

08



Overpressure dampers



Volume control dampers



Throttling, shut-off and non-return dampers



Mechanical flow rate controllers

Air flow control units

Overpressure dampers are used to equalize the pressures between adjacent rooms and for automatic interruption of air supply or air exhaust.

Volume control dampers regulate the air flow volume in ventilating ducts and air conditioning devices.

Throttling, shut-off and non-return dampers and flow rate controllers are used for control the air flow volume in ventilating ducts.

VENTILATING GRILLES,
VENTILATING VALVES

CIRCULAR DIFFUSERS,
SQUARE DIFFUSERS

SWIRL DIFFUSERS,
VARIABLE SWIRL
DIFFUSERS

SLOT DIFFUSERS,
ROUND DUCT DIFFUSERS

AIR DISPLACEMENT
UNITS

SUPPLY AIR NOZZLES

EXTERNAL ELEMENTS

AIR FLOW
CONTROL UNITS

SOUND ATTENUATORS,
SOUND ATTENUATING
LOUVRES

Overview

Overpressure dampers

Overpressure dampers are used to equalize the pressures between adjacent rooms and for automatic interruption of air supply or air exhaust. Steel (Types JNŽ) or aluminium (Types ANŽ) overpressure dampers can be produced.

Overpressure dampers



JNŽ-6



ANŽ-3, ANŽ-4



JNŽ-6W

Volume control dampers

Volume control dampers regulate the air flow volume in ventilating ducts and air conditioning devices. We produce several construction types with manual, motor or pneumatic regulation.

Volume control dampers



RŽ-1



RŽ-2



RŽ-3



RŽ-1/G

Throttling, shut off and non return dampers, flow rate controllers

They are used to control the air flow volume in ventilating ducts.



RŽ-7

Throttling, shut off and non return dampers



DL



DL-2



ZL-2



RSK

Mechanical flow rate controllers



MRP-1



MRP-2



MRP-3



MRP-4

Content

	Page
OVERPRESSURE DAMPERS	296
Overpressure dampers JNŽ-6, ANŽ-3, ANŽ-4	296
Louvre for maintaining the preset pressure difference JNŽ-6W	299
VOLUME CONTROL DAMPERS	301
Volume control dampers RŽ-1, RŽ-2, RŽ-3	301
Volume control dampers RŽ-7	308
COMBINATIONS	311
Combination of Protection louvres JZR-6 and AZR-4 with Overpressure damper JNŽ-6	311
Combination of Protection louvres JZR-6 and AZR-4 with Volume control damper RŽ-1	311
THROTTLING, SHUT-OFF AND NON-RETURN DAMPERS	312
Throttling dampers DL	312
Throttling dampers DL-1, DL-2	314
Shut-off dampers ZL-1, ZL-2	316
Non-return damper RSK	318
MECHANICAL FLOW RATE CONTROLLERS	319
Mechanical flow-rate controller MRP-1 (Circular)	319
Mechanical flow-rate controller MRP-2 (Rectangular)	321
Mechanical flow-rate controller MRP-3 (Circular)	323
Mechanical flow-rate controller MRP-4 (Square)	328
MOTOR ACTUATORS BELIMO AND JOVENTA	333
Motor actuators	333

VENTILATING GRILLES,
VENTILATING VALVES

CIRCULAR DIFFUSERS,
SQUARE DIFFUSERS

SWIRL DIFFUSERS,
VARIABLE SWIRL
DIFFUSERS

SLOT DIFFUSERS,
ROUND DUCT DIFFUSERS

AIR DISPLACEMENT
UNITS

SUPPLY AIR NOZZLES

EXTERNAL ELEMENTS

AIR FLOW
CONTROL UNITS

SOUND ATTENUATORS,
SOUND ATTENUATING
LOUVRES

■ Mechanical flow-rate controller MRP-4 (Square)

Description

The rectangular mechanical flow rate controller provides a constant volume flow rate in ventilation and air conditioning installations. The controllers operate without an auxiliary power supply. The air flow is regulated mechanically via a regulatory panel, which is mutually bearing and through the leverage of the spring training. The setting of the desired flow can be manual or motor driven. Rectangular flow rate controller may also have acoustic insulation with 40 mm of mineral wool enclosed with galvanised sheet steel.

Application

These controllers are designed to control air flow rate in circular duct systems. Their application temperature range is -20 to 70 °C. The volume flow rate shall be maintained constant, with a deviation between $\pm 5\%$ and $\pm 10\%$ at variable pressures between 50 and 1000 Pa. External measurements of the controller must suit the measured channel, so as to avoid mechanical failures: pressure loss and a higher level of noise.

Material

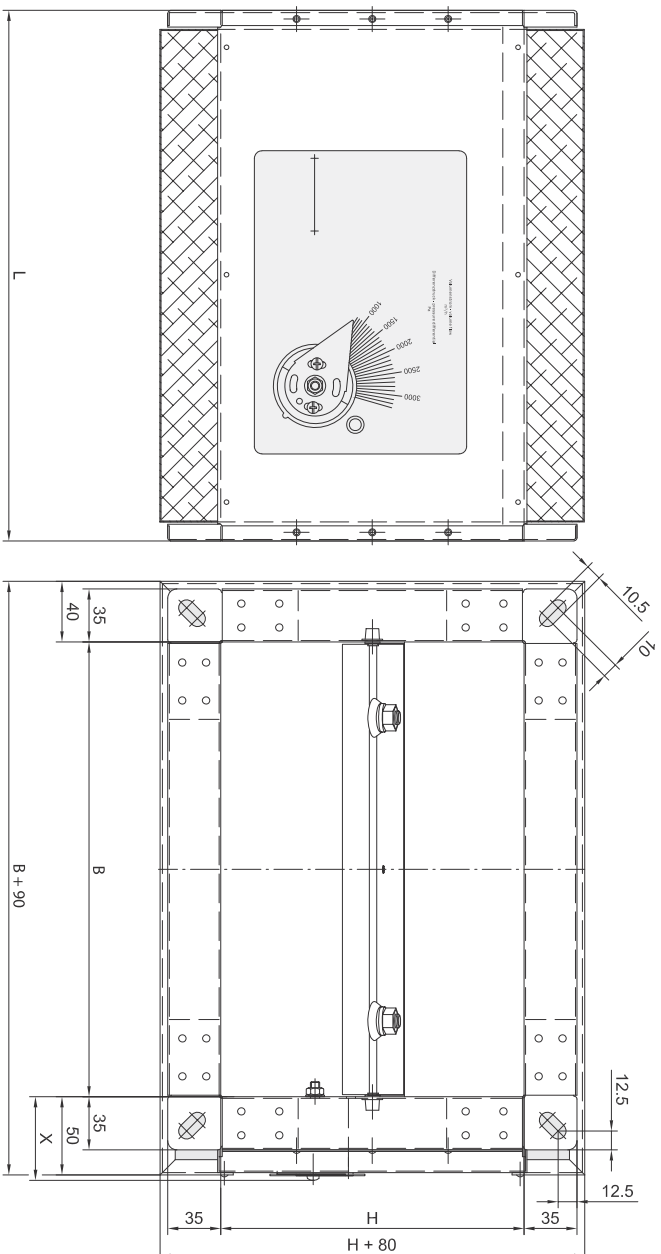
Mechanical flow rate controllers is made of galvanised steel sheet. The housing of regulator and connecting parts comply with the leak tightness classification B in accordance with EN 1751.

Installation

The controller can be easily installed in the ventilation system by means of its flange section. An important requirement is stable fixing of the ducting system, to prevent oscillations of the ducting in the flexible part during fast opening or closing of the control flap.



Width B (mm)	Height H (mm)	Length (mm)	Air flow volume	
			V_{\min} (m ³ /h)	V_{\max} (m ³ /h)
200	100	300	200	800
	150	325	250	1200
	200	425	350	1550
300	100	300	250	1200
	150	325	350	1650
	200	350	500	2100
	250	450	600	2800
	300	500	750	3500
400	200	375	700	3300
	250	450	800	3700
	300	500	1000	4250
500	200	375	875	4125
	250	400	1000	4375
	300	500	1200	5200
600	200	350	1125	4750
	250	500	1400	6000
	300	500	1600	7000



VENTILATING GRILLES,
VENTILATING VALVES

CIRCULAR DIFFUSERS,
SQUARE DIFFUSERS

SWIRL DIFFUSERS,
VARIABLE SWIRL
DIFFUSERS

SLOT DIFFUSERS,
ROUND DUCT DIFFUSERS

AIR DISPLACEMENT
UNITS

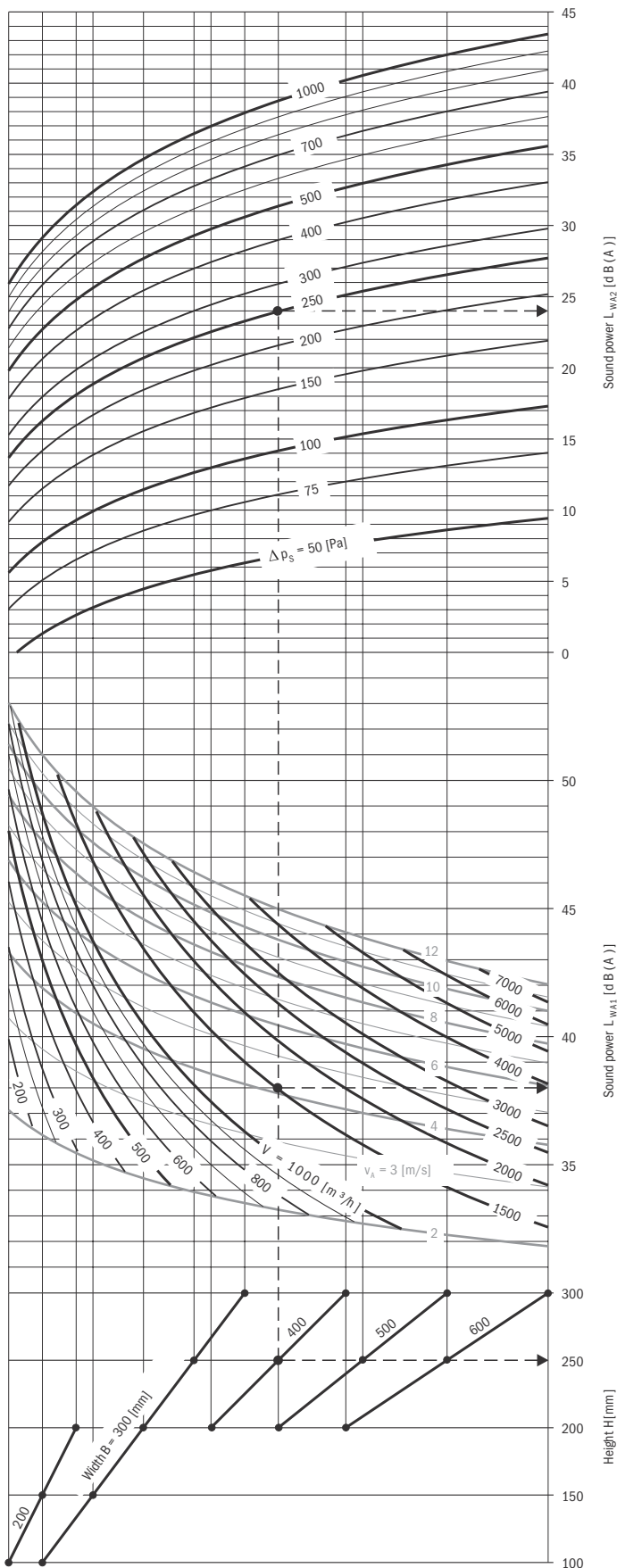
SUPPLY AIR NOZZLES

EXTERNAL ELEMENTS

**AIR FLOW
CONTROL UNITS**

SOUND ATTENUATORS,
SOUND ATTENUATING
LOUVRES

Sound power level outside the connecting duct (noise radiation)



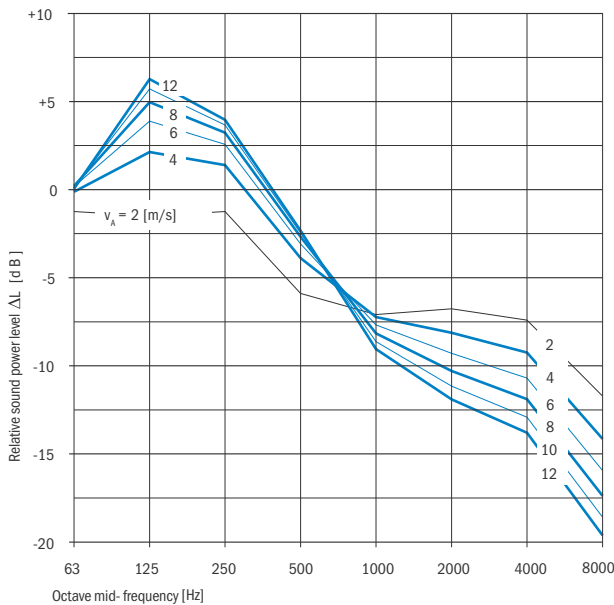
Example

Specified:
 Width B 400 mm
 Height H 250 mm
 Volume flow rate $V = 1500 (m^3/h)$
 Flow velocity $v_a = 4.2 (m/s)$
 Static pressure drop $\Delta p_s = 250 (Pa)$

Result:
 Sound power level: $L_{WA1} = 38 (dB(A))$
 $L_{WA2} = 24 (dB(A))$
 $L_{WA} = 62 (dB(A))$

Relative sound power level ΔL (dB)

Average values for all sizes and pressure drops



Definition of Symbols

- V (m³/h)** Volume flow rate
- A (m²)** Incoming cross-section BxH
- v_A (m/s)** Flow velocity in A
- Δp_s (Pa)** Static pressure drop
- L_{wa} (dB(A))** A-weighted sound power level
 $L_{wa} = L_{wa1} + L_{wa2}$
- L_{w-oct} (dB)** Octave sound power level
 $L_{w-oct} = L_{wa} + \Delta L$
- ΔL (dB)** Relative sound power level to L_{wa}

Sound power L_{w-Oct} for the octave mid-frequencies

	[Hz]	63	125	250	500	1000	2000	4000
L_{wa}	[dB(A)]	62	62	62	62	62	62	62
ΔL_{4,2}	[dB]	0	2	2	-4	-7	-8	-9
L_{w-Oct}	[dB]	62	64	64	58	55	54	53

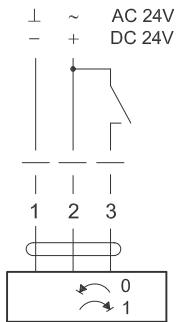
Technical data for actuators

	B2	B1	B3
Connection voltage	230 V [~]	24 V ^{∞=}	24 V ^{∞=}
Operating range	85 to 265V	19.2 to 28.8V	19.2 to 28.8V
Run time for 90°	150 s	150 s	150 s
Input power supply	≤6 VA	≤4 VA	≤4 VA
Energy consumption	≤2.5 W	≤2 W	≤2 W
Degree of protection	IP 54	IP 54	IP 54
Connection cable 0.75 mm²	approx. 1 m 3 core	approx. 1 m 3 core	approx. 1 m 4 core
Ambient temperature	-30 to + 50 °C	-30 to + 50 °C	-30 to + 50 °C

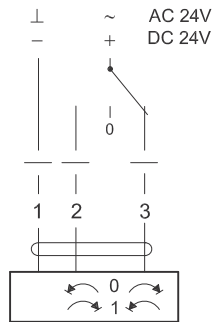
Wiring diagram

Actuator B1

1 wire control

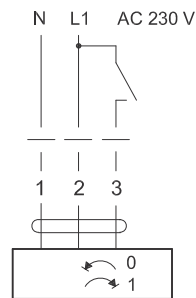


2 wire control

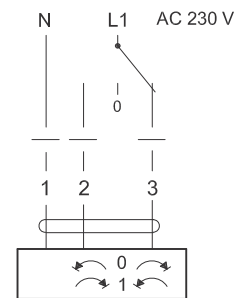


Actuator B2

1 wire control

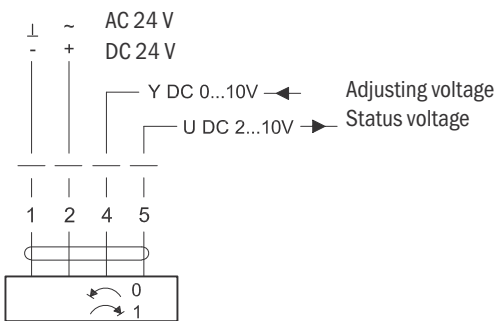


2 wire control



Actuator B3

Continuous



Ordering key

MRP-4/Q/BxH/I/B1

