



## High-Temperature Monobloc Air-to-Water Heat Pumps with Integrated Hydronic Module

PRO-DIALOG



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Quality  
Management  
Systems

**AQUASNAP**  
Heating

## 61AF 014-019

Nominal heating capacity 14-20 kW

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.

### Features

The main features of this product range are:

- **Energy savings**  
The 61AF range is certified to the Eurovent energy efficiency class A with a coefficient of performance (COP) of over 4. This complies with the COP required by the Ecolabel certification.
- **Ease-of-installation**  
The high-temperature Aquasnap heat pumps incorporate a hydronic module with a multi-speed pump, as standard.
- **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 quality is your guarantee for the safety and durability of the installation.

The high-temperature heat pump range incorporates the latest technological features:

- scroll compressors with vapour injection
- low-noise fans made of a composite material
- auto-adaptative microprocessor control
- electronic expansion valve
- multi-speed pump.

The high-temperature Aquasnap heat pumps can be equipped with a hydronic 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
  - Protection grilles on anti-vibration mountings to protect the heat exchanger against possible shocks.
  - Latest-generation low-noise Flying Bird fans are now even quieter and do not generate intrusive low-frequency noise.
  - Rigid fan installation for reduced start-up noise.

## Easy and fast installation

- Integrated hydronic module (option)
  - Multi-speed centrifugal water pump, based on the pressure loss of the hydronic installation.
  - Water filter protects the water pump against circulating debris (option).
  - Overpressure valve, set to 3 bar for the 61AF 014 and to 4 bar for the 61AF 019.
  - Thermal insulation and frost protection down to -20°C, using an electric resistance heater.
- Physical features
  - The unit has a small footprint and a low height (1103 mm for the 61AF 014 and 1550 mm for the 61AF 019), 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 with neutral.
  - Main disconnect switch with high trip capacity (standard only for 61AF 019).
  - 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) 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.
- Reduced maintenance costs
  - Maintenance-free scroll compressors with vapour injection.
  - Pro-Dialog+ control offers fast diagnosis of possible incidents and their history.

## Environmental care

- Ozone-friendly R-407C refrigerant
  - Chlorine-free refrigerant of the HFC group with zero ozone depletion potential.
  - Very efficient - ensures an increased energy efficiency ratio (COP).
- 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.

## 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.
- 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.

## Pro-Dialog+ control

Pro-Dialog+ combines intelligence with operating simplicity. The control constantly monitors all machine parameters and precisely manages the operation of compressors, expansion devices, fans and of the condenser water pump for optimum energy efficiency.

- Energy management
  - Seven-day internal time schedule clock: permits unit on/off control and operation at a second set point.
  - Set point reset based on the outside air temperature or the return water temperature or on the water heat exchanger delta T.
  - Master/slave control of two heat pumps operating in parallel with operating time equalisation and automatic change-over in case of a unit fault (option).
  - Start/stop based on the outside air temperature.
- Ease-of-use
  - The new backlit LCD interface includes a manual control potentiometer to ensure legibility under any lighting conditions.
  - The information is displayed clearly in English, French, German, Italian and Spanish (for other languages please consult Carrier).
  - The Pro-Dialog+ navigation uses intuitive tree-structure menus, similar to the Internet browsers. They are user-friendly and permit quick access to the principal operating parameters: number of compressors operating, suction/discharge pressure, compressor operating hours, set point, air temperature, entering/leaving water temperature.
  - As standard the unit includes a board for the control of a boiler and four electric resistance heater stages.

## Pro-Dialog+ operator interface



### Remote operating mode with volt-free contacts (standard)

A simple two-wire communication bus between the RS485 port of the Aquasnap high-temperature heat pumps and the Carrier Comfort Network 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 a heating system. Please consult your Carrier representative for more information on these products.

- Start/stop: opening of this contact will shut down the heat pump.
- Dual set point: closing of this contact activates a second heating set point (example: unoccupied mode).
- Demand limit: closing of this contact limits the maximum heat pump capacity to a predefined value.
- User safety: this contact is connected in series with the water flow switch and can be used for any customer safety loop.
- Water pump control.
- Alert indication: this volt-free contact indicates the presence of a minor fault.
- Alarm indication: this volt-free contact indicates the presence of a major fault that has led to the shut-down of the refrigerant circuit.

### Remote interface (accessory)

This accessory includes a box that can be mounted inside the building. The power supply is provided via a 220 V/24 V transformer supplied. This interface allows access to the same menus as the unit interface and can be installed up to 300 m from the 61AF unit.

## Options and accessories

Accessories/options	Description	Advantages	Use
Hydronic module	See hydronic module chapter	Easy and fast installation	61AF 014-019
Water filter	External water filter on the hydronic module	Water pump protection against circulating debris	61AF 014-019
Remote user interface	Remotely installed user interface (via communication bus).	Remote heat pump control up to 300 m	61AF 014-019
JBus gateway	Two-directional communications board, complies with JBus protocol	Connection by communication bus to a building management system	61AF 014-019
BACNet gateway	Two-directional communications board, complies with BACNet protocol	Connection by communication bus to a building management system	61AF 014-019
LonTalk gateway	Two-directional communications board, complies with LonTalk protocol	Connection by communication bus to a building management system	61AF 014-019
Master/slave operation	Unit equipped with an additional field-installed leaving water temperature sensor, allowing master/slave operation of two units connected in parallel	Operation of two units connected in parallel with operating time equalisation	61AF 014-019

# Hydronic module (option)

The hydronic module option reduces the installation time. The heat pump is factory-equipped with the main hydronic components required for the installation: screen filter, water pump, safety valve, water pressure transducer, flow switch.

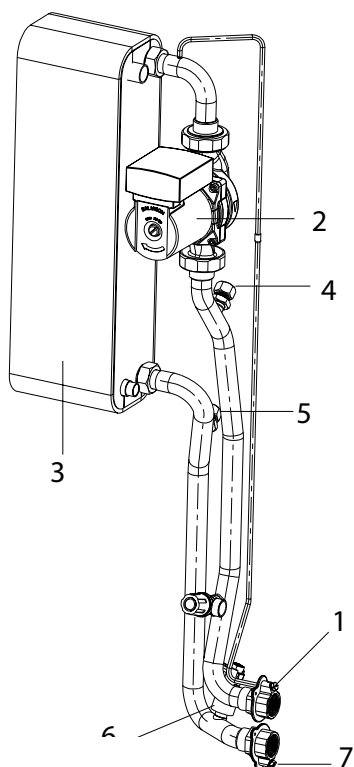
The Pro-Dialog+ control allows integration of system and water pump protection devices (insufficient water flow rate).

The pump supplied with the hydronic module is a multi-speed pump.

An automatic pump start-up algorithm protects the heat exchanger and the hydronic module piping against frost down to -10°C outside air temperature, as standard. If necessary, increased frost protection down to -20 °C is possible by adding heaters to the hydronic module piping.

The hydronic module option is integrated into the heat pump without increasing its dimensions and saves the space normally used for the water pump.

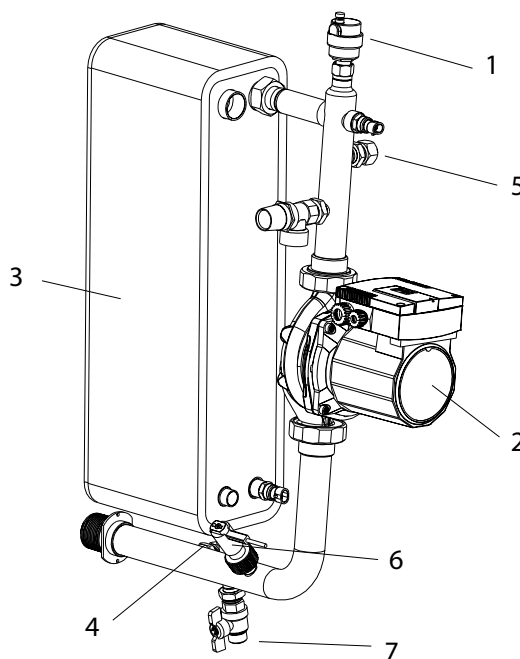
**Hydronic module 61AF 014**



**Legend**

- 1 Air purge
- 2 Water pump
- 3 Brazed plate heat exchanger
- 4 Water pressure gauge
- 5 Water pressure gauge
- 6 Flow switch
- 7 Water drain

**Hydronic module 61AF 019**



**Legend**

- 1 Air purge
- 2 Water pump
- 3 Brazed plate heat exchanger
- 4 Water pressure gauge
- 5 Water pressure gauge
- 6 Flow switch
- 7 Water drain

**Physical and electrical data, units with hydronic module**

61AF		014-7	014-9	019
<b>Operating weight*</b>				
Unit with hydronic module	kg	169	169	216
<b>Hydronic module</b>				
Maximum operating pressure	kPa	300	300	400
<b>Pumps</b>				
Water pump		Three-speed	Three-speed	Three-speed
Power input**	kW	0.21	0.21	0.39
Nominal operating current draw	A	0.95	0.95	1.90
<b>Water connections (with hydronic module)</b>				
Connections	inch	1 female	1 female	1 male in/1-1/4 male out
Outside diameter	mm	25	25	25 in/32 out

\* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

\*\* To obtain the maximum power input for a unit with hydronic module, add the maximum unit power input to the pump power input.

# Physical data

61AF		014-7	014-9	019
<b>Heating application as per EN14511-3:2011*</b>				
<b>Condition 1</b>				
Nominal heating capacity	kW	14.1	13.7	19.8
COP	kW/kW	3.32	3.50	3.45
Eurovent class, heating		A	A	A
<b>Condition 2</b>				
Nominal heating capacity	kW	13.9	13.5	20.2
COP	kW/kW	3.89	4.16	4.24
<b>Heating application**</b>				
<b>Condition 1</b>				
Nominal heating capacity	kW	14.0	13.6	19.7
COP	kW/kW	3.36	3.54	3.50
<b>Condition 2</b>				
Nominal heating capacity	kW	13.8	13.5	20.1
COP	kW/kW	3.94	4.22	4.32
<b>Operating weight***</b>				
Standard unit (without hydronic kit)	kg	159	159	206
Standard unit (plus hydronic module option)	kg	169	169	216
<b>Sound levels</b>				
Sound power level 10 <sup>-12</sup> W****	dB(A)	71	71	72
Sound pressure level at 10 m†	dB(A)	43	43	44
<b>Dimensions</b>				
Length x depth x height	mm	1103 x 333 x 1278	1103 x 333 x 1278	1135 x 559 x 1579
<b>Compressor</b>				
One, hermetic scroll, 48.3 r/s, one capacity stage				
<b>Refrigerant</b>				
R-407C				
Charge	kg	4.0	4.0	8.0
<b>Capacity control</b>				
Pro-Dialog+				
Minimum capacity	%	100	100	100
<b>Condenser</b>				
Direct-expansion plate heat exchanger				
Water volume	l	3.7	3.7	3.9
Max. water-side operating pressure with and without hydronic module	kPa	300	300	400
<b>Fan</b>				
Two, axial twin-speed fans				
Total air flow (high speed)	l/s	2050	2050	2000
Speed	r/s	11.7	11.7	14.5
<b>Evaporator</b>				
Grooved copper tubes and aluminium fins				
<b>Pump</b>				
One three-speed pump				
<b>Water connections with/without hydronic module</b>				
Victaulic				
Connections	inch	1 female	1 female	1 male in/1-1/4 male out
Outside diameter	mm	25	25	25 in/32 out
<b>Chassis paint colour</b>				
Colour code: RAL 7035				

\* Eurovent-certified performances in accordance with standard EN14511-3:2011

Condition 1: Heating mode conditions: water heat exchanger water entering/leaving temperature 40°C/45°C, outside air temperature 7°C db/6°C wb, condenser fouling factor: 0 m<sup>2</sup> K/W.

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

\*\* Gross performances, not in accordance with EN14511-3:2011. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger.

Condition 1: Heating mode conditions: water heat exchanger water entering/leaving temperature 40°C/45°C, outside air temperature 7°C db/6°C wb, condenser fouling factor: 0 m<sup>2</sup> K/W.

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

\*\*\* Weight shown is a guideline only. To find out the unit refrigerant charge, please refer to the unit nameplate.

\*\*\*\* In accordance with ISO 9614-1 and certified by Eurovent. The values have been rounded and are for information only and not contractually binding.

† For information, calculated from the sound power level Lw(A)

# Electrical data

61AF - standard unit		Without pump			With pump			
		014-7	014-9	019	014-7	014-9	019	
<b>Power circuit</b>								
Nominal power supply	V-ph-Hz	230-1-50	400-3-50	400-3-50	230-1-50	400-3-50	400-3-50	
Voltage range	V	207-253	360-440	360-440	207-253	360-440	360-440	
<b>Control circuit supply</b>		24 V, via internal transformer			24 V, via internal transformer			
<b>Maximum start-up current (Un)*</b>								
Standard unit	A	-	66	102	-	67	104	
Unit with electronic starter option	A	47	-	-	48	-	-	
<b>Unit power factor at maximum capacity**</b>		0.82	0.82	0.82	0.82	0.82	0.82	
<b>Maximum unit power input**</b>		kW	6.41	5.90	8.80	6.41	6.10	9.20
<b>Nominal unit current draw***</b>		A	22.9	7.9	12.4	23.7	7.9	12.4
<b>Maximum unit current draw (Un)****</b>		A	30.7	10.8	16.0	31.5	10.8	16.0
<b>Maximum unit current draw (Un-10%)†</b>		A	36.4	11.9	16.6	36.4	11.9	16.6

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

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

\*\*\* Standardised Eurovent conditions: condenser entering/leaving water temperature = 40°C/45°C, outside air temperature db/wb = 7°C/6°C.

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

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

## Electrical data and operating conditions notes:

- 61AF 014-019 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 (size 019 only),
  - starter and motor protection devices for the compressor, the fan 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 Machinery 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\* - Environment as classified in EN 60721 (corresponds to IEC 60721):
  - outdoor installation\*
  - 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 60947-3 (corresponds to IEC 60947-3)
- 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.

**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.**

- \* 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.

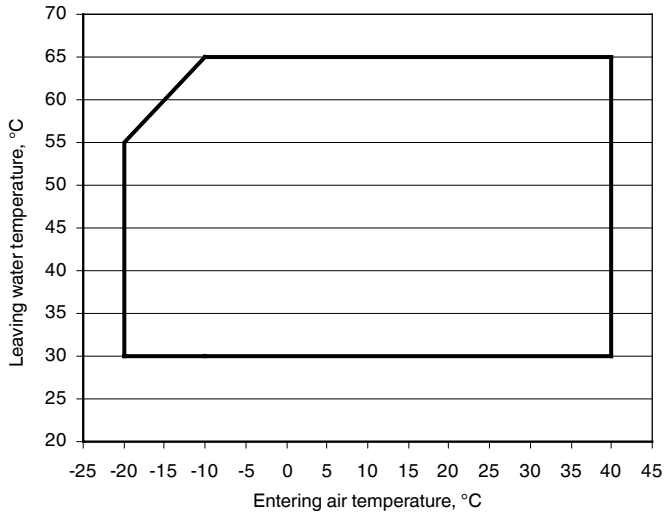
# Operating limits

## Operating range

61AF		Minimum	Maximum
<b>Condenser</b>			
Entering water temperature at start-up	°C	8	57
Leaving water temperature during operation	°C	30	65
Entering/leaving water temperature difference	K	3	10
<b>Evaporator</b>			
Entering air temperature*	°C	-20	40

\* Outside temperature: For transport and storage of the 61AF units the minimum and maximum allowable temperatures are -20°C and +50°C. It is recommended that these temperatures are used for transport by container.

**Note:** Do not exceed the maximum operating temperature.



— Full load

## Plate heat exchanger water flow rate

61AF	Flow rate, l/s	
	Minimum	Maximum*
014-7	0.2	1.1
014-9	0.2	1.1
019	0.3	1.6

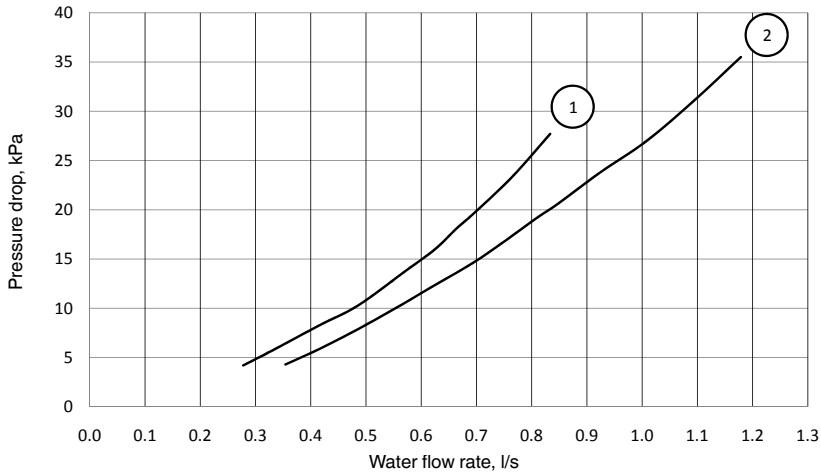
\* Maximum flow rate at a water temperature difference of 3 K in the plate heat exchanger.

**Note:** For a domestic hot water application (leaving water temperature = 65°C), the water temperature difference must be at least 8 K.

# Available static system pressure

## Plate heat exchanger pressure drop - for pure water at 20°C

### 61AF 014-019



- 1 61AF 014
- 2 61AF 019

## Pump pressure/flow rate curves for units with hydronic module - for pure water at 20°C

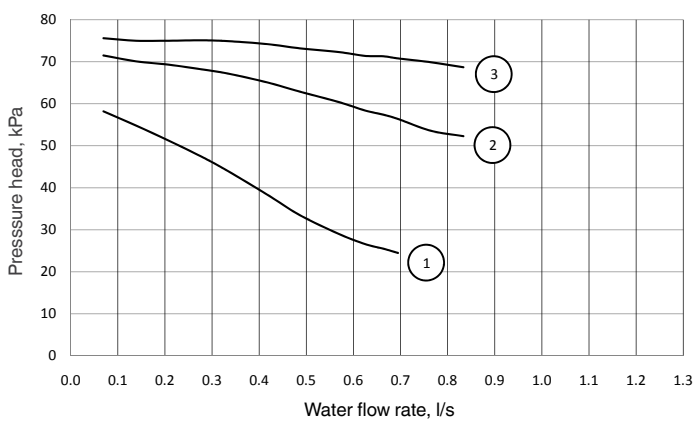
The 61AF units are equipped with a fixed-speed pump with three different speeds.

These speeds can be manually adjusted by changing the speed terminal board inside the terminal box (this operation can only be carried out by approved personnel). The speed initially selected corresponds to standard use for heating water loops. If this speed needs to be changed, the pressure/flow curves for the three speeds are shown below.

61AF	Condenser water flow rate, l/s	
	Minimum	Maximum*
014-7	0.2	1.1
014-9	0.2	1.1
019	0.3	1.6

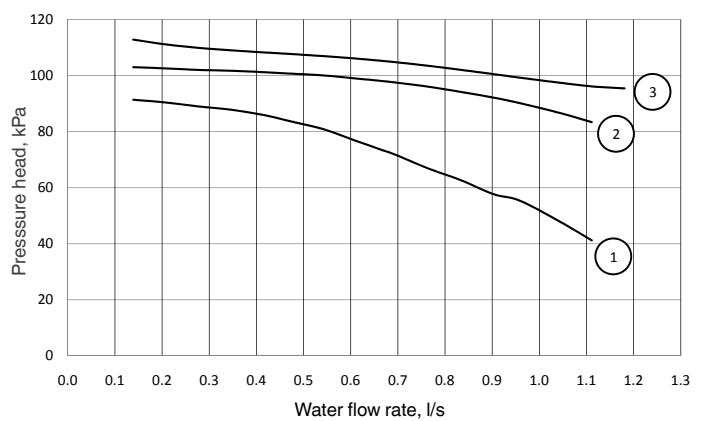
\* Maximum flow rate at a water temperature difference of 3 K in the plate heat exchanger

### 61AF 014



- 1 61AF 014 (speed 1)
- 2 61AF 014 (speed 2)
- 3 61AF 014 (speed 3): selected

### 61AF 019



- 1 61AF 019 (speed 1)
- 2 61AF 019 (speed 2)
- 3 61AF 019 (speed 3): selected

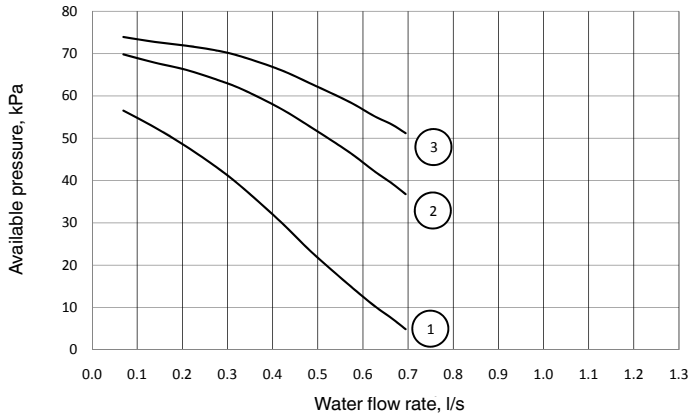


# Available static system pressure (cont.)

## Available system pressure for units with pump - for pure water at 20°C

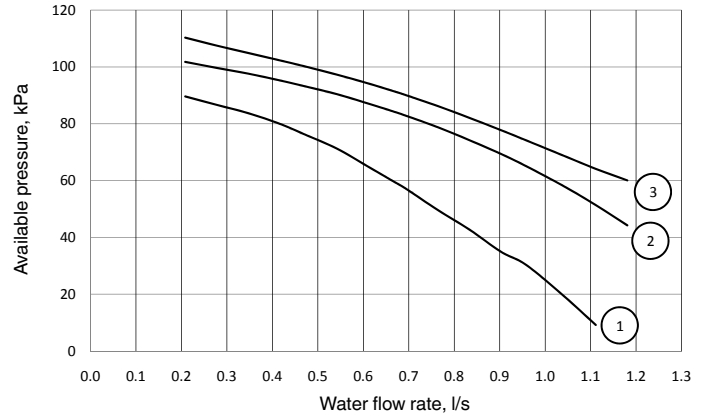
The available pressure curves for the 61AF units are given for each pump speed.

### 61AF 014



- 1 61AF 014 (speed 1)
- 2 61AF 014 (speed 2)
- 3 61AF 014 (speed 3): selected

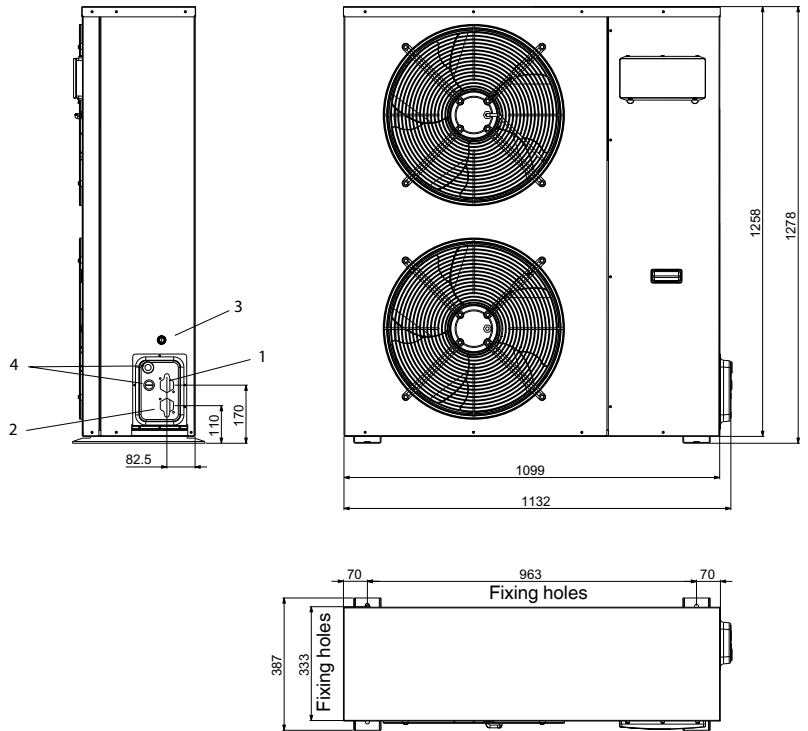
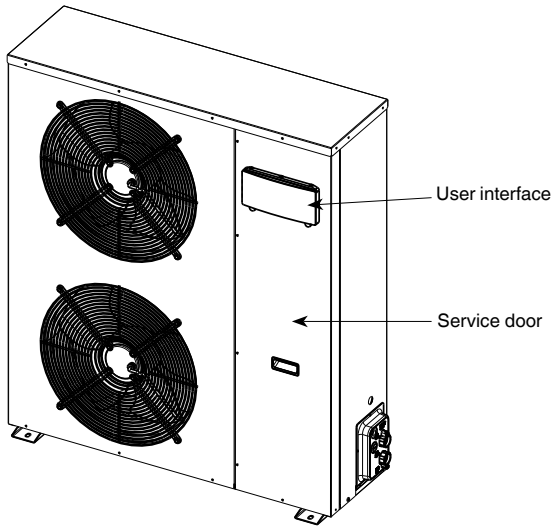
### 61AF 019



- 1 61AF 019 (speed 1)
- 2 61AF 019 (speed 2)
- 3 61AF 019 (speed 3): selected

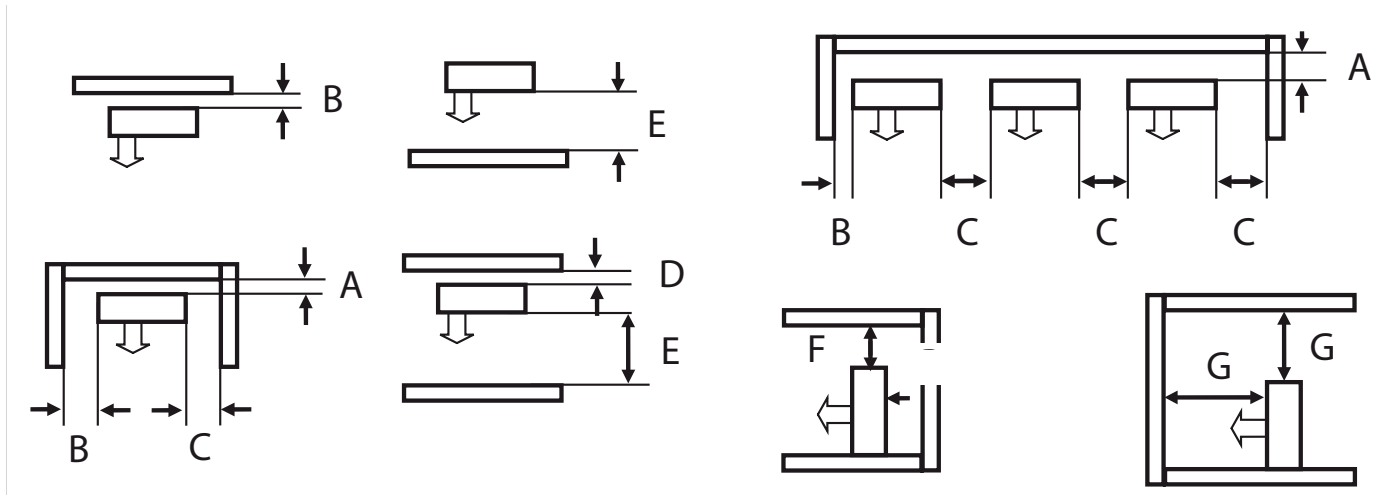
# Dimensions, mm

## 61AF 014 unit with and without hydronic module



- 1. Water outlet
- 2. Water inlet
- 3. Safety valve outlet
- 4. Electrical connections

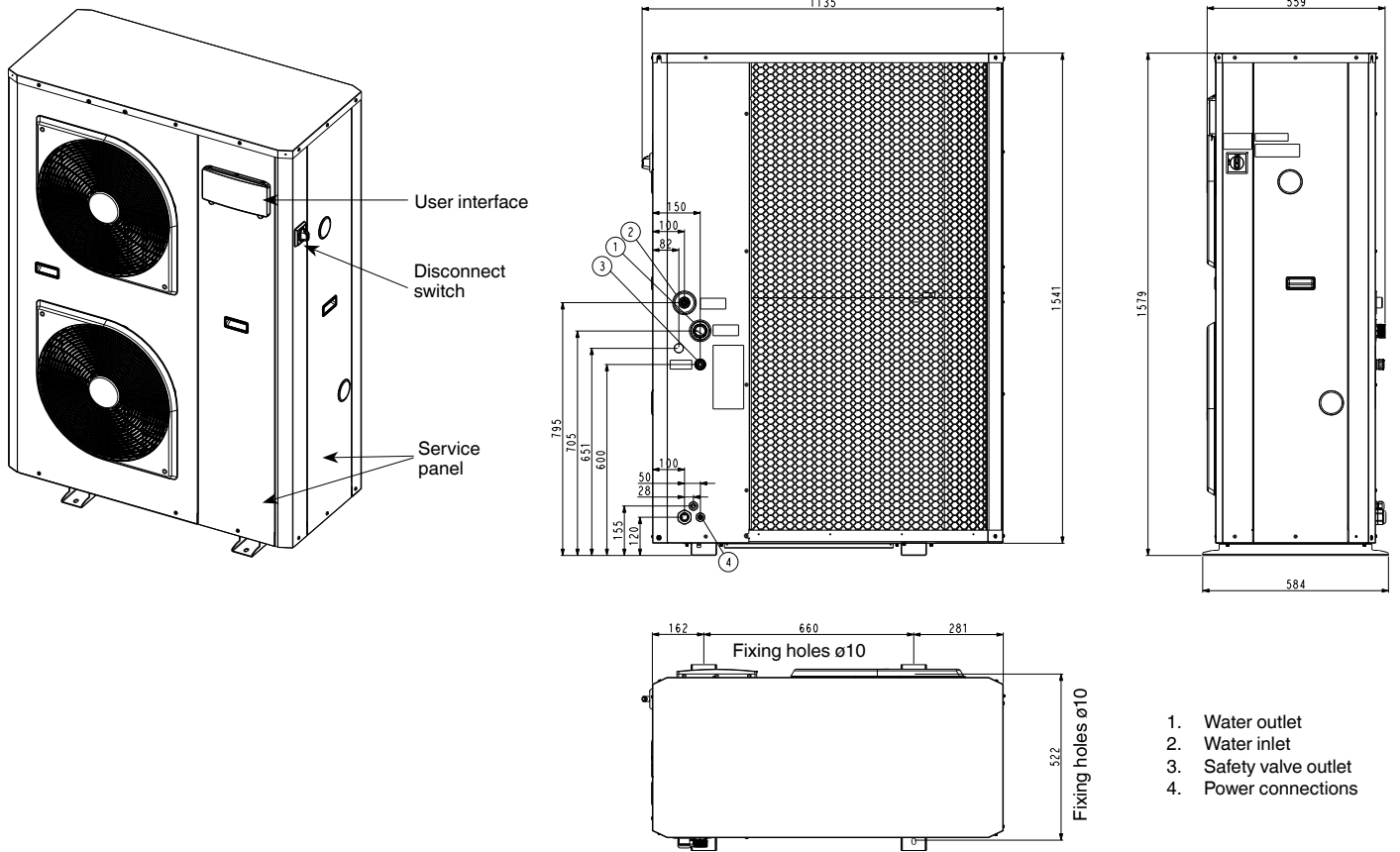
# Clearances, mm



61AF 014	A	B	C	D	E	F	G
	100	250	500	100	670	400	670

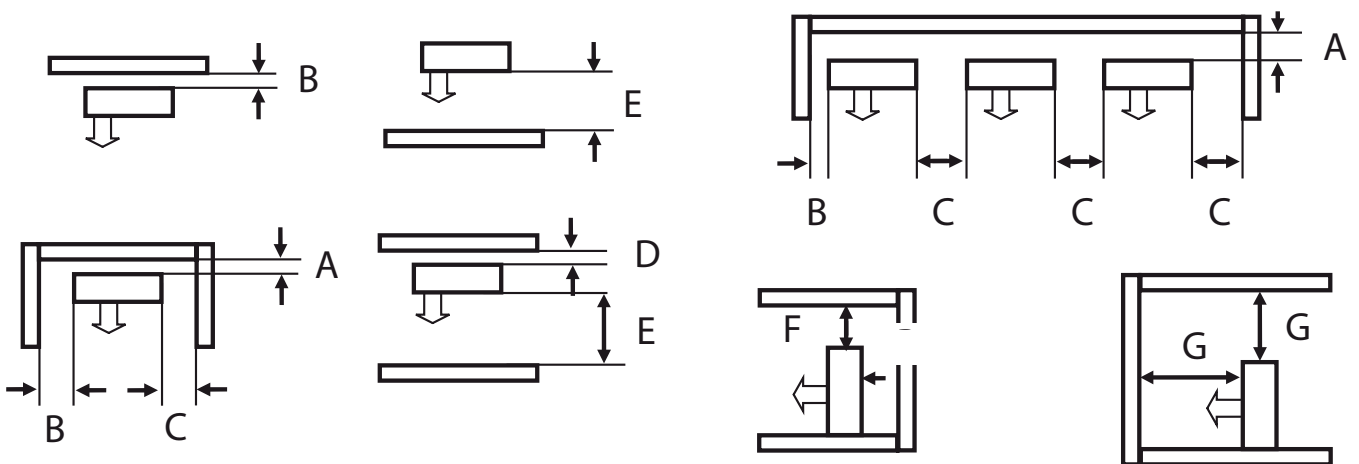
# Dimensions, mm

## 61AF 019 unit with and without hydronic module



1. Water outlet
2. Water inlet
3. Safety valve outlet
4. Power connections

# Clearances, mm



61AF 019	A	B	C	D	E	F	G
	300	200	400	200	700	500	1000

# Heating capacities in accordance with EN14511-3 : 2011

61AF 014-019

LWT °C		Outside air dry-bulb (wet-bulb) temperature, °C																							
		-20 (-20,5)				-15 (-16)				-10 (-11)				-7 (-8)				2 (1)				7 (6)			
		Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp
kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa		
014-7	30	6.39	2.16	0.31	4.5	7.53	2.46	0.36	6.0	8.32	2.66	0.43	7.9	8.62	2.74	0.47	9.2	10.94	3.42	0.61	14.4	13.85	4.18	0.66	16.5
014-9		6.01	2.30	0.29	4.0	7.14	2.64	0.34	5.5	7.95	2.86	0.41	7.3	8.27	2.94	0.45	8.6	10.62	3.68	0.59	13.7	13.46	4.52	0.64	15.7
019-9		9.48	2.37	0.45	6.6	10.95	2.68	0.53	8.7	11.39	2.78	0.62	11.3	11.16	2.73	0.67	13.1	13.97	3.41	0.86	20.1	20.48	4.66	0.98	25.1
014-7	35	6.40	2.03	0.31	4.4	7.53	2.31	0.36	5.9	8.31	2.49	0.43	7.7	8.60	2.55	0.47	9.0	10.90	3.16	0.61	14.0	13.89	3.88	0.67	16.2
014-9		6.03	2.15	0.29	4.0	7.15	2.45	0.35	5.4	7.94	2.65	0.41	7.1	8.26	2.71	0.45	8.4	10.57	3.36	0.59	13.3	13.53	4.15	0.65	15.5
019-9		9.39	2.20	0.45	6.4	10.86	2.48	0.53	8.4	11.40	2.58	0.61	10.9	11.28	2.56	0.67	12.6	14.08	3.16	0.85	19.2	20.19	4.23	0.97	24.0
014-7	40	6.42	1.92	0.31	4.3	7.54	2.16	0.37	5.7	8.30	2.31	0.43	7.5	8.59	2.36	0.47	8.8	10.84	2.90	0.61	13.6	13.98	3.59	0.67	16.0
014-9		6.05	2.01	0.29	3.9	7.16	2.28	0.35	5.3	7.94	2.45	0.41	7.0	8.24	2.50	0.45	8.2	10.51	3.06	0.59	12.9	13.62	3.81	0.65	15.3
019-9		9.35	2.05	0.45	6.2	10.82	2.29	0.53	8.2	11.45	2.39	0.61	10.5	11.43	2.39	0.66	12.2	14.24	2.93	0.84	18.5	19.98	3.82	0.96	23.0
014-7	45	6.43	1.81	0.31	4.2	7.55	2.03	0.37	5.6	8.29	2.16	0.43	7.3	8.57	2.19	0.47	8.5	10.78	2.66	0.60	13.2	14.08	3.32	0.68	15.9
014-9		6.09	1.88	0.29	3.9	7.19	2.12	0.35	5.2	7.94	2.26	0.41	6.8	8.24	2.30	0.45	8.0	10.45	2.79	0.59	12.5	13.72	3.49	0.66	15.2
019-9		9.35	1.91	0.45	6.1	10.83	2.12	0.53	8.0	11.55	2.22	0.61	10.3	11.62	2.22	0.66	11.9	14.46	2.70	0.84	18.0	19.84	3.44	0.95	22.3
014-7	50	6.48	1.71	0.31	4.2	7.58	1.90	0.37	5.6	8.36	2.02	0.43	7.2	8.68	2.06	0.47	8.4	10.71	2.44	0.60	12.8	14.18	3.06	0.68	15.8
014-9		6.16	1.76	0.30	3.9	7.24	1.97	0.35	5.2	8.03	2.10	0.41	6.7	8.36	2.14	0.45	7.9	10.41	2.53	0.58	12.2	13.84	3.20	0.67	15.2
019-9		9.41	1.78	0.45	6.0	10.90	1.97	0.53	7.9	11.67	2.05	0.61	10.2	11.80	2.06	0.67	11.8	14.75	2.49	0.84	17.7	19.83	3.09	0.95	21.9
014-7	55	6.51	1.65	0.20	1.9	7.61	1.83	0.23	2.5	8.42	1.96	0.27	3.2	8.78	2.00	0.29	3.7	10.64	2.33	0.38	5.7	14.17	2.94	0.43	7.1
014-9		6.21	1.69	0.19	1.8	7.28	1.89	0.22	2.3	8.10	2.02	0.26	3.0	8.47	2.07	0.28	3.5	10.35	2.40	0.37	5.4	13.80	3.04	0.42	6.8
019-9		9.46	1.72	0.29	2.7	10.96	1.89	0.33	3.5	11.78	1.97	0.39	4.5	11.96	1.99	0.42	5.2	15.01	2.41	0.53	7.8	19.79	2.95	0.60	9.6
014-7	60	6.58	1.58	0.16	1.3	7.67	1.75	0.19	1.7	8.52	1.86	0.22	2.2	8.92	1.91	0.24	2.5	10.60	2.17	0.30	3.8	14.08	2.74	0.34	4.7
014-9		6.29	1.61	0.15	1.2	7.36	1.79	0.18	1.6	8.20	1.91	0.21	2.1	8.61	1.96	0.23	2.4	10.32	2.23	0.29	3.6	13.73	2.81	0.33	4.5
019-9		9.58	1.64	0.23	1.8	11.10	1.79	0.27	2.4	11.98	1.87	0.31	3.1	12.21	1.89	0.34	3.5	15.37	2.28	0.43	5.3	19.86	2.72	0.48	6.5
014-7	65	6.73	1.50	0.16	1.3	7.81	1.64	0.19	1.7	8.68	1.75	0.22	2.2	9.12	1.80	0.24	2.5	10.60	1.98	0.30	3.8	14.02	2.48	0.34	4.6
014-9		6.43	1.52	0.16	1.2	7.48	1.68	0.18	1.6	8.34	1.79	0.21	2.1	8.78	1.84	0.23	2.4	10.31	2.03	0.29	3.6	13.67	2.54	0.33	4.4
019-9		9.81	1.54	0.24	1.9	11.35	1.67	0.28	2.5	12.29	1.74	0.32	3.1	12.57	1.76	0.35	3.6	15.85	2.11	0.43	5.3	20.05	2.45	0.49	6.5

## Legend

LWT Leaving water temperature, °C  
 Qh Heating capacity, kW  
 COP Coefficient of performance, kW/kW  
 q Condenser water flow rate, l/s  
 Δp Condenser pressure drop, kPa

## Application data

Standard units, refrigerant: R-407C  
 Condenser entering/leaving water temperature difference: 5 K for LWT values <55°C  
 Condenser entering/leaving water temperature difference: 8 K for LWT values = 55°C  
 Condenser entering/leaving water temperature difference: 10 K for LWT values >55°C  
 Condenser fluid: water  
 Fouling factor:  $0.18 \times 10^{-4}$  (m<sup>2</sup> K)/W

Performances in accordance with EN14511-3:2011.

# Heating capacities

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LWT °C		Outside air dry-bulb (wet-bulb) temperature, °C																							
		-20 (-20,5)				-15 (-16)				-10 (-11)				-7 (-8)				2 (1)				7 (6)			
		Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp
kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa		
014-7	30	6.38	2.16	0.31	4.5	7.57	2.49	0.36	6.0	8.89	2.85	0.43	7.9	9.76	3.09	0.47	9.2	12.71	3.97	0.61	14.4	13.78	4.25	0.66	16.5
014-9		5.99	2.31	0.29	4.0	7.18	2.67	0.34	5.5	8.50	3.07	0.41	7.3	9.37	3.32	0.45	8.6	12.35	4.28	0.59	13.7	13.40	4.60	0.64	15.7
019-9		9.45	2.38	0.45	6.6	11.06	2.72	0.53	8.7	12.84	3.11	0.62	11.3	13.99	3.35	0.67	13.1	17.89	4.26	0.86	20.1	20.35	4.76	0.98	25.1
014-7	35	6.38	2.04	0.31	4.4	7.57	2.33	0.36	5.9	8.88	2.66	0.43	7.7	9.74	2.87	0.47	9.0	12.67	3.67	0.61	14.0	13.82	3.94	0.67	16.2
014-9		6.01	2.16	0.29	4.0	7.18	2.48	0.35	5.4	8.49	2.83	0.41	7.1	9.35	3.06	0.45	8.4	12.29	3.91	0.59	13.3	13.46	4.22	0.65	15.5
019-9		9.36	2.21	0.45	6.4	10.96	2.51	0.53	8.4	12.72	2.85	0.61	10.9	13.86	3.07	0.67	12.6	17.66	3.86	0.85	19.2	20.08	4.31	0.97	24.0
014-7	40	6.40	1.92	0.31	4.3	7.58	2.18	0.37	5.7	8.88	2.47	0.43	7.5	9.73	2.66	0.47	8.8	12.60	3.37	0.61	13.6	13.91	3.64	0.67	16.0
014-9		6.04	2.02	0.29	3.9	7.20	2.30	0.35	5.3	8.49	2.62	0.41	7.0	9.34	2.82	0.45	8.2	12.22	3.55	0.59	12.9	13.55	3.86	0.65	15.3
019-9		9.32	2.06	0.45	6.2	10.91	2.32	0.53	8.2	12.65	2.62	0.61	10.5	13.78	2.81	0.66	12.2	17.51	3.50	0.84	18.5	19.86	3.88	0.96	23.0
014-7	45	6.42	1.81	0.31	4.2	7.59	2.05	0.37	5.6	8.87	2.30	0.43	7.3	9.70	2.47	0.47	8.5	12.53	3.08	0.60	13.2	14.01	3.35	0.68	15.9
014-9		6.08	1.88	0.29	3.9	7.23	2.14	0.35	5.2	8.50	2.41	0.41	6.8	9.33	2.59	0.45	8.0	12.16	3.23	0.59	12.5	13.65	3.54	0.66	15.2
019-9		9.32	1.92	0.45	6.1	10.91	2.15	0.53	8.0	12.64	2.40	0.61	10.3	13.75	2.57	0.66	11.9	17.45	3.16	0.84	18.0	19.73	3.49	0.95	22.3
014-7	50	6.46	1.71	0.31	4.2	7.62	1.92	0.37	5.6	8.88	2.15	0.43	7.2	9.69	2.29	0.47	8.4	12.45	2.82	0.60	12.8	14.11	3.09	0.68	15.8
014-9		6.15	1.76	0.30	3.9	7.28	1.99	0.35	5.2	8.53	2.23	0.41	6.7	9.33	2.38	0.45	7.9	12.10	2.93	0.58	12.2	13.77	3.23	0.67	15.2
019-9		9.39	1.79	0.45	6.0	10.98	1.99	0.53	7.9	12.69	2.21	0.61	10.2	13.80	2.35	0.67	11.8	17.46	2.85	0.84	17.7	19.72	3.13	0.95	21.9
014-7	55	6.50	1.65	0.20	1.9	7.64	1.84	0.23	2.5	8.89	2.05	0.27	3.2	9.70	2.19	0.29	3.7	12.41	2.68	0.38	5.7	14.14	2.95	0.43	7.1
014-9		6.20	1.69	0.19	1.8	7.32	1.90	0.22	2.3	8.55	2.12	0.26	3.0	9.35	2.26	0.28	3.5	12.07	2.77	0.37	5.4	13.77	3.05	0.42	6.8
019-9		9.45	1.72	0.29	2.7	11.05	1.90	0.33	3.5	12.76	2.10	0.39	4.5	13.86	2.23	0.42	5.2	17.50	2.70	0.53	7.8	19.74	2.96	0.60	9.6
014-7	60	6.58	1.58	0.16	1.3	7.71	1.75	0.19	1.7	8.93	1.94	0.22	2.2	9.72	2.06	0.24	2.5	12.37	2.50	0.30	3.8	14.06	2.74	0.34	4.7
014-9		6.29	1.61	0.15	1.2	7.39	1.80	0.18	1.6	8.60	1.99	0.21	2.1	9.39	2.11	0.23	2.4	12.04	2.56	0.29	3.6	13.71	2.82	0.33	4.5
019-9		9.58	1.64	0.23	1.8	11.18	1.80	0.27	2.4	12.90	1.98	0.31	3.1	13.99	2.09	0.34	3.5	17.61	2.50	0.43	5.3	19.83	2.73	0.48	6.5
014-7	65	6.72	1.50	0.16	1.3	7.84	1.65	0.19	1.7	9.04	1.81	0.22	2.2	9.81	1.91	0.24	2.5	12.37	2.28	0.30	3.8	14.00	2.49	0.34	4.6
014-9		6.42	1.52	0.16	1.2	7.51	1.68	0.18	1.6	8.69	1.85	0.21	2.1	9.45	1.95	0.23	2.4	12.03	2.33	0.29	3.6	13.65	2.55	0.33	4.4
019-9		9.80	1.54	0.24	1.9	11.43	1.68	0.28	2.5	13.16	1.83	0.32	3.1	14.25	1.93	0.35	3.6	17.83	2.27	0.43	5.3	20.02	2.46	0.49	6.5

## Legend

LWT Leaving water temperature, °C  
 Qh Heating capacity, kW  
 COP Coefficient of performance, kW/kW  
 q Condenser water flow rate, l/s  
 Δp Condenser pressure drop, kPa

## Application data

Standard units, refrigerant: R-407C  
 Condenser entering/leaving water temperature difference: 5 K for LWT values <55°C  
 Condenser entering/leaving water temperature difference: 8 K for LWT values = 55°C  
 Condenser entering/leaving water temperature difference: 10 K for LWT values >55°C  
 Condenser fluid: water  
 Fouling factor:  $0.18 \times 10^{-4}$  (m<sup>2</sup> K)/W

Gross performances, not in accordance with EN14511-3:2011. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger.

# Heating capacities in accordance with EN14511-3 : 2011

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LWT °C		Outside air dry-bulb (wet-bulb) temperature, °C																							
		12 (11)				15 (14)				20 (19)				25 (24)				30 (29)				35 (34)			
		Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp	Qh	COP	q	Δp
kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa	kW	kW/kW	l/s	kPa		
014-7	30	15.16	4.48	0.72	19.2	15.97	4.66	0.76	21.0	17.25	4.93	0.82	23.9	17.91	5.07	0.86	25.4	18.58	5.20	0.89	27.0	19.25	5.33	0.92	28.7
014-9		14.75	4.87	0.70	18.3	15.55	5.08	0.74	20.0	16.84	5.41	0.80	22.9	17.49	5.57	0.84	24.4	18.15	5.74	0.87	26.0	18.81	5.90	0.90	27.6
019-9		22.16	4.96	1.06	28.8	22.33	5.00	1.07	29.2	22.51	5.04	1.07	29.6	22.70	5.07	1.08	30.0	22.88	5.11	1.09	30.4	23.06	5.15	1.10	30.8
014-7	35	15.16	4.15	0.73	18.8	15.96	4.32	0.76	20.5	17.35	4.59	0.83	23.6	18.06	4.72	0.86	25.2	18.72	4.85	0.90	26.8	19.39	4.97	0.93	28.4
014-9		14.77	4.45	0.71	18.0	15.56	4.64	0.74	19.6	16.92	4.95	0.81	22.6	17.66	5.12	0.84	24.3	18.31	5.27	0.88	25.8	18.97	5.42	0.91	27.4
019-9		22.18	4.56	1.06	28.2	22.66	4.64	1.08	29.3	22.84	4.67	1.09	29.7	23.03	4.71	1.10	30.1	23.21	4.74	1.11	30.5	23.40	4.78	1.12	30.9
014-7	40	15.20	3.83	0.73	18.5	15.99	3.98	0.77	20.1	17.35	4.22	0.83	23.1	18.24	4.37	0.87	25.1	18.91	4.48	0.91	26.7	19.58	4.59	0.94	28.3
014-9		14.81	4.07	0.71	17.7	15.59	4.24	0.75	19.3	16.92	4.51	0.81	22.1	17.84	4.70	0.85	24.2	18.50	4.83	0.89	25.7	19.16	4.96	0.92	27.3
019-9		22.27	4.16	1.07	27.8	23.07	4.28	1.10	29.5	23.26	4.31	1.11	30.0	23.44	4.34	1.12	30.4	23.63	4.37	1.13	30.8	23.81	4.40	1.14	31.2
014-7	45	15.25	3.51	0.73	18.2	16.04	3.64	0.77	19.8	17.38	3.86	0.83	22.7	18.47	4.02	0.89	25.1	19.14	4.12	0.92	26.7	19.81	4.22	0.95	28.3
014-9		14.86	3.72	0.71	17.4	15.63	3.86	0.75	19.0	16.95	4.10	0.81	21.7	18.06	4.30	0.87	24.2	18.71	4.41	0.90	25.7	19.38	4.53	0.93	27.2
019-9		22.37	3.77	1.07	27.5	23.26	3.88	1.12	29.4	23.77	3.95	1.14	30.5	23.96	3.98	1.15	30.9	24.15	4.00	1.16	31.3	24.33	4.03	1.17	31.8
014-7	50	15.29	3.23	0.74	18.0	16.07	3.34	0.77	19.5	17.42	3.53	0.84	22.3	18.73	3.70	0.90	25.3	19.41	3.79	0.93	26.8	20.08	3.87	0.96	28.4
014-9		14.92	3.38	0.72	17.2	15.68	3.51	0.75	18.7	16.99	3.72	0.82	21.4	18.32	3.92	0.88	24.3	18.97	4.02	0.91	25.8	19.64	4.12	0.94	27.3
019-9		22.26	3.37	1.07	26.7	23.52	3.50	1.13	29.4	24.41	3.60	1.17	31.3	24.60	3.62	1.18	31.7	24.79	3.64	1.19	32.2	24.98	3.67	1.20	32.6
014-7	55	15.28	3.11	0.46	8.0	16.05	3.22	0.48	8.7	17.38	3.40	0.52	10.0	18.75	3.58	0.57	11.4	19.47	3.68	0.59	12.1	20.14	3.76	0.61	12.8
014-9		14.92	3.23	0.45	7.7	15.67	3.35	0.47	8.4	16.97	3.56	0.51	9.6	18.31	3.77	0.55	10.9	19.05	3.89	0.57	11.7	19.71	3.99	0.59	12.3
019-9		22.19	3.22	0.67	11.7	23.58	3.37	0.71	13.0	24.63	3.49	0.74	14.0	24.81	3.51	0.75	14.2	25.00	3.53	0.75	14.4	25.19	3.56	0.76	14.6
014-7	60	15.36	2.91	0.37	5.5	16.09	3.01	0.39	5.9	17.40	3.18	0.42	6.8	18.77	3.34	0.45	7.7	19.69	3.45	0.48	8.3	20.36	3.53	0.49	8.8
014-9		15.03	3.01	0.36	5.3	15.72	3.12	0.38	5.7	17.01	3.30	0.41	6.5	18.33	3.49	0.44	7.4	19.28	3.62	0.47	8.1	19.94	3.71	0.48	8.5
019-9		22.24	2.96	0.54	7.9	23.73	3.11	0.57	8.8	25.21	3.25	0.61	9.8	25.40	3.27	0.61	9.9	25.59	3.29	0.62	10.0	25.78	3.31	0.62	10.2
014-7	65	15.54	2.67	0.38	5.5	16.19	2.75	0.39	5.9	17.49	2.90	0.42	6.7	18.84	3.04	0.46	7.6	20.05	3.17	0.49	8.5	20.73	3.24	0.50	9.0
014-9		15.20	2.75	0.37	5.3	15.83	2.83	0.38	5.7	17.09	2.99	0.41	6.5	18.41	3.15	0.45	7.3	19.64	3.30	0.48	8.2	20.30	3.38	0.49	8.7
019-9		22.40	2.65	0.54	7.9	23.88	2.77	0.58	8.8	25.79	2.92	0.63	10.0	26.36	2.96	0.64	10.4	-	-	-	-	-	-	-	-

**Legend**

LWT Leaving water temperature, °C  
 Qh Heating capacity, kW  
 COP Coefficient of performance, kW/kW  
 q Condenser water flow rate, l/s  
 Δp Condenser pressure drop, kPa

**Application data**

Standard units, refrigerant: R-407C  
 Condenser entering/leaving water temperature difference: 5 K for LWT values <55°C  
 Condenser entering/leaving water temperature difference: 8 K for LWT values = 55°C  
 Condenser entering/leaving water temperature difference: 10 K for LWT values >55°C  
 Condenser fluid: water  
 Fouling factor: 0.18 x 10<sup>-4</sup> (m<sup>2</sup> K)/W

Performances in accordance with EN14511-3:2011.

# Heating capacities

61AF 014-019

LWT °C	Outside air dry-bulb (wet-bulb) temperature, °C																							
	12 (11)				15 (14)				20 (19)				25 (24)				30 (29)				35 (34)			
	Qh kW	COP kW/kW	q l/s	Δp kPa	Qh kW	COP kW/kW	q l/s	Δp kPa	Qh kW	COP kW/kW	q l/s	Δp kPa	Qh kW	COP kW/kW	q l/s	Δp kPa	Qh kW	COP kW/kW	q l/s	Δp kPa	Qh kW	COP kW/kW	q l/s	Δp kPa
<b>014-7 30</b>	15.08	4.57	0.72	19.2	15.88	4.76	0.76	21.0	17.15	5.05	0.82	23.9	17.80	5.20	0.86	25.4	18.46	5.34	0.89	27.0	19.12	5.49	0.92	28.7
<b>014-9</b>	14.67	4.97	0.70	18.3	15.46	5.19	0.74	20.0	16.75	5.55	0.80	22.9	17.39	5.73	0.84	24.4	18.03	5.91	0.87	26.0	18.68	6.09	0.90	27.6
<b>019-9</b>	22.02	5.09	1.06	28.8	22.18	5.13	1.07	29.2	22.37	5.17	1.07	29.6	22.55	5.22	1.08	30.0	22.73	5.26	1.09	30.4	22.91	5.30	1.10	30.8
<b>014-7 35</b>	15.08	4.22	0.73	18.8	15.88	4.40	0.76	20.5	17.25	4.69	0.83	23.6	17.94	4.83	0.86	25.2	18.60	4.97	0.90	26.8	19.27	5.10	0.93	28.4
<b>014-9</b>	14.69	4.54	0.71	18.0	15.48	4.74	0.74	19.6	16.82	5.07	0.81	22.6	17.55	5.25	0.84	24.3	18.20	5.41	0.88	25.8	18.85	5.57	0.91	27.4
<b>019-9</b>	22.04	4.66	1.06	28.2	22.51	4.75	1.08	29.3	22.69	4.79	1.09	29.7	22.88	4.83	1.10	30.1	23.06	4.87	1.11	30.5	23.24	4.90	1.12	30.9
<b>014-7 40</b>	15.12	3.89	0.73	18.5	15.90	4.04	0.77	20.1	17.24	4.30	0.83	23.1	18.13	4.46	0.87	25.1	18.79	4.59	0.91	26.7	19.45	4.71	0.94	28.3
<b>014-9</b>	14.73	4.14	0.71	17.7	15.50	4.31	0.75	19.3	16.83	4.61	0.81	22.1	17.73	4.80	0.85	24.2	18.38	4.95	0.89	25.7	19.04	5.09	0.92	27.3
<b>019-9</b>	22.13	4.25	1.07	27.8	22.92	4.37	1.10	29.5	23.11	4.40	1.11	30.0	23.29	4.44	1.12	30.4	23.47	4.47	1.13	30.8	23.66	4.50	1.14	31.2
<b>014-7 45</b>	15.17	3.56	0.73	18.2	15.95	3.70	0.77	19.8	17.28	3.92	0.83	22.7	18.36	4.10	0.89	25.1	19.02	4.20	0.92	26.7	19.68	4.31	0.95	28.3
<b>014-9</b>	14.78	3.77	0.71	17.4	15.54	3.92	0.75	19.0	16.85	4.18	0.81	21.7	17.95	4.38	0.87	24.2	18.60	4.51	0.90	25.7	19.25	4.63	0.93	27.2
<b>019-9</b>	22.23	3.84	1.07	27.5	23.11	3.96	1.12	29.4	23.62	4.03	1.14	30.5	23.80	4.06	1.15	30.9	23.99	4.08	1.16	31.3	24.17	4.11	1.17	31.8
<b>014-7 50</b>	15.21	3.27	0.74	18.0	15.99	3.39	0.77	19.5	17.32	3.58	0.84	22.3	18.62	3.76	0.90	25.3	19.28	3.85	0.93	26.8	19.96	3.94	0.96	28.4
<b>014-9</b>	14.84	3.42	0.72	17.2	15.60	3.56	0.75	18.7	16.90	3.78	0.82	21.4	18.21	3.99	0.88	24.3	18.86	4.10	0.91	25.8	19.51	4.21	0.94	27.3
<b>019-9</b>	22.12	3.42	1.07	26.7	23.37	3.56	1.13	29.4	24.25	3.66	1.17	31.3	24.44	3.69	1.18	31.7	24.62	3.71	1.19	32.2	24.81	3.73	1.20	32.6
<b>014-7 55</b>	15.24	3.12	0.46	8.0	16.01	3.23	0.48	8.7	17.34	3.42	0.52	10.0	18.71	3.61	0.57	11.4	19.42	3.70	0.59	12.1	20.09	3.79	0.61	12.8
<b>014-9</b>	14.89	3.25	0.45	7.7	15.64	3.37	0.47	8.4	16.93	3.59	0.51	9.6	18.26	3.80	0.55	10.9	19.00	3.92	0.57	11.7	19.65	4.02	0.59	12.3
<b>019-9</b>	22.13	3.24	0.67	11.7	23.52	3.39	0.71	13.0	24.56	3.51	0.74	14.0	24.75	3.54	0.75	14.2	24.93	3.56	0.75	14.4	25.12	3.58	0.76	14.6
<b>014-7 60</b>	15.34	2.92	0.37	5.5	16.06	3.02	0.39	5.9	17.38	3.19	0.42	6.8	18.74	3.36	0.45	7.7	19.65	3.47	0.48	8.3	20.33	3.55	0.49	8.8
<b>014-9</b>	15.01	3.02	0.36	5.3	15.70	3.13	0.38	5.7	16.98	3.32	0.41	6.5	18.30	3.51	0.44	7.4	19.25	3.64	0.47	8.1	19.90	3.73	0.48	8.5
<b>019-9</b>	22.20	2.97	0.54	7.9	23.69	3.12	0.57	8.8	25.16	3.26	0.61	9.8	25.35	3.28	0.61	9.9	25.54	3.30	0.62	10.0	25.73	3.33	0.62	10.2
<b>014-7 65</b>	15.52	2.68	0.38	5.5	16.17	2.75	0.39	5.9	17.46	2.90	0.42	6.7	18.81	3.05	0.46	7.6	20.01	3.18	0.49	8.5	20.69	3.25	0.50	9.0
<b>014-9</b>	15.18	2.76	0.37	5.3	15.81	2.84	0.38	5.7	17.06	3.00	0.41	6.5	18.38	3.17	0.45	7.3	19.60	3.31	0.48	8.2	20.27	3.39	0.49	8.7
<b>019-9</b>	22.37	2.66	0.54	7.9	23.84	2.78	0.58	8.8	25.74	2.93	0.63	10.0	26.31	2.97	0.64	10.4	-	-	-	-	-	-	-	-

**Legend**

LWT Leaving water temperature, °C  
 Qh Heating capacity, kW  
 COP Coefficient of performance, kW/kW  
 q Condenser water flow rate, l/s  
 Δp Condenser pressure drop, kPa

**Application data**

Standard units, refrigerant: R-407C  
 Condenser entering/leaving water temperature difference: 5 K for LWT values <55°C  
 Condenser entering/leaving water temperature difference: 8 K for LWT values = 55°C  
 Condenser entering/leaving water temperature difference: 10 K for LWT values >55°C  
 Condenser fluid: water  
 Fouling factor: 0.18 x 10<sup>-4</sup> (m<sup>2</sup> K)/W

Gross performances, not in accordance with EN14511-3:2011. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger.



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Environmental  
Management  
Systems

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