



PRO-DIALOG PLUS



Carrier is participating in the Eurovent Certification Programme. Products are as listed in the Eurovent Directory of Certified Products.



Quality Management System Approval

AQUASNAP JUNIOR



30RH 005-013

Nominal cooling capacity 5.0-11.5 kW

Nominal heating capacity 5.7-13.8 kW

This new generation of heat pumps features the latest technological innovations, incorporating scroll compressors and operating on the ozone-friendly refrigerant HFC-410A.

The 30RH heat pumps from Carrier have an integrated hydronic module, with pump and expansion tank, limiting the installation to simple operations like connection of the power supply and the water supply and return piping.

An electronic, microprocessor-based auto-adaptive control system ensures intelligent control of the compressor start-up sequence, permitting operation at low system water volumes.

Features

- Refrigerant R-410A is a blend of R-32 and R-125, ensures superior performances to those achieved with R-22 and offers an economical solution to environmental protection problems. It has no effect on the ozone layer and can be used as a replacement for R-22 in air conditioning applications with small and medium capacities.
- The components of these units are specifically designed for R-410A refrigerant, and all units have been submitted to the necessary laboratory tests to ensure perfect operation.
- The unit incorporates one or two two-speed axial fans with horizontal air discharge. The advanced design allows exceptionally low-noise operation. At part load conditions or at low outdoor temperatures the fan speed is automatically reduced by 50%, for even quieter operation. The control system also permits programming operation at reduced speed for a preset time period.
- The compact dimensions and reduced weight of these units facilitate installation, even in very restricted spaces.
- The use of galvanised steel panels guarantees increased resistance to atmospheric conditions. These components have exceeded the stringent salt-spray corrosion resistance tests according to ASTM 117, with over 500 hours exposure to aggressive environments.
- The panels are removable for improved service and easier access to the internal components.
- The condenser coils are made of copper tubes, mechanically expanded into aluminium fins, with an increased heat exchange surface.
- The refrigerant-to-water heat exchangers are plate heat exchangers, ensuring optimum heat transfer at reduced dimensions. The plates are made of welded stainless steel. This heat exchanger type requires less refrigerant than traditional heat exchangers of the same capacity.
- Scroll compressors run very quietly and vibration-free. They are known for their durability and reliability. The motors are fully cooled by suction gas and permit up to 12 starts per hour. These compressors are especially designed for operation with R-410A.
- Microprocessor-controlled automatic outdoor heat exchanger defrost cycles allow the unit to operate with high efficiency at low outdoor temperatures.

- The hydronic components are factory-installed. This eliminates the need to install the components on site.

The hydronic kit includes:

- a flow switch
- an expansion tank
- a three-speed circulating pump
- a manual purge valve
- a water drain valve
- a safety valve

PRO-DIALOG Plus control system

PRO-DIALOG Plus is an advanced numeric control system that combines complex intelligence with great operating simplicity. PRO-DIALOG Plus constantly monitors all machine parameters and safety devices, and precisely manages the operation of compressor and fans for optimum energy efficiency. It also controls the operation of the water pump.

A powerful control system

- The PID control algorithm with permanent compensation for the difference between entering and leaving water temperature, anticipates load variations, and ensures intelligent leaving water temperature control.
- Dual set point: two different supply water temperature set points can be manually programmed or selected, according to the thermal load expected during the course of the day in the zones to be air conditioned. This always ensures maximum comfort at minimum energy consumption.

- PRO-DIALOG Plus control is auto-adaptive for improved heat pump protection. Compressor cycling is automatically adapted to the characteristics of the application according to the inertia of the water loop and prevents dangerous compressor short cycling.
- The integrated CCN Clock Board offers additional unit functions:
 - CCN protocol interface for complete connectivity and compatibility with the Carrier CCN network
 - Real-time clock

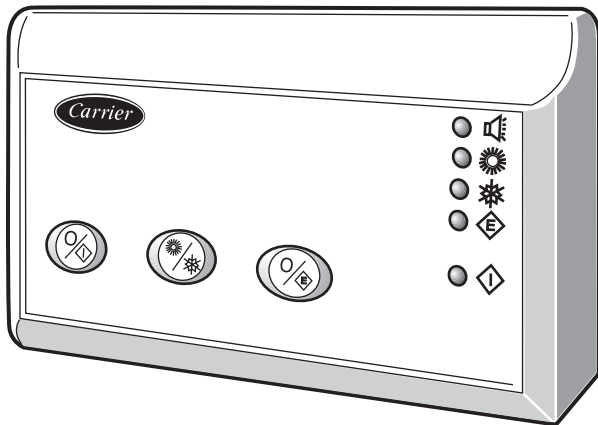
With this board installed and using a CCN tool (for example the accessory Service Interface tool) new and more advanced functions are available:

Time scheduling of the unit with up to eight sequences, cascade operation of two units, remote control and programming of the fan operating time at low speed.

Remote control system

The remote control system, wired to the unit located outside, permits easy user control of the principal unit functions: start/stop control, selection of the desired temperature at reduced energy consumption, general alarm display.

The remote control was designed for indoor use in residential and/or commercial applications.



Remote control

Accessories

	Accessory
Remote control	x
Service interface	x
Mechanical water filter	x

Physical data

30RH		005	007†	009	011	013
Nominal cooling capacity*	kW	5.1	6.7/6.3	7.2	9.6	11.5
Nominal heating capacity**	kW	5.7	7.5/7.7	8.7	10.2	13.8
Operating weight	kg	83	85	88	112	123
Refrigerant type	kg	R-410A	R-410A	R-410A	R-410A	R-410A
Compressor		One scroll compressor				
Refrigerant-to-water heat exchanger		One plate heat exchanger				
Net water volume	l	1.09	1.27	1.57	2.14	2.41
Max. water-side operating pressure	kPa	300	300	300	300	300
Hydraulic circuit		One three-speed pump				
Pump		One three-speed pump				
Available pressure***	kPa	46	35/37	50	53	54
Water inlet/outlet connections	in	1	1	1	1	1
Expansion tank volume	l	1	2	3	3	3
Fans		One or two propeller fans				
Number of fans/diameter	mm	1/370	1/370	1/370	2/370	2/370
No. of blades		4	4	4	4	4
Fan speed	r/s	14.0	17.2	19.1	17.2	20.0
Sound pressure level‡	dB(A)	34	39	43	43	45
Sound power level	dB(A)	62	67	71	71	73

* Based on Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, condenser entering air temperature of 35°C.

** Based on Eurovent conditions: condenser entering/leaving water temperature 40°C/45°C, evaporator entering air temperature of 7°C db/6°C wb.

*** At nominal flow and high pump speed

† The first value is for single-phase units, the second value for three phase units

‡ Sound pressure level is measured at 10 m distance.

Electrical data

30RH		005	007	007	009	011	011	013
Power supply	V-ph-Hz	230-1-50	230-1-50	400-3-50	400-3-50	230-1-50	400-3-50	400-3-50
Voltage range	V	198-264	198-264	342-462	342-462	198-264	342-462	342-462
Nominal power input								
Cooling*	kW	1.98	2.72	2.53	2.91	3.24	3.24	4.51
Heating**	kW	2.23	2.97	2.93	3.39	3.71	3.71	5.01
Maximum power input***	kW	2.85	4.0	3.9	4.3	5.18	4.9	6.73
Locked rotor current	A	58	82	35	40	97	48	64
Full load current	A	14	18	6.5	6.5	19.0	8.0	11.5
Water circulating pump (230-1-50)								
Current drawn	A	0.30	0.50	0.50	0.50	0.90	0.90	0.97
Fan motor (230-1-50)								
Current drawn	A	0.50	0.94	0.94	0.90	1.80	1.80	1.80
Compressor crankcase heater (230-1-50)								
Current drawn	A	0.11	0.11	0.11	0.11	0.11	0.11	0.11

* Based on Eurovent conditions: evaporator entering/leaving water temperature 12°C/7°C, condenser entering air temperature of 35°C.

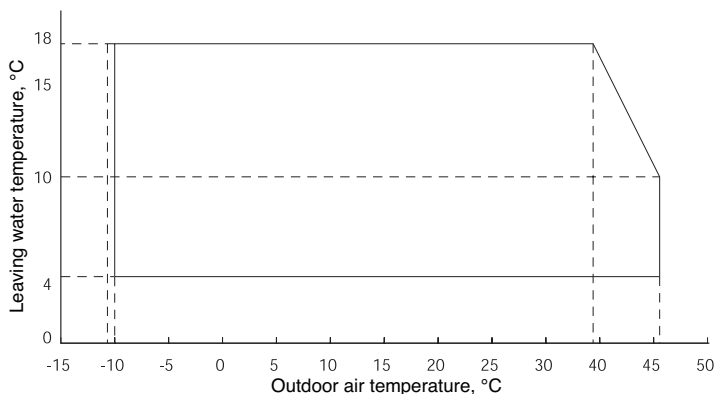
** Based on Eurovent conditions: condenser entering/leaving water temperature 40°C/45°C, evaporator entering air temperature of 7°C db/6°C wb.

*** Maximum unit power input at maximum operating conditions and worst power supply voltage.

Operating limits

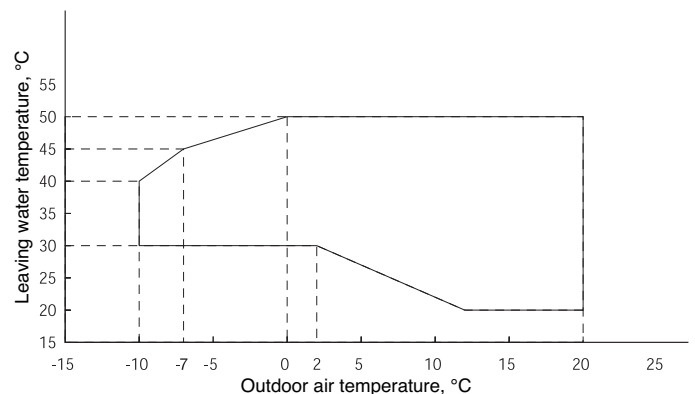
Operating range - cooling

Start-up leaving water temperature 35°C max.



Operating range - heating

Start-up leaving water temperature 3°C



Cooling capacities



30RH Condenser entering air temperature, °C																										
	LWT °C	25					30					35					40					45				
		CAP kW	COMP kW	UNIT kW	COOL l/s	PRES kPa	CAP kW	COMP kW	UNIT kW	COOL l/s	PRES kPa	CAP kW	COMP kW	UNIT kW	COOL l/s	PRES kPa	CAP kW	COMP kW	UNIT kW	COOL l/s	PRES kPa	CAP kW	COMP kW	UNIT kW	COOL l/s	PRES kPa
005	5	5.39	1.4	1.54	0.26	43	5.15	1.6	1.75	0.25	45	4.85	1.82	1.96	0.23	48	4.49	2.05	2.19	0.21	51	4.06	2.29	2.44	0.19	54
007-7		7.16	2.08	2.31	0.34	31	6.72	2.24	2.46	0.32	35	6.23	2.43	2.65	0.3	39	5.68	2.66	2.88	0.27	44	5.07	2.94	3.15	0.24	48
007-9		6.79	1.9	2.12	0.32	33	6.35	2.05	2.27	0.3	37	5.85	2.25	2.46	0.28	41	5.3	2.48	2.7	0.25	45	4.69	2.75	2.97	0.22	49
009		7.65	2.04	2.31	0.36	48	7.22	2.31	2.59	0.34	50	6.76	2.6	2.88	0.32	52	6.27	2.91	3.18	0.3	54	5.74	3.23	3.51	0.27	57
011		10.2	2.29	2.63	0.49	51	9.5	2.58	2.92	0.45	55	8.75	2.89	3.23	0.42	58	8.01	3.23	3.58	0.38	61	7.26	3.6	3.95	0.34	64
013		11.9	3.22	3.59	0.56	53	11.5	3.66	4.04	0.55	54	11	4.15	4.52	0.52	56	10.3	4.67	5.04	0.49	58	9.38	5.23	5.61	0.45	60
005	6	5.46	1.4	1.55	0.26	43	5.24	1.61	1.75	0.25	45	4.97	1.83	1.97	0.24	47	4.63	2.06	2.2	0.22	50	4.23	2.3	2.45	0.2	53
007-7		7.38	2.09	2.31	0.35	29	6.95	2.26	2.48	0.33	33	6.47	2.47	2.68	0.31	37	5.93	2.71	2.93	0.28	42	5.34	3	3.22	0.25	46
007-9		7	1.9	2.12	0.33	31	6.57	2.07	2.29	0.31	35	6.09	2.28	2.5	0.29	39	5.55	2.53	2.75	0.26	43	4.96	2.81	3.03	0.24	47
009		7.89	2.06	2.33	0.38	47	7.46	2.33	2.6	0.36	49	7	2.62	2.89	0.33	51	6.51	2.93	3.2	0.31	53	5.99	3.24	3.52	0.28	56
011		10.6	2.3	2.64	0.51	49	9.92	2.58	2.92	0.47	53	9.2	2.9	3.24	0.44	56	8.47	3.24	3.58	0.4	59	7.73	3.6	3.95	0.37	62
013		12.1	3.24	3.61	0.57	52	11.7	3.67	4.04	0.56	53	11.2	4.14	4.51	0.53	55	10.6	4.65	5.02	0.5	57	9.74	5.19	5.57	0.46	59
005	7	5.52	1.41	1.55	0.26	42	5.34	1.61	1.76	0.25	44	5.08	1.83	1.98	0.24	46	4.77	2.07	2.21	0.23	49	4.39	2.31	2.46	0.21	51
007-7		7.59	2.09	2.31	0.36	27	7.18	2.27	2.5	0.34	31	6.71	2.5	2.72	0.32	35	6.18	2.76	2.98	0.29	40	5.6	3.06	3.28	0.27	44
007-9		7.22	1.9	2.12	0.34	29	6.8	2.09	2.31	0.32	33	6.33	2.31	2.53	0.3	37	5.81	2.58	2.79	0.28	41	5.22	2.88	3.1	0.25	46
009		8.13	2.08	2.35	0.39	46	7.7	2.35	2.62	0.37	48	7.24	2.64	2.91	0.34	50	6.75	2.94	3.22	0.32	52	6.23	3.26	3.54	0.3	55
011		11.1	2.31	2.65	0.53	47	10.3	2.59	2.93	0.49	51	9.64	2.9	3.24	0.46	54	8.92	3.24	3.58	0.42	57	8.21	3.6	3.95	0.39	60
013		12.3	3.26	3.63	0.58	51	12	3.68	4.05	0.57	52	11.5	4.13	4.51	0.55	54	10.9	4.63	5	0.52	56	10.1	5.16	5.53	0.48	58
005	8	5.59	1.41	1.56	0.27	41	5.43	1.62	1.76	0.26	43	5.2	1.84	1.98	0.25	45	4.91	2.08	2.22	0.23	47	4.55	2.32	2.47	0.22	50
007-7		7.81	2.09	2.32	0.37	24	7.4	2.29	2.51	0.35	28	6.95	2.53	2.75	0.33	33	6.43	2.81	3.03	0.31	38	5.87	3.13	3.35	0.28	42
007-9		7.43	1.9	2.13	0.35	27	7.03	2.1	2.33	0.34	31	6.57	2.34	2.56	0.31	35	6.06	2.62	2.84	0.29	39	5.49	2.94	3.16	0.26	44
009		8.37	2.1	2.37	0.4	44	7.95	2.37	2.64	0.38	47	7.49	2.66	2.93	0.36	49	6.99	2.96	3.23	0.33	51	6.47	3.28	3.55	0.31	54
011		11.5	2.32	2.65	0.55	45	10.8	2.59	2.93	0.51	49	10.1	2.9	3.24	0.48	52	9.38	3.24	3.58	0.45	55	8.68	3.6	3.95	0.41	58
013		12.5	3.29	3.66	0.59	51	12.2	3.69	4.06	0.58	52	11.8	4.13	4.5	0.56	53	11.2	4.61	4.98	0.53	55	10.4	5.12	5.5	0.5	57
005	9	5.66	1.42	1.56	0.27	41	5.52	1.63	1.77	0.26	42	5.31	1.85	1.99	0.25	44	5.05	2.08	2.23	0.24	46	4.72	2.34	2.48	0.22	49
007-7		8.02	2.09	2.32	0.38	22	7.63	2.31	2.53	0.36	26	7.19	2.56	2.79	0.34	31	6.69	2.86	3.08	0.32	35	6.13	3.19	3.41	0.29	40
007-9		7.65	1.9	2.13	0.36	24	7.26	2.12	2.34	0.35	28	6.81	2.38	2.6	0.32	33	6.31	2.67	2.89	0.3	37	5.75	3.01	3.23	0.27	42
009		8.62	2.11	2.38	0.41	43	8.19	2.39	2.66	0.39	45	7.73	2.67	2.94	0.37	48	7.24	2.97	3.25	0.34	50	6.71	3.29	3.57	0.32	52
011		11.9	2.32	2.66	0.56	43	11.2	2.6	2.94	0.53	47	10.5	2.91	3.24	0.5	50	9.84	3.24	3.58	0.47	53	9.16	3.6	3.94	0.43	56
013		12.7	3.31	3.68	0.6	50	12.5	3.7	4.07	0.59	51	12.1	4.12	4.49	0.57	52	11.5	4.58	4.96	0.55	54	10.8	5.08	5.46	0.51	56
005	10	5.73	1.42	1.57	0.27	40	5.61	1.63	1.78	0.27	41	5.43	1.86	2	0.26	43	5.19	2.09	2.24	0.25	45	4.88	2.35	2.49	0.23	48
007-7		8.24	2.09	2.32	0.39	19	7.86	2.32	2.55	0.37	24	7.42	2.6	2.82	0.35	28	6.94	2.91	3.13	0.33	33	6.39	3.26	3.48	0.3	38
007-9		7.86	1.9	2.13	0.38	22	7.48	2.14	2.36	0.36	26	7.05	2.41	2.63	0.34	30	6.56	2.72	2.94	0.31	35	6.02	3.07	3.29	0.29	40
009		8.86	2.13	2.4	0.42	42	8.43	2.4	2.67	0.4	44	7.97	2.69	2.96	0.38	46	7.48	2.99	3.26	0.36	49	6.95	3.31	3.58	0.33	51
011		12.3	2.33	2.67	0.58	41	11.6	2.6	2.94	0.55	45	11	2.91	3.25	0.52	48	10.3	3.24	3.58	0.49	51	9.63	3.6	3.94	0.46	54
013		12.9	3.33	3.7	0.61	49	12.7	3.7	4.08	0.6	50	12.4	4.12	4.49	0.59	51	11.8	4.56	4.94	0.56	53	11.2	5.05	5.42	0.53	55

Values for size 007-7 are for single-phase units, values for size 007-9 are for three-phase units

Full load correction factors for Eurovent laboratory test:

Net cooling capacity	1.000
Energy efficiency ratio	1.000
Evaporator pressure drop	1.000

Legend:

LWT	Leaving water temperature
CAP kW	Net cooling capacity = gross cooling capacity plus the capacity corresponding to the available pressure (flow x pressure/0.3).
COMP kW	Compressor power input
UNIT kW	Unit power input (compressors, fans, control circuit and pumps) minus the capacity corresponding to the available pressure (flow x pressure/0.3).
COOL l/s	Evaporator water flow rate
PRES kPa	Available pressure at the unit outlet (unit with single-pump hydronic module)

Capacity based on standard EUROVENT conditions

The published performances are in accordance with EUROVENT tolerances:

- 5% for heating and cooling capacities

+ 5% for power input

+15% for the pressure drop

Application data:

Refrigerant:	R-410A
Evaporator temperature rise:	5 K
Evaporator fluid:	chilled water
Fouling factor:	0.000044 m ² K/W

Heating capacities



30RH		Entering air temperature, °C																													
LWT	°C	-10					-5					0					7					10									
		CAP		COMP	UNIT	COND	PRES	CAP		COMP	UNIT	COND	PRES	CAP		COMP	UNIT	COND	PRES	CAP		COMP	UNIT	COND	PRES	CAP		COMP	UNIT	COND	PRES
		Integr	Inst.	kW	kW	l/s	kPa	Integr	Inst.	kW	kW	l/s	kPa	Integr	Inst.	kW	kW	l/s	kPa	Integr	Inst.	kW	kW	l/s	kPa	Integr	Inst.	kW	kW	l/s	kPa
005	30	3.15	3.63	1.39	1.54	0.17	56	3.45	4.1	1.4	1.55	0.2	53	4.19	4.85	1.46	1.6	0.23	48	5.86	5.86	1.5	1.64	0.28	38	6.24	6.24	1.52	1.67	0.3	34
007-7		3.85	4.43	2	2.22	0.21	52	4.26	5.06	2.01	2.23	0.24	48	5.22	6.05	2.09	2.3	0.29	40	7.84	8.06	2.29	2.52	0.39	21	7.86	7.86	2.08	2.31	0.38	23
007-9		4.17	4.8	1.65	1.87	0.23	48	4.58	5.45	1.67	1.88	0.26	44	5.58	6.47	1.74	1.96	0.31	35	8.31	8.53	1.94	2.18	0.41	14	8.07	8.07	2.04	2.27	0.39	19
009		4.28	4.93	1.89	2.17	0.24	60	4.76	5.66	1.91	2.18	0.27	57	5.87	6.8	1.99	2.26	0.33	52	8.87	9.12	2.22	2.49	0.44	40	8.91	8.91	2.97	3.24	0.43	42
011		5.76	6.62	2.26	2.62	0.32	66	6.29	7.47	2.28	2.63	0.36	63	7.6	8.81	2.37	2.71	0.42	57	10.4	10.4	2.23	2.57	0.5	50	11.1	11.1	2.28	2.61	0.53	47
013		7.36	8.48	2.9	3.28	0.41	63	8.1	9.63	2.92	3.3	0.46	60	9.87	11.4	3.05	3.42	0.55	54	14.1	14.1	3.24	3.61	0.68	44	15	15	3.3	3.67	0.72	40
005	35	3.1	3.58	1.53	1.67	0.17	57	3.4	4.05	1.54	1.68	0.19	54	4.13	4.8	1.59	1.74	0.23	48	5.85	5.85	1.65	1.8	0.28	38	6.23	6.23	1.68	1.83	0.3	34
007-7		3.78	4.37	2.18	2.4	0.21	52	4.19	4.99	2.19	2.41	0.24	48	5.15	5.98	2.26	2.48	0.29	41	7.76	7.99	2.47	2.7	0.38	22	7.89	7.89	2.29	2.52	0.38	23
007-9		4.1	4.73	1.83	2.05	0.23	49	4.51	5.38	1.84	2.06	0.26	44	5.51	6.4	1.91	2.13	0.31	36	8.22	8.46	2.11	2.35	0.4	15	8.1	8.1	2.25	2.48	0.39	19
009		4.21	4.85	2.09	2.38	0.23	60	4.69	5.58	2.11	2.39	0.27	57	5.79	6.73	2.19	2.47	0.32	52	8.78	9.04	2.43	2.7	0.43	41	8.88	8.88	2.93	3.2	0.43	42
011		5.66	6.53	2.49	2.84	0.31	66	6.2	7.38	2.5	2.85	0.35	63	7.51	8.72	2.6	2.94	0.42	58	10.4	10.4	2.53	2.87	0.5	50	11	11	2.58	2.91	0.53	47
013		7.24	8.35	3.2	3.59	0.4	63	7.98	9.51	3.22	3.6	0.46	60	9.74	11.3	3.35	3.72	0.54	54	14.1	14.1	3.61	3.98	0.68	44	15	15	3.67	4.04	0.72	40
005	40	3.04	3.49	1.68	1.83	0.17	57	3.35	3.96	1.69	1.84	0.19	54	4.09	4.71	1.75	1.89	0.23	49	5.81	5.81	1.85	2	0.28	39	6.19	6.19	1.88	2.02	0.3	35
007-7		3.71	4.25	2.39	2.61	0.2	53	4.13	4.87	2.4	2.62	0.23	49	5.09	5.86	2.47	2.69	0.28	42	7.7	7.87	2.68	2.9	0.38	23	7.89	7.89	2.52	2.75	0.38	23
007-9		4.03	4.61	2.03	2.25	0.22	49	4.45	5.25	2.05	2.27	0.25	45	5.44	6.27	2.12	2.34	0.3	37	8.16	8.34	2.32	2.55	0.4	16	8.1	8.1	2.48	2.71	0.39	19
009		4.12	4.72	2.33	2.62	0.23	61	4.61	5.44	2.35	2.63	0.26	58	5.72	6.59	2.43	2.71	0.32	53	8.71	8.9	2.66	2.94	0.43	42	8.97	8.97	3.02	3.3	0.43	41
011		5.57	6.37	2.75	3.11	0.31	67	6.11	7.22	2.77	3.12	0.35	64	7.82	8.72	2.89	3.23	0.42	58	10.3	10.3	2.91	3.25	0.49	51	11	11	2.95	3.29	0.53	48
013		7.11	8.14	3.56	3.95	0.39	63	7.86	9.29	3.58	3.96	0.45	60	9.63	11.1	3.7	4.08	0.53	55	14	14	4.08	4.45	0.67	44	14.9	14.9	4.13	4.51	0.71	40
005	45	-	-	-	-	-	-	3.3	3.83	1.87	2.02	0.18	55	4.05	4.58	1.93	2.07	0.22	50	5.73	5.73	2.09	2.23	0.27	40	6.11	6.11	2.11	2.26	0.29	36
007-7		-	-	-	-	-	-	4.06	4.71	2.64	2.86	0.23	50	5.03	5.69	2.71	2.93	0.27	43	7.52	7.52	2.74	2.97	0.36	27	7.86	7.86	2.77	3	0.38	23
007-9		-	-	-	-	-	-	4.38	5.08	2.28	2.5	0.24	46	5.39	6.1	2.36	2.58	0.29	39	7.73	7.73	2.7	2.93	0.37	23	8.07	8.07	2.73	2.96	0.39	19
009		-	-	-	-	-	-	4.52	5.25	2.62	2.9	0.25	59	5.65	6.39	2.71	2.98	0.31	54	8.74	8.74	3.12	3.39	0.42	42	9.18	9.18	3.24	3.52	0.44	40
011		-	-	-	-	-	-	6.03	6.99	3.07	3.42	0.34	64	8.59	8.59	3.35	3.69	0.41	58	10.2	10.2	3.37	3.71	0.49	51	10.8	10.8	3.41	3.75	0.52	48
013		-	-	-	-	-	-	7.74	8.98	3.99	4.37	0.43	61	9.53	10.8	4.11	4.49	0.52	56	13.8	13.8	4.64	5.01	0.66	45	14.7	14.7	4.7	5.07	0.71	41
005	50	-	-	-	-	-	-	-	-	-	-	-	-	4.01	4.42	2.14	2.28	0.21	51	5.62	5.62	2.37	2.51	0.27	41	6	6	2.39	2.54	0.29	37
007-7		-	-	-	-	-	-	-	-	-	-	-	-	4.97	5.47	2.98	3.2	0.26	45	7.46	7.46	3.02	3.24	0.36	28	7.8	7.8	3.05	3.27	0.37	24
007-9		-	-	-	-	-	-	-	-	-	-	-	-	5.33	5.87	2.62	2.84	0.28	40	7.67	7.67	2.98	3.21	0.37	24	8.01	8.01	3.01	3.24	0.38	20
009		-	-	-	-	-	-	-	-	-	-	-	-	5.57	6.14	3.02	3.29	0.29	55	9.08	9.08	3.46	3.74	0.44	41	-	-	-	-	-	-
011		-	-	-	-	-	-	-	-	-	-	-	-	8.4	8.4	3.89	4.23	0.4	59	9.98	9.98	3.91	4.25	0.48	52	10.6	10.6	3.95	4.29	0.51	49
013		-	-	-	-	-	-	-	-	-	-	-	-	9.43	10.4	4.58	4.95	0.5	57	13.5	13.5	5.31	5.68	0.65	46	14.4	14.4	5.36	5.74	0.69	42

Values for size 007-7 are for single-phase units, values for size 007-9 are for three-phase units

Legend:

LWT	Leaving water temperature
CAP Integr. kW	Integrated heating capacity
CAP Inst. kW	Net nominal heating capacity (instantaneous capacity) = gross heating capacity minus the capacity corresponding to the available pressure (flow x pressure/0.3).
COMP kW	Compressor power input
UNIT kW	Unit power input, (compressors, fans, control circuit and pumps) minus the capacity corresponding to the available pressure (flow x pressure/0.3).
COND l/s	Condenser water flow rate
PRES kPa	Available pressure at the unit outlet (unit with single-pump hydronic module)



Capacity based on standard EUROVENT conditions

The published performances are in accordance with EUROVENT tolerances:

- 5% for heating and cooling capacities
- + 5% for power input
- +15% for the pressure drop

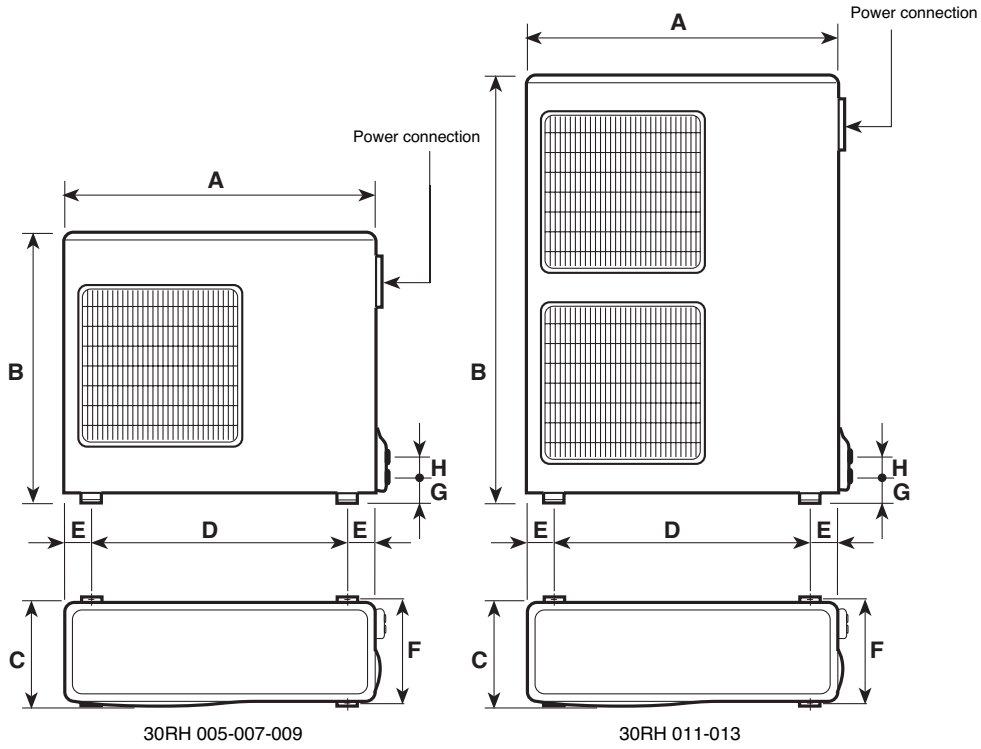
Full load correction factors for Eurovent laboratory test:

Net heating capacity	1.000
Energy efficiency ratio	1.000
Heat exchanger pressure drop	1.000

Application data:

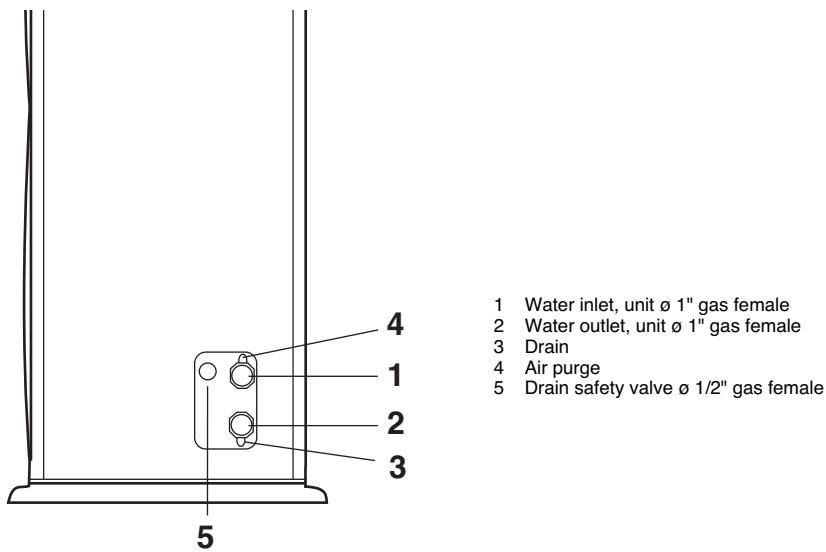
Refrigerant: R-410A
 Condenser temperature rise: 5 K
 Condenser fluid: water
 Fouling factor: 0.000044 m² K/W

Dimensions

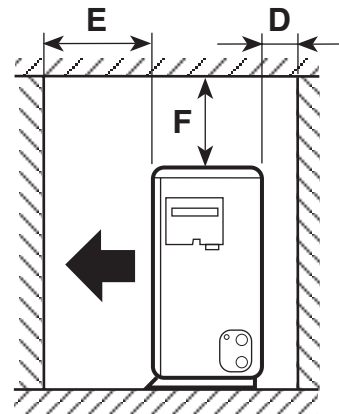
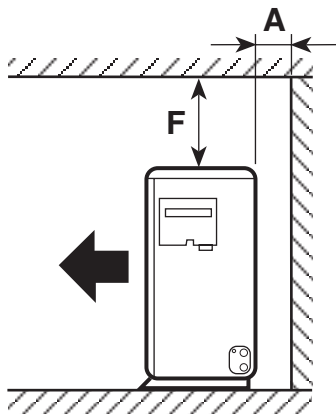
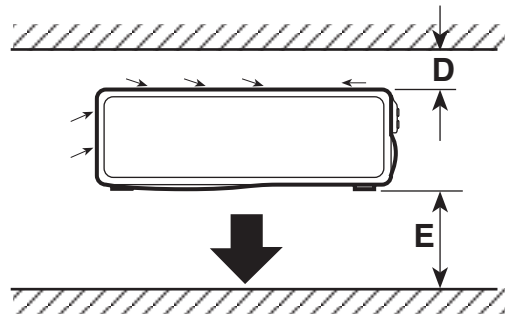
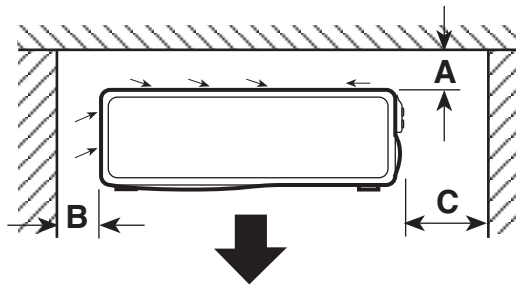


30RH		005	007	009	011	013
A	mm	800	800	800	800	800
B	mm	803	803	803	1264	1264
C	mm	300	300	300	300	300
D	mm	508	508	508	508	508
E	mm	146	146	146	146	146
F	mm	330	330	330	330	330
G	mm	97	97	97	97	97
H	mm	157	157	157	157	157

Water connections



Clearances



30RH		005-013	
A	mm		100
B	mm		250
C	mm		500
D	mm		100
E	mm		670
F	mm		400

System water flow rate/volume

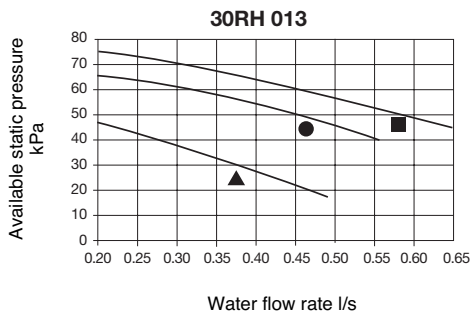
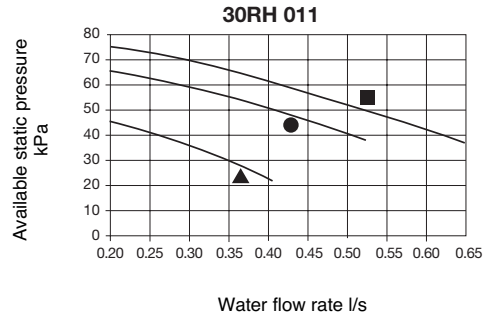
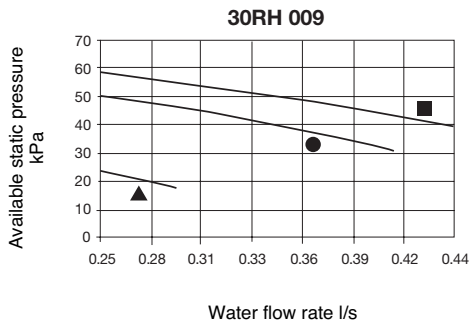
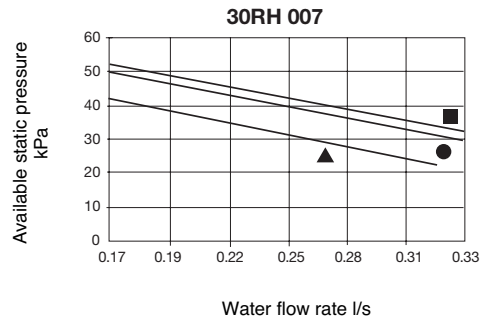
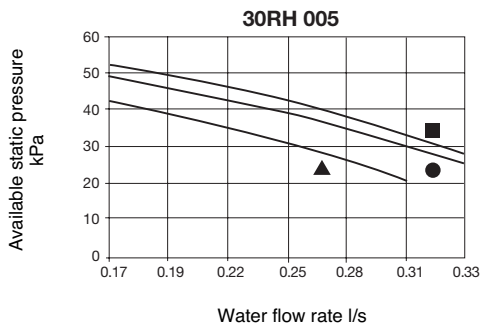
30RH		005	007	009	011	013
Nominal water flow rate	l/s	0.25	0.31	0.37	0.46	0.54
System water volume	l					
Minimum*		17	22	27	32	41
Maximum		35	45	65	65	65

* If the water content is below the indicated value, a buffer tank must be added.

Sound power levels (dB)

30RH	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)
005	66	62	60	58	53	48	43	62
007	74	67	64	63	57	52	44	67
009	75	70	69	67	62	56	49	71
011	76	72	68	66	62	57	50	71
013	78	72	70	69	65	60	54	73

Total pressure available



Legend:

- III high speed
 - II medium speed
 - ▲ I low speed
- Water temperature 20°C

