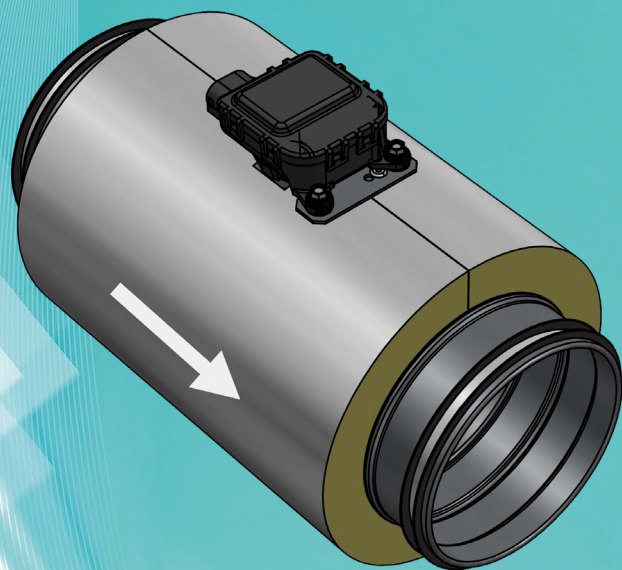


Fabriqué
en France



Dynamic airflow

control module

EUREVIA *by* **De Dietrich** 

www.eurevia.com



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Description

Dynamic airflow control modules are designed to maintain a constant airflow or to regulate the airflow according to instructions from a supervision system.

Designed for maintenance-free operation, they can be installed in any position in circular ducts.

The dynamic control mechanism is isolated from the air flow.

The module's plastic casing and air connection are made from a special anti-static, germ-resistant plastic that does not encourage the growth of micro-organisms (fungi, bacteria). Therefore, they meet the hygienic requirements of VDI 6022-1, VDI 3803-1, DIN 1946-4 and DIN EN 13779, SWKI VAI 0401 and SWKI 99-3, ÖNORM H 6020 and ÖNORM H 6021.

- Ability to regulate low air velocities
- Simplified implementation
- Modulating motorisation with integrated position feedback
- Minimum and maximum airflow rates can be set via a supervision system
- Anti-condensation thermal insulation

Technical specifications

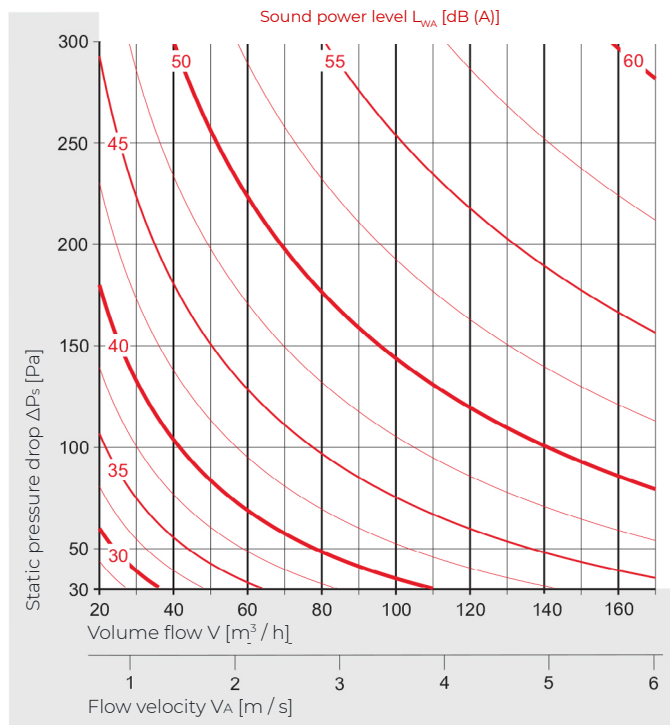
- Sizes: DN 100 and DN 125
- Total volume flow range: $V_{\min} = 20 \text{ m}^3/\text{h}$ to $V_{\max} = 270 \text{ m}^3/\text{h}$
- Differential pressure range: 30 Pa to 300 Pa
- Indoor temperature range: $+10^\circ\text{C}$ to $+50^\circ\text{C}$

The control mechanism guarantees high control accuracy with a deviation of approx. $\pm 5\%$ to $\pm 10\%$ over the entire application range.

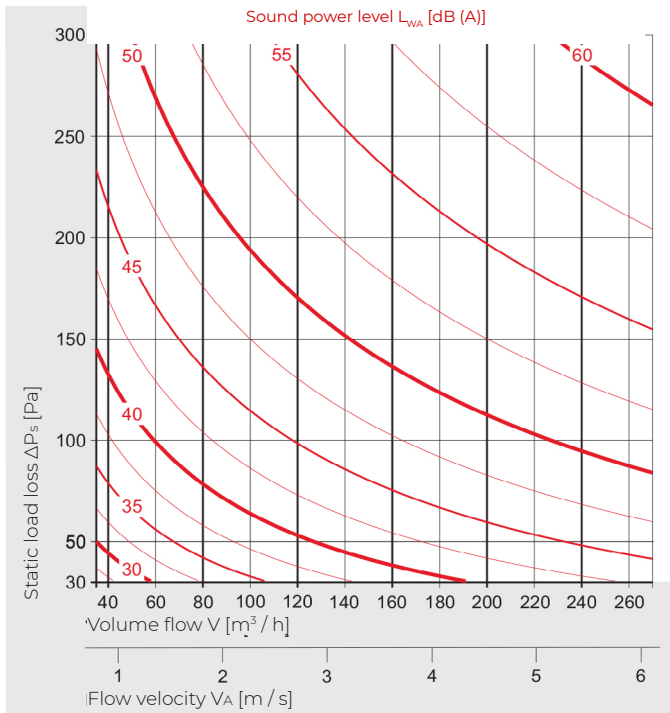
Dimension	$V_{\min}$	$V_{\max}$	$\varnothing d$	A_A
DN	m^3/h	m^3/h	mm	m^2
100	20	170	99	0.008
125	35	270	124	0.012

Legend		
V	m^3/h	Volume flow
$V_{\min}$	m^3/h	Minimum volume airflow setpoint
$V_{\max}$	m^3/h	Maximum volume flow setpoint
A_A	m^2	Air inlet cross-section
v_A	m/s	Flow speed
Δp_s	Pa	Static pressure drop
L_{WA}	dB (A)	A-weighted sound power level
$L_{W\text{-Oct}}$	dB	Sound power level per octave $L_{W\text{-Oct}} = L_{WA} + D_L$
ΔL	dB	Relative sound power level compared to L_{WA}
f	Hz	Octave mean frequency
L_p	dB	Sound pressure level
L_{pA}	dB (A)	A-weighted sound pressure level
$\Delta L_{L,R}$	dB	Attenuation (duct, room)

Sound power level
in the duct
DN 100



Sound power level
in the duct
DN 125



Example:

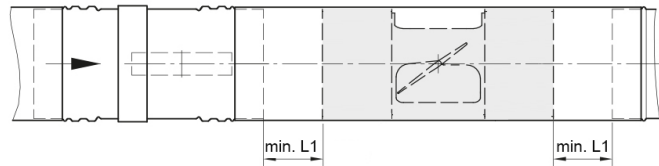
- Specified: size DN 100
- Volume flow $V = 80 \text{ m}^3/h$
- Static pressure drop $\Delta p_s = 100 \text{ Pa}$
- Result: flow noise
- Sound power level $L_{WA} = 45 \text{ dB (A)}$
- Attenuation (conduit, pièce) $\Delta L_{L,R} = 8 \text{ dB}$
- Sound pressure level $L_{pA} = 37 \text{ dB (A)}$

The sound power level L_{WA} determines the acoustic energy introduced into the duct. The sound pressure level L_p or L_{pA} takes account of attenuation by the duct and the rooms. This essential difference, usually between 8 and 12 dB, should be taken into account when making comparisons.

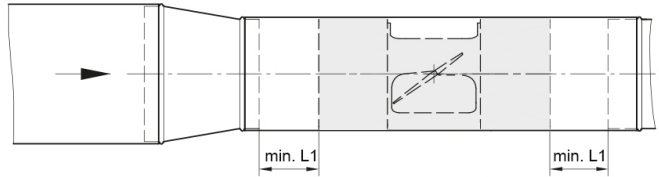
Installation tips

The installation conditions specified below must be observed to ensure optimum operation of the module.

Installation downstream of a fire damper:



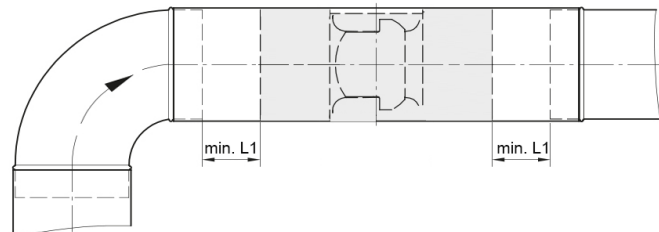
Installation downstream of a pipe reducer:



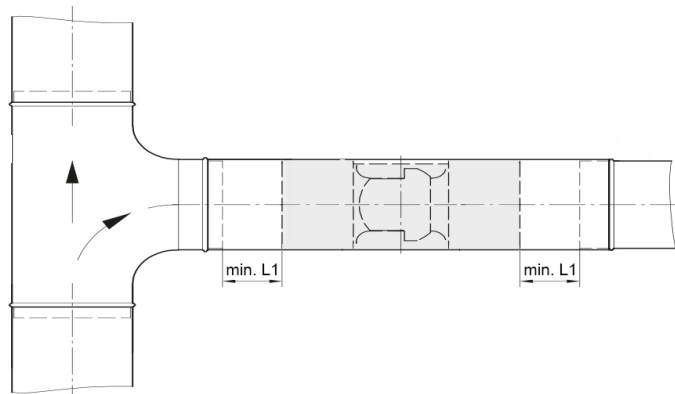
Installation downstream of a pipe increaser:



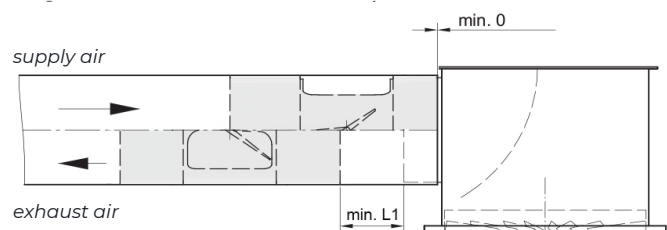
Installation downstream of a bend:



Installation downstream of a T-junction:



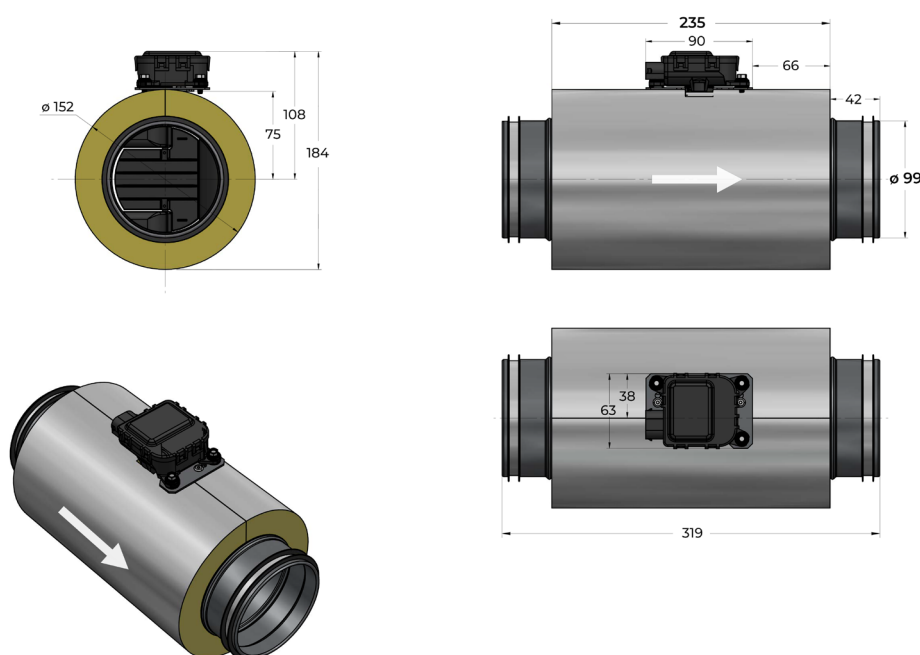
Installation upstream or downstream of a connection box:



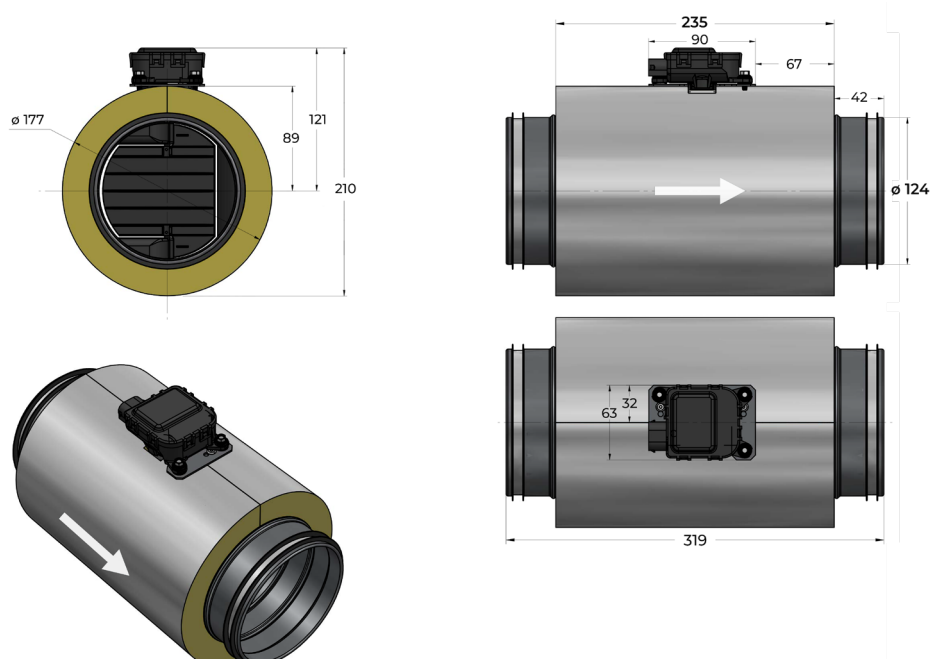
		DN 100	DN 125
L1	mm	45	83
L2	mm	180	330

Dimensions

DN 100



DN 125



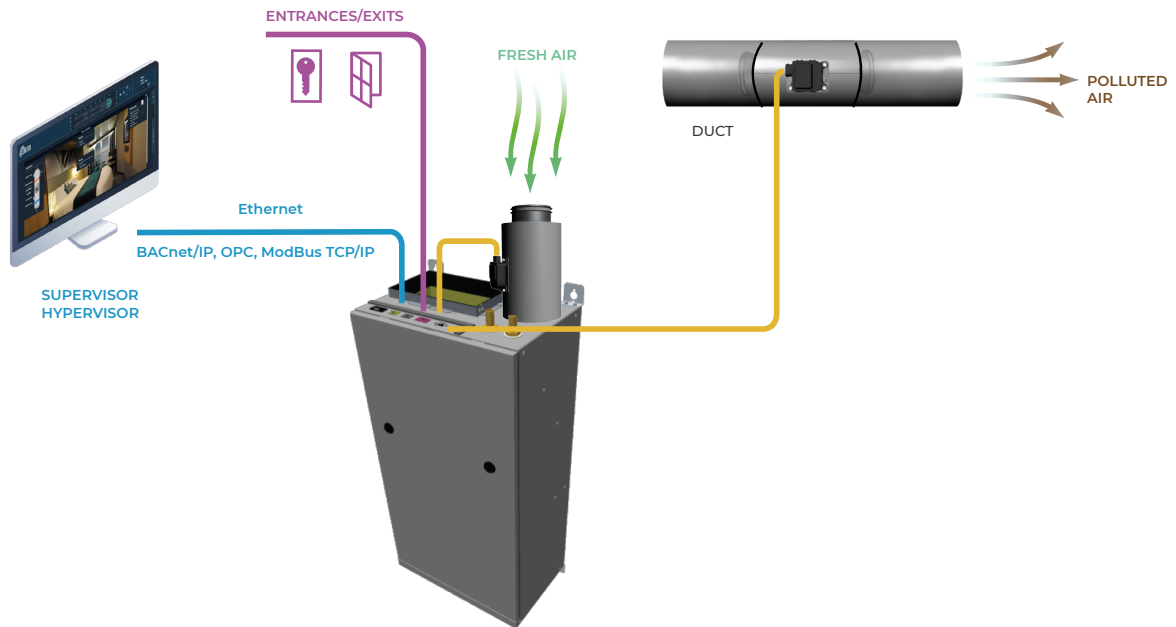
Motorisation

The compact motorisation derived from automotive technologies enables the module to be controlled and informed of its position feedback.

- Supply voltage : 24 V AC / DC
- Opening time at 90° : < 3 s
- Power consumption : 0.3 W
- Protection rating : IP 54
- Connection cable : 40 cm
- Operating temperature : - 10 °C to + 55 °C

EUREVIA comfort units can be fitted with an optional control board to control 2 or 6 dynamic airflow control modules.

This board is used to control and calibrate the module and to communicate with the supervision system.



Communication protocol with a supervision system

The Eurevia rCONNECT and rSMART units communicate with a supervision system using a number of available protocols: OPC UA, Modbus TCP/IP, Bacnet IP, Modbus RTU, etc.

Among other things, communication enables:

Setting of the module:

- Forced calibration command
- Minimum flow rate setting
- Maximum flow rate setting
- Setting the desired flow rate

Follow-up for maintenance purposes:

- Tracking the number of movements
- Air flow return (return to position)

Information about defects:

- Obstacle detection (difference between command and return to state)
- Position error
- Calibration error

Insulating shell option: thermal and anti-condensation

- Material: ROCKWOOL SeaRox SL 620 (Marine certified)
- Cladding: ALU
- Thickness: 13 mm
- Thermal conductivity λ : 0.035 (W/m. K)
- Density: 100 kg/m³.

Dynamic airflow control module

iCRUISE

iROOM

oZONE

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