



Handbook

NOTUS-R

CAV Controller

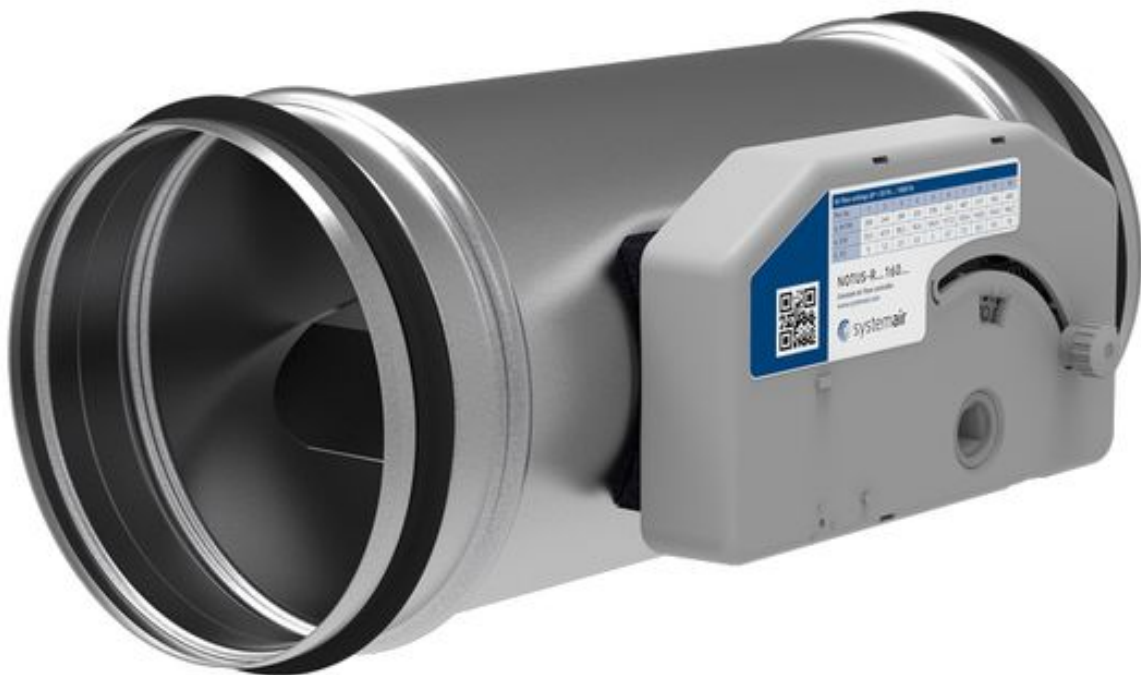


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Description

NOTUS-R is a constant air flow volume controller with mechanical type of operation (no need for auxiliary energy). The product is intended to control the constant air flow independently of the duct air pressure in the range of 50 Pa to 1000 Pa. The product fits into the circular ducts of 80 mm up to 400 mm in diameter. The constant air flow value can be set manually (product type NOTUS...M0) or by an actuator (product type NOTUS...M1/M2). The product is intended for all applications, where a reliable, precise and cost effective air flow control is required.

Highlights

- Easy, precise air flow adjustment
- Good, stable control accuracy
- Small straight equalizing duct length in front of device required
- Large pressure drop working range
- High casing tightness, class C acc. to EN 1751

Types of Product

- NOTUS-R...M0: Manually operated CAV controller
- NOTUS-R...M1: Actuator operated CAV controller, AC 24V
- NOTUS-R...M2: Actuator operated CAV controller, AC 230V
- NOTUS-RI...M0: Manually operated CAV controller with acoustic insulation
- NOTUS-RI...M1: Actuator operated CAV controller with acoustic insulation, AC 24V
- NOTUS-RI...M2: Actuator operated CAV controller with acoustic insulation, AC 230V

List of Accessories

- **M1A-NOTUS**: Actuator kit, continuous or 2-point, AC 24 V, Belimo CM24-SRV
- **M1B-NOTUS**: Actuator kit, continuous or 2-point, AC 24 V, Belimo LM24-SRV
- **M2A-NOTUS**: Actuator kit, 2-point, AC 230 V, Belimo CM230
- **M2B-NOTUS**: Actuator kit, 2-point, AC 230 V, Belimo LM230
- **FB-NOTUS**: Adjustment arresting bolt for NOTUS...M0

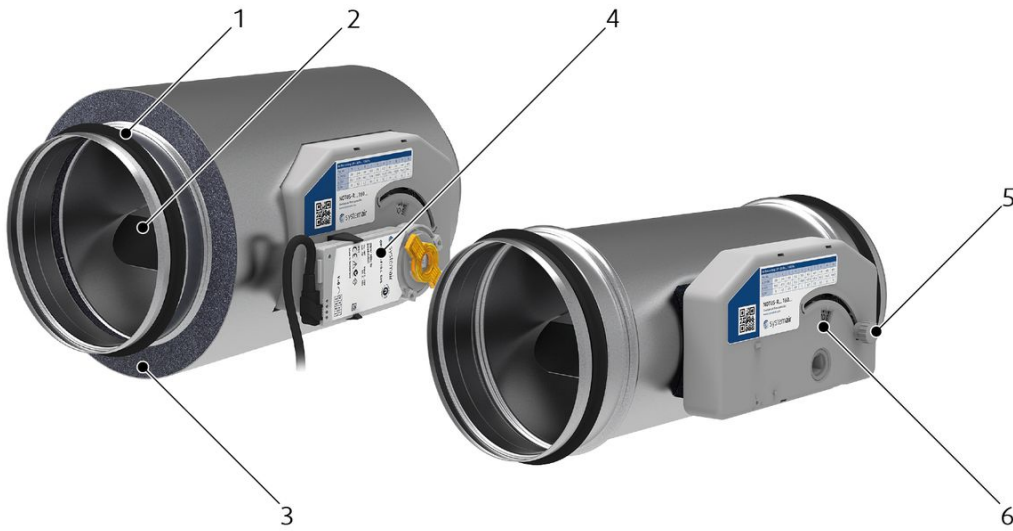
Design

NOTUS-R is manufactured from galvanized steel sheet with rubber gasket sealed duct connections. The control damper blade is made from aluminium. Product type NOTUS-RI (with acoustic insulation) has 1,9 cm polymer foam layer around the damper casing. The damper casing is covered by galvanized sheet cover. The control mechanism is made from ABS plastics levers and transmissions, steel springs, rotary shock absorber filled with silicone oil and ABS box. The body of the product has leakage class C according to EN 1751 (the damper blade is not intended for shut-off function so the blade leakage is not classified). Product type NOTUS...M0 (manually operated) can be equipped by an actuator additionally.

Noise and thermal insulation material for NOTUS-RI

Base	NBR/PVC
Cellular Structure	Closed
Colour	Black
Density	80 kg/m ³
Water Absorption	2 % < 5 %
Resistance	Air+ U.V.-Good
Thermal Conductivity (t. + 40 °C)	< 0,039 W/m K
	Class 1 (DM 26/06/84)
	UL 94-HF1
Fire Resistance	Class 0 - BS 476 part6-7 UK
	NF certificate n.38 (until mm.32) France
	B-s3,d0 (EN 13501-1) Euroclass
Marine and Shipbuilding	MED B - MED D - DNV type approval
Steam Diffusion	MU > 7.000
Noise Reduction (DIN 4109)	Up to 30 dB
Ecological Compatibility	NO CFC - HCFC, asbest free

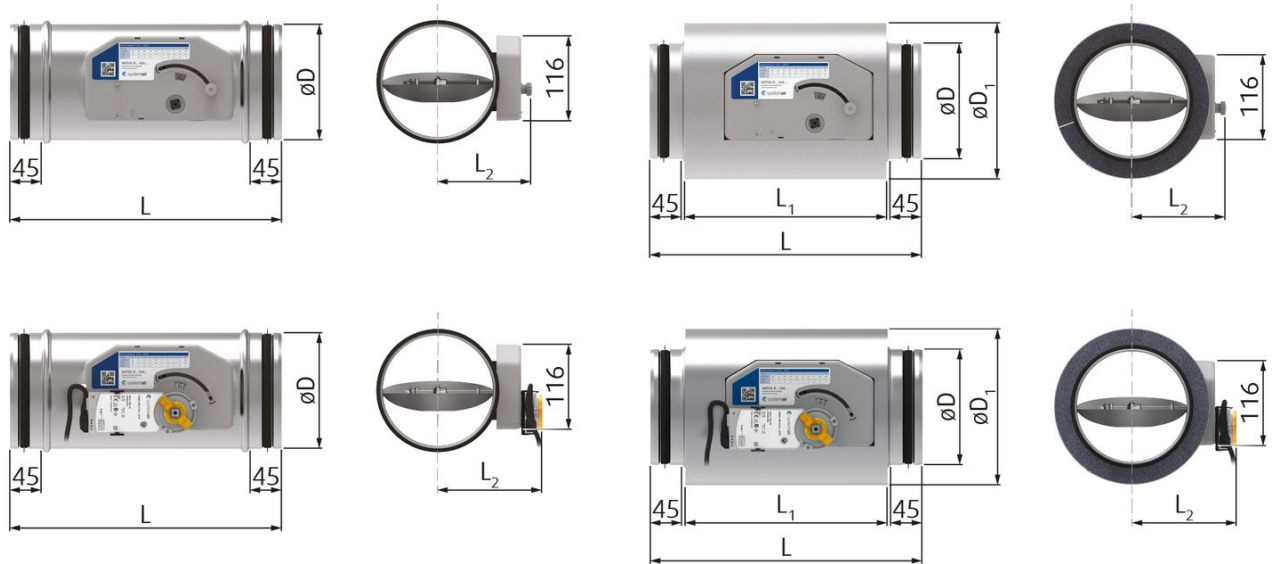
Product Parts



Legend

- 1 Duct connection with gasket
- 2 Flow control blade
- 3 Insulation (NOTUS-RI)
- 4 Actuator (types M1, M2)
- 5 Air flow adjustment knob (type M0)
- 6 Adjustment position indicator

Dimensions & Weights



DN	øD	øD ₁	L	L ₁	L ₂ (M0)	L ₂ (M1/M2)	m ₁ (M0)	m ₂ (M0)	m ₃ (M1/M2)
	mm						kg		
80	77,5	122	350	251	83	102	1,1	1,8	+ 0,3
100	97,5	142	350	251	93	112	1,2	2,0	
125	122,5	167	360	261	106	124	1,4	2,4	
140	136,5	182	370	271	113	132	1,6	2,8	
160	156,5	202	380	281	123	142	1,8	3,2	
180	176,5	222	390	291	133	152	2,1	3,7	
200	196,5	242	400	301	143	162	2,3	4,2	+ 0,5
250	246,5	292	425	326	165	228	3,6	6,1	
315	311,5	357	485	386	201	264	5,0	8,7	
400	396,5	442	530	431	243	306	6,9	12,2	

NOTES:

m₁ = Weight of NOTUS-R...M0

m₂ = Weight of NOTUS-RI...M0

m₃ = Weight of actuator. To be added to m₁ or m₂ for type NOTUS...M1/M2

Ordering Codes

CAV controller

NOTUS-R

Nominal diameter DN

DN

Type of adjustment ¹⁾

M0 Manually operated

M1 Actuator operated; AC/DC 24 V continuous 0 V ... 10 V/2-point

M2 Actuator operated; AC 230 V 2-point

CAV controller with acoustic insulation

NOTUS-RI

Nominal diameter DN

DN

Type of adjustment ¹⁾

M0 Manually operated

M1 Actuator operated; AC/DC 24 V continuous 0 V ... 10 V/2-point

M2 Actuator operated; AC 230 V 2-point

NOTE:

Nominal diameter 80 mm ... 250 mm:

- M1A-NOTUS actuator kit, continuous, AC 24 V, Belimo CM24-SRV
- M2A-NOTUS: Actuator kit for NOTUS CAV controllers, 2-point, AC 230 V, Belimo CM230

Nominal diameter 315 mm ... 400 mm:

- M1B-NOTUS actuator kit, continuous, AC 24 V, Belimo LM24-SRV
- M2B-NOTUS actuator kit, 2-point, AC 230 V, Belimo LM230

Example of the Ordering Code

NOTUS-RI - 125 - M0

CAV controller with acoustic insulation NOTUS-RI, nominal diameter (connection diameter) 125 mm, manually operated.

Accessories

M1A-NOTUS

Actuator Kit



Description

The M1A-NOTUS is an actuator kit. The product upgrades the manually operated NOTUS...M0 to the actuator operated NOTUS...M1 and enables remote adjustment of NOTUS in continuous or in 2-point mode. The product is intended for NOTUS with nominal diameter 80 mm ... 250 mm.

Design

The actuator kit consists of the actuator type Belimo CM24-SRV, the gearing and fixing material.

Power supply: AC 24 V

Control: DC 0 V ... 10 V for continuous positioning or AC 24 V for 2-point positioning

Power consumption: 1.5 VA

Protection: IP54

Item Number:

94809

M1B-NOTUS

Actuator Kit



Description

The M1B-NOTUS actuator kit upgrades the manually operated NOTUS...M0 to the actuator operated NOTUS...M1. The product enables remote adjustment of NOTUS in continuous or in 2-point mode. The product is intended for NOTUS with nominal diameter 315 mm ... 400 mm.

Design

The actuator kit consists of the actuator type Belimo LM24-SRV, the gearing and fixing material.

Power supply: AC 24 V

Control: DC 0 V ... 10 V for continuous positioning or AC 24 V for 2-point positioning

Power consumption: 2 VA

Protection: IP54

Item Number:

94810

M2A-NOTUS

Actuator Kit



Description

The M2A-NOTUS actuator kit upgrades the manually operated NOTUS...M0 to the actuator operated NOTUS...M2. The product enables remote adjustment of NOTUS in 2-point mode. The product is intended for NOTUS with nominal diameter 80 mm ... 250 mm.

Design

The actuator kit consists of the actuator type Belimo CM230, the gearing and fixing material.

Power supply: AC 230 V

Control: AC 230 V

Power consumption: 3 VA

Protection: IP54

Item Number:

94811

M2B-NOTUS

Actuator Kit



Description

The M2B-NOTUS actuator kit upgrades the manually operated NOTUS...M0 to the actuator operated NOTUS...M2. The product enables remote adjustment of NOTUS in 2-point mode. The product is intended for NOTUS with nominal diameter 315 mm ... 400 mm.

Design

The actuator kit consists of the actuator type Belimo LM230, the gearing and fixing material.

Power supply: AC 230 V

Control: AC 230 V

Power consumption: 3.5 VA

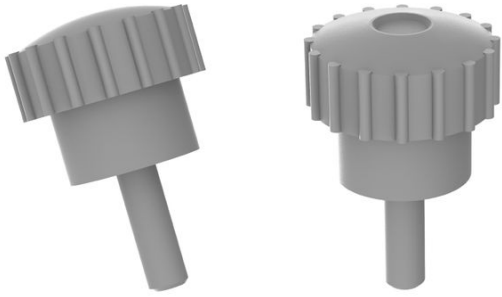
Protection: IP54

Item Number:

94812

FB-NOTUS

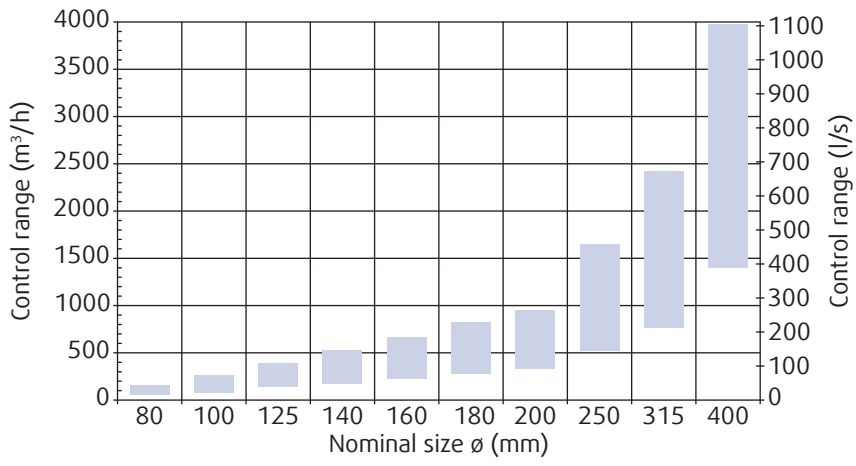
Adjustment Arresting Bolt for NOTUS...M0



Item Number:

237570

Quick Selection



Technical Parameters

Legend

p_s (Pa) Pressure drop

q_v (m³/h or l/s) Air flow volume

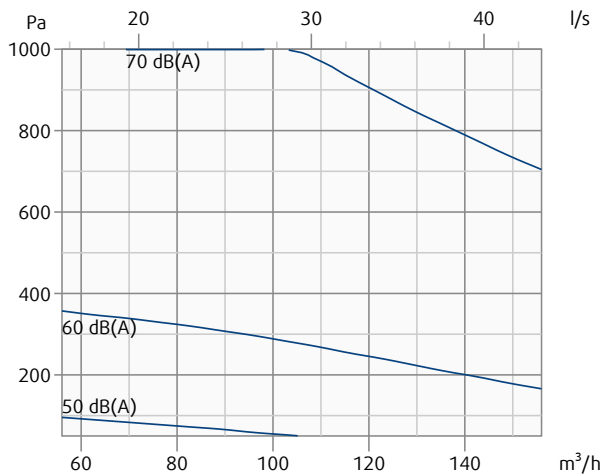
$L_{WA, tot.}$ (dB(A)) A-weighted total radiated sound power level

$L_{W, tot.}$ (dB) Non weighted total sound power level

L_W (dB) Non weighted sound power level

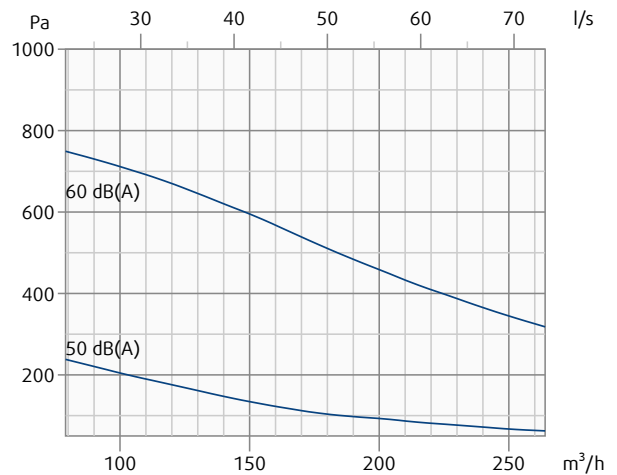
NOTUS-R-80-M0

Pressure drop & A-weighted sound power level in dB(A)



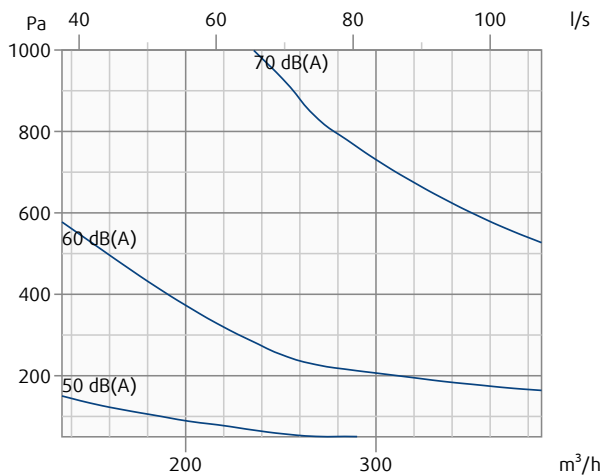
NOTUS-R-100-M0

Pressure drop & A-weighted sound power level in dB(A)



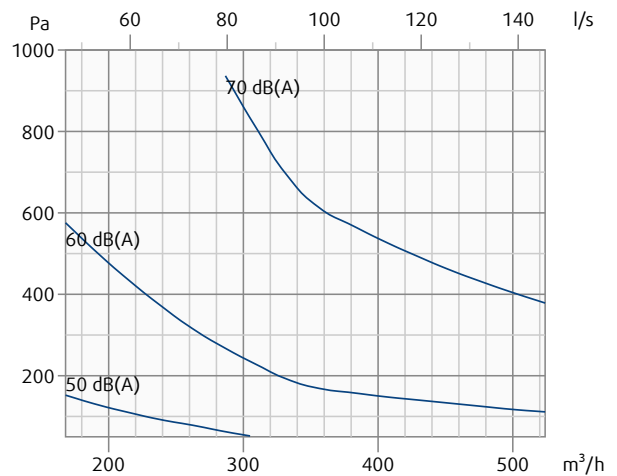
NOTUS-R-125-M0

Pressure drop & A-weighted sound power level in dB(A)



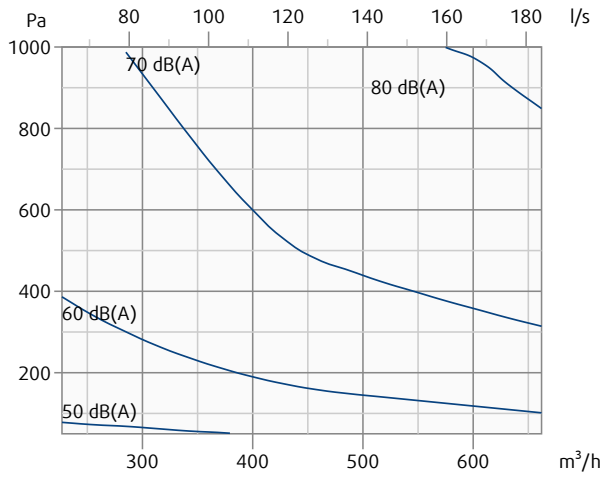
NOTUS-R-140-M0

Pressure drop & A-weighted sound power level in dB(A)



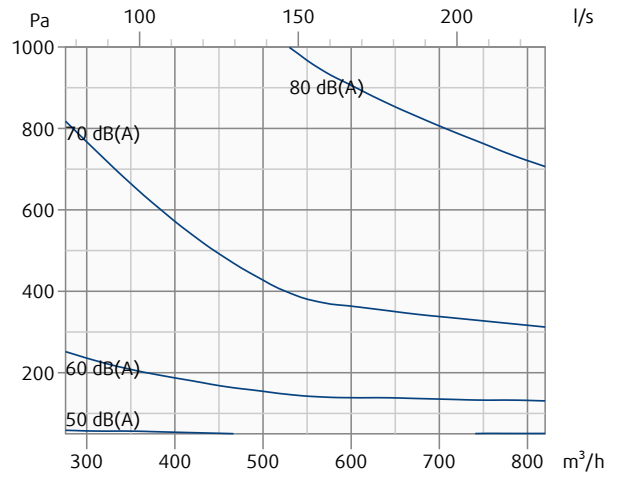
NOTUS-R-160-M0

Pressure drop & A-weighted sound power level in dB(A)



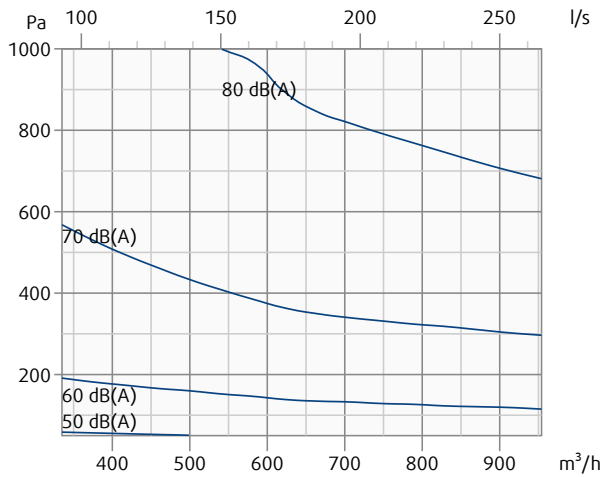
NOTUS-R-180-M0

Pressure drop & A-weighted sound power level in dB(A)



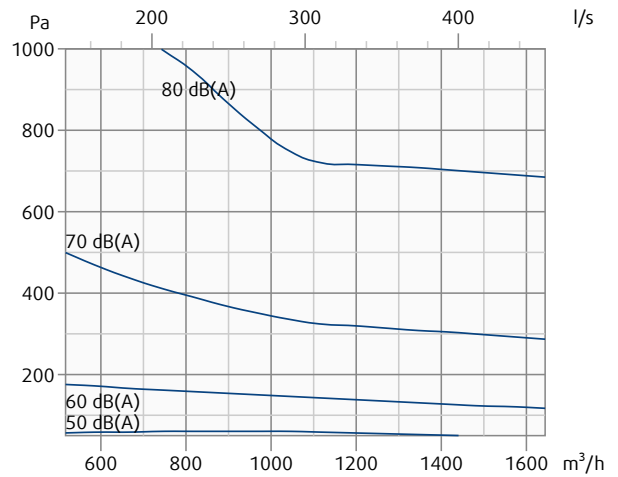
NOTUS-R-200-M0

Pressure drop & A-weighted sound power level in dB(A)



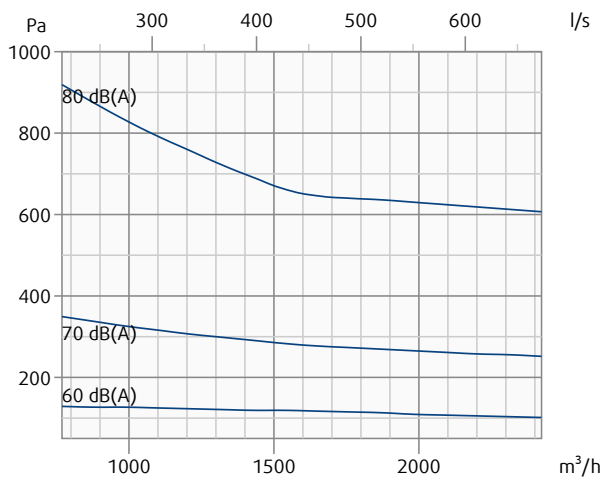
NOTUS-R-250-M0

Pressure drop & A-weighted sound power level in dB(A)



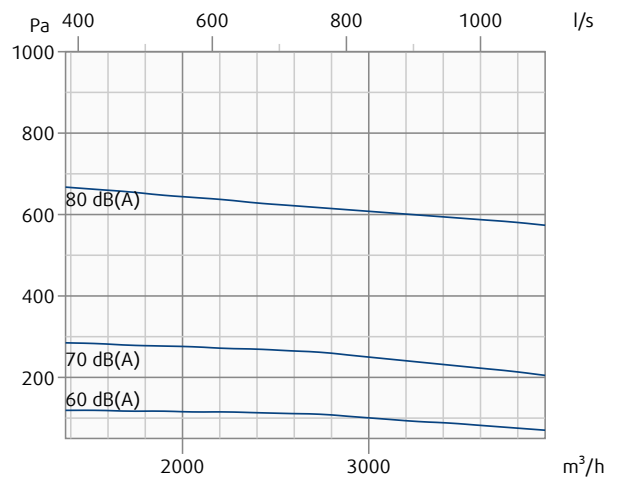
NOTUS-R-315-M0

Pressure drop & A-weighted sound power level in dB(A)

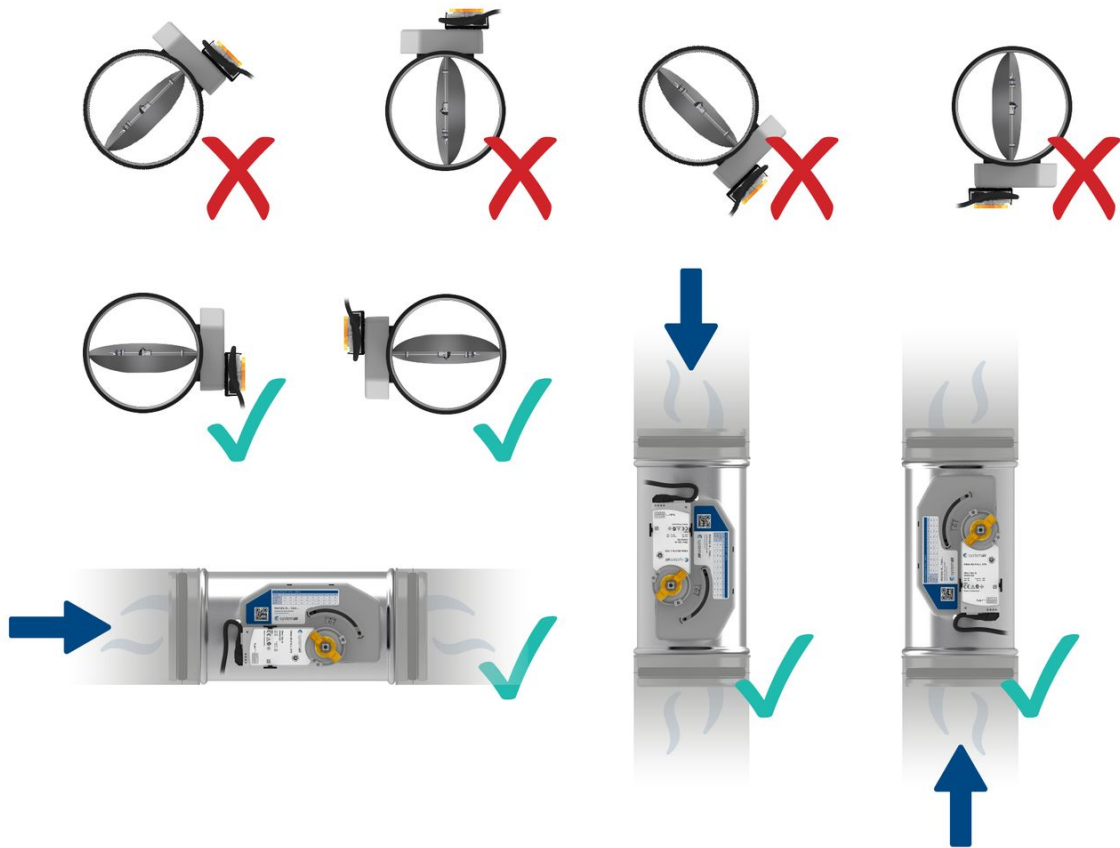
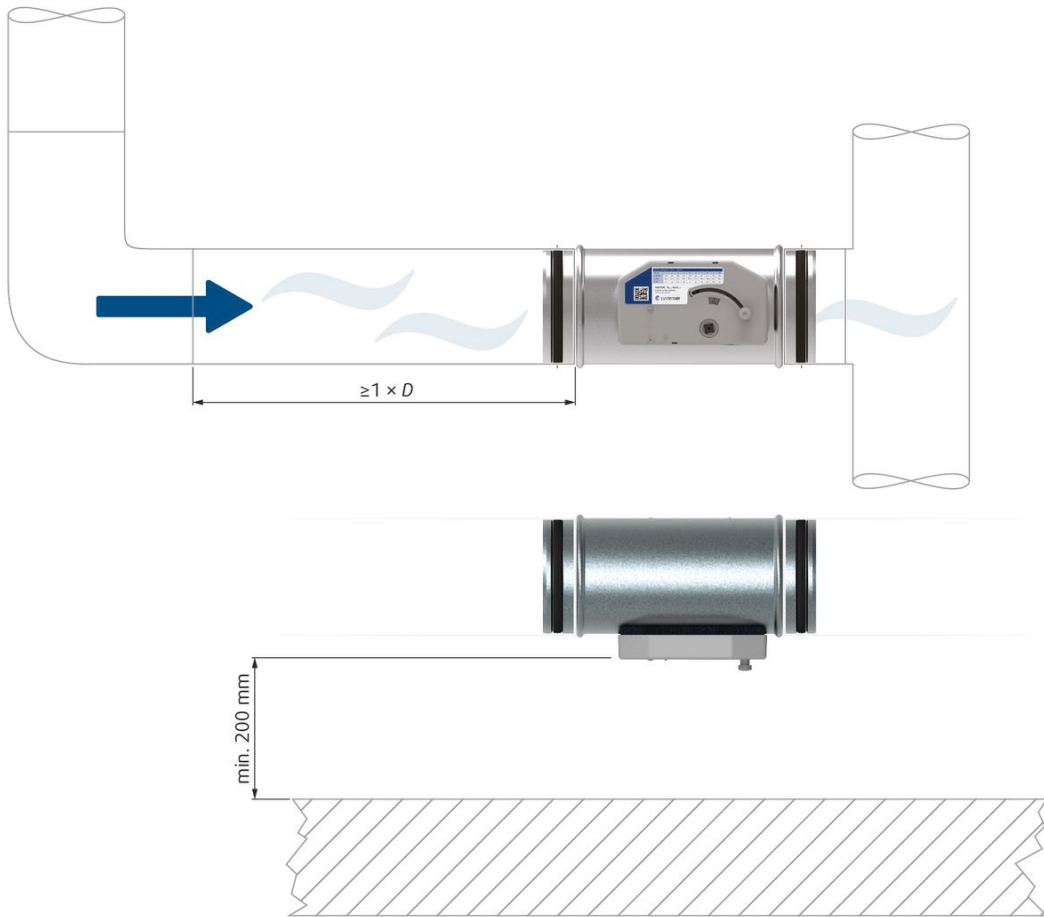


NOTUS-R-400-M0

Pressure drop & A-weighted sound power level in dB(A)

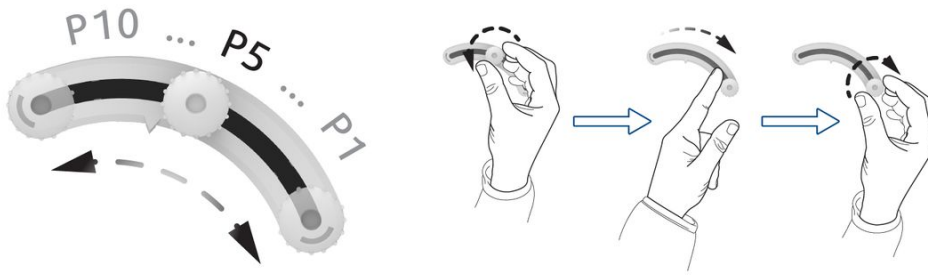


Installation



Setup

NOTUS-R...M0



1a

1b

Air flow settings $\Delta P = 50 \text{ Pa} \dots 1000 \text{ Pa}$					
Pos. No.	1	2	3	4	5
q_v (m ³ /h)	200	244	289	333	378
q_v (l/s)	55,5	67,9	80,2	92,6	104,9
U_c (V)	0	1,2	2,3	3,5	5

320

$$P = \frac{4 - 3}{333 - 289} \cdot (320 - 289) + 3$$

$$P = 3,704$$

2.

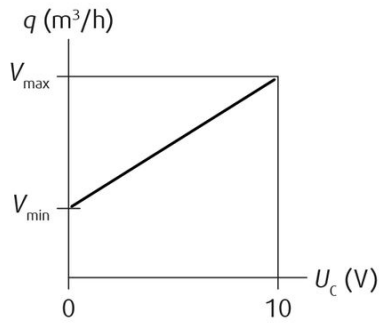
✓

$q_v = 320 \text{ m}^3/\text{h}$

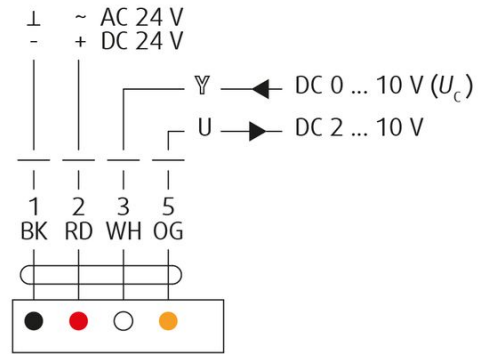
NOTUS-R...M1



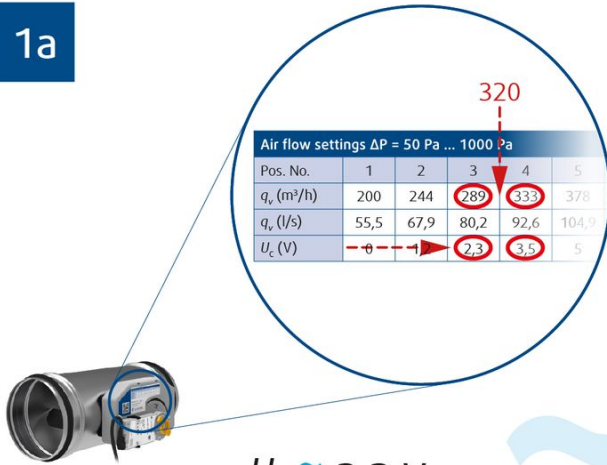
CM24-SRV



LM24-SRV



1a



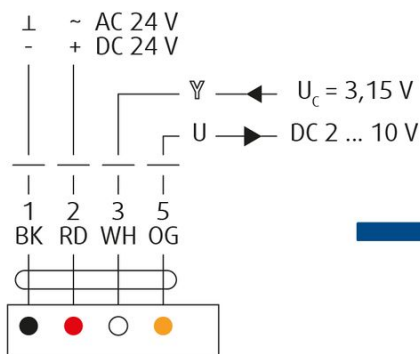
1b

$$U_c = \frac{3,5 - 2,3}{333 - 289} \cdot (320 - 289) + 2,3$$

$U_c \approx 3,2 \text{ V}$

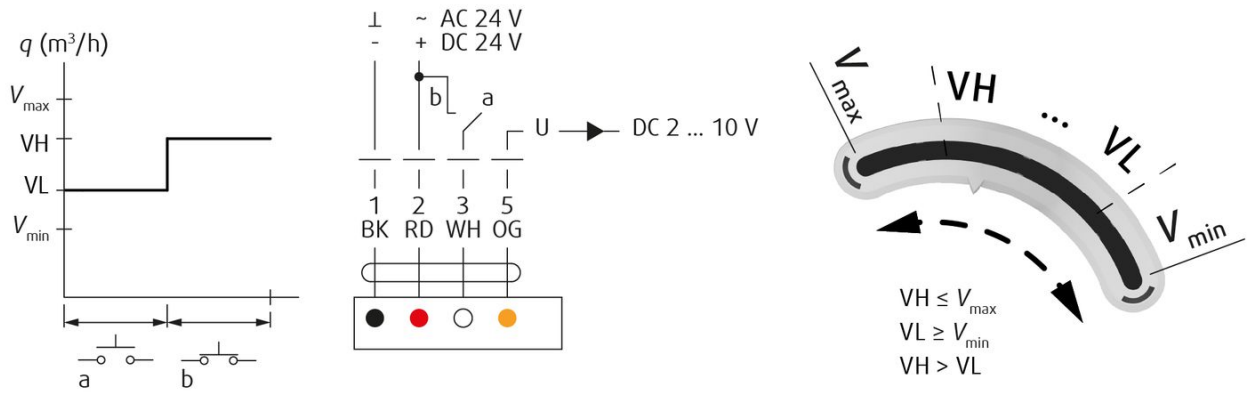
$U_c = 3,15 \text{ V}$

2.

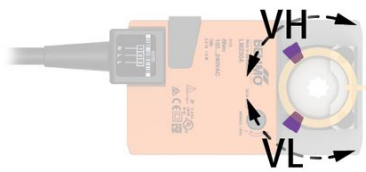


✓

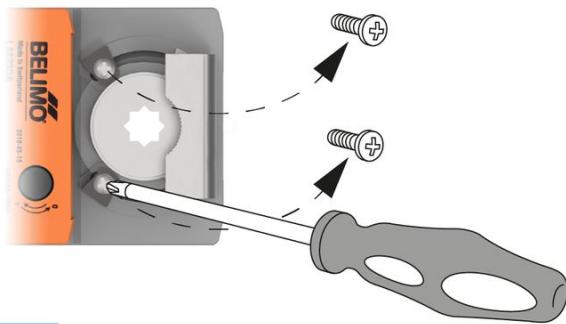
$\rightarrow q_v = 320 \text{ m}^3/\text{h}$



LM24-SRV



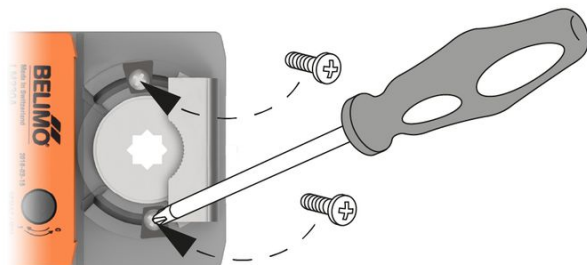
1.



2.



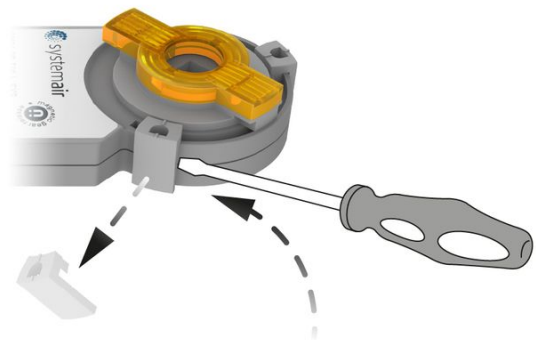
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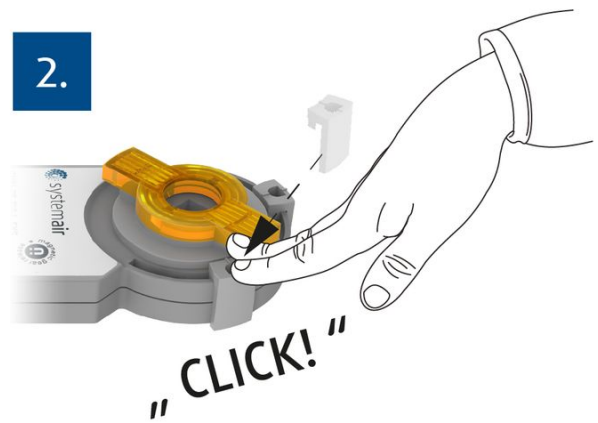
CM24-SRV



1.



2.



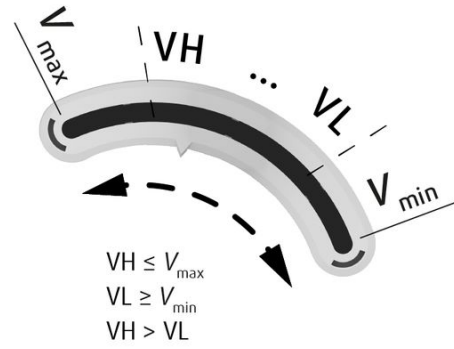
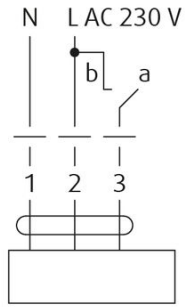
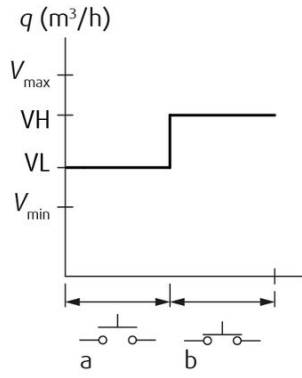
NOTUS-R...M2



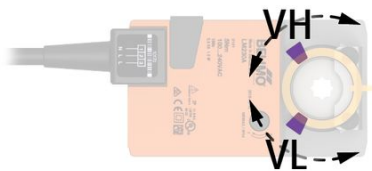
LM230



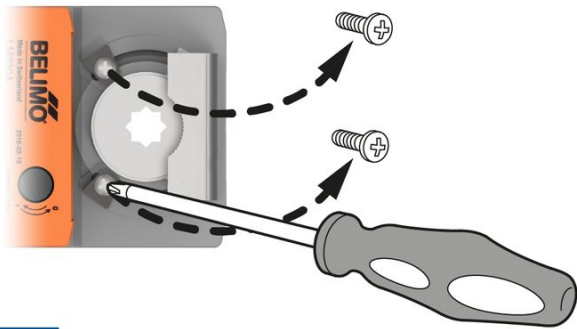
CM230



LM230



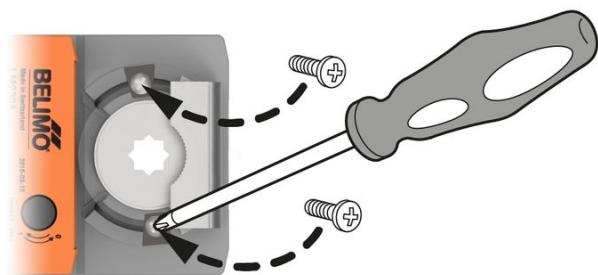
1.



2.



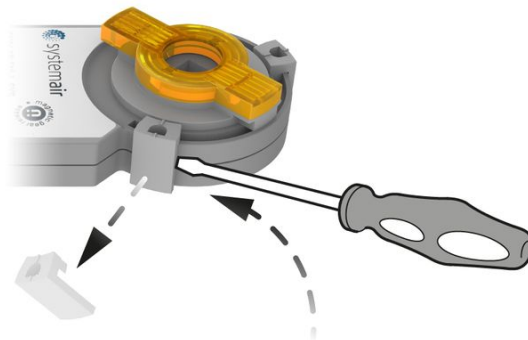
3.



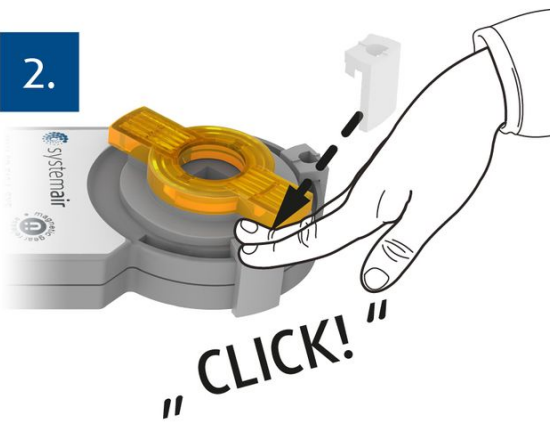
CM230



1.



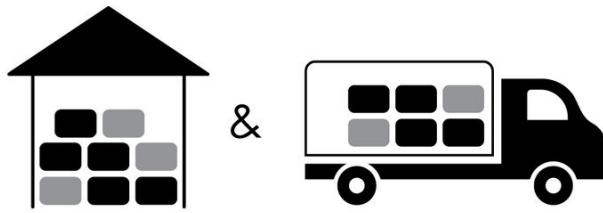
2.




Positioning

NOTUS-R-100										
P	1,75	2	3	4	5	6	7	8	9	10
q _v (m ³ /h)	85	91,7	119	141	162	183	203	224	245	-
q _v (l/s)	23,6	25,5	33	39,2	45	50,7	56,5	62,3	68,1	-
Y (V)	2,7	2,9	3,8	4,6	5,5	6,3	7,2	8,1	9	-
NOTUS-R-125										
P	1	2	3	4	5	6	7	8	9	10
q _v (m ³ /h)	-	134	183	216	243	271	299	327	354	382
q _v (l/s)	-	37,2	50,7	59,9	67,6	75,3	83	90,7	98,4	106,1
Y (V)	-	2,1	3	3,9	4,8	5,7	6,7	7,6	8,5	9,4
NOTUS-R-140										
P	1,5	2	3	4	5	6	7	8	9	10
q _v (m ³ /h)	160	184,1	232	271	310	348	387	426	464	503
q _v (l/s)	44,4	51,1	64,6	75,3	86	96,8	107,5	118,2	129	139,7
Y (V)	2,6	3,1	3,9	4,8	5,7	6,6	7,4	8,3	9,2	10

Transport, Storage and Operation




 °C -40°C ... +50°C

 % ≤ 95%



 °C -20°C ... +50°C

 % ≤ 95%

Supplement

Any deviations from the technical specifications contained herein and the terms should be discussed with the manufacturer. We reserve the right to make any changes to the product without prior notice, provided that these changes do not affect the quality of the product and the required parameters.

Current information on all products is available on design.systemair.com.



Handbook_NOTUS_R_en-GB

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E&OE

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