

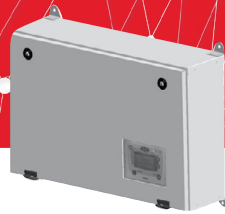


## PRODUCT SELECTION DATA

### HIGH-TEMPERATURE MONOBLOC AIR-TO-WATER HEAT PUMPS WITH INTEGRATED HYDRAULIC MODULE



Unit with protection grille option



Heating system control (accessory)

61AF optimized for heating

Compact design

Plug & play approach

High temperature 65°C

# 61AF 030-105

**AQUASNAP**  
Heating

Nominal heating capacity 26-102 kW 50 Hz

The AquaSnap high-temperature heat pump range was designed for commercial applications such as the heating of offices, apartments and hotels as well as domestic hot water production in new and refurbished buildings.

The main features of this product range are:

■ Ease-of-installation

The high-temperature AquaSnap heat pumps incorporate an optional hydraulic module with a variable speed pump.

■ Easy integration

The low noise levels of the 61AF heat pump and its very compact chassis reduce the noise disturbance from the unit.

■ Application flexibility

The operating range allows outside temperatures down to -20°C and leaving water temperatures up to 65°C for domestic hot water applications.

■ Availability

- Intelligent unit control permits unit operation in extreme conditions, minimising unit shut-down times.
- Hot water production at 65°C is available continuously.



CARRIER participates in the ECP programme for LCP/HP  
Check ongoing validity of certificate:  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

## FEATURES AND BENEFITS

Carrier quality is your guarantee for the safety and durability of the installation.

The AquaSnap high-temperature heat pumps incorporate the latest technological features:

- Scroll compressors with vapour injection
- Low-noise fans made of a composite material
- Auto-adaptative microprocessor control
- Electronic expansion valve
- Variable speed.

The AquaSnap high-temperature heat pumps can be equipped with a hydraulic module that is integrated into the heat pump chassis, limiting the installation to straight-forward operations like the wiring and the connection of the hot water supply and return piping.

### Quiet operation

- Compressors
  - Low-noise scroll compressors with low vibration level.
  - The compressor assembly is installed on an independent chassis and supported by anti-vibration mountings.
  - Dynamic suction and discharge piping supports, minimising vibration transmission (Carrier patent).
- Evaporator section
  - Vertical evaporator coils
  - Anti-vibration mountings and optional grilles to protect the heat exchanger against possible shocks.
  - Latest-generation low-noise Flying Bird fans, made of a composite material (Carrier patent), are now even quieter and do not generate intrusive low-frequency noise.
  - Rigid fan installation for reduced start-up noise (Carrier patent).

### Easy and fast installation

- Integrated hydraulic module (option)
  - Variable speed pump, based on the pressure loss of the hydraulic installation.
  - Water filter protects the water pump against circulating debris.
  - Pump protected against cavitation by a pressure transducer that measures the entering water pressure.
  - Overpressure valve, set to 4 bar.
  - Thermal insulation and frost protection down to -20°C, using an electric resistance heater (see table of options).
- Physical features
  - The unit has a small footprint and a low height (1329 mm) allowing it to blend in with any architectural styles.
  - The unit is enclosed by easily removable panels, covering all components (except condensers and fans).
- Simplified electrical connections
  - Single power supply point without neutral.
  - Main disconnect switch with high trip capacity.
  - Transformer for safe 24 V control circuit supply included.
- Fast commissioning
  - Systematic factory operation test before shipment.
  - Quick-test function for step-by-step verification of the instruments, electrical components and motors.

### Economical operation

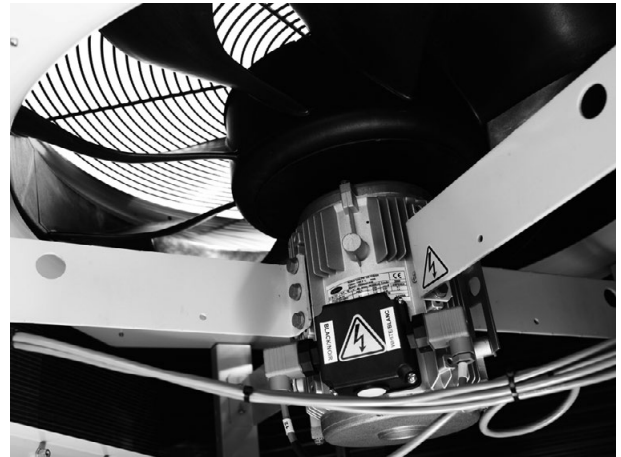
- Increased energy efficiency
  - The exceptional energy efficiency level (COP /SCOP) of the high-temperature AquaSnap heat pumps in the heating mode is the result of a long qualification and optimisation process.
  - The electronic expansion device (EXV) allows operation at a lower condensing pressure (COP optimisation).

- Dynamic superheat management for better utilisation of the condenser surface.
- Patented FreeDefrost algorithm without reverse the circuit in order to optimised energy during defrost and increase energy performance.

- Reduced maintenance costs
  - Maintenance-free scroll compressors with vapour injection.
  - SmartVu™ control offers fast diagnosis of possible incidents and their history.

### Environmental care

- Non-ozone depleting R-407C refrigerant
  - Chlorine-free refrigerant of the HFC group with zero ozone depletion potential.
  - Very efficient - ensures an increased energy efficiency ratio (COP).
  - Flying Bird IV fan



- Leak-tight refrigerant circuit
  - Brazed refrigerant connections for increased leak-tightness.
  - Reduction of leaks due to elimination of capillary tubes (TXVs).
  - Verification of pressure transducers and temperature sensors without transferring refrigerant charge.



Unit with protection grille option

## FEATURES AND BENEFITS

### Superior reliability

#### ■ State-of-the-art concept

Cooperation with specialist laboratories and use of limit simulation tools (finite element calculations) for the design of the critical components, e.g. motor supports, suction/discharge piping etc.

#### ■ Auto-adaptive control

Control algorithm prevents excessive compressor cycling and permits reduction of the water quantity in the hydraulic circuit (Carrier patent).

#### ■ Exceptional endurance tests

- Corrosion resistance tests in salt mist in the laboratory.
- Accelerated ageing test on components that are submitted to continuous operation: compressor piping, fan supports.
- Transport simulation test in the laboratory on a vibrating table.

### SmartVu™ control

The SmartVu™ control combines intelligence with operating simplicity. The control constantly monitors all machine parameters and precisely manages the operation of compressors, expansion devices, fans and the evaporator water pump for optimum energy efficiency.

The SmartVu™ control features advanced communication technology over Ethernet (IP) and a user-friendly and intuitive user interface with 4.3-inch colour touch screen.

#### ■ Energy management configuration

- Internal timer: Controls chiller on/off times and operation at a second setpoint
- Setpoint offset based on the outdoor air temperature
- Master/slave control of two chillers operating in parallel with runtime balancing and automatic changeover in case of a unit fault.
- For further energy savings, the AquaSnap® can be monitored remotely by Carrier experts for energy consumption diagnosis and optimisation.

#### ■ Integrated features

- Night mode: Capacity and fan speed limitation for reduced noise level
- With hydraulic module: Water pressure display and water flow rate calculation.

#### ■ Advanced communication features

- Easy and high-speed communication technology over Ethernet (IP) to a centralised building management system
- Access to multiple unit parameters.
- Maintenance functions
- F-Gas regulation leak check reminder alert
- Maintenance alert can be configured to days, months or hours of operation
- Storage of maintenance manual, wiring diagram and spare parts list
- Display of trend curves for the main values
- Management of a fault memory allowing a log of the last 50 incidents to be accessed, with operating readings taken when the fault occurs
- Blackbox memory

#### ■ 4"3 SmartVu™ user interface



- Intuitive and user-friendly 4"3 inch touch screen interface
- Concise and clear information is available in local languages
- Complete menu, customised for different users (end user, service personnel or Carrier engineers).

### Remote management (standard)

Units with SmartVu™ control can be easily accessed from the internet, using a PC with an Ethernet connection. This makes remote control quick and easy and offers significant advantage for service operations.

The AquaSnap® is equipped with an RS485 serial port that offers multiple remote control, monitoring and diagnostic possibilities. Carrier offers a vast choice of control products, specially designed to control, manage and supervise the operation of an air conditioning system. Please consult your Carrier representative for more information.

The AquaSnap® also communicates with other centralised building management systems via optional communication gateways.

A connection terminal allows the AquaSnap® unit to be remotely controlled by wire:

- Start/stop: Opening of this contact will shut down the unit
- Dual setpoint: Closing of this contact activates a second setpoint (e.g. unoccupied mode).
- Demand limit: Closing of this contact limits the maximum chiller capacity to a predefined value.
- Operation indication: This volt-free contact indicates that the chiller is operating (cooling load).
- Alarm indication: This volt-free contact indicates the presence of a major fault that has led to the shut-down of one or several refrigerant circuits.
- Setpoint adjustable via 4-20 mA signal

## OPTIONS AND ACCESSORIES

Options	No.	Description	Advantages	Use
Corrosion protection, traditional coils	3A	Fins made of pre-treated aluminium (polyurethane and epoxy)	Improved corrosion resistance, recommended for moderate marine and urban environments	61AF 030-105
Unit with ductable fans	11	Fans with 100 Pa maximum available pressure	Allows connection to discharge ducts in order to facilitate air evacuation	61AF 035-105
Low noise level	15	Aesthetic and sound absorbing compressor enclosure	Noise level reduction by 1 to 2 dB(A)	61AF 030-105
Very low noise level	15LS	Aesthetic and sound absorbing compressor enclosure associated with low-speed fans	Noise level reduction for sensible site	61AF 035-105
Protection grilles	23	Metallic protection grilles	Coil protection against possible impact	61AF 030-105
Soft Starter	25	Electronic starter on each compressor	Reduced start-up current	61AF 030-105
Water Exchanger frost protection	42	Electric heater on the hydraulic module	hydraulic module frost protection at low outside temperatures down to -20°C	61AF 030-105 with option 116X
Master/slave operation	58	Unit equipped with supplementary water outlet temperature sensor kit to be field-installed allowing master/slave operation of two units connected in parallel	Optimised operation of two units connected in parrallele operation with operating time equalisation	61AF 030-105
LP VSD single-pump	116X	Variable speed single pump, For more details, refer to the dedicated chapter (expansion tank not included)	Easy and fast installation (plug & play), significant pumping energy cost savings (more than two-thirds), tighter water flow control, improved sytem reliability	61AF 030-105
J-Bus gateway	149B	Two-directional communication board complying with JBus protocol	Connects the unit by communication bus to a building management system	61AF 030-105
Lon gateway	148D	Two-directional communication board complying with Lon Talk protocol	Connects the unit by communication bus to a building management system	61AF 030-105
Bacnet over IP	149	Two-directional high-speed communication using BACnet protocol over Ethernet network (IP)	Easy and high-speed connection by ethernet line to a building management system. Allows access to multiple unit parameters	61AF 030-106
Compliance with Russian regulations	199	EAC certification	Conformance with Russian regulations	61AF 030-105
Condenser screw connection sleeves kit	265	Condenser inlet/outlet screw connection sleeves	Allows unit connection to a screw connector	61AF 030-105
Welded condenser water connection kit	267	Victaulic piping connections with welded joints	Easy installation	61AF 035-105
Set-point adjustment by 4-20mA signal	311	Connections to allow a 4-20mA signal input	Easy energy managment, allow to adjust set-point by a 4-20mA external signal	61AF 030-105
Plastic tarp	331	Plastic sheeting covering the units, with strapping securing it on the wooden pallet.	Allow unit to avoid dust and dirt from the outside environment during stocking and shipping.	61AF 030-105

Accessories	Description	Advantages	Use
00PPG000488000- Heating System Manager type A: controls one heat emitter type with an auxiliary electric heater or boiler	Additional control box not supplied with the unit, to be installed remotely	Heating system control facilitated	61AF 030-105
00PPG000488100- Heating System Manager type B: controls two heat emitter types (or independent zones) and domestic hot water production with an auxiliary electric heater or boiler	Additional control box not supplied with the unit, to be installed remotely	Heating system control facilitated	61AF 030-105
00PPG000488200- Heating System Manager type C: controls two heat emitter types (or independent zones) and domestic hot water production with a district heating system as auxiliary source	Additional control box not supplied with the unit, to be installed remotely	Heating system control facilitated	61AF 030-105

## OPTIONS AND ACCESSORIES

Units with fans with available pressure for indoor installation (option 11)

This option applies to 61AF units installed inside the building in a plant room. For this type of installation the cold air leaving the air-cooled evaporators is discharged by the fans to the outside of the building, using a duct system.

The installation of a duct system at the air evaporator discharge line causes a pressure drop due to the resistance caused by the air flow.

Therefore more powerful fan motors than those used for the standard units are installed in the units with this option. For each installation of a unit installed inside a plant room the duct pressure drops differ, depending on the duct length, duct section and direction changes.

61AF units equipped with fans with available pressure are designed to operate with air discharge ducts with maximum pressure drops of 100 Pa.

### Fan discharge connection

A square flange is supplied mounted on the unit. An available standard round flange can easily be installed at the fan discharge, if the installer prefers the use of a round connection duct.

The unit is supplied with a grille on the discharge side. This grille has to be removed before connection to the duct system.

It is advisable to make the connection to the duct system with a flexible sleeve. If this recommendation is not observed, a lot of vibration and noise may be transmitted to the building structure.

Applicable rules for units incorporated into an air duct system

Ensure that the suction or discharge inlets are not accidentally obstructed by the panel positioning (e.g. low return or open doors etc.).

### Electrical data for 61AF units with option 11

61AF - unit with option 11 (without hydraulic module)		035	045	055	075	105
<b>Power circuit</b>						
Nominal power supply	V-ph-Hz	400-3-50				
Voltage range	V	360-440				
<b>Control circuit supply</b>						
24 V, via internal transformer						
<b>Maximum start-up current (Un)<sup>(1)</sup></b>						
Standard unit	A	131	171	203	160	244
Unit with electronic starter option	A	70	91	103	99	147
<b>Unit power factor at maximum capacity<sup>(2)</sup></b>						
		0,83	0,87	0,87	0,83	0,87
<b>Maximum unit power input<sup>(2)</sup></b>						
		16	20	24	33	49
<b>Nominal unit current draw<sup>(3)</sup></b>						
		22	25	29	43	58
<b>Maximum unit current draw (Un)<sup>(4)</sup></b>						
		29	34	40	57	81
<b>Maximum unit current draw (Un-10%) *</b>						
		31	37	44	62	87
<b>Customer-side unit power reserve</b>						
Customer reserve at the 24V control power circuit						
<b>Short-circuit stability and protection</b>						
See table on page 12						

(1) Maximum instantaneous start-up current (maximum operating current of the compressor + fan current + locked rotor current of the compressor).

(2) Power input, compressor and fan, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400V (data given on the unit nameplate).

(3) Standardised Eurovent conditions: evaporator entering/leaving water temperature 40°C/45°C, outside air temperature db/wb = 7°C/6°C.

(4) Maximum unit operating current at maximum unit power input and 400V (values given on the unit nameplate).

\* Maximum unit operating current at maximum unit power input and 360V.

## PHYSICAL DATA

61AF			030	035	045	055	075	105		
<b>Heating</b>										
<b>Standard unit</b> Full load performances*	HA1	Nominal capacity	kW	25,9	32,3	43,5	51,6	64,8	102	
		COP	kW/kW	3,99	3,99	4,32	4,36	3,99	4,26	
	HA2	Nominal capacity	kW	25,4	32,0	43,0	51,7	66,8	102	
		COP	kW/kW	3,34	3,32	3,60	3,67	3,43	3,59	
	HA3	Nominal capacity	kW	25,00	31,50	42,70	52,30	68,00	102,00	
		COP	kW/kW	2,90	2,88	3,14	3,19	3,01	3,13	
	HA4	Nominal capacity	kW	24,50	31,30	42,70	53,30	68,00	103,00	
		COP	kW/kW	2,43	2,42	2,64	2,68	2,54	2,64	
	<b>Standard unit</b> Seasonal energy efficiency**	HA1	SCOP <sub>30/35°C</sub>	kWh/kWh	3,33	3,44	3,58	3,66	3,57	3,62
			η <sub>s heat</sub> <sub>30/35°C</sub>	%	130	135	140	143	140	142
HA3		<b>SCOP<sub>47/55°C</sub></b>	<b>kWh/kWh</b>	<b>2,93</b>	<b>2,94</b>	<b>3,10</b>	<b>3,15</b>	<b>3,00</b>	<b>3,16</b>	
		<b>η<sub>s heat</sub><sub>47/55°C</sub></b>	<b>%</b>	<b>114</b>	<b>115</b>	<b>121</b>	<b>123</b>	<b>117</b>	<b>123</b>	
		P <sub>rated</sub>	kW	19,00	31,00	43,00	55,00	63,00	94,00	
		Energy labelling		A+	A+	A+	A+	A+	-	
<b>Operating weight<sup>(1)</sup></b>										
Standard unit (without hydraulic module)		kg	409	426	540	564	904	1024		
Standard unit (with hydraulic module option)		kg	418	435	555	579	919	1039		
<b>Sound levels</b>										
Sound power level <sup>(2)</sup>		dB(A)	78	83	82	84	84	85		
Sound pressure level at 10 m <sup>(3)</sup>		dB(A)	46	51	51	53	52	53		
<b>Dimensions</b>										
Length		mm	1110		1114		2273			
Depth		mm	1327		2100		2100			
Height		mm	1330		1330		1330			
<b>Compressor</b>		Hermetic scroll compressors, 48,3 r/s								
Quantity			1	1	1	1	2	2		
Number of capacity stages			1	1	1	1	2	2		
<b>Refrigerant</b>		R407C GWP = 1800 following AR4								
Charge		kg	8,8	9,7	10	13,2	22	26,5		
		teqCO <sub>2</sub>	15,6	17,2	17,7	23,4	39,0	47,0		
<b>Capacity control</b>		SmartVu™								
Minimum capacity		%	100	100	100	100	50	50		

\* In accordance with standard EN14511-3:2018

\*\* In accordance with standard EN14825:2018, average climate

HA1 Heating mode conditions: Water heat exchanger water entering/leaving temperature 30°C/35°C, outside air temperature tdb/twb = 7°C db/6°C wb, evaporator fouling factor 0 m<sup>2</sup>.K/W

HA2 Heating mode conditions: Water heat exchanger water entering/leaving temperature 40°C/45°C, outside air temperature tdb/twb = 7°C db/6°C wb, evaporator fouling factor 0 m<sup>2</sup>.K/W

HA3 Heating mode conditions: Water heat exchanger water entering/leaving temperature 47°C/55°C, outside air temperature tdb/twb = 7°C db/6°C wb, evaporator fouling factor 0 m<sup>2</sup>.K/W

HA4 Heating mode conditions: Water heat exchanger water entering/leaving temperature 55°C/65°C, outside air temperature tdb/twb = 7°C db/6°C wb, evaporator fouling factor 0 m<sup>2</sup>.K/W

η<sub>s heat</sub><sub>30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2018

η<sub>s heat</sub><sub>47/55°C</sub> & SCOP<sub>47/55°C</sub> **Bold values compliant to Ecodesign regulation: (EU) No 813/2013 for Heat Pump application**

- Not applicable

(1) Weight shown is a guideline only. Please refer to the unit nameplate

(2) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(3) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).



Eurovent certified values

## PHYSICAL DATA

61AF		030	035	045	055	075	105
<b>Condenser</b>		Direct expansion, plate heat exchanger					
Water volume	l	6,4	8,2	9,6	12,1	16,4	22,7
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000
Max. water-side operating pressure plus hydraulic module	kPa	400	400	400	400	400	400
<b>Fan</b>		Axial Flying Bird IV with rotating shroud					
Quantity		1	1	1	1	2	2
Maximum total air flow	l/s	3748	3736	4035	4036	7479	8072
Max speed, standard unit	tr/s	12	12	12	12	12	12
Max speed, unit with option 11	tr/s	-	16	16	16	16	16
<b>Evaporator</b>		Grooved copper tubes and aluminium fins					
<b>Hydraulic module (option 116)</b>							
Variable speed pump		Pump, Victaulic screen filter, relief valve, purge valves (water and air), cavitation pressure sensors					
<b>Water connections with / without hydraulic module</b>		Victaulic					
Connections	inch	1"1/4	1"1/2	1"1/2	1"1/2	2	2
Outside diameter	mm	42,4	48,3	48,3	48,3	60,3	60,3
<b>Chassis paint colour</b>		Colour code RAL7035					

## ELECTRICAL DATA

61AF - standard unit (without hydraulic module)		030	035	045	055	075	105
<b>Power circuit</b>							
Nominal power supply	V-ph-Hz	400-3-50					
Voltage range	V	360-440					
<b>Control circuit supply</b>							
24 V, via internal transformer							
<b>Maximum start-up current (Un)<sup>(1)</sup></b>							
Standard unit	A	101	129	169	201	157	241
Unit with electronic starter option	A	54	68	89	101	94	142
<b>Unit power factor at maximum capacity<sup>(2)</sup></b>							
		0,82	0,83	0,87	0,87	0,83	0,87
<b>Maximum unit power input<sup>(2)</sup></b>							
	kW	11	15	19	23	30	46
<b>Nominal unit current draw<sup>(3)</sup></b>							
	A	16	19	23	28	39	55
<b>Maximum unit current draw (Un)<sup>(4)</sup></b>							
	A	20	26	32	38	53	76
<b>Maximum unit current draw (Un-10%) *</b>							
	A	22	29	35	42	57	83
<b>Customer-side unit power reserve</b>							
Customer reserve at the 24 V control power circuit							
<b>Short-circuit stability and protection</b>							
See table below.							

- (1) Maximum instantaneous start-up current (maximum operating current of the compressor + fan current + locked rotor current of the compressor).  
(2) Power input, compressor and fan, at the unit operating limits (saturated suction temperature 10°C, saturated condensing temperature 65°C) and nominal voltage of 400V (data given on the unit nameplate).  
(3) Standardised Eurovent conditions: evaporator entering/leaving water temperature 40°C/45°C, outside air temperature db/wb = 7°C/6°C.  
(4) Maximum unit operating current at maximum unit power input and 400V (values given on the unit nameplate).  
\* Maximum unit operating current at maximum unit power input and 360V.

### Short-circuit stability current, main disconnect without fuse (TN system<sup>(1)</sup>)

61AF - standard unit (main disconnect switch)		030	035	045	055	075	105
<b>Value with unspecified upstream protection</b>							
Short-term current at 1 s (I <sub>cw</sub> )	kA rms	0,6	0,6	1,26	1,26	1,26	2
Admissible peak current (I <sub>pk</sub> )	kA pk	4,5	4,5	6	6	6	10
<b>Maximum value with upstream protection by circuit breaker</b>							
Conditional short-circuit current (I <sub>cc</sub> )	kA rms	7	7	7,7	7,7	6,1	10
Circuit breaker - Compact range		40	40	50	63	80	100
Reference number <sup>(2)</sup>		5SY6340-7	5SY6340-7	5SY4350-7	5SY4363-8	5SP4380-7	5SP4391-7
<b>Maximum value with upstream protection by fuses (gL/gG)</b>							
Conditional short-circuit current (I <sub>cc</sub> )	kA rms	50	50	50	50	14,5	22
Fuse (gL/gG)		40	40	63	63	80	125

- (1) Earthing system type  
(2) If another current limitation protection system is used, its time-current and thermal constraint (I<sup>2t</sup>) trip characteristics must be at least equivalent to those of the recommended circuit breaker.  
The short-circuit stability current values above are suitable with the TN system.

#### Electrical data and operating conditions notes:

- 61AF 030-105 units have a single power connection point located immediately upstream of the main disconnect switch.
- The control box includes the following standard features:
  - A main disconnect switch,
  - Starter and motor protection devices for each compressor, the fans and the pump,
  - The control devices.
- Field connections:**  
All connections to the system and the electrical installations must be in full accordance with all applicable local codes.
- The Carrier 61AF units are designed and built to ensure conformance with these codes. The recommendations of European standard EN 60204-1 (machine safety - electrical machine components - part 1: general regulations - corresponds to IEC 60204-1) are specifically taken into account, when designing the electrical equipment.

#### NOTES:

- Generally the recommendations of IEC 60364 are accepted as compliance with the requirements of the installation directives. Conformance with EN 60204-1 is the best means of ensuring compliance with the Machines Directive § 1.5.1.
- Annex B of EN 60204-1 describes the electrical characteristics used for the operation of the machines.

- The operating environment for the 61AF units is specified below:

- Environment<sup>(1)</sup> - Environment as classified in EN 60721 (corresponds to IEC 60721):
  - Outdoor installation<sup>(1)</sup>
  - Ambient temperature range: -20°C to +40°C, class 4K4H
  - Altitude: ≤ 2000 m
  - Presence of hard solids, class 4S2 (no significant dust present)
  - Presence of corrosive and polluting substances, class 4C2 (negligible)
- Power supply frequency variation: ± 2 Hz.
- The neutral (N) conductor must not be connected directly to the unit (if necessary use a transformer).
- Overcurrent protection of the power supply conductors is not provided with the unit.
- The factory-installed disconnect switch is of a type suitable for power interruption in accordance with EN 60947.
- The units are designed for connection to TN networks (IEC 60364). For IT networks the earth connection must not be at the network earth. Provide a local earth, consult competent local organisations to complete the electrical installation. Units delivered with speed drive (options 116) are not compatible with IT network.

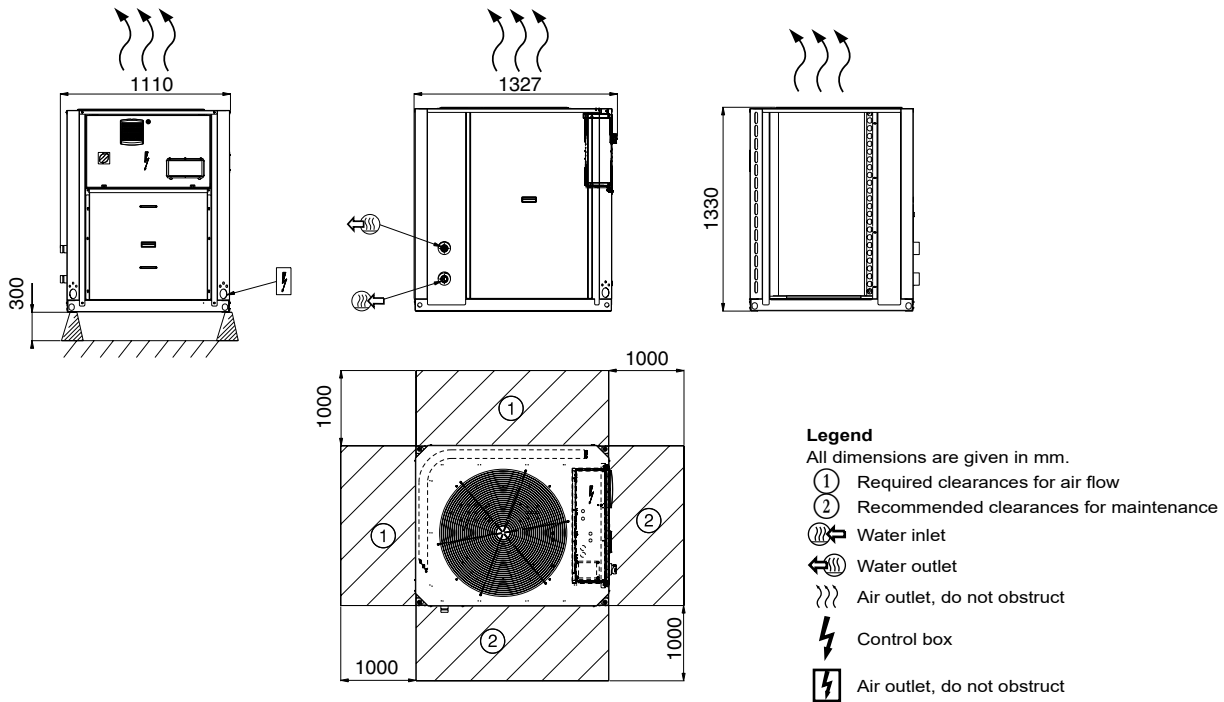
**Caution: If particular aspects of an actual installation do not conform to the conditions described above, or if there are other conditions which should be considered, always contact your local Carrier representative.**

- (1) The required protection level for this class is IP43BW (according to reference document IEC 60529). All 61AF units are protected to IP44CW and fulfil this protection condition.

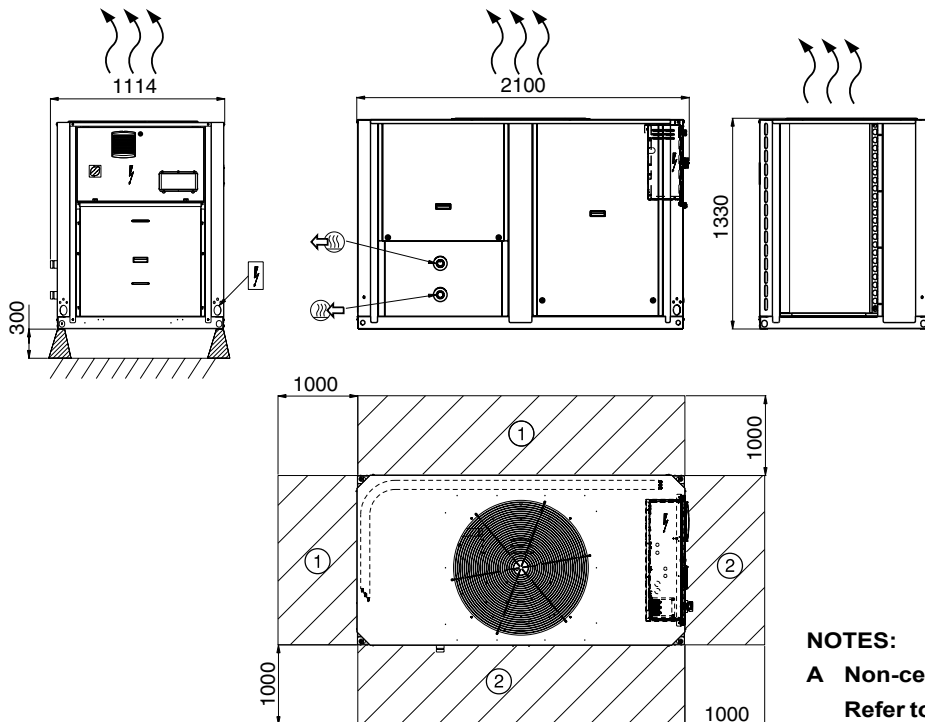


## DIMENSIONS/CLEARANCES

### 61AF 030-035 units with and without hydraulic module



### 61AF 045-055 units with and without hydraulic module



#### NOTES:

##### A Non-certified drawings.

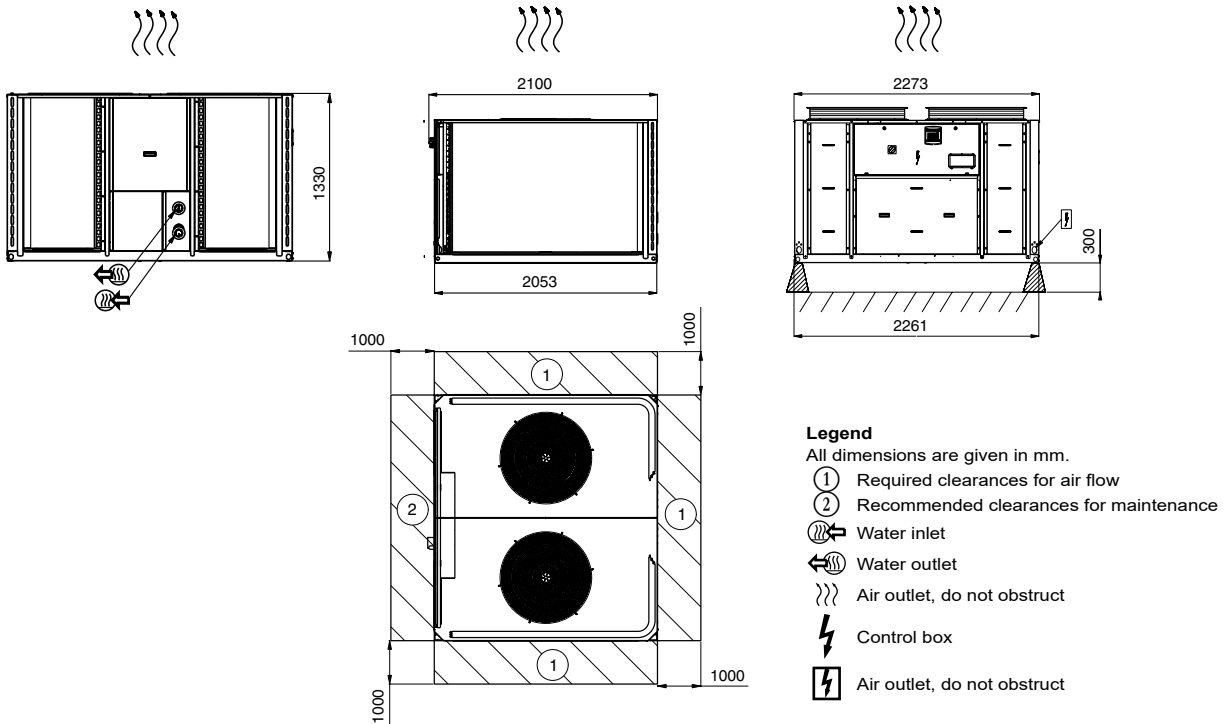
Refer to the certified dimensional drawings supplied with the unit or available on request, when designing an installation. For the location of fixing points, weight distribution and coordinates of the centre of gravity refer to the certified dimensional drawings.

##### B In multiple-unit installations (maximum four units), the side clearance between the units should be increased from 1000 to 2000 mm.

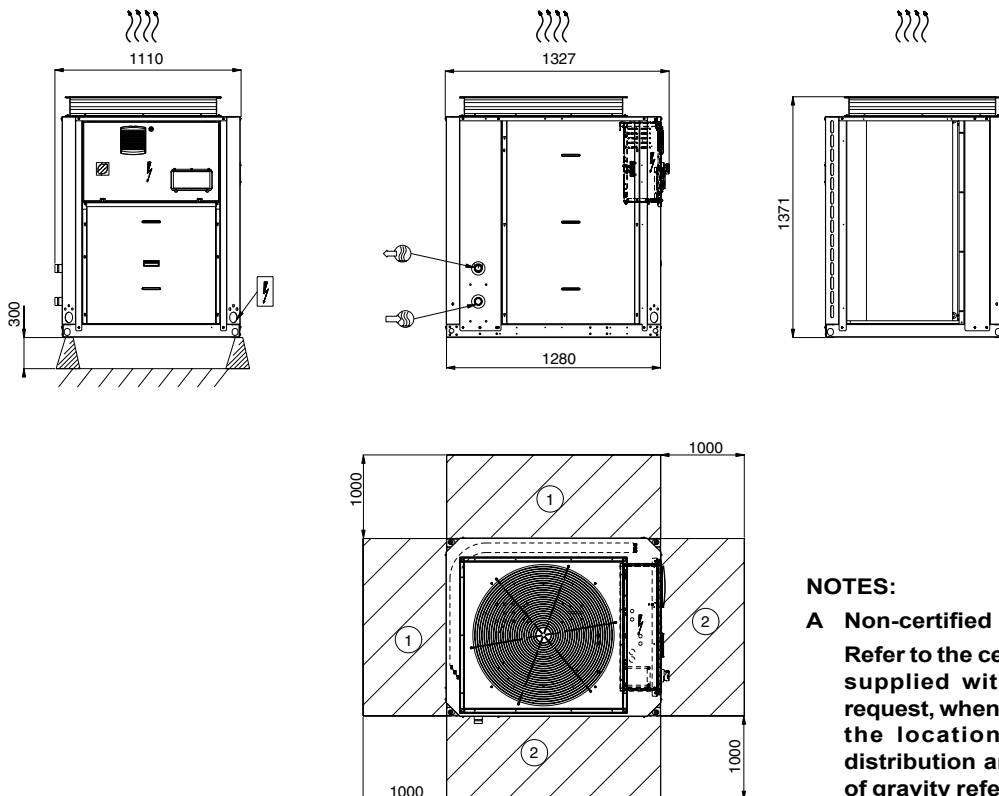
##### C The height of the solid surface must not exceed 2 m.

## DIMENSIONS/CLEARANCES

### 61AF 075-105 units with and without hydraulic module



### 61AF 035 with option 11, units with and without hydraulic module



#### NOTES:

##### A Non-certified drawings.

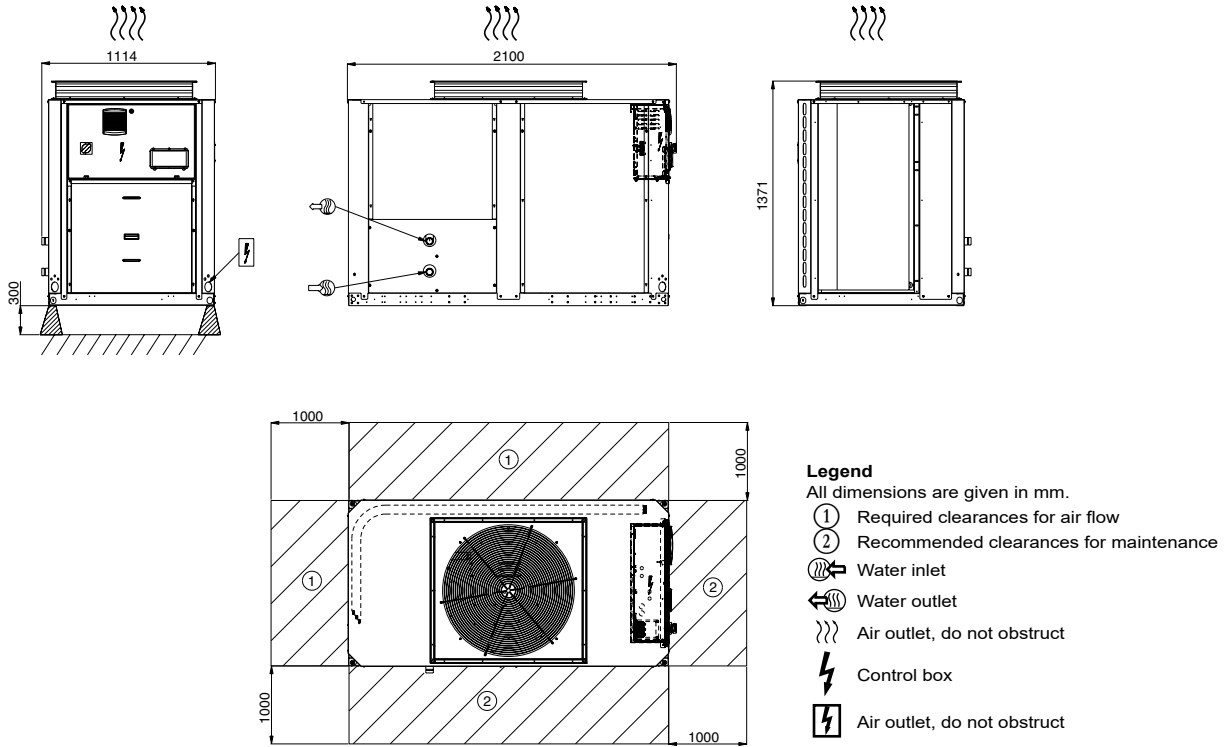
Refer to the certified dimensional drawings supplied with the unit or available on request, when designing an installation. For the location of fixing points, weight distribution and coordinates of the centre of gravity refer to the certified dimensional drawings.

B In multiple-unit installations (maximum four units), the side clearance between the units should be increased from 1000 to 2000 mm.

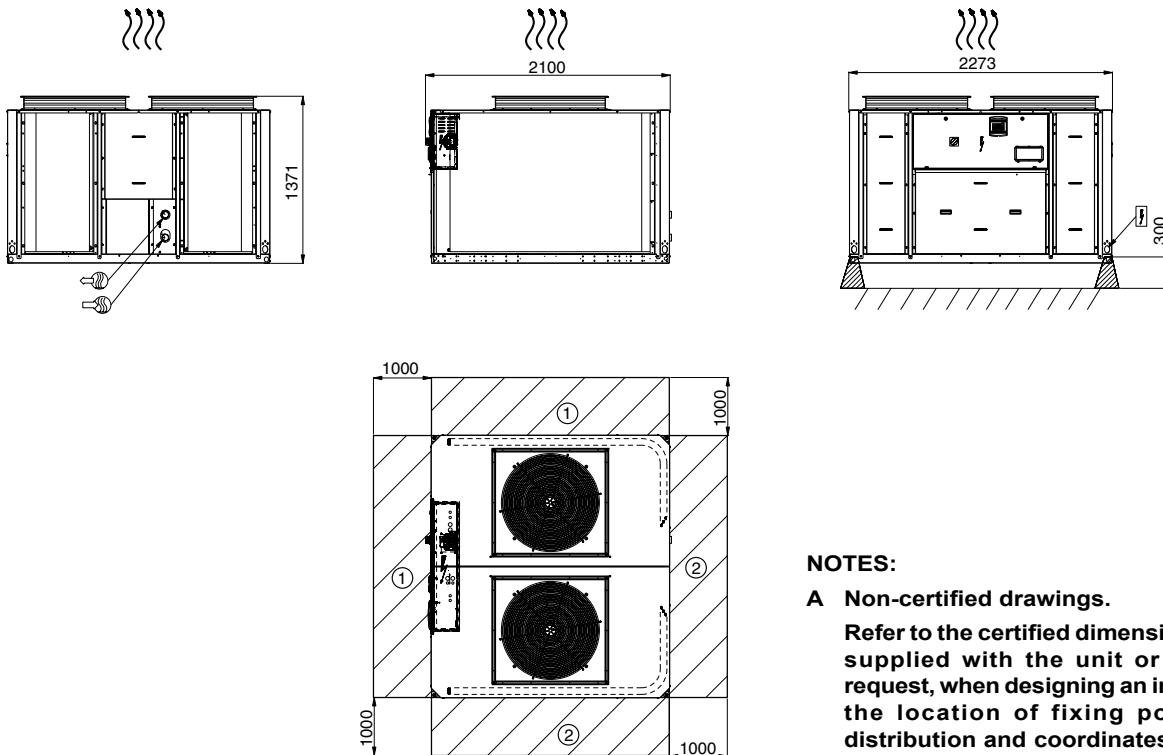
C The height of the solid surface must not exceed 2 m.

## DIMENSIONS/CLEARANCES

### 61AF 045-055 with option 11, units with and without hydraulic module



### 61AF 075-105 with option 11, units with and without hydraulic module



**NOTES:**

- A Non-certified drawings.**  
 Refer to the certified dimensional drawings supplied with the unit or available on request, when designing an installation. For the location of fixing points, weight distribution and coordinates of the centre of gravity refer to the certified dimensional drawings.
- B In multiple-unit installations (maximum four units), the side clearance between the units should be increased from 1000 to 2000 mm.**
- C The height of the solid surface must not exceed 2 m.**