CHILLER

WITH FULL-INVERTER SCREW COMPRESSORS

FGAC 2220 - 3722 AE2(.SL/.HE/ .HT)

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Fig. 1: Unit view (example version)

Type code

	FG	A	C	2	220	A	E	2	.SL
	FläktGroup	Condensing	Operating mode	Number of Compressors	Capacity stage	Series	Refrigerant	Supply voltage	Unit model
FG	FläktGroup Series								
A	Air cooled (outdoor installation)								
C	Chiller								
2	2 Screw compressors								
3	3 Screw compressors								
220-602	Unit sizes with 2 compressors: 220, 260, 265, 270, 272, 315, 360, 390, 420, 450, 480, 481*, 482, 541, 600*, 602*								
570-722	Unit sizes with 3 compressors: 570**, 630, 660**, 690*, 720*, 721*, 722* *not for HE/HT units / **only for HE/HT units								
A	Unit series A								
E	Refrigerants R-513A								
2	400 V / 3~ / 50Hz / PE								
_	standard								
.SL	SL unit – super low noise version								
.HE	HE unit - highly efficient design with operating range up to +46 °C								
.HT	HT unit - highly efficient performance with operating range up to +50 °C								

Fig. 2: Explanation of unit type code

Unit description

FläktGroup chiller with full inverter screw compressors

- Air-cooled for outdoor installation
- ErP 2021-compliant, comfort cooling application range
- High energy efficiency at full and part-load mode
- Refrigerant R-513A (GWP 631), safety class A1 (according to ISO 817)
- Capacity range approx. 477 kW to 1.7 MW cooling capacity
- 4 unit models
  - Standard-version (21 unit sizes)
  - SL model, noise-optimized with noise reduction of approx. 9 dB(A) (21 unit sizes)
  - HE model in particularly energy-efficient design (16 unit sizes)
  - HT model with particularly energy-efficient design for ambient temperatures up to 50 °C (16 unit sizes)
- Built-in double pump (redundancy) optionally possible, models with standard delivery head or increased delivery head, as on/off pump or inverter pump
- 2-3 refrigeration circuits
- 2-3 semi-hermetic double-rotor compact screw compressors with a flanged oil separator and integrated inverter for capacity control
- Integrated cooling system for the inverter using refrigerant to ensure efficient and safe operation
- Internal Vi-slide to increase efficiency in part-load mode
- Electronic expansion valve
- W-shaped condenser
- Al/Al micro-channel condenser
- Optional Al/Al micro-channel condenser with epoxy polymer coating
- Optional Cu/Al condenser with coated fins or entire coating (instead of micro-channel)
- Shell-and-tube heat exchanger as evaporator, incl. internal frost protection heater
- Water-side connections via Victaulic coupling with weld-on ends, optional flange coupling
- Connection side left (view from switch cabinet side)
- Standard and SL units with directly driven axial fans, 6-pole with contact protection (IP54), fan speed control via mains transformer, which supplies the fans with different voltages depending on the high pressure, EC fans optional
- HE and HT units with energy-efficient, continuously variable EC fans, which are controlled with different control voltages depending on the high pressure; HT units are equipped with EC fans having stronger motors to achieve heat dissipation at higher ambient temperatures by higher rotational speeds
- Water outlet temperature -8 to +20 °C depending on outdoor temperature*)
- Standard and SL units: air-intake temperature from -10 °C to + 48 °C based on 7 °C water-outlet temperature*)
- HE units: Air-intake temperature from -15 °C to + 46 °C referred to 7 °C water-outlet temperature*)
- HT units: Air-intake temperature from -15 °C to + 50 °C referred to 7 °C water-outlet temperature*)
- Extended operating range down to -20 °C*) available for units with EC fan (option .R28)
- *) For details see chart of operating limits
- Power supply 400V / 3 / 50 Hz / PE (without N)
- Numbered connecting terminals
- Built-in phase sequence protection relay
- Automatic circuit breakers for control circuits
- Pump relay for control of one on-site chilled-water pump (option .E30) or two on-site chilled-water pumps with redundancy function (option .E31) for units without integrated pumps
- Demand limit contact to reduce electrical power consumption by deactivating compressors or their capacity steps optional (option .E23)
- FläktGroup controller, black display
- ***Attention: A water filter must be installed on site directly before the evaporator(s) to protect them from contamination and deposits of any kind. The water filter must have a mesh size of 0.9 mm or less.***
- All units of the series FGAC 2220-3690 AE2(.SL) and FGAC 2220-3630AE2.HE(HT) are Eurovent certified

Options and accessories

Mechanics accessories

Pumps - **There are 4 different variants of built-in pumps available**
- On/Off double pumps with standard head
- Double on/off double pumps with increased delivery head
- Inverter double pumps with standard head
- Inverter double pumps with increased delivery head
(refer to separate pump data information sheet)

Installation of accessories

Option .I02 or .I26 for SL units .I59 for HE/HT units - **Rubber anti-vibration mounts**
Anti-vibration isolators with rubber elements to minimize vibration transmission (supplied separately).
The on-site installation of suitable anti-vibration mounts is a prerequisite for warranty claims!

FläktGroup recommends the use of rubber vibration mounts. Alternatively, spring anti-vibration mounts can be chosen depending on the project specification.

Option .I01 or .I21 for SL units .I54 for HE/HT units **Spring anti-vibration mounts**
Anti-vibration isolators with spring elements to reduce the transmission of vibrations (supplied loose).
The on-site installation of the appropriate anti-vibration mounts is a prerequisite for warranty claims!

Spring vibration dampers are frequently requested in Great Britain.

Option .I10 - **Flow switch**
With paddle for installation in the hydraulic circuit at the chilled-water outlet (supplied separately). The on-site installation and wiring of the flow switch is a prerequisite for warranty claims!

Option .I08 - **Chilled-water connections with flanges**
Depending on the unit type, either mounted flanges or separate flange adaptor kit.

Option .I16 or .I65 for SL units .I61 for HE/HT units - **Protection grille for air-cooled heat exchanger**
Additional protection grille to prevent access to components installed under the air-cooled heat exchangers.

Option .I55 or .I56 for SL units, .I57 for HE/HT units - **Anti-corrosion coating for microchannel heat exchangers (MCHX)**
100 % epoxy-polymer coating using e-coating method for the entire air-cooled microchannel heat exchanger for protection against corrosion, UV radiation, and to ensure enhanced weather-proof features in conditions with average air contamination and application in proximity to sea water with average salt content.
- salt-spray test according to ASTM G85-02 A3 (SWAAT) for at least 3120 hours

Option .I09 or .I23 for SL units, .I52 for HE/HT units - **Cu/Al heat exchanger with corrosion-resistant coating for the fins (instead of the microchannel heat exchanger)**
Corrosion-resistant coating for fins of Cu/Al heat exchanger. The use of chemical cleaning methods and protective-paint coating made of polyester resin ensures the following characteristics:
- Corrosion resistance in a salt-spray test according to ASTM B117 for at least 1000 hours
- UV durability
Attention: Change in refrigerant charge volume and unit weight

Option .I18 or .I22 for SL units, .I51 for HE units - **Cu/Al heat exchanger with polyurethane coating (instead of microchannel heat exchanger)**
Cu/Al heat exchanger with polyurethane paint. The entire heat exchanger receives protective coating using polyurethane paint, so that the following qualities are safeguarded:

- Corrosion resistance in a salt-spray test according to ASTM B117 for at least 3000 hours
- UV durability

Attention: Change in refrigerant charge volume and unit weight

Refrigeration circuit accessories

Option .R02 - **Shut-off valves for compressor suction side**
Service shut-off valve assembled for fast and easy maintenance.

Option .R13 - **LP and HP Pressure Gauges**
Refrigerant gauge for high and low pressure side for reading off current operating pressures.

FläktGroup recommends the selection of the built-in pressure gauges.

Option .R19 - **Safety valve in double configuration for high and low-pressure side**
Two safety valves are connected via a changeover valve on the high and low-pressure side each. By using a changeover valve a trouble-free and fast replacement of safety valves without refrigerant loss is possible for maintenance and service jobs.

Option .R28 - **High-pressure control for operation at very low air-intake temperatures**
High-pressure control inside the refrigeration circuit to guarantee operation down to -20 °C air-intake temperatures.
Refer to the charts of operating limits for the exact operating range.
Attention: Change in refrigerant charge volume and unit weight. Prices on request.

For standard and SL-units it is mandatory to select EC fans (option .E81/ .E82).

FläktGroup recommends option R28 only for projects with special requirements. Alternatively, the unit's activation can be withdrawn if the outdoor temperature falls below the minimum outdoor temperature in the standard operating range (-10 °C for standard and SL units or -15 °C for HE and HT units).

Electrical accessories

Option .E02 - **Wiring in colour sequence: L1: brown L2: black L3: grey**
The wiring of the load circuit for the device takes place in the following colour sequence: L1: brown, L2: black, L3: grey

This colour sequence is frequently requested in Great Britain.

Option .E03 - **Operation message of compressor**
Floating contacts for status indication of each respective compressor.

Option .E21 - **Setpoint shift via a 4-20 mA signal provided on-site**
Shifting the chilled-water setpoint value in a fixed range via a 4-20 mA signal provided on-site. Changing the setpoint, e.g. during night operation, can result in significant savings potential.

Option .E22 - **2nd setpoint via on-site normally open contact.**
External changeover between two setpoint values set for unit by closing a field-provided floating contact. Raising the setpoint, e.g. during night mode operation, can realize significant savings potential.

Option .E23 - **Demand limit / load limitation**
Reduction of electrical power consumption by deactivating compressors or their capacity stages (demand limit switch) by opening an on-site floating contact. This function is used if a full electrical power supply is unavailable.

Option .E13 *(only for units with built-in pumps)*	-	**Frost protection heating for pipework and pump** Required when operating the unit below 0 °C outdoor temperature, regardless of the design with or without glycol; absolutely necessary when operating without glycol to protect against freezing in standby mode. ***For locations where the outdoor temperature can fall below -10 °C, the unit must be configured with a water-glycol mixture***.
Option .E58	-	**Heating for switch cabinet** To guarantee the operating range of the electrical components during year-round operation and to avoid condensation building up in the switch cabinet in areas with high relative humidity. FläktGroup recommends to select the switch cabinet heating for all delivery areas.
Option .E71	-	**Switch cabinet with socket 230 V** To facilitate service work, there is a socket in the switch cabinet which can be used, for example, for a laptop power supply or a flashlight (230 V, max. 500VA). FläktGroup recommends selecting the built-in socket if the customer has special requirements.
Option .E78	-	**Switch cabinet lighting** To facilitate service work, for example in poor visibility conditions or when working in the dark season when no lighting or connection for a portable rod lamp is available on site. FläktGroup recommends selecting the built-in lighting for special customer requirements.
Option .E81 or .E82 for SL units		**EC fans** The use of stepless EC fans instead of AC fans offers the following advantages: - Extended operating range down to -15 ° C outside temperature based on a water temperature of 7 ° C (see "Operating limits") - Improved deviating SEER values (see "General data") - Reduced power consumption in partial load operation - Reduced noise levels in partial load operation HE/HT units are equipped with EC fans as a standard.

For units without built-in pumps, one of the four following option numbers must be ordered to define the hardware control of the on-site pump:

Option .E04 - **Relay for actuating an on-site chilled water pump**
An on/off pump provided on-site is controlled via a floating contact.

Option .E34 - **Relay for actuating two parallel on-site chilled-water pumps**
Two on-site on/off pumps are controlled via two floating contacts. To increase system availability, the pumps are alternately activated by the controller; if one pump fails, the system automatically switches to the other pump permanently. The pumps must be fitted on-site with non-return valves.

Option .E30 - **0-10 V signal for controlling a customer supplied inverter chilled-water pump**
A speed-controlled inverter pump provided on-site is controlled by a 0-10 V signal. In addition, there is a floating contact for enabling the pump.

Option .E31 - **0-10 V signal for controlling two parallel inverter chilled-water pumps provided on-site**
Two on-site speed-regulated inverter pumps are controlled by a common 0-10 V signal. In addition, there are two floating contacts for activating the pumps. To increase system availability, the pumps are alternately activated by the release contact of the controller; if one pump fails, the system automatically switches to the other pump permanently. The pumps must be fitted on-site with non-return valves.

Accessories for controls

Serial card for connection to a building management system - **Unit connection to the building management system (BMS) using a serial card.**
The following protocols are used to transmit digital and analog values:
- Readout of error messages
- Retrieval of temperature and pressure values provided by the controller
- Operating status of individual compressors
- Enabling the unit
- Setpoint shift

Option .E14 - **Modbus (RS485),**
Built-in modbus interface for connection to the building management system.

Option .E15 - **LonWorks® ,**
Built-in LonWorks interface for connection to the building management system.

Option .E16 - **BACnet via IP,**
Built-in BACnet via IP interface for connection to the building management system.

Option .E17 - **BACnet via MS/TP RS485,**
Built-in BACnet via MS/TP RS485 interface for connection to the building management system.

Option .E19/.E20 - **Second control connection for remote monitoring and regulation.**
Up to 10 units in the same controller family can be connected to an additional remote control.
Option .E19 for remote controls up to 200 meters away
Option .E20 for remote controls up to 500 meters away

For units with built-in inverter pumps or on-site inverter pump(s), one of the following three option numbers must be ordered to define the software type of pump control:

Option .E84

(only when using inverter pumps)

Setting constant pump speed
on the unit controller for pumps with variable speed. The speed is adjusted once during commissioning so that the required water-volume flow passes through the evaporator.

Option .E85

(only when using inverter pumps)

- **VPS-D control**
In order to exploit further potential energy savings, the speed of the on-site or installed inverter pump(s) is reduced to 50% in part-load mode As far as possible, the Delta T at the evaporator is kept constant on the water side during part-load mode. VPS-D is intended for systems without system separation, a single-circuit buffer storage tank and a distributor with overflow to the collector. For the consumer circuits, additional on-site pumps with on-site control are required, which are usually designed as pressure-controlled inverter pumps in conjunction with 2-way valves at the consumers. Included in delivery are two separately supplied temperature sensors as well as an extended controller hardware with the required connection points. The temperature sensors must be installed on-site at the water inlet to the manifold and in the overflow pipe in immersion wells with heat-conducting paste. Measurement at the temperature sensors has a higher-ranking influence on the pump speed and always ensures an overflow from the inlet to the outlet.

It should be noted that
- the hydraulic system is designed so that the primary circuit pump(s) can always deliver at least 50% of the water volume. If this value is not reached, the unit will malfunction.
- the overflow line is designed for 50% of the nominal water flow rate
- the flow switch is calibrated to a value of 35% of the nominal water volume flow. For this purpose, the maximum pipe cross-section in the area of the flow monitor must be observed in order to ensure proper functioning.

Observe the separate planning instructions and hydraulic diagrams for VPS-D systems.

Option .E86

(only when using inverter pumps)

- **VPS-E control**
In order to exploit further potential energy savings, the speed of the on-site or installed inverter pump(s) is reduced to 50% in part-load mode. As far as possible, the Delta T at the evaporator is kept constant on the water side during part-load mode. VPS-E is intended for systems with system separation (plate heat exchangers) and a single-circuit buffer tank on the primary side. For the consumer circuits on the secondary side of the system separation (plate heat exchanger), one or more additional on-site pumps with on-site control are required, which are usually designed as pressure-controlled inverter pumps in conjunction with 2-way valves at the consumers. Alternatively, the system can be used for single circuit systems with single-circuit buffer and a single consumer with 3-way valve. A corresponding software for the function is included in the scope of delivery.

It should be noted that
- the hydraulic system is designed so that the primary circuit pump(s) can always deliver at least 50% of the water volume. If this value is not reached, the unit will malfunction.
- the flow monitor is calibrated to a value of 35% of the nominal water volume flow. For this purpose, the maximum pipe cross-section in the area of the flow monitor must be observed in order to ensure proper functioning.

Observe the separate planning instructions and hydraulic diagrams for VPS-E systems.

Other accessories

Option .O10	-	**Operation with chilled-water temperatures below 0°C** Option is required for operation with chilled-water outlet temperatures below 0°C.
Option .O30 or .O32 for SL units, .O24 for HE/HT units	-	**Increased thermal insulation of evaporator** Double-layer thermal insulation of the evaporator to prevent condensation when the unit is operated below -10 °C outdoor temperature. Only required for units without integrated pumps and operation below -10 °C outdoor temperature.
Option .O31 or .O33 for SL units, .O25 for HE/HT units	-	**Reinforced thermal insulation in evaporators, pipes and pumps** Double-layer thermal insulation of the evaporator, piping and pumps to prevent condensation. Only required for units with integrated pumps and operation below -10 °C outdoor temperature.
Option .O27	-	**Refrigerant leak detection (Alarm)** The compressor section is monitored for leaking refrigerant. A refrigerant leakage is triggered by an error message from the controller. By using a leakage detection system, the test intervals prescribed by EU (No.) 517/2014 with regard to the tightness of the refrigeration circuit can be reduced. See operating instructions.
Option .O28	-	**Refrigerant leak detection (compressor switch off)** The compressor section is monitored for leaking medium. In the event of refrigerant leakage, the compressor is switched off and an error message is triggered by the controller. By using a leakage detection system, the test intervals prescribed in EU (No.) 517/2014 with regard to the tightness of the refrigeration circuit can be reduced. See operating instructions.
Option .O13 or .O26 for SL units, .O14 for HE/HT units	-	**Unit stabilization for shipping** Additionally reinforced frame construction to stabilize unit during shipping. Only required in special delivery areas.
Option .O11	-	**Packing of the unit with nylon cover** The unit is shrink-wrapped in nylon foil for transport and storage to protect it from weather and dirt. FläktGroup recommends nylon packaging for all delivery areas.

Operating limits

On the water side, the operating limits according to Table 1, and on the air and water side, the limits of the selected options according to the following chart must be observed.

Tab.1: Operating limits of water (glycol) circuit

		Min	Max
Water inlet	[°C]	-5	28
Water outlet	[°C]	-8	20
dT at water outlet temp. > 5°C	[K]	4	8
dT at water outlet temp. ≤ 5 °C	[K]	3	5

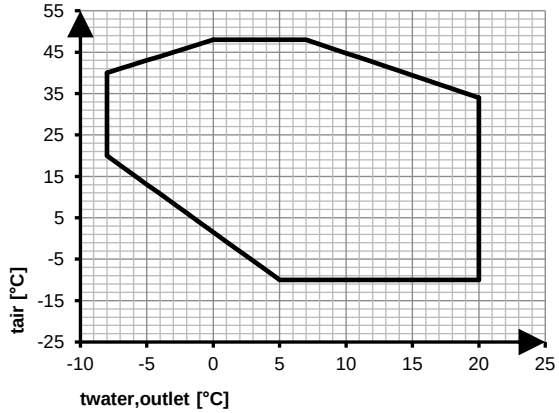


Fig. 3: Operating range for standard and SL units

Standard configuration AC fans with variable control.
Operating range -10 °C to 48 °C air-intake temperature based on a water-outlet temperature of 7 °C.
Option .O10 required for water outlet temperatures below 0 °C.

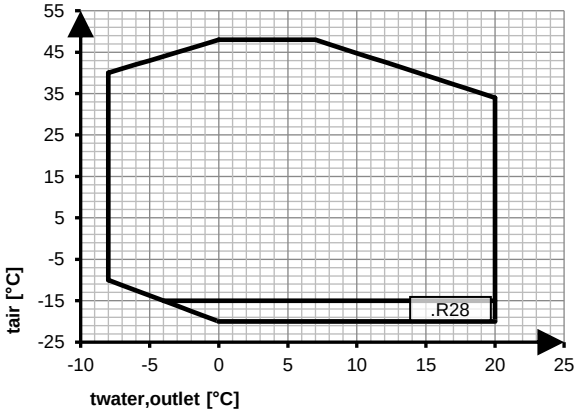


Fig. 4: Operating range for standard and SL units with EC fans

Version with stepless EC fans (option .E81 / .E82).
Operating range -15 ° C to 48 ° C air intake temperature based on a water outlet temperature of 7 ° C.
Option .R28 required for air temperatures below -15 ° C.
Option .O10 required for water outlet temperatures below 0 ° C.

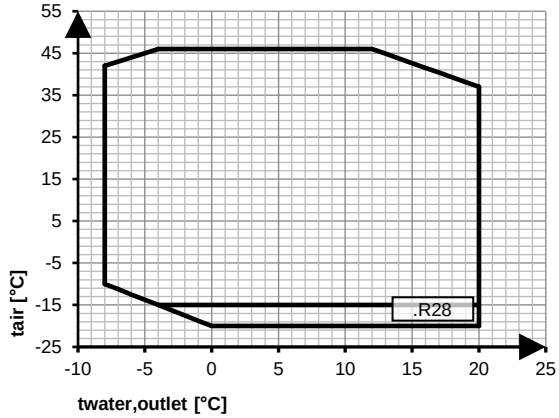


Fig. 5: Operating range for HE units

EC fans with stepless speed control.
Operating range -15 °C to +46 °C air-intake temperature based on a water-outlet temperature of +7 °C.
Option .R28 required for air temperatures below -15 °C.
Option .O10 required for water outlet temperatures below 0 °C.

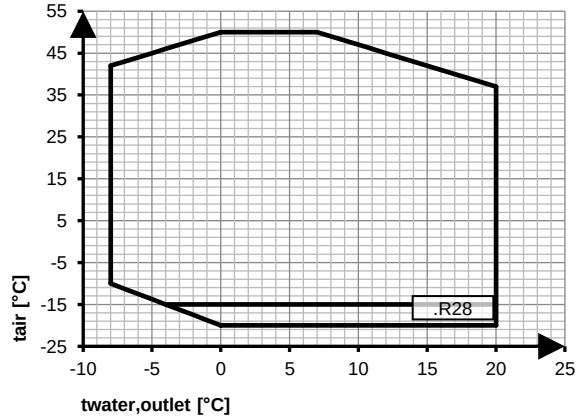


Fig. 6: Extended operating range of HT units

EC fans with stepless speed control.
Operating range -15 °C to +50 °C air-intake temperature based on a water-outlet temperature of 7 °C.
Option .R28 required for air temperatures below -15 °C.
Option .O10 required for water outlet temperatures below 0 °C

Notices for all diagrams

The unit is prepared for the selected operating range during the end-of-line test. Please attach the technical order information to the order.

For operational reasons, water at evaporator outlet temperatures below 5°C must be protected from freezing by adding glycol.
FläktGroup recommends the use of at least 30% ethylene glycol.

The unit must be protected from freezing at ambient temperatures less than 5°C.
For this purpose, frost protection heating for the evaporator is provided as standard on units without pumps.
For units with integrated pumps, an anti-freeze heater for pipes and pumps is available under option number .E13.
The anti-freeze heaters are designed for outdoor temperatures down to -10 °C. In installation locations where colder outdoor temperatures may occur, the unit must be configured with glycol.

General Data

Tab.2: General data for standard units with 2 compressors

Unit type FGAC #### AE2			2220	2260	2265	2270	2272	2315	2360	2390
Performance data (catalog) - [6]										
Refrigeration capacity [1]	Qe	[kW]	478.6	531.1	561.2	598.1	656.7	720.7	801.4	874.1
Power consumption [5]	P	[kW]	172	189.2	198.6	209.1	237.2	263	290.3	312.1
EER			2.78	2.81	2.83	2.86	2.77	2.74	2.76	2.80
ESEER			4.66	4.67	4.67	4.63	4.63	4.72	4.7	4.61
Chilled water flow rate	Ve	[m³/h]	82.4	91.4	96.6	103.0	113.0	124.1	138.0	150.5
Pressure drop	Δpe	[kPa]	32	39.5	35.2	40	38.3	46.2	40.7	42.8
ERP conformity										
SEER (EU 2016/2281)[7]			4.77	4.78	4.73	4.76	4.76	4.82	4.83	4.79
η_S (EU 2016/2281) [7]		[%]	188	188	186	187	187	190	190	189
SEER (EU 2016/2281)[9]			4.93	4.94	4.89	4.93	4.91	5.01	5.02	4.95
η_S (EU 2016/2281)[9]		[%]	194	195	192	194	194	197	198	195
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011										
Refrigeration capacity [1]	Qe	[kW]	477.3	529.4	559.6	596.2	654.7	718.2	798.9	871.3
EER			2.75	2.77	2.8	2.83	2.74	2.71	2.73	2.77
ESEER			4.48	4.46	4.48	4.43	4.43	4.49	4.49	4.41
Eurovent Class			C	C	C	C	C	C	C	C
Controller			FläktGroup controller with TA software and large display							
Fans			**Axial Fans**							
Fan Quantity		n	6	7	7	8	8	9	10	11
Total air volume flow		[m³/h]	114840	133992	133992	153108	153108	172260	191412	210528
Compressors			**Double rotor screw compressor with integrated inverter**							
Number of compressors			2	2	2	2	2	2	2	2
Number of refrigeration circuits			2	2	2	2	2	2	2	2
Minimum part-load speed		[%]	13	13	13	13	13	13	13	13
Evaporator (chilled-water side)										
Min. water mass flow	$V_{e,min}$	[m³/h]	45.0	45.0	57.0	57.0	63.0	63.0	69.0	69.0
Max. water mass flow	$V_{e,max}$	[m³/h]	144.0	144.0	169.0	169.0	181.0	181.0	196.0	202.0
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	1700	1900	2000	2100	2300	2500	2800	3100
Water charge of heat exchanger		[l]	140	140	124	124	230	230	220	210
Evaporator connection	VICTAULIC[2]		6“	6“	6“	6“	6“	6“	6“	6“
Refrigeration circuit charge										
Refrigerant R513A [3.4]		[kg]	79	87	92	101	108	120	135	146
Oil charge		[kg]	36	36	36	36	36	36	36	36
Connectable cable cross-sections [8]										
Rectangular	Min Max	[mm] [mm]	2 x 32 x 6	2x32x6	2x32x6	2x32x6	2x40x5 2x63x5	2x40x5 2x63x5	2x40x5 2x63x5	2x40x5 2x63x5
Round	Min Max	[mm²] [mm²]	2 x 185	2 x 185	2 x 185	2 x 185	2 x 185 2 x 300	2 x 185 2 x 300	2 x 185 2 x 300	2 x 185 2 x 300
Dimensions and weight										
A (length)		[mm]	4150	5400	5400	5400	5400	6650	6650	7900
B (width)		[mm]	2260	2260	2260	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500	2500	2500	2500
Weight [4.5]		[kg]	4790	5360	5360	5420	5730	6150	6240	6730

1) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
2) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
9) Applies to units with option .E81 (EC fan) and without pumps

Tab.2: General data for standard units with 2 compressors (continued)

Unit type FGAC #### AE2			2420	2450	2480	2481	2482	2541	2600	2602
Performance data (catalog) - [6]										
Refrigeration capacity [1]	Qe	[kW]	932	990.3	1029	1054	1128	1169	1242	1302
Power consumption [5]	P	[kW]	331	358.1	383.8	366.8	405.3	430.5	438.8	477.1
EER			2.82	2.77	2.68	2.87	2.78	2.72	2.83	2.73
ESEER			4.62	4.67	4.73	4.65	4.65	4.79	4.81	4.81
Chilled water flow rate	Ve	[m³/h]	160.5	170.5	177.1	181.5	194.2	201.2	213.9	224.2
Pressure drop	Δpe	[kPa]	48.7	42.4	45.8	48.1	51.7	41.7	47.1	51.8
ERP conformity										
SEER (EU 2016/2281)[7]			4.82	4.77	4.8	4.79	4.82	4.89	4.9	4.9
η_S (EU 2016/2281) [7]		[%]	190	188	189	189	190	193	193	193
SEER (EU 2016/2281)[9]			4.98	4.97	4.98	4.98	5.00	5.11	5.12	5.12
η_S (EU 2016/2281)[9]		[%]	196	196	196	196	197	201	202	202
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011										
Refrigeration capacity [1]	Qe	[kW]	928.7	987.3	1026	1050	1124	1166	1238	1297
EER			2.78	2.73	2.65	2.84	2.75	2.69	2.8	2.69
ESEER			4.4	4.48	4.52	4.43	4.43	4.59	4.58	4.56
Eurovent Class			C	C	D	C	C	D	C	D
Controller			FläktGroup controller with TA software and large display							
Fans			**Axial Fans**							
Fan Quantity		n	12	12	12	14	14	14	16	16
Total air volume flow		[m³/h]	229680	229680	229680	267948	267948	267948	306252	306252
Compressors			**Double rotor screw compressor with integrated inverter**							
Number of compressors			2	2	2	2	2	2	2	2
Number of refrigeration circuits			2	2	2	2	2	2	2	2
Minimum part-load speed		[%]	13	13	13	13	13	13	13	13
Evaporator (chilled-water side)										
Min. water mass flow	$V_{e,min}$	[m³/h]	69.0	90.0	90.0	90.0	90.0	112.0	112.0	112.0
Max. water mass flow	$V_{e,max}$	[m³/h]	202.0	230.0	230.0	230.0	248.0	362.9	362.9	362.9
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	3300	3500	3600	3700	3900	4100	4300	4600
Water charge of heat exchanger		[l]	140	140	124	124	230	230	220	210
Evaporator connection	VICTAULIC[2]		6“	8“	8“	8“	8“	8“	8“	8“
Refrigeration circuit charge										
Refrigerant R513A (GWP 631) [3,4]		[kg]	155	161	168	174	189	193	208	214
Oil charge		[kg]	36	53	70	70	70	70	70	70
Connectable cable cross-sections [8]										
Rectangular	Min Max	[mm] [mm]	2 x 40 x 5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5
Round	Min Max	[mm²] [mm²]	2 x 185 2 x 300	2 x 240 4 x 185	2 x 240 4 x 185	2 x 240 4 x 185	2 x 240 4 x 185	4 x 185	4 x 185	4 x 185
Dimensions and weight										
A (length)		[mm]	7900	7900	7900	9150	9150	9150	10400	10400
B (width)		[mm]	2260	2260	2260	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500	2500	2500	2500
Weight [4.5]		[kg]	6810	7410	7760	8360	8470	8560	9030	9060

1) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
2) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
9) Applies to units with option .E81 (EC fan) and without pumps

Tab.2: General data for standard units with 3 compressors (continued)

Unit type FGAC #### AE2			3630	3690	3720	3721	3722
Performance data (catalog) - [6]							
Refrigeration capacity [1]	Qe	[kW]	1409	1493	1559	1649	1697
Power consumption [5]	P	[kW]	498.8	544.8	578.9	596.2	618.5
EER			2.83	2.74	2.69	2.77	2.74
ESEER			4.61	4.66	4.66	4.62	4.65
Chilled water flow rate	Ve	[m³/h]	242.6	257.0	268.5	283.9	292.2
Pressure drop	Δpe	[kPa]	45.9	51.5	39.6	44.3	50.4
ERP conformity							
SEER (EU 2016/2281)[7]			4.74	4.77	4.76	4.76	4.79
η_S (EU 2016/2281) [7]		[%]	187	188	187	187	189
SEER (EU 2016/2281)[9]			4.94	4.97	4.95	4.99	5.00
η_S (EU 2016/2281)[9]		[%]	195	196	195	196	197
ERP-compliant 2021			☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011							
Refrigeration capacity [1]	Qe	[kW]	1405	1488	1555	1644	1691
EER			2.79	2.71	2.67	2.74	2.71
ESEER			4.41	4.44	4.48	4.43	4.43
Eurovent Class			C	C	D	C	C
Controller			FläktGroup controller with TA software and large display				
Fans			**Axial Fans**				
Fan Quantity		n	18	18	18	20	20
Total air volume flow		[m³/h]	344520	344520	344520	382788	382788
Compressors			**Double rotor screw compressor with integrated inverter**				
Number of compressors			3	3	3	3	3
Number of refrigeration circuits			3	3	3	3	3
Minimum part-load speed		[%]	8	8	8	8	8
Evaporator (chilled-water side)							
Min. water mass flow	$V_{e,min}$	[m³/h]	150.0	150.0	150.0	150.0	150.0
Max. water mass flow	$V_{e,max}$	[m³/h]	370.1	370.1	350.0	350.0	360.0
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10
Minimum chilled-water system content		[l]	4900	5200	5500	5800	5900
Water charge of heat exchanger		[l]	575	575	550	550	500
Evaporator connection	VICTAULIC[2]		8“	8“	8“	8“	8“
Refrigeration circuit charge							
Refrigerant R513A (GWP 631) [3,4]		[kg]	236	244	254	273	288
Oil charge		[kg]	54	88	105	105	105
Connectable cable cross-sections [8]							
Rectangular	Min Max	[mm] [mm]	2 x 60 x 5 2x63x5	3x50x8	3x50x8	3x50x8	3x50x8
Round	Min Max	[mm²] [mm²]	4 x 185	--	--	--	--
Dimensions and weight							
A (length)		[mm]	11650	11650	11650	12900	12900
B (width)		[mm]	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500
Weight [4,5]		[kg]	10880	11620	11940	12420	12440

1) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
2) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
9) Applies to units with option .E81 (EC fan) and without pumps

Tab.3: General data for SL units (super low noise model) with 2 compressors

Unit type FGAC #### AE2.SL			2220	2260	2265	2270	2272	2315	2360	2390
Performance data (catalog) - [6]										
Refrigeration capacity [1]	Qe	[kW]	477	517	555	578	663	711	774	846
Power consumption [5]	P	[kW]	168.1	177.0	195.5	212.2	228.3	260.2	295.6	317.7
EER			2.84	2.92	2.84	2.72	2.90	2.73	2.62	2.66
ESEER			4.81	4.80	4.77	4.66	4.75	4.76	4.75	4.64
Chilled water flow rate	Ve	[m³/h]	82.1	89.0	95.5	99.5	114.1	122.5	133.3	145.6
Pressure drop	Δpe	[kPa]	31.8	37.4	34.4	37.3	39.1	45	38	40.1
ERP conformity										
SEER (EU 2016/2281)[7]			4.91	4.88	4.83	4.74	4.89	4.9	4.87	4.76
η_S (EU 2016/2281) [7]		[%]	194	192	190	187	193	193	192	187
SEER (EU 2016/2281)[9]			5.13	5.14	5.04	4.93	5.14	5.12	5.06	4.96
η_S (EU 2016/2281)[9]		[%]	202	203	199	194	203	202	199	195
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011										
Refrigeration capacity [1]	Qe	[kW]	475.7	515.1	553	576.3	660.9	708.9	772	843.1
EER			2.81	2.88	2.81	2.69	2.87	2.7	2.59	2.63
ESEER			4.48	4.59	4.57	4.47	4.56	4.54	4.56	4.45
Eurovent Class			C	C	C	D	C	C	D	D
Controller			FläktGroup controller with TA software and large display							
Fans			**Axial Fans**							
Fan Quantity		n	7	8	8	8	10	10	10	11
Total air volume flow		[m³/h]	120996	138276	138276	138276	172872	172872	172872	190152
Compressors			**Double rotor screw compressor with integrated inverter**							
Number of compressors			2	2	2	2	2	2	2	2
Number of refrigeration circuits			2	2	2	2	2	2	2	2
Minimum part-load speed		[%]	13	13	13	13	13	13	13	13
Evaporator (chilled-water side)										
Min. water mass flow	$V_{e,min}$	[m³/h]	45.0	45.0	57.0	57.0	63.0	63.0	69.0	69.0
Max. water mass flow	$V_{e,max}$	[m³/h]	144.0	144.0	169.0	169.0	181.0	181.0	196.0	202.0
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	1700	1900	2000	2100	2300	2500	2800	3100
Water charge of heat exchanger		[l]	140	140	124	124	230	230	220	210
Evaporator connection	VICTAULIC[2]		6“	6“	6“	6“	6“	6“	6“	6“
Refrigeration circuit charge										
Refrigerant R513A (GWP 631) [3,4]		[kg]	83	91	97	101	116	125	135	146
Oil charge		[kg]	36	36	36	36	36	36	36	36
Connectable cable cross-sections [8]										
Rectangular	Min Max	[mm] [mm]	2 x 32 x 6	2x32x6	2x32x6	2x32x6	2x40x5 2x63x5	2x40x5 2x63x5	2x40x5 2x63x5	2x40x5 2x63x5
Round	Min Max	[mm²] [mm²]	2 x 185	2 x 185	2 x 185	2 x 185	2 x 185 2 x 300	2 x 185 2 x 300	2 x 185 2 x 300	2 x 185 2 x 300
Dimensions and weight										
A (length)		[mm]	5400	5400	5400	5400	6650	6650	6650	7900
B (width)		[mm]	2260	2260	2260	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500	2500	2500	2500
Weight [4.5]		[kg]	5510	5680	5700	5720	6480	6510	6550	7070

3) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
4) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
9) Applies to units with option .E82 (EC fan) and without pumps

Tab.3: General data for SL units (super low noise model) with 2 compressors (continued)

Unit type FGAC #### AE2.SL			2420	2450	2480	2481	2482	2541	2600	2602
Performance data (catalog) - [6]										
Refrigeration capacity [1]	Qe	[kW]	903	973	1028	1046	1120	1162	1199	1290
Power consumption [5]	P	[kW]	336.9	356.8	373.5	359.4	397.2	422.1	446.5	470.5
EER			2.68	2.73	2.75	2.91	2.82	2.75	2.69	2.74
ESEER			4.64	4.76	4.85	4.74	4.80	4.88	4.88	4.88
Chilled water flow rate	Ve	[m³/h]	155.5	167.5	176.9	180.0	192.9	200.1	206.4	222.0
Pressure drop	Δpe	[kPa]	45.7	40.9	45.7	47.3	51	41.2	43.9	50.8
ERP conformity										
SEER (EU 2016/2281)[7]			4.78	4.86	4.95	4.89	4.93	5.00	4.95	4.99
η_S (EU 2016/2281) [7]		[%]	188	191	195	192	194	197	195	197
SEER (EU 2016/2281)[9]			4.97	5.08	5.17	5.13	5.19	5.25	5.18	5.25
η_S (EU 2016/2281)[9]		[%]	196	200	204	202	205	207	204	207
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011										
Refrigeration capacity [1]	Qe	[kW]	900.1	969.8	1025	1042	1116	1159	1195	1286
EER			2.65	2.7	2.72	2.87	2.78	2.72	2.66	2.71
ESEER			4.43	4.56	4.61	4.53	4.56	4.67	4.66	4.63
Eurovent Class			D	C	C	C	C	C	D	C
Controller			FläktGroup controller with TA software and large display							
Fans			**Axial Fans**							
Fan Quantity		n	12	13	14	16	16	16	16	18
Total air volume flow		[m³/h]	207432	224712	241992	276588	276588	276588	276588	311148
Compressors			**Double rotor screw compressor with integrated inverter**							
Number of compressors			2	2	2	2	2	2	2	2
Number of refrigeration circuits			2	2	2	2	2	2	2	2
Minimum part-load speed		[%]	13	13	13	13	13	13	13	13
Evaporator (chilled-water side)										
Min. water mass flow	$V_{e,min}$	[m³/h]	69.0	90.0	90.0	90.0	90.0	112.0	112.0	112.0
Max. water mass flow	$V_{e,max}$	[m³/h]	202.0	230.0	230.0	230.0	248.0	362.9	362.9	362.9
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	3300	3500	3600	3700	3900	4100	4300	4600
Water charge of heat exchanger		[l]	210	275	275	275	261	310	310	310
Evaporator connection	VICTAULIC[2]		6“	8“	8“	8“	8“	8“	8“	8“
Refrigeration circuit charge										
Refrigerant R513A (GWP 631) [3,4]		[kg]	155	168	178	183	198	204	208	224
Oil charge		[kg]	36	53	70	70	70	70	70	70
Connectable cable cross-sections [8]										
Rectangular	Min Max	[mm] [mm]	2 x 40 x 5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5
Round	Min Max	[mm²] [mm²]	2 x 185 2 x 300	2 x 240 4 x 185	2 x 240 4 x 185	2 x 240 4 x 185	2 x 240 4 x 185	4 x 185	4 x 185	4 x 185
Dimensions and weight										
A (length)		[mm]	7900	9150	9150	10400	10400	10400	10400	11650
B (width)		[mm]	2260	2260	2260	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500	2500	2500	2500
Weight [4,5]		[kg]	7150	8290	8670	9110	9110	9310	9370	9780

3) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
4) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
9) Applies to units with option .E82 (EC fan) and without pumps

Tab.3: General data for SL units (super low noise model) with 3 compressors

Unit type FGAC #### AE2.SL			3630	3690	3720	3721	3722
Performance data (catalog) - [6]							
Refrigeration capacity [1]	Qe	[kW]	1365	1474	1541	1590	1635
Power consumption [5]	P	[kW]	507.7	541.1	572.2	610.0	633.6
EER			2.69	2.72	2.69	2.61	2.58
ESEER			4.76	4.88	4.81	4.80	4.81
Chilled water flow rate	Ve	[m³/h]	235.0	253.8	265.3	273.7	281.4
Pressure drop	Δpe	[kPa]	43.1	50.2	38.7	41.2	46.7
ERP conformity							
SEER (EU 2016/2281)[7]			4.77	4.94	4.84	4.84	4.85
η_S (EU 2016/2281) [7]		[%]	188	194	191	190	191
SEER (EU 2016/2281)[9]			5.01	5.19	5.06	4.98	5.04
η_S (EU 2016/2281)[9]			197	204	199	196	199
ERP-compliant 2021			☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011							
Refrigeration capacity [1]	Qe	[kW]	1361	1469	1537	1586	1630
EER			2.66	2.69	2.67	2.58	2.55
ESEER			4.57	4.65	4.63	4.61	4.61
Eurovent Class			D	D	D	D	D
Controller			FläktGroup controller with TA software and large display				
Fans			**Axial Fans**				
Fan Quantity		n	18	20	20	20	20
Total air volume flow		[m³/h]	311148	345708	345708	345708	345708
Compressors			**Double rotor screw compressor with integrated inverter**				
Number of compressors			3	3	3	3	3
Number of refrigeration circuits			3	3	3	3	3
Minimum part-load speed		[%]	8	8	8	8	8
Evaporator (chilled-water side)							
Min. water mass flow	$V_{e,min}$	[m³/h]	150.0	150.0	150.0	150.0	150.0
Max. water mass flow	$V_{e,max}$	[m³/h]	370.1	370.1	350.0	350.0	360.0
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10
Minimum chilled-water system content		[l]	4900	5200	5500	5800	5900
Water charge of heat exchanger		[l]	575	575	550	550	500
Evaporator connection	VICTAULIC[2]		8“	8“	8“	8“	8“
Refrigeration circuit charge							
Refrigerant R513A (GWP 631) [3,4]		[kg]	236	255	267	278	288
Oil charge		[kg]	54	88	105	105	105
Connectable cable cross-sections [8]							
Rectangular	Min Max	[mm] [mm]	2 x 60 x 5 2x63x5	3x50x8	3x50x8	3x50x8	3x50x8
Round	Min Max	[mm²] [mm²]	4 x 185	--	--	--	--
Dimensions and weight							
A (length)		[mm]	11650	12900	12900	12900	12900
B (width)		[mm]	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500
Weight [4.5]		[kg]	11350	12550	12870	12890	12910

3) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
4) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
9) Applies to units with option .E82 (EC fan) and without pumps

Tab.4: General data for HE/HT units (particularly efficient design) with 2 compressors

Unit type FGAC #### AE2.(HE/HT)			2220	2260	2265	2270	2272	2315	2360	2390
Performance data (catalog) - [6]										
Refrigeration capacity [1]	Qe	[kW]	510	552	590	627	684	767	840	899
Power consumption [5]	P	[kW]	163.5	177.8	189.4	203	222.2	257.2	286	303.4
EER			3.12	3.10	3.12	3.09	3.08	2.98	2.94	2.96
ESEER			5.08	5.2	5.16	5.06	5.05	5.04	5.07	5.06
Chilled water flow rate	Ve	[m³/h]	87.8	95.0	101.6	107.9	117.8	132.1	144.6	154.8
Pressure drop	Δpe	[kPa]	36.4	34	38.9	43.9	41.6	37.3	44.7	45.3
ERP conformity										
SEER (EU 2016/2281)[7]			5.26	5.27	5.26	5.2	5.21	5.21	5.22	5.17
η_S (EU 2016/2281) [7]		[%]	207	208	207	205	205	206	206	204
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011										
Refrigeration capacity [1]	Qe	[kW]	508.7	550.4	588.2	624.8	682.1	765	837.1	896.4
EER			3.08	3.07	3.08	3.05	3.04	2.95	2.9	2.93
ESEER			4.86	4.98	4.92	4.81	4.82	4.83	4.81	4.81
Eurovent Class			B	B	B	B	B	B	B	B
Controller			FläktGroup controller with TA software and large display							
Fans			**Axial Fans**							
Fan Quantity		n	8	8	9	10	10	11	12	13
Total air volume flow		[m³/h]	153108	153108	172260	191412	191412	210528	229680	248832
Compressors			**Double rotor screw compressor**							
Number of compressors			2	2	2	2	2	2	2	2
Number of refrigeration circuits			2	2	2	2	2	2	2	2
Minimum part-load speed		[%]	13	13	13	13	13	13	13	13
Evaporator (chilled-water side)										
Min. water mass flow	$V_{e,min}$	[m³/h]	45.0	57.0	57.0	57.0	63.0	69.0	69.0	69.0
Max. water mass flow	$V_{e,max}$	[m³/h]	144.0	169.0	169.0	169.0	181.0	196.0	196.0	202.0
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	1800	1900	2100	2200	2400	2700	2900	3100
Water charge of heat exchanger		[l]	140	124	124	124	230	220	220	210
Evaporator connection	VICTAULIC[2]		6“	6“	6“	6“	6“	6“	6“	6“
Refrigeration circuit charge										
Refrigerant R513A (GWP 631) [3,4]		[kg]	91	93	100	106	115	130	141	153
Oil charge		[kg]	36	36	36	36	36	36	36	36
Connectable cable cross-sections [8]										
Rectangular	Min Max	[mm] [mm]	2 x 32 x 6	2x32x6	2x32x6	2x32x6	2x40x5 2x63x5	2x40x5 2x63x5	2x40x5 2x63x5	2x40x5 2x63x5
Round	Min Max	[mm²] [mm²]	2 x 185	2 x 185	2 x 185	2 x 185	2 x 185 2 x 300	2 x 185 2 x 300	2 x 185 2 x 300	2 x 185 2 x 300
Dimensions and weight										
A (length)		[mm]	5400	5400	6650	6650	6650	7900	7900	9150
B (width)		[mm]	2260	2260	2260	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500	2500	2500	2500
Weight [4.5]		[kg]	5270	5330	5730	5800	6130	6610	6670	7130

1) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
2) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.

Tab.4: General data for HE/HT units (particularly efficient version) with 2 to 3 compressors

Unit type FGAC #### AE2.(HE/HT)			2420	2450	2480	2482	2541	3570	3630	3660
Performance data (catalog) - [6]										
Refrigeration capacity [1]	Qe	[kW]	959	1028	1099	1162	1230	1334	1467	1520
Power consumption [5]	P	[kW]	320.6	340	358.2	388.6	401.1	452.6	493.4	518.9
EER			2.99	3.02	3.07	2.99	3.07	2.95	2.97	2.93
ESEER			5.08	5.09	5.06	5.02	5.06	5.03	4.99	5.01
Chilled water flow rate	Ve	[m³/h]	165.2	177.0	189.1	200.1	211.7	229.6	252.6	261.7
Pressure drop	Δpe	[kPa]	51.6	45.7	50.1	41.2	46.2	41.1	35.1	37.7
ERP conformity										
SEER (EU 2016/2281)[7]			5.12	5.26	5.21	5.16	5.22	5.15	5.06	5.12
η_S (EU 2016/2281) [7]		[%]	202	207	206	203	206	203	199	202
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort	Comfort
Performance values according to EN14511-3:2011										
Refrigeration capacity [1]	Qe	[kW]	955.9	1025	1095	1159	1226	1330	1463	1516
EER			2.95	2.98	3.02	2.96	3.03	2.91	2.94	2.9
ESEER			4.81	4.84	4.8	4.81	4.81	4.82	4.81	4.81
Eurovent Class			B	B	B	B	B	B	B	B
Controller			FläktGroup controller with TA software and large display							
Fans			**Axial Fans**							
Fan Quantity		n	14	15	16	16	18	19	20	20
Total air volume flow		[m³/h]	267948	287100	306252	306252	344520	363636	382788	382788
Compressors			**Double rotor screw compressor**							
Number of compressors			2	2	2	2	2	3	3	3
Number of refrigeration circuits			2	2	2	2	2	3	3	3
Minimum part-load speed		[%]	13	13	13	13	13	8	8	8
Evaporator (chilled-water side)										
Min. water mass flow	$V_{e,min}$	[m³/h]	69.0	90.0	90.0	112.0	112.0	150.0	150.0	180.0
Max. water mass flow	$V_{e,max}$	[m³/h]	202.0	230.0	241.0	362.9	362.9	370.1	350.0	360.0
MAX WORKING PRESSURES	p_{max}	[bar]	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	3400	3600	3800	4100	4300	4700	5100	5300
Water charge of heat exchanger		[l]	210	275	269	310	310	575	550	500
Evaporator connection	VICTAULIC[2]		6“	8“	8“	8“	8“	8“	8“	8“
Refrigeration circuit charge										
Refrigerant R513A (GWP 631) [3,4]		[kg]	162	174	185	199	209	227	260	258
Oil charge		[kg]	36	53	70	70	70	54	54	71
Connectable cable cross-sections [8]										
Rectangular	Min Max	[mm] [mm]	2 x 50 x 5 2x63x5	2x50x5 2x63x5	2x50x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5	2x60x5 2x63x5	 3x50x8
Round	Min Max	[mm²] [mm²]	2 x 240 4 x 185	2 x 240 4 x 185	2 x 240 4 x 185	 4 x 185	 4 x 185	 4 x 185	 4 x 185	 --
Dimensions and weight										
A (length)		[mm]	9150	10400	10400	10400	11650	12900	12900	12900
B (width)		[mm]	2260	2260	2260	2260	2260	2260	2260	2260
H (height)		[mm]	2500	2500	2500	2500	2500	2500	2500	2500
Weight [4.5]		[kg]	7150	8270	8750	8850	9390	11000	11150	11500

1) Performance data for input parameters: chilled water temperatures (inlet/outlet) 12/7°C; ambient temperature 35°C; values partially rounded off
2) Victaulic coupling supplied separately, with transition to welding end (units without pumps)
3) For exact refrigerant charge volume, refer to the unit identification plate.
4) Applies to units with micro-channel heat exchanger as condenser and without option .R28
5) based on the entire unit (without pumps)
6) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
7) Applies to units in standard configuration without pumps
8) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.

Noise levels

Tab.5: Noise levels

	Total sound level		Octave band [Hz]							
			Sound power level [dB]							
Unit type FGAC	**Sound power [dB(A)] 1)**	**Sound pressure level [dB(A)] 10 m 2)**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Standard units										
2220AE2	99	67	100	100	97	96	95	91	83	73
2260AE2	100	68	101	101	98	97	96	92	84	74
2265AE2	100	68	101	101	98	97	96	92	84	74
2270AE2	100	68	101	101	98	97	96	92	84	74
2272AE2	101	69	102	102	99	98	97	93	85	75
2315AE2	101	68	102	102	99	98	97	93	85	75
2360AE2	101	68	102	102	99	98	97	93	85	75
2390AE2	102	69	103	103	100	99	98	94	86	76
2420AE2	103	70	104	104	101	100	99	95	87	77
2450AE2	103	70	104	104	101	100	99	95	87	77
2480AE2	104	71	105	105	102	101	100	96	88	78
2481AE2	104	71	105	105	102	101	100	96	88	78
2482AE2	105	72	106	106	103	102	101	97	89	79
2541AE2	105	72	106	106	103	102	101	97	89	79
2600AE2	105	72	106	106	103	102	101	97	89	79
2602AE2	105	72	106	106	103	102	101	97	89	79
3630AE2	105	72	106	106	103	102	101	97	89	79
3690AE2	105	72	106	106	103	102	101	97	89	79
3720AE2	105	72	106	106	103	102	101	97	89	79
3721AE2	106	73	107	107	104	103	102	98	90	80
3722AE2	106	73	107	107	104	103	102	98	90	80
SL units (super low noise model)										
2220AE2.SL	92	60	93	93	90	89	88	84	76	66
2260AE2.SL	93	61	94	94	91	90	89	85	77	67
2265AE2.SL	93	61	94	94	91	90	89	85	77	67
2270AE2.SL	93	61	94	94	91	90	89	85	77	67
2272AE2.SL	94	61	95	95	92	91	90	86	78	68
2315AE2.SL	94	61	95	95	92	91	90	86	78	68
2360AE2.SL	94	61	95	95	92	91	90	86	78	68
2390AE2.SL	95	62	96	96	93	92	91	87	79	69
2420AE2.SL	96	63	97	97	94	93	92	88	80	70
2450AE2.SL	96	63	97	97	94	93	92	88	80	70
2480AE2.SL	96	63	97	97	94	93	92	88	80	70
2481AE2.SL	96	63	97	97	94	93	92	88	80	70
2482AE2.SL	96	63	97	97	94	93	92	88	80	70
2541AE2.SL	96	63	97	97	94	93	92	88	80	70
2600AE2.SL	96	63	97	97	94	93	92	88	80	70
2602AE2.SL	96	63	97	97	94	93	92	88	80	70
3630AE2.SL	96	63	97	97	94	93	92	88	80	70
3690AE2.SL	96	63	97	97	94	93	92	88	80	70
3720AE2.SL	96	63	97	97	94	93	92	88	80	70
3721AE2.SL	97	64	98	98	95	94	93	89	81	71
3722AE2.SL	97	64	98	98	95	94	93	89	81	71

Continued and footnotes on next page

Tab.5: Noise levels (continued)

	Total sound level		Octave band [Hz]							
			Sound power level [dB]							
Unit type FGAC	Sound power [dB(A)] 1)	Sound pressure level [dB(A)] 10 m 2)	63	125	250	500	1000	2000	4000	8000
HE/HT units (high efficient model)										
2220AE2.HE/HT	99	67	100	100	97	96	95	91	83	73
2260AE2.HE/HT	100	68	101	101	98	97	96	92	84	74
2265AE2.HE/HT	100	67	101	101	98	97	96	92	84	74
2270AE2.HE/HT	100	67	101	101	98	97	96	92	84	74
2272AE2.HE/HT	101	68	102	102	99	98	97	93	85	75
2315AE2.HE/HT	101	68	102	102	99	98	97	93	85	75
2360AE2.HE/HT	101	68	102	102	99	98	97	93	85	75
2390AE2.HE/HT	102	69	103	103	100	99	98	94	86	76
2420AE2.HE/HT	103	70	104	104	101	100	99	95	87	77
2450AE2.HE/HT	103	70	104	104	101	100	99	95	87	77
2480AE2.HE/HT	104	71	105	105	102	101	100	96	88	78
2482AE2.HE/HT	105	72	106	106	103	102	101	97	89	79
2541AE2.HE/HT	105	72	106	106	103	102	101	97	89	79
3570AE2.HE/HT	105	72	106	106	103	102	101	97	89	79
3630AE2.HE/HT	105	72	106	106	103	102	101	97	89	79
3660AE2.HE/HT	105	72	106	106	103	102	101	97	89	79

Data on operating conditions
Data applies only to water inlet and outlet temperature of 12 °C/ 7 C° and ambient air temperatures of 35 °C. All specifications apply to units without pumps.

1) Specification of sound power (EUROVENT certified value)
Manufacturer determines the sound power value for Eurovent-certified units in accordance with ISO 9614 standard.
This certification expressly refers to sound power in dB(A), which thus constitutes obligatory data in this case.

2) Specification of sound pressure level
The sound pressure level is determined according to enveloping surface method with a reflecting plane (Q = 2) The distance of 10 m refers to the external dimensions of the unit. For sound pressure level the following corrections can be used:
Sound pressure level at 5 m: +5 dB as compared to sound pressure level at 10 meters distance.
Sound pressure level at 15 m: -3 dB as compared to sound pressure level at 10 meters distance.
Sound pressure level at 20 m: -6 dB as compared to sound pressure level at 10 meters distance.
Only an externally engaged acoustics engineer should carry out specific sound level calculations to be valid for your installation site.

Footprint

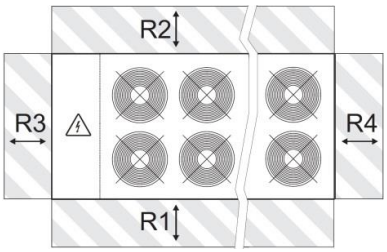


Fig. 7: Required clearances (example)

CLEARANCE FOR AIR SUPPLY!
Unit must be able to freely discharge air upwards. Air short-circuiting must be impossible! The necessary clearances near and over the unit may exceed the depicted maintenance clearance by many times.

Tab.6: Clearances

All unit sizes		R1	R2	R3	R4
Required clearances	[mm]	2000	2300	1500	1500

Anti-vibration mounts

Tab.7: Required anti-vibration mounts depending on unit model

	Rubber anti-vibration mounts		Spring anti-vibration mounts	
Unit type FGAC…	**FläktGroup sales number (complete as accessory)**	**FläktGroup individual part designation**	**FläktGroup sales number (complete as accessory)**	**FläktGroup individual part designation**
Standard units				
2220AE2	FGZAC2220AE.I02	8 x FZ 400-57	FGZAC2220AE.I01	8 x SR21-1000
2260AE2	FGZAC2260AE.I02	8 x FZ 400-57	FGZAC2260AE.I01	8 x SR21-1000
2265AE2	FGZAC2265AE.I02	8 x FZ 400-57	FGZAC2265AE.I01	8 x SR21-1000
2270AE2	FGZAC2270AE.I02	8 x FZ 400-57	FGZAC2270AE.I01	8 x SR21-1000
2272AE2	FGZAC2272AE.I02	8 x FZ 600-51	FGZAC2272AE.I01	8 x SR21-1000
2315AE2	FGZAC2315AE.I02	10 x FZ 400-57	FGZAC2315AE.I01	10 x SR21-1000
2360AE2	FGZAC2360AE.I02	10 x FZ 400-57	FGZAC2360AE.I01	10 x SR21-1000
2390AE2	FGZAC2390AE.I02	12 x FZ 400-57	FGZAC2390AE.I01	12 x SR21-800
2420AE2	FGZAC2420AE.I02	12 x FZ 400-57	FGZAC2420AE.I01	12 x SR21-800
2450AE2	FGZAC2450AE.I02	12 x FZ 400-57	FGZAC2450AE.I01	12 x SR21-1000
2480AE2	FGZAC2480AE.I02	12 x FZ 400-57	FGZAC2480AE.I01	12 x SR21-1000
2481AE2	FGZAC2481AE.I02	14 x FZ 400-57	FGZAC2481AE.I01	14 x SR21-1000
2482AE2	FGZAC2482AE.I02	14 x FZ 400-57	FGZAC2482AE.I01	14 x SR21-1000
2541AE2	FGZAC2541AE.I02	14 x FZ 400-57	FGZAC2541AE.I01	14 x SR21-1000
2600AE2	FGZAC2600AE.I02	14 x FZ 400-57	FGZAC2600AE.I01	14 x SR21-1000
2602AE2	FGZAC2602AE.I02	14 x FZ 400-57	FGZAC2602AE.I01	14 x SR21-1000
3630AE2	FGZAC3630AE.I02	18 x FZ 600-51	FGZAC3630AE.I01	18 x SR21-1000
3690AE2	FGZAC3690AE.I02	18 x FZ 600-51	FGZAC3690AE.I01	18 x SR21-1000
3720AE2	FGZAC3720AE.I02	18 x FZ 400-57	FGZAC3720AE.I01	18 x SR21-1000
3721AE2	FGZAC3721AE.I02	17 x FZ 400-57	FGZAC3721AE.I01	17 x SR21-1000
3722AE2	FGZAC3722AE.I02	17 x FZ 400-57	FGZAC3722AE.I01	17 x SR21-1000
SL units (super low noise model)				
2220AE2.SL	FGZAC2220AE.I26	8 x FZ 400-57	FGZAC2220AE.I21	8 x SR21-1000
2260AE2.SL	FGZAC2260AE.I26	8 x FZ 400-57	FGZAC2260AE.I21	8 x SR21-1000
2265AE2.SL	FGZAC2265AE.I26	8 x FZ 400-57	FGZAC2265AE.I21	8 x SR21-1000
2270AE2.SL	FGZAC2270AE.I26	8 x FZ 400-57	FGZAC2270AE.I21	8 x SR21-1000
2272AE2.SL	FGZAC2272AE.I26	10 x FZ 400-57	FGZAC2272AE.I21	10 x SR21-1000
2315AE2.SL	FGZAC2315AE.I26	10 x FZ 400-57	FGZAC2315AE.I21	10 x SR21-1000
2360AE2.SL	FGZAC2360AE.I26	10 x FZ 400-57	FGZAC2360AE.I21	10 x SR21-1000
2390AE2.SL	FGZAC2390AE.I26	12 x FZ 400-57	FGZAC2390AE.I21	12 x SR21-800
2420AE2.SL	FGZAC2420AE.I26	12 x FZ 400-57	FGZAC2420AE.I21	12 x SR21-800
2450AE2.SL	FGZAC2450AE.I26	14 x FZ 400-57	FGZAC2450AE.I21	14 x SR21-1000
2480AE2.SL	FGZAC2480AE.I26	14 x FZ 400-57	FGZAC2480AE.I21	14 x SR21-1000
2481AE2.SL	FGZAC2481AE.I26	14 x FZ 400-57	FGZAC2481AE.I21	14 x SR21-1000
2482AE2.SL	FGZAC2482AE.I26	14 x FZ 400-57	FGZAC2482AE.I21	14 x SR21-1000
2541AE2.SL	FGZAC2541AE.I26	14 x FZ 400-57	FGZAC2541AE.I21	14 x SR21-1000
2600AE2.SL	FGZAC2600AE.I26	14 x FZ 400-57	FGZAC2600AE.I21	14 x SR21-1000
2602AE2.SL	FGZAC2602AE.I26	18 x FZ 400-57	FGZAC2602AE.I21	18 x SR21-800
3630AE2.SL	FGZAC3630AE.I26	18 x FZ 600-51	FGZAC3630AE.I21	18 x SR21-1000
3690AE2.SL	FGZAC3690AE.I26	18 x FZ 400-57	FGZAC3690AE.I21	18 x SR21-1000
3720AE2.SL	FGZAC3720AE.I26	17 x FZ 400-57	FGZAC3720AE.I21	17 x SR21-1000
3721AE2.SL	FGZAC3721AE.I26	17 x FZ 400-57	FGZAC3721AE.I21	17 x SR21-1000
3722AE2.SL	FGZAC3722AE.I26	18 x FZ 400-57	FGZAC3722AE.I21	18 x SR21-1000

Continued on the next page

Tab.7: Required anti-vibration mounts depending on unit model (continued)

	Rubber anti-vibration mounts		Spring anti-vibration mounts	
Unit type FGAC…	**FläktGroup sales number (complete as accessory)**	**FläktGroup individual part designation**	**FläktGroup sales number (complete as accessory)**	**FläktGroup individual part designation**
HE/HT units-Geräte (high efficient model)				
2220AE2.HE/HT	FGZAC2220AE.I59	8 x FZ 400-57	FGZAC2220AE.I54	8 x SR21-1000
2260AE2.HE/HT	FGZAC2260AE.I59	8 x FZ 400-57	FGZAC2260AE.I54	8 x SR21-1000
2265AE2.HE/HT	FGZAC2265AE.I59	10 x FZ 400-57	FGZAC2265AE.I54	10 x SR21-1000
2270AE2.HE/HT	FGZAC2270AE.I59	10 x FZ 400-57	FGZAC2270AE.I54	10 x SR21-1000
2272AE2.HE/HT	FGZAC2272AE.I59	10 x FZ 400-57	FGZAC2272AE.I54	10 x SR21-1000
2315AE2.HE/HT	FGZAC2315AE.I59	12 x FZ 400-57	FGZAC2315AE.I54	12 x SR21-800
2360AE2.HE/HT	FGZAC2360AE.I59	12 x FZ 400-57	FGZAC2360AE.I54	12 x SR21-800
2390AE2.HE/HT	FGZAC2390AE.I59	14 x FZ 400-57	FGZAC2390AE.I54	14 x SR21-800
2420AE2.HE/HT	FGZAC2420AE.I59	14 x FZ 400-57	FGZAC2420AE.I54	14 x SR21-800
2450AE2.HE/HT	FGZAC2450AE.I59	14 x FZ 400-57	FGZAC2450AE.I54	14 x SR21-1000
2480AE2.HE/HT	FGZAC2480AE.I59	14 x FZ 400-57	FGZAC2480AE.I54	14 x SR21-1000
2482AE2.HE/HT	FGZAC2482AE.I59	16 x FZ 400-57	FGZAC2482AE.I54	16 x SR21-800
2541AE2.HE/HT	FGZAC2541AE.I59	18 x FZ 400-57	FGZAC2541AE.I54	18 x SR21-800
3570AE2.HE/HT	FGZAC3570AE.I59	20 x FZ 400-57	FGZAC3570AE.I54	20 x SR21-1000
3630AE2.HE/HT	FGZAC3630AE.I59	20 x FZ 400-57	FGZAC3630AE.I54	20 x SR21-1000
3660AE2.HE/HT	FGZAC3660AE.I59	20 x FZ 400-57	FGZAC3660AE.I54	20 x SR21-1000

NOTICE!
If the units are operated without the appropriate anti-vibration mounts, the warranty is void!
FläktGroup recommends the use of rubber anti-vibration mounts. Alternatively, depending on the project specification, spring anti-vibration mounts can be used.

Electrical Data

Tab.8: Electrical data

Air Handling Unit Type			Compressors			Fans[3]		Total [1) 2) 3)]		
FGAC…	Power supply	n	F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A [A]	F.L.I. [kW]	F.L.A. [A]	S.A.
Standard units										
2220AE2	400/3/50	2	2 x 99	2 x 163	2 x 20	12	24	210	349	< F.L.A.
2260AE2	400/3/50	2	1 x 123 + 1 x 99	1 x 200 + 1 x 163	2 x 20	14	28	236	390	< F.L.A.
2265AE2	400/3/50	2	1 x 125 + 1 x 106	1 x 202 + 1 x 174	2 x 20	14	28	245	403	< F.L.A.
2270AE2	400/3/50	2	2 x 123	2 x 200	2 x 20	16	32	262	430	< F.L.A.
2272AE2	400/3/50	2	2 x 137	2 x 220	2 x 20	16	32	290	470	< F.L.A.
2315AE2	400/3/50	2	1 x 176 + 1 x 137	1 x 280 + 1 x 220	2 x 20	18	36	331	534	< F.L.A.
2360AE2	400/3/50	2	2 x 176	2 x 280	2 x 20	20	40	372	598	< F.L.A.
2390AE2	400/3/50	2	1 x 188 + 1 x 176	1 x 298 + 1 x 280	2 x 20	22	44	386	620	< F.L.A.
2420AE2	400/3/50	2	2 x 188	2 x 298	2 x 20	24	48	400	642	< F.L.A.
2450AE2	400/3/50	2	1 x 222 + 1 x 188	1 x 357 + 1 x 298	2 x 20	24	48	434	701	< F.L.A.
2480AE2	400/3/50	2	2 x 222	2 x 357	2 x 20	24	48	468	760	< F.L.A.
2481AE2	400/3/50	2	2 x 222	2 x 357	2 x 20	28	56	472	767	< F.L.A.
2482AE2	400/3/50	2	2 x 236	2 x 378	2 x 20	28	56	500	809	< F.L.A.
2541AE2	400/3/50	2	1 x 267 + 1 x 236	1 x 428 + 1 x 378	2 x 20	28	56	531	859	< F.L.A.
2600AE2	400/3/50	2	2 x 267	2 x 428	2 x 20	32	64	566	917	< F.L.A.
2602AE2	400/3/50	2	2 x 281	2 x 451	2 x 20	32	64	594	963	< F.L.A.
3630AE2	400/3/50	2	3 x 188	3 x 298	3 x 20	36	72	600	962	< F.L.A.
3690AE2	400/3/50	2	2 x 222 + 1 x 188	2 x 357 + 1 x 298	3 x 20	36	72	668	1080	< F.L.A.
3720AE2	400/3/50	2	3 x 222	3 x 357	3 x 20	36	72	702	1139	< F.L.A.
3721AE2	400/3/50	2	2 x 236 + 1 x 222	2 x 378 + 1 x 357	3 x 20	40	80	734	1189	< F.L.A.
3722AE2	400/3/50	3	3 x 236	3 x 378	3 x 20	40	80	748	1210	< F.L.A.
SL units (super low noise model)										
2220AE2.SL	400/3/50	2	1 x 107 + 1 x 92	1 x 176 + 1 x 152	2 x 20	14	28	213	355	< F.L.A.
2260AE2.SL	400/3/50	2	2 x 135	2 x 218	2 x 20	16	32	228	378	< F.L.A.
2265AE2.SL	400/3/50	2	1 x 123 + 1 x 106	1 x 200 + 1 x 174	2 x 20	16	32	245	404	< F.L.A.
2270AE2.SL	400/3/50	2	2 x 123	2 x 200	2 x 20	16	32	262	430	< F.L.A.
2272AE2.SL	400/3/50	2	2 x 137	2 x 200	2 x 20	20	40	294	478	< F.L.A.
2315AE2.SL	400/3/50	2	1 x 176 + 1 x 137	1 x 280 + 1 x 220	2 x 20	20	40	333	538	< F.L.A.
2360AE2.SL	400/3/50	2	2 x 176	2 x 280	2 x 20	20	40	372	598	< F.L.A.
2390AE2.SL	400/3/50	2	1 x 188 + 1 x 176	1 x 298 + 1 x 280	2 x 20	22	44	386	620	< F.L.A.
2420AE2.SL	400/3/50	2	2 x 188	2 x 298	2 x 20	24	48	400	642	< F.L.A.
2450AE2.SL	400/3/50	2	1 x 222 + 1 x 188	1 x 357 + 1 x 298	2 x 20	26	52	434	701	< F.L.A.
2480AE2.SL	400/3/50	2	2 x 222	2 x 357	2 x 20	28	56	468	760	< F.L.A.
2481AE2.SL	400/3/50	2	2 x 222	2 x 357	2 x 20	32	64	472	767	< F.L.A.
2482AE2.SL	400/3/50	2	2 x 236	2 x 378	2 x 20	32	64	500	809	< F.L.A.
2541AE2.SL	400/3/50	2	1 x 267 + 1 x 236	1 x 428 + 1 x 378	2 x 20	32	64	531	859	< F.L.A.
2600AE2.SL	400/3/50	2	2 x 267	2 x 428	2 x 20	32	64	566	917	< F.L.A.
2602AE2.SL	400/3/50	2	2 x 281	2 x 451	2 x 20	36	72	594	963	< F.L.A.
3630AE2.SL	400/3/50	2	3 x 188	3 x 298	3 x 20	36	72	600	962	< F.L.A.
3690AE2.SL	400/3/50	2	2 x 222 + 1 x 188	2 x 357 + 1 x 298	3 x 20	40	80	668	1080	< F.L.A.
3720AE2.SL	400/3/50	2	3 x 222	3 x 357	3 x 20	40	80	702	1139	< F.L.A.
3721AE2.SL	400/3/50	2	2 x 236 + 1 x 222	2 x 378 + 1 x 357	3 x 20	40	80	734	1189	< F.L.A.
3722AE2.SL	400/3/50	3	3 x 236	3 x 378	3 x 20	40	80	748	1210	< F.L.A.

Continued and footnotes on next page

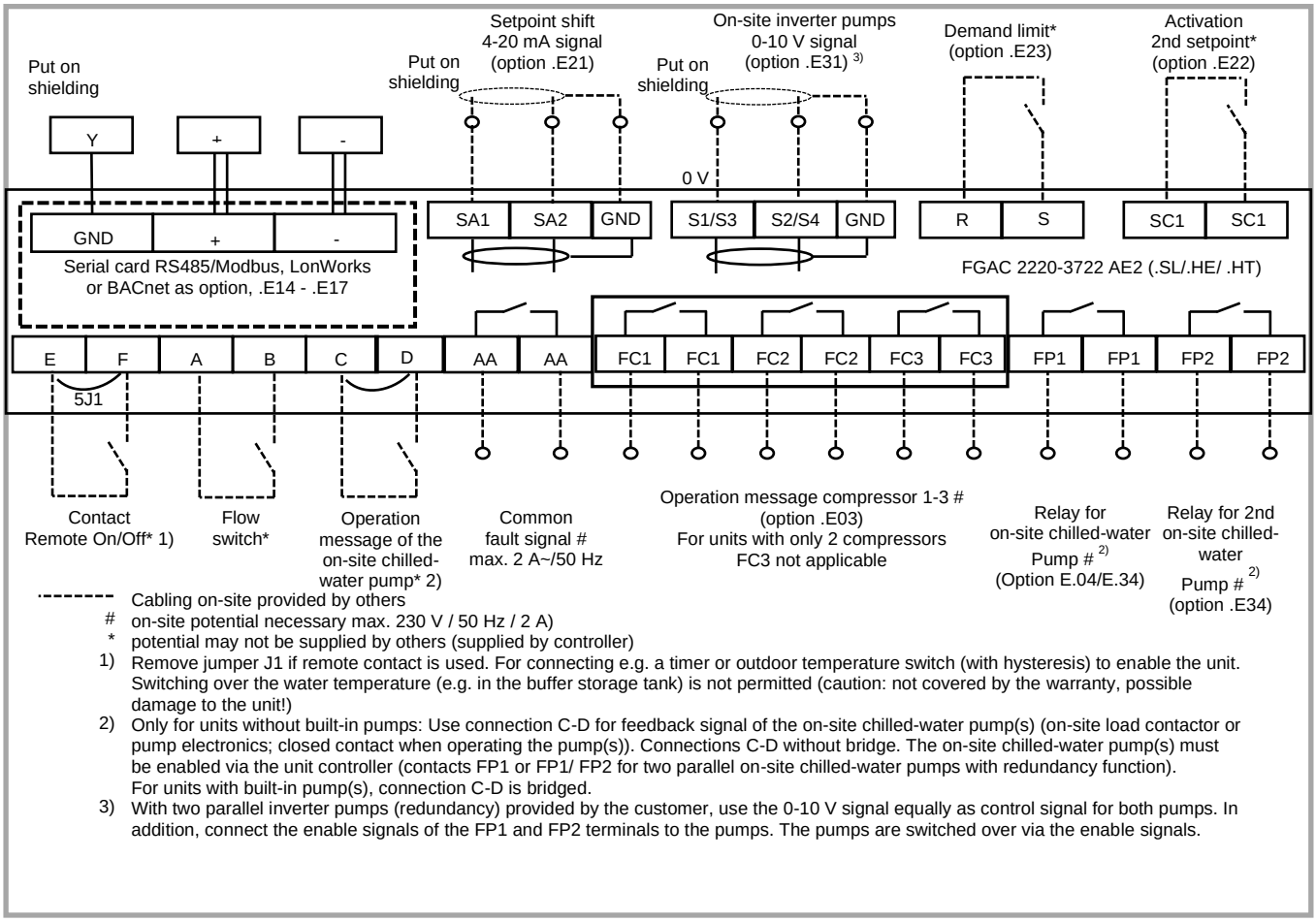
Tab.8: Electrical data (continued)

Air Handling Unit Type			Compressors			Fans[3]		Total [1) 2) 3)]		
FGAC…	Power supply	n	F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A [A]	F.L.I. [kW]	F.L.A. [A]	S.A.
HE units (high efficient model)										
2220AE2.HE	400/3/50	2	2 x 100	2 x 164	2 x 20	15.6	24	216	354	< F.L.A.
2260AE2.HE	400/3/50	2	2 x 107	2 x 176	2 x 20	15.6	24	230	378	< F.L.A.
2265AE2.HE	400/3/50	2	1 x 125 + 1 x 107	1 x 202 + 1 x 176	2 x 20	17.55	27	250	408	< F.L.A.
2270AE2.HE	400/3/50	2	2 x 125	2 x 202	2 x 20	19.5	30	270	437	< F.L.A.
2272AE2.HE	400/3/50	2	2 x 137	2 x 220	2 x 20	19.5	30	294	473	< F.L.A.
2315AE2.HE	400/3/50	2	1 x 181 + 1 x 137	1 x 287 + 1 x 220	2 x 20	21.45	33	339	543	< F.L.A.
2360AE2.HE	400/3/50	2	2 x 181	2 x 287	2 x 20	23.4	36	385	614	< F.L.A.
2390AE2.HE	400/3/50	2	1 x 190 + 1 x 181	1 x 301 + 1 x 287	2 x 20	25.35	39	396	631	< F.L.A.
2420AE2.HE	400/3/50	2	2 x 190	2 x 301	2 x 20	27.3	42	407	648	< F.L.A.
2450AE2.HE	400/3/50	2	1 x 224 + 1 x 190	1 x 360 + 1 x 301	2 x 20	29.25	45	443	711	< F.L.A.
2480AE2.HE	400/3/50	2	2 x 224	2 x 360	2 x 20	31.2	48	479	773	< F.L.A.
2482AE2.HE	400/3/50	2	2 x 236	2 x 378	2 x 20	31.2	48	503	809	< F.L.A.
2541AE2.HE	400/3/50	2	1 x 267 + 1 x 236	1 x 428 + 1 x 378	2 x 20	35.1	54	538	865	< F.L.A.
3570AE2.HE	400/3/50	2	1 x 190 + 2 x 181	1 x 301 + 2 x 287	3 x 20	37.05	57	589	938	< F.L.A.
3630AE2.HE	400/3/50	2	3 x 190	3 x 301	3 x 20	39	60	609	969	< F.L.A.
3660AE2.HE	400/3/50	2	1 x 224 + 2 x 190	1 x 360 + 2 x 301	3 x 20	39	60	643	1028	< F.L.A.
HT units (high efficient model for high ambient temperatures)										
2220AE2.HT	400/3/50	2	2 x 100	2 x 164	2 x 20	24.8	40	225	366	< F.L.A.
2260AE2.HT	400/3/50	2	2 x 107	2 x 176	2 x 20	24.8	40	239	390	< F.L.A.
2265AE2.HT	400/3/50	2	1 x 125 + 1 x 107	1 x 202 + 1 x 176	2 x 20	27.9	45	260	421	< F.L.A.
2270AE2.HT	400/3/50	2	2 x 125	2 x 202	2 x 20	31	50	281	452	< F.L.A.
2272AE2.HT	400/3/50	2	2 x 137	2 x 220	2 x 20	31	50	305	488	< F.L.A.
2315AE2.HT	400/3/50	2	1 x 181 + 1 x 137	1 x 287 + 1 x 220	2 x 20	34.1	55	352	560	< F.L.A.
2360AE2.HT	400/3/50	2	2 x 181	2 x 287	2 x 20	37.2	60	399	632	< F.L.A.
2390AE2.HT	400/3/50	2	1 x 190 + 1 x 181	1 x 301 + 1 x 287	2 x 20	40.3	65	411	650	< F.L.A.
2420AE2.HT	400/3/50	2	2 x 190	2 x 301	2 x 20	43.4	70	423	669	< F.L.A.
2450AE2.HT	400/3/50	2	1 x 224 + 1 x 190	1 x 360 + 1 x 301	2 x 20	46.5	75	461	733	< F.L.A.
2480AE2.HT	400/3/50	2	2 x 224	2 x 360	2 x 20	49.6	80	498	797	< F.L.A.
2482AE2.HT	400/3/50	2	2 x 236	2 x 378	2 x 20	49.6	80	522	833	< F.L.A.
2541AE2.HT	400/3/50	2	1 x 267 + 1 x 236	1 x 428 + 1 x 378	2 x 20	55.8	90	559	892	< F.L.A.
3570AE2.HT	400/3/50	2	1 x 190 + 2 x 181	1 x 301 + 2 x 287	3 x 20	58.9	95	611	966	< F.L.A.
3630AE2.HT	400/3/50	2	3 x 190	3 x 301	3 x 20	62	100	632	999	< F.L.A.
3660AE2.HT	400/3/50	2	1 x 224 + 2 x 190	1 x 360 + 2 x 301	3 x 20	62	100	666	1058	< F.L.A.

All values refer to units without built-in pumps. For units with built-in pumps, the pump data must be added.
n Number of compressors
F.L.I. El. FULL LOAD INPUT
F.L.A. Operating current
L.R.A. Starting current of each compressor
S.A. Starting current of entire unit

1) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
2) Please observe the regionally applicable standards for cable cross-sections and backup fuses. Voltage tolerance: max. 10%, voltage imbalance between phases: max. 3%.
3) Values are based on the total number of fans operating at maximum speed.

Terminal scheme



Cabling on-site provided by others
\# on-site potential necessary max. 230 V / 50 Hz / 2 A)
* potential may not be supplied by others (supplied by controller)

1) Remove jumper J1 if remote contact is used. For connecting e.g. a timer or outdoor temperature switch (with hysteresis) to enable the unit. Switching over the water temperature (e.g. in the buffer storage tank) is not permitted (caution: not covered by the warranty, possible damage to the unit!)
2) Only for units without built-in pumps: Use connection C-D for feedback signal of the on-site chilled-water pump(s) (on-site load contactor or pump electronics; closed contact when operating the pump(s)). Connections C-D without bridge. The on-site chilled-water pump(s) must be enabled via the unit controller (contacts FP1 or FP1/ FP2 for two parallel on-site chilled-water pumps with redundancy function). For units with built-in pump(s), connection C-D is bridged.
3) With two parallel inverter pumps (redundancy) provided by the customer, use the 0-10 V signal equally as control signal for both pumps. In addition, connect the enable signals of the FP1 and FP2 terminals to the pumps. The pumps are switched over via the enable signals.

Fig. 8: Terminal scheme

Order-related documentation

NOTICE!
For detailed planning please only use the order-related documentation. Detailed dimensional drawings can be obtained on request from your responsible FläktGroup sales office. Specifications and technical data are subject to regular updates. The manufacturer reserves the right to make necessary changes to information without prior written notice.