

BRRM

Measuring unit



DAMPERS &
MEASURING DAMPERS



25/02/2020

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Measuring unit BRRM



Also available as Flow measurement unit BVVM, see separate product sheet.

Quick facts

- Sizes according to table
- Hot dip galvanised sheet steel or Stainless steel design
- Slip joint connection
- Available in MagiCAD
- Also available as flow measurement unit BVVM
- Only 120 mm deep
- Supplied with integrated lifting points
- Prepared for wrap over insulation

Use

The BRRM measurement unit is designed for measuring air flows in rectangular ducts. Testing and specifying of K-factors has been performed at RISE (SP). For commissioning, the measurement unit is supplemented with rectangular damper BRJS, see separate product sheet.

Material och ytbehandling

The casing is made as standard of hot-dip galvanized sheet steel. The measurement tube is made of extruded aluminium. Corrosivity category C3. Other casing materials are available for higher environmental requirements.

Specifications

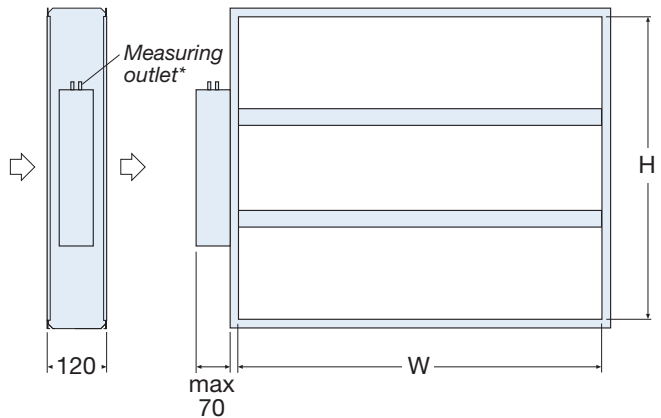
Example: **Measuring unit BRRM - 600 - 400 - 1**

Size
Dimensions, W x H mm

Material

Galvanized sheet steel	= 1
Stainless steel 1.4301	= 2
Stainless steel 1.4404	= 3

Dimensions



* Number of measurement tubes varies depending on the size of the damper.

Sizes

H	W															
	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	
200	●	●	●	●	●											
300	●	●	●	●	●	●	●	●								
400		●	●	●	●	●	●	●	●	●	●					
500		●	●	●	●	●	●	●	●	●	●	●	●	●		
600			●	●	●	●	●	●	●	●	●	●	●	●	●	●
700			●	●	●	●	●	●	●	●	●	●	●	●	●	●
800				●	●	●	●	●	●	●	●	●	●	●		
900				●	●	●	●	●	●	●	●					
1000					●	●	●	●	●	●						
1100						●	●	●	●							
1200						●	●	●								
1300							●	●								

NB: The measuring outlet is placed on the H-side



Technical data

Sound data

Correction of sound power level, L_W , for different sizes

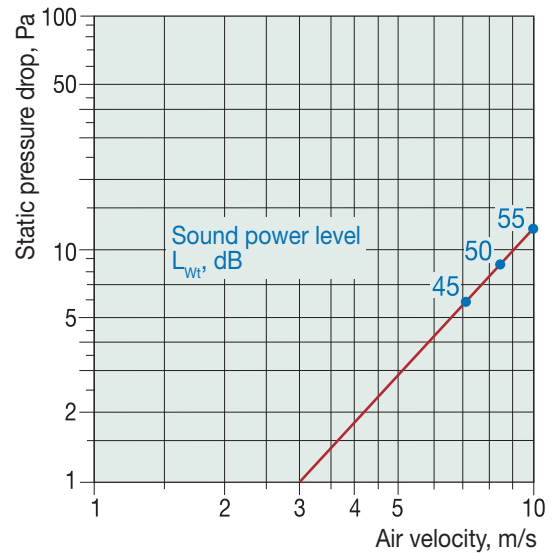
$$L_W = L_{Wt} + K_1$$

Damper-area, m ²	0,12	0,25	0,5	1,0	2,0	3,0	4,0
K_1	-3	0	3	6	9	10,5	12

Correction of sound power level, L_{Wok} , in octave band

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

Mid frequency Hz	125	250	500	1000	2000	4000	8000
K_{ok}	-3	-6	-9	-12	-17	-16	-25



Installation

When installing the measuring unit a linear distance corresponding to minimum 2 hydraulic diameters (d_h), is required after a disturbance source (min. 500 mm), see below. At other disturbance sources, for example T-piece, minimum 5 x d_h is recommended.

$$d_h = \frac{2 \times B \times H}{B + H} \text{ mm, where } W \text{ and } H \text{ are the sides of the duct}$$

Examples of disturbance sources are: Duct bend, silencer change in dimensions, damper, heater, fan, air intake, etc.

Method error, $m_2 < 5\%$

NB: The device should always be placed in the same plane as a duct bend or bifurcation and with the measuring tube turned outwards. Commissioning dampers can be placed directly after the measurement unit.

Commissioning

Commissioning with K-factor

For commissioning with K-factor, use the formula:

$$q = a \times K \times \sqrt{\Delta p}$$

q = airflow, l/s

Δp = differential pressure, Pa

K = measuring unit's K factor = 680

a = area of the measuring unit, m²

Recommended working range, 2-5 m/s in duct velocity.

NB: Measurement uncertainty increases at air velocities < 2 m/s.

