to the system	White	Flashing, slowly
To be added to the system	White	Flashing, fast for 5 s

Paired

	Colour	Type
Normal operation	Green	Permanent
Restart	Blue	Permanent for 10 s
Initiation	Blue	Flashing
Air commissioning	Orange	Permanent
Water commissioning	Violet	Permanent
Commissioning, air/ water	Orange/Violet	Alternating
Emergency mode	Green/Red	Alternating
Service mode	Blue	Short flash every 5 s

Use

Use TuneWISE for commissioning. Commissioning must be performed by qualified and trained WISE service engineers.

Use SuperWISE for settings, reading alarms, etc. refer to the documentation for SuperWISE II / SuperWISE II SC.

Trouble shooting

The product is not shown in the system:

- Make sure that the product is energized. (e.g. diode).
- Make sure that the product is paired.
- Make sure the product is in the right radio network.

The product shows incorrect/no air flow/pressure

- Make sure that the product is installed according to the recommended distance to disruptions, see "Installation".
- Check that there is air flow/pressure.
- 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 tube is mounted correctly, plus to plus (red), minus to minus (blue).
- Check that the measuring tubes are undamaged.

The product shows incorrect/no temperature

- Make sure that the temperature sensor does not hang outside the product.
- Check that the temperature sensor is connected to the right input.

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 any cleaning when necessary.
- In connection with a service, mandatory ventilation inspection or cleaning of the ventilation system, check that the general condition of the products looks ok. 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 galvanized sheet steel (Z275).

Disposal

Waste must be handled according to local regulations.

Product warranty

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

Replacement of WISE CU

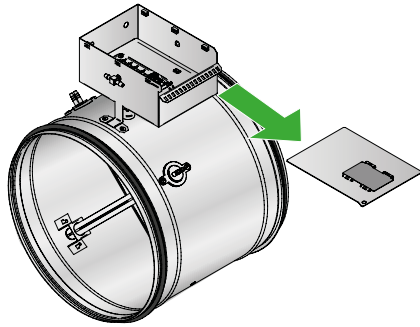


Figure 10. Dismantle the cover on the motor shelf by pulling it out of the slot in the motor shelf.

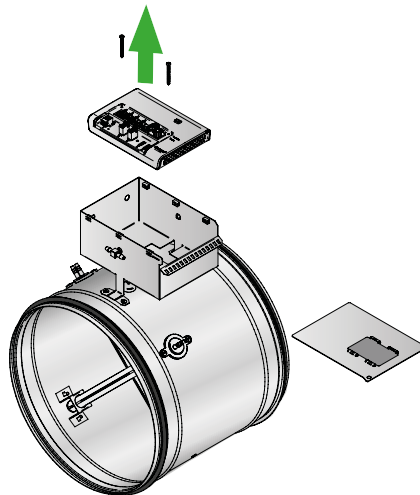


Figure 11. Remove hoses and contactors from WISE CU. Unscrew 2 screws holding WISE CU in place (screw: PH1).

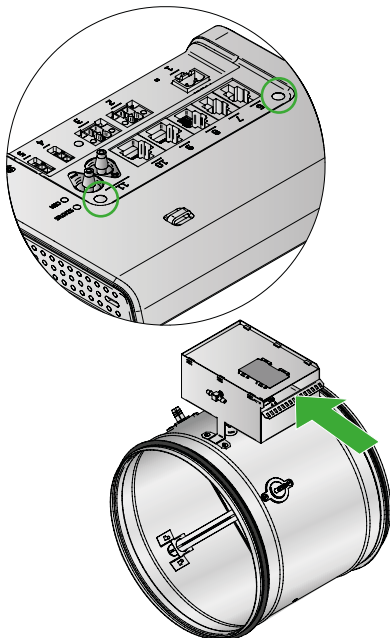


Figure 12.

1. Screw the WISE CU on the motor shelf.
2. Connect hoses and contactors from WISE CU, see "Connection".
3. Insert the lock in the slot until it "snaps into place".
4. Apply the new supplied QR codes over the existing QR codes on the product.

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 (RoHS)

Electrical data

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

Declaration of Conformity

Swegon AB hereby affirms that

WISE Measure with integrated radio, complies with the essential characteristic demands and relevant regulations specified in the following directives: 2014/53/EU (RED) and 2011/65/EU (RoHS2):

The following standards have been observed:

EN 60730-1:2011	Automatic electrical controls for household and similar use - Part 1 Generic standards
IEC 60529:1992+A2:2013	Degrees of protection provided by enclosures (IP code)
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
EN 300328 V1.9.2, V1.9.1, V1.8.1	Electromagnetic compatibility and Radio spectrum Matters (ERM) - Wideband Transmission systems - Data transmission equipment operating in the 2.4 GHz ISM band and using spread spectrum modulation techniques



Person responsible for this declaration:

Name: Ingvar Hagström, Factory Manager Tomelilla

Address: Industrigatan 5, 273 21 Tomelilla, Sweden

Date: 170131

A handwritten signature in black ink, appearing to read 'Ingvar Hagström', is written over the date.

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

www.swegon.com

Building Materials Declaration

WISE Measure product data sheet

WISE System Guide

SuperWISE II / SuperWISE II SC User Manual

WISE Project Planning Guide VS & Cooling, Electric & Control and Ventilation