System PulseVentilation
The decentralized facade ventilation unit FVP\textit{pulse}

Simply natural ventilation (supply and return) with only one fan and one facade opening.

- **Instationary air flow**: Air conditioning with high ventilation effectiveness and thermal comfort by impulse ventilation
- **Economical solution** thanks to low investment and maintenance costs
- **Only one facade opening**, very simple structural integration without flow short circuit
- **High operational reliability** thanks to innovative design and control concepts
For air-conditioning of rooms directly via the facade, including highly efficient heat recovery.

**Function**

Fresh outdoor air is cyclically supplied (breathing IN) and exhaust air exhaled (breathing OUT) on the same path. A valve system controls the direction of the air. Therefore only one fan and only one facade opening are necessary.

Since the air is not conveyed simultaneously, there are no short-circuit flows either between the outside air and the exhaust air (on the outside of the facade) nor between the supply air and the return air (in the room).

The transient mode of operation results in a highly inductive and pulsating room flow. This leads to good mixing of the supplied air with the room air and a rapid decrease in the temperature differences and flow velocities.

Sound-absorbing transfer air openings in the hallway walls ensure pressure equalization and ventilation of the inside zones.

**Example: Breathing IN, Winter Situation**

The heat recovery unit is still warm from breathing OUT. Now a breathing IN cycle starts. The cold external air is sucked in through facade opening, shut-off damper and filter 1, flows through the heat recovery unit and is heated as it does so 2, enters into the fan chamber by passing a damper 3, flows out on the discharge side of the fan 4, enters into the supply air duct by passing the damper 5 and passes through the heat exchanger (cooling or heating) into the room 6.

### Technical Data

- Nominal supply air flow rate: 120 [m³/h]
- Nominal fan power consumption: 25 [W]
- Sound pressure level at $V_{\text{nominal}}$ (with 6 dB room absorption): 39 [dB(A)]
- Nominal cooling capacity of unit: 570 [W]
- Nominal heating capacity of unit: 2180 [W]
- Cooling capacity hybrid ventilation: 880 [W]
- Nominal heat provision level: 78 [%]
- Nominal cycle time: 40 [s]
- Unit height incl. floor grille: 225 [mm]

### Control

In the basic version, the ventilation unit is operated by a standard room temperature controller.

Optionally additional functions can be provided:
- Wind impact
- Continuous flow rate adjustment
- Continuous heat provision level adjustment