

# MultiMAXX<sup>®</sup> HX

DATA & FACTS



## Dear Customer,

This catalogue focuses on the special application of the EX-protected unit heaters and provides assistance in the layout of the FläktGroup MultiMAXX HX units according to your needs and in conformity with ATEX RL 94/9 regulation and enables you to select the correct order code.

**The wide variety:** The current catalogue also contains important instructions for consultants, plant engineers and operators!

The 1st part also comprises and specifies technical exceptions to be considered in certain operating conditions.

The catalogue is composed of four main sections:

### Part 1 Unit description

This section provides ample data on all unit components.

**Part 2** Unit samples present you our experience in the most common applications using FläktGroup MultiMAXX HX units. Typical and possible combinations of components are summarized in the selection table. Options and combinations, that are not feasible from the technical point of view, are not considered by the current document.

**Part 3** Unit data present you the most essential technical information for the FläktGroup MultiMAXX HX unit heaters. Dimensions, sizes and weight are summarized in this section as well.

### Part 4 Control equipment

after selecting a particular unit, you can find data on possible regulation variants and then choose the suitable package in Part 4. Because of the standards required by the explosion protection regulations, MATRIX control system can not be used here.

**Unit code** The entire unit code (Fig. 1-1) specifies the unit in its variations. As with other FläktGroup products, the unit code contains all details necessary for ordering, subsequent extension of the unit or provision of spare parts.

**Accessory items code** Accessory items have an individual type code (Fig. 1-2) and are to be added to the main unit code.

The position of medium and coil connections (position 8 in unit code), connection type (position 9) and the design of heat exchangers (position 13) are covered in the **unit code** (Fig. 1-1) - and then you're done.

If you need assistance, our trained sales staff will be glad to help you in the selection and layout of the unit using Aid@ design software, which can also provide complete technical data and specification texts.

Fig. 1-1 Unit code

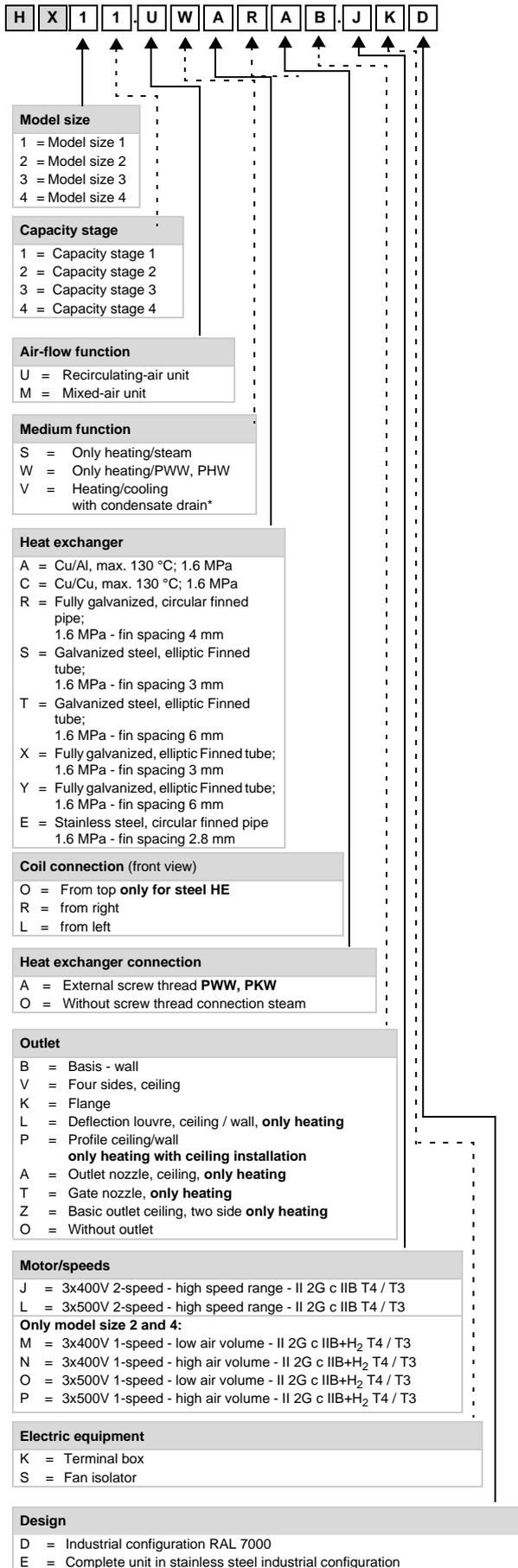
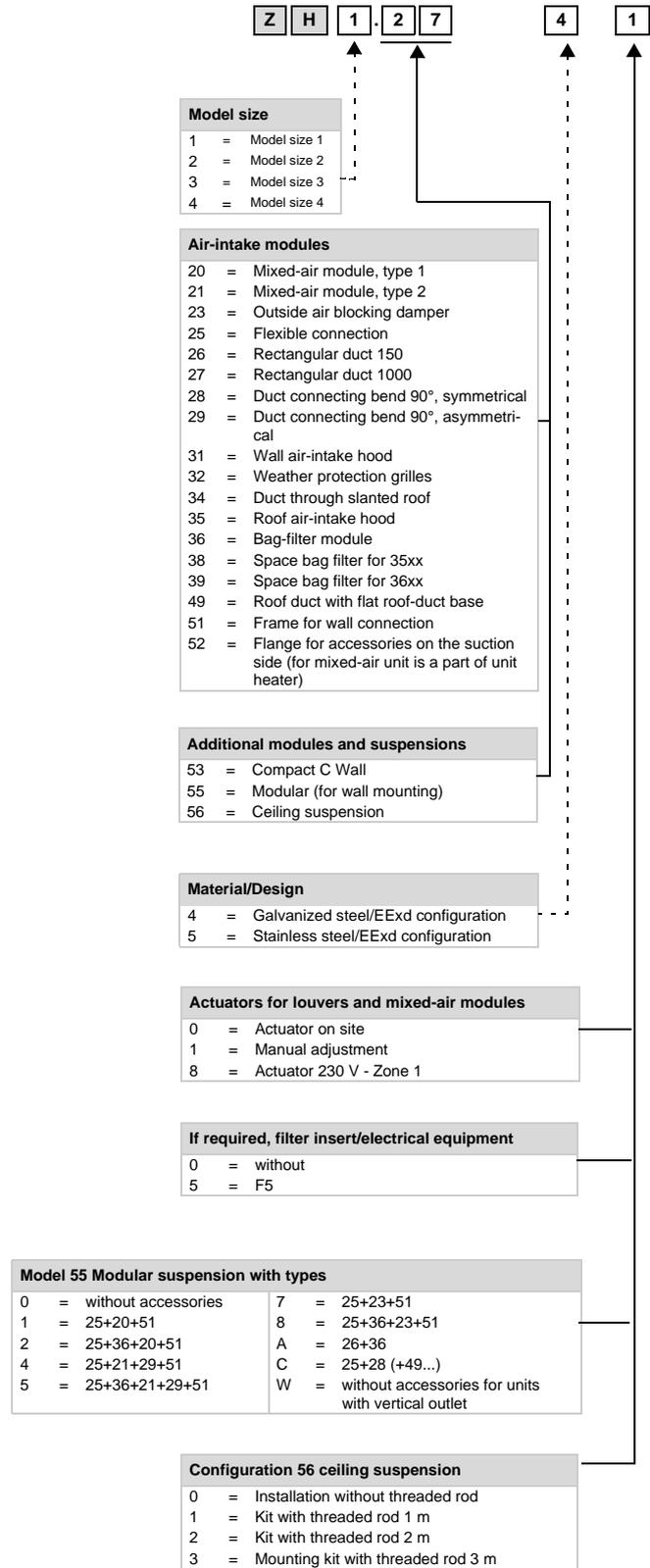
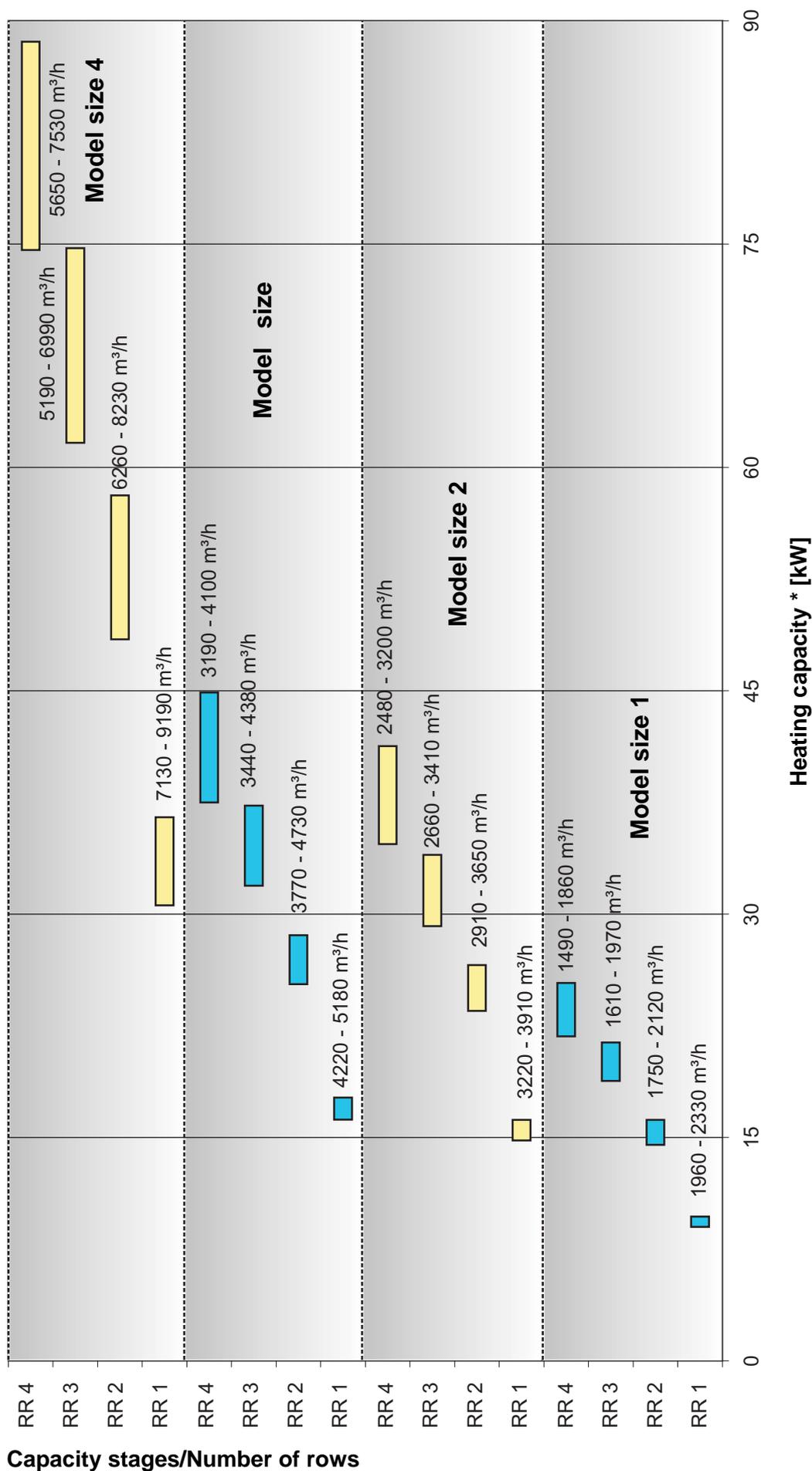


Fig. 1-2 Accessories Code



\* Only motor configuration M, O possible with cooling units (model size 2, 4)

Fig. 1: Unit type code



\* Water 80/60 °C; air 20 °C  
Air volume flow rate is based on air intake 18 °C recirculating-air unit, heat exchanger Cu/Al, profile outlet, 3x400 V 2-speed wide-blade fan.  
(higher air volume flow rate is possible using other discharge variants!)

Fig. 2: Diagram with capacity overview

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The FläktGroup MultiMAXX HX unit heaters are designed for heating, cooling, ventilating and filtering of indoor and outdoor air in industrial buildings of explosion risk zones 1 and 2. The units can be performed as II 2G c IIB T4/T3 or II 2G c IIB+H2 T4/T3. Filters, mixed-air and air intake modules, suspension sets, control units and control devices can be supplied as optional accessories. Proper use also stipulates the observance of the operation manual as well as adherence to all inspection and maintenance intervals specified by FläktGroup.

*Improper use* Any use other than that described above is considered improper. The manufacturer/supplier is not liable for any damages arising from improper use. The user alone is liable.

## Operating conditions

*Medium types* The unit is not designed for medium types that can damage or destroy the surface coating due to corrosive, chemical or abrasive effects. Only non-corrosive and non-combustible liquids or steam must be used as a medium.

*Operating Pressure* The maximal allowed operating pressure of heating media depends on the operating limits of the heat exchanger and is presented in the following table. The table values are based on a unit with a shut off valve (medium blockage in case of a fan standstill). If a shut off valve is not used, the operating limit of the heat exchanger is reduced to a maximum of 90 °C medium temperature.

## Operating limits for heat exchanger

Function (unit type code)	W	S	W (V)	S	Design	Maximum air inlet temperature	Accessory	
Heating medium	Water	Steam	Water	Steam				
Fan (unit type code)	J, L	J, L	M, N, O, P	M, N, O, P				
Designation	II 2G c II B T4	II 2G c II B T4/T3	II 2G c IIB+H2 T4	II 2G c IIB+H2 T3				
Without valve	90°C	-	90°C	-	Ceiling	40°C	No	
with valve	130°C	-	130°C	175°C		40°C		
Without valve	90°C	-	90°C	-	Wall	40°C		
with valve	130°C	130°C (T4)	130°C	180°C		40°C		
with valve	-	144°C (T3)	-	-	30°C			
Without valve	90°C	-	90°C	-	Ceiling	40°C		Yes
with valve	100°C	-	108°C	130°C		40°C		
Without valve	90°C	-	90°C	-	Wall	40°C		
with valve	100°C	100°C (T4)	108°C	130°C		40°C		

Tab. 1: Operating limits heat exchanger

All units with a medium inlet temperature > 90 °C, it is necessary to use a shut off valve (with return spring).

*Ambient conditions* The FläktGroup MultiMAXX HX recirculating-air units must only be used indoors where the unit surface coating can not be damaged or destroyed as a result of corrosion, chemical reaction, abrasion or other similar effects.



### Note!

It must be ensured that the **ambient temperature** for the MultiMAXX HX units **does not fall below -20 °C and exceeds +40 °C**. If this condition can not be met, we recommend to fit the unit heater with a safety thermostat (as e.g. 902017, see page 60), that isolates the unit and shuts off the medium supply if air intake temperature is exceeded (see table 1).

Should you require further information, please contact our knowledgeable staff, who can design units for all application types using our layout software.

*Maximum unit surface temperature* The maximum surface temperature mostly depends on the temperature of circulated heating medium, unit configuration and mounting position (wall/ceiling/recirculating/mixed-air). Therefore the maximum medium temperature must not be exceeded (see table 1).

*Medium supply* Make sure that the medium supply to the unit is blocked in case of power outage or unit switch off. A shut off valve with spring return must be used. For this purpose, insert a shut-off valve with spring-return actuator. (For more information refer to table 1 and Technical Description Page 7)

## Technical Description

The MultiMAXX HX units consist of a fan, heat exchanger and casing performed in metal sheet or painted metal sheet. The discharge side is fitted with an optional discharge louvre. The axial fan is fitted on the rear side and is equipped with a contact protection grille.

Units with a cooling function are equipped with a drain pan with a free drainage below the unit (discharge hose with 17 mm internal diameter). It must be guaranteed that all fitted medium supply components are insulated.

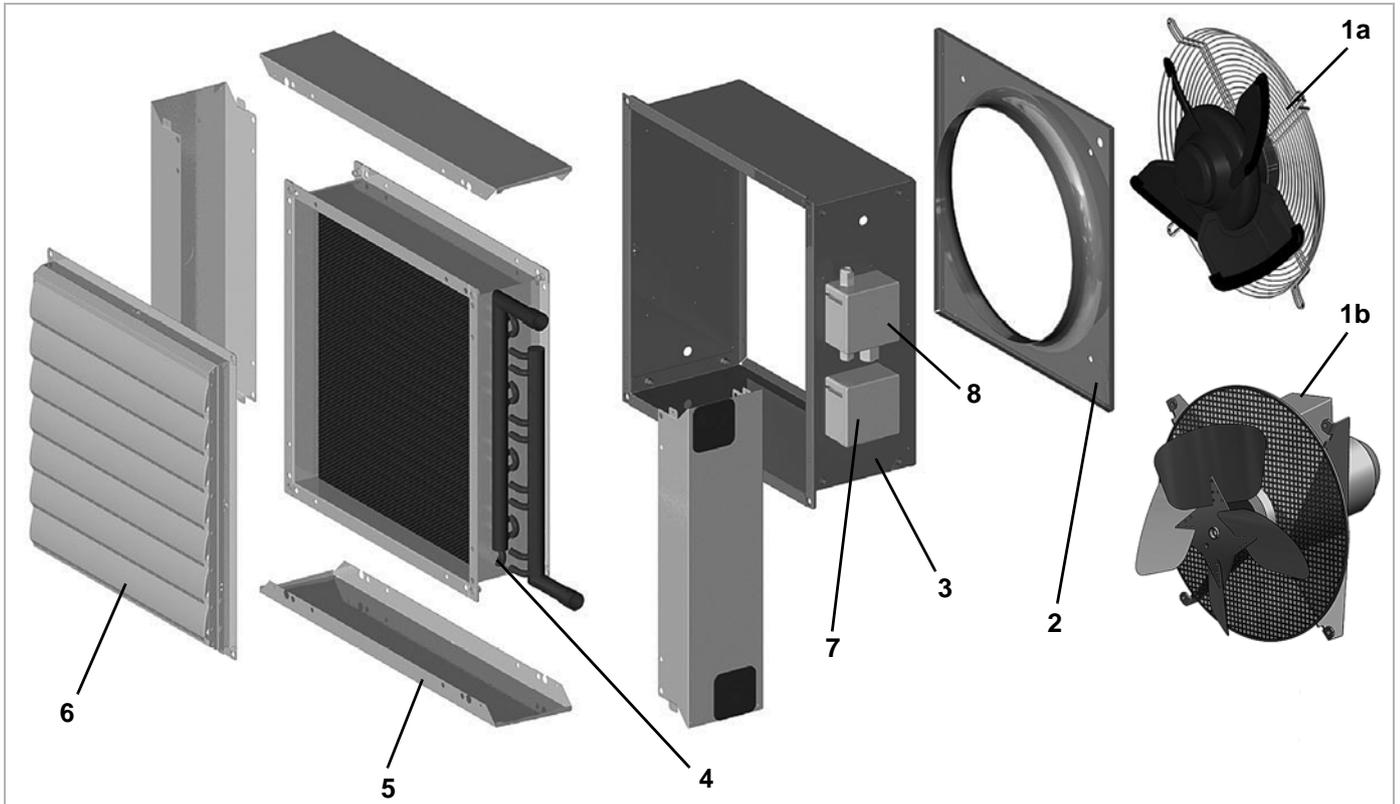


Fig. 3: Sample unit design with description of unit components

- 1a: Fan with contact protection grille - II 2G c IIB T4, T3
- 1b: Fan with contact protection grille - II 2G c IIB+H<sub>2</sub> T4, T3
- 2: Air inlet nozzle
- 3: Fan module with terminal box
- 4: Heat exchanger Cu/Cu (sample)
- 5: Industrial type casing
- 6: Basic wall outlet (sample)
- 7: Frost protection thermostat
- 8: Terminal box/fan isolator



Fig. 4: Fan with enhanced safety design and short air intake nozzle

**Motor design explosion-protected and enhanced safety – 400 V (J), 500 V (L)**

Standard axial fan with external rotor motor (II 2G c IIB T4 in conformity with EN14986, 13463-1 and 13463-5, 60079-0 and 60079-7 safe design) for normal pressure and sound requirements with fan protection curb and integrated contact grille EN ISO 13857, wide blades performed in aluminium, phosphate coated and painted surface, wing tips sheathed in plastic, balanced by the factory according to ISO 14 class BV-3 (ISO1940-1, G6,3), maintenance-free with moisture-proof motor wired in terminal box and ready for connection.

Protection class IP 44, thermal class F, PTC thermistor, 400 V or 500 V 2-speed. Air inlet nozzle is performed as short nozzle.

Range of application:	
Air inlet temperature:	-20 to +40 °C

H	X	#	#	.	#	#	#	#	#	#	.	J	#	#
H	X	#	#	.	#	#	#	#	#	#	.	L	#	#

# - see unit type code on page page 3

**Fan in explosion-protected and explosion-proof design – 400 V (M, N), 500 V (O, P)**

Low noise Axial fan with standard motor (II 2G c IIB + H2 T4/T3 according to EN14986, EN 13463-1, EN 13463-3, EN 60079-0, EN60079-1 – explosion-proof design) for normal pressure and sound requirements, with integrated contact protection grille EN ISO 13857.

Wide wings performed in aluminium and balanced at the factory according to ISO 14694 class BV-3 (ISO 1940-1, G6,3), maintenance-free with moisture-proof motor wired in terminal box.

Protection class IP54, thermal class F, air intake nozzle performed as short nozzle.

Range of application:	
Air inlet temperature:	-20 to +40 °C

H	X	#	#	.	#	#	#	#	#	#	.	M	#	#
H	X	#	#	.	#	#	#	#	#	#	.	N	#	#
H	X	#	#	.	#	#	#	#	#	#	.	O	#	#
H	X	#	#	.	#	#	#	#	#	#	.	P	#	#

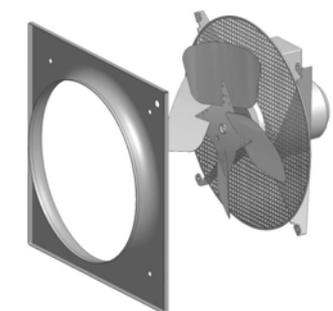


Fig. 5: Fan in explosion-proof design with short air intake nozzle

**Heat Exchanger Cu/Cu - C (medium water)**

H	X	#	#	.	#	#	C	#	#	#	.	#	#	#
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

High-performance heat exchanger for heating with pumped warm or hot water and cooling with cool water with 50%glykol, with average and high air contamination levels.

In heavy-duty industrial design performed with Cu pipes with profiled copper fins, fin spacing 3.0 mm (therefore significantly better cleaning capability), with 1-, 2-, 3- or 4 rows.

**Cu/Cu heat exchangers are performed for medium connections on the right or left side.**

Range of application:				
AC-motor	Medium	Heat Exchanger (see unit type code)	Rows	Max. operating pressure [bar]
J, L, M, N, O, P	Warm water	Cu/Cu (C)	1 - 4	16
	Cool water		3 - 4	



Fig. 6: HE Cu/Cu

**Heat Exchanger Cu/Al - A (medium water)**

**H X # # . # # A # # # . # # #**

Standard heat exchanger for heating with pumped warm or hot water and cooling with cool water with 50%glykol, designed for air with low dirt concentration.

Performed with Cu pipes with profiled aluminium fins, fin spacing 2.5 mm, with 1-, 2-, 3- or 4 rows.

**Cu/Al heat exchangers are performed for medium connections on the right or left side.**

Range of application:				
AC-motor	Medium	Heat Exchanger (see unit type code)	Rows	Max. operating pressure [bar]
J, L, M, N, O, P	Warm water	Cu/Al (A)	1 - 4	16
	Cool water		3 - 4	



Fig. 7: HE Cu/Al

**Heat exchanger fully galvanized/steel galvanized, stainless steel - R, S, T, X, Y, E (medium water)**

**H X # # . # # R # # # . # # #**  
**H X # # . # # S # # # . # # #**  
**H X # # . # # T # # # . # # #**  
**H X # # . # # X # # # . # # #**  
**H X # # . # # Y # # # . # # #**  
**H X # # . # # E # # # . # # #**

High performance industrial heat exchanger for pumped hot water for heavily contaminated air.

Extremely robust, heavy construction as well as efficient and reliable heat transfer between pipes and fins using elliptical (S, T, X, Y) or circular (E) FläktGroup steel finned pipes with high mechanical stability. The entire heat exchanger (R, S, T, X, Y) is galvanized to achieve good heat transfer between the pipe and the ribs. Another option is stainless steel version of the exchanger (E).

Range of application (HE - R, S, T, X, Y):	Warm water
Max. operating pressure - 1 RR:	16 bar
Max. operating pressure - 2 RR:	10 bar
Range of application (HE - E):	Warm water
Max. operating pressure - 2 RR:	12 bar
Max. operating pressure - 3 RR:	10 bar



Fig. 8: HE Fe/Fe Zn (medium water)

**Heat exchanger fully galvanized/steel galvanized, stainless steel - R, T, Y, E (medium steam)**

**H X # # . # # R # # # . # # #**  
**H X # # . # # T # # # . # # #**  
**H X # # . # # Y # # # . # # #**  
**H X # # . # # E # # # . # # #**

High performance industrial heat exchanger for pumped steam heating (without figure) for heavily contaminated air. Extremely rigid, heavy construction as well as efficient and reliable heat transfer between pipes and fins using circular FläktGroup stainless steel (R, T, Y) finned pipes with high mechanical stability. Another option is stainless steel version of the exchanger (E).

The connection of the exchanger tubes at the inlet of the medium is by external thread R 5/4", at the output R 1".

Range of application:		Steam		
Max. operating temperature:	180°C	130°C*	100°C**	
Max. operating pressure - 1 RR:	8 bar	3 bar	1 bar	
Max. operating pressure - 2 RR:	8 bar	3 bar	1 bar	

\* for units HX##.US####.J(L)## and HX##.MS####.M(N,O,P)##

\*\* for units HX##.MS####.J(L)## (only wall version)

**The heat exchanger with steam configuration is performed only with a medium connection from top!**

Rows	Heat exchanger			
	R	T	Y	E
	Fin spacing [mm]			
1 RR	4	6	6	2,8
2 RR	4	-	-	2,8

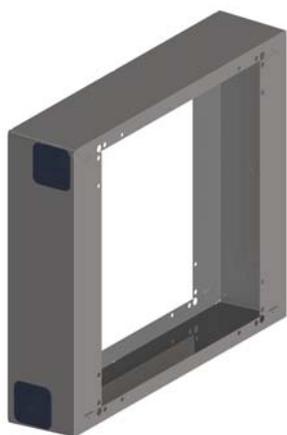


Fig. 9: HE Fe/Fe Zn (medium steam)

The heat exchanger variants with pumped warm / hot water are fitted with top, right or left connections

Model size		1				2				3				4			
Rows		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Pipe connections</b>																	
HE	External thread	R 1"								R 1 1/4"							
C, A	Pipe ø d [mm]	22				22	28			22	28	35	28	28	35	42	35
HE	External thread	R 1"	-	-	-	R 1"	-	-	-	R 1 1/4"	-	-	-	R 1 1/4"	-	-	-
R, S, X	Pipe ø d [mm]	33,8	-	-	-	33,8	-	-	-	42,4	-	-	-	42,4	-	-	-
HE	External thread	R 1"	-	-	-	R 1"	-	-	-	R 1 1/4"	-	-	-	R 1 1/4"	-	-	-
T, Y	Pipe ø d [mm]	33,8	-	-	-	33,8	-	-	-	42,4	-	-	-	42,4	-	-	-
HE	External thread	-	R 1"	-	-	R 1"	-	-	-	R 1 1/4"	-	-	-	R 1 1/4"	-	-	-
E	Pipe ø d [mm]	-	33,8	-	-	33,8	-	-	-	42,4	-	-	-	42,4	-	-	-

### Heat exchanger casing



Heat exchanger casing is available in the following industrial variants:

- Galvanized metal sheet, painted RAL 7000 – variant D
- Stainless steel - variant E

Industrial casing is especially sturdy, factory mounted casing for industrial environment.

H	X	#	#	.	#	#	#	#	#	#	.	#	#	D
H	X	#	#	.	#	#	#	#	#	#	.	#	#	E

Fig. 10: Casing

### Discharge wall outlet



#### Basic outlet

With basic wall outlet galvanized metal sheet or stainless steel fins enable to deflect conditioned air at the required discharge angle.

The fins are self-locking and can be adjusted manually.

For wall mounting, it can also be used for cooling (the condensate tray is mounted on the unit).

H	X	#	#	.	#	#	#	#	#	B	.	#	#	#
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Fig. 11: Basic outlet

### Discharge ceiling outlets



#### Two-side basic ceiling outlet

Outlet for low installation heights. Galvanized metal sheet or stainless steel fins enable to deflect conditioned air at two needed discharge angles. The adjustment mechanism is divided in the middle. Metal sheet fins are self-locking and can be adjusted manually.

**Only suitable for heating!**

H	X	#	#	.	#	#	#	#	#	Z	.	#	#	#
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Fig. 12: Two-side basic ceiling outlet

**Four-side outlet**

Air distributing outlet for low mounting heights made of galvanized metal sheet or stainless steel. Independent adjustability in four directions enables to individually direct air volume flow. Direct air flow in the vertical range located below can be prevented.

Configured as **cooling version** without a condensate pump with an additionally, insulated drain pan available.

The fins are self-locking and can be adjusted manually.

**H X # # . # # # # # V . # # #**

Heating



Cooling

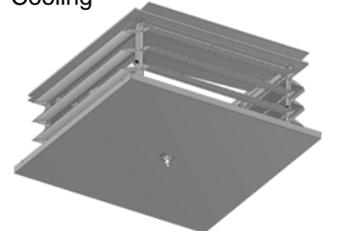


Fig. 13: Four-side outlet

**Outlet nozzle**

Made of galvanized metal sheet or stainless steel square cone-shaped nozzle. Therefore air velocity increases which enables larger installation heights.

**Only suitable for heating!**

**H X # # . # # # # # A . # # #**



Fig. 14: Outlet nozzle

**Gate nozzle**

Made of galvanized metal sheet or stainless steel one-sided cone-shaped nozzle. Therefore air velocity is increased which enables targeted deflection of air volume flow for shielding lager gates in combination with multiple units.

**Only suitable for heating!**

**H X # # . # # # # # T . # # #**



Fig. 15: Gate nozzle

**Discharge wall and ceiling outlets****Profile outlet**

Profile outlet is fitted with:

- Aluminium fins with a frame in metal sheet, galvanized and painted
- Painted aluminium fins (RAL 7000) with a frame in stainless steel

It is used to increase the penetration depth at constant air discharge velocity. In such a way the unit can be easily installed at average ceiling heights and with medium penetration depth (wall unit). Air deflection louvers are self-locking and can be adjusted manually. For wall mounting, it can also be used for cooling (the condensate tray is mounted on the unit).

**H X # # . # # # # # P . # # #**

**Air deflection louvre**

Customized outlet for low installation heights. Independently-adjustable short metal sheet fins angled at 90° allow to deflect air volume flow to match individual requirements. Can also be used for wall mounting.

**Only suitable for heating!**

**H X # # . # # # # # L . # # #**



Fig. 16: Profile outlet

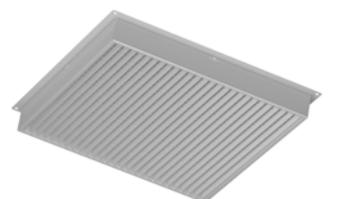


Fig. 17: Air deflection louvre

In this example heating and ventilation or mixed-air operation are often required (also refer to DIN 4701ff). Besides reaching the required fresh air volume flow, meeting the transmission and air ventilation heat requirement is also critical in these operating conditions.

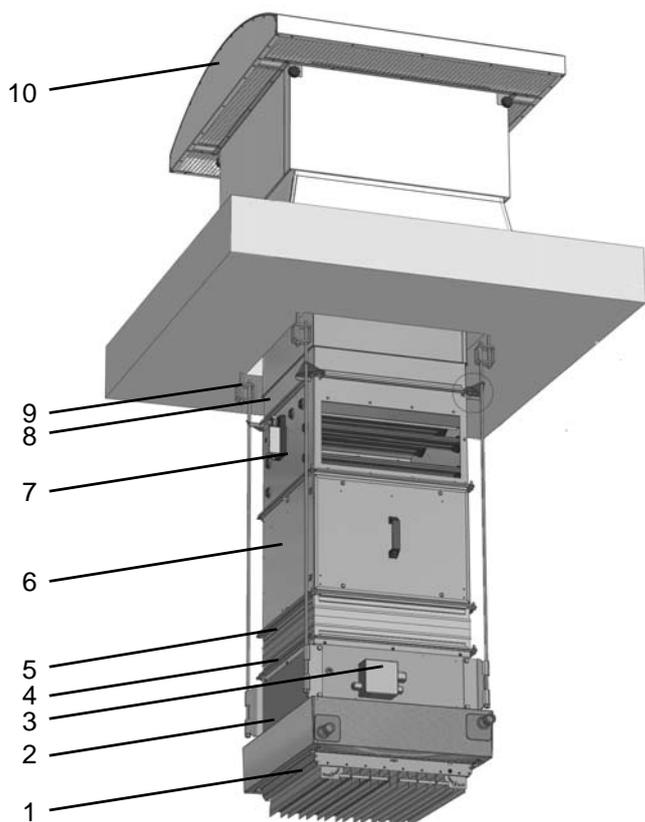
FläktGroup unit heaters can be selected as mixed-air units or as a combination of recirculating and outside-air units for wall and ceiling mounting. Installation type and number of units primarily depend on furnishing and equipment.

FläktGroup MultiMAXX HX units with wide blade fans combined with the presented outlet variant meet all requirements for an outdoor air operation.

However, for outdoor air operation a bag filter module is designed (6). In such a way dirt is prevented from penetrating into the heat exchanger and its heating output is maintained. Maintenance expenses are then reduced to replacing the filter or its cleaning which enables to save operating costs. If accessories are used, the unit noise level increases to a very minor extent.

Additional resistance exerted by the filter reduces the air volume flow rate and must be corrected using the relevant factors during the layout stage. Unit heaters performed as II 2G c IIB T4/T3 (fan motor with enhanced safety) can be operated with FläktGroup switch units 986960.3 (2-speed), unit heaters performed as II 2G c IIB + H2 T4/T3 (explosion-proof fan) with FläktGroup switch units 986811.3 (1-speed). Installation of switch units outside the EX-range!

### Sample of ceiling mounting



Pos No.	Unit/ accessory item	Unit/accessory type code
1	Profile outlet	HXnm.MWARAP.#KC
2	Heat exchanger module with casing	
3	Terminal box	
4	Fan module (wide-blade fan (E) Exe or (E) Exd)	
5	Rectangular duct 150 or flexible canvas connection	ZHn.2640 or ZHn.2520 (II 2G c IIB T4/T3) ZHn.2540 (II 2G c IIB+H2 T4/T3)
6	Bag filter module with F5 filter	ZHn.3645
7	Mixed-air module type 1 with actuator 230 V,	ZHn.2048
8	Roof duct with flat roof-duct base (partially visible in the picture)	ZHn.4940
9	Ceiling suspension	ZHn.56##
10	Roof air-intake hood	ZHn.3540

n = model size 1...4 selectable  
 m = capacity stage/rows 1...4 selectable  
 # = threaded rod length 1-3 m selectable

Fig. 18: Sample of ceiling mounting



The section focuses on explosion risk areas of temperature classes T3-T4, where air quality requirements are usually low. Air circulation and heat demand are the most crucial technical requirements that the units have to meet. Air circulation (2-3 times) is pre-defined by the geometrical dimensions of the hall.

Heat demand in order to maintain frost-free conditions depends on the building type (insulation) and location. For this application FläktGroup unit heaters can be selected as recirculating-air units for wall or ceiling installation. Suspension type and number of units primarily depend on the arrangement and furnishing/equipment of the warehouse.

FläktGroup MultiMAXX HX units with a steel heat exchanger (2) and wide-blade fan (3) combined with basic or profile (1) discharge variants fulfil all relevant requirements here. The wide-blade fan is powerful enough to overcome the pressure drop of the heat exchanger and discharge, thus allowing warm air to penetrate and secure good temperature distribution indoors.

In a normal case all acoustic requirements for warehouses are usually satisfied. It is recommended to use a bag filter. In such a way dirt is prevented from penetrating into the heat exchanger and its heating output is maintained. Maintenance expenses are then reduced to filter maintenance which enables to save operating costs. Additional resistance exerted by the filter reduces the air volume flow rate and must be corrected using the relevant factors during the layout stage.

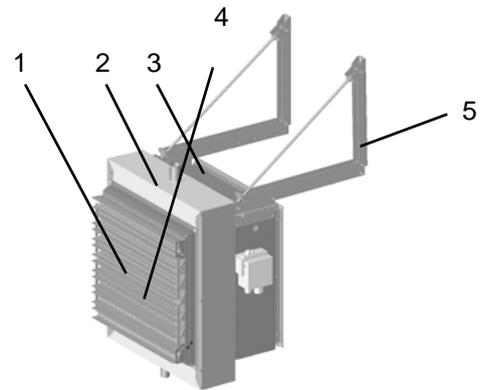
The best way to install the unit is by using “modular” unit suspension (5). Along with other variants, the suspension is available as an accessory item.

Electrical connection must be established by others on site and a well-accessible terminal box (4) is fitted on the side of the fan module. Unit heaters performed as II 2G c IIB T4/T3 (fan motor with enhanced safety) can be operated with FläktGroup switch units 986920.3 (2-speed), unit heaters performed as II 2G c IIB + H2 T4/T3 (explosion-proof fan) with FläktGroup switch units 986810.3 (1-speed). Installation of switch units outside the EX-range!

**Example for heating with wall mounting**

Pos Nr.	Unit/ accessory item	Unit/accessory type code
1	Profile outlet	HXnm.USXOOP.JKC
2	MultiMAXX HX with steel heat exchanger and industrial casing	
3	Fan module (wide-blade fan)	
4	Terminal box	
5	Modular suspension	ZHn.5500

n = Model size 1...4 selectable  
m = capacity stage/rows



**Sample cooling with wall unit**

Pos Nr.	Unit/ accessory item	Unit/accessory type code
1	Profile outlet	HXnm.UVCRAP.JKC
2	Heat exchanger module with heat exchanger casing	
3	Fan module (wide-blade fan)	
4	Terminal box	
5	Condensate tray (part of cooling unit)	

n = Model size 2, 4 selectable  
m = capacity stage/rows

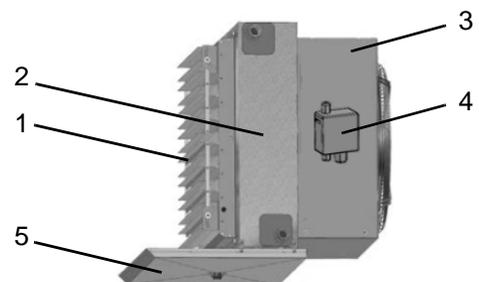
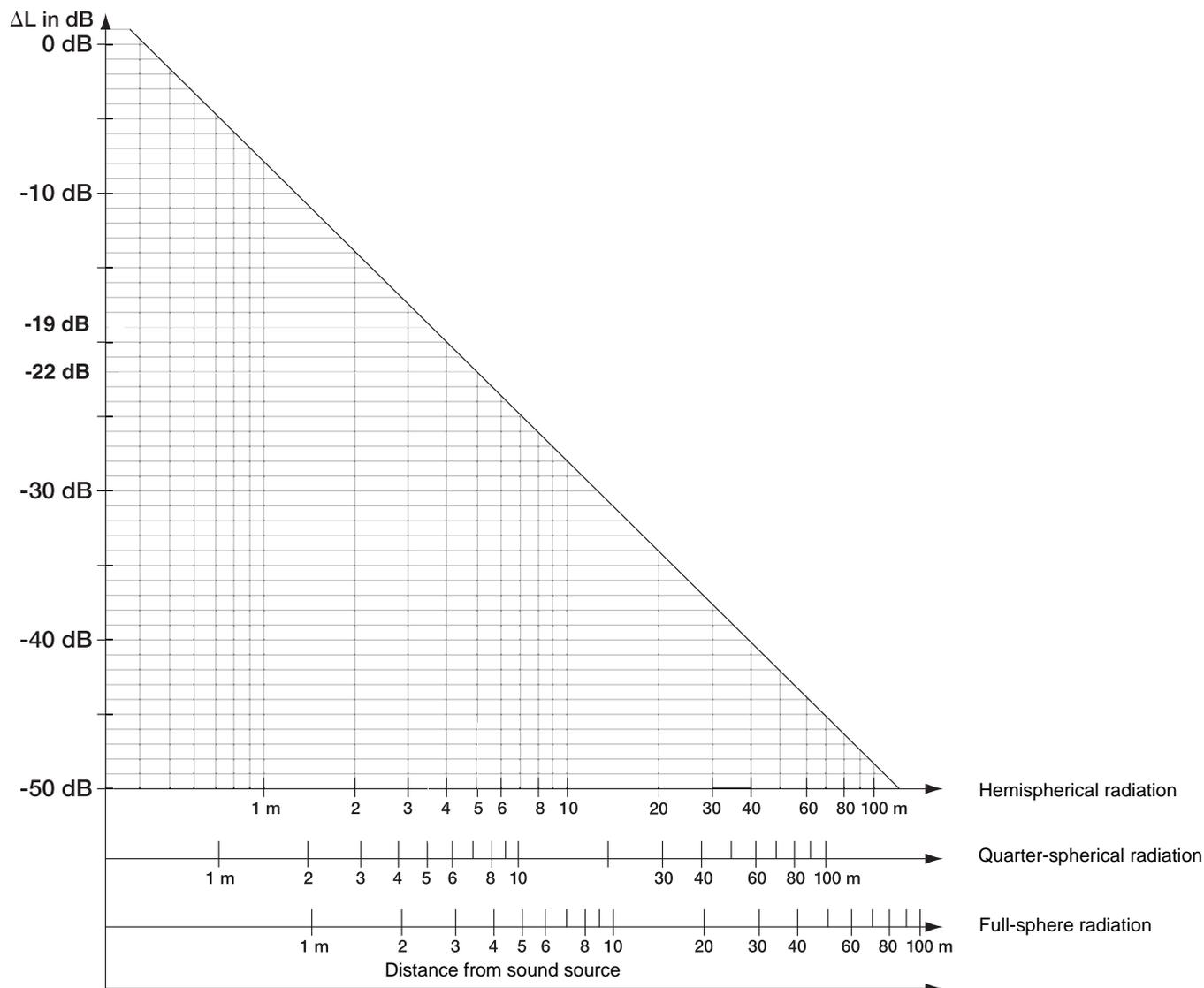
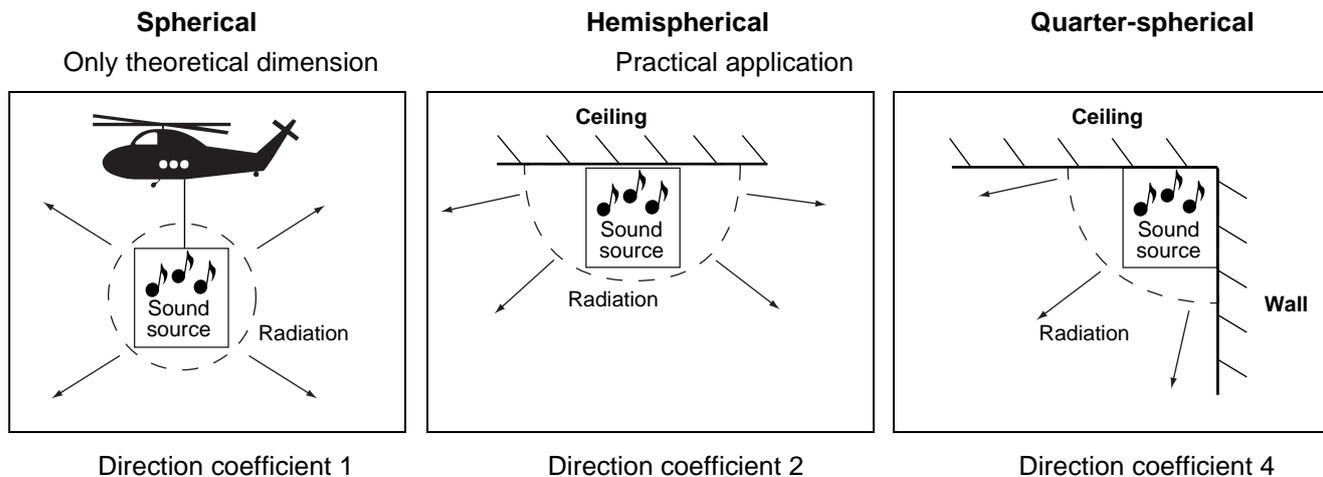


Fig. 19: Sample for wall mounting

## Conversion of sound power in sound pressure

### Radiation of sound source without reflections



Sound power level: measurable, but not perceptible. Like the heat output of a radiator.

Sound pressure level: can be measured and perceived. Like the increase in room temperature by a radiator.

Model size	Speed		Sound power level (dB)								A-rated sum level		Power consumption kW	Current consumption A
			Octave centre frequency (Hz)								Sound power dB(A)	Sound pressure* dB(A)		
	Step	RPM	63	125	250	500	1000	2000	4000	8000				
<b>II 2G c IIB - Motor J, 3 x 400V, 2 speed</b>														
1	2	1420	54	64	70	65	67	65	61	54	71	55	0.14	0.27
	1	1230	58	69	65	61	62	61	57	48	67	51	0.12	0.20
2	2	1390	62	74	76	69	69	69	66	59	75	59	0.29	0.60
	1	1130	64	65	97	64	65	65	61	54	70	54	0.23	0.41
3	2	910	79	67	73	68	67	67	64	56	73	57	0.31	0.58
	1	730	62	70	65	62	63	63	59	50	69	52	0.23	0.38
4	2	890	78	75	85	74	73	70	67	60	80	63	0.44	0.80
	1	690	67	84	73	73	68	66	62	55	75	59	0.32	0.52
<b>II 2G c IIB - Motor L, 3 x 500V, 2 speed</b>														
1	2	1440	54	64	70	65	67	65	61	54	71	55	0.17	0.38
	1	1290	58	69	65	61	62	61	57	48	67	51	0.12	0.18
2	2	1400	62	74	76	69	69	69	66	59	75	59	0.33	0.52
	1	1130	64	65	67	64	65	65	61	54	70	54	0.25	0.35
3	2	900	79	67	73	68	67	67	64	56	73	57	0.33	0.49
	1	730	62	70	65	62	63	63	59	50	69	52	0.24	0.32
4	2	870	78	75	85	74	73	70	67	60	80	63	0.50	0.71
	1	660	67	84	73	73	68	66	62	55	75	59	0.34	0.44
<b>II 2G c IIB+H<sub>2</sub> - Motor M, 3 x 400V, 1 speed</b>														
2	1	930	63	59	68	61	61	58	53	43	66	49	0.30	0.64
4	1	680	72	77	76	71	65	61	56	49	73	56	0.30	0.67
<b>II 2G c IIB+H<sub>2</sub> - Motor O, 3 x 500V, 1 speed</b>														
2	1	930	63	59	68	61	61	58	53	43	66	49	0.30	0.52
4	1	700	72	77	76	71	65	61	56	49	73	56	0.30	0.53
<b>II 2G c IIB+H<sub>2</sub> - Motor N, 3 x 400V, 1 speed</b>														
2	1	1355	81	78	78	70	66	61	56	50	73	57	0.37	0.75
4	1	925	82	84	84	79	73	69	64	58	81	64	0.55	1.10
<b>II 2G c IIB+H<sub>2</sub> - Motor P, 3 x 500V, 1 speed</b>														
2	1	1350	81	78	78	70	66	61	56	50	73	57	0.37	0.62
4	1	950	82	84	84	79	73	69	64	58	81	64	0.55	0.94

Tab. 2: Sound and electric data

\* Sound pressure: standard values at 5 m distance to the unit side, at maximum air volume flow and low reflection room. Industrial hall volume 1500 m<sup>3</sup>, absorption surface 200 m<sup>2</sup> Sabin, hemispherical radiation = direction coefficient 2. These values can be significantly influenced by the indoor characteristics in a positive or negative way.

## About the performance data tables

For fast selection of FläktGroup MultiMAXX HX unit heaters please use the following tables.



### Note!

Should you require further information, please contact our knowledgeable staff, who can design units for all application types using our layout software Aid@.

## Capacity tables

The **tables** contain all parameters for all heat exchangers in terms of different medium temperature and air intake temperature.

Having selected a recirculating or mixed-air unit, choose the connection type of medium and the design of the heat exchanger connection.

## Order code

H	X	-	-	.	-	-	-	-	-	-	.	-	-	-
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U - recirculating-air unit  
M - mixed-air unit

O - Medium connection from top (only for steel HE)  
R - Medium connection from right  
L - Medium connection from left

A - HE-connection external screw thread  
O - without screw thread connection

*Make your designated selection on this page.*

**AC-motor (J, L), 2-speed, 3 x 400 (500) V, high speed range, HE - Cu/Al, Cu/Cu (A, C), heating (warm water)**

Model size 1		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4								
Cu/Al, Cu/Cu - Fin spacing 2,5 mm (3 mm)	J,L	AC-motor, 3x400(500)V, 2-speed																				
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	1960	2330		1750	2120		1610	1970		1490	1860									
	Air throw <sup>2</sup> basic (B)	m	5	8		5	6		4	5		4	4									
	Air throw <sup>2</sup> profile (P)	m	8	9		6	7		5	6		4	5									
	Max. height <sup>2</sup> two side basic (Z)	m	7	9		5	6		3	4		3	4									
	Max. height <sup>2</sup> profile (P)	m	8	10		5	7		4	5		4	5									
	Heating capacity Q <sub>T</sub> /																					
	Discharge temperature t <sub>L2</sub>		kW	°C	kW	°C																
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	12	23	13	21		19	37	21	34		24	49	27	46		27	59	32	56
			18°C	9	32	10	30		15	43	16	41		19	53	21	50		22	62	25	59
20°C			9	33	9	32		14	44	16	42		18	53	21	51		21	62	25	59	
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	9	19	10	18		15	31	17	29		20	42	23	39		23	51	27	48	
		18°C	7	28	7	27		11	37	12	35		15	45	17	43		17	53	20	51	
		20°C	6	30	7	29		10	37	11	36		14	46	16	44		17	53	19	51	
A,C																						

Model size 2		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4								
Cu/Al, Cu/Cu - Fin spacing 2,5 mm (3 mm)	J,L	AC-motor, 3x400(500)V, 2-speed																				
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3220	3910		2910	3650		2660	3410		2480	3200									
	Air throw <sup>2</sup> basic (B)	m	8	10		6	8		5	6		5	6									
	Air throw <sup>2</sup> profile (P)	m	9	11		7	8		6	7		5	6									
	Max. height <sup>2</sup> two side basic (Z)	m	9	11		6	7		4	6		4	5									
	Max. height <sup>2</sup> profile (P)	m	10	13		7	9		5	7		5	6									
	Heating capacity Q <sub>T</sub> /																					
	Discharge temperature t <sub>L2</sub>		kW	°C	kW	°C																
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	19	22	21	21		30	36	34	33		38	47	44	43		43	57	52	53
			18°C	15	32	16	30		26	42	27	40		29	51	34	48		35	60	41	56
20°C			14	33	16	32		23	43	25	41		28	51	33	48		33	60	40	57	
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	15	19	17	18		25	30	28	28		31	39	36	36		36	49	43	45	
		18°C	11	29	12	27		18	36	20	35		23	43	26	41		28	51	33	49	
		20°C	11	30	12	29		17	37	19	36		21	44	25	42		26	52	32	49	
A,C																						

Model size 3		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4								
Cu/Al, Cu/Cu - Fin spacing 2,5 mm (3 mm)	J,L	AC-motor, 3x400(500)V, 2-speed																				
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	4200	5180		3770	4730		3440	4380		3190	4100									
	Air throw <sup>2</sup> basic (B)	m	8	9		6	7		5	6		4	5									
	Air throw <sup>2</sup> profile (P)	m	8	10		6	8		6	7		5	6									
	Max. height <sup>2</sup> two side basic (Z)	m	8	10		5	7		4	5		3	4									
	Max. height <sup>2</sup> profile (P)	m	9	12		6	8		5	6		4	5									
	Heating capacity Q <sub>T</sub> /																					
	Discharge temperature t <sub>L2</sub>		kW	°C	kW	°C																
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	27	24	29	22		42	38	48	35		51	49	60	46		59	60	70	56
			18°C	21	33	23	31		33	44	38	42		41	54	48	50		47	62	56	59
20°C			20	34	22	33		32	45	36	43		39	54	46	51		45	62	54	59	
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	22	21	24	19		34	32	39	30		43	42	50	39		49	51	59	48	
		18°C	16	29	18	28		25	38	29	36		32	46	37	43		38	53	45	51	
		20°C	15	31	17	30		24	39	27	37		30	46	35	44		36	53	42	51	
A,C																						

Model size 4		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4								
3 mm	J,L	AC-motor, 3x400(500)V, 2-speed																				
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	6240	8210		5630	7510		5180	6980		4820	6550									
	Air throw <sup>2</sup> basic (B)	m	8	10		6	8		5	7		5	6									
	Air throw <sup>2</sup> profile (P)	m	9	11		7	9		6	8		5	7									
	Max. height <sup>2</sup> two side basic (Z)	m	8	11		5	7		4	6		3	5									
	Max. height <sup>2</sup> profile (P)	m	10	13		6	9		5	7		4	6									
	Heating capacity Q <sub>T</sub> /		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C							
	Discharge temperature t <sub>L2</sub>		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C							
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	40	24	45	21		63	39	74	34		77	49	94	45		90	60	111	56
			18°C	31	33	36	31		50	44	58	41		61	53	74	50		72	62	89	58
20°C			30	34	34	32		47	45	56	42		59	54	71	50		69	63	86	59	
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	33	21	37	19		52	32	61	29		64	42	78	38		75	52	93	47	
		18°C	24	30	27	28		38	38	44	36		48	45	57	42		57	53	71	50	
		20°C	23	31	26	29		36	39	42	37		45	46	54	43		54	54	67	51	

- Air volume flow rate: specified data in the table are calculated for units with fan type „J, L“ = 2-speed with profile outlet. The data are valid for heat exchangers A, C. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

## AC-motor (J, L), 2-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (S, X), heating (warm water)

Model size 1		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 3 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	1690	2060		1430	1790										
	Air throw <sup>2</sup> basic (B)	m	6	7		4	5										
	Air throw <sup>2</sup> profile (P)	m	6	8		5	6										
	Max. height <sup>2</sup> two side basic (Z)	m	5	7		3	4										
	Max. height <sup>2</sup> profile (P)	m	6	8		4	5										
	Heating capacity Q <sub>T</sub> /	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C			
	Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C			
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	12	27	14	25	18	42	21	40						
			18°C	10	35	11	33	14	47	16	35						
20°C			9	36	10	35	13	47	15	45							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	10	23	11	21	14	35	17	33							
		18°C	7	30	8	30	10	39	12	38							
		20°C	7	32	8	31	10	40	11	39							
S,X																	

Model size 2		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 3 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	2810	3520		2390	3080										
	Air throw <sup>2</sup> basic (B)	m	7	8		5	6										
	Air throw <sup>2</sup> profile (P)	m	8	9		6	7										
	Max. height <sup>2</sup> two side basic (Z)	m	7	9		4	6										
	Max. height <sup>2</sup> profile (P)	m	8	11		5	7										
	Heating capacity Q <sub>T</sub> /	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C			
	Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C			
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	20	27	23	25	30	42	36	39						
			18°C	16	35	18	33	23	48	28	45						
20°C			15	36	17	35	22	48	26	45							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	17	23	19	21	24	35	29	33							
		18°C	12	31	14	30	17	40	21	38							
		20°C	11	32	13	31	16	40	20	39							
S,X																	

Model size 3		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 3 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3650	4560		3090	3940										
	Air throw <sup>2</sup> basic (B)	m	6	8		5	6										
	Air throw <sup>2</sup> profile (P)	m	7	8		5	6										
	Max. height <sup>2</sup> two side basic (Z)	m	6	7		4	5										
	Max. height <sup>2</sup> profile (P)	m	7	9		5	6										
	Heating capacity Q <sub>T</sub> /	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C			
	Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C			
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	29	29	33	27	41	45	50	42						
			18°C	23	37	26	35	33	49	39	47						
20°C			22	38	25	36	31	50	37	48							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	24	24	27	23	34	38	41	36							
		18°C	17	32	20	31	25	42	29	40							
		20°C	16	33	19	32	23	43	28	41							
S,X																	

Model size 4		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 3 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	5440	7260		4640	6320										
	Air throw <sup>2</sup> basic (B)	m	7	9		5	6										
	Air throw <sup>2</sup> profile (P)	m	8	10		6	7										
	Max. height <sup>2</sup> two side basic (Z)	m	6	8		4	5										
	Max. height <sup>2</sup> profile (P)	m	7	10		5	7										
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>		kW °C	kW °C		kW °C	kW °C		kW °C	kW °C		kW °C	kW °C				
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	45	30	54	27		63	46	80	43					
			18°C	36	37	42	35		51	50	62	47					
			20°C	34	39	40	36		48	51	60	48					
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	37	25	44	23		53	39	66	36						
		18°C	27	33	33	31		39	43	49	41						
		20°C	26	34	31	33		37	43	46	42						
S,X																	

- Air volume flow rate: specified data in the table are calculated for units with fan type „J, L“ = 2-speed with profile outlet. The data are valid for heat exchangers S, X. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm**
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm**
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3**
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3**
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**AC-motor (J, L), 2-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (T, Y), heating (warm water)**

Model size 1		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 6 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	2020	2430													
	Air throw <sup>2</sup> basic (B)	m	9	10													
	Air throw <sup>2</sup> profile (P)	m	9	11													
	Max. height <sup>2</sup> two side basic (Z)	m	9	11													
	Max. height <sup>2</sup> profile (P)	m	11	14													
	Heating capacity Q <sub>T</sub> /		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	Discharge temperature t <sub>L2</sub>		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	7	16	8	15										
			18°C	6	26	6	26										
20°C			5	28	6	27											
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	6	14	7	13											
		18°C	4	24	5	24											
		20°C	4	26	4	25											
T,Y																	

Model size 2		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 6 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3340	4060													
	Air throw <sup>2</sup> basic (B)	m	10	11													
	Air throw <sup>2</sup> profile (P)	m	11	13													
	Max. height <sup>2</sup> two side basic (Z)	m	11	14													
	Max. height <sup>2</sup> profile (P)	m	13	17													
	Heating capacity Q <sub>T</sub> /		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	Discharge temperature t <sub>L2</sub>		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	12	16	14	15										
			18°C	9	26	11	26										
20°C			9	28	10	27											
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	10	14	11	13											
		18°C	7	24	8	24											
		20°C	7	26	8	26											
T,Y																	

Model size 3		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4			
Fe/Fe Zn - Fin spacing 6 mm	J,L	AC-motor, 3x400(500)V, 2-speed															
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	4370	5380													
	Air throw <sup>2</sup> basic (B)	m	10	11													
	Air throw <sup>2</sup> profile (P)	m	10	12													
	Max. height <sup>2</sup> two side basic (Z)	m	10	13													
	Max. height <sup>2</sup> profile (P)	m	12	15													
	Heating capacity Q <sub>T</sub> /		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	Discharge temperature t <sub>L2</sub>		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	17	17	20	16										
			18°C	13	27	15	27										
20°C			13	29	15	28											
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	14	15	16	14											
		18°C	10	25	12	24											
		20°C	10	27	11	26											
T,Y																	

Model size 4		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4				
Fe/Fe Zn - Fin spacing 6 mm	J,L	AC-motor, 3x400(500)V, 2-speed																
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	6470	8530														
	Air throw <sup>2</sup> basic (B)	m	10	12														
	Air throw <sup>2</sup> profile (P)	m	11	13														
	Max. height <sup>2</sup> two side basic (Z)	m	10	14														
	Max. height <sup>2</sup> profile (P)	m	12	17														
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>		kW	°C	kW	°C			kW	°C	kW	°C			kW	°C	kW	°C
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	26	17	32	16											
			18°C	21	27	25	27											
			20°C	20	29	24	28											
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	22	15	26	14												
		18°C	16	25	19	25												
		20°C	15	27	18	26												
T,Y																		

- Air volume flow rate: specified data in the table are calculated for units with fan type „J, L“ = 2-speed with profile outlet. The data are valid for heat exchangers T, Y. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

**J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3**

**L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3**

M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3

N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3

P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**AC-motor (J, L), 2-speed, 3 x 400 (500) V, high speed range, HE - Stainless steel (E), heating (warm water)**

Model size 1		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	J,L	AC-motor, 3x400(500)V, 2-speed																
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h				1620 1960				1480 1820								
	Air throw <sup>2</sup> basic (B)	m				6 7				5 6								
	Air throw <sup>2</sup> profile (P)	m				7 8				6 7								
	Max. height <sup>2</sup> two side basic (Z)	m				6 7				4 5								
	Max. height <sup>2</sup> profile (P)	m				7 9				5 7								
	Heating capacity Q <sub>T</sub> /		kW		°C		kW		°C		kW		°C		kW		°C	
	Discharge temperature t <sub>L2</sub>																	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C				10 24		11 22		13 31		15 29					
			18°C				8 32		8 30		10 38		11 36					
20°C					7 33		8 32		9 38		10 37							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C				8 19		9 18		10 25		11 23						
		18°C				5 27		6 27		6 31		7 30						
		20°C				5 28		5 28		6 31		7 31						
E																		

Model size 2		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	J,L	AC-motor, 3x400(500)V, 2-speed																
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h				2690 3360				2450 3140								
	Air throw <sup>2</sup> basic (B)	m				7 8				6 7								
	Air throw <sup>2</sup> profile (P)	m				8 10				7 8								
	Max. height <sup>2</sup> two side basic (Z)	m				7 9				6 7								
	Max. height <sup>2</sup> profile (P)	m				8 11				6 9								
	Heating capacity Q <sub>T</sub> /		kW		°C		kW		°C		kW		°C		kW		°C	
	Discharge temperature t <sub>L2</sub>																	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C				16 23		18 21		21 31		24 28					
			18°C				13 32		14 30		17 38		19 36					
20°C					12 33		13 32		16 39		18 37							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C				13 20		14 18		17 26		19 23						
		18°C				9 28		10 27		12 33		14 31						
		20°C				9 30		10 28		11 34		13 32						
E																		

Model size 3		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	J,L	AC-motor, 3x400(500)V, 2-speed																
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h				3490 4360				3180 4030								
	Air throw <sup>2</sup> basic (B)	m				7 8				5 6								
	Air throw <sup>2</sup> profile (P)	m				7 9				6 7								
	Max. height <sup>2</sup> two side basic (Z)	m				6 8				4 6								
	Max. height <sup>2</sup> profile (P)	m				7 9				5 7								
	Heating capacity Q <sub>T</sub> /		kW		°C		kW		°C		kW		°C		kW		°C	
	Discharge temperature t <sub>L2</sub>																	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C				24 26		27 23		32 34		36 31					
			18°C				19 34		21 32		24 41		28 38					
20°C					18 32		20 34		23 42		26 40							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C				20 22		22 20		26 29		29 26						
		18°C				14 30		16 29		18 35		21 33						
		20°C				13 31		15 30		17 36		20 34						
E																		

Model size 4		Capacity stage 1				Capacity stage 2				Capacity stage 3				Capacity stage 4				
J,L	AC-motor, 3x400(500)V, 2-speed	1		2		1		2		1		2		1		2		
Stainless steel - Fin spacing 2,8 mm	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h					5210	6930			4780	6430							
	Air throw <sup>2</sup> basic (B) m					7	9			6	7							
	Air throw <sup>2</sup> profile (P) m					8	10			6	8							
	Max. height <sup>2</sup> two side basic (Z) m					6	9			5	7							
	Max. height <sup>2</sup> profile (P) m					8	11			6	8							
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C				37	26	43	23	48	35	57	31				
			18°C				29	35	34	32	38	42	44	38				
			20°C				28	36	32	34	36	43	42	40				
	70/50°C	Inlet air temperature t <sub>L1</sub>	5°C				31	23	35	20	40	30	47	27				
18°C					23	31	26	29	29	69	34	34						
20°C					21	32	24	30	27	37	32	35						
E																		

- Air volume flow rate: specified data in the table are calculated for units with fan type „J, L“ = 2-speed with profile outlet. The data are valid for heat exchangers E. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm**

**J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3**

**L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3**

M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3

N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3

P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Cu/Al, Cu/Cu (A, C), heating / cooling (warm / cool water)**

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
M,O	AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	2160		2050		1950		1870	
	Air throw <sup>2</sup> basic (B) m	6		5		4		4	
	Air throw <sup>2</sup> profile (P) m	6		5		5		4	
	Max. height <sup>2</sup> two side basic (Z) m	5		4		3		3	
	Max. height <sup>2</sup> profile (P) m	6		5		4		3	
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	16 26	24 41	30 51	36 62		
			18°C	12 35	19 46	24 54	28 63		
			20°C	12 36	18 47	23 54	27 63		
Chladicí výkony Q <sub>K</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C		
6/12°C	Inlet air temperature t <sub>L1</sub>	27°C	4 22	6 19	8 16	11 13			
		Relative humidity	46%						
A,C									

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
M,O	AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	3970		3820		3700		3590	
	Air throw <sup>2</sup> basic (B) m	5		4		4		4	
	Air throw <sup>2</sup> profile (P) m	6		5		5		4	
	Max. height <sup>2</sup> two side basic (Z) m	4		3		3		2	
	Max. height <sup>2</sup> profile (P) m	5		4		4		3	
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	32 29	50 44	61 54	71 64		
			18°C	25 37	39 48	48 56	57 66		
			20°C	24 38	37 49	46 57	56 66		
Chladicí výkony Q <sub>K</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C		
6/12°C	Inlet air temperature t <sub>L1</sub>	27°C	8 21	12 18	16 16	24 12			
		Relative humidity	46%						
A,C									

1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet.

The data are valid for heat exchangers A, C. Other fan types are available on request.

2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C.

The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

**Order code**

H	X	#	#	.	#	V	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

**A – Cu/Al max. 130 °C; 1,6 MPa**

**C – Cu/Cu max. 130 °C; 1,6 MPa**

R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm

S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

J – 3x400V 2-speed - high speed range - II 2G c IIB T3, T4

L – 3x500V 2-speed - high speed range - II 2G c IIB T3, T4

**M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T3, T4**

N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T3, T4

**O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T3, T4**

P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T3, T4

AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Fe/Fe Zn (R), heating (warm water)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4			
Fe/Fe Zn - Fin spacing 4 mm	M,O	AC-motor, 3x400(500)V, 1-speed		1		1		1		1	
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	1980		1870					
		Air throw <sup>2</sup> basic (B)	m	6		5					
		Air throw <sup>2</sup> profile (P)	m	7		6					
		Max. height <sup>2</sup> two side basic (Z)	m	5		4					
		Max. height <sup>2</sup> profile (P)	m	7		5					
		Heating capacity Q <sub>T</sub> /									
		Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	10	19		15	28			
			18°C	8	29		12	37			
20°C			7	31		11	38				
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	8	16		13	24				
		18°C	6	27		9	32				
		20°C	6	28		9	34				
R											

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4			
Fe/Fe Zn - Fin spacing 4 mm	M,O	AC-motor, 3x400(500)V, 1-speed		1		1		1		1	
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3630		3500					
		Air throw <sup>2</sup> basic (B)	m	6		5					
		Air throw <sup>2</sup> profile (P)	m	7		5					
		Max. height <sup>2</sup> two side basic (Z)	m	5		3					
		Max. height <sup>2</sup> profile (P)	m	6		4					
		Heating capacity Q <sub>T</sub> /									
		Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C	
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	20	21		32	31			
			18°C	16	31		25	39			
20°C			15	32		24	40				
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	17	18		27	26				
		18°C	13	28		20	35				
		20°C	12	30		19	36				
R											

- 1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers R. Other fan types are available on request.
- 1 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm**
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

## AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Fe/Fe Zn (R), heating (steam)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn - Fin spacing 4 mm	M,O AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	1980		1870					
	Air throw <sup>2</sup> basic (B) m	4		3					
	Air throw <sup>2</sup> profile (P) m	4		4					
	Max. height <sup>2</sup> two side basic (Z) m	3		2					
	Max. height <sup>2</sup> profile (P) m	4		3					
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C		kW °C		kW °C
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	30 51	43 73					
		18°C	28 60	39 80					
		20°C	27 61	38 81					
R									

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn - Fin spacing 4 mm	M,O AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	3630		3500					
	Air throw <sup>2</sup> basic (B) m	4		3					
	Air throw <sup>2</sup> profile (P) m	4		4					
	Max. height <sup>2</sup> two side basic (Z) m	2		2					
	Max. height <sup>2</sup> profile (P) m	3		3					
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C		kW °C		kW °C
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	60 54	84 77					
		18°C	54 62	76 83					
		20°C	53 63	75 84					
R									

1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers R. Other fan types are available on request.

1 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

## Order code

H	X	#	#	.	S	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm

C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm

**R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm**

S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3

L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3

**M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Fe/Fe Zn (S, X), heating (warm water)

Model size 2		Capacity stage 1			Capacity stage 2			Capacity stage 3			Capacity stage 4					
Fe/Fe Zn - Fin spacing 3 mm	M,O	AC-motor, 3x400(500)V, 1-speed														
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	1970			1800										
	Air throw <sup>2</sup> basic (B)	m	5			4										
	Air throw <sup>2</sup> profile (P)	m	6			5										
	Max. height <sup>2</sup> two side basic (Z)	m	4			3										
	Max. height <sup>2</sup> profile (P)	m	5			4										
	Heating capacity Q <sub>T</sub> /	kW °C														
	Discharge temperature t <sub>L2</sub>															
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	17	30				24	45						
			18°C	13	37				19	49						
20°C			12	39				18	50							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	13	25				20	38							
		18°C	18	33				14	42							
		20°C	9	34				13	42							
S,X																

Model size 4		Capacity stage 1			Capacity stage 2			Capacity stage 3			Capacity stage 4					
Fe/Fe Zn - Fin spacing 3 mm	M,O	AC-motor, 3x400(500)V, 1-speed														
	Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3690			3450										
	Air throw <sup>2</sup> basic (B)	m	5			4										
	Air throw <sup>2</sup> profile (P)	m	6			5										
	Max. height <sup>2</sup> two side basic (Z)	m	4			3										
	Max. height <sup>2</sup> profile (P)	m	5			3										
	Heating capacity Q <sub>T</sub> /	kW °C														
	Discharge temperature t <sub>L2</sub>															
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	35	34				51	49						
			18°C	28	40				40	52						
20°C			26	41				38	53							
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	29	28				42	41							
		18°C	21	35				31	45							
		20°C	20	36				29	45							
S,X																

1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers S, X. Other fan types are available on request.  
 1 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm**
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm**
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Fe/Fe Zn (T, Y), heating (warm water)

Model size 2			Capacity stage 1			Capacity stage 2			Capacity stage 3			Capacity stage 4		
Fe/Fe Zn - Fin spacing 6 mm	M,O	AC-motor, 3x400(500)V, 1-speed	1			1			1			1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	2260											
		Air throw <sup>2</sup> basic (B) m	7											
		Air throw <sup>2</sup> profile (P) m	8											
		Max. height <sup>2</sup> two side basic (Z) m	7											
		Max. height <sup>2</sup> profile (P) m	9											
		Heating capacity Q <sub>T</sub> /												
		Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C			kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	9	17									
			18°C	7	27									
20°C			7	29										
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	8	15										
		18°C	5	25										
		20°C	5	27										
T,Y														

Model size 4			Capacity stage 1			Capacity stage 2			Capacity stage 3			Capacity stage 4		
Fe/Fe Zn - Fin spacing 6 mm	M,O	AC-motor, 3x400(500)V, 1-speed	1			1			1			1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	4150											
		Air throw <sup>2</sup> basic (B) m	7											
		Air throw <sup>2</sup> profile (P) m	8											
		Max. height <sup>2</sup> two side basic (Z) m	6											
		Max. height <sup>2</sup> profile (P) m	7											
		Heating capacity Q <sub>T</sub> /												
		Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C			kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	19	19									
			18°C	15	29									
20°C			15	30										
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	16	16										
		18°C	12	26										
		20°C	11	28										
T,Y														

1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers T, Y. Other fan types are available on request.

1 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Fe/Fe Zn (T, Y), heating (steam)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn - Fin spacing 6 mm	M,O AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	2260							
	Air throw <sup>2</sup> basic (B) m	5							
	Air throw <sup>2</sup> profile (P) m	6							
	Max. height <sup>2</sup> two side basic (Z) m	4							
	Max. height <sup>2</sup> profile (P) m	5							
3 bar	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C	
		5°C	23 35						
		18°C	21 45						
		20°C	21 47						
T,Y	Inlet air temperature t <sub>L1</sub>								

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn - Fin spacing 6 mm	M,O AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	4150							
	Air throw <sup>2</sup> basic (B) m	5							
	Air throw <sup>2</sup> profile (P) m	5							
	Max. height <sup>2</sup> two side basic (Z) m	3							
	Max. height <sup>2</sup> profile (P) m	4							
3 bar	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C	
		5°C	46 38						
		18°C	42 48						
		20°C	41 49						
T,Y	Inlet air temperature t <sub>L1</sub>								

- Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers T, Y. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	S	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Stainless steel (E), heating (warm water)**

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	M,O	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h			1870		1790				
		Air throw <sup>2</sup> basic (B)	m			5		4				
		Air throw <sup>2</sup> profile (P)	m			6		5				
		Max. height <sup>2</sup> two side basic (Z)	m			4		3				
		Max. height <sup>2</sup> profile (P)	m			5		4				
		Heating capacity Q <sub>T</sub> /										
		Discharge temperature t <sub>L2</sub>	kW	°C								
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C			14	27		18	35		
			18°C			11	35		14	41		
20°C					10	36		13	42			
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C			11	23		14	29			
		18°C			8	30		10	35			
		20°C			7	32		10	36			

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	M,O	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h			3500		3390				
		Air throw <sup>2</sup> basic (B)	m			5		4				
		Air throw <sup>2</sup> profile (P)	m			6		5				
		Max. height <sup>2</sup> two side basic (Z)	m			4		3				
		Max. height <sup>2</sup> profile (P)	m			5		4				
		Heating capacity Q <sub>T</sub> /										
		Discharge temperature t <sub>L2</sub>	kW	°C								
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C			30	30		39	39		
			18°C			23	38		30	44		
20°C					22	39		29	45			
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C			25	26		32	33			
		18°C			18	33		23	38			
		20°C			17	34		22	39			

1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers E. Other fan types are available on request.

2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

**Order code**

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm

C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm

R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm

S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

**E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm**

J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3

L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3

**M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

AC-motor (M, O), 1-speed, 3 x 400 (500) V, low speed range, HE - Stainless steel (E), heating (steam)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	M,O	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	1980		1870						
		Air throw <sup>2</sup> basic (B)	m	5		4						
		Air throw <sup>2</sup> profile (P)	m	5		4						
		Max. height <sup>2</sup> two side basic (Z)	m	4		2						
		Max. height <sup>2</sup> profile (P)	m	4		3						
		Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C		kW
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	20	34		34	59					
		18°C	18	45		31	67					
		20°C	18	46		31	68					
E												

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	M,O	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3630		3500						
		Air throw <sup>2</sup> basic (B)	m	4		3						
		Air throw <sup>2</sup> profile (P)	m	5		4						
		Max. height <sup>2</sup> two side basic (Z)	m	3		2						
		Max. height <sup>2</sup> profile (P)	m	4		3						
		Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C		kW
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	41	39		71	65					
		18°C	37	49		64	73					
		20°C	37	50		63	74					
E												

- 1 Air volume flow rate: specified data in the table are calculated for units with fan type „M, O“ = 2-speed with profile outlet. The data are valid for heat exchangers E. Other fan types are available on request.
- 2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	S	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm**

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Cu/Al, Cu/Cu (A, C), heating / cooling (warm / cool water)**

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4						
Cu/Al, Cu/Cu - Fin spacing 2,5 mm (3 mm)	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1				
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3070		2910		2780		2670				
		Air throw <sup>2</sup> basic (B)	m	8		6		5		5				
		Air throw <sup>2</sup> profile (P)	m	9		7		6		6				
		Max. height <sup>2</sup> two side basic (Z)	m	8		5		4		4				
		Max. height <sup>2</sup> profile (P)	m	10		7		6		5				
		Heating capacity Q <sub>T</sub> /												
		Discharge temperature t <sub>L2</sub>	kW	°C										
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	18	23		30	36		38	46		46	56
			18°C	14	32		24	42		30	50		37	59
20°C			14	33		23	43		29	51		35	59	
	Chladicí výkony Q <sub>K</sub> /													
	Discharge temperature t <sub>L2</sub>	kW	°C											
6/12°C	Inlet air temperature t <sub>L1</sub>	27°C	4	22		6	19		8	16		11	13	
		Relative humidity	46%											
A,C														

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4						
Cu/Al, Cu/Cu - Fin spacing 2,5 mm (3 mm)	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1				
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	3970		3820		3700		3590				
		Air throw <sup>2</sup> basic (B)	m	6		5		5		4				
		Air throw <sup>2</sup> profile (P)	m	7		6		6		5				
		Max. height <sup>2</sup> two side basic (Z)	m	6		4		4		3				
		Max. height <sup>2</sup> profile (P)	m	7		5		5		4				
		Heating capacity Q <sub>T</sub> /												
		Discharge temperature t <sub>L2</sub>	kW	°C										
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	36	26		57	41		71	51		86	62
			18°C	28	35		45	46		56	54		69	63
20°C			27	36		43	47		54	54		66	63	
	Chladicí výkony Q <sub>K</sub> /													
	Discharge temperature t <sub>L2</sub>	kW	°C											
6/12°C	Inlet air temperature t <sub>L1</sub>	27°C	8	22		12	18		16	16		24	12	
		Relative humidity	46%											
A,C														

1 Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet.

The data are valid for heat exchangers A, C. Other fan types are available on request.

2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C.

The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

**Order code**

H	X	#	#	.	#	V	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

**A – Cu/Al max. 130 °C; 1,6 MPa** - Fin spacing 2,5mm

**C – Cu/Cu max. 130 °C; 1,6 MPa** - Fin spacing 3 mm

R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm

S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3

L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3

M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3

**P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (R), heating (warm water)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4			
Fe/Fe Zn - Fin spacing 4 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h		2800		2670						
	Air throw <sup>2</sup> basic (B) m		8		6						
	Air throw <sup>2</sup> profile (P) m		9		7						
	Max. height <sup>2</sup> two side basic (Z) m		8		6						
	Max. height <sup>2</sup> profile (P) m		10		8						
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>		kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	12	17	19	25				
			18°C	10	28	15	34				
			20°C	9	29	14	35				
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	10	15	16	21					
		18°C	8	26	11	31					
		20°C	7	27	11	32					
R											

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4			
Fe/Fe Zn - Fin spacing 4 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h		4550		4390						
	Air throw <sup>2</sup> basic (B) m		7		6						
	Air throw <sup>2</sup> profile (P) m		8		6						
	Max. height <sup>2</sup> two side basic (Z) m		6		4						
	Max. height <sup>2</sup> profile (P) m		8		6						
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>		kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	24	20	38	29				
			18°C	19	30	30	38				
			20°C	18	32	29	39				
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	20	17	32	25					
		18°C	15	27	23	34					
		20°C	14	29	22	35					
R											

- Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers R. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	-	-	-	W	-	-	-	-	-	-	-
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm**
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

**AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (R), heating (steam)**

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn- Fin spacing 4 mm	N,P AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	2800		2670					
	Air throw <sup>2</sup> basic (B) m	5		4					
	Air throw <sup>2</sup> profile (P) m	6		5					
	Max. height <sup>2</sup> two side basic (Z) m	4		3					
	Max. height <sup>2</sup> profile (P) m	5		4					
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C		kW °C		kW °C
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	38 46	55 66					
		18°C	34 55	49 73					
		20°C	34 56	49 74					
R									

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn- Fin spacing 4 mm	N,P AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	4550		4390					
	Air throw <sup>2</sup> basic (B) m	5		4					
	Air throw <sup>2</sup> profile (P) m	5		4					
	Max. height <sup>2</sup> two side basic (Z) m	3		3					
	Max. height <sup>2</sup> profile (P) m	4		3					
	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C			kW °C		kW °C		kW °C
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	70 51	100 73					
		18°C	64 60	91 80					
		20°C	63 61	89 81					
R									

- Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers R. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

**Order code**

H	X	#	#	.	#	S	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm**
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (S, X), heating (warm water)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Fe/Fe Zn - Fin spacing 3 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	2810		2590						
		Air throw <sup>2</sup> basic (B)	m	7		5						
		Air throw <sup>2</sup> profile (P)	m	8		6						
		Max. height <sup>2</sup> two side basic (Z)	m	6		4						
		Max. height <sup>2</sup> profile (P)	m	8		6						
		Heating capacity Q <sub>T</sub> /										
		Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	20	27		31	41				
			18°C	16	35		25	46				
20°C			15	36		23	47					
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	17	23		26	35					
		18°C	12	31		19	39					
		20°C	11	32		17	40					
S,X												

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Fe/Fe Zn - Fin spacing 3 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	4610		4340						
		Air throw <sup>2</sup> basic (B)	m	9		7						
		Air throw <sup>2</sup> profile (P)	m	10		8						
		Max. height <sup>2</sup> two side basic (Z)	m	9		6						
		Max. height <sup>2</sup> profile (P)	m	12		8						
		Heating capacity Q <sub>T</sub> /										
		Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	41	31		60	46				
			18°C	32	39		48	51				
20°C			31	40		45	51					
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	33	27		50	39					
		18°C	25	34		37	43					
		20°C	23	34		35	44					
S,X												

- Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers S, X. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm**
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm**
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

**AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (T, Y), heating (warm water)**

Model size 2			Capacity stage 1			Capacity stage 2			Capacity stage 3			Capacity stage 4		
Fe/Fe Zn- Fin spacing 6 mm	N,P	AC-motor, 3x400(500)V, 1-speed	1			1			1			1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	3220											
		Air throw <sup>2</sup> basic (B) m	9											
		Air throw <sup>2</sup> profile (P) m	10											
		Max. height <sup>2</sup> two side basic (Z) m	10											
		Max. height <sup>2</sup> profile (P) m	13											
		Heating capacity Q <sub>T</sub> /												
		Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C			kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	12	16									
			18°C	9	26									
20°C			9	28										
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	10	14										
		18°C	7	24										
		20°C	6	26										
T,Y														

Model size 4			Capacity stage 1			Capacity stage 2			Capacity stage 3			Capacity stage 4		
Fe/Fe Zn- Fin spacing 6 mm	N,P	AC-motor, 3x400(500)V, 1-speed	1			1			1			1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	5190											
		Air throw <sup>2</sup> basic (B) m	9											
		Air throw <sup>2</sup> profile (P) m	11											
		Max. height <sup>2</sup> two side basic (Z) m	9											
		Max. height <sup>2</sup> profile (P) m	12											
		Heating capacity Q <sub>T</sub> /												
		Discharge temperature t <sub>L2</sub>	kW °C			kW °C			kW °C			kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C	23	18									
			18°C	18	28									
20°C			17	30										
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C	19	16										
		18°C	14	26										
		20°C	13	27										
T,Y														

1 Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers T, Y. Other fan types are available on request.

2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

**Order code**

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Fe/Fe Zn (T, Y), heating (steam)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn- Fin spacing 4 mm	N,P AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	3220							
	Air throw <sup>2</sup> basic (B) m	7							
	Air throw <sup>2</sup> profile (P) m	7							
	Max. height <sup>2</sup> two side basic (Z) m	8							
	Max. height <sup>2</sup> profile (P) m	6							
R	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C	
		5°C	29 32						
		18°C	27 42						
		20°C	26 44						
3 bar	Inlet air temperature t <sub>L1</sub>								

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4	
Fe/Fe Zn- Fin spacing 4 mm	N,P AC-motor, 3x400(500)V, 1-speed	1		1		1		1	
	Air volume flow rate <sup>1</sup> V <sub>L</sub> m <sup>3</sup> /h	5190							
	Air throw <sup>2</sup> basic (B) m	6							
	Air throw <sup>2</sup> profile (P) m	6							
	Max. height <sup>2</sup> two side basic (Z) m	5							
	Max. height <sup>2</sup> profile (P) m	6							
R	Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C	
		5°C	53 36						
		18°C	49 46						
		20°C	48 47						
3 bar	Inlet air temperature t <sub>L1</sub>								

- Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers R. Other fan types are available on request.
- Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	-	-	.	S	-	-	-	-	.	-	-	-
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Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm**
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

## AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Stainless steel (E), heating (warm water)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4			
Stainless steel - Fin spacing 2,8 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1	
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	2670		2570					
		Air throw <sup>2</sup> basic (B)	m	7		6					
		Air throw <sup>2</sup> profile (P)	m	8		7					
		Max. height <sup>2</sup> two side basic (Z)	m	7		5					
		Max. height <sup>2</sup> profile (P)	m	8		7					
		Heating capacity Q <sub>T</sub> /									
		Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C		16	23	22	30			
			18°C		13	32	17	37			
20°C				12	33	16	38				
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C		13	20	18	25				
		18°C		9	28	13	33				
		20°C		9	30	12	34				
E											

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4			
Stainless steel - Fin spacing 2,8 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1	
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	4390		4250					
		Air throw <sup>2</sup> basic (B)	m	9		7					
		Air throw <sup>2</sup> profile (P)	m	10		9					
		Max. height <sup>2</sup> two side basic (Z)	m	8		7					
		Max. height <sup>2</sup> profile (P)	m	11		9					
		Heating capacity Q <sub>T</sub> /									
		Discharge temperature t <sub>L2</sub>	kW °C		kW °C		kW °C		kW °C		
	80/60°C	Inlet air temperature t <sub>L1</sub>	5°C		34	28	45	37			
			18°C		27	36	35	43			
20°C				25	37	34	44				
70/50°C	Inlet air temperature t <sub>L1</sub>	5°C		28	24	37	31				
		18°C		21	32	27	37				
		20°C		19	33	25	38				
E											

1 Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers E. Other fan types are available on request.

2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

## Order code

H	X	#	#	.	#	W	#	#	#	#	.	#	#	#
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Model size (1,2,3,4)

Capacity stage (1,2,3,4)

A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm

C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm

R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm

S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm

Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm

**E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm**

J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3

L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3

M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T/T34**O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3**P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

AC-motor (N, P), 1-speed, 3 x 400 (500) V, high speed range, HE - Stainless steel (E), heating (steam)

Model size 2		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	2800		2670						
		Air throw <sup>2</sup> basic (B)	m	6		4						
		Air throw <sup>2</sup> profile (P)	m	7		6						
		Max. height <sup>2</sup> two side basic (Z)	m	6		4						
		Max. height <sup>2</sup> profile (P)	m	7		5						
		Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C		kW
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	23	29		41	50					
		18°C	21	40		37	59					
		20°C	20	41		36	60					
E												

Model size 4		Capacity stage 1		Capacity stage 2		Capacity stage 3		Capacity stage 4				
Stainless steel - Fin spacing 2,8 mm	N,P	AC-motor, 3x400(500)V, 1-speed		1		1		1		1		
		Air volume flow rate <sup>1</sup> V <sub>L</sub>	m <sup>3</sup> /h	4550		4390						
		Air throw <sup>2</sup> basic (B)	m	5		4						
		Air throw <sup>2</sup> profile (P)	m	6		5						
		Max. height <sup>2</sup> two side basic (Z)	m	4		3						
		Max. height <sup>2</sup> profile (P)	m	5		4						
		Heating capacity Q <sub>T</sub> / Discharge temperature t <sub>L2</sub>	kW	°C		kW	°C		kW	°C		kW
3 bar	Inlet air temperature t <sub>L1</sub>	5°C	47	35		82	60					
		18°C	42	46		74	68					
		20°C	42	47		73	69					
E												

- 1 Air volume flow rate: specified data in the table are calculated for units with fan type „N, P“ = 2-speed with profile outlet. The data are valid for heat exchangers E. Other fan types are available on request.
- 2 Air throw: air throw is calculated for air intake temperature 18°C and medium temperature 80/60°C. The values are valid for air discharge temperature up to 15 K greater than air intake temperature. Pay attention to medium values!

Order code

H	X	#	#	.	#	S	#	#	#	#	.	#	#	#
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Model size (1,2,3,4)

Capacity stage (1,2,3,4)

- A – Cu/Al max. 130 °C; 1,6 MPa - Fin spacing 2,5 mm
- C – Cu/Cu max. 130 °C; 1,6 MPa - Fin spacing 3 mm
- R – Fe/Fe Zn, circular finned pipe; 1,6 MPa - Fin spacing 4 mm
- S – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- T – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- X – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 3 mm
- Y – Fe/Fe Zn, elliptic finned pipe; 1,6 MPa - Fin spacing 6 mm
- E – Stainless steel, circular finned pipe, 1,6 MPa, Fin spacing 2,8 mm**

- J – 3x400V 2-speed - high speed range - II 2G c IIB T4/T3
- L – 3x500V 2-speed - high speed range - II 2G c IIB T4/T3
- M – 3x400V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- N – 3x400V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T/T34**
- O – 3x500V 1-speed - low speed range - II 2G c IIB+H<sub>2</sub> T4/T3
- P – 3x500V 1-speed - high speed range - II 2G c IIB+H<sub>2</sub> T4/T3**

Minimum air volume [m<sup>3</sup>/h]



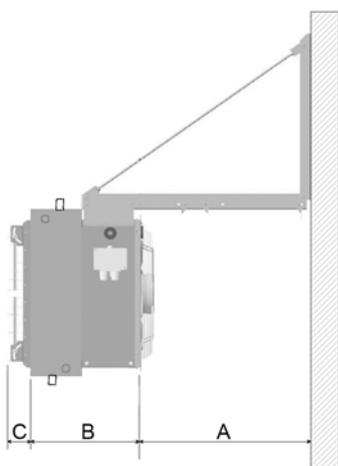
**NOTICE!**

The unit must always be operated at air volume higher than that specified in the table!

Fan configuration	J		L		M	N	O	P
Fan speed	1	2	1	2	1	1	1	1
Model size 1	1300	1500	1300	1500	–	–	–	–
Model size 2	2100	2700	2100	2700	1400	2000	1400	2000
Model size 3	3300	4000	3300	4000	–	v	–	–
Model size 4	4100	5000	4100	5000	3600	5000	3600	5000

Tab. 3: Minimum air volume

Example of wall instalation



The heat exchanger modules are constant in the overall depth for all model sizes and also for all capacity stages (number of tube rows).

In addition, a distance A (but at least 50% of the fan diameter) from a wall or ceiling must be maintained for recirculation units in order to achieve the required air volume flow and thus the desired performance of your unit.

This distance is also fully sufficient for maintenance, which guarantees your unit performance over the entire life cycle of the unit.

Fig. 20: Example for suspension and assembly with heat exchanger casing industry

Model size	1	2	3	4
Wall clearance A (mm), II 2G c IIB T4/T3	300	300	400	400
Wall clearance A (mm), II 2G c IIB+H <sub>2</sub> T4/T3	450	450	450	550
Unit depth B (mm)	387	387	387	452
Depth of outlet C (mm) – Basis	105	105	105	105
Depth of outlet C (mm) – Profile	100	100	100	100

The same dimensions and conditions apply to the ceiling installation.

Medium-related function - W (heating), V (heating and cooling)

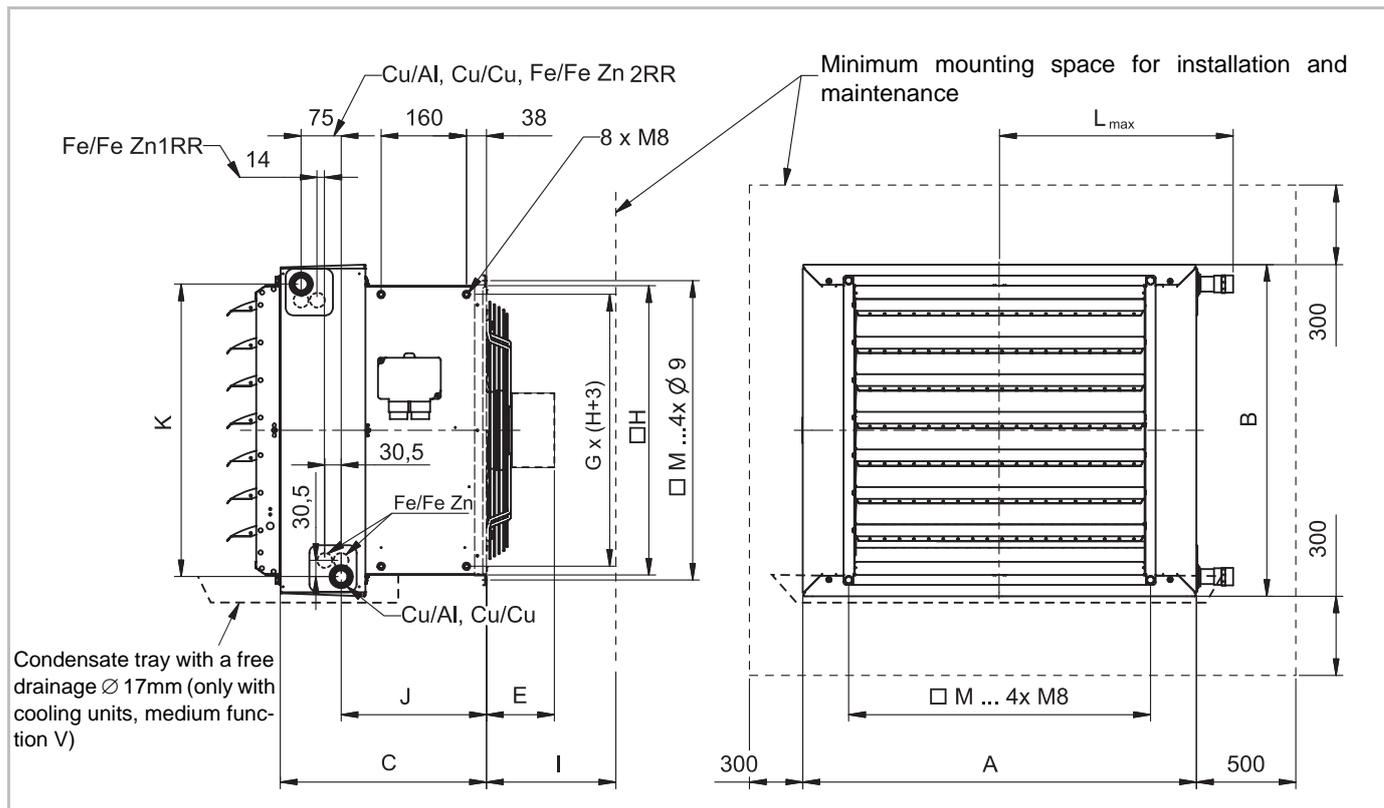


Fig. 21: Dimension of unit heater and arrangement of heat exchanger connection fittings

Dimensions / unit size	1	2	3	4
A	642	738	866	1026
B	520	616	744	904
C	387	387	387	452
E (for motor J, L)	120	120	140	140
E (for motor M, N, O, P)	-	223	-	250
G	418	514	642	802
H	451	547	675	835
I (for motor J, L)	300	300	400	400
I (for motor M, N, O, P)	-	450	-	550
J	273	273	273	348
K	457	553	681	841
L <sub>max</sub> (for Cu/Al, Cu/Cu)	384	438	509	596
L <sub>max</sub> (for Fe/Fe Zn, stainless steel)	383	431	495	575
M	470	566	694	854

Tab. 4: Unit dimensions

## Medium function S (heating - steam)

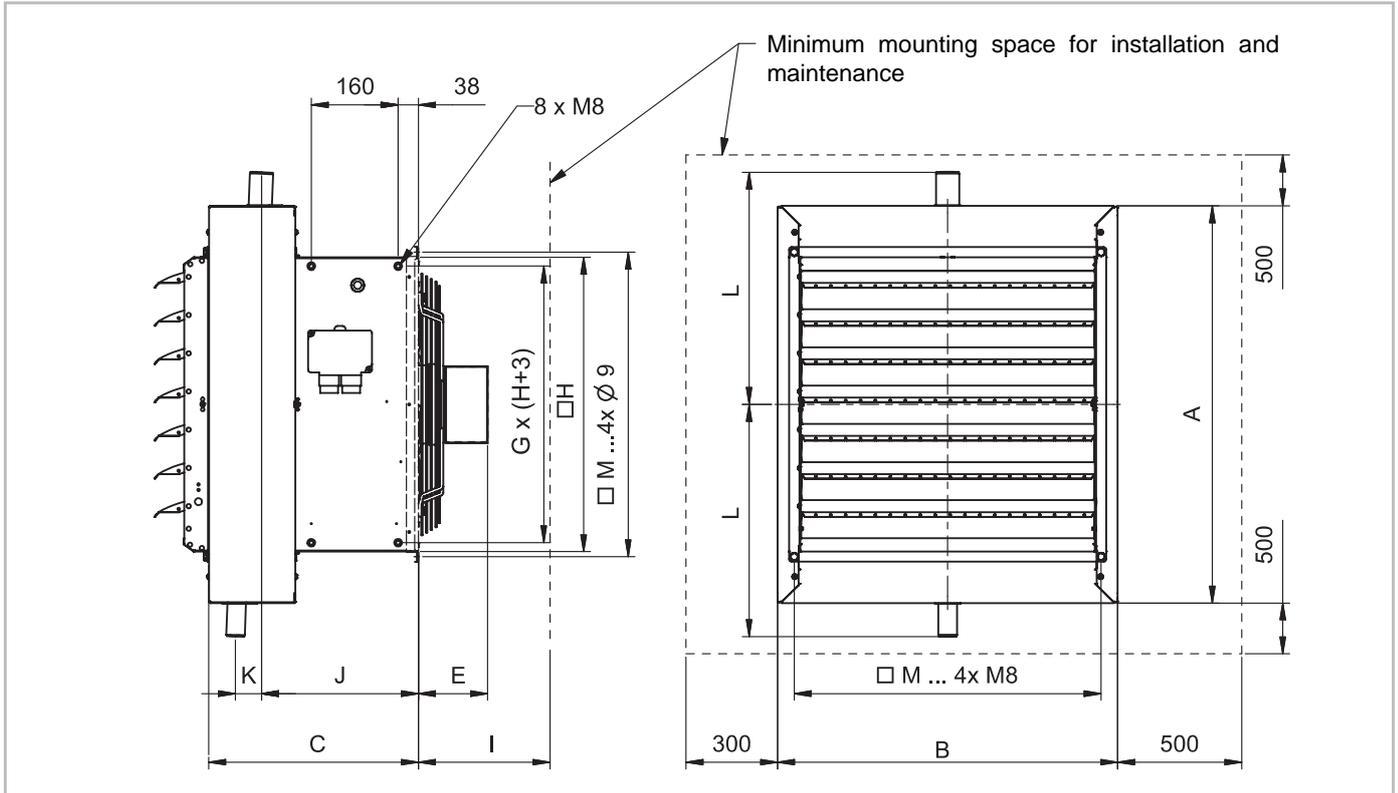


Fig. 22: Dimension of unit heater and arrangement of heat exchanger connection fittings - only steam heating

Dimensions / unit size	1	2	3	4
A	642	738	866	1026
B	520	616	744	904
C	386	386	386	452
E (for motor J, L)	120	120	140	140
E (for motor M, N, O, P)	-	223	-	250
G	418	514	642	802
H	451	547	675	835
I (for motor J, L)	300	300	400	400
I (for motor M, N, O, P)	-	450	-	550
J	291	290	288	350
K	41	45	49	55
L	361	409	473	553
M	470	566	694	854

Tab. 5: Unit dimensions

**HE Cu/Al or Cu/Cu**



Serial heat exchanger for heating with pumped warm water or for cooling with pumped chilled water for air with low contamination level;

performed with **Cu** pipes with profiled aluminium fins, fin spacing 2.5 mm, with 1-, 2- or 3 rows **or**

as heavy-duty industrial design performed with Cu pipes with profiled copper fins, fin spacing 3.0 mm, with 1-, 2- or 3 rows.

Model size	1	2	3	4
<b>Dimensions/empty weight</b>				
A (mm)	470	566	694	854
H (mm)	457	553	681	841
L (mm)	384	432	496	576
Cu/Al max. weight (kg)	10.8	14.40	19.80	28.80
Cu/Cu max. weight (kg)	15.30	22.10	31.45	45.90

Fig. 23: HE Cu/Al or Cu/Cu

Two variants are available for **pipe connections**:

- External screw thread connection (Fig. 22a)
- Smooth-bore pipe connection (Fig. 22b).

Cu/Al or Cu/Cu heat exchangers are performed for medium connections **on the right or left side**.

Model size	1				2				3				4			
Rows	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Pipe connections																
Threaded pipe → D (external screw thread)	R 1"								R 1 ¼"							
Smooth-bore pipe Ø d	22				22	28			22	28	35	28	28	35	42	35

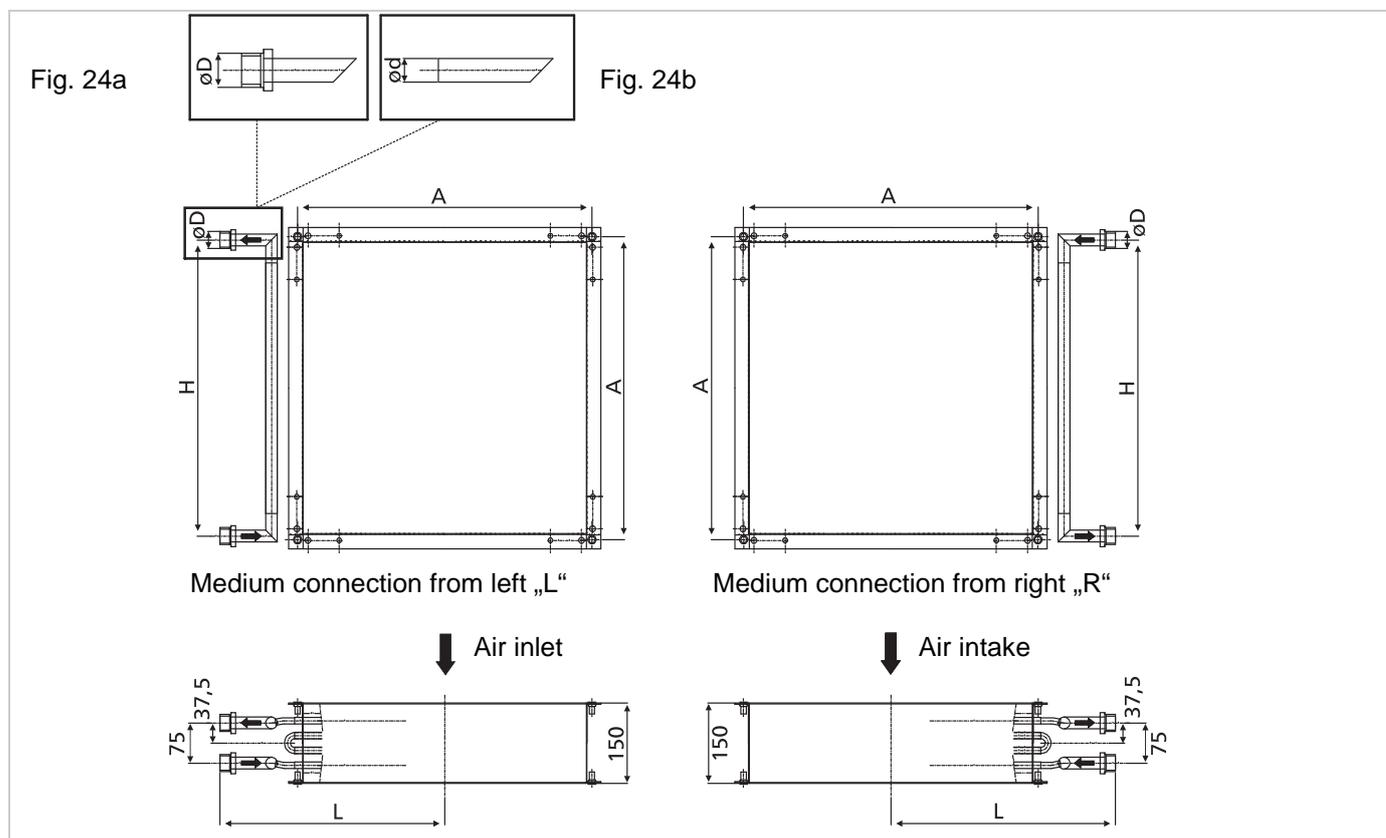


Fig. 24: HE Cu/Al or Cu/Cu with different pipe connections

**HE fully galvanized/galvanized steel**

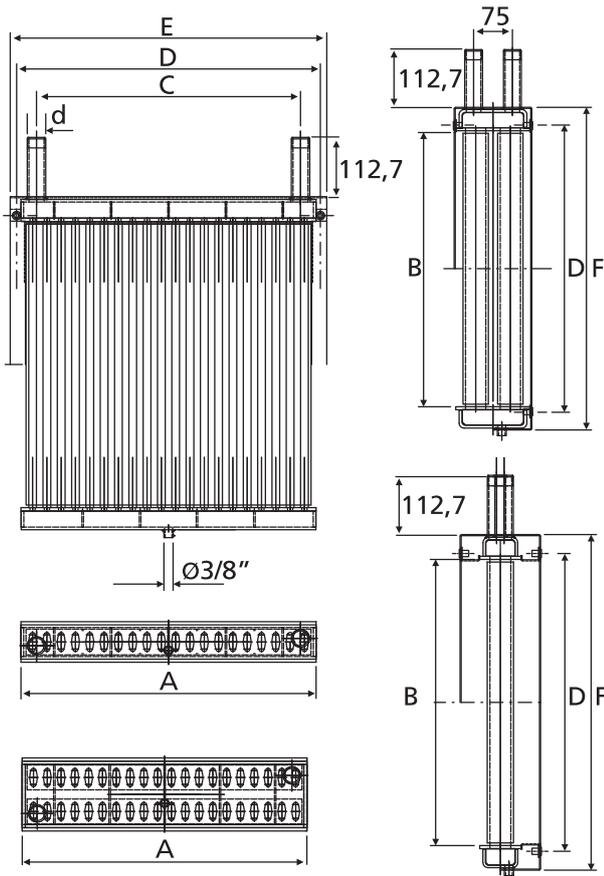


Fig. 25: Steel HE pumped warm/hot water

High performance industrial heat exchanger for heating with **hot water** (pumped warm/hot water with 1-2 rows) or **steam** for heavily contaminated air; in fully galvanized or galvanized steel variants; performed with elliptical or circular FläktGroup steel finned pipes, fin spacing 3.0 or 6.0 mm.



**Pumped warm/hot water variants**

Model size	1		2		3		4	
Rows	1	2	1	2	1	2	1	2
<b>Dimensions/empty weight</b>								
A (mm)	454	550	678	838				
B (mm)	448	544	672	832				
C (mm)	396	492	620	780				
D (mm)	470	566	694	854				
E (mm)	490	586	714	874				
F (mm)	536	632	760	920				
Max. weight (kg)	26	49	37	69	55	105	80	150
<b>Pipe connections (weld-on end/screw thread connection)</b>								
Ø d	R 1"				R 1 ¼"			

Heat exchanger models with pumped warm/hot water are performed for **medium connections from the top, right or left sides.**

**Steam variant**

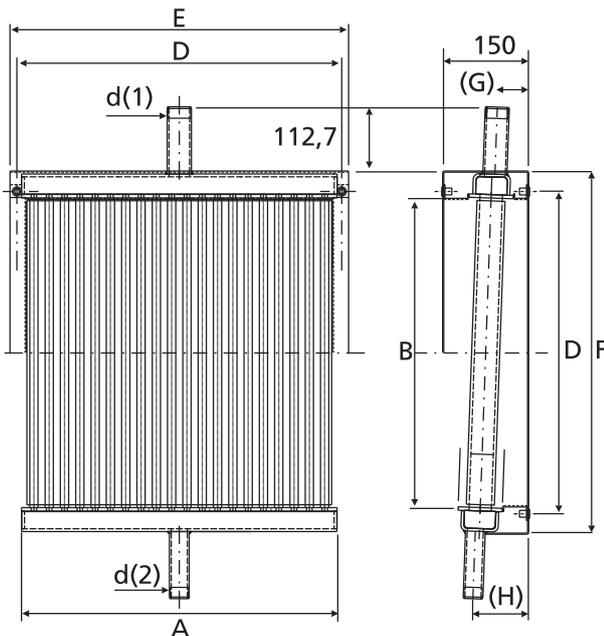


Fig. 26: Steel HE steam

Model size	1	2	3	4
<b>Dimensions/empty weight</b>				
A (mm)	454	550	678	838
B (mm)	448	544	672	832
D (mm)	470	566	694	854
E (mm)	490	586	714	874
F (mm)	538	634	762	922
G (mm)	54.4	52.7	50.5	47.5
H (mm)	95.5	97.3	99.5	102.5
Max. weight (kg)	26	37	55	80
<b>Pipe connections (weld-on end)</b>				
Steam inlet Ø d (1)	R 1 ¼"			
Condensate outlet Ø d (2)	R 1"			

With steam model heat exchanger **only medium connection from top is possible!**

### Stainless steel HE

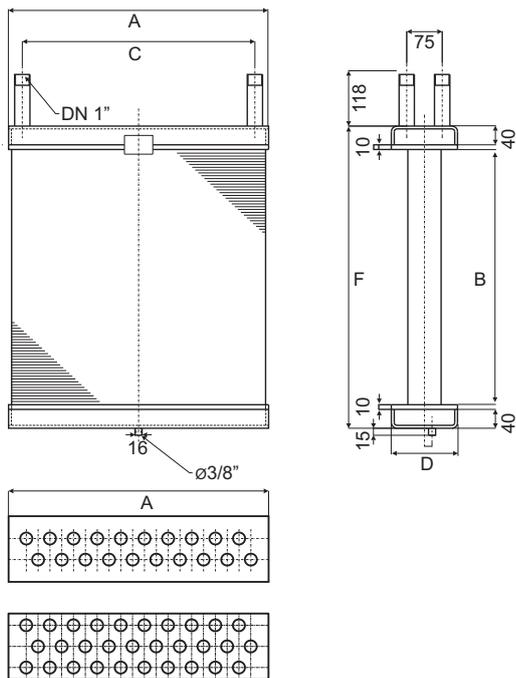


Fig. 27: Stainless steel HE pumped warm/hot water

High performance industrial heat exchanger for pumped hot water or steam heating for heavily contaminated air. Extremely rigid, heavy construction as well as efficient and reliable heat transfer between pipes and fins using FläktGroup stainless steel finned pipes with high mechanical stability. Intensive, continuous heat transfer between pipes and fins, sections performed as pressure-resistant welded construction, fin spacing 2.8 mm, with 1-3 rows.



#### Pumped warm/hot water variants

Model size	1		2		3		4	
Rows	2	3	2	3	2	3	2	3
<b>Dimensions/empty weight</b>								
A (mm)	454	454	550	550	678	678	838	838
B (mm)	448	448	544	544	672	672	832	832
C (mm)	396	396	492	492	620	620	780	780
D (mm)	140	140	140	140	140	140	140	140
F (mm)	548	548	644	644	772	772	932	932
Max. weight (kg)	36	48	48	67	70	98	96	134
<b>Pipe connections (weld-on end/screw thread connection)</b>								
Ø d	R 1"				R 1 1/4"			

Heat exchangers for pumped warm/hot water are performed for medium connections from the top, right or left side.

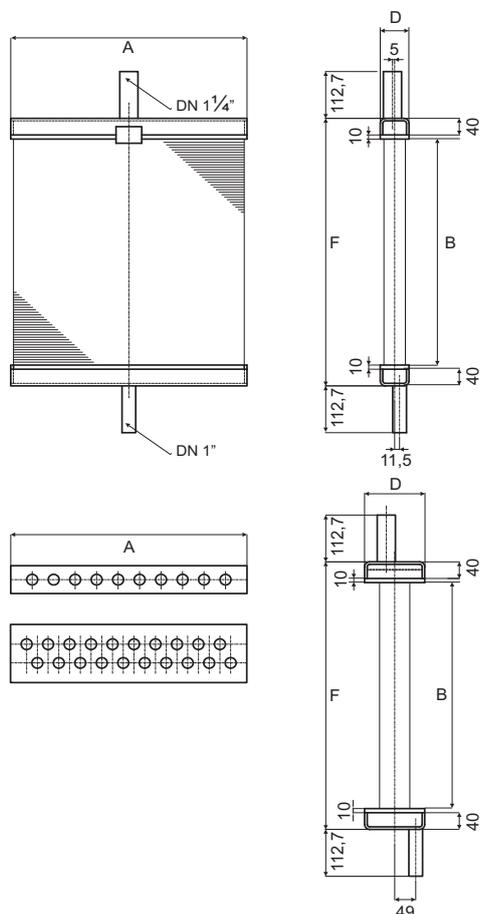


Fig. 28: Stainless steel HE for steam

#### Steam variant

Model size	1		2		3		4	
Rows	1	2	1	2	1	2	1	2
<b>Dimensions/empty weight</b>								
A (mm)	454	454	550	550	678	678	838	838
B (mm)	448	448	544	544	672	672	832	832
D (mm)	67	140	67	140	67	140	67	140
F (mm)	548	548	644	644	772	772	932	932
Max. weight (kg)	24	36	29	48	42	70	58	96
<b>Pipe connections (weld-on end)</b>								
Steam inlet Ø d(1)	R 1 1/4"							
Condensate outlet Ø d(2)	R 1"							

With steam model heat exchanger **only medium connection from top is possible!**

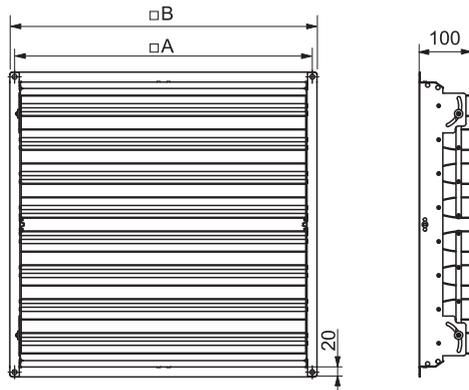


Fig. 29: Profile outlet wall/ceiling

**Profile outlet wall/ceiling**

for increasing discharge velocity and air throw; manually adjustable, self-locking

H X # # . # # # # # P . # # D – Frame as galvanized metal sheet and painted (RAL7000), aluminium fins

H X # # . # # # # # P . # # E – Stainless steel frame, painted (RAL 7000) aluminium fins

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
Weight (kg)	5,6	7,8	11,3	16,4

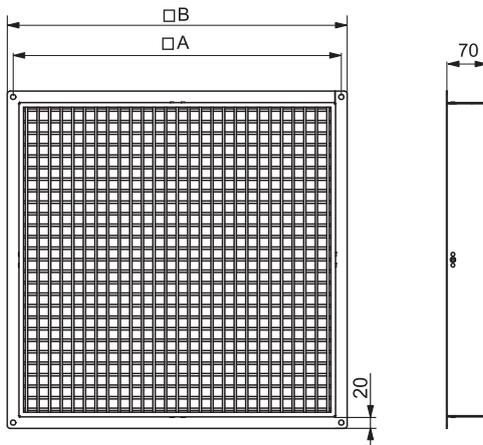


Fig. 30: Air deflection louvre

**Air deflection louvre**

Air deflection unit for distributing supply air flow in 4 directions, manually adjustable and self-locking

H X # # . # # # # # L . # # D – Frame as galvanized metal sheet, aluminium fins

H X # # . # # # # # L . # # E – Stainless steel frame, aluminium fins

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
Weight (kg)	4,7	6,8	10,3	15,6

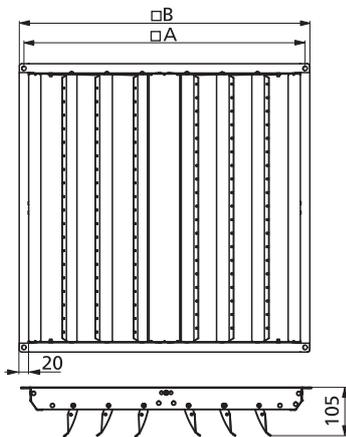


Fig. 31: Two-side basic ceiling outlet

**Two-side basic ceiling outlet**

Air deflection unit for distributing supply air flow in 2 directions, manually adjustable and self-locking

H X # # . # # # # # Z . # # D – Frame/fins as galvanized metal sheet

H X # # . # # # # # Z . # # E – Frame/fins in stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
Weight (kg)	2,5	3,6	5,4	8

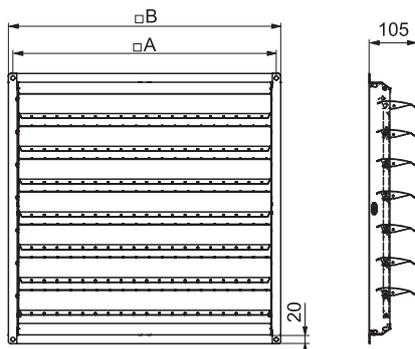


Fig. 32: Basic outlet

**Basic outlet (wall / ceiling)**

Louvers are curved outwards; adjustable, self-locking for changing direction air volume flow; manually adjustable

H X # # . # # # # # B . # # D – Frame/fins as galvanized metal sheet

H X # # . # # # # # B . # # E – Frame/fins in stainless steel

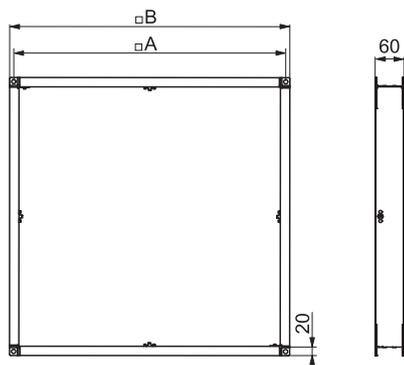


Fig. 33: Terminating flange

**Terminating flange, pressure side (wall / ceiling)**

For use without discharge for wall and ceiling; can be used for connection to a short pressure-side duct

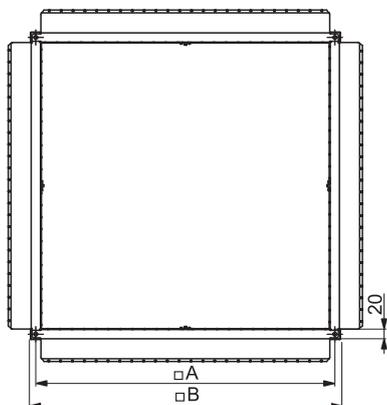
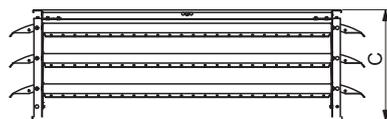
H X # # . # # # # # # K . # # D – Sheet steel, galvanized

H X # # . # # # # # # K . # # E – Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
Weight (kg)	2,1	2,5	3,1	3,8

Flange width = 20 mm

**Heating**



**Four-side outlet**

Air deflection unit for low installation height (2.5 - 3.5 m); prevents direct blowing at persons; for air discharge in 4 sides

H X # # . # # # # # # V . # # D – Sheet steel, galvanized

H X # # . # # # # # # V . # # E – Stainless steel

**Heating**

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
C (mm)	190	260	260	260
Weight (kg)	6,4	8,5	11,9	16,6

**Cooling**

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	499	595	723	883
C (mm)	454	454	454	585
Weight (kg)	12,5	19,6	26,1	40,6

External diameter of plastic drain connection amounts to 18 mm.

**Cooling**

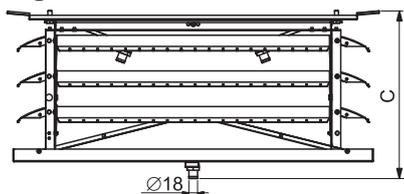


Fig. 34: Four-side outlet

**Outlet nozzle**

square; cone-shaped through reduction of outlet surface - air velocity and air throw are increased; for large installation heights

H X # # . # # # # # # A . # # D – Sheet steel, galvanized

H X # # . # # # # # # A . # # E – Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
C (mm)	154	178	211	253
Weight (kg)	3,6	5	7,2	10,5

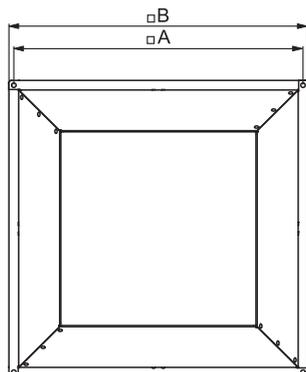


Fig. 35: Outlet nozzle

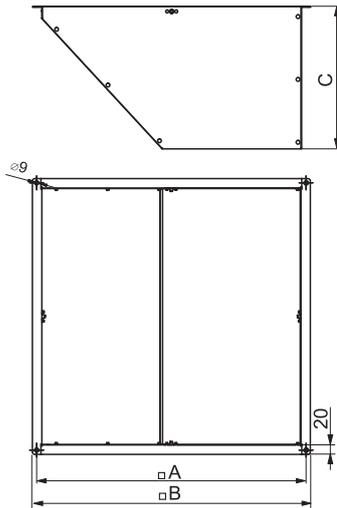


Fig. 36: Gate nozzle

**Gate nozzle**

Increase of discharge velocity; targeted routing of air volume flow in units; to be used as a gate shield

**H X # # . # # # # # T . # # D** – Sheet steel, galvanized

**H X # # . # # # # # T . # # E** – Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	489	585	713	873
C (mm)	286	302	417	525
Weight (kg)	4,4	5,6	9,1	14

**Heat exchanger casing**

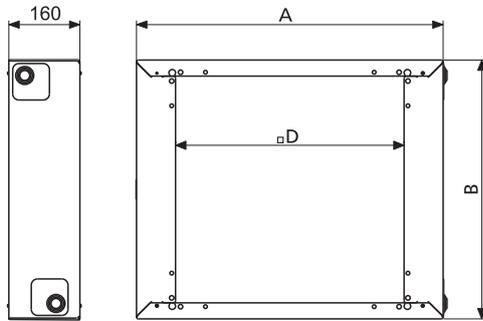


Fig. 37: Heat exchanger casing

**H X # # . # # # # # # . # # D** – made of galvanized metal sheet painted RAL 7000

**H X # # . # # # # # # . # # E** – made of stainless steel

Model size	1	2	3	4
A (mm)	642	738	866	1026
B (mm)	520	616	744	904
D (mm)	454	550	678	838
Weight (kg)	5,1	6,2	7,6	9,4

**Air-intake modules**

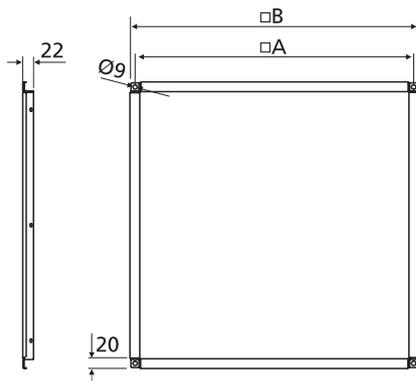


Fig. 38: Flange

**Flange**

Flange with peripheral mounting frame for suction-side accessories in recirculating-air units; standard with mixed-air units

**Z H # . 5 2 4 0** – Sheet steel, galvanized

**Z H # . 5 2 5 0** – Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	491	587	715	875
Weight (kg)	2,6	3,1	3,9	4,8

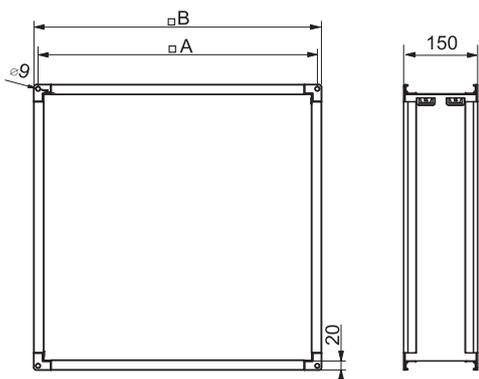


Fig. 39: Rectangular duct 150

### Rectangular duct 150

Spacer, overall length 150 mm, with a peripheral mounting frame. It is always used (or a flexible connection) when any accessory on the suction side is connected to the base unit.

Z H #	2 6 4 0	– Sheet steel, galvanized
Z H #	2 6 5 0	– Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	487	583	711	871
Weight (kg)	1,8	2,2	2,7	3,3

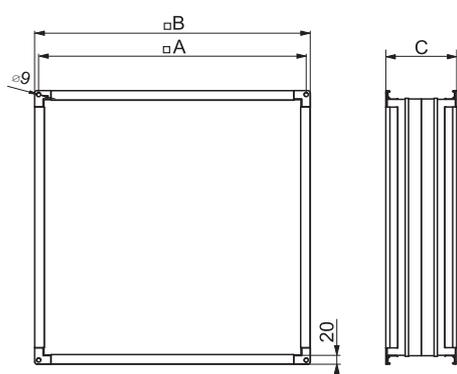


Fig. 40: Flexible connection

### Flexible connection

Air-tight, tear-resistant, elastic connection with the peripheral run-around mounting frame. It is always used when any accessory on the suction side is connected to the base unit.

Z H #	2 5 2 0	– Frame made of galvanized metal sheet, overall length C = 150 mm
Z H #	2 5 3 0	– Stainless steel frame, overall length C = 150 mm
Z H #	2 5 4 0	– Frame made of galvanized metal sheet, overall length C = 300 mm
Z H #	2 5 5 0	– Stainless steel frame, overall length C = 300 mm

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	487	583	711	871
Weight (kg)	2,6	3,2	3,9	4,8

Flange width = 20 mm

Overall length = 150 mm motor model J, L

Overall length = 300 mm motor model M, N, O, P

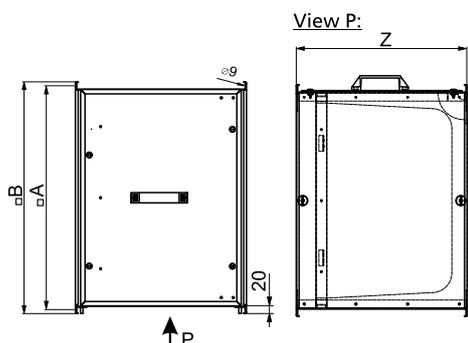


Fig. 41: Bag filter module

### Bag filter module

Bag filter cassette, quality class F5 as of DIN EN 779; casing made of galvanized metal sheet; lateral service opening with 20 mm run-around connection frame

Z H #	3 6 4 0	– Without filter, galvanized metal sheet
Z H #	3 6 5 0	– Without filter, stainless steel
Z H #	3 6 4 5	– with F5 filter, galvanized metal sheet
Z H #	3 6 5 5	– with F5 filter, stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	491	587	715	875
Z (mm)	430	430	430	430
Weight (kg)	13	16	20	25

Spare filter:

Z H #	3 9 4 5	– with F5 filter, galvanized metal sheet
Z H #	3 9 5 5	– with F5 filter, stainless steel

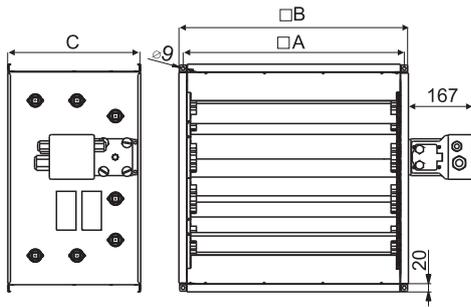


Fig. 42: Mixed-air module type 1 - direct

**Mixed-air module type 1 - direct**

1 fresh air damper (FA) and 2 recirculating-air louvers (RA); outdoor air and recirculating-air angled at 90°; shaft diameter = 15.5 mm  
Unbalanced pressures can penetrate cold air into the room. Solve optimal regulation.

ZH#	.2	0	4	#	– Sheet steel, galvanized
ZH#	.2	0	5	#	– Stainless steel

Depending on configuration, please supply data according to „Table: Product type code ...“ see below.

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	491	587	715	875
C (mm)	340	340	450	450
Weight (kg) ca.	13	16	24	31

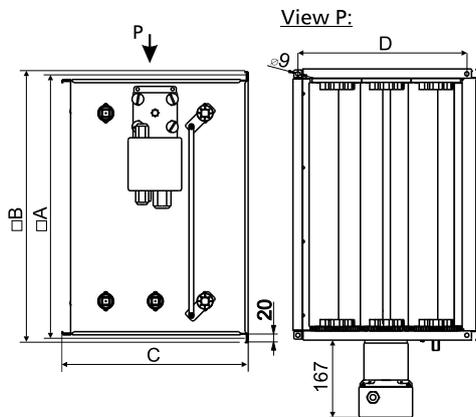


Fig. 43: Mixed-air module type 2 - lateral

**Mixed-air module type 2 - lateral**

Each model with 1 fresh air damper (FA) and 1°recirculating air louver (RA); outdoor air and recirculating air at opposing 180°; shaft diameter = 15.5 mm  
Unbalanced pressures can penetrate cold air into the room. Solve optimal regulation.

ZH#	.2	1	4	#	– Sheet steel, galvanized
ZH#	.2	1	5	#	– Stainless steel

Depending on configuration, please supply data according to „Table: Product type code ...“ see below.

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	491	587	715	875
C (mm)	400	400	450	510
D (mm)	380	380	430	490
Weight (kg) ca.	12,8	15,4	24,4	31,5

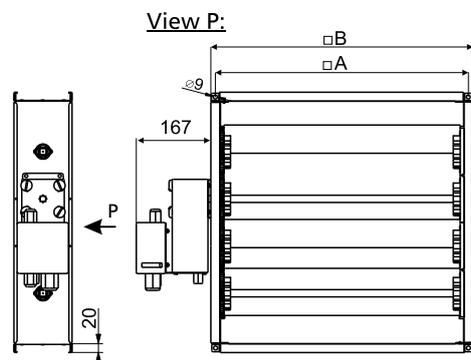


Fig. 44: Outside air blocking damper

**Outside air blocking damper**

Fins made of galvanized metal sheet or stainless steel; shaft diameter = 15.5 mm

ZH#	.2	3	4	#	– Sheet steel, galvanized
ZH#	.2	3	5	#	– Stainless steel

Depending on configuration, please supply data according to „Table: Product type code ...“ – see below.

**Table: Product type code for mixed-air modules and fresh air blocking damper depends on the actuator**

ZHx	.2	x	x	0	– with actuator provided by others (shaft diameter = 15.5 mm)
ZHx	.2	x	x	1	– Manual adjustment
ZHx	.2	x	x	8	– Actuator 230 V (E) Ex Zone 1

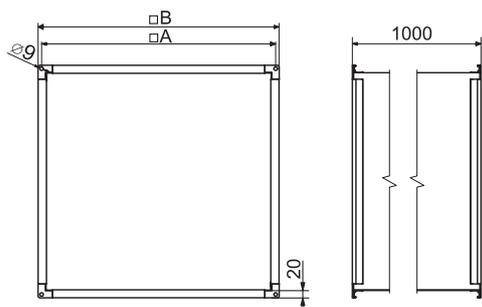


Fig. 45: Rectangular duct 1000

**Rectangular duct 1000**

Connection with a peripheral run-around mounting frame, installation length 1000 mm.

Z	H	#	2	7	4	0	– Sheet steel, galvanized
Z	H	#	2	7	5	0	– Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	487	583	711	871
Weight (kg)	12,5	15	18,3	22,4

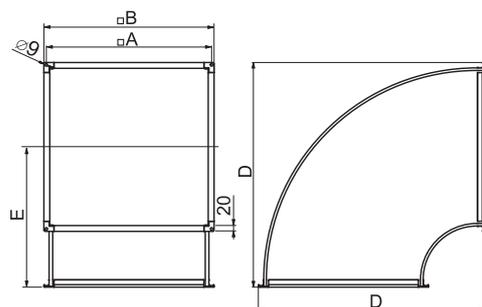


Fig. 46: Duct bend 90°, symmetrical

**Duct bend 90°, symmetrical**

90° symmetrical, tapered with run-around mounting frame

Z	H	#	2	8	4	0	– Sheet steel, galvanized
Z	H	#	2	8	5	0	– Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	487	583	711	871
D (mm)	646	742	871	1030
E (mm)	403	451	515	595
Weight (kg)	7,3	11,5	19,3	33

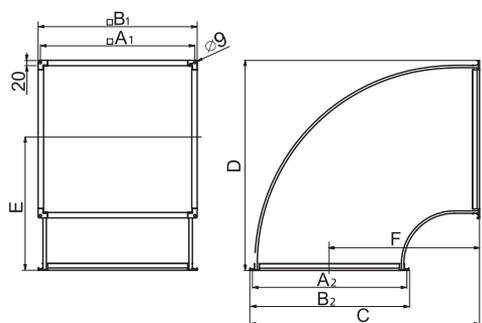


Fig. 47: Duct bend 90°, asymmetrical

**Duct bend 90°, asymmetrical**

90° asymmetrical, tapered run-around mounting frame

Z	H	#	2	9	4	0	– Sheet steel, galvanized
Z	H	#	2	9	5	0	– Stainless steel

Model size	1	2	3	4
A1 (mm)	470	566	694	854
A2 (mm)	363	363	473	473
B1 (mm)	487	583	711	871
B2 (mm)	380	380	490	490
C (mm)	540	540	650	650
D (mm)	646	742	871	1030
E (mm)	403	451	515	595
F (mm)	350	350	405	405
Weight (kg)	7,3	11,5	19,3	33

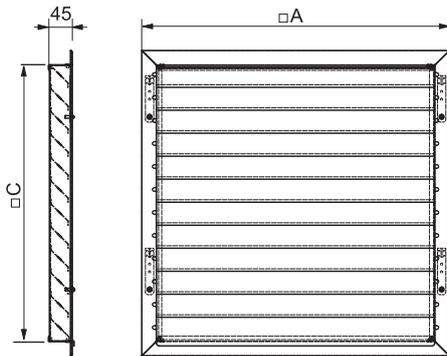


Fig. 48: External weather grille

**External weather grille**

Made of metal sheet with bird protection grille and removeable wall bracket.

Z H # . 3 2 4 0 – Overall depth 45 mm

Model size	1	2	3	4
A (mm)	496	592	720	880
C (mm)	438	534	662	822
Weight (kg)	3,7	5,2	7,7	11,5

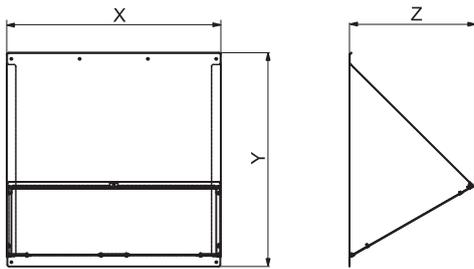


Fig. 49: Wall air-intake hood

**Wall air-intake hood**

Weather protection; galvanized metal sheet with bird protection grille, low pressure drop

Z H # . 3 1 4 0 – wall mounting

Model size	1	2	3	4
X (mm)	496	592	720	880
y (mm)	500	596	724	884
Z (mm)	288	350	430	532
Weight (kg)	2,8	3,9	5,8	8,6

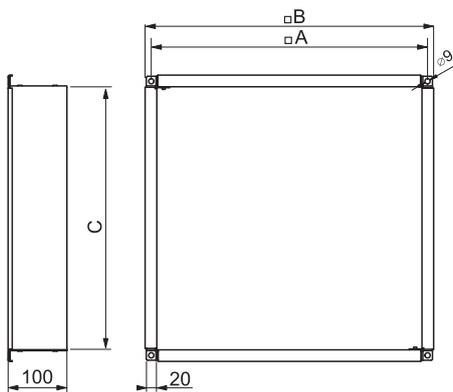


Fig. 50: Frame for wall connection

**Frame for wall connection**

As spacer for wall opening

Z H # . 5 1 4 0 – Sheet steel, galvanized  
Z H # . 5 1 5 0 – Stainless steel

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	491	587	715	875
C (mm)	451	547	675	835
Weight (kg)	2,6	3,1	3,9	4,8

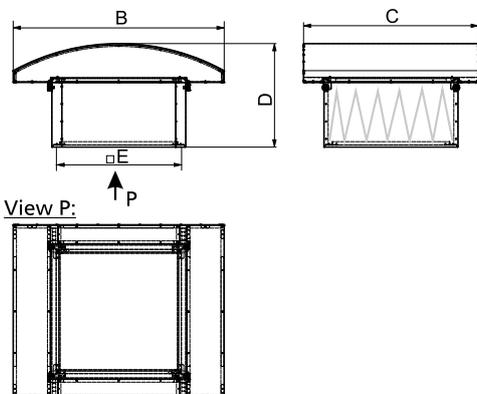


Fig. 51: Roof air-intake hood

**Roof air-intake hood**

Made of metal sheet in RAL 9002 with bird protection grille; other colours on request; **optionally** with **bag filter** (quality class M5 as of DIN EN 779), then the hood can be tilted at 90° for easier filter replacement.

Z H # . 3 5 4 0 – Without filter  
Z H # . 3 5 4 5 – With F5 filter

Model size	1	2	3	4
B (mm)	970	1260	1260	1700
C (mm)	800	1044	1044	1500
D (mm)	569	623	623	712
E (mm)	490	730	730	1050
Weight (kg)	24,5	39,5	39,5	78

**Spare filter:**

Z H # . 3 8 4 5 – F5 filter

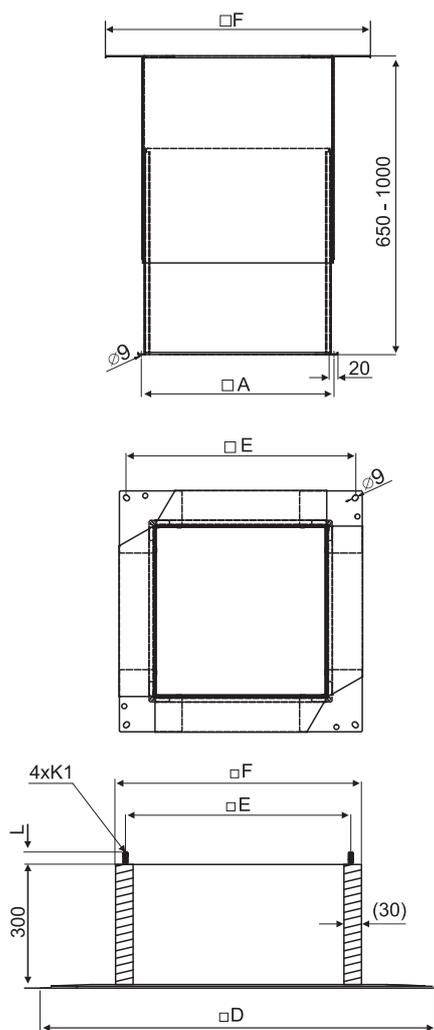


Fig. 52: Roof duct with flat roof-duct base

### Roof duct with flat roof-duct base

Roof opening performed in galvanized metal sheet, including mounting bracket with a peripheral run-around mounting frame, including flat roof plinth, thermally isolated

The upper part of the passage through the roof is lowered into the plinth, the lower part has to be screwed with the accessories of the unit and inserted into the upper part of the space under the roof.

ZH#.4940 – Sheet steel, galvanized

Model size	1	2	3	4
A (mm)	470	566	694	854
D (mm)	860	1100	1100	1420
E (mm)	490	730	730	1050
F (mm)	536	775	775	1095
Roof opening size (mm)	476 / 536	570 / 775	700 / 775	860 / 1095
Weight (kg) roof opening	15,6	19,2	23,7	29,4
Weight (kg) flat roof-duct base	8	10	10	13
K 1xL (mm)	M10x22	M12x27	M12x27	M12x27
k (mm)	12	16	16	16

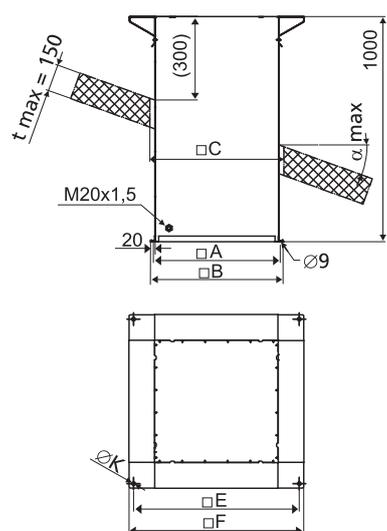


Fig. 53: Duct through slanted roof

### Duct through slanted roof

Performed in galvanized metal sheet, including mounting bracket with a peripheral run-around mounting frame

ZH#.3440 – Sheet steel, galvanized

Model size	1	2	3	4
A (mm)	470	566	694	854
B (mm)	487	583	711	871
C (mm)	530	630	760	920
E (mm)	490	730	730	1050
F (mm)	528	768	768	1088
K (mm)	12	16	16	16
α max	50°	45°	40°	35°
Weight (kg)	17	21	25	31

**Suspensions**

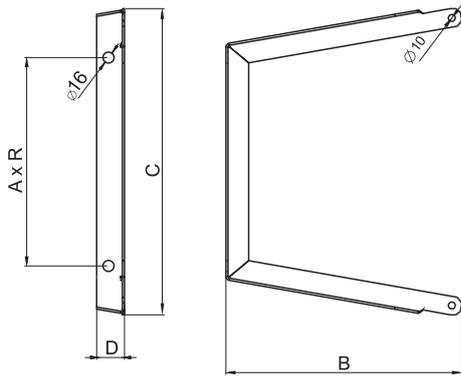


Fig. 54: Suspension type compact C

**Suspension type compact C**

For recirculating-air units for wall and ceiling mounting, **Cu/Al** and **Cu/Cu** heat exchangers

Z	H	#	.	5	3	4	0	– Sheet steel, galvanized
Z	H	#	.	5	3	5	0	– Stainless steel



Model size	1	2	3	4
A (mm)	303	389	484	628
B (mm)	340	392	504	578
C (mm)	445	544	680	845
D (mm)	40	40	50	62
Weight (kg)	2,9	3,9	8,2	12,2
R (mm)	414	510	628	776

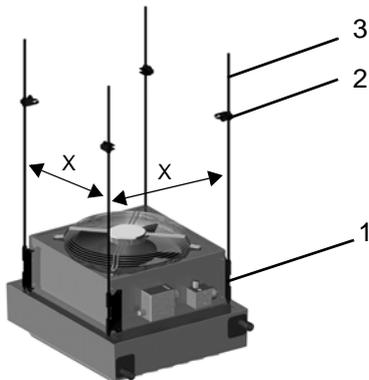


Fig. 55: Ceiling suspension

**Ceiling suspension**

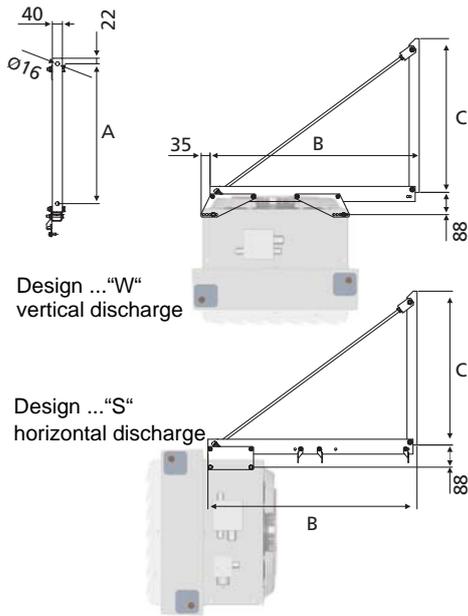
Comprising 4 unit mounting brackets (1) including fixing material for optional accessories (2) and 4 threaded rods (3); made of galvanized metal sheet or stainless steel; for ceiling mounting.

Threaded rods M10 can be supplied in different lengths and have the following accessory code designations:

Z	H	#	.	5	6	#	0	– Installation without threaded rod
Z	H	#	.	5	6	#	1	– Threaded rod M10 - 1 m, 5.7 kg
Z	H	#	.	5	6	#	2	– Threaded rod M10 - 2 m, 8.1 kg
Z	H	#	.	5	6	#	3	– Threaded rod M10 - 3 m, 10.5 kg

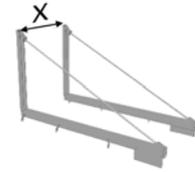
#: 4 = galvanized steel  
5 = stainless steel

Model size	1	2	3	4
X (mm)	531	627	755	915



**Modular type suspension**

Performed with supporting arms in galvanized metal sheet or stainless steel; installation rail with threaded rods and tensioning locks. Wall mounting using steel brackets, suitable for all heat exchanger models



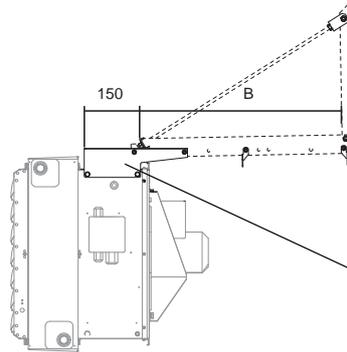
W – vertical unit outlet

S – horizontal unit outlet

Z	H	#	.	5	5	4	-	– Wall mounting, galvanized metal sheet
Z	H	#	.	5	5	5	-	– Wall mounting, stainless steel

Model size	1	2	3	4
X (mm)	414	510	638	798

Fig. 56: Modular type suspension



- only with II 2G c IIB+H<sub>2</sub> T3, T4:
- HX##.M#####.M##
  - HX##.M#####.N##
  - HX##.M#####.O##
  - HX##.M#####.P##

Z	H	#	.	5	5	-	0*	1*	2*	4*	5*	7*	8*	A*	C*	W*
Model size			<b>Structure of accessories</b>													
			without accessories	25+20+51	25+36+20+51	25+21+29+51	25+36+21+29+51	25+23+51	25+36+23+51	26+36	25+28 (+49...)	without accessories for vertical discharge				
			<b>Modular Type 55 type code</b>													
1				5S	7S	11S	9S	13S	5S	9S	10S	10S	7W			
2				6S	7S	11S	9S	13S	5S	9S	11S	11S	8W			
3				7S	8S	12S	10S	14S	5S	9S	12S	12S	9W			
4				8S	8S	12S	10S	14S	5S	9S	12S	14S	11W			

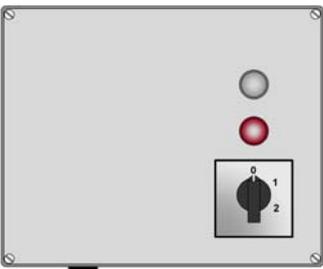
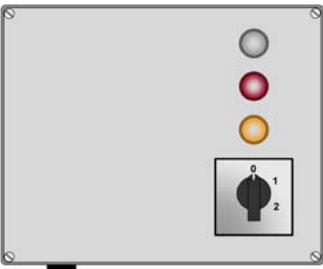
\* Use number or letter in the last position of the accessories code.

Type code	5S	6S	7S/7W	8S/8W	9S/9W	10S	11S/11W	12S/12W	13S	14S
A (mm)	386	386	386	556	556	556	556	556	656	656
B (mm)	505	605	715	825	935	1045	1155	1265	1375	1485
C (mm)	442	442	442	612	612	612	612	612	712	712
Weight (kg)	7.5	8.3	9.3	11.2	12.1	12.9	13.9	15	16.1	17

## Control units

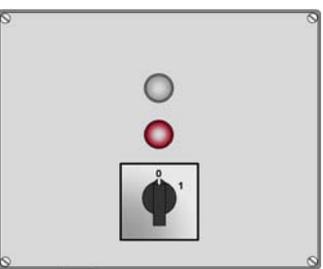
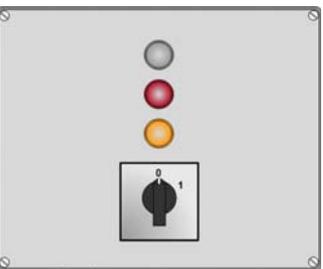
- Plastic casing for wall mounting, light grey with a terminal section
- Protection class IP54
- Contactor, 4 kW switching capacity according to AC3, max. current 9 A
- Control transformer 500/230 V (only for switch units for 500 V)
- Fully protected motor electronics with automatic restart after power outage and interlocking fault shutdown with ATEX approval according to the 94/9/EG Directive
- Standby indicator and malfunction control lights
- Connecting terminals for thermostats, damper actuator, shut-off valve with spring return or external remote ON/OFF contact
- Switch units is suitable for installation outside the EX-range
- Dimensions W x H x D: 268 x 218 x 148 mm

## Control units for units with (E) Exe fan motors (J,L)

Control unit type	Function
<b>986920.3</b> <b>400 V</b> <b>986920T.51</b> <b>500V</b> – to be used for recirculating-air units	 <ul style="list-style-type: none"> <li>– Selector switch 0-1-2</li> <li>– Standby indicator light</li> <li>– Malfunction indicator light</li> <li>– Room thermostat connection (must be suitable for use in EX-range)</li> <li>– Connection for shut-off valve (with spring return)</li> </ul>
<b>986960.3</b> <b>400 V</b> <b>986960T.51</b> <b>500V</b> – to be used for fresh-air units	 <ul style="list-style-type: none"> <li>– Selector switch 0-1-2</li> <li>– Standby indicator light</li> <li>– Malfunction indicator light</li> <li>– Frost warning indicator light</li> <li>– Connection for frost protection thermostat</li> <li>– Room thermostat connection (must be suitable for use in EX-range)</li> <li>– Connection for actuator of outside air damper</li> <li>– Connection for shut-off valve (with spring return)</li> </ul>

*It is allowed to use one switch unit to operate a maximum of 2 fan motors!*

## Control units for units with (E) Exd fan motors (M,N,O,P)

Control unit type	Function
<b>986810.3</b> <b>400 V</b> <b>986810T.51</b> <b>500 V</b> – to be used for recirculating-air units	 <ul style="list-style-type: none"> <li>– Selector switch 0-1</li> <li>– Standby indicator light</li> <li>– Malfunction indicator light</li> <li>– Room thermostat connection (must be suitable for use in EX-range)</li> <li>– Connection for shut-off valve (with spring return)</li> </ul>
<b>986811.3</b> <b>400V</b> <b>986811T.51</b> <b>500V</b> – to be used for fresh-air units	 <ul style="list-style-type: none"> <li>– Selector switch 0-1</li> <li>– Standby indicator light</li> <li>– Malfunction indicator light</li> <li>– Frost warning indicator light</li> <li>– Connection for frost protection thermostat</li> <li>– Room thermostat connection (must be suitable for use in EX-range)</li> <li>– Connection for actuator of outside air damper</li> <li>– Connection for shut-off valve (with spring return)</li> </ul>

*It is allowed to use one switch unit to operate a maximum of 1 fan motor!*

### Installation of switch unit and unit connection

The switch unit (accessory item) shall be installed at the designated location (outside Zone 1). The connection type shall be determined between single or group unit connection. As a group - adjacent units shall be connected to one heating line. During wiring of a unit group - an intermediate terminal box shall be used. A maximum of 2 unit heaters (with consideration to motor full protection device) can be included in a unit group.

### Installation example

Unit group comprising MultiMAXX HX with recirculated air function with a switch unit.

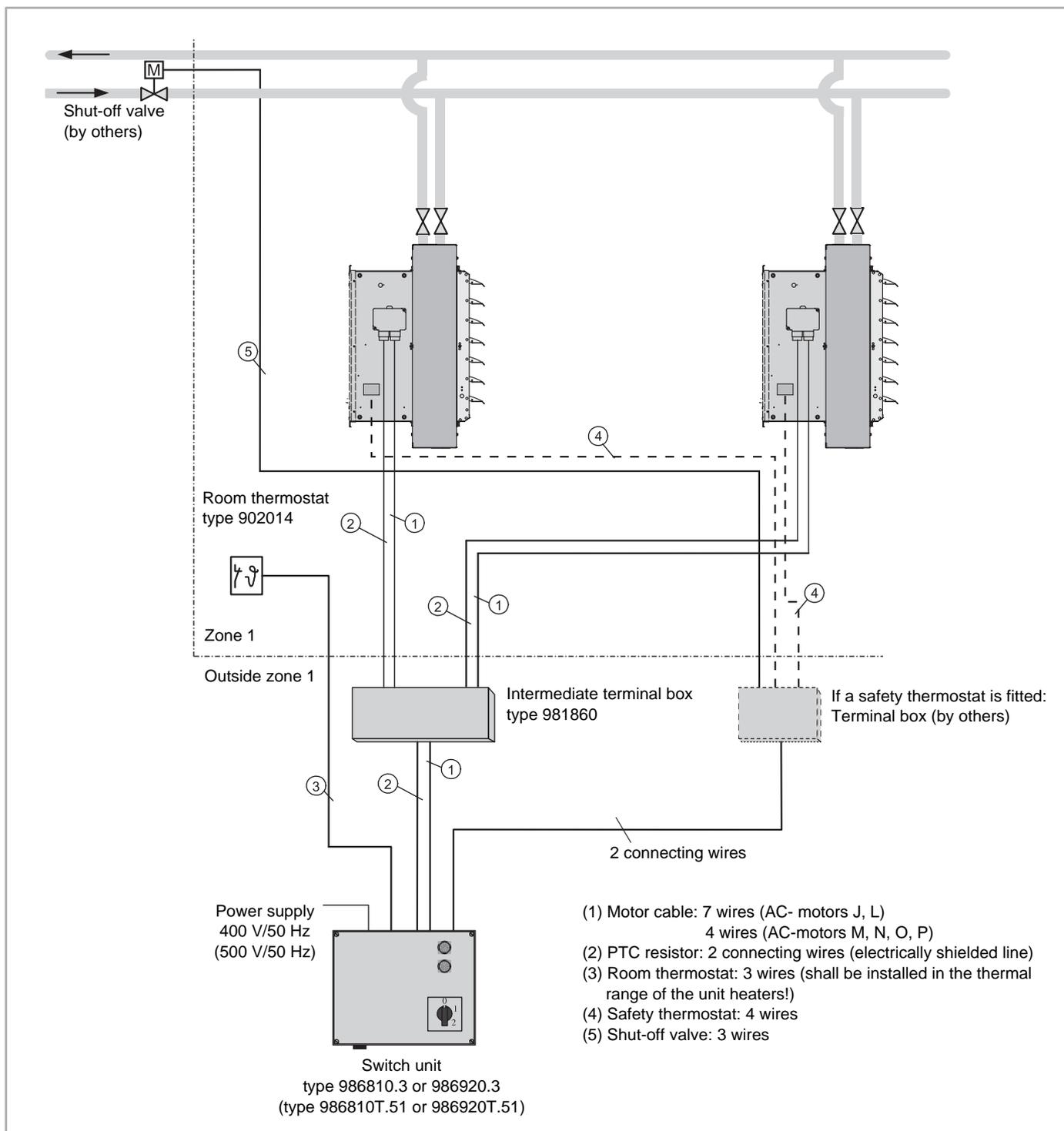


Fig. 57: Unit group comprising MultiMAXX HX with recirculated air function with a switch unit.

Unit group comprising MultiMAXX HX with mixed air function with a switch unit.

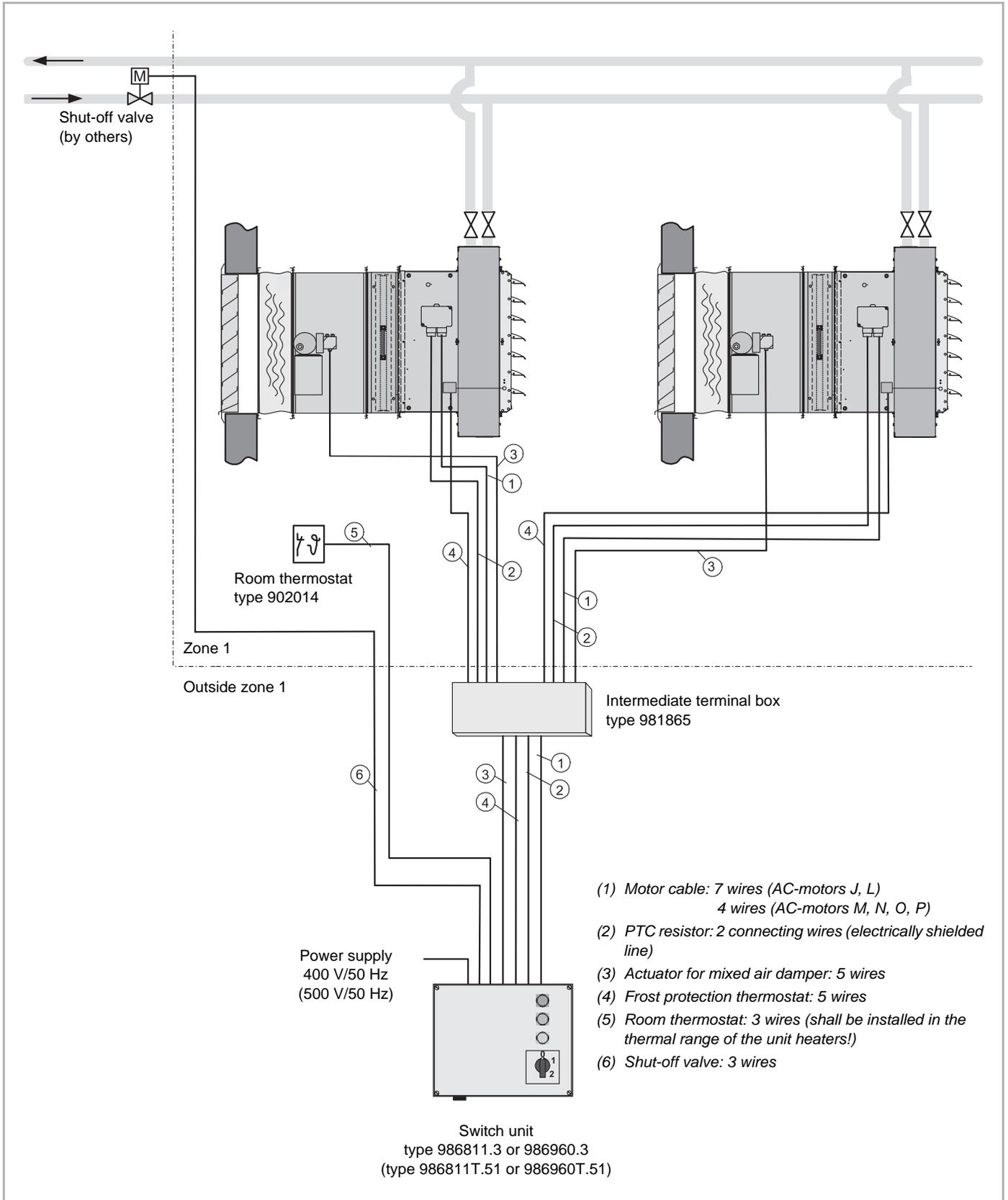


Fig. 58: Unit group comprising MultiMAXX HX with recirculated air function with a switch unit

**Shut-off valve**

In order to assure the maximum ambient conditions of the motor a shut-off valve with a spring return (230 V) must be fitted in the supply inlet line of the heat exchanger at medium temperature >90 °C. (Consider the operating limits in table 1 on Page 6).

Connecting a shut-off valve to a FläktGroup switch unit ensures that the valve closes and shuts off supply of heating medium in case of fan deactivation or voltage failure. If the fan is externally regulated, such forced activation of the valve must be ensured by others on site.

(Shut-off valve can also be fitted outside the Ex-range.)

**Intermediate terminal box**



Intermediate terminal box for connecting a maximum of 4 air-handling units: (to be used outside the EX-range):

Plastic casing for on-wall mounting with sufficient space for loop-in wiring

Protection class: IP 54

Row terminals: 2.5 mm<sup>2</sup>

Dimensions W x H x D: 270 x 220 x 105 mm

Fig. 59: Secondary terminal box

Operation mode	Motor design/motor mode	Terminal box type
Recirculating air	3x400 V / 3x500 V, 1-speed	981860
	3x400 V / 3x500 V, 2-speed	
Mixed air	3x400 V / 3x500 V, 1-speed	981865
	3x400 V / 3x500 V, 2-speed	

**FläktGroup EX-room thermostat**



Measurement of room temperature with fiberglass reinforced polyester casing and closed capillary system:

EX-labelling: II 2G EEx ed IIC T6

Setpoint range: 0 ... 50 °C

Sensor coil: Cu, brazed, galvanically tin-plated, length 1 m

Protection class: IP 65

Setpoint setting: 0 ... 50 °C, internal

Switching difference: +0 ... -2 K

Output: change-over contact 5 A ind.250 V AC

Fig. 60: Type: 902014

**FläktGroup EX-safety thermostat type: 902017**



Measurement of intake temperature with aluminium die-cast casing and closed capillary system (only supplied as a mounted part on the unit heater):

EX-labelling: II 2G/D Eex de IIC T6 IP65 T80°C

Setpoint range: 10 ... 50 °C

Sensor coil: Cu-capillary tube

Protection class: IP 65

Setpoint setting: 10 ... 50 °C, internal

Switching difference: 1.5 K (average value)

Output: change-over contact 2 A ind.250 V A C

Fig. 61: EX-safety thermostat

**Motor Full Protection**



Fig. 62: Motor Full Protection

Motor protection unit as thermal unit protection for direct temperature monitoring of explosion-protected motors of ignition protection type „enhanced safety“ EEx e. Electronic reset lock.

Control voltage	AC 220-240 V 10 % 50/60 Hz 2 VA
Connectable PTC resistors	1...6 items as of DIN 44081 or 44082
Switch point	< 4000 Ohm
Output relay	1 change-over contact
- switching voltage	max. AC 415 V
- switching current	max. 6 A
- switching capacity	max. 2000 VA (ohmic load) max. 120 W at C 24 V
- rated operating current (Ie) for change-over contact	3 A AC15 250 V; 2 A DC13 24 V
- recommended pre-fuse	3.15 A with time lag (gL)
Allowed ambient temperature	-20...+50 °C
Fixing	on 35 mm standard mounting rail as of EN 50 022 or screw fixing M4
Protection type casing/terminals	IP 30/IP 20
Weight	approx. 120 g

**AC-motor terminal diagram J (3x400V), L (3x500V)**  
**2-speed, 3-phase AC-motor with external rotor - II 2G c IIB T3, T4**

- With PTC thermistor
- Slip regulator
- Winding Δ/Y
- Without voltage change-over!
- Operating voltage: refer to unit identification plate

**1-speed operation, 3 x 400 V (3 x 500 V) - unit with terminal box (K)**

- power cable: 3 + PE = 4 wires
- electrically shielded line: 2 K connecting wires

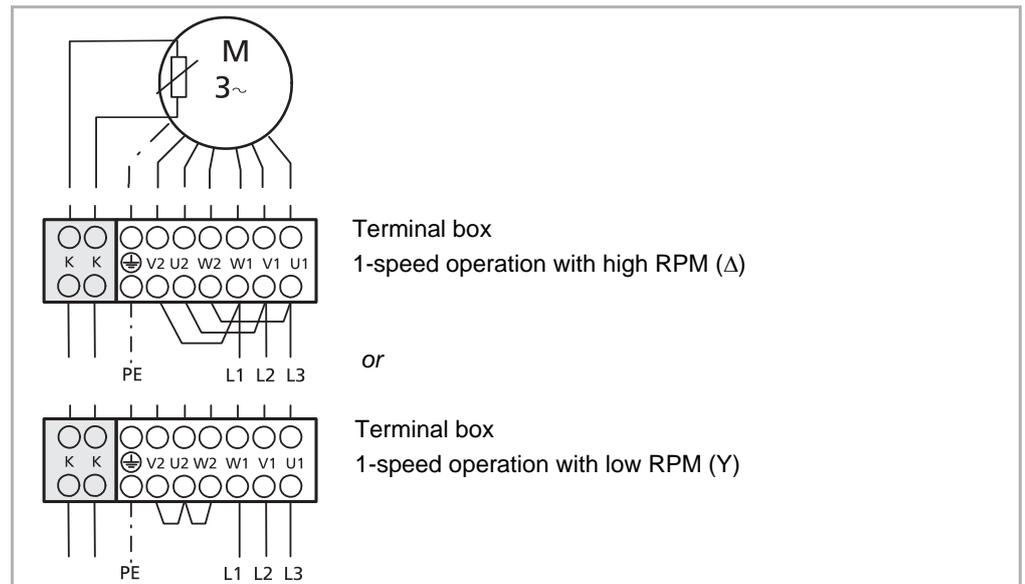


Fig. 63: Terminal drawing for 1-speed operation

**2-speed operation 3x400V (3x500V) - unit with terminal box (K) and switch unit**

- with speed switch unit 986920.3 or 986960.3 for 3x400V (AC-motor J), 986920T.51 or 986960T.51 for 3x500V (AC-motor L)
- power cable: 3 + PE = 4 wires
- connection cable: 6 + PE = 7 wires
- electrically shielded line: 2 PTC resistor connecting wires

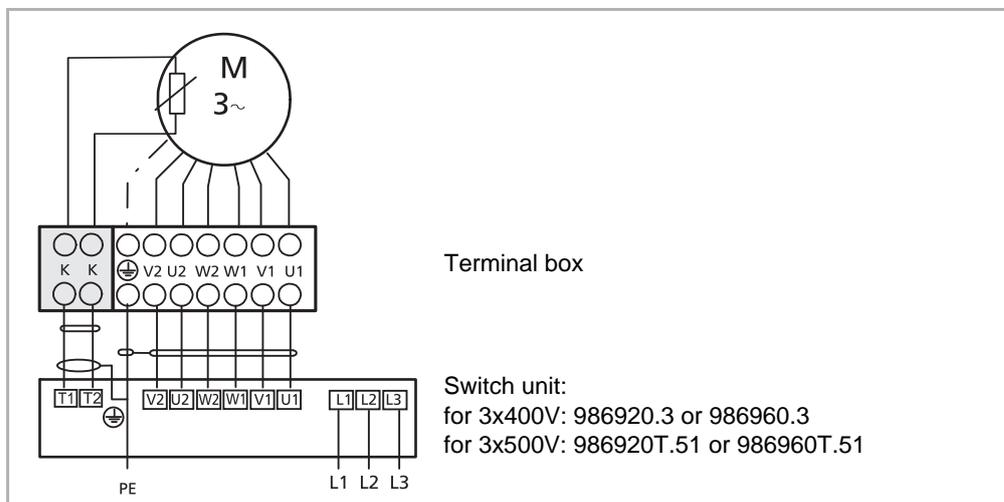


Fig. 64: 2-speed operation - unit with terminal box and switch unit

**1-speed operation 3x400V (3x500V) - unit with fan isolator (S)**

- power cable: 3 + PE = 4 wires
- electrically shielded line: 2 PTC resistor connecting wires

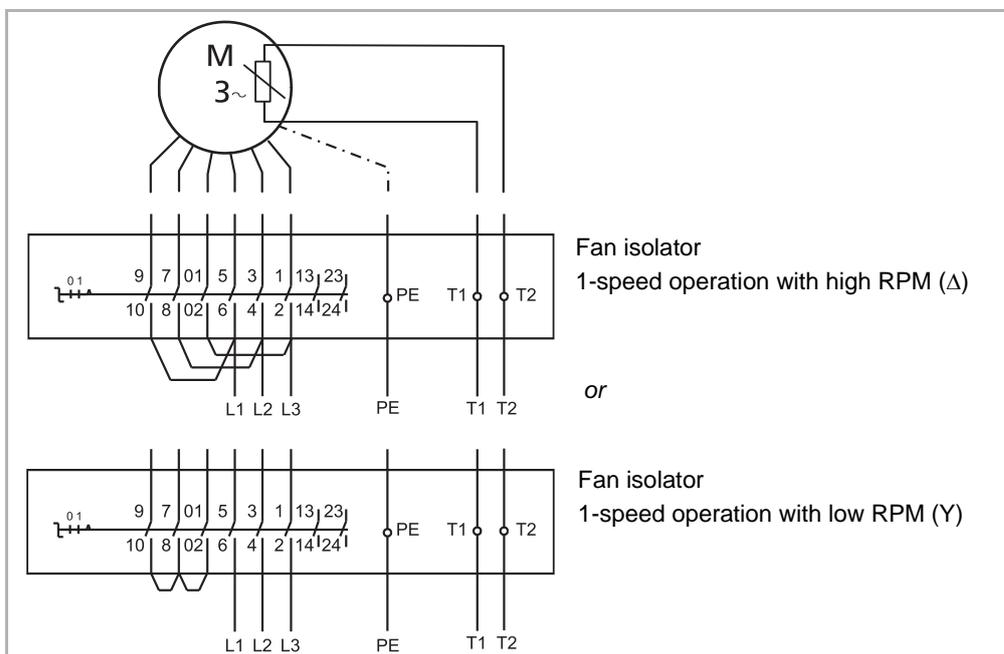


Fig. 65: 1-speed operation - unit with fan isolator (jumpers ( $\Delta$  or Y) shall be placed by others)

**2-speed operation 3x400V (3x500V) - unit with fan isolator (S) and switch unit**

- with speed switch unit 986920.3 or 986960.3 for 3x400V (AC-motor J), 986920T.51 or 986960T.51 for 3x500V (AC-motor L)
- power cable: 3 + PE = 4 wires
- connection cable: 6 + PE = 7 wires
- electrically shielded line: 2 PTC resistor connecting wires

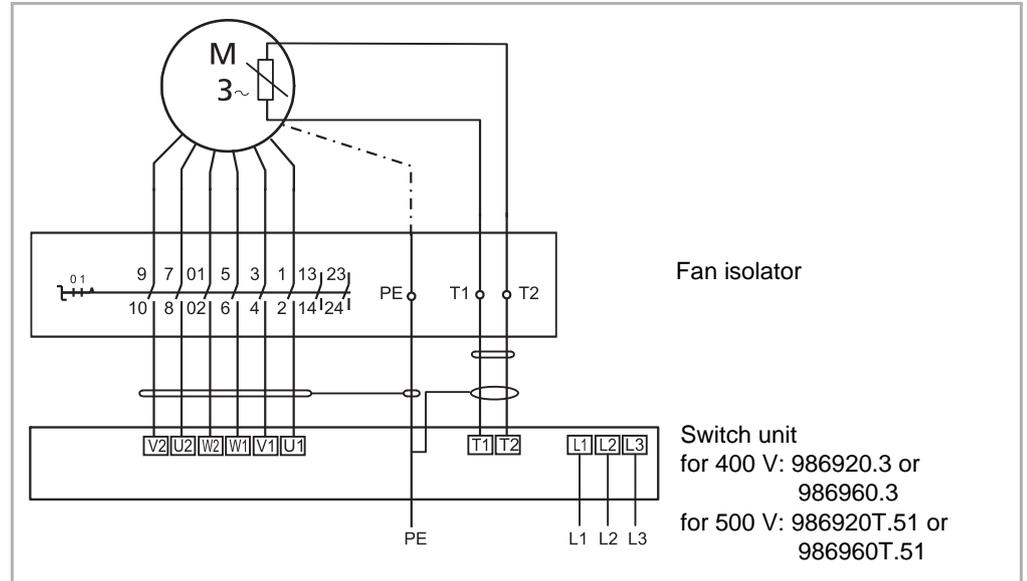


Fig. 66: 2-speed operation - unit with fan isolator (S) and switch unit

**AC-motor terminal diagram M, N (3x400V) and O, P (3x500V):  
1-speed, 3-phase motor - II 2G c IIB+H<sub>2</sub> T3, T4**

- With PTC thermistor
- Operating voltage: refer to unit identification plate

**1-speed operation 3 x 400 V (3 x 500 V) - unit with terminal box (K)**

- power cable: 3 + PE = 4 wires
- electrically shielded line: 2 PTC resistor connecting wires

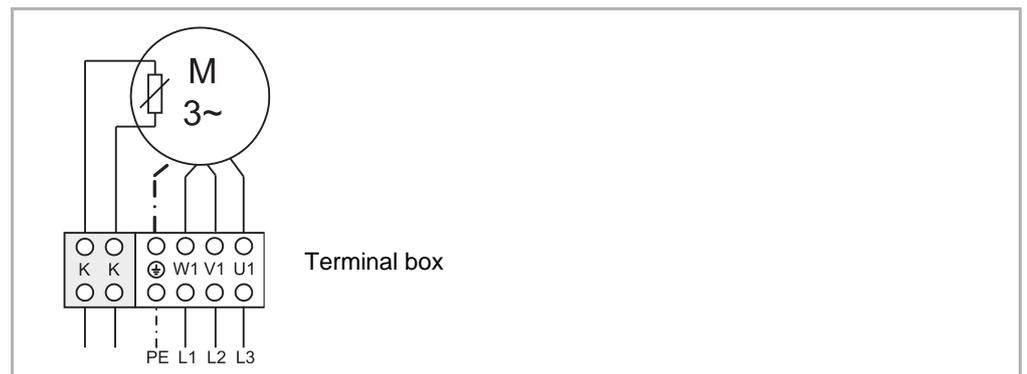


Fig. 67: 1-speed operation - unit with terminal box

**1-speed operation 3 x 400 V (3 x 500 V) - unit with terminal box (K) and switch unit**

- with speed switch unit 986810.3 or 986811.3 for 3x400V (AC-motory M, N), 986810T.51 or 986811T.51 for 3x500V (AC-motory O, P)
- power cable: 3 + PE = 4 wires
- connection cable: 3 + PE = 4 wires
- electrically shielded line: 2 PTC resistor connecting wires

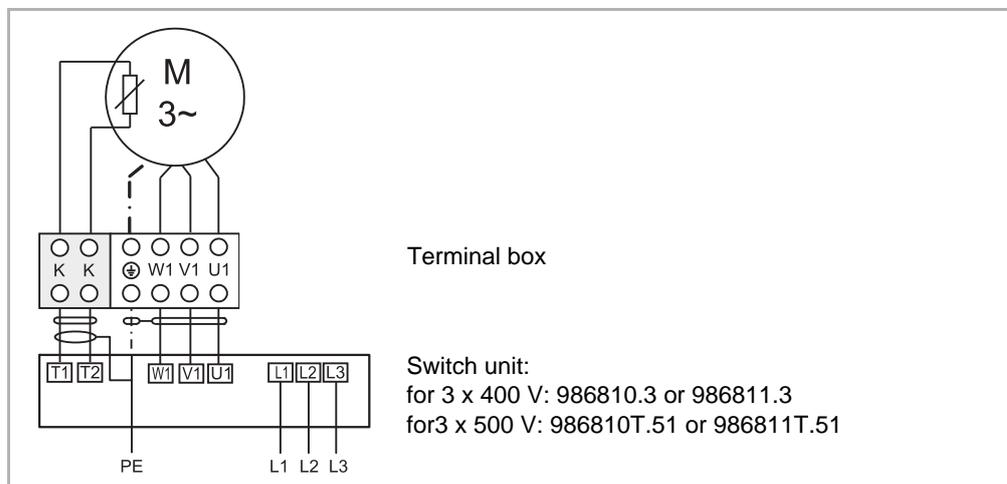


Fig. 68: 1-speed operation - unit with terminal box and switch unit

**1-speed operation 3x400V (3x500V) - unit with fan isolator (S)**

- power cable: 3 + PE = 4 wires
- electrically shielded line: 2 PTC resistor connecting wires

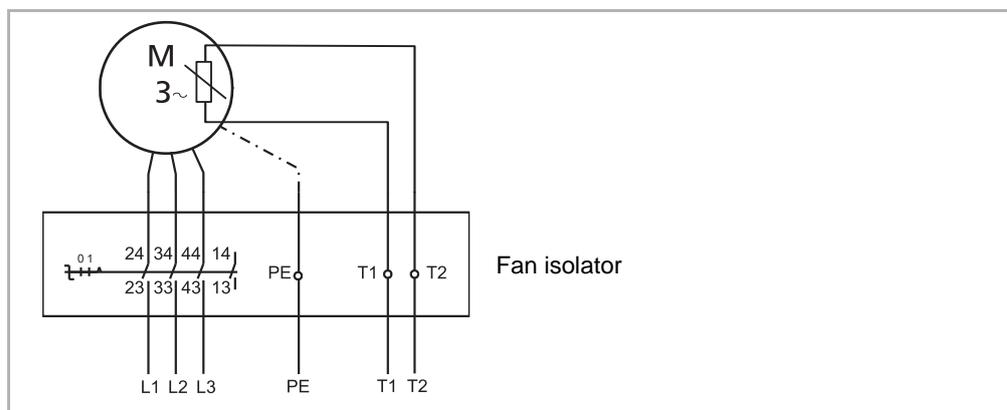


Fig. 69: 1-speed operation - unit with fan isolator

**1-speed operation 3x400V (3x500V) - unit with fan isolator (S) and switch unit**

- with speed switch unit 986810.3 or 986811.3 or 3x400V (AC-motor M,N), 986810T.51 or 986811T.51 for 3x500V (AC-motor O, P)
- power cable: 3 + PE = 4 wires
- connection cable: 3 + PE = 4 wires
- electrically shielded line: 2 PTC resistor connecting wires

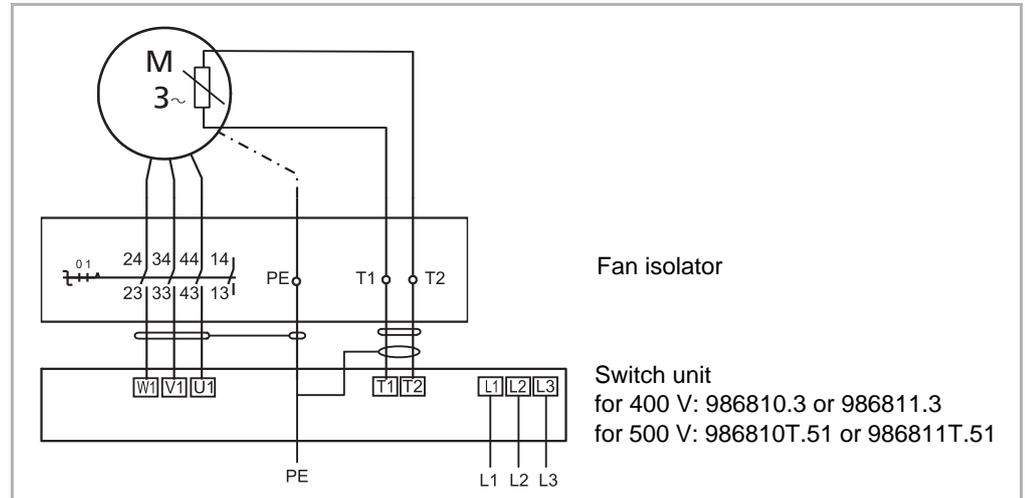


Fig. 70: 1-speed operation - unit with fan isolator and switch unit

**Frost protection monitoring of outdoor air unit and connection of damper actuator**

Monitoring of the heat exchanger is performed by the frost protection thermostat.

Deactivation of a fan and closing of a possibly connected fresh air damper is performed in combination with a 986960.3 switch unit. After the fault is corrected and the frost protection thermostat resets automatically the unit heater can be started again by using the 0-position of the speed selection switch.

When connecting the damper actuator the following shall be considered:

During manual deactivation of the unit heater - external remote switch or regulation system in frost risk case shall ensure that the fresh air damper is closed by the actuator.

During relevant connection a separate operation manual of Schischek company shall be observed.

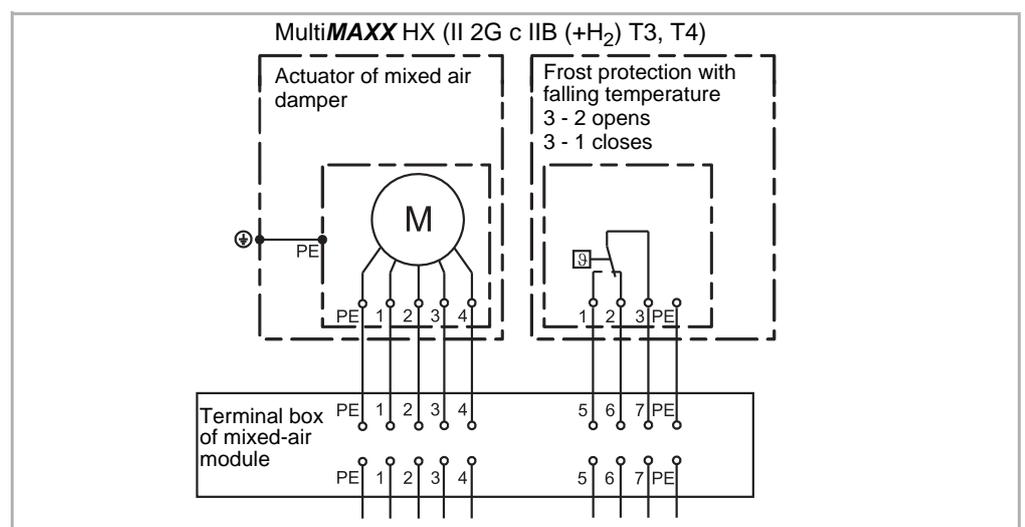


Fig. 71: Connecting frost protection thermostat and actuator for mixed air damper

Wiring diagram for shut-off valve with switch unit and safety thermostat

Valve actuator shall be regulated by the switch unit (see obr. 72).

In cases where the maximum intake air temperature (+ 40 ° C) is exceeded, it is necessary to install a safety thermostat (eg Ex TAM 150 range 10 to 50 ° C, mark 902017) to ensure the supply of the heating medium is interrupted.

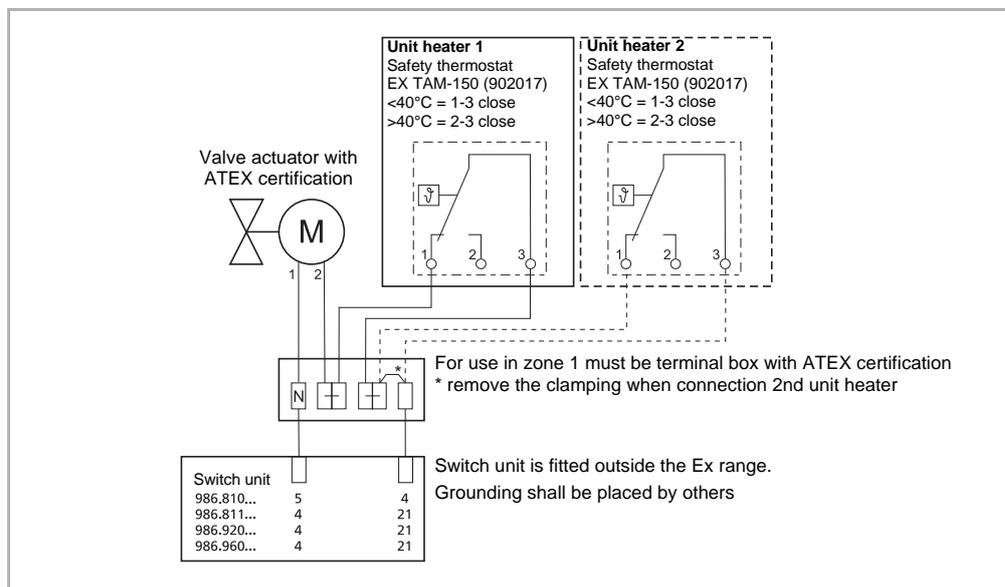


Fig. 72: Wiring diagram for shut-off valve with switch unit and safety thermostat

Safety switch

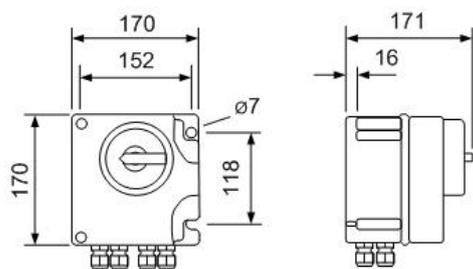


Fig. 73: Safety switch

Safety switch is mounted on the unit heater.

- 6-pole safety switch 16 A, 690 V
- Auxiliary contacts: 2 NOC (1 x ON late opening - OFF early opening/1 x normal switching)
- Explosion protection according to CENELEC IEC
- To be used in zone 1 and zone 2, zone 21 and zone 22
- Motor switching capacity AC 3 and AC 23 as of IEC 60 947-3, EN 60 947, DIN VDE 0660 part 107
- Forced opening of main contacts
- Isolating capacity as of DIN VDE 0660
- 3-fold lockable in OFF position with padlocks
- Protection class IP 65
- High corrosion resistance of external parts
- Labelling using orange „safety switch“
- Explosion protection II 2 G Ex ed IIC T6,T5
- Gas explosion protection PTB 02 ATEX 1033



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