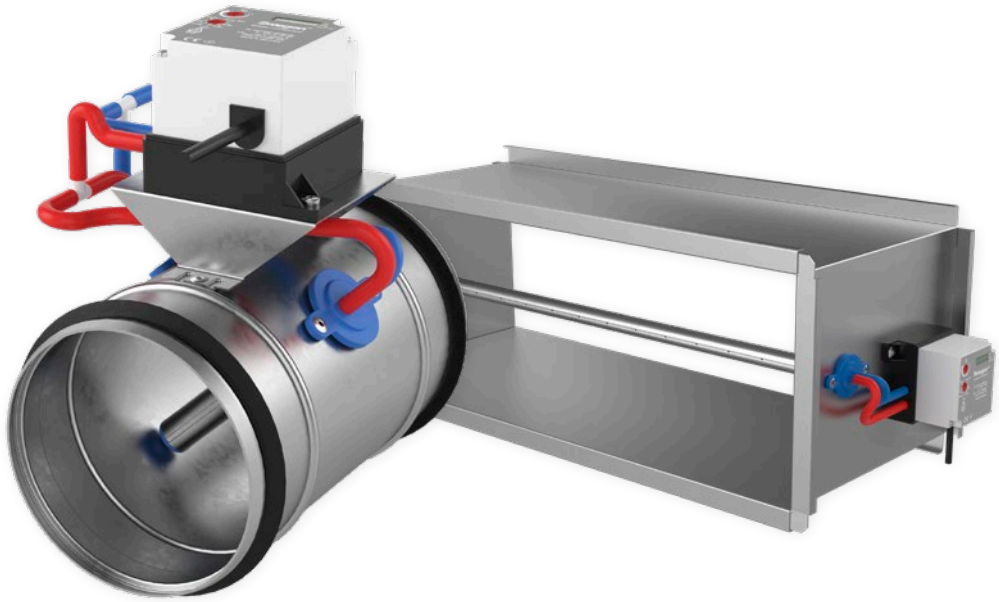
REACT M GMB

Measurement unit – Gruner Modbus



QUICK FACTS

- Stand-alone measurement unit for measuring the air flow
- Can be mounted directly at bends and duct transitions/ reductions (circular)
- Rapid setting/reading of parameters via the controller's display
- Analogue control and Modbus control
- Can be easily insulated against condensation in the duct system
- Variants:
  - Circular connection: Ø100-630 mm
  - Rectangular connection: 200x200-1400x700 mm

FLOW RANGE				
REACT M GMB Size	Min.		Max.*	
	l/s	m³/h	l/s	m³/h
100	5	18	90	324
125	9	32	147	529
160	16	58	254	914
200	25	90	404	1454
250	40	144	658	2369
315	63	227	1054	3794
400	102	367	1732	6235
500	164	590	2670	9612
630	300	1080	4174	15026

** Nominal flow (Vnom), based on 250 Pa in pressure reading.*

Contents

Technical description

General

- Intended for measuring comfort ventilation.
- Moist, cold and aggressive environments must be avoided.
- Can be installed in both supply and extract air systems.
- The minimum air flow must be considered during design.

Design

- Integrated air flow sensor.
- Analogue control and Modbus control.

Circular design

- 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 is available on request.

Rectangular design

- Connection 200x200-1400x700 mm.
- Other sizes are also available on request.

Functions

- Measurement of air flow.
- 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

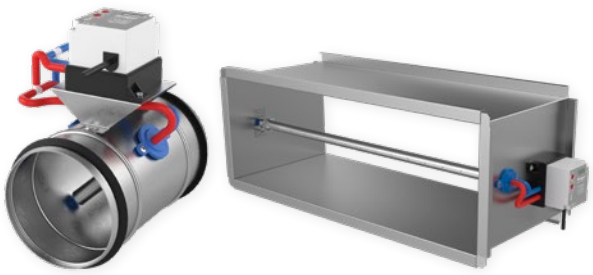
See separate documentation "REACT Gruner Description of functions & wiring diagrams", available for download via www.swegon.com.

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.



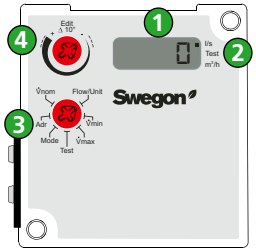


Figure 1. REACT M GMB controller.
1. *Display*
2. *Unit matrix*
3. *Function wheel*
4. *Edit wheel*

Accessories

FSR	Clamp for easy dismantling of a circular design for cleaning and inspection

FSR

Technical data

IP class:	IP42
Corrosivity class:	C3
Leakage classes according to SS-EN 1751	
- Leakage class, casing:	C
Ambient temperature	
Operation:	0 – +50 °C
Storage:	-20 – +50°C
RH:	10 - 95% (non-condensing)
CE marking:	2014/35/EU (LVD)
	2014/30/EU (EMC)
	2011/65/EU (RoHS2)

Electrical data

Power supply:	24 V AC/DC ±15% 50 - 60 Hz	
Fixed connection cable, 1000 mm with cable size.		
Supply voltage	3 x 0.75 mm²	
Modbus	2 x 0.38 mm²	
	See figure 2 below.	
Power consumption, for transformer rating:		
REACT M GMB	0.6 W	1.3 VA

Connection

1-2 – Supply voltage	24 V AC/DC
4 – Actual value signal (U)	0..10/(2..10) V DC
A – Modbus (-CA)	
B – Modbus (+CB)	

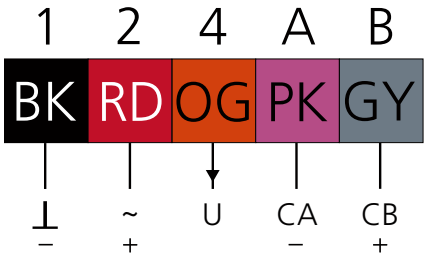


Figure 2. Connection.

Sizing

Circular design

- Note: 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.

Sound power in octave bands

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

Correction factor, K_{ok}

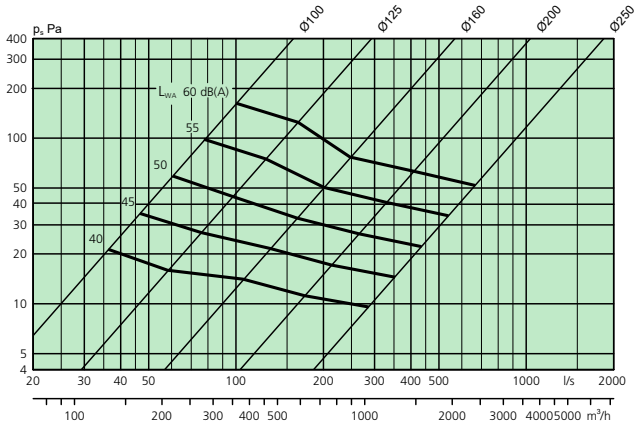
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
100	7	18	8	0	-3	-9	-17	-22
125	6	16	6	-2	-3	-7	-19	-23
160	5	15	4	-3	-4	-9	-11	-22
200	2	15	3	-4	-4	-7	-14	-22
250	7	12	4	-4	-4	-6	-12	-19
315	5	11	3	-6	-4	-6	-14	-23
400	8	10	1	-6	-4	-7	-16	-24
500	8	9	0	-5	-3	-7	-17	-24
630	7	8	1	-4	-2	-9	-17	-25
Tol. ±	6	3	2	2	2	2	2	2

Sizing diagram

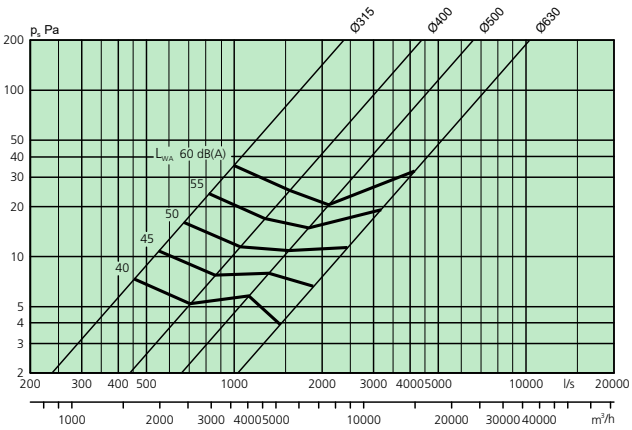
Air flow – Pressure drop – Sound level

- Specified sound levels, L_{WA}: 40, 50, 60 and 70 dB(A).
- Data is for the sound created in the duct.

REACT M GMB 100, 125, 160, 200, 250



REACT M GMB 315, 400, 500, 630



Rectangular design

No increased pressure drop.

Installation, dimensions and weights

Circular design

Dimensions

Size ØD (mm)	A (mm)	B (mm)	C (mm)	Weight (kg)	Flow range				Tolerance Q* ±5% but at least ±x	
					Min.		Max = Vnom*)			
					l/s	m³/h	l/s	m³/h	l/s	m³/h
100	220	50	200	0.8	5	18	90	324	2	7
125	220	50	225	0.9	9	32	147	529	2	7
160	220	50	260	1.1	16	58	254	914	2	7
200	220	50	300	1.2	25	90	404	1454	3	11
250	220	50	350	1.4	40	144	658	2369	5	18
315	220	50	415	1.7	63	227	1054	3794	8	29
400	220	50	500	2.1	102	367	1732	6235	13	47
500	230	50	600	2.5	164	590	2670	9612	20	72
630	230	50	730	3.0	300	1080	4174	15026	32	115

*)Vnom at 250 Pa in pressure reading.

*Installed according to the instructions.

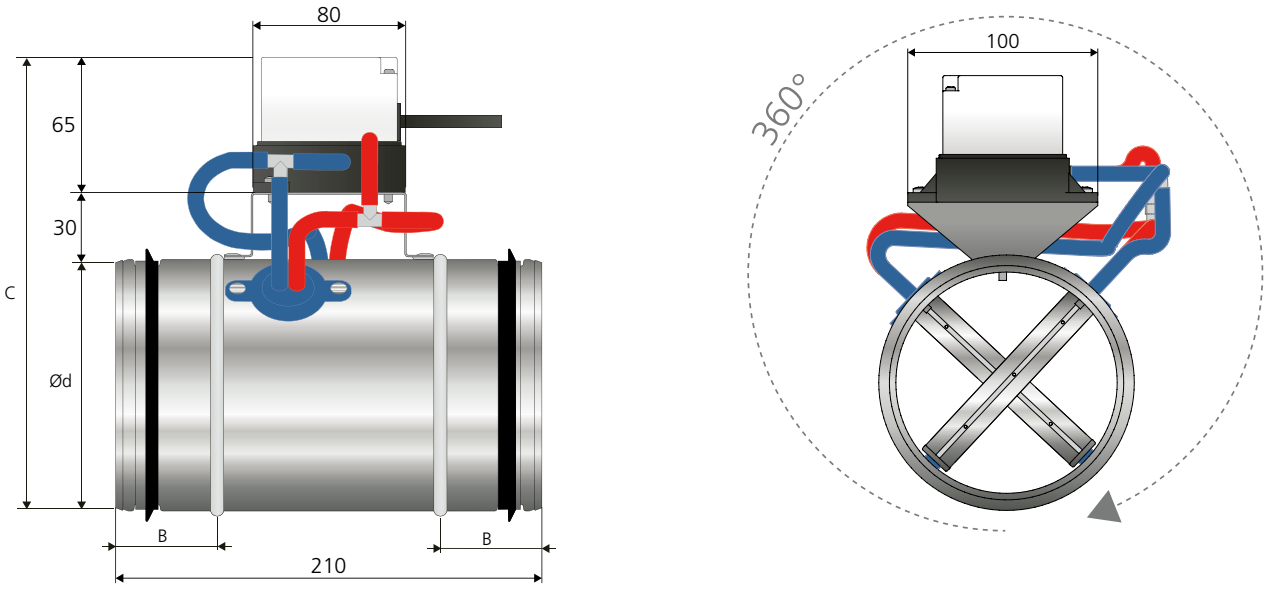


Figure 3. Dimensions (mm), REACT M GMB circular. The measurement unit can be installed at an optional angle.

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

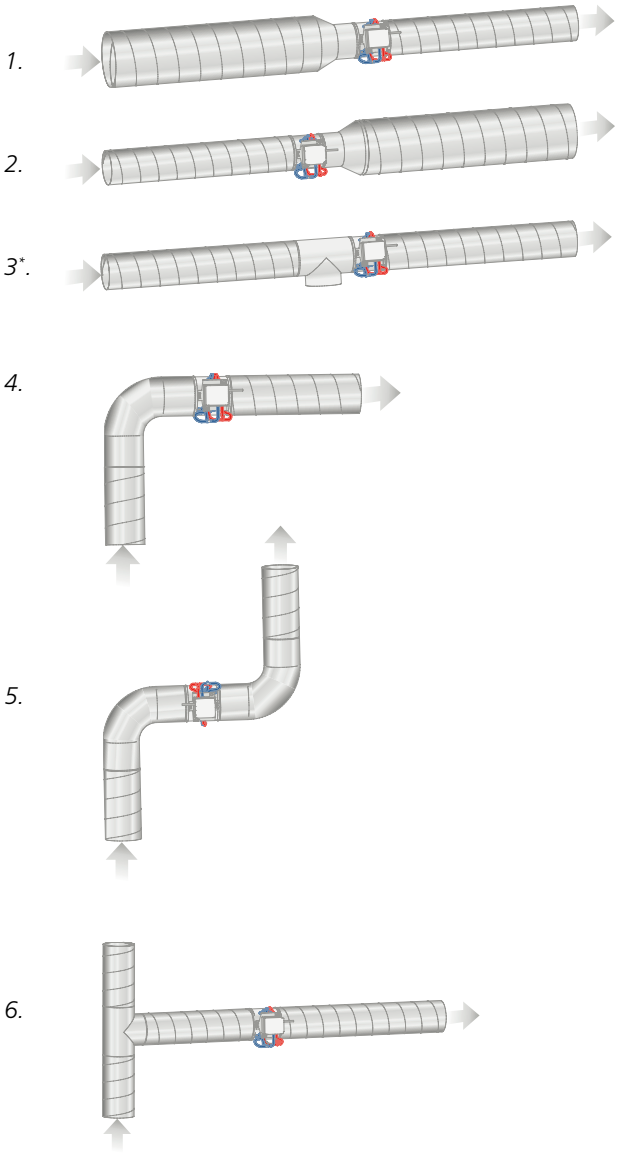


Figure 4. Straight duct section requirements in circular ducts, number of Ø before product:
Images 1-5 require no straight duct section (image 3 illustrates a T piece with a cleaning hatch).*
Image 6 requires a straight duct section before the damper equivalent to 4 x the diameter of the duct.

Straight duct section requirements in case of sound attenuator with baffle

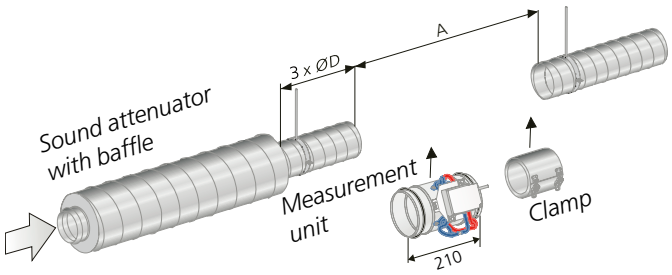


Figure 5. Straight duct section requirements 3 x Ø in case of sound attenuator with baffle or centre body.

Installation in the duct system

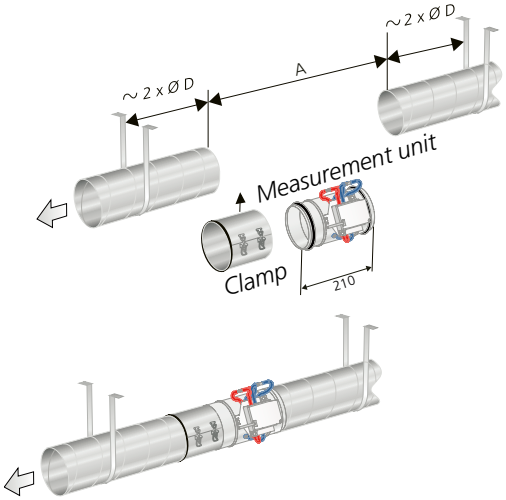


Figure 5. Installation in the duct system. The ducts must be firmly fixed to the frame of the building on each side of the product.

Rectangular design

Dimensions

Size BxH (mm)	Weight (kg)	Flow range				Tolerance Q* ±5% but at least ±x	
		Min		Max = Vnom*)			
		l/s	m³/h	l/s	m³/h	l/s	m³/h
200 x 200	2.5	67	240	527	1897	8	29
300 x 200	3.0	100	360	790	2845	12	43
400 x 200	3.4	133	480	1054	3793	17	61
500 x 200	3.9	167	600	1317	4742	21	76
600 x 200	4.3	200	720	1581	5690	25	90
700 x 200	4.8	233	840	1844	6638	29	104
800 x 200	5.3	267	960	2107	7586	33	119
1000 x 200	6.2	333	1200	2634	9483	42	151
300 x 300	3.4	152	548	1204	4334	19	68
400 x 300	3.8	203	731	1605	5779	25	90
500 x 300	4.3	254	914	2006	7223	32	115
600 x 300	4.8	305	1096	2408	8668	38	137
700 x 300	5.1	355	1279	2809	10113	44	158
800 x 300	5.7	406	1462	3210	11557	51	184
1000 x 300	6.6	508	1827	4013	14447	63	227
400 x 400	4.4	273	983	2158	7769	34	122
500 x 400	4.9	341	1228	2697	9711	43	155
600 x 400	5.3	409	1474	3237	11653	51	184
700 x 400	5.9	478	1720	3776	13595	60	216
800 x 400	6.4	546	1965	4316	15537	68	245
1000 x 400	7.3	682	2457	5395	19421	85	306
1200 x 400	8.3	819	2948	6474	23306	102	367
1400 x 400	9.2	955	3439	7553	27190	119	428
1600 x 400	10.2	1092	3931	8632	31074	136	490
500 x 500	5.3	429	1543	3388	12195	54	194
600 x 500	5.7	514	1851	4065	14634	64	230
700 x 500	6.3	600	2160	4743	17073	75	270
800 x 500	6.7	686	2468	5420	19513	86	310
1000 x 500	7.7	857	3085	6775	24391	107	385
1200 x 500	8.7	1028	3702	8130	29269	129	464
1400 x 500	9.7	1200	4319	9485	34147	150	540
1600 x 500	10.7	1371	4936	10840	39025	171	616
600 x 600	6.4	618	2227	4890	17602	77	277
700 x 600	7.0	722	2598	5704	20536	90	324
800 x 600	7.4	825	2969	6519	23470	103	371
1000 x 600	8.5	1031	3711	8149	29337	129	464
1200 x 600	9.5	1237	4453	9779	35204	155	558
1400 x 600	10.5	1443	5195	11409	41072	180	648
1600 x 600	11.6	1649	5937	13039	46939	206	742
700 x 700	7.4	844	3038	6671	24014	105	378
800 x 700	7.9	964	3472	7624	27445	121	436
1000 x 700	8.9	1205	4339	9530	34306	151	544
1200 x 700	9.9	1446	5207	11435	41168	181	652
1400 x 700	11.0	1688	6075	13341	48029	211	760

*) Vnom at 250 Pa in pressure reading.

*Installed according to the instructions.

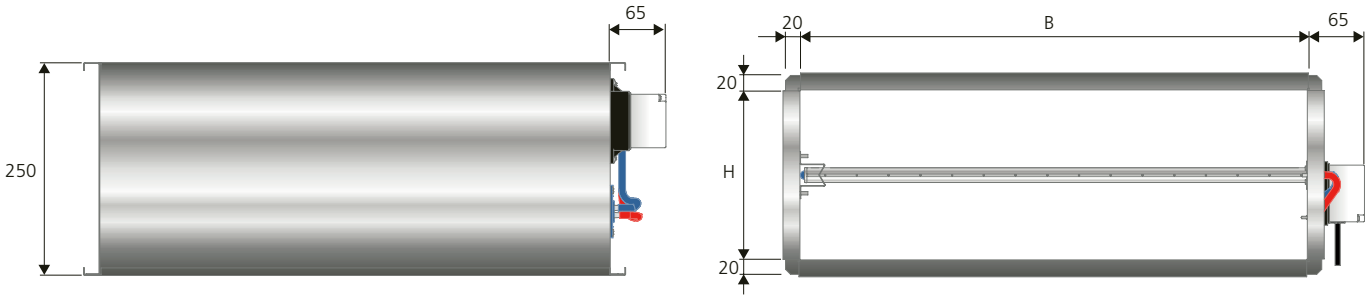


Figure 6. Dimensions (mm), REACT M GMB rectangular.

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, always install the measurement unit 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.

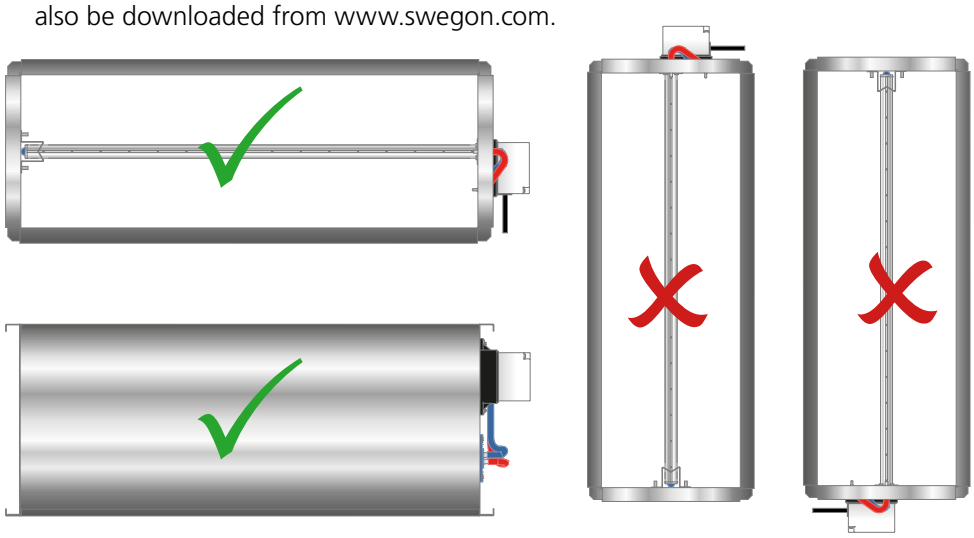


Figure 7. Installation - For rectangular ducts, always install the measurement unit so that the controller/actuator is placed along the side of the duct.

Straight duct section requirements

Type of obstruction	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

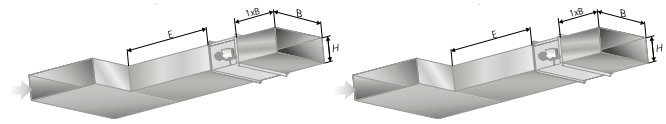


Figure 8. Straight duct section requirements in rectangular ducts.
E = Straight section
B = Width of duct
H = Height of duct

Straight duct section requirements in case of sound attenuator with baffle

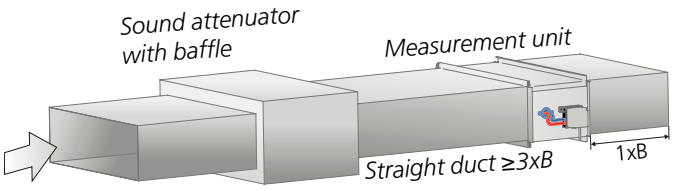


Figure 9. Straight duct section requirements 3 x B in case of sound attenuator with baffle. Applies to both supply and extract air.

Specification

Product

Circular design

Circular measurement unit	REACT M GMB	a	bbb
Version:			
Size: 100, 125, 160, 200, 250, 315, 400, 500, 630			

Rectangular design

Rectangular measurement unit	REACT M GMB	a	bbb-ccc
Version:			
Size: B x H (see table on page 8)			

Accessories

FSR

Clamp for circular ventilation ducts	FSR	c	aaa
Version:			
Dimension: 100, 125, 160, 200, 250, 315, 400, 500, 630			

Specification text

Example of a specification text according to VVS AMA.

QJJ Flow measurement unit in ventilation duct
Make: Swegon
Type: REACT M GMB

Measurement unit for ducts with the following functions:

- Measures air flow.
- Available in a circular or rectangular designs.
- Can be installed in both supply and extract air systems.
- Can be ordered with factory-fitted insulation.
- Shelf with 30 mm spacer to facilitate condensation insulation of the duct system.

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

Size circular:	Ø 100 to Ø 630
Size rectangular:	200 x 200 to 1400 x 700

Specification

Standard SS-EN 1751:	2014, Annex C	
Power supply:	24 V AC ±15% 50 - 60 Hz	
IP class:	IP20	
Air tightness class, casing:	C	
Corrosivity class:	C3	
Tolerance flow measurement:	±5%, although at least ±X according to table in product sheet	
Type:	REACT M GMBa	bbb xx pcs
	REACT M GMBa	bbb-ccc xx pcs

Accessories

Clamp for circular ventilation ducts	FSR	xx pcs