

DATA & FACTS

Fan-Coil Units

HyPower-Geko®

AIRTREND Ltd

Predstavništvo u Beogradu

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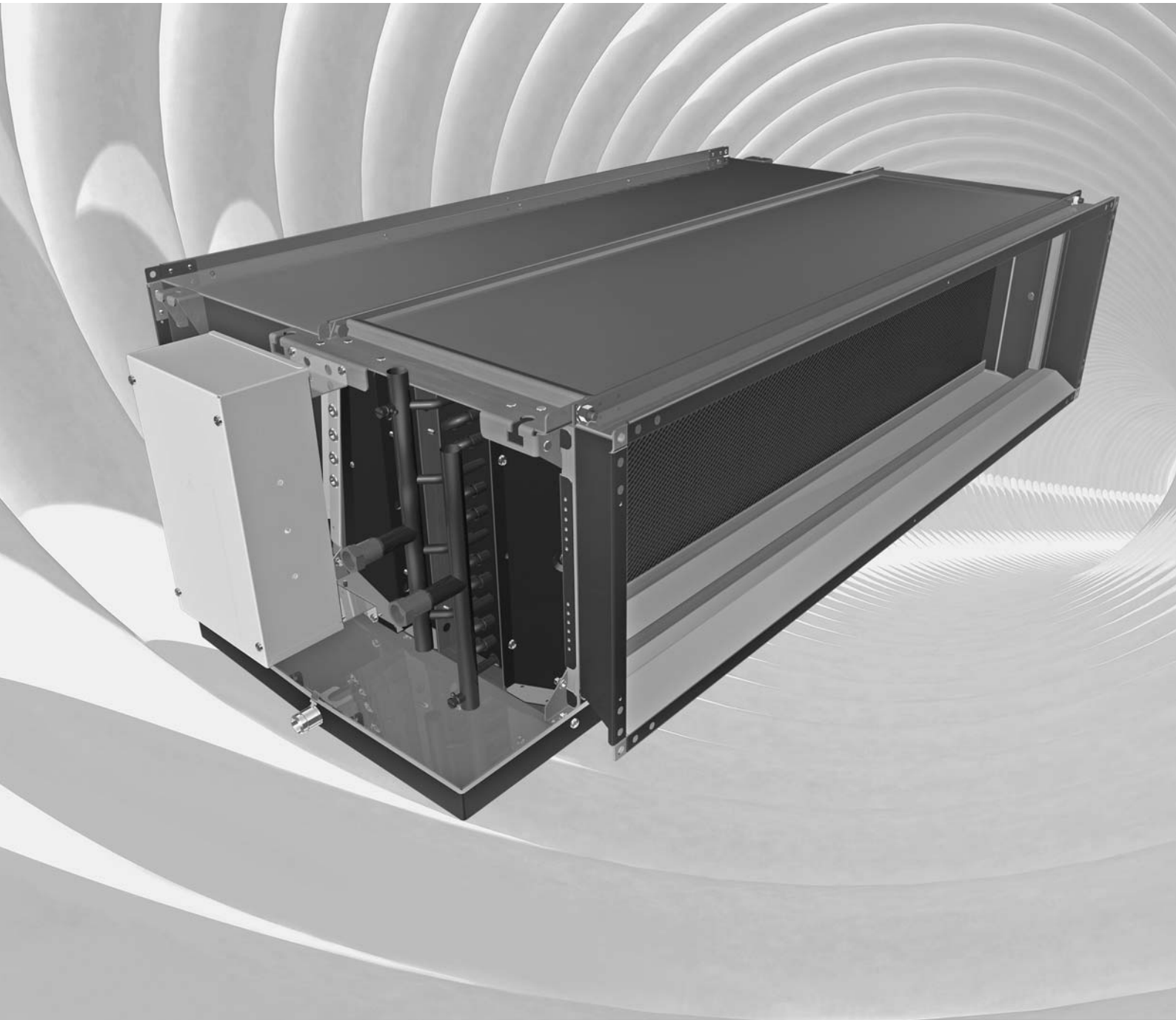
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The optimal solution for intermediate ceiling



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Model size	Motor type	Width [mm]	Air volume flow ¹⁾ [m ³ /h]	Sound power level ¹⁾ (on discharge side) [dB(A)]	Heating capacity Q _H ^{1) 2)}	Cooling capacity Q _K ^{1) 2)}
					[kW]	
1	AC	803	600-1195	52-64	0.6-5,5 0.9-3	
	EC		310-1035	44-71	2.2-13,8 1.6-7,0	
2	AC	1108	810-2115	47-66	1.0-6,2 1-3,4	
	EC		365-1915	39-72	2.9-23,4 2.1-12,0	
3	AC	1413	710-2315	46-68	1.7-9,6 1.7-5,3	
	EC		555-2960	47-74	4.2-36,8 3.1-18,5	
4	AC	1833	2120-3895	61-71	1.9-11,1 2.0-6,2	
	EC		655-3900	42-73	1.9-11,1 3.8-25,0	

1) All capacity data are valid for operation with external pressure of 50 Pa at medium speed.

2) Capacity data apply for input parameters: PWW 70/50 °C, t_{L1} = +20 °C; PCW 6/12 °C, t_{L1} = 27 °C, 46 % r.h.

With other input parameters the following correction factors for approximate estimation of performance data should be applied.

Correction factors ³⁾

Correction factors f_K For cooling capacity Q_K

Correction factors f_H For heating capacity Q_H

The correction factors listed below can be used to calculate the capacity data in accordance with EUROVENT classification conditions:

Cooling in 2-pipe system	0.98
Cooling in 4-pipe system	0.99
Heating (2-pipe system)	0.66
Heating (4-pipe system):	1.19
Sound power 4):	+2 dB

Chilled water temp. [°C]	Air intake: t _{L1} [°C], φ ₁ [% r.h.]				
	32/40	30/40	27/46	26/50	24/50
6/12	1.34	1.14	1.00	0.99	0.79
7/13	1.30	1.10	0.96	0.95	0.74
8/12	1.25	1.05	0.92	0.91	0.71
8/14	1.14	0.94	0.79	0.78	0.59
10/15	0.98	0.79	0.65	0.64	0.51
12/16	0.84	0.72	0.59	0.54	0.45
12/18	0.75	0.67	0.53	0.49	0.37
14/18	0.72	0.63	0.50	0.45	0.36

Warm water temperature [°C]	2-pipe system Air intake: t _{L1} [°C]			4-pipe system Air intake: t _{L1} [°C]		
	+10	+15	+20	+10	+15	+20
90/70	1.81	1.66	1.52	1.88	1.72	1.57
80/60	1.55	1.40	1.26	1.59	1.44	1.28
70/55	1.35	1.21	1.07	1.40	1.25	1.10
70/50	1.29	1.14	1.00	1.31	1.15	1.00
60/50	1.15	1.01	0.87	1.21	1.06	0.91
60/40	1.02	0.87	0.73	1.01	0.86	0.71
50/40	0.90	0.76	0.62	0.93	0.78	0.63
40/30	0.63	0.49	0.36	0.64	0.49	0.35

³⁾ All indicated correction factors are arithmetically calculated for different unit configurations and are provided for approximate calculations of capacity data using other parameters.

Exact data and other parameters can be obtained from our staff.

⁴⁾ Maximum indication due to EUROVENT zero tolerance.

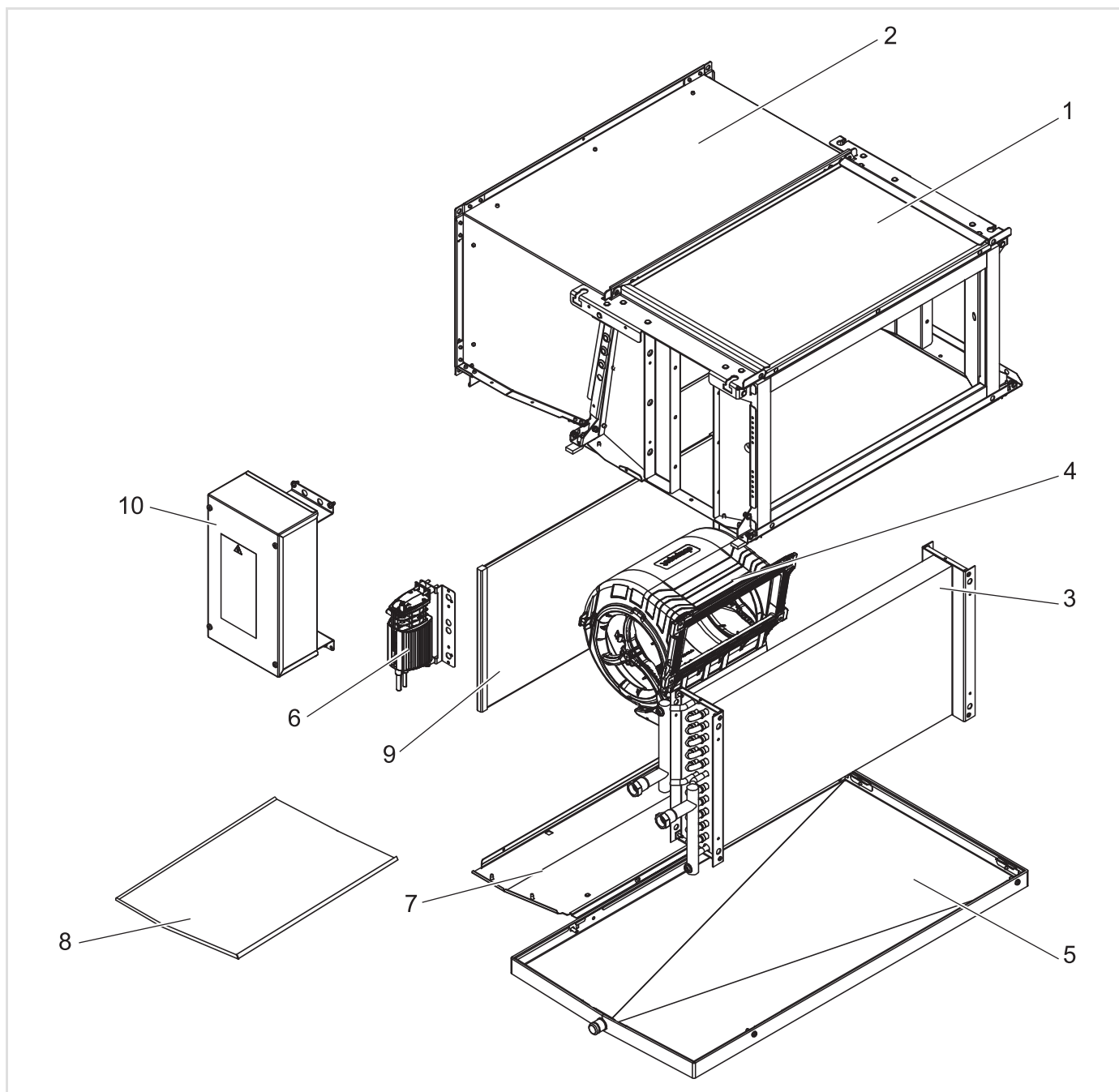


Fig. 1: Unit components (depending on unit model)

Pos. 1: Basic casing

Pos. 2: Fan chamber

Pos. 3: Heat exchange coils

Pos. 4: Fan

Pos. 5: Coil drip tray

Pos. 6: Condensate pump

Pos. 7: Service panel

Pos. 8: Auxiliary drain pan

Pos. 9: Filter element

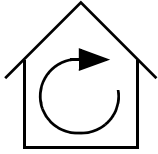
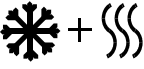



Pos. 10: Electric switch cabinet

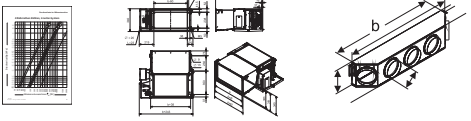




FläktGroup is a participant in the EUROVENT certification programme. The certified products are listed in the corresponding EUROVENT lists.



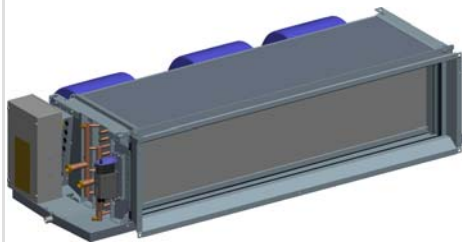
The HyPower-Geko unit can be equipped optionally with a special hygiene version according to VDI 6022 and DIN 1946 T4 (code number „GH##.H###.#####“, see unit type code on page 56).

			Description of the unit	6
	Cooling and heating		4-Pipe Chilled and Warm Water (EC Fans) 4-Pipe Chilled and Warm Water (AC Fans)	12 14
	Cooling or Heating		2-Pipe Chilled or Warm Water (EC Fans) 2-Pipe Chilled or Warm Water (AC Fans)	16 18
	Heating		2-Pipe Warm Water (EC Fans) 2-Pipe Warm Water (AC Fans)	20 22
	Cooling		2-Pipe Chilled Water (EC Fans) 2-Pipe Chilled Water (AC Fans)	24 26

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Basic unit

1. without fan chamber



2. with fan chamber

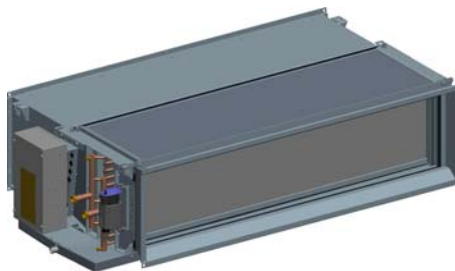


Fig. 2

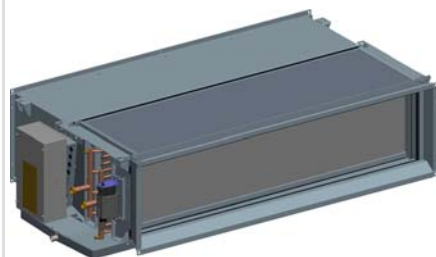
Fig. 3

Basic units are available in 4 variants:

- 1: Without fan chamber (free intake, Filter by others needed, (refer to Fig. 2))
- 2: With fan chamber (connection of intake-side accessories and ducts possible, with integrated flat filter, (refer to Fig. 3))

Basic unit

3. with acoustic insulation in fan chamber



4. as hygiene version

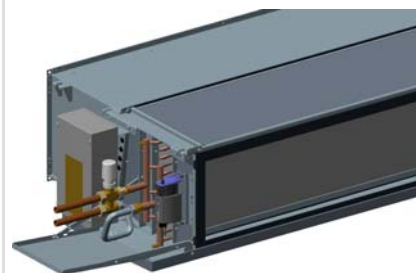


Fig. 4

Fig. 5

- 3: As 2, with additional inner-wall acoustical insulation in the fan chamber ((refer to Fig. 4))
- 4: As 3, with special hygiene version, with extended and coated coil drip tray ((refer to Fig. 5))

Thermoelectric valves



Modulating valves

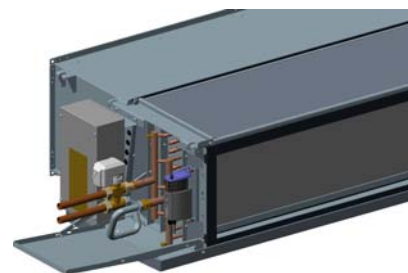
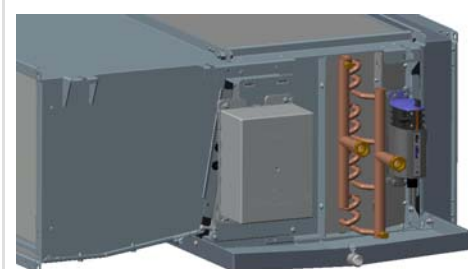


Fig. 6

Valves

2 and 3-way valves with actuators for 2-point, 230/24 V~ 50/60 Hz
3-point, 230/24 V~ 50/60 Hz
continuous 24 V~, control signal 0-10 V supplied loose,
Additional condensate pan for collecting condensate from valves and connected fittings (auxiliary drain pan only for basic variants 1-3)

Terminal box



Metal-sheet electric switch cabinet

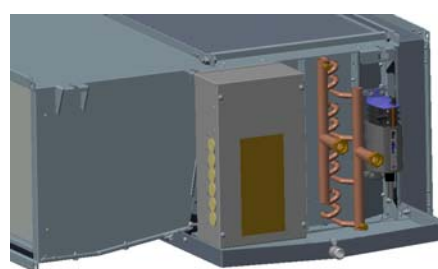


Fig. 7

Electric equipment

Terminal box or metal-sheet electric switch cabinet (depending on unit model, function and requirements)

Speed and thermostat switches



MATRIX Control System

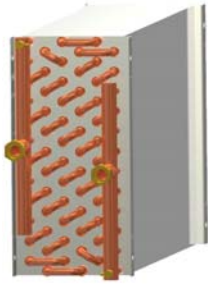


Control systems

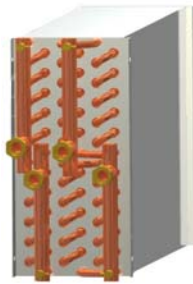
according to:
– Unit Type
– Valves
– internal/external electronic components

Fig. 8

Heat exchanger
for warm / chilled water (2-pipe system)



Heat exchanger
for warm / chilled water (4-pipe system)

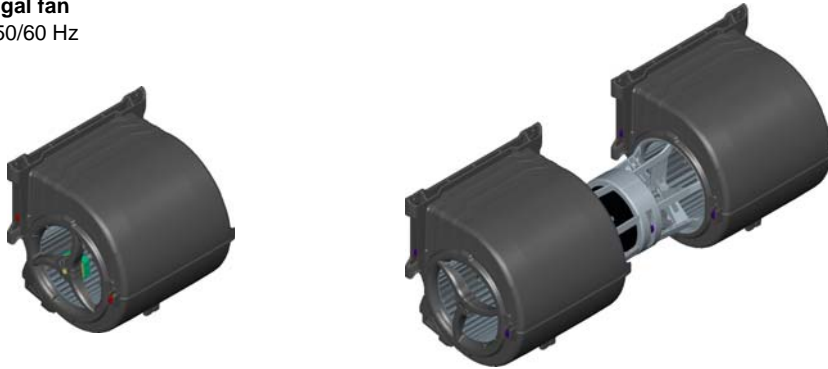


Heat Exchanger

Copper pipes with drawn aluminium fins, connection with internal thread, air vent and drain screws
 Max. inlet temperature 90 °C
 Max. operating pressure 16 bar
 Versions with 2, 4 and 6 rows (depending on capacity stage and model)

Fig. 9

Centrifugal fan
230 V - 50/60 Hz



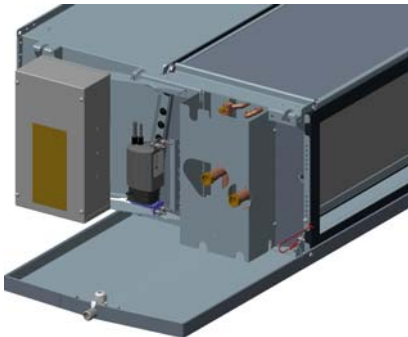
Centrifugal fan

Selection is available with:

- high efficiency, continuous EC motors, with quiet and maintenance-free ball bearings, protection type IP00, insulation class B
- robust, 5-speed AC motors, sleeve bearings, protection type IP20, insulation class F, number of fans depend on type and model size

Fig. 10

Condensate pump (optional)



Filters

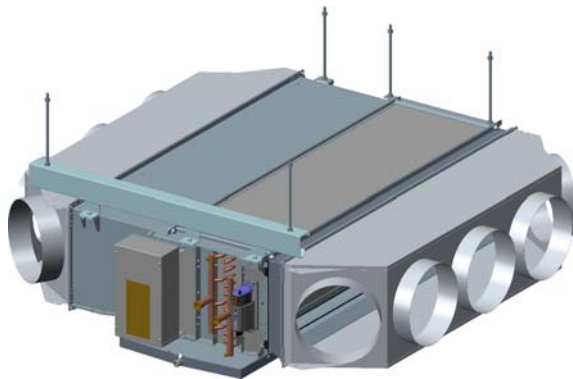


Condensate pump/filter

As an option, forming condensate can be drained using a condensate pump. High operating safety through contact-free sensors.
 Regenerative filter hose on changer frame (only in combination with fan chamber), filter classification G2 (EN 779) or G4 (EN 779)

Fig. 11

Assembly track



Assembly track

Assembly track (accessory) offers flexible and time-saving installation of multiple modules.

Fig. 12

What are EC motors?

EC-motors (= electronically commutated motors) are DC motors, where the rotor is not performed as a coil, like in usual AC motors (AC = alternating current), but consists of a permanent magnet. Electronic control of the motor enables continuous operation, where the integrated electronics ensures alternating magnetic field which adjusts itself to the relevant speed (refer to fig. 13).

In such a way the motor operates at optimal conditions, resulting in maximum torque and minimum losses. The efficiency rate of the EC motors used by FläktGroup is twice as high as the comparable AC motors. The application of this technology in FläktGroup fan coil units makes it possible to achieve high efficiency rates for fan motors – especially in part-load mode.

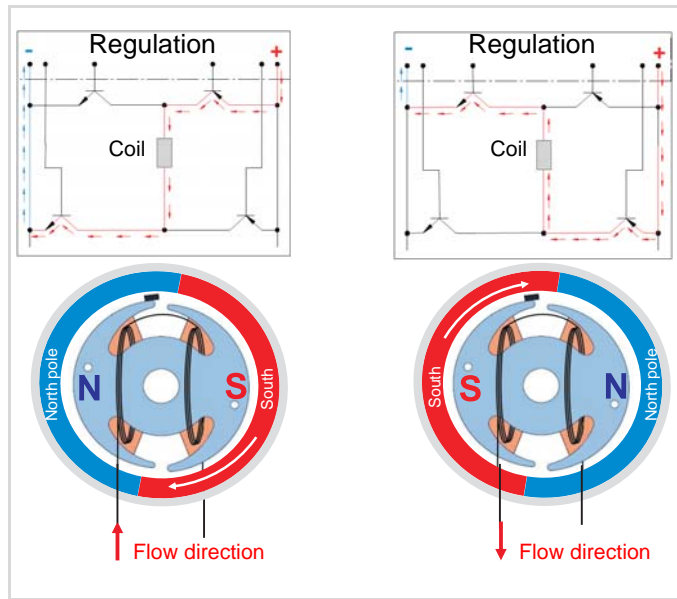


Fig. 13: Functional description of EC motor (electrical commutation)

This results in the considerable reduction of electrical power consumption of an EC fan, especially in partial-load range.

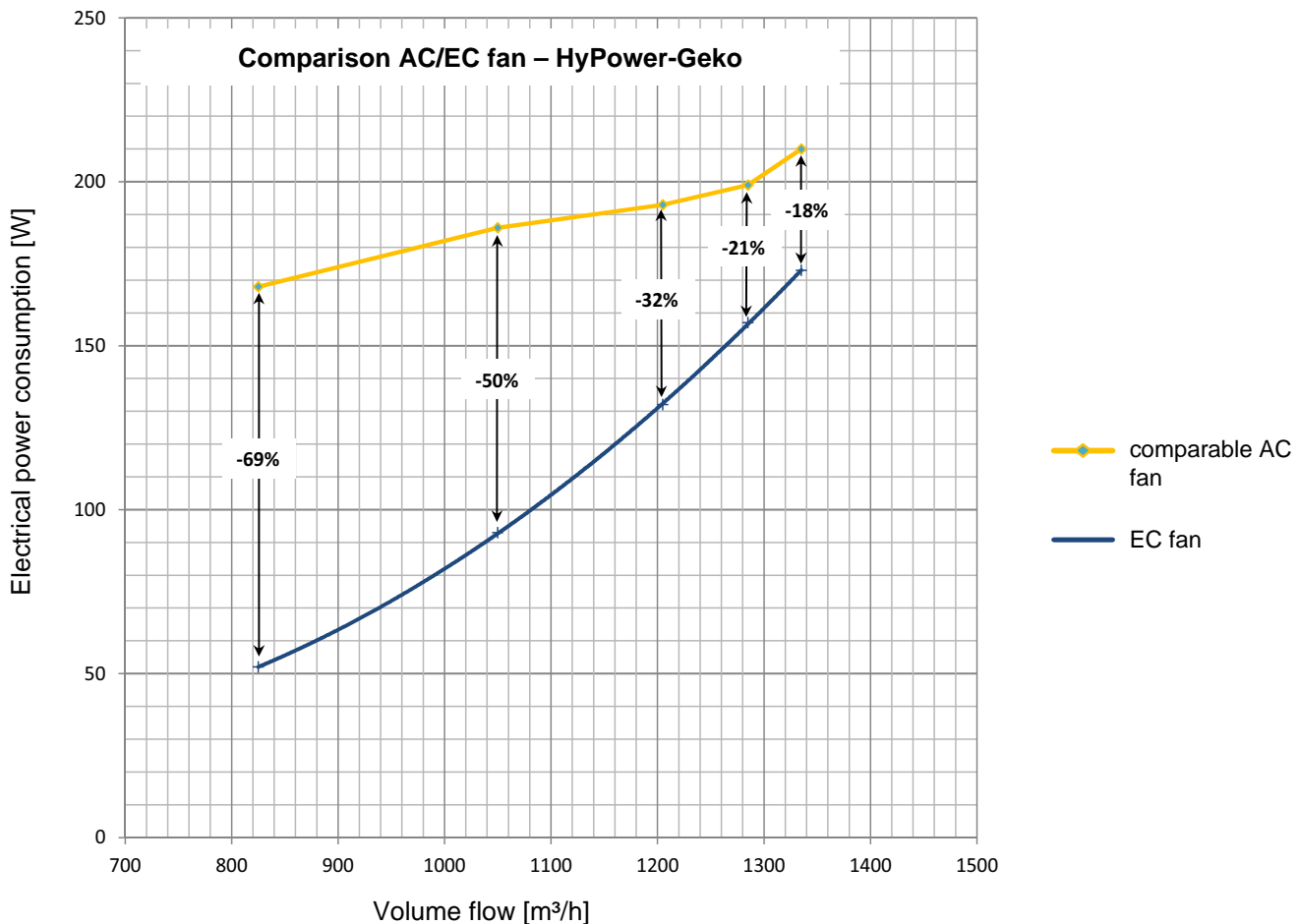


Fig. 14: Comparison - electrical power consumption EC/AC fan

- Further aspects:**
- Continuous operation
 - Low generation of heat
 - Established and usual high motor quality
 - Same design for 50 and 60 Hz

Continuous fan controls (MATRIX and CET.ACEC)

EC fans featuring continuous operating mode offer a few of benefits:

- Room temperature control is performed with a higher accuracy, because occurring temperature differences can be addressed with the accordingly adjusted fan speed. This effect is assisted by using 3-point regulation valves (only with MATRIX control system).
- Variable fan speed control can compensate for fluctuating conditions of heating and cooling medium. Example: season-related different inlet temperature of heat generator or fluctuating volume flow rates (hydraulics)
- With standard AC fans the fan speed, which is optimal for room temperature control, must be adapted to the available fan speed stages which often leads to rapid increase of motor RPM and thus electrical power consumption.
- With continuous speed regulation - "hard" fan speed changes are eliminated, which provides additional acoustical comfort.

The MATRIX CET.ACEC controls uses these features by making the following functions available, the customer can select between automatic and manual operation:

Automatic mode: Room temperature control with continuous regulation (1.3-10 V) of a continuously variable EC fan. The fan continuously operates within the minimum and maximum air volumes.

Using the display control panel OP50/51 a speed limitation can be activated (mute function) in order to prevent an acoustic overshoot in automatic mode. This upper RPM limit can be separately set for each control panel (only MATRIX controls).

As an additional measure to avoid possible on-site acoustical resonance occurrences, up to three speed ranges can be hidden using only MATRIX.controls and service software.

Manual mode
MATRIX controls: OP 50/51 (control panel with display): continuous fan setting using rotary switch between minimum and maximum air volume flow rate.

OP30/31 and OP44: (speed-stage control panel): 5-speed fan setting with speed 1 = minimum air volume flow rate and speed 5 = maximum air volume flow rate. Percentage values (regarding maximum air volume flow rate) for speeds 2-4 are pre-configured by the factory (default values) and can be changed on site by others using MATRIX.PC.

Manual mode
miniature switch
CET.ACEC: 3-stage fan control with stage 1 = min. air volume flow and stage 3 = max. air volume flow. The control voltage (Volt) of stages 1-3 are preset by others (depending on selected unit) and can be changed on-site (with FläktGroup service tool or via MODbus interface).

EUROVENT Energy Label

Within the framework of EU regulations (Eco-Design Directive) clear limits will be set in the future with respect to the energy efficiency of state-of-the-art technological standards. EUROVENT, as the European Association of Manufacturers of HVAC equipment, anticipates this development by using Energy Label for fan coil units to include 5 energy efficiency classes (A to E). The Label was published in December 2013.

In this case the energy efficiency is composed of time-weighted relationship between cooling or heating output and consumed electrical power of the fan.

If fan coil units are equipped with an energy-efficient temperature regulation system (MATRIX), the adjustment of fan speed is performed according to the situation-related heating or cooling demand. For the evaluation of energy efficiency - time percentage of the corresponding active speed stages must be considered. For the description of time-related conditions EUROVENT uses coefficient A (maximum), B (medium) and C (minimum speed). These indicators vary, depending on heating or cooling operating mode.

Fan stage	Coefficient	Time share	
		Cooling	Heating
High (maximum)	A	5 %	5 %
Medium	B	30 %	25 %
Low (minimum)	C	65 %	70 %

The energy efficiency relationship is composed of time-weighted shares and is presented in the example using the following formulas:

Cooling (FCEER):

$$FCEER = \frac{A \times \dot{Q}_{KHighSpeed} + B \times \dot{Q}_{KMediumSpeed} + C \times \dot{Q}_{KLowSpeed}}{A \times Pe_{HighSpeed} + B \times Pe_{MediumSpeed} + C \times Pe_{LowSpeed}}$$

Fan Coil Energy Efficiency Ratio - total cooling capacity
(= Energy efficiency relationship)

Heating (FCCOP):

$$FCCOP = \frac{A \times \dot{Q}_{HHighSpeed} + B \times \dot{Q}_{HMediumSpeed} + C \times \dot{Q}_{HLowSpeed}}{A \times Pe_{HighSpeed} + B \times Pe_{MediumSpeed} + C \times Pe_{LowSpeed}}$$

Fan Coil Coefficient Of Performance
(=Performance coefficient of fan coil unit)

with \dot{Q}_K = Total cooling capacity

with \dot{Q}_H = Heating capacity

with Pe = Electrical power consumption of fan

Higher numerical value of these indicators stands for especially outstanding energy efficiency.

For the corresponding energy label the EUROVENT determines the following classification:

Cooling FCEER (Total)		
Class		Value
A	>=	85
B	>=	60
C	>=	40
D	>=	25
E	>=	15

Heating FCCOP		
Class		Value
A	>=	85
B	>=	60
C	>=	40
D	>=	25
E	>=	15

Example: HyPower-Geko GH22.UWW3.SE0C2
[unit type code for 4-pipe system]

Cooling (FCEER) *:

$$FCEER = \frac{5\% \times 8,33 + 30\% \times 5,63 + 65\% \times 2,73}{5\% \times 0,234 + 30\% \times 0,069 + 65\% \times 0,010} = 100 \geq 85 \xrightarrow{\text{Label}} \text{CLASS A}$$

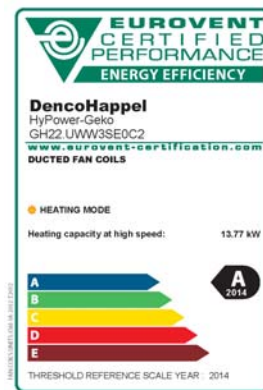
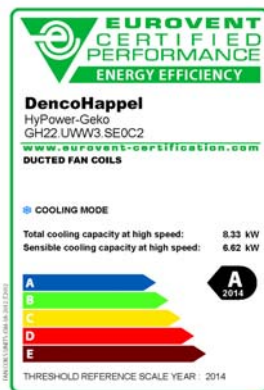
Heating (FCCOP) *:

$$FCCOP = \frac{5\% \times 13,77 + 25\% \times 9,54 + 70\% \times 4,79}{5\% \times 0,234 + 25\% \times 0,069 + 70\% \times 0,010} = 179 \geq 85 \xrightarrow{\text{Label}} \text{CLASS A}$$

*) Cooling, heating and electrical output in [kW] under EUROVENT conditions:

Cooling: air intake 27°C / 47% r.h., chilled water 7 / 12°C

Heating: air intake 20°C, warm water 70 / 60°C



AiD@ Data for all unit types can be calculated using our AiD@ layout software or provided by our sales representatives.

Performance data cooling and heating (EC fans)

4-Pipe Chilled and Warm Water

Sizes 1 to 4

CWP 6/12 °C
 t_{L1} = +27 °C
 φ₁ = 46 % r.h.

PWW 70/50 °C
 t_{L1} = +20 °C

HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Air volume flow** m ³ /h	Capacity stage 1				Capacity stage 2				Sound power air intake** dB(A)	Sound power air discharge** dB(A)	Sound power casing** dB(A)
				Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop			
				Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa			
50 Pa	1	1	335	2,1	3	2,3	2,2	2,2	2,1	3,3	1,3	41	44	36
		2	430	2,5	4,3	2,7	3,0	2,8	3,4	4,1	1,9	47	51	42
		3	610	3,4	7,3	3,5	4,8	3,8	5,5	5,3	3,1	56	60	50
		4	775	4,1	10,3	4,1	6,5	4,6	7,9	6,5	4,4	63	66	56
		5	910	4,7	13	4,6	7,9	5,3	10,1	7,4	5,5	67	71	59
	2	1	400	2,5	3,5	2,9	2,3	2,7	1,6	4,1	0,9	37	39	30
		2	555	3,3	5,7	3,7	3,5	3,7	2,7	5,4	1,5	44	47	36
		3	920	5,0	12,2	5,3	6,8	5,7	6,1	8,0	3,1	56	59	46
		4	1195	6,2	17,9	6,3	9,5	7,1	9,0	9,9	4,5	61	65	52
		5	1460	7,3	24,0	7,3	12,3	8,4	12,3	11,6	6,0	66	70	57
	3	1	600	3,8	3,0	4,2	1,9	4,2	2,3	6,2	1,2	45	47	36
		2	800	4,9	4,6	5,2	2,8	5,4	3,6	7,8	1,8	51	53	42
		3	1340	7,5	9,9	7,5	5,3	8,4	8,4	11,8	3,8	61	64	53
		4	1695	9,0	13,9	8,9	7,2	10,2	11,9	14,2	5,3	66	69	58
		5	1995	10,2	17,6	9,9	8,8	11,7	15,3	16,1	6,7	69	73	61
	4	1	710	4,7	5,5	5,1	1,2	5,1	4,2	7,5	0,9	43	42	35
		2	1020	6,4	9,4	6,7	1,9	7,0	7,3	10,1	1,4	50	49	42
		3	1665	9,6	19,5	9,5	3,7	10,7	15,9	15,0	2,9	60	60	51
		4	2175	11,9	28,8	11,5	5,1	13,4	24,2	18,4	4,3	66	66	56
		5	2695	14,1	39,4	13,4	6,7	16,1	33,2	21,8	5,8	71	72	61
75 Pa	1	1	275	1,7	2,2	1,9	1,7	1,9	1,6	2,8	1,0	40	43	36
		2	355	2,2	3,3	2,4	2,4	2,4	2,4	3,5	1,4	47	50	41
		3	490	2,8	5,3	3,0	3,6	3,1	4,0	4,5	2,3	55	58	49
		4	655	3,6	8,1	3,7	5,2	4,0	6,4	5,7	3,4	63	66	56
		5	795	4,2	10,7	4,2	6,7	4,7	8,3	6,6	4,5	68	71	60
	2	1	295	1,9	2,1	2,3	1,5	2,2	1,1	3,2	0,6	37	39	30
		2	415	2,6	3,7	3,0	2,4	2,9	1,8	4,3	1,0	45	47	36
		3	675	3,9	7,7	4,2	4,6	4,4	4,0	6,4	2,1	55	58	46
		4	880	4,9	11,4	5,1	6,4	5,6	5,9	7,9	3,0	61	65	52
		5	1085	5,8	15,6	5,9	8,4	6,6	8,0	9,2	3,9	66	70	57
	3	1	485	3,2	2,2	3,6	1,4	3,4	1,6	5,2	0,9	45	47	36
		2	645	4,1	3,3	4,4	2,1	4,5	2,6	6,6	1,3	51	53	42
		3	1075	6,2	7,1	6,4	4,0	7,0	6,0	10	2,8	61	64	53
		4	1365	7,6	10,1	7,6	5,5	8,6	8,7	12,0	3,9	66	69	58
		5	1615	8,7	12,9	8,6	6,8	9,9	11,4	13,7	5,0	70	73	62
	4	1	560	3,9	3,9	4,3	0,9	4,1	2,8	6,1	0,6	43	42	35
		2	800	5,2	6,7	5,6	1,4	5,7	4,9	8,3	1,0	50	49	42
		3	1290	7,8	13,4	7,9	2,6	8,6	10,4	12,2	2,0	60	60	51
		4	1680	9,7	19,8	9,6	3,7	10,8	16,2	15,1	3,0	66	66	56
		5	2095	11,6	27,3	11,2	4,9	13,0	22,9	17,9	4,1	71	71	60

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4

Plastic box with terminal strip
(with MATRIX metal sheet-
electric switch cabinet)



Metal-sheet electric switch cabinet with
terminal strip or for integrated controls



Version with electric switch cabinet	
F	Plastic box with terminal strip
S	Metal sheet switch cabinet with terminal strip or integrated control system

Type of unit	
without fan chamber	A
with fan chamber	B
with fan chamber and acoustic insulation	C

Air-flow function	
U	Recircul. unit
H	Hygiene unit

motor	
E	EC motor

Medium connection front connection side, facing discharge	Ceiling	Left	3
	right	4	
Condensate line	with drainage	0	
	With condensate pump	1	

Order code: **G H** [] [] . [] **W W** [] . [] **E** [] [] [] []

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD@ selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow
 ** air volumes and sound power for capacity stage 1

Performance data cooling or heating (AC fans)

4-Pipe Chilled and Warm Water

Sizes 1 to 4

CWP 6/12 °C
 $t_{L1} = +27 °C$
 $\phi_1 = 46 \% \text{ r.h.}$


PWW 70/50 °C
 $t_{L1} = +20 °C$

HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Air volume flow** m ³ /h	Capacity stage 1				Capacity stage 2				Sound power air intake** dB(A)	Sound power air discharge** dB(A)	Sound power casing** dB(A)
				Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop			
				Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa			
50 Pa	1	1	630	3,5	7,6	3,6	5,0	4,0	6,1	5,6	3,3	55	57	50
		2	720	3,9	9,3	3,9	5,9	4,4	7,1	6,2	3,9	57	60	52
		3	775	4,1	10,3	4,1	6,5	4,6	7,8	6,5	4,3	59	61	53
		4	810	4,3	11,0	4,2	6,8	4,8	8,3	6,7	4,5	60	62	55
		5	835	4,4	11,5	4,3	7,1	4,9	8,6	6,8	4,7	61	63	55
	2	1	815	4,6	10,2	4,8	5,8	5,4	5,6	7,6	2,8	51	51	48
		2	1050	5,6	14,8	5,8	8,1	6,6	8,1	9,2	3,9	56	58	51
		3	1185	6,2	17,7	6,3	9,4	7,2	9,3	10,0	4,6	60	63	54
		4	1265	6,5	19,5	6,6	10,2	7,6	10,2	10,5	5,0	62	65	56
		5	1315	6,7	20,6	6,8	10,8	7,8	10,7	10,8	5,2	62	66	56
	3	1	690	4,3	3,7	4,7	2,3	4,9	3,1	7,1	1,5	45	47	43
		2	1015	5,9	6,6	6,2	3,7	6,8	5,7	9,8	2,7	50	51	45
		3	1445	7,9	11,0	7,9	5,9	9,2	10,0	12,8	4,4	57	59	52
		4	1750	9,2	14,6	9,1	7,5	10,6	12,8	14,7	5,6	61	64	56
		5	1890	9,8	16,3	9,6	8,3	11,3	14,2	15,5	6,2	63	66	57
	4	1	2290	12,4	31,2	11,9	5,5	14,2	27,2	19,4	4,7	62	64	55
		2	2460	13,2	34,6	12,5	6,0	15,1	30,2	20,5	5,2	64	66	56
		3	2600	13,7	37,5	13,0	6,4	15,7	32,7	21,2	5,6	65	67	57
		4	2700	14,2	39,6	13,3	6,7	16,1	33,4	21,8	5,8	66	68	58
		5	2820	14,6*	41,3	13,8	7,1	16,7	35,6	22,5	6,2	67	69	59
75 Pa	1	1	570	3,2	6,6	3,3	4,4	3,6	5,2	5,2	2,9	55	57	50
		2	625	3,5	7,5	3,5	4,9	3,9	6,0	5,6	3,3	56	59	52
		3	655	3,6	8,1	3,6	5,2	4,0	6,3	5,7	3,4	58	61	53
		4	680	3,7	8,5	3,7	5,5	4,2	6,7	5,9	3,6	59	62	54
		5	695	3,8	8,8	3,8	5,6	4,2	6,7	6,0	3,7	60	62	55
	2	1	790	4,4	9,8	4,7	5,6	5,3	5,3	7,4	2,7	52	52	49
		2	970	5,3	13,2	5,5	7,3	6,2	7,1	8,6	3,5	56	59	52
		3	1045	5,6	14,7	5,8	8,0	6,5	7,9	9,1	3,9	60	63	54
		4	1100	5,8	15,9	6,0	8,6	6,8	8,6	9,5	4,2	61	64	55
		5	1135	6,0	16,6	6,1	8,9	7,0	9,1	9,7	4,3	62	65	56
	3	1	680	4,3	3,6	4,6	2,2	4,8	3,0	7,0	1,5	46	48	44
		2	995	5,9	6,4	6,1	3,7	6,8	5,7	9,6	2,6	51	52	47
		3	1375	7,6	10,2	7,7	5,5	8,8	9,2	12,3	4,1	58	60	53
		4	1555	8,4	12,3	8,3	6,4	9,7	11,1	13,5	4,8	61	64	55
		5	1650	8,8	13,4	8,7	7,0	10,1	11,7	14,0	5,2	62	65	56
	4	1	2110	11,6	27,7	11,2	4,9	13,3	24,0	18,3	4,2	62	63	55
		2	2235	12,2	30,1	11,7	5,3	13,9	26,1	19,1	4,6	63	66	56
		3	2330	12,6	31,9	12,0	5,6	14,4	27,8	19,6	4,8	64	67	57
		4	2405	12,9	33,5	12,3	5,8	14,8	29,0	20,1	5,0	66	67	57
		5	2500	13,3	35,4	12,7	6,1	15,2	30,8	20,6	5,3	66	68	58

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4


Plastic box with terminal strip
(with MATRIX metal sheet electric switch cabinet)



Speed combination

A	1-2-3
B	2-3-4
C	3-4-5
E	1-3-5
H	1-2-3-4-5

Metal-sheet electric switch cabinet with terminal strip or for integrated controls



Speed combination

K	1-2-3
L	2-3-4
M	3-4-5
O	1-3-5
R	1-2-3-4-5

Type of unit	
without fan chamber	A
with fan chamber	B
with fan chamber and acoustic insulation	C

Air-flow function	
U	Recircul. unit
H	Hygiene unit

motor	
0	AC Motor

Medium connection	
front connection side, facing discharge	3
Left	4
right	

Condensate line	
with drainage	0
With condensate pump	1

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD@ selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow

** air volumes and sound power for capacity stage 1

Order code

G H . W W . 0

Performance data cooling or heating (EC fans)

2-Pipe Chilled or Warm Water

Sizes 1 to 4

CWP 6/12 °C
 t_{L1} = +27 °C
 φ₁ = 46% r.h.

PWW 70/50 °C
 t_{L1} = +20 °C

HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Air volume flow** m ³ /h	Capacity stage 1				Capacity stage 2				Capacity stage 3				Sound power air intake** dB(A)	Sound power air discharge** dB(A)	Sound power casing** dB(A)
				Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop			
				Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa			
50 Pa	1	1	340	1.7	4.1	3.5	1.4	2.3	2.3	4.5	0.7	2.6	1.5	4.7	0.4	41	44	36
		2	435	2.0	5.8	4.3	2.0	2.9	3.5	5.6	1.0	3.3	2.3	6.0	0.6	47	51	42
		3	620	2.7	9.5	5.6	3.4	3.9	6.0	7.7	1.8	4.4	3.9	8.2	1.1	57	60	50
		4	785	3.2	13.1	6.8	4.7	4.8	8.4	9.5	2.7	5.5	5.6	10.3	1.7	63	66	56
		5	920	3.6	16.2	7.7	5.8	5.5	10.6	10.9	3.4	6.4	7.4	12.0	2.3	67	71	59
	2	1	420	2.2	3.3	4.5	1.1	2.9	1.8	5.6	0.6	3.2	0.9	5.7	0.2	37	40	30
		2	580	2.8	5.1	5.8	1.7	3.9	3.0	7.6	0.9	4.3	1.5	7.9	0.4	44	47	36
		3	970	4.2	10.3	8.8	3.6	6.0	6.8	11.9	2.2	6.7	3.3	12.7	1.0	56	59	46
		4	1260	5.1	14.6	10.8	5.2	7.5	9.9	14.9	3.3	8.5	5.0	16.3	1.6	62	65	52
		5	1525	5.9	18.9	12.5	6.8	8.8	13.4	17.8	4.5	10.1	6.7	20	2.2	66	70	57
	3	1	630	3.2	4.1	6.7	1.4	4.3	2.5	8.5	0.8	4.9	1.5	9.0	0.4	45	48	36
		2	835	4.0	5.9	8.4	2.1	5.6	3.9	11.0	1.3	6.4	2.3	11.9	0.7	51	53	42
		3	1410	6.0	12.2	12.7	4.4	8.7	9.0	17.4	3.0	10.0	5.3	19.3	1.7	61	64	53
		4	1775	7.2	16.6	15.2	6.0	10.6	12.7	21.4	4.3	12.3	7.7	24.0	2.5	66	70	58
		5	2090	8.1	20.6	17.2	7.5	12.1	16.2	24.6	5.6	14.2	9.7	27.8	3.2	70	73	61
	4	1	735	4.0	7.7	8.1	2.5	5.3	4.4	10.3	1.4	6.1	2.7	10.9	0.7	43	42	35
		2	1060	5.3	12.9	11.0	4.3	7.3	7.8	14.3	2.5	8.3	4.7	15.4	1.3	50	49	42
		3	1735	7.8	24.7	16.3	8.7	11.1	17.2	22.2	5.6	12.7	10.1	24.3	3.1	61	60	51
		4	2265	9.5	35.4	20.0	12.7	14.0	26.2	28.0	8.6	16.1	15.4	31.1	4.9	66	66	56
		5	2800	10.7*	37.0*	23.6	17.1	16.7	35.6	33.8	12.2	19.4	21.1	38.0	7.0	71	72	61
75 Pa	1	1	280	1.4	3.2	3.0	1.1	2.0	1.7	3.7	0.5	2.2	1.1	3.8	0.3	40	43	36
		2	360	1.8	4.5	3.6	1.5	2.5	2.5	4.7	0.8	2.7	1.6	4.9	0.4	47	50	41
		3	500	2.3	7.1	4.8	2.5	3.3	4.3	6.3	1.3	3.7	2.8	6.7	0.8	55	58	49
		4	665	2.8	10.4	6.0	3.7	4.2	6.5	8.2	2.1	4.8	4.5	8.9	1.3	63	66	56
		5	800	3.3	13.4	6.9	4.8	4.9	8.7	9.7	2.8	5.6	5.8	10.6	1.8	68	71	60
	2	1	305	1.7	2.1	3.4	0.7	2.2	1.1	4.2	0.3	2.5	0.6	4.3	0.1	37	39	30
		2	425	2.2	3.4	4.5	1.1	3.0	1.9	5.7	0.6	3.3	1.0	5.9	0.3	44	46	36
		3	695	3.2	6.5	6.7	2.3	4.6	4.2	9.0	1.3	5.2	2.1	9.6	0.6	55	58	46
		4	910	4.0	9.4	8.4	3.3	5.8	6.3	11.4	2.0	6.5	3.1	12.3	0.9	61	65	52
		5	1125	4.7	12.5	9.9	4.5	6.9	8.7	13.7	2.8	7.9	4.4	15.0	1.3	66	70	57
	3	1	505	2.7	3.0	5.5	1.0	3.6	1.7	6.9	0.6	4.1	1.1	7.3	0.3	45	47	36
		2	670	3.4	4.5	7.0	1.5	4.6	2.8	9.0	0.9	5.3	1.6	9.7	0.5	51	53	42
		3	1115	5.0	8.8	10.6	3.1	7.2	6.3	14.3	2.1	8.3	3.8	15.8	1.2	61	64	52
		4	1420	6.1	12.3	12.8	4.4	8.9	9.3	17.7	3.0	10.3	5.5	19.8	1.7	66	69	58
		5	1680	6.9	15.4	14.6	5.6	10.2	11.8	20.5	4.0	11.9	7.2	23.1	2.3	69	73	61
	4	1	575	3.3	5.4	6.6	1.8	4.3	3.1	8.1	0.9	4.8	1.8	8.5	0.5	43	42	35
		2	825	4.4	9.0	8.9	3.0	5.9	5.3	11.4	1.7	6.7	3.2	12.1	0.9	50	49	42
		3	1330	6.4	17.6	13.2	6.0	8.9	11.3	17.6	3.7	10.2	6.8	19.2	2.0	60	60	51
		4	1735	7.8	24.7	16.3	8.7	11.2	17.3	22.3	5.7	12.9	10.3	24.6	3.2	66	66	56
		5	2165	9.2	33.3	19.3	12.0	13.5	24.6	27.1	8.1	15.6	14.6	30.2	4.6	71	71	61

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4

Plastic box with terminal strip (with MATRIX metal sheet electric switch cabinet)



Metal-sheet electric control box with terminal block or for integrated controls



Version with electric switch cabinet	
F	Plastic box with terminal strip
S	Metal-sheet switch cabinet with terminal strip or integrated controls

Type of unit		
	without fan chamber	A
	with fan chamber	B
	with fan chamber and acoustic insulation	C

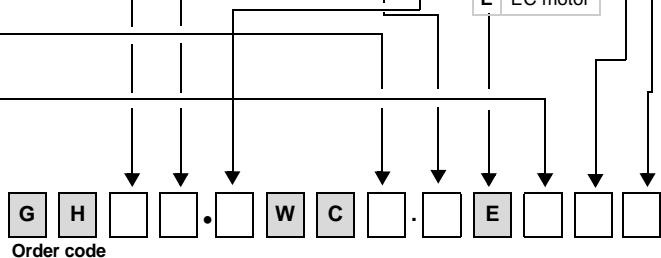
Air-flow function	
U	Recirculating-air unit
H	Hygiene unit

motor
E EC motor

Medium connection front connection side, facing discharge	Ceiling	Left	3
		Right	4
Condensate line		with drainage	0
		With condensate pump	1

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD@ selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow
 ** air volumes and sound power for capacity stage 1



Accessory

	Spare filter hoses						Flexible connection	Intake **	1	1	1
	Filter class G2	8	2	3	Discharge			1	1	2	
	Filter class G4	8	4	3							
	Box with round connector	Intake **	0	4	1		Sound attenuation module	Intake **	2	1	1
		Discharge	0	4	2			Discharge	2	1	2
	Seal cap for round connector DN250 (irrespective of size) *						Suspension rail (irrespective of size) *	950 mm	6	1	3
	Intake	7	1	1	1550 mm			6	2	3	
	Discharge	7	1	2	2150 mm			6	3	3	
	Contact protection	intake	5	1	1		Filter chamber	Filter removal from the top	4	1	1
								Filter removal from the side	4	2	2

Sizes 1 to 4
* 0, if irrespective of size

** Only for basic units in types B and C

Order code



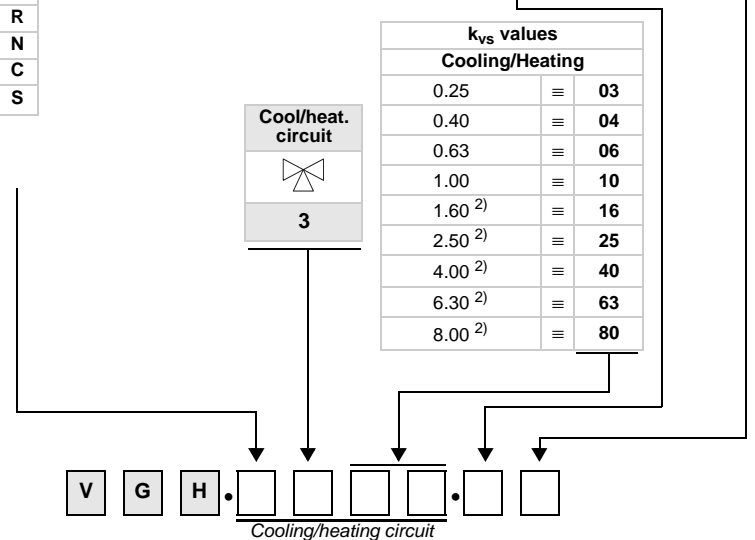
Valves

MATRIX 3000/4000	Terminal box	Drive	Operating voltage/circuit	
•	•	2-point open/close	230 V AC ²⁾	T
•	•		24 V AC ^{1), 2)}	Q
•	•	3-point open/stop/close	230 V AC	R
			24 V AC ¹⁾	N
			230 V AC + 2 contacts	C
•	•	Continuous	0/2 ... 10 V = 24 V AC ¹⁾	S

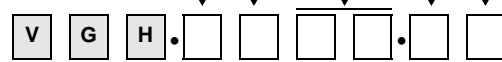
Connection/shut-off	
Inlet/outlet flow with external screw thread	0
Inlet/outlet with solder fitting	1
Inlet/outlet + ball trap with external thread	2
Inlet/outlet + ball trap with solder fitting	3
Inlet + ball trap/outlet + shut-off valve with external thread	4
Inlet + ball trap/outlet + shut off valve with solder fitting	5

Medium connection	
Left	L
right	R

k _{vs} values		
Cooling/Heating		
0.25	≡	03
0.40	≡	04
0.63	≡	06
1.00	≡	10
1.60 ²⁾	≡	16
2.50 ²⁾	≡	25
4.00 ²⁾	≡	40
6.30 ²⁾	≡	63
8.00 ²⁾	≡	80



Order code



¹⁾ 24 V-transformer to be provided by others
²⁾ k_{vs}-values for open/close actuators (T,Q) only k_{vs} 1.6 to 8.0 possible

Performance data cooling or heating (AC fans)

2-Pipe Chilled or Warm Water

Sizes 1 to 4

CWP 6/12 °C
 t_{L1} = +27 °C
 φ₁ = 46 % r.h.

PWW 70/50 °C
 t_{L1} = +20 °C

HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Capacity stage 1				Capacity stage 2				Capacity stage 3				Sound power air intake**	Sound power air discharge**	Sound power casing**	
			Air volume flow**	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity				Pressure drop
			m ³ /h	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW				Δp _H kPa
50 Pa	1	1	640	2.8	9.9	5.8	3.5	4.1	6.4	7.9	1.9	4.7	4.3	8.6	1.2	55	57	50
		2	735	3.1	12.0	6.4	4.3	4.5	7.6	8.9	2.4	5.2	5.0	9.7	1.5	57	60	52
		3	790	3.2	13.2	6.8	4.7	4.8	8.5	9.5	2.7	5.5	5.6	10.3	1.7	59	61	53
		4	830	3.4	14.1	7.1	5.1	5.0	9.0	9.9	2.9	5.7	6.0	10.7	1.8	60	63	55
		5	855	3.4	14.7	7.2	5.3	5.1	9.5	10.1	3.0	5.9	6.3	11.0	1.9	61	63	55
	2	1	820	3.7	8.2	7.7	2.9	5.4	5.6	10.7	1.8	6.4	3.0	12.0	0.9	50	51	48
		2	1070	4.5	11.7	9.5	4.2	6.8	8.4	13.4	2.7	7.9	4.4	15.1	1.4	56	58	51
		3	1230	5.0	14.2	10.6	5.1	7.5	10.0	15.0	3.3	8.7	5.2	16.7	1.6	60	63	54
		4	1320	5.3	15.6	11.2	5.6	7.9	11.0	15.8	3.6	9.1	5.6	17.7	1.8	62	65	56
		5	1375	5.5	16.5	11.5	5.9	8.2	11.7	16.4	3.9	9.5	6.0	18.3	1.9	63	66	56
	3	1	690	3.5	4.7	7.2	1.6	4.9	3.1	9.6	1.0	5.8	1.9	10.7	0.6	45	47	43
		2	1015	4.7	7.8	9.8	2.7	6.9	5.8	13.6	1.9	8.2	3.6	15.4	1.1	50	51	45
		3	1465	6.2	12.8	13.1	4.6	9.3	10.2	18.6	3.4	11.1	6.4	21.4	2.0	57	59	52
		4	1805	7.3	17.0	15.4	6.1	10.9	13.4	22.0	4.6	12.9	8.1	25.1	2.7	62	65	56
		5	1955	7.7	18.9	16.3	6.9	11.6	15.0	23.4	5.1	13.7	9.1	26.8	3.0	64	67	57
	4	1	2355	9.8	37.0	20.6	13.4	14.7	28.7	29.4	9.5	17.2	17.5	33.5	5.5	63	64	55
		2	2545	10.2*	37.0	21.9	15.0	15.6	32.3	31.4	10.6	18.3	19.4	35.6	6.2	64	66	56
		3	2700	10.5*	37.0	22.9	16.2	16.3	34.1	32.9	11.6	19.0	20.5	37.3	6.8	65	68	58
		4	2815	10.7*	37.0	23.6	17.2	16.8	36.2	34.1	12.4	19.6	21.6	38.5	7.2	67	69	58
		5	2950	11.0*	37.0	24.5	18.4	17.4	38.7	35.2	13.3	20.4	23.2	40.1	7.7	68	70	59
75 Pa	1	1	580	2.6	8.7	5.3	3.0	3.7	5.5	7.3	1.7	4.3	3.7	7.9	1.1	55	57	50
		2	640	2.8	9.9	5.8	3.5	4.0	6.3	7.9	1.9	4.7	4.3	8.6	1.2	56	59	52
		3	670	2.8	10.6	6.0	3.7	4.2	6.6	8.2	2.1	4.8	4.6	9.0	1.3	58	61	53
		4	695	2.9	11.1	6.2	3.9	4.3	7.0	8.5	2.2	5.0	4.8	9.3	1.4	59	62	54
		5	710	3.0	11.4	6.3	4.1	4.4	7.3	8.7	2.3	5.1	5.0	9.5	1.5	60	62	55
	2	1	800	3.6	7.9	7.5	2.8	5.3	5.4	10.4	1.7	6.2	2.9	11.7	0.9	51	52	49
		2	995	4.3	10.6	9.0	3.8	6.3	7.5	12.6	2.4	7.4	4.0	14.1	1.2	56	59	52
		3	1085	4.6	12.0	9.6	4.2	6.8	8.5	13.4	2.7	7.9	4.4	15.1	1.4	60	63	54
		4	1150	4.8	12.9	10.0	4.6	7.1	9.0	14.1	2.9	8.3	4.8	15.8	1.5	61	64	55
		5	1185	4.9	13.5	10.3	4.8	7.3	9.5	14.5	3.1	8.5	5.0	16.2	1.5	62	65	56
	3	1	680	3.4	4.6	7.1	1.5	4.8	3.0	9.5	1.0	5.7	1.9	10.5	0.6	46	48	44
		2	1000	4.6	7.6	9.7	2.7	6.8	5.8	13.4	1.8	8.1	3.6	15.2	1.1	51	52	46
		3	1395	6.0	12.0	12.6	4.3	8.9	9.5	17.8	3.1	10.6	5.9	20.4	1.8	58	59	53
		4	1605	6.6	14.5	14.0	5.2	10.0	11.6	20.0	3.8	11.8	7.1	22.8	2.2	61	64	55
		5	1715	7.0	15.9	14.8	5.7	10.4	12.4	21.1	4.2	12.4	7.7	24.0	2.5	63	65	57
	4	1	2185	9.2	33.8	19.4	12.1	13.8	25.7	27.7	8.4	16.2	15.6	31.3	4.9	62	64	55
		2	2330	9.7	35.6	20.4	13.2	14.5	28.2	29.1	9.3	17.0	17.0	33.0	5.4	63	66	56
		3	2440	10.0*	37.0	21.2	14.1	15.1	30.2	30.3	10.0	17.6	18.2	34.3	5.8	64	67	57
		4	2520	10.1*	37.0	21.7	14.8	15.4	31.6	31.0	10.4	18.0	18.9	35.1	6.1	66	68	58
		5	2625	10.4*	37.0	22.4	15.6	15.9	32.8	32.2	11.2	18.6	19.6	36.4	6.5	67	68	58

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4

Plastic box with terminal strip
(with MATRIX metal sheet electric switch cabinet)



Speed combination

A	1-2-3
B	2-3-4
C	3-4-5
E	1-3-5
H	1-2-3-4-5

Metal sheet electric switch cabinet
with terminal block or
for integrated controls



Speed combination

K	1-2-3
L	2-3-4
M	3-4-5
O	1-3-5
R	1-2-3-4-5

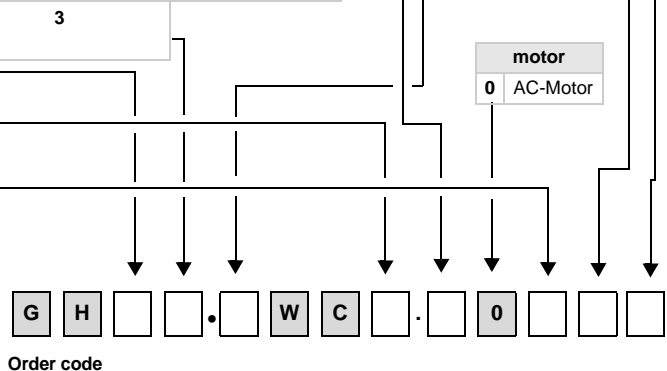
Type of unit	
without fan chamber	A
with fan chamber	B
with fan chamber + acoustic insulation	C

Air-flow	
U	Recircul. unit
H	Hygiene unit

motor	
0	AC-Motor

Medium connection front connection side, facing discharge	Ceiling	Left right	3 4
Condensate line	with drainage		0
	With condensate pump		1

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD® selection software or can be requested with our sales employees.
 * capacity with max. allowed medium volume flow
 ** air volumes and sound power for capacity stage 1



Order code

Accessory

	Spare filter hoses				
	Filter class G2		8	2	3
	Filter class G4		8	4	3

	Flexible connection		Intake **	1	1	1
			Discharge	1	1	2

	Box with round connector		Intake **	0	4	1
			Discharge	0	4	2

	Seal cap for round connector DN250 (irrespective of size) *				
	Intake		7	1	1
	Discharge		7	1	2

	Sound attenuation module		Intake **	2	1	1
			Discharge	2	1	2

	Suspension rail (irrespective of size) *		950 mm	6	1	3
			1550 mm	6	2	3
			2150 mm	6	3	3

	Contact protection		intake	5	1	1
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	Filter chamber		Filter removal from the top	4	1	1
			Filter removal from the side	4	2	2

Sizes 1 to 4
* 0, if irrespective of size

** Only for basic units in types B and C

Order code Z G H . [] A [] [] []

Valves

MATRIX 3000/4000	Terminal box	Drive	Operating voltage/circuit	
•	•	2-point open/close	230 V AC ²⁾	T
•	•		24 V AC ¹⁾ , 2)	Q
•	•	3-point open/stop/close	230 V AC	R
			24 V AC ¹⁾	N
			230 V AC + 2 contacts	C
•	•	Continuous	0/2 ... 10 V = 24 V AC ¹⁾	S

Connection/shut-off	
Inlet/outlet flow with external screw thread	0
Inlet/outlet with solder fitting	1
Inlet/outlet + ball trap with external thread	2
Inlet/outlet + ball trap with solder fitting	3
Inlet + ball trap/outlet + shut-off valve with external thread	4
Inlet + ball trap/outlet + shut off valve with solder fitting	5

Medium connection	
left	L
right	R

k _{vs} values		
Cooling/Heating		
0.25	≡	03
0.40	≡	04
0.63	≡	06
1.00	≡	10
1.60 ²⁾	≡	16
2.50 ²⁾	≡	25
4.00 ²⁾	≡	40
6.30 ²⁾	≡	63
8.00 ²⁾	≡	80

Order code V G H . [] [] [] [] . [] []

¹⁾ 24 V-transformer to be provided by others
²⁾ k_{vs}-values for open/close actuators (T,Q) only k_{vs} 1.6 to 8.0 possible

Performance data heating

2-Pipe Warm Water

PWW 70/50 °C
t_{L1} = +20 °C

HyPower-Geko


Sizes 1 to 4

Ext. pressure loss (in speed 3)	Model size	Speeds	Capacity stage 1				Capacity stage 2				Capacity stage 3				Sound power air intake**	Sound power air discharge**	Sound power casing**	
			Air volume flow**	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity				Pressure drop
			m ³ /h	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW				Δp _H kPa
50 Pa	1	1	340	-	-	3.5	1.4	-	-	4.5	0.7	-	-	4.7	0.4	41	44	36
		2	435	-	-	4.3	2.0	-	-	5.6	1.0	-	-	6.0	0.6	47	51	42
		3	620	-	-	5.6	3.4	-	-	7.7	1.8	-	-	8.2	1.1	57	60	50
		4	785	-	-	6.8	4.7	-	-	9.5	2.7	-	-	10.3	1.7	63	66	56
		5	920	-	-	7.7	5.8	-	-	10.9	3.4	-	-	12.0	2.3	67	71	59
	2	1	420	-	-	4.5	1.1	-	-	5.6	0.6	-	-	5.7	0.2	37	40	30
		2	580	-	-	5.8	1.7	-	-	7.6	0.9	-	-	7.9	0.4	44	47	36
		3	970	-	-	8.8	3.6	-	-	11.9	2.2	-	-	12.7	1.0	56	59	46
		4	1260	-	-	10.8	5.2	-	-	14.9	3.3	-	-	16.3	1.6	62	65	52
		5	1525	-	-	12.5	6.8	-	-	17.8	4.5	-	-	20	2.2	66	70	57
	3	1	630	-	-	6.7	1.4	-	-	8.5	0.8	-	-	9.0	0.4	45	48	36
		2	835	-	-	8.4	2.1	-	-	11.0	1.3	-	-	11.9	0.7	51	53	42
		3	1410	-	-	12.7	4.4	-	-	17.4	3.0	-	-	19.3	1.7	61	64	53
		4	1775	-	-	15.2	6.0	-	-	21.4	4.3	-	-	24.0	2.5	66	70	58
		5	2090	-	-	17.2	7.5	-	-	24.6	5.6	-	-	27.8	3.2	70	73	61
	4	1	735	-	-	8.1	2.5	-	-	10.3	1.4	-	-	10.9	0.7	43	42	35
		2	1060	-	-	11.0	4.3	-	-	14.3	2.5	-	-	15.4	1.3	50	49	42
		3	1735	-	-	16.3	8.7	-	-	22.2	5.6	-	-	24.3	3.1	61	60	51
		4	2265	-	-	20.0	12.7	-	-	28.0	8.6	-	-	31.1	4.9	66	66	56
		5	2800	-	-	23.6	17.1	-	-	33.8	12.2	-	-	38.0	7.0	71	72	61
75 Pa	1	1	280	-	-	3.0	1.1	-	-	3.7	0.5	-	-	3.8	0.3	40	43	36
		2	360	-	-	3.6	1.5	-	-	4.7	0.8	-	-	4.9	0.4	47	50	41
		3	500	-	-	4.8	2.5	-	-	6.3	1.3	-	-	6.7	0.8	55	58	49
		4	665	-	-	6.0	3.7	-	-	8.2	2.1	-	-	8.9	1.3	63	66	56
		5	800	-	-	6.9	4.8	-	-	9.7	2.8	-	-	10.6	1.8	68	71	60
	2	1	305	-	-	3.4	0.7	-	-	4.2	0.3	-	-	4.3	0.1	37	39	30
		2	425	-	-	4.5	1.1	-	-	5.7	0.6	-	-	5.9	0.3	44	46	36
		3	695	-	-	6.7	2.3	-	-	9.0	1.3	-	-	9.6	0.6	55	58	46
		4	910	-	-	8.4	3.3	-	-	11.4	2.0	-	-	12.3	0.9	61	65	52
		5	1125	-	-	9.9	4.5	-	-	13.7	2.8	-	-	15.0	1.3	66	70	57
	3	1	505	-	-	5.5	1.0	-	-	6.9	0.6	-	-	7.3	0.3	45	47	36
		2	670	-	-	7.0	1.5	-	-	9.0	0.9	-	-	9.7	0.5	51	53	42
		3	1115	-	-	10.6	3.1	-	-	14.3	2.1	-	-	15.8	1.2	61	64	52
		4	1420	-	-	12.8	4.4	-	-	17.7	3.0	-	-	19.8	1.7	66	69	58
		5	1680	-	-	14.6	5.6	-	-	20.5	4.0	-	-	23.1	2.3	69	73	61
	4	1	575	-	-	6.6	1.8	-	-	8.1	0.9	-	-	8.5	0.5	43	42	35
		2	825	-	-	8.9	3.0	-	-	11.4	1.7	-	-	12.1	0.9	50	49	42
		3	1330	-	-	13.2	6.0	-	-	17.6	3.7	-	-	19.2	2.0	60	60	51
		4	1735	-	-	16.3	8.7	-	-	22.3	5.7	-	-	24.6	3.2	66	66	56
		5	2165	-	-	19.3	12.0	-	-	27.1	8.1	-	-	30.2	4.6	71	71	61


Medium connection		Ceiling	
front connection side, facing discharge		Left	3
		right	4

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4

Plastic box
with terminal strip
(with MATRIX
metal sheet electrical
switch cabinet)



Metal-sheet electric switch
cabinet with terminal strip or for
integrated controls



Version with electric switch cabinet	
F	Plastic box with terminal strip
S	Metal-sheet switch cabinet with terminal strip or integrated controls

Type of unit	
without fan chamber	A
with fan chamber	B
with fan chamber and acoustic insulation	C

Air-flow function	
U	Recircul. unit
H	Hygiene unit

motor	
E	EC motor

Order code

G H . O W . E 0

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD® selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow
** air volumes and sound power for capacity stage 1

Accessory

	Spare filter hoses				
	Filter class G2		8	2	3
	Filter class G4		8	4	3

	Flexible connection	Intake **	1	1	1
		Discharge	1	1	2

	Box with round connector	Intake **	0	4	1
		Discharge	0	4	2

	Sound attenuation module	Intake **	2	1	1
		Discharge	2	1	2

	Seal cap for round connector DN250 (irrespective of size) *				
	Intake		7	1	1
	Discharge		7	1	2

	Suspension rail (irrespective of size) *	950 mm	6	1	3
		1550 mm	6	2	3
		2150 mm	6	3	3

	Contact protection	intake	5	1	1
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	Filter chamber	Filter removal from the top	4	1	1
		Filter removal from the side	4	2	2

Sizes 1 to 4
* 0, if irrespective of size

** Only for basic units in types B and C

Order code Z G H . [] A [] [] []

Valves

MATRIX 3000/4000	Terminal box	Drive	Operating voltage/circuit	
•	•	2-point open/close	230 V AC ²⁾	T
•	•	2-point open/close	24 V AC ^{1), 2)}	Q
•	•	3-point open/stop/close	230 V AC	R
•	•	3-point open/stop/close	24 V AC ¹⁾	N
•	•	3-point open/stop/close	230 V AC + 2 contacts	C
•	•	Continuous	0/2 ... 10 V = 24 V AC ¹⁾	S

Connection/shut-off	
Inlet/outlet flow with external screw thread	0
Inlet/outlet with solder fitting	1
Inlet/outlet + ball trap with external thread	2
Inlet/outlet + ball trap with solder fitting	3
Inlet + ball trap/outlet + shut-off valve with external thread	4
Inlet + ball trap/outlet + shut off valve with solder fitting	5

Medium connection	
left	L
right	R

k _{vs} values		
Cooling/Heating		
0.25	≡	03
0.40	≡	04
0.63	≡	06
1.00	≡	10
1.60 ²⁾	≡	16
2.50 ²⁾	≡	25
4.00 ²⁾	≡	40
6.30 ²⁾	≡	63
8.00 ²⁾	≡	80

Heat. circuit

Order code V G H . [] [] [] [] . [] []

Heating circuit

Performance data heating (AC fans)

2-Pipe Warm Water

Sizes 1 to 4

PWW 70/50 °C

t_{L1} = +20 °C


HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Air volume flow** m ³ /h	Capacity stage 1				Capacity stage 2				Capacity stage 3				Sound power air intake** dB(A)	Sound power air discharge** dB(A)	Sound power casing** dB(A)
				Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop			
				Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa			
50 Pa	1	1	640	-	-	5.8	3.5	-	-	7.9	1.9	-	-	8.6	1.2	55	57	50
		2	735	-	-	6.4	4.3	-	-	8.9	2.4	-	-	9.7	1.5	57	60	52
		3	790	-	-	6.8	4.7	-	-	9.5	2.7	-	-	10.3	1.7	59	61	53
		4	830	-	-	7.1	5.1	-	-	9.9	2.9	-	-	10.7	1.8	60	63	55
		5	855	-	-	7.2	5.3	-	-	10.1	3.0	-	-	11.0	1.9	61	63	55
	2	1	820	-	-	7.7	2.9	-	-	10.7	1.8	-	-	12.0	0.9	50	51	48
		2	1070	-	-	9.5	4.2	-	-	13.4	2.7	-	-	15.1	1.4	56	58	51
		3	1230	-	-	10.6	5.1	-	-	15.0	3.3	-	-	16.7	1.6	60	63	54
		4	1320	-	-	11.2	5.6	-	-	15.8	3.6	-	-	17.7	1.8	62	65	56
		5	1375	-	-	11.5	5.9	-	-	16.4	3.9	-	-	18.3	1.9	63	66	56
	3	1	690	-	-	7.2	1.6	-	-	9.6	1.0	-	-	10.7	0.6	45	47	43
		2	1015	-	-	9.8	2.7	-	-	13.6	1.9	-	-	15.4	1.1	50	51	45
		3	1465	-	-	13.1	4.6	-	-	18.6	3.4	-	-	21.4	2.0	57	59	52
		4	1805	-	-	15.4	6.1	-	-	22.0	4.6	-	-	25.1	2.7	62	65	56
		5	1955	-	-	16.3	6.9	-	-	23.4	5.1	-	-	26.8	3.0	64	67	57
	4	1	2355	-	-	20.6	13.4	-	-	29.4	9.5	-	-	33.5	5.5	63	64	55
		2	2545	-	-	21.9	15.0	-	-	31.4	10.6	-	-	35.6	6.2	64	66	56
		3	2700	-	-	22.9	16.2	-	-	32.9	11.6	-	-	37.3	6.8	65	68	58
		4	2815	-	-	23.6	17.2	-	-	34.1	12.4	-	-	38.5	7.2	67	69	58
		5	2950	-	-	24.5	18.4	-	-	35.2	13.3	-	-	40.1	7.7	68	70	59
75 Pa	1	1	580	-	-	5.3	3.0	-	-	7.3	1.7	-	-	7.9	1.1	55	57	50
		2	640	-	-	5.8	3.5	-	-	7.9	1.9	-	-	8.6	1.2	56	59	52
		3	670	-	-	6.0	3.7	-	-	8.2	2.1	-	-	9.0	1.3	58	61	53
		4	695	-	-	6.2	3.9	-	-	8.5	2.2	-	-	9.3	1.4	59	62	54
		5	710	-	-	6.3	4.1	-	-	8.7	2.3	-	-	9.5	1.5	60	62	55
	2	1	800	-	-	7.5	2.8	-	-	10.4	1.7	-	-	11.7	0.9	51	52	49
		2	995	-	-	9.0	3.8	-	-	12.6	2.4	-	-	14.1	1.2	56	59	52
		3	1085	-	-	9.6	4.2	-	-	13.4	2.7	-	-	15.1	1.4	60	63	54
		4	1150	-	-	10.0	4.6	-	-	14.1	2.9	-	-	15.8	1.5	61	64	55
		5	1185	-	-	10.3	4.8	-	-	14.5	3.1	-	-	16.2	1.5	62	65	56
	3	1	680	-	-	7.1	1.5	-	-	9.5	1.0	-	-	10.5	0.6	46	48	44
		2	1000	-	-	9.7	2.7	-	-	13.4	1.8	-	-	15.2	1.1	51	52	46
		3	1395	-	-	12.6	4.3	-	-	17.8	3.1	-	-	20.4	1.8	58	59	53
		4	1605	-	-	14.0	5.2	-	-	20.0	3.8	-	-	22.8	2.2	61	64	55
		5	1715	-	-	14.8	5.7	-	-	21.1	4.2	-	-	24.0	2.5	63	65	57
	4	1	2185	-	-	19.4	12.1	-	-	27.7	8.4	-	-	31.3	4.9	62	64	55
		2	2330	-	-	20.4	13.2	-	-	29.1	9.3	-	-	33.0	5.4	63	66	56
		3	2440	-	-	21.2	14.1	-	-	30.3	10.0	-	-	34.3	5.8	64	67	57
		4	2520	-	-	21.7	14.8	-	-	31.0	10.4	-	-	35.1	6.1	66	68	58
		5	2625	-	-	22.4	15.6	-	-	32.2	11.2	-	-	36.4	6.5	67	68	58

Medium connection		Ceiling		
front connection side, facing discharge		Left	right	3
				4

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4


Plastic box with terminal strip
(with MATRIX metal sheet electric switch cabinet)



Speed combination

A	1-2-3
B	2-3-4
C	3-4-5
E	1-3-5
H	1-2-3-4-5

Metal sheet electric switch cabinet
with terminal block or for integrated controls



Speed combination

K	1-2-3
L	2-3-4
M	3-4-5
O	1-3-5
R	1-2-3-4-5

Type of unit	
without fan chamber	A
with fan chamber	B
with fan chamber and acoustic insulation	C

Air-flow function	
U	Recirculat. unit
H	Hygiene unit

motor	
0	AC-Motor

Order code

G H [] [] . [] 0 W [] . [] 0 0 [] []

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD® selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow
** air volumes and sound power for capacity stage 1

Accessory

	Spare filter hoses				
	Filter class G2		8	2	3
	Filter class G4		8	4	3

	Flexible connection		Intake **	1	1	1
			Discharge	1	1	2

	Box with round connector		Intake **	0	4	1
			Discharge	0	4	2

	Seal cap for round connector DN250 (irrespective of size) *					
	Intake		7	1	1	
	Discharge		7	1	2	

	Sound attenuation module		Intake **	2	1	1
			Discharge	2	1	2

	Suspension rail (irrespective of size) *		950 mm	6	1	3
			1550 mm	6	2	3
			2150 mm	6	3	3

	Contact protection		intake	5	1	1
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	Filter chamber		Filter removal from the top	4	1	1
			Filter removal from the side	4	2	2

Sizes 1 to 4
* 0, if irrespective of size

** Only for basic units in types B and C

Order code Z G H . [] A [] [] []

Valves

MATRIX 3000/4000	Terminal box	Drive	Operating voltage/circuit	
•	•	2-point open/close	230 V AC ²⁾	T
			24 V AC ^{1), 2)}	Q
•	•	3-point open/stop/close	230 V AC	R
			24 V AC ¹⁾	N
			230 V AC + 2 contacts	C
•	•	continuous	0/2 ... 10 V = 24 V AC ¹⁾	S

Connection/shut-off	
Inlet/outlet flow with external screw thread	0
Inlet/outlet with solder fitting	1
Inlet/outlet + ball trap with external thread	2
Inlet/outlet + ball trap with solder fitting	3
Inlet + ball trap/outlet + shut-off valve with external thread	4
Inlet + ball trap/outlet + shut off valve with solder fitting	5

Medium connection	
left	L
right	R

k _{vs} values		
Cooling/Heating		
0.25	≡	03
0.40	≡	04
0.63	≡	06
1.00	≡	10
1.60 ²⁾	≡	16
2.50 ²⁾	≡	25
4.00 ²⁾	≡	40
6.30 ²⁾	≡	63
8.00 ²⁾	≡	80

Heat.circuit

¹⁾ 24 V-transformer to be provided by others

²⁾ k_{vs}-values for open/close actuators (T, Q) only k_{vs} 1.6 to 8.0 possible

Order code V G H . [] [] [] [] . [] []

Heating circuit

Performance data cooling (EC fans)

2-Pipe Chilled Water

Sizes 1 to 4

CWP 6/12 °C

t_{L1} = +27 °C

φ₁ = 46 % r.h.

HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Air volume flow** m ³ /h	Capacity stage 1				Capacity stage 2				Capacity stage 3				Sound power air intake** dB(A)	Sound power air discharge** dB(A)	Sound power casing** dB(A)
				Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop	Cooling capacity	Pressure drop	Heating capacity	Pressure drop			
				Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa	Q _K kW	Δp _K kPa	Q _H kW	Δp _H kPa			
50 Pa	1	1	340	1.7	4.1	-	-	2.3	2.3	-	-	2.6	1.5	-	-	41	44	36
		2	435	2.0	5.8	-	-	2.9	3.5	-	-	3.3	2.3	-	-	47	51	42
		3	620	2.7	9.5	-	-	3.9	6.0	-	-	4.4	3.9	-	-	57	60	50
		4	785	3.2	13.1	-	-	4.8	8.4	-	-	5.5	5.6	-	-	63	66	56
		5	920	3.6	16.2	-	-	5.5	10.6	-	-	6.4	7.4	-	-	67	71	59
	2	1	420	2.2	3.3	-	-	2.9	1.8	-	-	3.2	0.9	-	-	37	40	30
		2	580	2.8	5.1	-	-	3.9	3.0	-	-	4.3	1.5	-	-	44	47	36
		3	970	4.2	10.3	-	-	6.0	6.8	-	-	6.7	3.3	-	-	56	59	46
		4	1260	5.1	14.6	-	-	7.5	9.9	-	-	8.5	5.0	-	-	62	65	52
		5	1525	5.9	18.9	-	-	8.8	13.4	-	-	10.1	6.7	-	-	66	70	57
	3	1	630	3.2	4.1	-	-	4.3	2.5	-	-	4.9	1.5	-	-	45	48	36
		2	835	4.0	5.9	-	-	5.6	3.9	-	-	6.4	2.3	-	-	51	53	42
		3	1410	6.0	12.2	-	-	8.7	9.0	-	-	10.0	5.3	-	-	61	64	53
		4	1775	7.2	16.6	-	-	10.6	12.7	-	-	12.3	7.7	-	-	66	70	58
		5	2090	8.1	20.6	-	-	12.1	16.2	-	-	14.2	9.7	-	-	70	73	61
	4	1	735	4.0	7.7	-	-	5.3	4.4	-	-	6.1	2.7	-	-	43	42	35
		2	1060	5.3	12.9	-	-	7.3	7.8	-	-	8.3	4.7	-	-	50	49	42
		3	1735	7.8	24.7	-	-	11.1	17.2	-	-	12.7	10.1	-	-	61	60	51
		4	2265	9.5	35.4	-	-	14.0	26.2	-	-	16.1	15.4	-	-	66	66	56
		5	2800	10.7*	37.0*	-	-	16.7	35.6	-	-	19.4	21.1	-	-	71	72	61
75 Pa	1	1	280	1.4	3.2	-	-	2.0	1.7	-	-	2.2	1.1	-	-	40	43	36
		2	360	1.8	4.5	-	-	2.5	2.5	-	-	2.7	1.6	-	-	47	50	41
		3	500	2.3	7.1	-	-	3.3	4.3	-	-	3.7	2.8	-	-	55	58	49
		4	665	2.8	10.4	-	-	4.2	6.5	-	-	4.8	4.5	-	-	63	66	56
		5	800	3.3	13.4	-	-	4.9	8.7	-	-	5.6	5.8	-	-	68	71	60
	2	1	305	1.7	2.1	-	-	2.2	1.1	-	-	2.5	0.6	-	-	37	39	30
		2	425	2.2	3.4	-	-	3.0	1.9	-	-	3.3	1.0	-	-	44	46	36
		3	695	3.2	6.5	-	-	4.6	4.2	-	-	5.2	2.1	-	-	55	58	46
		4	910	4.0	9.4	-	-	5.8	6.3	-	-	6.5	3.1	-	-	61	65	52
		5	1125	4.7	12.5	-	-	6.9	8.7	-	-	7.9	4.4	-	-	66	70	57
	3	1	505	2.7	3.0	-	-	3.6	1.7	-	-	4.1	1.1	-	-	45	47	36
		2	670	3.4	4.5	-	-	4.6	2.8	-	-	5.3	1.6	-	-	51	53	42
		3	1115	5.0	8.8	-	-	7.2	6.3	-	-	8.3	3.8	-	-	61	64	52
		4	1420	6.1	12.3	-	-	8.9	9.3	-	-	10.3	5.5	-	-	66	69	58
		5	1680	6.9	15.4	-	-	10.2	11.8	-	-	11.9	7.2	-	-	69	73	61
	4	1	575	3.3	5.4	-	-	4.3	3.1	-	-	4.8	1.8	-	-	43	42	35
		2	825	4.4	9.0	-	-	5.9	5.3	-	-	6.7	3.2	-	-	50	49	42
		3	1330	6.4	17.6	-	-	8.9	11.3	-	-	10.2	6.8	-	-	60	60	51
		4	1735	7.8	24.7	-	-	11.2	17.3	-	-	12.9	10.3	-	-	66	66	56
		5	2165	9.2	33.3	-	-	13.5	24.6	-	-	15.6	14.6	-	-	71	71	61

Medium connection	Ceiling	Left	Right	3	4
front connection side, facing discharge					
Condensate line		with drainage	With condensate pump	0	1

Filters	0	2	4
without filter			
G2 mat filter			
G4 mat filter			

Plastic box with terminal strip (with MATRIX metal sheet electrical switch cabinet)

Metal-sheet electric switch cabinet with terminal strip or for integrated controls

Version with electric switch cabinet
F Plastic box with terminal strip
S Metal-sheet switch cabinet with terminal strip or integrated controls

Type of unit	A	B	C
without fan chamber			
with fan chamber			
with fan chamber and acoustic insulation			

Air-flow function	U	H
Recircul. unit		
Hygiene unit		

motor	E
EC motor	

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD@ selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow

** air volumes and sound power for capacity stage 1

Order code

G H . W O . E

Accessory

	Spare filter hoses						
	Filter class G2	8	2	3			
	Filter class G4	8	4	3			

	Flexible connection			Intake **	1	1	1
				Discharge	1	1	2

	Box with round connector			Intake **	0	4	1
				Discharge	0	4	2

	Sound attenuation module			Intake **	2	1	1
				Discharge	2	1	2

	Seal cap for round connector DN250 (irrespective of size) *						
	Intake	7	1	1			
	Discharge	7	1	2			

	Suspension rail (irrespective of size) *			950 mm	6	1	3
				1550 mm	6	2	3
				2150 mm	6	3	3

	Contact protection			intake	5	1	1

	Filter chamber			Filter removal from the top	4	1	1
				Filter removal from the side	4	2	2

Sizes 1 to 4
* 0, if irrespective of size

** Only for basic units in types B and C

Order code Z G H . [] A [] [] []

Valves

MATRIX 3000/4000	Terminal box	Drive	Operating voltage/circuit	
•	•	2-point open/close	230 V AC ²⁾	T
			24 V AC ^{1), 2)}	Q
•	•	3-point open/stop/close	230 V AC	R
			24 V AC ¹⁾	N
			230 V AC + 2 contacts	C
•	•	Continuous	0/2 ... 10 V = 24 V AC ¹⁾	S

Connection/shut-off	
Inlet/outlet flow with external screw thread	0
Inlet/outlet with solder fitting	1
Inlet/outlet + ball trap with external thread	2
Inlet/outlet + ball trap with solder fitting	3
Inlet + ball trap/outlet + shut-off valve with external thread	4
Inlet + ball trap/outlet + shut off valve with solder fitting	5

Medium connection	
left	L
right	R

k _{vs} values		
Cooling/Heating		
0.25	≡	03
0.40	≡	04
0.63	≡	06
1.00	≡	10
1.60 ²⁾	≡	16
2.50 ²⁾	≡	25
4.00 ²⁾	≡	40
6.30 ²⁾	≡	63
8.00 ²⁾	≡	80

Order code V G H . [] [] [] [] [] []

Cooling circuit

Performance data cooling (AC fans)

2-Pipe Chilled Water

Sizes 1 to 4

CWP 6/12 °C

t_{L1} = +27 °C


φ₁ = 46 % r.h.

HyPower-Geko

Ext. pressure loss (in speed 3)	Model size	Speeds	Air volume flow** m ³ /h	Capacity stage 1				Capacity stage 2				Capacity stage 3				Sound power air intake** dB(A)	Sound power air discharge** dB(A)	Sound power casing** dB(A)
				Cooling capacity Q _K kW	Pressure drop Δp _K kPa	Heating capacity Q _H kW	Pressure drop Δp _H kPa	Cooling capacity Q _K kW	Pressure drop Δp _K kPa	Heating capacity Q _H kW	Pressure drop Δp _H kPa	Cooling capacity Q _K kW	Pressure drop Δp _K kPa	Heating capacity Q _H kW	Pressure drop Δp _H kPa			
				1	2	3	4	1	2	3	4	1	2	3	4			
50 Pa	1	1	640	2.8	9.9	-	-	4.1	6.4	-	-	4.7	4.3	-	-	55	57	50
		2	735	3.1	12.0	-	-	4.5	7.6	-	-	5.2	5.0	-	-	57	60	52
		3	790	3.2	13.2	-	-	4.8	8.5	-	-	5.5	5.6	-	-	59	61	53
		4	830	3.4	14.1	-	-	5.0	9.0	-	-	5.7	6.0	-	-	60	63	55
		5	855	3.4	14.7	-	-	5.1	9.5	-	-	5.9	6.3	-	-	61	63	55
	2	1	820	3.7	8.2	-	-	5.4	5.6	-	-	6.4	3.0	-	-	50	51	48
		2	1070	4.5	11.7	-	-	6.8	8.4	-	-	7.9	4.4	-	-	56	58	51
		3	1230	5.0	14.2	-	-	7.5	10.0	-	-	8.7	5.2	-	-	60	63	54
		4	1320	5.3	15.6	-	-	7.9	11.0	-	-	9.1	5.6	-	-	62	65	56
		5	1375	5.5	16.5	-	-	8.2	11.7	-	-	9.5	6.0	-	-	63	66	56
	3	1	690	3.5	4.7	-	-	4.9	3.1	-	-	5.8	1.9	-	-	45	47	43
		2	1015	4.7	7.8	-	-	6.9	5.8	-	-	8.2	3.6	-	-	50	51	45
		3	1465	6.2	12.8	-	-	9.3	10.2	-	-	11.1	6.4	-	-	57	59	52
		4	1805	7.3	17.0	-	-	10.9	13.4	-	-	12.9	8.1	-	-	62	65	56
		5	1955	7.7	18.9	-	-	11.6	15.0	-	-	13.7	9.1	-	-	64	67	57
	4	1	2355	9.8	37.0	-	-	14.7	28.7	-	-	17.2	17.5	-	-	63	64	55
		2	2545	10.2*	37.0	-	-	15.6	32.3	-	-	18.3	19.4	-	-	64	66	56
		3	2700	10.5*	37.0	-	-	16.3	34.1	-	-	19.0	20.5	-	-	65	68	58
		4	2815	10.7*	37.0	-	-	16.8	36.2	-	-	19.6	21.6	-	-	67	69	58
		5	2950	11.0*	37.0	-	-	17.4	38.7	-	-	20.4	23.2	-	-	68	70	59
75 Pa	1	1	580	2.6	8.7	-	-	3.7	5.5	-	-	4.3	3.7	-	-	55	57	50
		2	640	2.8	9.9	-	-	4.0	6.3	-	-	4.7	4.3	-	-	56	59	52
		3	670	2.8	10.6	-	-	4.2	6.6	-	-	4.8	4.6	-	-	58	61	53
		4	695	2.9	11.1	-	-	4.3	7.0	-	-	5.0	4.8	-	-	59	62	54
		5	710	3.0	11.4	-	-	4.4	7.3	-	-	5.1	5.0	-	-	60	62	55
	2	1	800	3.6	7.9	-	-	5.3	5.4	-	-	6.2	2.9	-	-	51	52	49
		2	995	4.3	10.6	-	-	6.3	7.5	-	-	7.4	4.0	-	-	56	59	52
		3	1085	4.6	12.0	-	-	6.8	8.5	-	-	7.9	4.4	-	-	60	63	54
		4	1150	4.8	12.9	-	-	7.1	9.0	-	-	8.3	4.8	-	-	61	64	55
		5	1185	4.9	13.5	-	-	7.3	9.5	-	-	8.5	5.0	-	-	62	65	56
	3	1	680	3.4	4.6	-	-	4.8	3.0	-	-	5.7	1.9	-	-	46	48	44
		2	1000	4.6	7.6	-	-	6.8	5.8	-	-	8.1	3.6	-	-	51	52	46
		3	1395	6.0	12.0	-	-	8.9	9.5	-	-	10.6	5.9	-	-	58	59	53
		4	1605	6.6	14.5	-	-	10.0	11.6	-	-	11.8	7.1	-	-	61	64	55
		5	1715	7.0	15.9	-	-	10.4	12.4	-	-	12.4	7.7	-	-	63	65	57
	4	1	2185	9.2	33.8	-	-	13.8	25.7	-	-	16.2	15.6	-	-	62	64	55
		2	2330	9.7	35.6	-	-	14.5	28.2	-	-	17.0	17.0	-	-	63	66	56
		3	2440	10.0*	37.0	-	-	15.1	30.2	-	-	17.6	18.2	-	-	64	67	57
		4	2520	10.1*	37.0	-	-	15.4	31.6	-	-	18.0	18.9	-	-	66	68	58
		5	2625	10.4*	37.0	-	-	15.9	32.8	-	-	18.6	19.6	-	-	67	68	58

Filters	
without filter	0
G2 mat filter	2
G4 mat filter	4


Plastic box with terminal strip (with MATRIX metal sheet electric switch cabinet)



Speed combination

A	1-2-3
B	2-3-4
C	3-4-5
E	1-3-5
H	1-2-3-4-5

Metal sheet electric switch cabinet with terminal block or for integrated controls



Speed combination

K	1-2-3
L	2-3-4
M	3-4-5
O	1-3-5
R	1-2-3-4-5

Type of unit	
without fan chamber	A
with fan chamber	B
with fan chamber and acoustic insulation	C

Air-flow function	
U	Recircul. unit
H	Hygiene unit

motor	
0	AC-Motor

Medium connection	
front connection side, facing discharge	3
Ceiling	4

Condensate line	
with drainage	0
With condensate pump	1

Data apply to basic units of unit type C with filter class G2, without accessories, with external pressure drop of 50 Pa/75 Pa in the 3rd speed. Data for unit types A and B and other unit features and/or operating point are available in AiD@ selection software or can be requested with our sales employees.

* capacity with max. allowed medium volume flow

** air volumes and sound power for capacity stage 1

Order code: **G H [] [] . [] W O [] . [] 0 [] [] []**

Accessory

	Spare filter hoses				
	Filter class G2	8	2	3	
	Filter class G4	8	4	3	

	Flexible connection		Intake **	1	1	1
			Discharge	1	1	2

	Box with round connector		Intake **	0	4	1
			Discharge	0	4	2

	Sound attenuation module		Intake **	2	1	1
			Discharge	2	1	2

	Seal cap for round connector DN250 (irrespective of size) *					
	Intake	7	1	1		
	Discharge	7	1	2		

	Suspension rail (irrespective of size) *		950 mm	6	1	3
			1550 mm	6	2	3
			2150 mm	6	3	3

	Contact protection		intake	5	1	1
--	--------------------	--	--------	---	---	---

	Filter chamber		Filter removal from the top	4	1	1
			Filter removal from the side	4	2	2

Sizes 1 to 4
* 0, if irrespective of size

** Only for basic units in types B and C

Order code

Z

G

H

•

A

Valves

MATRIX 3000/4000	Terminal box	Drive	Operating voltage/circuit	
•	•	2-point open/close	230 V AC ²⁾	T
•	•	2-point open/close	24 V AC ^{1), 2)}	Q
•	•	3-point open/stop/close	230 V AC	R
			24 V AC ¹⁾	N
			230 V AC + 2 contacts	C
•	•	Continuous	0/2 ... 10 V = 24 V AC ¹⁾	S

Connection/shut-off	
Inlet/outlet flow with external screw thread	0
Inlet/outlet with solder fitting	1
Inlet/outlet + ball trap with external thread	2
Inlet/outlet + ball trap with solder fitting	3
Inlet + ball trap/outlet + shut-off valve with external thread	4
Inlet + ball trap/outlet + shut off valve with solder fitting	5

Medium connection	
left	L
right	R

k _{vs} values	
Cooling/Heating	
0.25	≡ 03
0.40	≡ 04
0.63	≡ 06
1.00	≡ 10
1.60 ²⁾	≡ 16
2.50 ²⁾	≡ 25
4.00 ²⁾	≡ 40
6.30 ²⁾	≡ 63
8.00 ²⁾	≡ 80

Cool.circuit

Order code

V

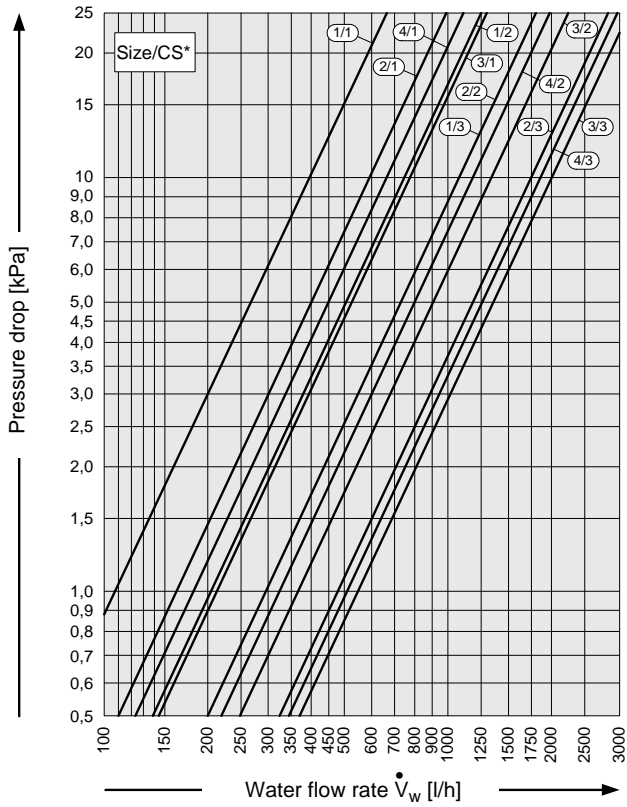
G

H

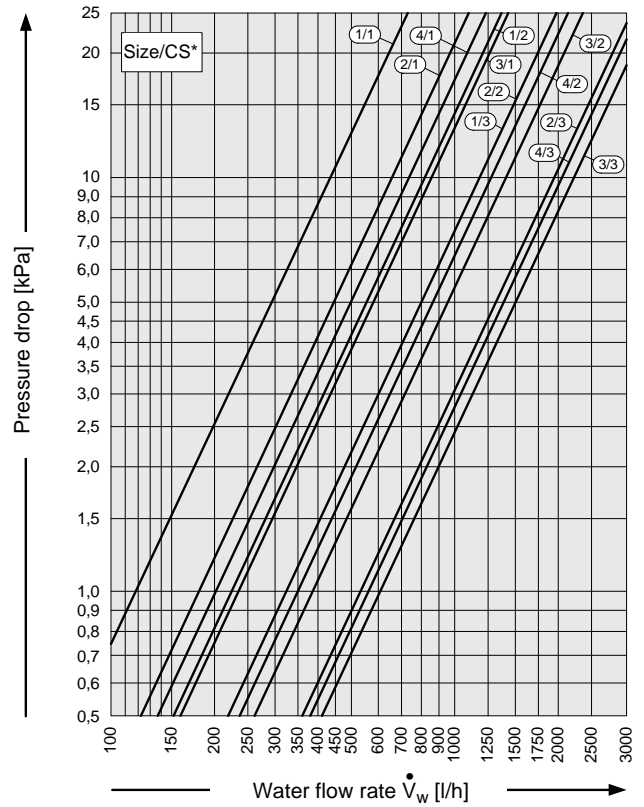
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Cooling circuit

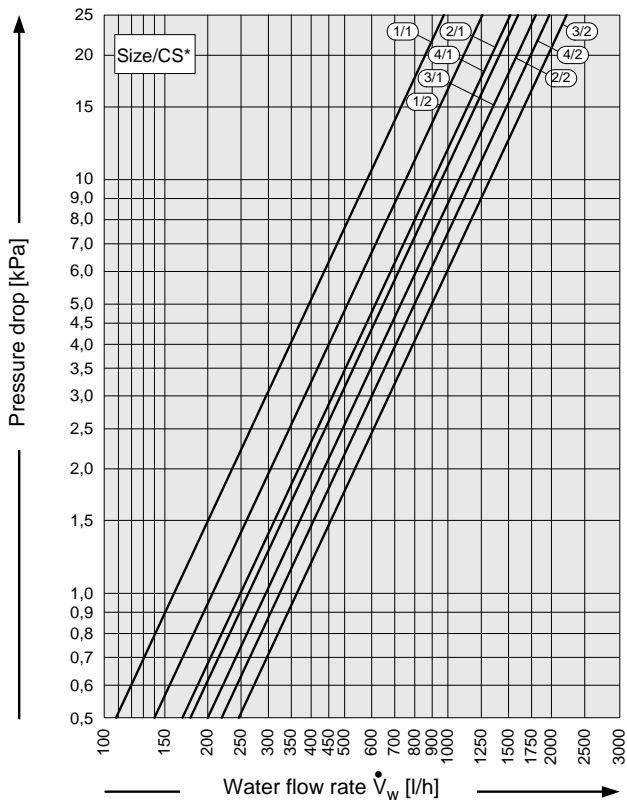
Cooling in 2-pipe system



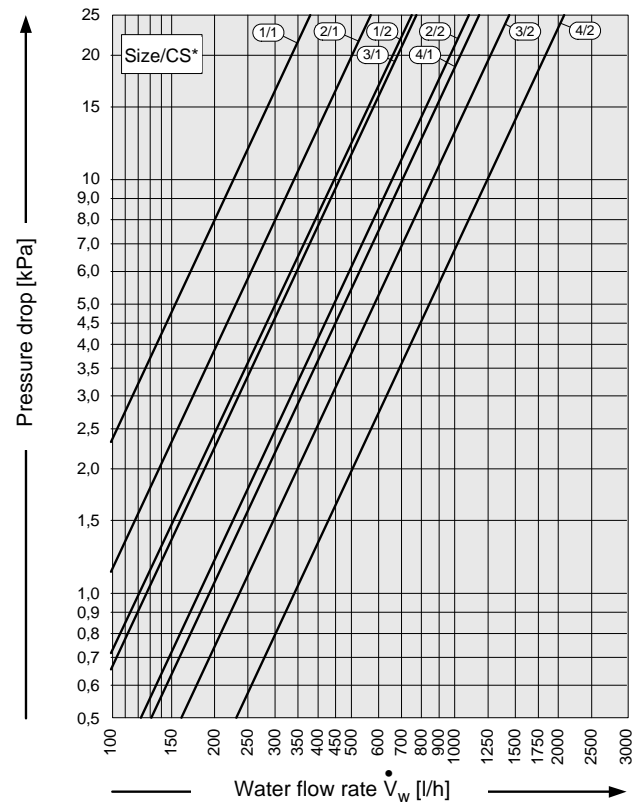
Heating in 2-pipe system



Cooling in 4-pipe system



Heating in 4-pipe system



* Size = Size, CS = Capacity stage

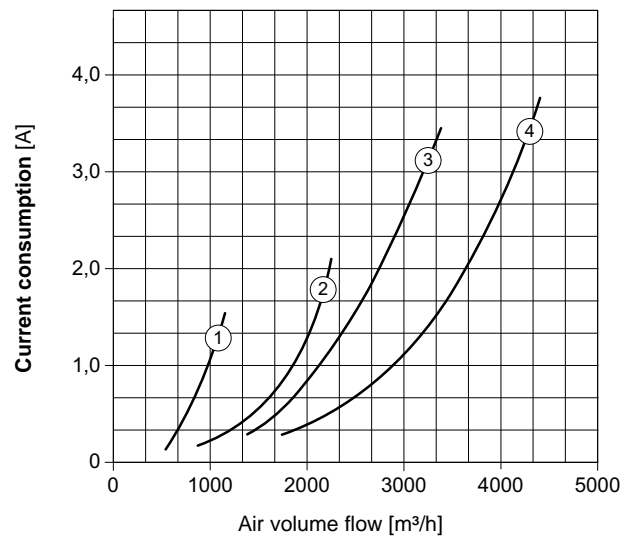
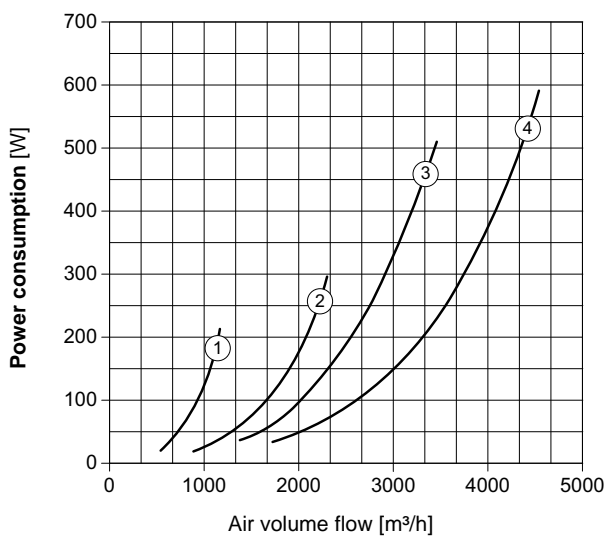
Power and current consumption (AC fans)

Maximum power and current consumption (AC fans)				
Model size	Speed	Air volume flow [m ³ /h]	Motor	
			Capacity [W]	Current [A]
1	1	725	135	0.64
	2	885	160	0.74
	3	1040	178	0.82
	4	1250	205	0.91
	5	1445	224	0.98
2	1	890	183	0.93
	2	1210	242	1.12
	3	1595	309	1.42
	4	2065	358	1.62
	5	2640	431	1.90
3	1	790	194	0.94
	2	1140	241	1.13
	3	1640	336	1.46
	4	2355	418	1.82
	5	3200	490	2.15
4	1	2665	431	1.97
	2	3160	501	2.24
	3	3600	570	2.52
	4	4090	636	2.79
	5	4490	708	3.09

**notice!**

The current table applies for unit type A, capacity stage 1 and without filter. Power and current consumption decreases in other units variants and/or in case of mounted air side accessories and additional external static pressure drop.

Power and current consumption (EC fans)



- 1 - model size 1
- 2 - model size 2
- 3 - model size 3
- 4 - model size 4

In order to estimate the expected sound pressure level (measurable sound level value at a defined distance to the sound source), it is necessary to know the sound energy or power released by the air outlet. Only the supply-air side is considered in the example. It is assumed that the sound level on the air inlet in the room corresponds to the sound level behind the discharge sound attenuator of the HyPower fan coil unit.

1. Based on the conference room (800 m³), an absorption surface of approx. **100 m²** Sabin is estimated in accordance with the diagram Fig. 15 "Homes, offices, hotel rooms, conference rooms". 4 units of model size 4 should be selected to provide air volume flow of 1600 m³/h each with a sound level of 39 dB(A) behind the sound attenuator.

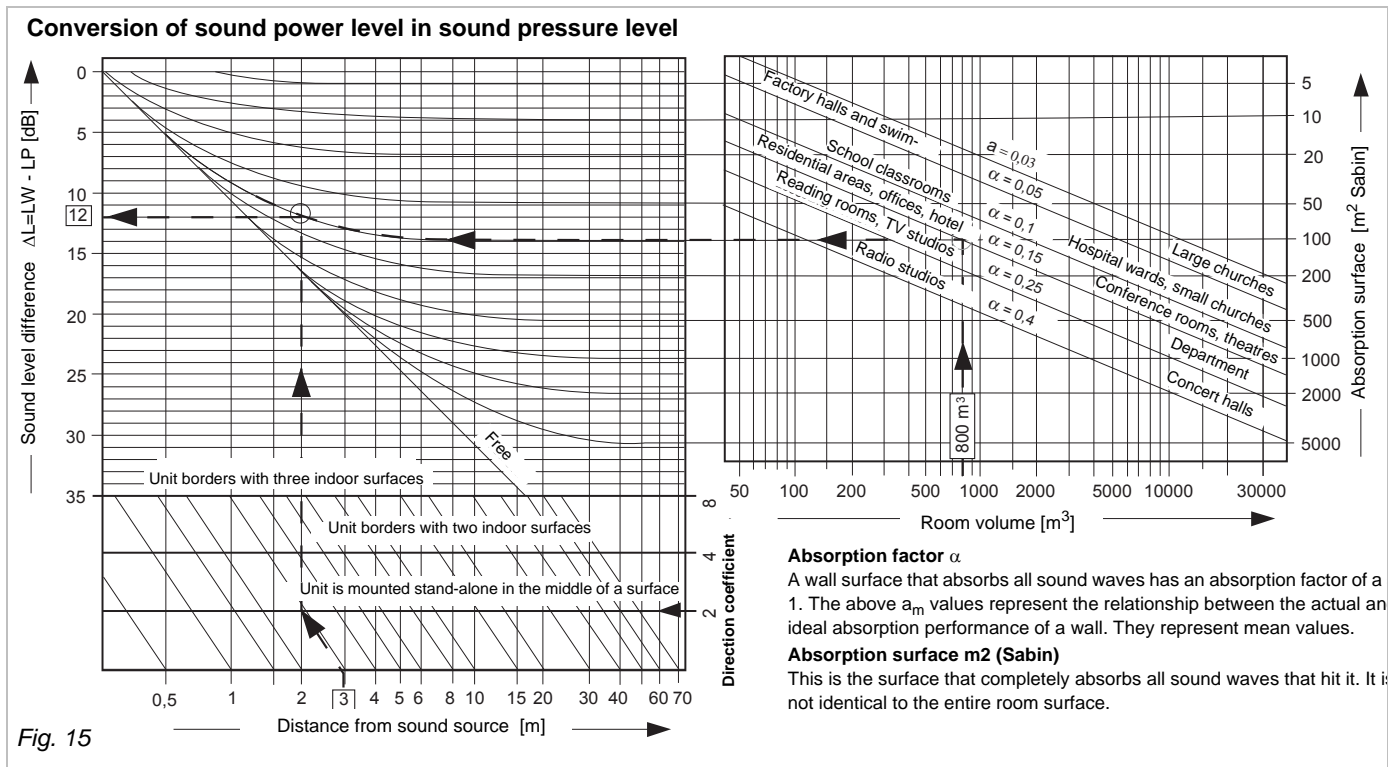


Fig. 15

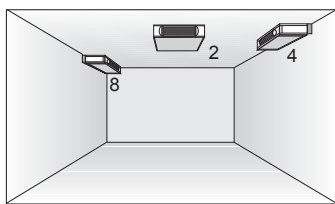


Fig. 16: Direction coefficient

2. The mean distance to the duct opening is assumed to be approx. 3 m and the direction coefficient to be "2", Fig. 16. The intersection of the dotted sample lines in the diagram Fig. 15 makes up the sound level difference: $\Delta L \sim 12 \text{ dB}$.

Direction coefficient 2

(hemispherical radiation): unit is mounted free in the middle of a surface

Direction coefficient 4

(quarter-spherical radiation): unit borders with two room surfaces

Direction coefficient 8

(eight-spherical radiation): unit borders with three room surfaces

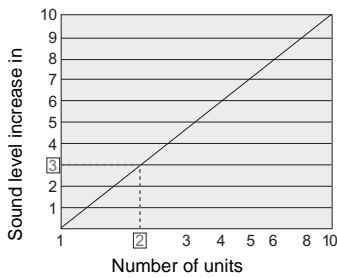


Fig. 17: Sound level increase (dB)

3. The anticipated A-rated sound pressure level L_p for a unit is thus:

$$L_p = L_W - \Delta L = 39 \text{ dB(A)} - 12 \text{ dB} = \underline{\underline{27 \text{ dB(A)}}$$

Increase in sound level of 4 units amounts to **approx. 6 dB** and is specified in the diagram Fig. 17.

Thus, the expected sound pressure level in the room amounts to:

$$L_{p_{ges.}} = L_p + 6 \text{ dB} = 27 \text{ dB(A)} + 6 \text{ dB} = \underline{\underline{33 \text{ dB(A)}}$$

The approximate value for increased requirements (conference room 35 dB (A) in table Fig. 18) is thus fulfilled.

Table „A-sound pressure level“ LP^1 as standard value according to VDI 2081

Room type	A-sound level [dB(A)]		Mean reverberation time [s]
Auditoriums	*	**	
Theatre	35	30	1.0
Cinema	40	30	1.0
Lecture halls	40	35	1.0
Reading rooms	40	35	1.0
Seminar rooms	40	35	1.0
Classrooms	40	35	1.0
Offices			
Conference rooms	40	35	1.0
Leisure rooms	40	35	0.5
Break rooms	40	35	0.5
small offices	40	35	0.5
Large offices	50	45	0.5
Church	35	25	3.0
Museum	40	35	1.5
Service halls	45	40	1.5
IT/Telecommunication room	55	40	1.5
Laboratory	45	40	2.0
Restaurants	40	to 55 ²	1.0
Kitchens	45	to 60 ²	1.5
Sales rooms	45	to 60 ²	1.0

Abb. 18

* = Minimum requirements

** = Increased requirements

¹ Also refer to applicable building regulations, DIN standards and VDI guidelines (e.g. DIN 4109, DIN 1946, VDI 2058)

² Depending on use

On-demand mounting of intake an pressure side accessories

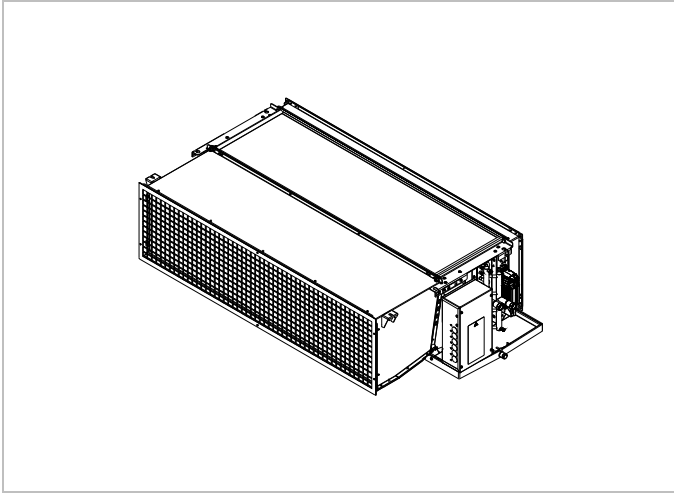


Fig. 19: Basic unit without accessories

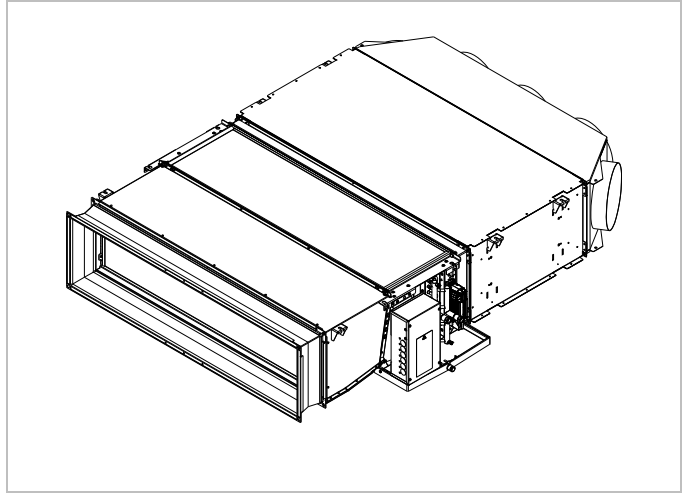


Fig. 20: Intake flexible connection + discharge sound attenuator + discharge box

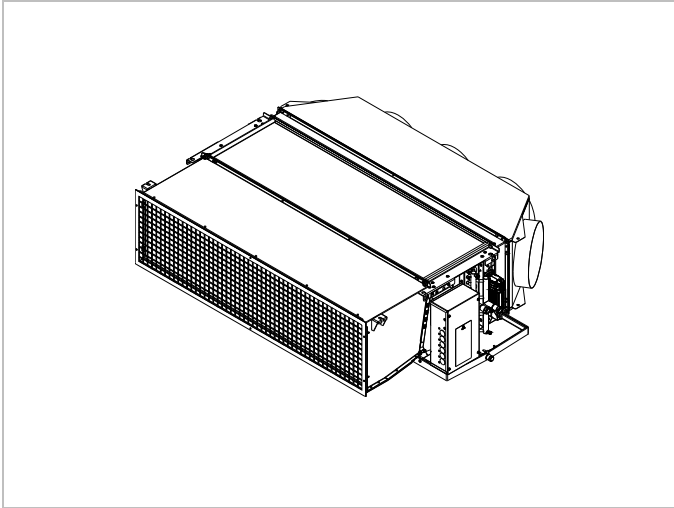


Fig. 21: Unit with discharge box

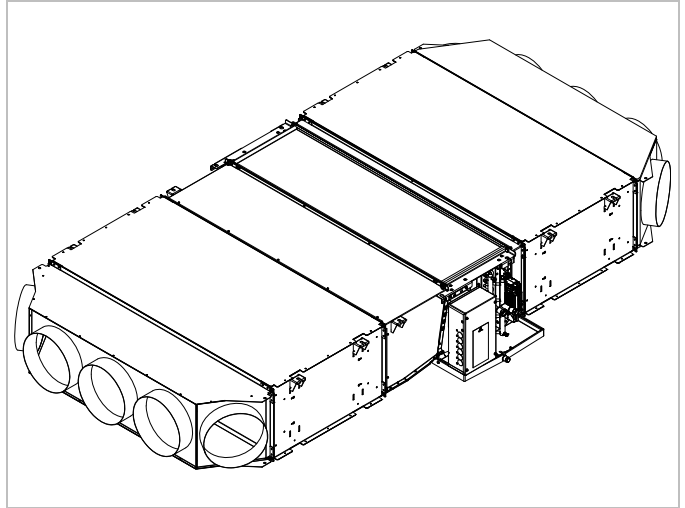


Fig. 22: Air intake box + air intake sound attenuator + air discharge sound attenuator + discharge box

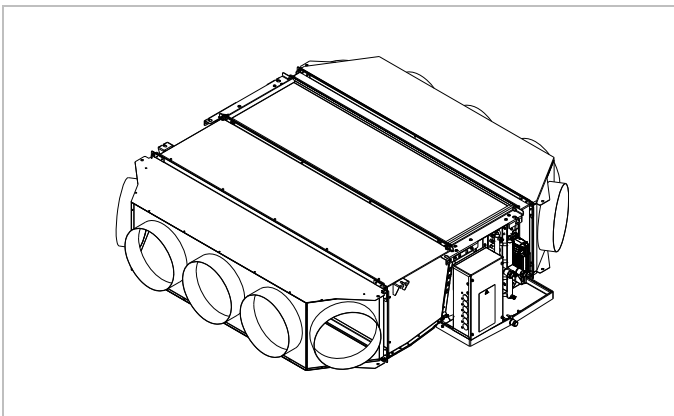


Fig. 23: Air intake and discharge box

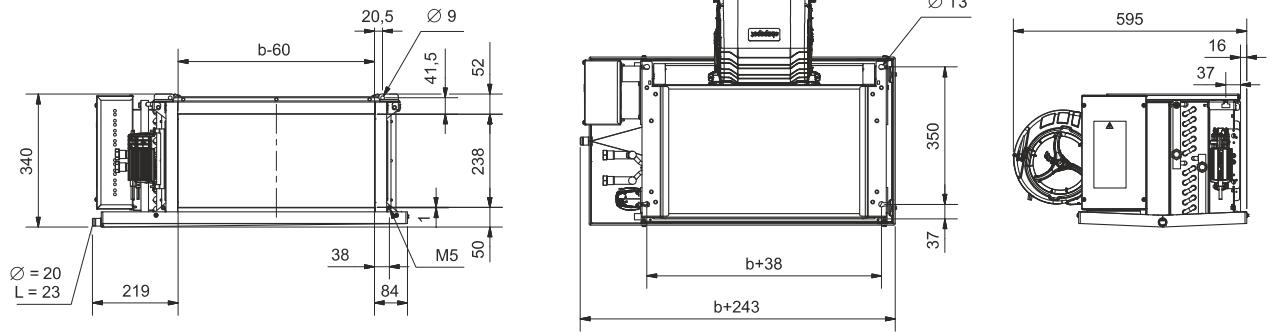


Fig. 24: Dimensions basic unit type A

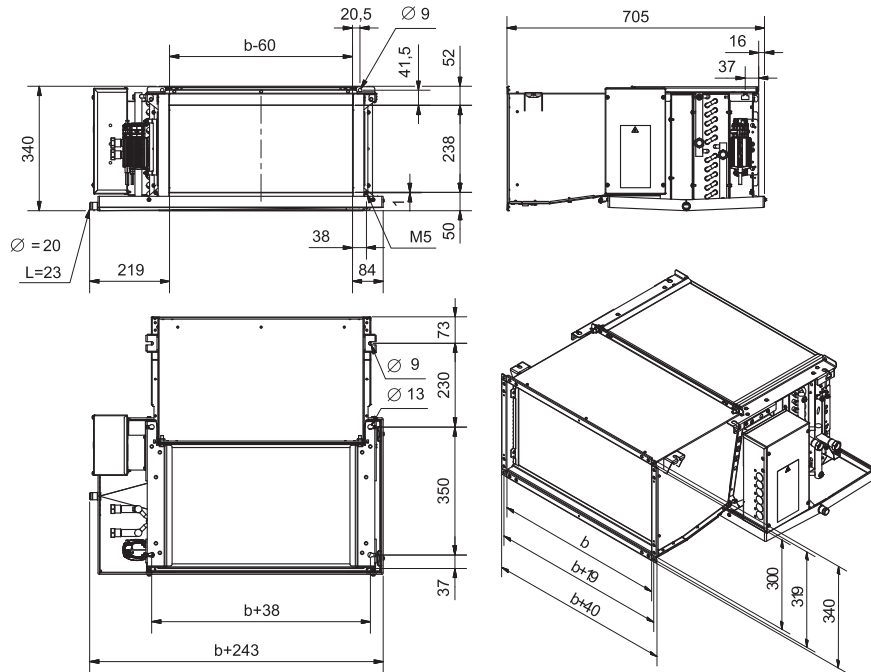


Fig. 25: Dimensions basic unit type B and C

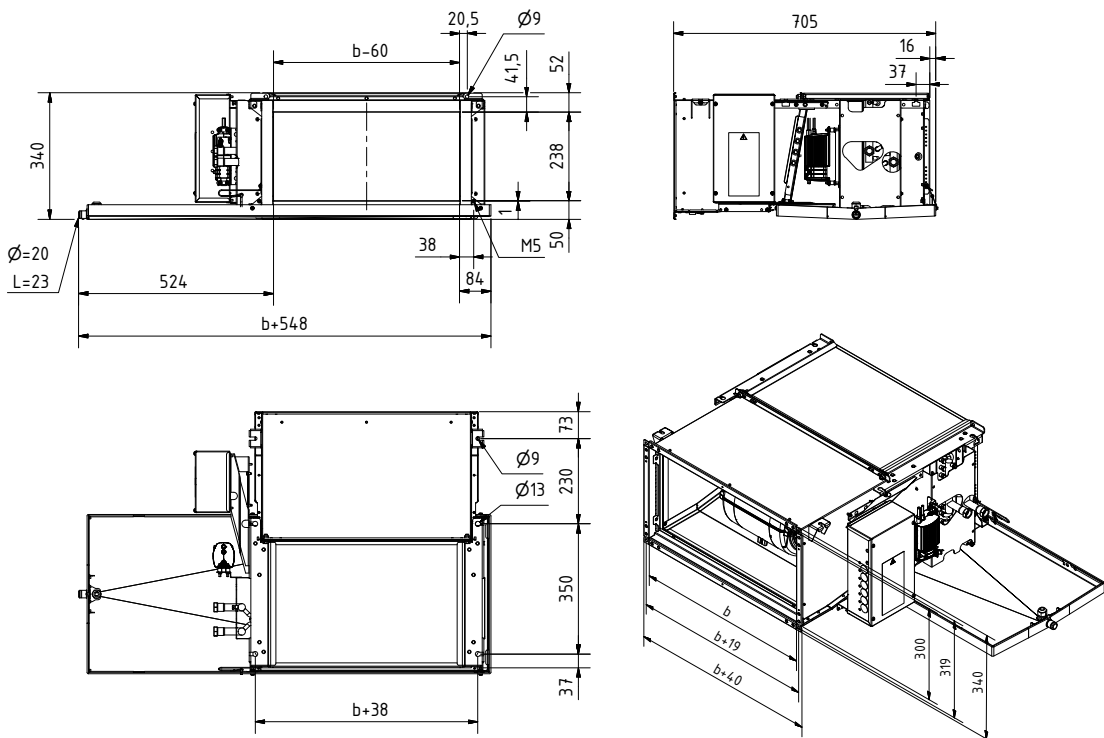
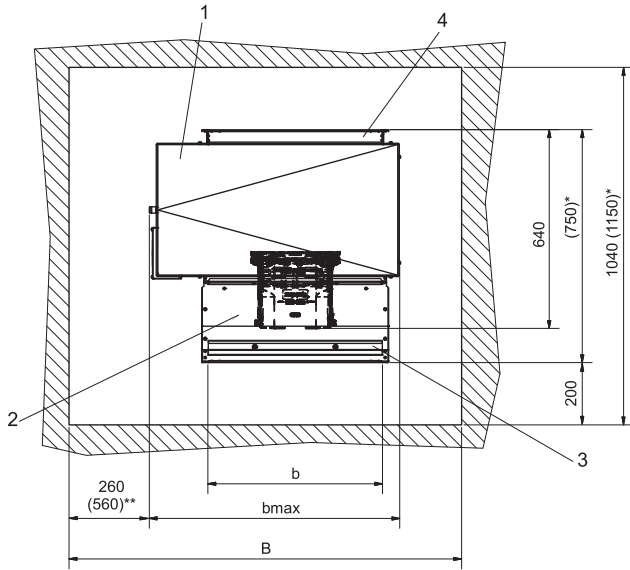


Fig. 26: Hygiene unit of series B and C

Recommended service opening for basic unit



- 1: Coil drip tray
- 2: Service panel for fan
- 3: Filter cover
- 4: Discharge transition piece

* Dimensions in brackets apply to units with fan chambers (unit types B and C)
 ** Dimensions in brackets apply to FläktGroup valve accessories

Fig. 27: Service opening

Size

Model size	b [mm]	b _{max} [mm]		B [mm]
		Type GH##.U...	Type GH##.H...	
1	560	805	1108	1260
2	865	1110	1413	1560
3	1170	1415	1718	1860
4	1590	1835	2138	2290

Please consider that possibly further or larger openings must be provided if accessories are mounted.

Minimum mounting clearances

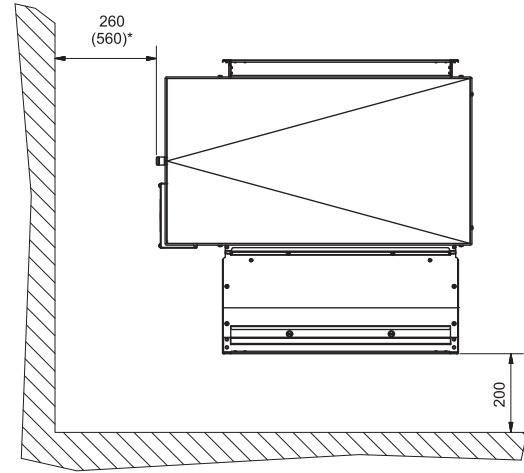


Fig. 28: Installation clearances

2-pipe, medium connections on the left side

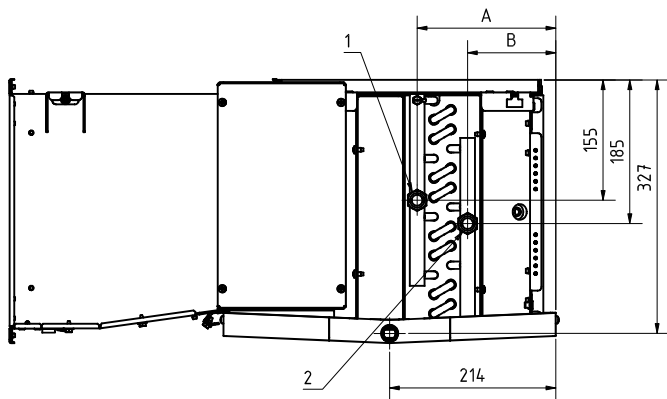


Fig. 29: Connections on the left side

2-pipe, medium connections on the right side

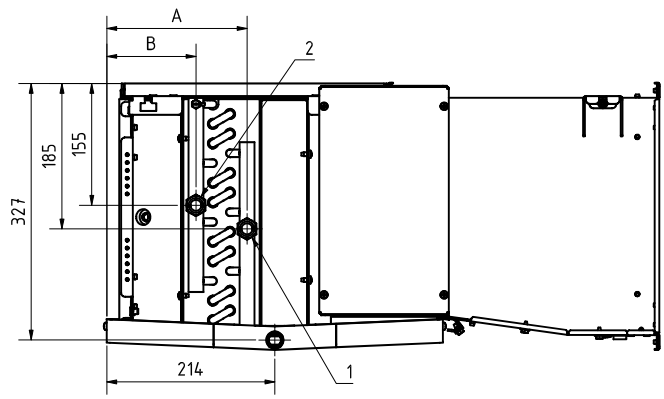


Fig. 30: Connections the right side

Pos. 1: Outlet
 Pos. 2: Inlet

Model size	Connections		
	Capacity stage		
	1	2	3
1	1/2"	1/2"	1/2"
2	1/2"	1/2"	3/4"
3	1/2"	3/4"	1"
4	3/4"	1"	1"

Di-mension	Capacity stage		
	1	2	3
A	179	179	225
B	114	114	117

4-pipe, medium connections on the left side

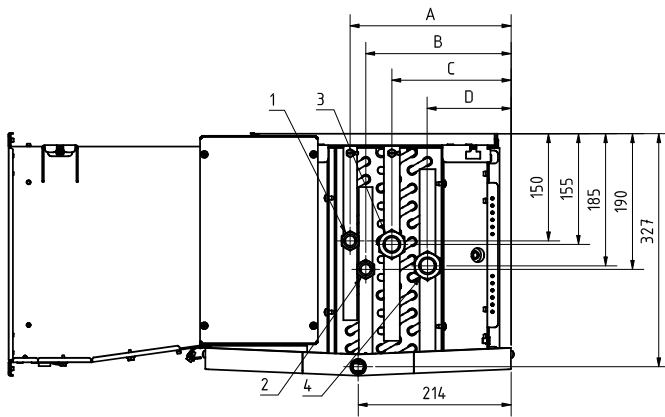


Fig. 31

4-pipe, medium connections on the right side

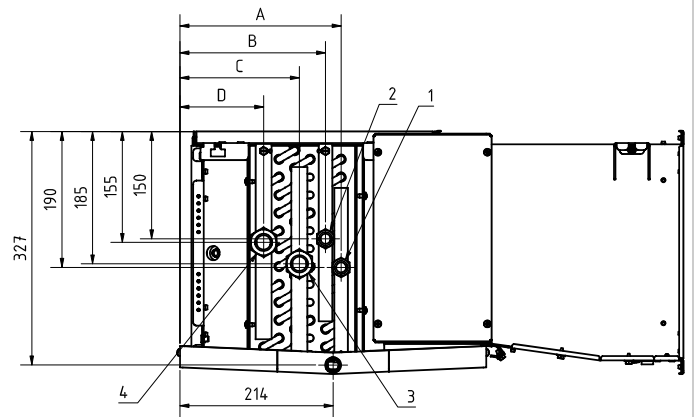


Fig. 32

Pos. 1: Heating outlet
 Pos. 2: Heating inlet
 Pos. 3: cooling outlet
 Pos. 4: Cooling inlet

Model size	Connections			
	Cooling		Heating	
	Capacity stage 1	Capacity stage 2	Capacity stage 1	Capacity stage 2
1	1/2"	1/2"	1/2"	1/2"
2	1/2"	1/2"	1/2"	1/2"
3	3/4"	3/4"	1/2"	1/2"
4	3/4"	1"	1/2"	1/2"

Dimension	Capacity stage 1 and 2
	A
B	203
C	167
D	117

Unit weight and water charge of heat exchanger

Model size	Weight ¹⁾ [kg]			Water charge[l]						
	Unit model A	Unit model B	Unit model C	2-pipe			4-pipe			
							Cooling circuit		Heating circuit	
				CS 1	CS 2	CS 3	CS 1	CS 2	CS 1	CS 2
1	27	33	36	1.2	2.2	3.3	1.7	2.2	0.7	1.2
2	37	45	48	1.7	3.3	4.8	2.5	3.3	0.9	1.7
3	48	59	62	2.2	4.3	6.4	3.2	4.3	1.2	2.2
4	60	75	79	2.9	5.8	8.5	4.3	5.8	1.6	2.9

¹⁾ Max. basic unit weight without accessories
 CS - capacity size

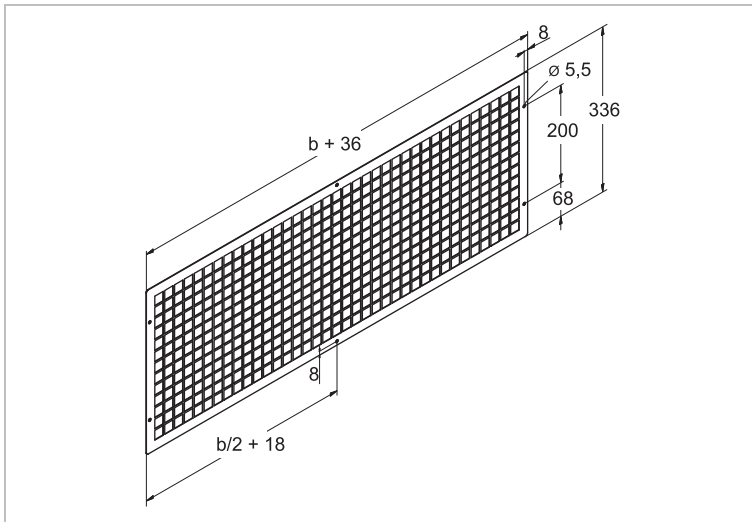


Fig. 36

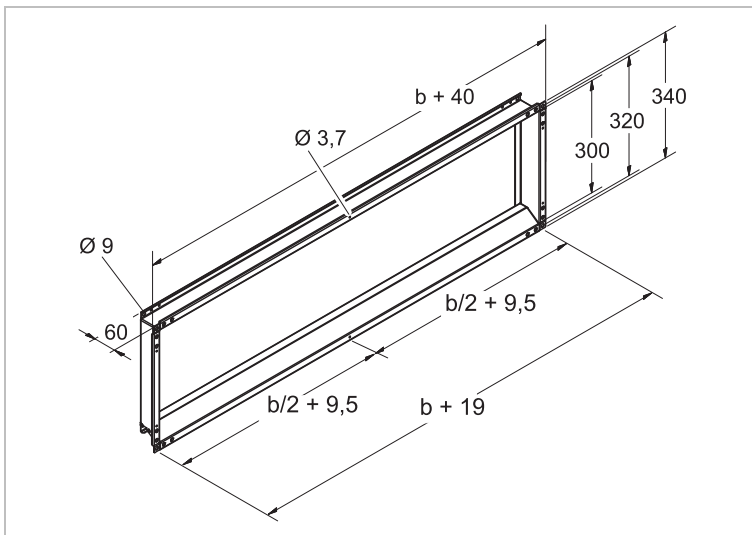


Fig. 37

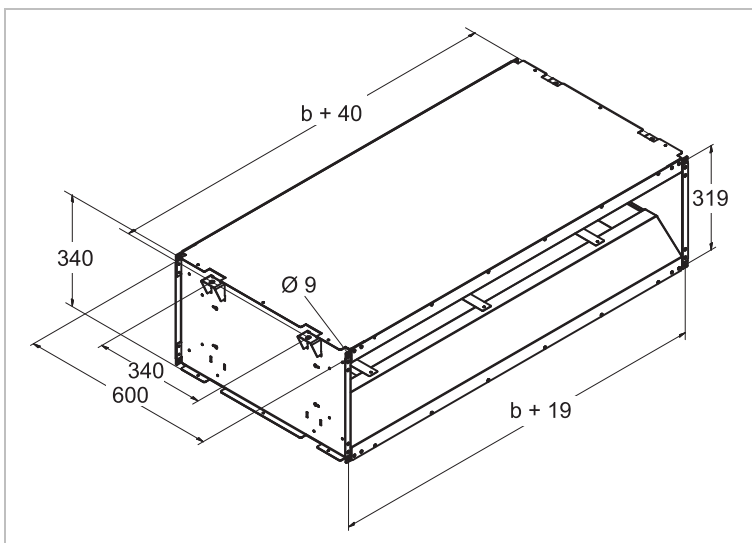


Fig. 38

Model size	1	2	3	4
b [mm]	560	865	1170	1590

Acoustic insulation [dB]	Octave centre frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
	6	6	13	13	15	20	17	13

Suction grille

Contact protection (air intake grille, galvanized metal sheet)

Model size	Order No.	Weight [kg]
1	ZGH.1A511	1.5
2	ZGH.2A511	2.2
3	ZGH.3A511	2.9
4	ZGH.4A511	3.9

Transition piece

Adapter for installation of accessories on discharge side, galvanized metal sheet

Model size	Order No.	Weight [kg]
1	ZGH.1A912	4.0
2	ZGH.2A912	5.5
3	ZGH.3A912	7.0
4	ZGH.4A912	9.0

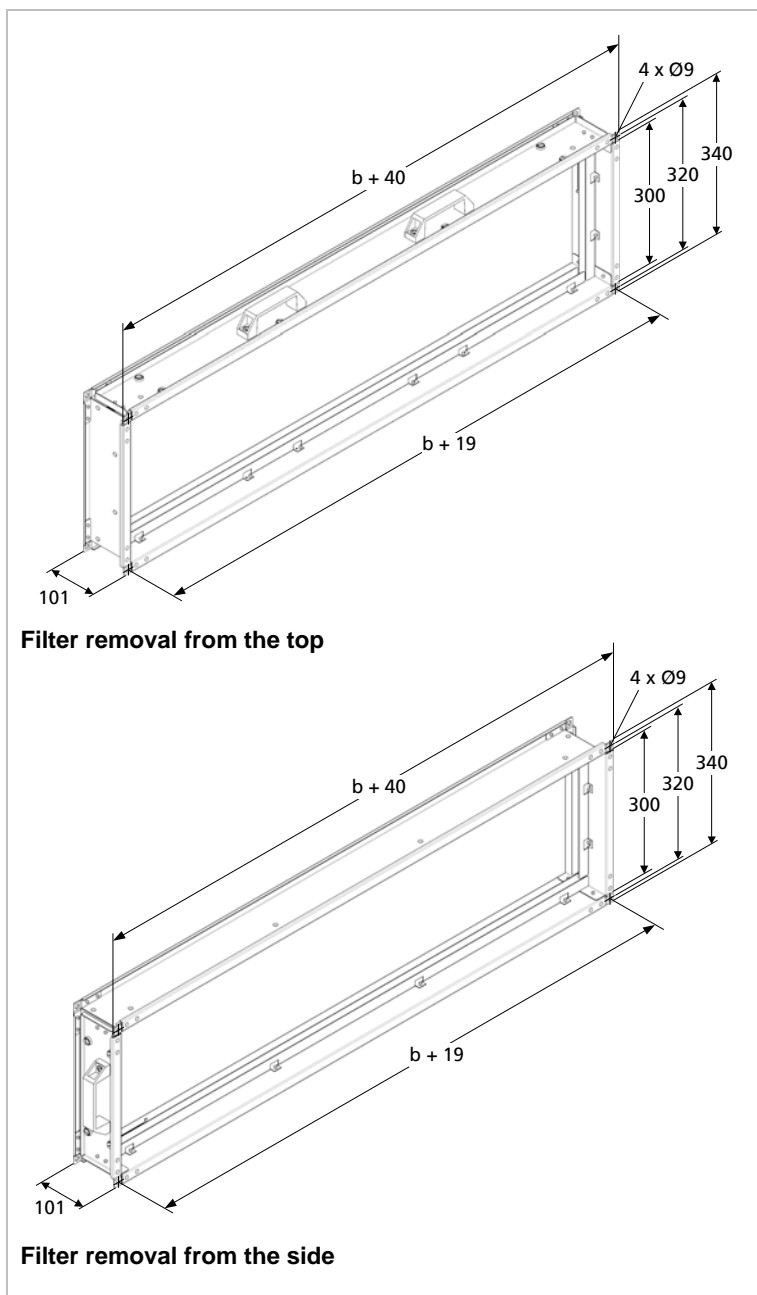
Air intake sound attenuator (galvanized sheet steel with internal acoustic and thermal insulation)

Model size	Order No.	Weight [kg]
1	ZGH.1A211	15.0
2	ZGH.2A211	20.0
3	ZGH.3A211	25.0
4	ZGH.4A211	32.0

Air discharge sound attenuator (galvanized sheet steel with internal acoustic and thermal insulation)

Model size	Order No.	Weight [kg]
1	ZGH.1A212	15.0
2	ZGH.2A212	20.0
3	ZGH.3A212	25.0
4	ZGH.4A212	32.0

Sum level	approx. ΔL _w [dB]
Air intake side	12
Air discharge side	10



Separate filter chamber

Filter removal from the top or side (depending on model). These accessories enable filter maintenance, if a standard filter removal from the bottom side is not possible.

Model size	Order No.		Weight [kg]
	Filter removal		
	top	side	
1	ZGH.1A411	ZGH.1A421	2,9
2	ZGH.2A411	ZGH.2A421	3,9
3	ZGH.3A411	ZGH.3A421	4,8
4	ZGH.4A411	ZGH.4A421	6,1

Abb. 39

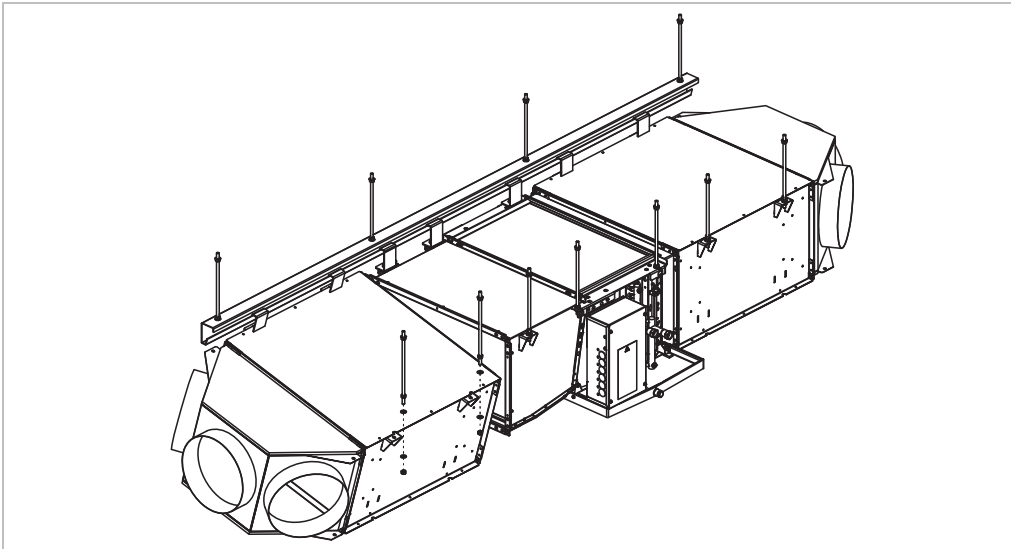


Fig. 40

Installation sample:

Suspension rail with threaded rods M8+minor parts

Overall length [mm]	Order No.	Weight [kg]
950	ZGH.0A613	2.4
1550	ZGH.0A623	4.0
2150	ZGH.0A633	5.5

Mounting with suspension rail and mounting adapter on one side and threaded rods on the other side.

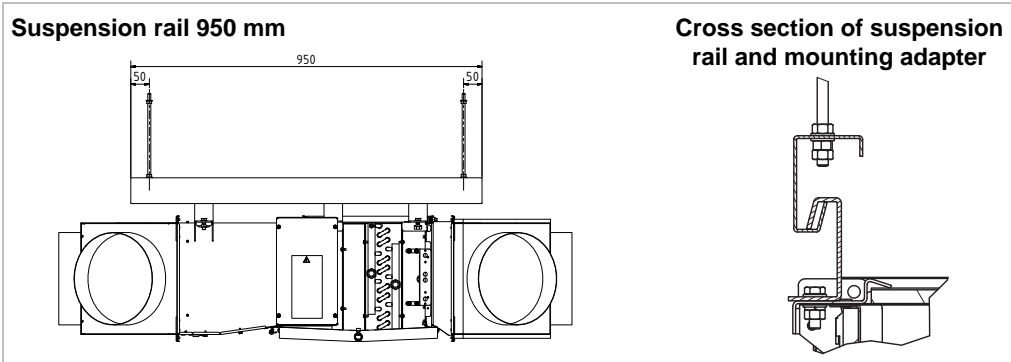


Fig. 41

Rail length enough for a maximum 1 basic unit and 1 air intake and discharge box.

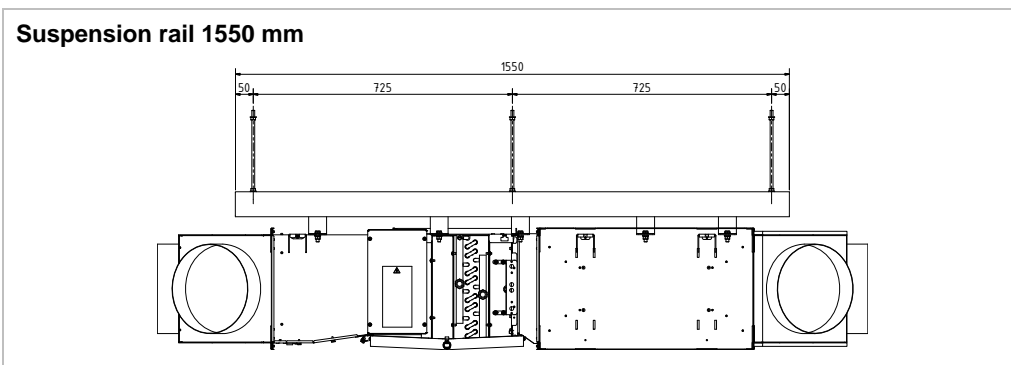


Fig. 42

Rail length enough for a maximum 1 basic unit, 1 sound attenuator and 1 air intake and discharge box.

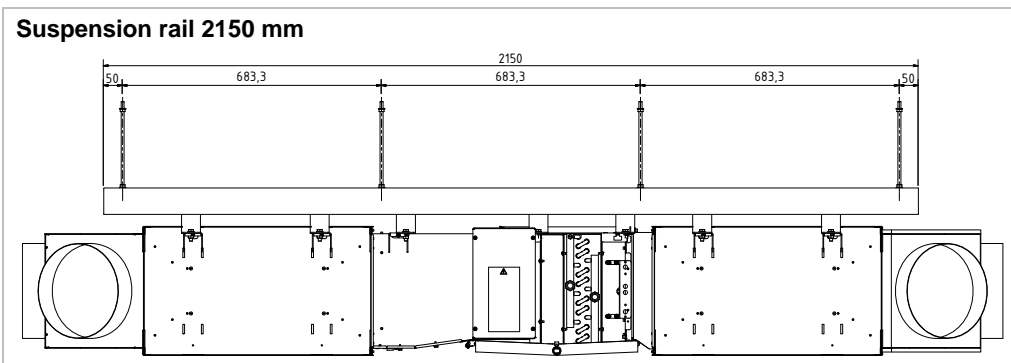


Fig. 43

Rail length enough for max. 1 basic unit, 1 intake and discharge sound attenuator, 2 sound attenuators and 1 air intake and discharge box.

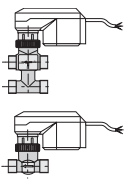
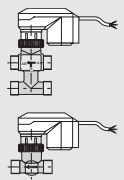
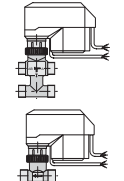
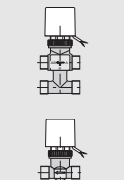
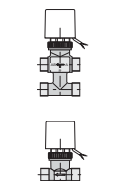
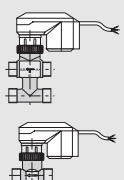
In order to minimize the remaining structure borne sound we recommend to use standard spring elements.




The following selection table presents all available valves models with main features and compatible control equipment.

The following symbols are used:

„✓“ = Valve type compatible with the corresponding control panel or electric equipment.

„–“ = Valve type not compatible with the corresponding control panel or electrical equipment.

Valve type	Function type	Control type	Voltage	Compatible control equipment			On-site controls
				MATRIX 3000	MATRIX 4000	Thermostat switch/ CET.ACEC Controller	
	R	3 point (modulating)	230 V~	✓	✓	–	✓
	N	3 point (modulating)	24 V~	✓ (transformer by others required)	✓ (transformer by others required)	–	✓
	C	3 point (modulating) (2 pieces floating auxiliary switch)	230 V~	✓	✓	–	✓
	T	2 point (modulating)	230 V~	✓	✓	✓	✓
	Q	2 point (modulating)	24 V~	✓ (transformer by others required)	✓ (transformer by others required)	–	✓
	S	Continuous	24 V~ (analog signal 0..10 V)	–	–	–	✓

Function type ¹⁾		Valve body			Drive		Max. Closing pressure kPa	
		kvs-value m³/h	Model design		Connector (flat sealing)	Supply voltage		Control type
			2-way	3-way				
R, C, N		0.25	X		R1/2"	230 V 50/60 Hz (for R, C) 24 V 50/60 Hz (for N)	3 point (modulating)	1600
								X
		0.40	X		R1/2"			1600
				X				800
		0.63	X		R1/2"			1600
				X				800
		1.00	X		R1/2"			1200
				X				250
		1.60	X		R1/2"			1200
				X				250
		2.50	X		R3/4"			400
				X				100
4.00	X		R3/4"	400				
		X		100				
6.30	X		R5/4"	250				
		X		250				
8.00	X		R5/4"	250				
		X		250				
S		0.25	X		R1/2"	24 V 50/60 Hz	Continuous (0-10 V)	1600
								X
		0.40	X		R1/2"			1600
				X				800
		0.63	X		R1/2"			1600
				X				800
		1.00	X		R1/2"			1200
				X				250
		1.60	X		R1/2"			1200
				X				250
		2.50	X		R3/4"			400
				X				100
4.00	X		R3/4"	400				
		X		100				
6.30	X		R5/4"	250				
		X		250				
8.00	X		R5/4"	250				
		X		250				
Q, T		1.60	X		R1/2"	230 V 50 / 6Hz (for T) 24 V 50/60 Hz (for Q)	2 point (modulating)	200
								X
		2.50	X		R3/4"			200
				X				150
		4.00	X		R3/4"			100
				X				100
6.30	X		R5/4"	250				
		X		250				
8.00	X		R5/4"	250				
		X		250				

1) see unit type code on page 56

All FläktGroup valves for HyPower fan coils can be delivered and are optionally fitted with ball valves at inlet and outlet connections (only shut-off function) or alternatively with a ball trap at inlet and an adjustable shut-off valve at outlet (shut-off and volume flow function).

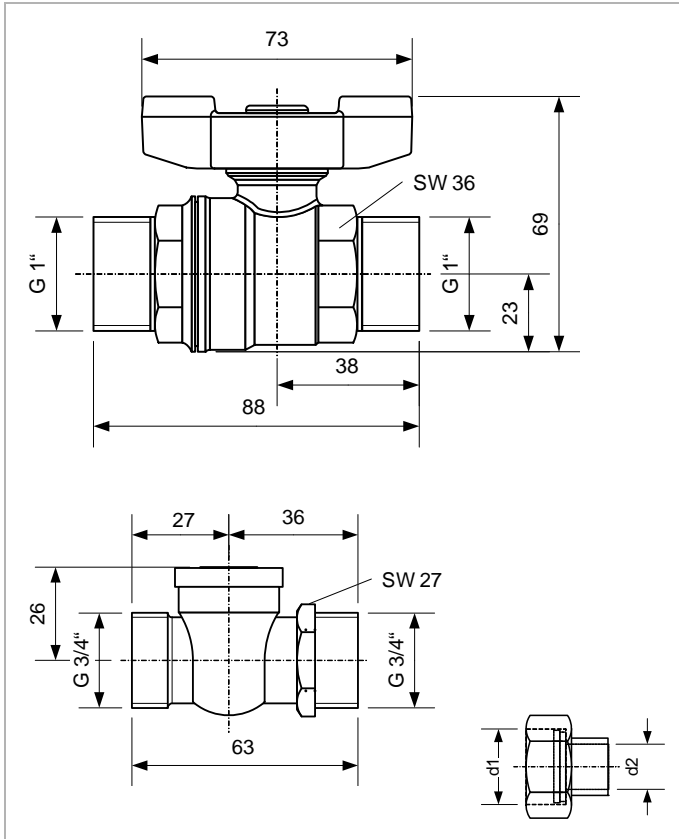


Fig. 44

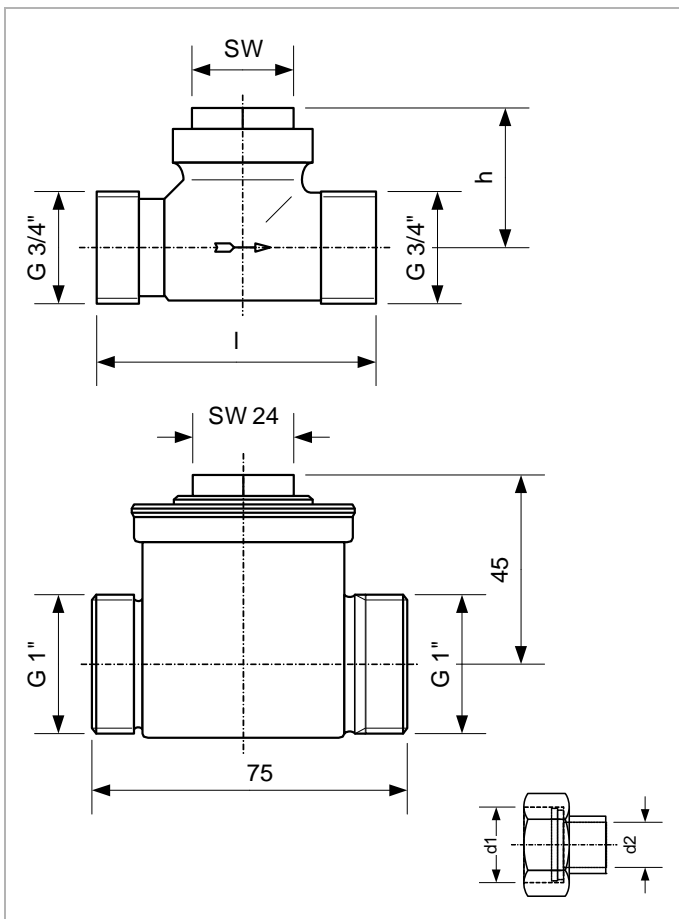


Fig. 45

Ball valves

Ball valves are necessary to shut off cooling and/or heating medium.

Materials:

Valve body: brass
 Ball: brass, ground
 Seal: rubber (PTFE)*

Technical Data:

Nominal pressure: 10 bar (25 bar)*
 Max. water inlet temperature: 110 °C

* for ball valve 1"

As a medium water and water/glycol is allowed.

Depending on the valve equipment, ball valves are delivered:

- with external screw thread (code number 2 and 4, see unit type code page 56) or
- with coupling nut and solder fitting (code number 3 and 5, see unit type code page 56).

Control valve ¹⁾	Ball valve		Solder fitting	
	k_{VS} -value [m ³ /h]	Values [m ³ /h]	Connecting thread	d1 d2 [mm]
0.25 - 4.00	6.7	G 3/4"	G 3/4"	15
6.30 - 8.00	36.3	G1"	G1"	22

1) See overview on page 40

Shut off valves

Ball valves are required to shut off and regulate the volume of cooling and/or heating medium.

Material:

valve body: red brass (k_{VS} 5.0)
 red brass, nickel-plated

Valve upper body: brass

Sealing: EPDM

Technical data:

Max. operating pressure: 10 bar
 Max. water inlet temperature: 110 °C
 k_{VS} -value see table

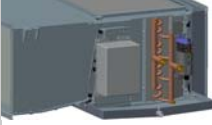
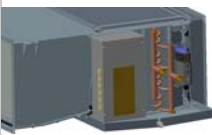
As a medium water and water/glycol is allowed.

- with external screw thread (code number 2 and 4, see unit type code page 56) or
- with coupling nut and solder fitting (code number 3 and 5, see unit type code page 56).

Control valve ¹⁾	Shut-off valve					Solder fitting	
	k_{VS} values [m ³ /h]	k_{VS} values [m ³ /h]	l [mm]	h [mm]	SP [mm]	Connection thread	d1 d2 [mm]
0.25 - 1.60	1.45	51	32	19	G 3/4"	G 3/4"	15
2.50 - 4.00	2.20	66	33	24	G 3/4"	G 3/4"	15
6.30 - 8.00	5.00	75	45	24	G1"	G1"	22

1) See overview on page 40



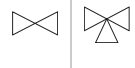


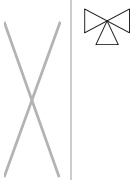


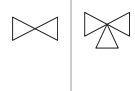


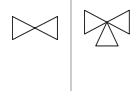
Terminal box with connections for Geko units

	Order code basic unit
	GHxx.xxxx.Axxxx
	GHxx.xxxx.Bxxxx
	GHxx.xxxx.Cxxxx
	GHxx.xxxx.Exxxx
	GHxx.xxxx.Fxxxx
	GHxx.xxxx.Hxxxx
	GHxx.xxxx.Kxxxx
	GHxx.xxxx.Lxxxx
	GHxx.xxxx.Mxxxx
	GHxx.xxxx.Oxxxx
	GHxx.xxxx.Rxxxx
	GHxx.xxxx.Sxxxx

In order to carry out connection to the control system all components such as fan(s) and valve(s) are wired in the terminal box.

Depending on the selected unit configuration and valve equipment, the terminal box is either made of plastic or sheet steel. The selection is performed using the unit type code, as illustrated.

Using thermostat and miniature switches of series C standard control is provided for fan coil units.

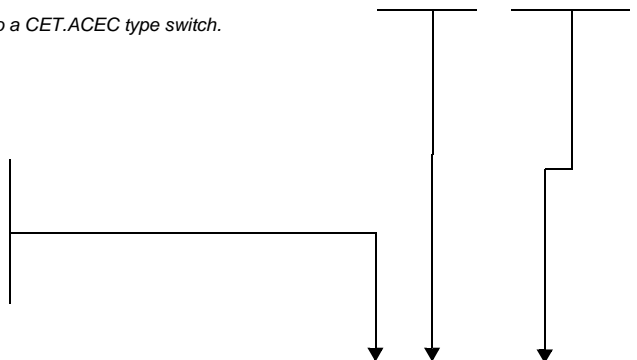
The switches can be used with:			Valve Type	Switch type	Return air sensor		Order number		
					with-out	with	EC motor	AC-Motor	
	Cooling and Heating		4-pipe system chilled and warm water		CMT4D (continuous fan mode)	0	-	-	2
					CET.ACEC	0	5		J
	Cooling or Heating		2-pipe system chilled or warm water		CMT2Z (fan and valve control) Order contact temperature thermostat separately using order no. 902135	0	-	-	4
					CMT2D (continuous fan mode) Order contact temperature thermostat separately using order no. 902135	0	-	-	3
					CET.ACEC with flow sensor (flow sensor included in the package)	1	6		J
	Heating		2-pipe system warm water		CMT2Z (fan and valve control)	0	-	-	4
					CMT2D (continuous fan mode)	0	-	-	3
					CET.ACEC	0	5		J
					CMS	0	-	-	1
	Cooling		2-pipe system chilled water		CMT2Z (fan and valve control)	0	-	-	4
					CMT2D (continuous fan mode)	0	-	-	3
					CET	0	5		J
				CMS	0	-	-	1	

Alternatively to a return air sensor, a room temperature sensor can also be connected to a CET.ACEC type switch. If a return air sensor is used, the fan must be operating continuously.

Please note:
In connection with thermostat-miniature switches only 2-point open/close valve actuators can be used (T)

Relay kit
is necessary if up to four fan coil units with AC fans are switched in parallel. Mixing of different model sizes is allowed.

With kit	2
Without kit	0



Order code **D 0 . [] [] 1 . [] A**

Slave unit with relay kit




Order code **D 0 . 2 0 1 . Z D**




Notice!

For units with cooling function we recommend fan continuous operation (fin drying).

Functions of thermostat and miniature switch

Switch type		Functions
CMS		<ul style="list-style-type: none"> - On/off switch - Fan speed selection switch 1-2-3 - Plastic casing: white, similar to RAL 9016 - Control elements: grey, similar to RAL 7044 - Protection class IP 30
CMT		<ul style="list-style-type: none"> - On/off switch - Fan speed selection switch 1-2-3 - Setpoint setting room temperature 10..30 °C (mechanical setting range limitation as accessory on request) - Thermostat with neutral zone (only CMT4D) - Plastic casing: white, similar to RAL 9016 - Control elements: grey, similar to RAL 7044 - Protection class IP 30
CET.ACEC		<ul style="list-style-type: none"> - Fan speed selection switch standby auto 1-2-3 - AC or EC fan control - External valve control possible (e.g. floor heating, chilled ceiling) - Setpoint setting for room temperature 10..30 °C (adjustable setting range limitation) - Thermostat with settable neutral zone - Input for unit enabling via volt free dry contact by others - Room frost protection, connection possibilities for external room or return-air sensor and flow sensor - Integrated room temperature sensor - Interface MODbus RS485 RTU - Factory pre-configured - Plastic casing: white, similar to RAL 9016 - Protection class IP 30

Sensors		Functions
Room temperature sensor 903 414		Thermistor sensor for on-wall mounting <ul style="list-style-type: none"> – NTC-sensor element; resistance coefficient at 25 °C = 10 kΩ – Plastic casing: white, similar to RAL 9010 – Protection class IP 20 – Dimensions in mm (W x H x D): 84 x 84 x 22
Flow sensor 903 435		Thermistor sensor for mounting at inlet with clip <ul style="list-style-type: none"> – NTC-sensor element; resistance coefficient at 25 °C = 10 kΩ – Sensor dimensions (D x L): 6.25 x 27 mm; cable length 2.5 m – Max. ambient temperature 100 °C
Return-air sensor 903 475		Thermistor sensor for mounting in unit <ul style="list-style-type: none"> – NTC-sensor element; resistance coefficient at 25 °C = 10 kΩ – Sensor dimensions (D x L): 6.25 x 27 mm; cable length 2.5 m – Max. ambient temperature 60 °C
Contact thermostat 902 135		Contact temperature thermostat for change-over between heating or cooling mode <ul style="list-style-type: none"> – For mounting on pipework with diameter from 15 mm to 28 mm – Operating voltage 250 VAC 50/60 Hz – Dimensions in mm (W x H x D): 79 x 50 x 44

Additional sensors which are supplied loose and wired on-site by others should be ordered optionally (not in connection with the above-mentioned switch types CMT and CMS).



NOTICE!

Flow and return air sensor are integrated in the relevant controls packages and do not have to be selected separately if ordered using the package number.

MATRIX 2000

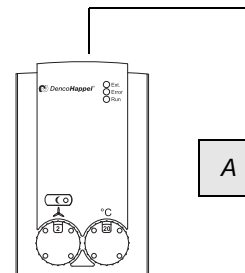
System features:

- Temperature assignment.: 7...40 °C (default 10..30 °C)
- Manual assignment of speed stage
- Adjustable regulating range
- Change-over between normal/economy mode on control panel
- Room temperature measurement using control panel
- External room temperature sensor can be connected
- Valve control (2-point)
- Temperature control via fan-speed change and valve(s)
- Status messages using LED
- Group control
- Group switch-off switch-off in case of fault
- Temperature monitoring of motor (TC required)
- network-enabled

MATRIX OP21C

Control panel for MATRIX 2000

- Pure white casing, protection type IP20
- Setpoint temperature setting
- Speed stage selection switch 0-A(Auto)-1-2-3
- Economy mode button
- LEDs for operation/fault/ext.control
- Integrated room temperature sensor



MATRIX 3000/4000

System features MATRIX 3000

- Temperature assignment.: 7...40 °C (default 10..30 °C)
- Speed (stage) assignment
- Adjustable regulating range
- Change-over between normal/economy mode on control panel
- Input for change-over between normal/economy mode or unit OFF with frost protection
- Room temperature measurement using control panel
- External room temperature sensor can be connected
- Valve control (2x2 or 2x3 point)
- Temperature control via fan and/or valve(s)
- Room frost protection
- Status messages using LED
- Status and alarm signal via volt free change-over contacts
- Unit individual and group control
- Isolation of individual units in case of fault
- Motor temperature monitoring (with speed stage motors TC required)
- Network-enabled

MATRIX OP30C

Control panel for MATRIX 3000

- Pure white casing, protection type IP20
- Setpoint temperature setting
- Speed-stage selection switch 0-A(Auto)-1-2-3-4-5 (Stages 4 and 5 only in connection with EC motor)
- LEDs for operation/fault/ext.control
- Integrated room temperature sensor

MATRIX OP31C

- As for control panel OP30C, but also with:
- Normal/economy mode buttons

MATRIX OP44C

- As for control panel OP31C, but also with button for:
- Changeover between recirculating-air/??mixed-air operation
 - Change-over heating/cooling/automatic mode

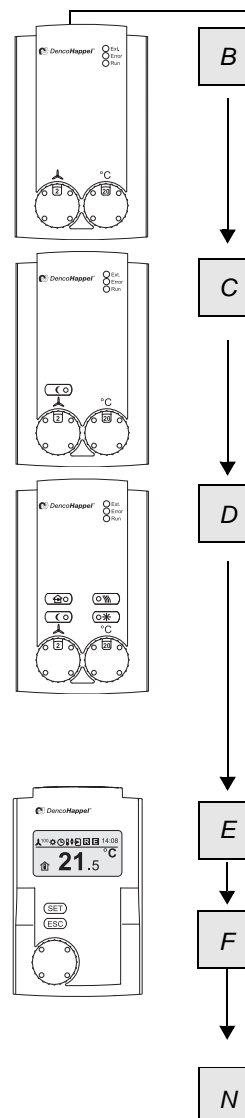
MATRIX OP50C

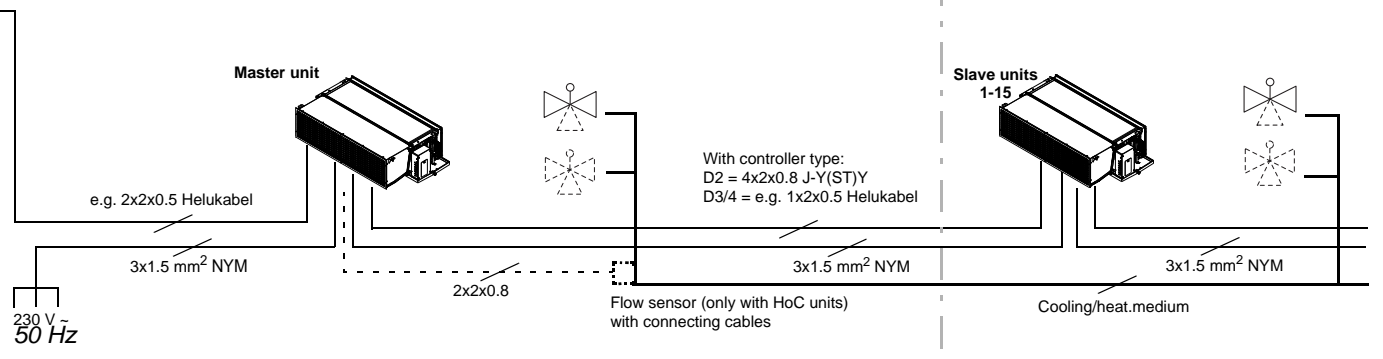
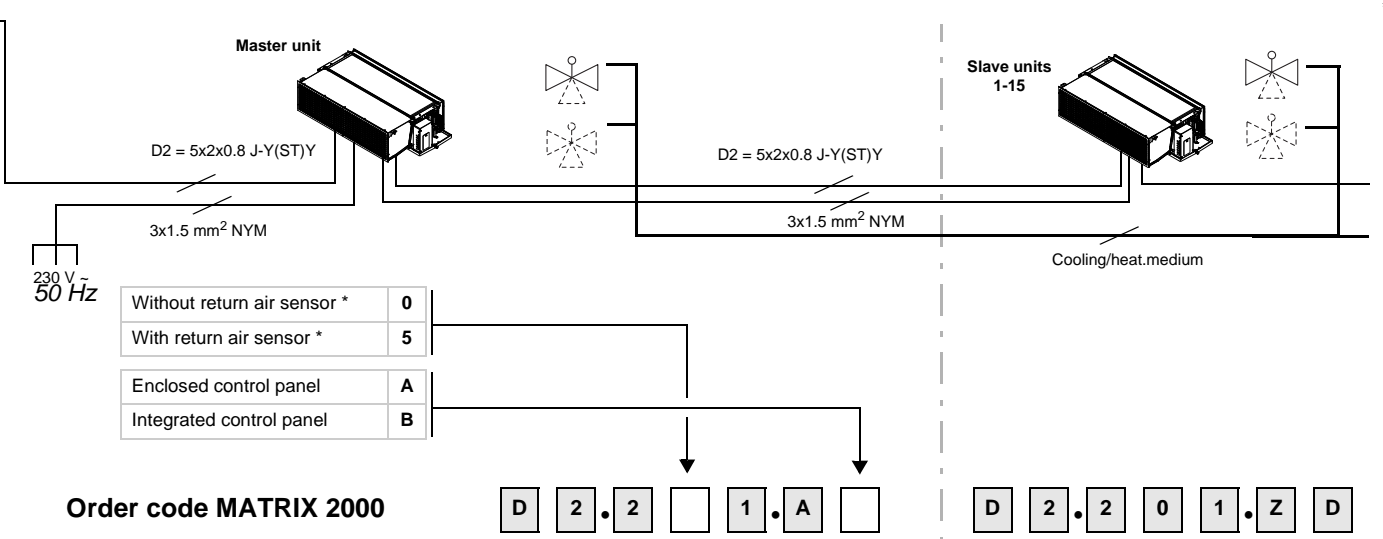
Control panel for MATRIX 3000

- Pure white casing, protection type IP20
- Menu-guided controls using rotation navigator
- LCD display with plain-text display
- Status messages using pictograms
- Integrated room temperature sensor
- Continuous speed assignment (only in connection with EC motor)

MATRIX OP51C

- As for control panel OP50C, but also with:
- Integrated weekly clock timer with holiday and special days programme



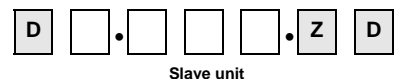


Speed (EC motor)	Speed stages (AC motor)	Stand alone unit control With operating and Fault signal	Group regulation with status and alarm signals	Input unit OFF with room frost protection	Input economy contact	Supply temperature limitation	Noiseless valve control	Contact heat and cool request	Connection external sensor
continuous	up to 3 speed	•	•	•	•				3 1
		•	•	•	•				3 2
		•	•	•	•				3 1
		•	•	•	•	•			3 2
		•	•	•	•	•	•		3 3
	up to 5 speed	•	•	•	•	•			3 4
		•	•	•	•	•	•		4 1
		•	•	•	•	•	•	•	4 2
		•	•	•	•	•	•	•	4 3
		•	•	•	•	•	•	•	4 4

2	0	1
2	0	1
3		1
3		2
3		3
3		4
4		1
4		2
4		3
4		4
4		5
4		6
4		6

Cooling / Heating	0
Cooling or Heating	1
Cooling and heating	2
Without return air sensor *	0
With return air sensor *	5
Control panel	
Enclosed control panel	A
Integrated control panel	B

Order code



* Alternatively room temperature sensor (see page 45)/with MATRIX.IR return or room temperature sensor absolutely necessary!

Overview



MATRIX 2000

MATRIX 2000 control system supports all basic functions (heating/cooling) of recirculating-air fan coil unit and can be used in the following unit types:

- 2-pipe units „only heating“
- 2-pipe units „only cooling“
- 2-pipe units „cooling or heating“ (change over)
- 4-pipe unit „cooling and heating“

The assignment of speed stage can be carried out manually in a 3-speed mode or automatically in a 3-speed mode based on the deviation of actual temperature from the setpoint. Valves with on/off or 2-point modulating control behavior and a supply voltage of 230 V AC can be activated to control the heating and/or cooling capacity. With 2-pipe units 3-point modulating valve actuators can alternatively be controlled as well. The operation of 24 V AC valve actuators is possible as well (transformer by others required).

The direct connection of an external room temperature sensor is not possible with changeover units, but can be performed via a Global Module.

An alarm signal can also be processed by a Global module.

Direct tapping is not possible.

Additionally, the MATRIX 2000 enables monitoring of the fan motor via thermal contacts with external leads as well as the condensate water level for cooling units with a condensate pump. An alarm signal can also be processed by a Global module. Direct tapping via floating contacts is not possible. The connected sensors are monitored as well.

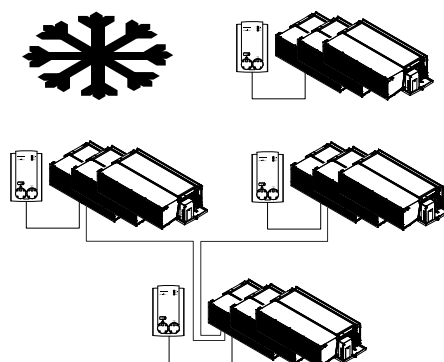
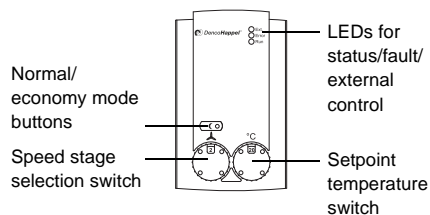
The OP2000 control panel enables the setpoint values to be set quickly and easily without extensive prior experience. Mechanical limit stops can be used to limit the setting range for the setpoint temperature and speed stage. Room temperature is measured via a sensor integrated in the control panel. If the control panel is positioned in an unfavorable location (such as by the door), an external temperature sensor or return air sensor can be connected (not possible on changeover systems). System faults are signaled centrally via the red “malfunction” LED and output using a change-over contact. If economy mode is activated, it is displayed via the yellow LED integrated into the button.






In addition to protection class IP20 (OP21 C), an OP21 I control panel in protection class IP54 for moist areas can be used.

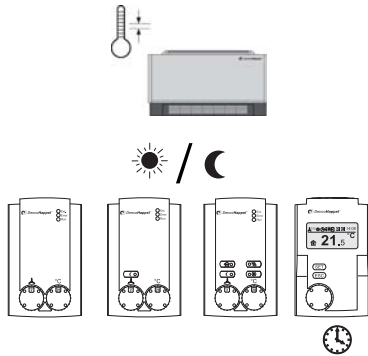
The connection in the unit is made via plug-in cage clamps. Electronics, fans and valves (230V) are fused separately via two pre-fuses on the power supply. A fuse of B 10A type must be supplied to provide the necessary circuit protection.

The MATRIX 2000 can be used for controlling individual recirculating-air units and recirculating-air unit groups as well. The integrated MATRIX.Net bus system enables integration of up to 16 several groups to one network. The combination with MATRIX 3000 controllers and connection of Global Modules and communication interfaces is also possible.

		Actuator type Valves	
		2 point	3 point
		•	
		•	•
		•	•
		•	•



		Valve actuator type	
		2 point	3 point
		•	•
		•	•
		•	•
		•	•



MATRIX 3000

The MATRIX 3000 control system is based on the MATRIX 2000 system and provides the following additional functions. These features are described as follows: 3-point valves with modulating control behavior can be applied on 4-pipe systems. Mixed operation is also possible (2-point cooling valve / modulating heating valve or modulating cooling valve / 2-point heating valve).

Status and alarm signals are relayed via two change-over contacts on the unit. The maximum load on the contacts at 230 V AC is 4 A ohmic / 2 A inductive.

The supply air temperature can be limited for heating and cooling. Fixed and sliding limits can be defined.

An external temperature sensor or return air sensor can be connected to all system types.

An additional control input enables the following operating modes that can be set externally:

- Normal/economy operation or
- Unit OFF with frost protection

Various types of control panels are available. The range varies from a simple variant with setpoint temperature and fan operating mode selection to a control panel with display. The display unit can also be supplied with an integrated weekly timer.

MATRIX 4000

The MATRIX 4000 control system is based on the MATRIX 2000/3000 system and provides the following additional functions. These features are described as follows:

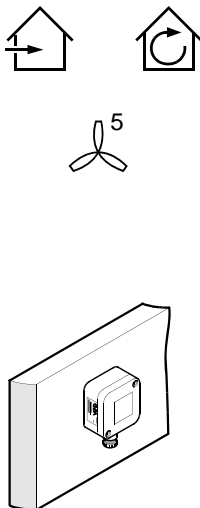
In order to provide improved selection of heating/cooling capacity a five speed fan control is enabled.

For applications with highest comfort requirements electronic control elements provide absolutely silent valve control.

Four additional control inputs enable external assignment of the following operating modes:

- Normal operation
- Economy mode
- Free mode
- Unit OFF with frost protection
- Compulsory setting of a fan speed

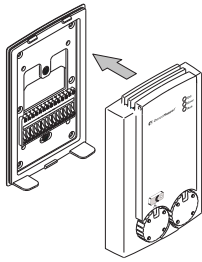
It is also possible to connect the outdoor sensor for activation of summer compensation. Outdoor air temperature reading is automatically transmitted to all units connected within the MATRIX.Net.



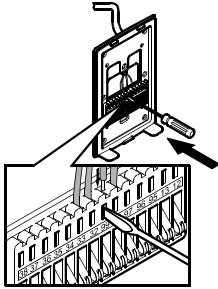
Description of features		MATRIX 2000	MATRIX 3000	MATRIX 4000
Unit type	2-pipe systems: „only heating“, „only cooling“; „heating or cooling“	•	•	•
	4-pipe system heating and cooling	•	•	•
Fan	up to 3 speeds	•	•	•
	up to 5 speeds			•
	continuous		•	•
	Temperature-dependent fan speed control	•	•	•
	Minimum speed 1	•	•	•
	Motor fault message EC motor	•	•	•
Valve control	2 and 4-pipe system: on/off actuators	•	•	•
	2-pipe system: 3-point modulating actuator	•	•	•
	4-pipe system: 3-point modulating actuators		•	•
	Silent control (semiconductor relay)			•
	External heating valve with cooling unit with fan switch off	•	•	•
Frost protection	Indoor Anti-Freeze Protection	•	•	•
Summer / winter compensation		•*	•*	•
Supply temperature limitation	Min/Max limitation heating		•	•
	Min/Max limitation cooling		•	•
Control inputs	Economy mode			
	Economy mode or door or window contact	•*	•	•
	Economy mode and door or window contact and unit OFF and autonomous operating mode	•*	•*	•
Measuring outside temperature	via local sensor connection			•
	using MATRIX.AI	•	•	•
Measuring inlet temperature	via local sensor connection	•	•	•
Measuring return air temperature	via local sensor connection	•**	•	•
Measuring supply air temperature	via local sensor connection		•	•
Messages	Alarm condensate level too high with unit switch off	•	•	•
	Heating and/or cooling request	•*	•*	•
	Status signal via change-over contact	•*	•	•
	Fault signal via change-over contact	•*	•	•
Control modes	Room temperature control	•	•	•
	Supply Air Temperature Control		•	•
MATRIX.Net bus system		•	•	•
can be extended by:	MATRIX.DI	•	•	•
	MATRIX.AI	•	•	•
	MATRIX.DO	•	•	•
	MATRIX.LON	•	•	•
Service tool	MATRIX.PC	•	•	•
Control panels	MATRIX OP21x	•		
	MATRIX OP30x		•	•
	MATRIX OP31x		•	•
	MATRIX OP44x		•	•
	MATRIX OP50x/51x		•	•

* with additional module only

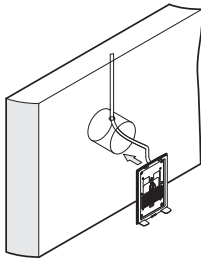
** not with heating or cooling units



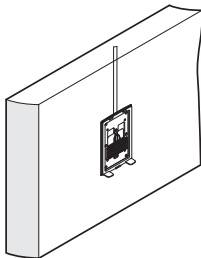
As the control panel is split into two units, the control panel cover only needs to be snapped on the mounting plate during commissioning. This provides optimum protection against dirt and damage for the control panels during the construction phase.



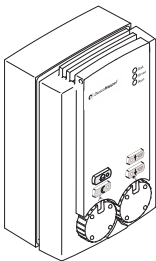
The cable connection is established via cage clamps. This enables quick and easy use of solid and flexible cores.



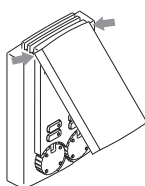
To mount the control panel in a standard flush-mounted socket, corresponding drill holes need to be provided in the mounting plate.



The control panel can also be fitted directly on the wall (cable laid under plaster or in cavity wall).



IP54 control panels for moisture proof applications are available on request.



To prevent dirt accumulation or accidental operation, control panel covers are available as accessories (refer to Fig. 48 on page 52).



Fig. 46

Indoor sensor, order-Nr.903.414

Thermistor sensor for on-wall mounting

- NTC sensor element
- Plastic casing: white, similar to RAL 9010
- Resistance coefficient at 25 °C = 10 kΩ
- Protection type IP20
- Dimensions in mm (W x H x D): 84 x 84 x 22

The 903.414 indoor sensor replaces indoor sensor in the MATRIX OP XXC control panels. The additional sensor must be fitted if the control panel is mounted in a location that is unsuitable for accurate temperature measurement.



Fig. 47

External sensor order-nr.903.454

Thermistor sensor for measuring ambient temperature e.g. for summer/winter compensation (according to DIN 1946 part 2/3)

- NTC sensor element
- Impact resistant white plastic casing
- for outdoor wall mounting
- PG bolts
- Resistance coefficient at 25 °C = 10 kΩ
- Protection type IP54
- Dimensions in mm (W x H x D): 65 x 50 x 37.5



Fig. 48

Unit cap

White order nr.OPD.C
(for OP30C/OP31C/OP44C)

Light grey order-nr.OPD.I
(for OP30I/OP31I/OP44I)

For covering operating elements of control panel

The control panel cover is hung into the guide slots of the control panel and protects the control panel from dirt accumulation and accidental operation.

Global modules

The global modules of the MATRIX control system are designated for input and output of MATRIX system signals. Global modules enable the transmission of messages and unit status information to external units as well as control via such external units. The modules can be integrated anywhere within the MATRIX network. A network can contain and simultaneously operate a maximum of 2 MATRIX modules of the same type (DI,DO,AI) or 16 modules (LON).

The modules are supplied with the default factory configuration. Configurations with other settings can be performed using the MATRIX.PC software.

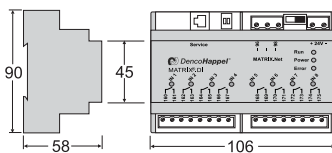
Technical Specifications

Spannungsversorgung	24 V DC \pm 15 %
Schutzart	IP 20
Betriebstemperatur	0 bis +45 °C
Absicherung	10 A T
Befestigung	Tragschiene
MATRIX.DI max. Stromaufnahme	0,1 A
MATRIX.DI Abmaße	106 mm x 90 mm x 58 mm
MATRIX.DO max. Stromaufnahme	0,14 A
MATRIX.DO Kontaktbelastung	250 V/5 A (ohmsch); 2 A (induktiv)
MATRIX.DO Abmaße	160 mm x 90 mm x 58 mm
MATRIX.AI Nennstromaufnahme	0,03 A
MATRIX.AI Abmaße	160 mm x 90 mm x 58 mm
MATRIX.LON Nennstromaufnahme	0,045 A
MATRIX.LON Abmaße	106 mm x 90 mm x 58 mm

Digital input module MATRIX.DI

The digital input module MATRIX.DI is used to receive 8 independent digital control signals.

Factory configuration:

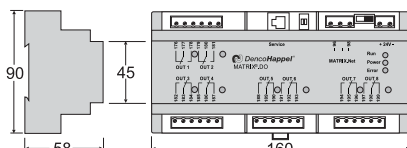


Input	Valid for	Closed contact results in
1	All groups	HVAC Mode Heating
2	All groups	HVAC Mode Cooling
3	All groups	Normal operation
4	All groups	Economy mode
5	Group 0	Fan in speed 3
6	Group 0	Secondary-air louvre close
7	Group 0	Secondary-air louvre open
8	Group 0	100 % mixed-air operation

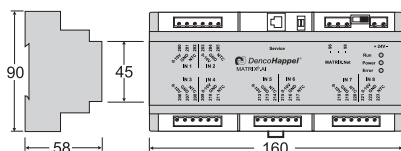
Digital output module MATRIX.DO

The module is fitted with 8 separate digital outputs with volt-free changeover contacts.

Factory configuration:



Output	Valid for	Relay on signals
1	All groups	Operation
2	Group 0	Fault signal
3	Group 0	Frost alarm
4	Group 1	Fault signal
5	Group 1	Frost alarm
6	Group 2	Fault signal
7	Group 2	Frost alarm
8	All groups	Fault signal



Analog input module MATRIX.AI

The module is equipped with 8 independent analog inputs that are controlled using 0...10 V/2..10 V signals or can be fitted with NTC sensors (10 k Ohm/25 °C).

Factory configuration:

Input	valid for	Parameter	Type	Filter value	Measuring range
1	All groups	Outdoor temperature	NTC	0	–
2	All groups	Inlet temperature	NTC	0	–
3	Group 0	Room air setpoint	0 ... 10 V	0	10 – 30 °C
4	Group 1	Room air setpoint	0 ... 10 V	0	10 – 30 °C
5	Group 2	Room air setpoint	0 ... 10 V	0	10 – 30 °C
6	Group 1	Outside air rate	0 ... 10 V	0	0 ... 100 %
7	Group 2	Outside air rate	0 ... 10 V	0	0 ... 100 %
8	Group 3	Outside air rate	0 ... 10 V	0	0 ... 100 %

MATRIX.LON module

The MATRIX.LON communication module is part of the global modules of the MATRIX control system and is used for connecting the MATRIX control system to a network structure in accordance with the LON WORKS standard. It enables the connection of HVAC equipment to a building management system or other facility management systems. The modules also enables external systems such as dampers/louvres or lighting systems to be regulated via the MATRIX OP50/51 control panel. The module can be integrated at any point within the MATRIX network.

Service software MATRIX.PC

MATRIX.PC service software provides further comprehensive functions for settings, commissioning and data recording of the MATRIX controller system. The service software can be connected via the service interface which is integrated in all control panels, controllers, global modules, clock timer and communication modules. Your PC must have a USB port; the enclosed adapter establishes the connection between the PC and the service interface. The following main functions are available:

- Automatic scanning of network with display of found users
- Display of errors as text
- Changing parameters as e.g. temperature limits, times or control mode
- Display of actual values
- Display of current unit status, e.g. HVAC Mode or valve position
- Manual control of actuators for fans and valves
- Reading, saving and writing configuration data
- Online display of module, status and network data
- Recording and saving of temperature curves and switch states of driven components with adjustable sample rate
- Offline settings
- Programming of required inputs and outputs (controllers, global modules)
- Activation of messaging and network data
- Configuration of controller and control panel functions
- Input of sensor correction factors
- Selection of 6 different languages

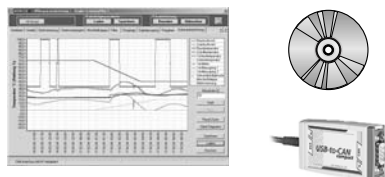
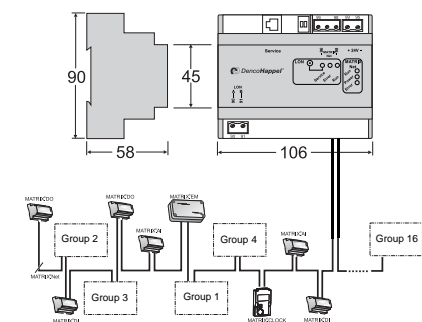
PC system requirements:

- PC with 233 MHz processor frequency or higher
- 20 MB available disk space
- Minimum monitor resolution of 800 x 600 pixels
- USB interface for CAN adaptor

The software is compatible with the following operating systems:

Windows 98 Second Edition; Windows 2000; Windows XP

Together with main software on a CD, the installation instructions and interface module for connection to the PC USB port are also included.



MATRIX.OP71 control panel for all groups



The MATRIX.OP71 control panel is designed for operation from one central point. This control panel can be integrated at any location within the MATRIX network and can be simultaneously operated in 16 groups.

Up to 16 unit groups can be assigned to one cluster:

- One unit group per each cluster
- Each cluster to include up to 16 unit groups.

Clear text menus and "push&turn" function enable easy handling during operation or configuration. A maximum of 16 unit groups can be individually grouped to clusters. Using a control panel the desired setpoints for temperature, fan speed, etc. can be assigned for each cluster. Thanks to comprehensive features of the control panel, the necessary room or return air sensors are located in the respective groups (group locations).

Local control panels (OP2xx, OP3xx, OP4xx, OP5x) can be additionally integrated in individual groups. Their functional scope can be defined and adjusted using the control panel for all groups. Thus, a relative daily setpoint can be entered via a local control panel, whereas the standard setpoint is assigned via the OP71C.

The integrated clock timer enables to assign 8 weekly programmes to clusters at any sequence. Each weekly programme enables to enter four switching times per day (2 x On/2 x Off), that can also be set to be valid for the whole day. In addition, it is possible to set 8 special switching days with up to four switching times (2 x On/2 x Off) per designated switching day.

Holiday periods can be taken into consideration by programming for the entire year. On holidays the unit can be set to operate in "unit off" or economy mode.

The summer / winter time changeover is performed automatically.

The control unit is currently supplied with 7 selectable languages:

- German
- English
- French
- Dutch
- Polish
- Czech
- Hungarian.

Two different variants are available:

- MATRIX.OP71C with IP20 protection type; colour – white (similar to RAL 9016)
- MATRIX.OP71I with IP54 protection type; colour – light grey (similar to RAL 7035).

Unit type code

G H 1 1 . U W 0 3 . F E 0 C 2

G	Geko
H	Series HyPower
1	Model size 1
2	Model size 2
3	Model size 3
4	Model size 4
1	Capacity stage 1
2	Capacity stage 2
3	Capacity stage 3
U	Recirculating-air unit
H	Hygiene unit
0W	Heating only/PWW
W0	Cooling only/PKW
WC	Cooling or heating/PCW - PWW
WW	Cooling and heating/PCW - PWW
3	Ceiling left
4	Ceiling right
A	1, 2, 3 plastic terminal box
B	2, 3, 4 plastic terminal box
C	3, 4, 5 plastic terminal box
E	1, 3, 5 plastic terminal box
H	1, 2, 3, 4, 5 plastic terminal box
F	Min-Max (EC-Motor, plastic terminal box)
K	1, 2, 3 metal sheet terminal box
L	2, 3, 4 metal sheet terminal box
M	3, 4, 5 metal sheet terminal box
O	1, 3, 5 metal sheet terminal box
R	1, 2, 3, 4, 5 metal sheet terminal box
S	Min-Max (EC Motor, metal sheet terminal box)
0	AC-Motor
E	EC motor
0	with condensate drain
1	with condensate pump **
A	without fan chamber
B	with fan chamber
C	with fan chamber and acoustic insulation
0	without filter ***
2	G2 mat filter
4	G4 mat filter

Controls package

D 3 . 0 0 1 . B A

D	Controller type
3	Controller package no.
0	Terminal box
2	MATRIX 2000
3	MATRIX 3000
4	MATRIX 4000
0	No. of controller package
A	MATRIX OP21C
B	MATRIX OP30C
C	MATRIX OP31C
D	MATRIX OP44C
E	MATRIX OP50C
F	MATRIX OP51C
1	CMS
2	CMT4D
3	CMT2D
4	CMT2Z
J	CET.ACEC
Z	without control panel
A	Individual/master unit, control panel included
C	Master unit without control panel
D	Slave unit without control panel

Valve code

V G H . R 3 1 6 R 2 2 5 . 1 L

V	Valves for Geko for HyPower Series
G	Function type
H	valve body
R	K_{vs} -value
3	Function type
1	valve body
6	K_{vs} -value
R	Connection/shut-off
2	Medium connection
2	2-way
2	2-way
5	3-way
1	Left
L	Left
R	Right

V	3-point 230 V
G	2-point 230 V
H	3-point 24 V
R	0-10 V, 24 V
T	3-point 230 V + 2 contacts
N	2-way
Q	3-way
S	2-way
C	3-way
03	K_{vs} 0.25 (R, N, S, C)
04	K_{vs} 0.40 (R, N, S, C)
06	K_{vs} 0.63 (R, N, S, C)
10	K_{vs} 1.0 (R, N, S, C)
16	K_{vs} 1.6 (R, N, S, C, T, Q)
25	K_{vs} 2.5 (R, N, S, C, T, Q)
40	K_{vs} 4.0 (R, N, S, C, T, Q)
63	K_{vs} 6.3 (R, N, S, C, T, Q)
80	K_{vs} 8.0 (R, N, S, C, T, Q)
R	3-point 230 V
T	2-point 230 V
N	3-point 24 V
Q	2-point 24 V
S	0-10 V, 24 V
C	3-point 230 V + 2 contacts
2	2-way
3	3-way
03	K_{vs} 0.25 (R, N, S, C)
04	K_{vs} 0.40 (R, N, S, C)
06	K_{vs} 0.63 (R, N, S, C)
10	K_{vs} 1.0 (R, N, S, C)
16	K_{vs} 1.6 (R, N, S, C, T, Q)
25	K_{vs} 2.5 (R, N, S, C, T, Q)
40	K_{vs} 4.0 (R, N, S, C, T, Q)
63	K_{vs} 6.3 (R, N, S, C, T, Q)
80	K_{vs} 8.0 (R, N, S, C, T, Q)
0	Inlet/outlet flow with external screw thread
1	Inlet/outlet with solder fitting
2	Inlet/outlet + ball trap with external thread
3	Inlet/outlet + ball trap with solder fitting
4	Inlet + ball trap/Outlet + shut-off valve with external screw thread
5	Inlet + ball trap/Outlet + shut-off valve with solder fitting
L	Left
R	Right

* Front connection side, facing discharge
 ** Metal sheet electrical control box necessary
 *** only unit model A

DencoHappel is a global company with expertise in air treatment, air conditioning and air filtration.

Our nearest sales and service teams will be glad to discuss ideas and develop creative and effective solutions with you.

