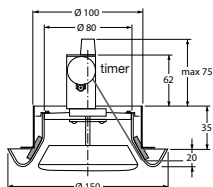


VEL – electrically operated plate valves 24V

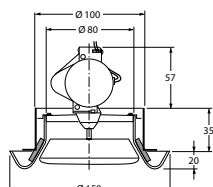


VEL 10-1



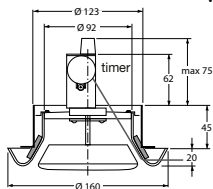
version 1 – mechanical run-out

VEL 10-4



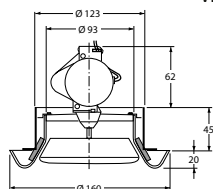
Version 4 – 24 V servomotor (+ CTE 24/5 W)

VEL 12-1



version 1 – mechanical run-out

VEL 12-4



Version 4 – 24 V servomotor (+ CTE 24/5 W)

Technical parameters

Designed for air discharge (supply), with adjustable centre element for flow control. The valves are made of polypropylene, colour white (RAL9003), sealing to the frame with elastic tape. Mounting frames are made of galvanized sheet metal.

- electric control 24 V (4 W)
- protection IP 61
- mechanical with run-out for DCV systems (demand controlled ventilation)
- suitable for renovation of prefabricated houses without the need to interfere with the HVAC ductwork
- min. flow adjustment by turning the disc
- low noise and crosstalk values
- ambient temperature up to 100 °C

Installation

The valves are inserted into the mounting frame, which is not included. The mounting frame is used to fix the valve to the ceiling structure, to the wall or to the circular pipe. By rotating the centre disc, the minimum continuous flow rate of the closed valve can be adjusted. For the mechanical version, a minimum opening corresponding to approx. 20 l/s is required to ensure the run-out time (see diagram on the next page).

Mounting frames

VLZ-03-10, VLZ-03-12 - without rubber seal, for valves with bayonet
VLZ-06-10, VLZ-06-12 - without rubber seal, for valves with flat springs

Use

Electrically operated VEL plate valves are suitable for DCV (demand controlled ventilation) systems. The systems operate on the principle of constant pressure control in the riser pipe. A CTE 24/5 W transformer is used for the power supply.

Functions

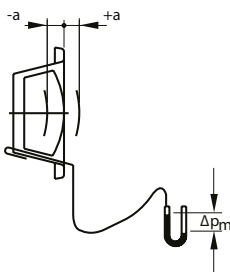
When the light is switched on in the bathroom or toilet, the plate valve opens and the pressure in the pipe drops. The differential pressure sensor of the CTB and CRxB-N Ecowatt Plus fans with control electronics will increase the speed to adjust to the previous pressure value.

Measurement and control

The air flow is regulated by turning the centre disc, which changes the opening of the valve "a" (mm). The air flow measurement is performed as a pressure differential measurement using a measuring tube. See diagrams for further details. The dependence of flow and pressure drop on valve opening 'a' is expressed by the relation:

$$q = k \sqrt{\Delta P_m} \text{ (l/s), (Pa)}$$

Note: k = f(a) values on request



Example of order execution

VEL 24 V electric

VEL-10-4-0

size
10 = Ø 100 mm
12 = Ø 125 mm

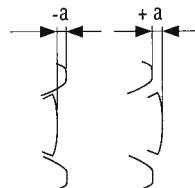
installation
0 = flat springs;
1 = bayonet

VEL with mechanical timer

VEL-10-1-1-2

size
10 = Ø 100 mm
12 = Ø 125 mm

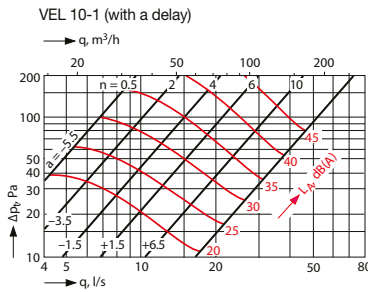
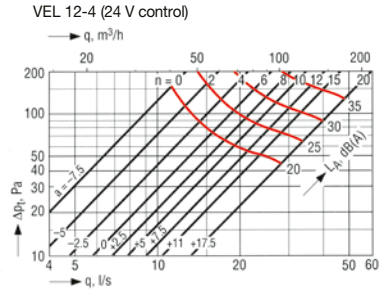
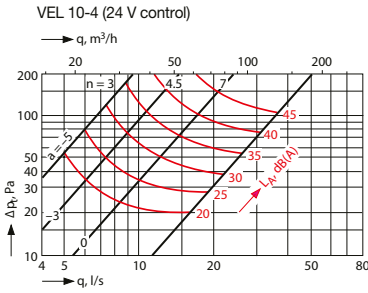
installation
1 = bayonet
run-out time
2 = 30 min



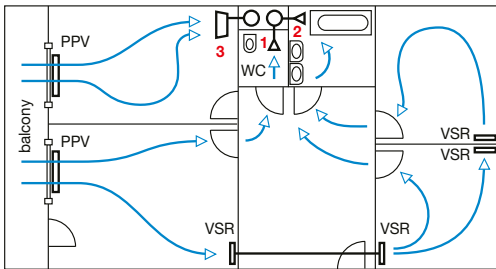
n = number of disk rotations
a = valve opening (mm)

VEL – electrically operated plate valves 24 V

Characteristics



Additional illustration



schematic sketch of ventilation of a flat in residential construction using supply and passage elements, 1 – electrically operated plate valve (24 V); 2 – plate valve with mechanical timer, which can be placed in Zone 1 above the bathtub; 3 – hood actuator



flat spring design



with mechanical timer



version with bayonet



opening by pulling the drawstring

DCV
controlled ventilation systems
actual demand



residential sensors



sensor CO₂



humidity sensor



DT4 programmable
time switch
and CTE 24/5 W
transformer

The VEL is an electrically operated drainage plate valve suitable for systems central ventilation systems with CRVB-N, CRHB-N and CTB Ecowatt Plus fans, which can be controlled e.g. by bathroom and toilet lighting, CO₂ sensors, humidity sensors, thermostat, programmable timers.