



Inside ventilation unit – For safe operation of the BackCooler

Heat build-up between the rear of the server and the BackCooler can lead to a backflow of warm air via the partitioning to the server supply air side. The inside ventilation unit from SCHÄFER enables safe operation of the BackCooler even if the server-side air output is too low to overcome the pressure loss of the heat exchanger. A bidirectional airflow sensor records the flow speed and direction here on a 1U bulkhead panel. The control unit analyses these values and drives fans with the same speed in order to achieve an adjustable target value at the hot/cold separation point.



Inside ventilation unit from SCHÄFER

Advantages

- The IVU can be retrofitted to a passive BackCooler during ongoing operation. Sealing at the BackCooler is ensured by the fastening.
- With heterogeneous fitting of server cabinets and in the low-load area, the IVU supports the airflow on the hot side and ensures heat transfer to the BackCooler.
- In the low-load area of the installed components, the IVU ensures heat transfer to the BackCooler.
- When using the IVU, the airflow in the hot area is optimised in a targeted manner by the axial fans. This avoids heat pockets and prevents backflow into the cold area.
- The IVU is installed on the inside of the BackCooler. Due to this internal fitting, the outer dimensions of the cabinet are not changed, meaning that existing escape routes in passages are maintained.
- The IVU is designed in such a way that there is sufficient space for cable management and power strips when used.
- Economical solution thanks to the use of a standardised industrial control system.

Technical data

Housing	RAL 9005 powder-coated sheet steel	
Dimensions according to BackCooler size	Nominal dimensions of rack (H x W)	Dimensions of IVU (H x W x D)
Art. no. 506020600	2,000 x 600 mm	1,702 x 403 x 153 mm
Art. no. 506020700	2,000 x 700 mm	1,702 x 503 x 153 mm
Art. no. 506020800	2,000 x 800 mm	1,702 x 603 x 153 mm
Art. no. 506022600	2,200 x 600 mm	1,902 x 403 x 153 mm
Art. no. 506022700	2,200 x 700 mm	1,902 x 503 x 153 mm
Art. no. 506022800	2,200 x 800 mm	1,902 x 603 x 153 mm
Cooling	Four EC axial fans, infinitely variable, each 1125 m ³ /h at Δp = 100 Pa	
Fans	4,500 m ³ /h	
Max. air volume flow		
Electronics	Single-phase 230 V/50 Hz, IEC 60320 C14 built-in plug incl. pull-out safety catch	
Mains connection	570 W	
Max. power consumption	10 A	
Back-up fuse	24 V	
Control voltage	IP20	
Degree of protection		
Sensors	Measurement of the normal speed (w_N) of air Measuring range: -2.5 to 0 to +2.5 m/s Measurement accuracy: ± 5 % of MV (measured value) plus (1 % of MREV (measuring range end value); min. 0.05 m/s) Connection via circular connector	
Bidirectional airflow sensor		
External interfaces	Collective fault message for: - Fan fault - Cable break on airflow sensor - Control unit failure The fault is also shown in red on the display, where the existing flow speed can be read off and the number of the faulty fan is shown	
Potential-free output		
Redundancy	The fans have been designed so that if one fan fails, the remaining fans can deliver the air volume flow required for cooling. If one fan fails, this is detected by the control unit and the remaining fans then run at a speed of 100%.	
Fans		