
argo
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Professional
catalogue

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HEAT PUMPS

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X3 AIR TO WATER HEAT PUMPS

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Monobloc

Split

Built-in solution for split heat pumps

All in one

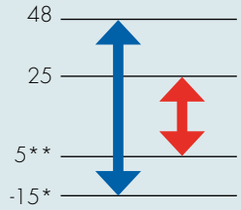
X3 AIR TO WATER HEAT PUMPS
PLUS

WIDE OPERATING RANGE

The outdoor temperature range varies between -25 °C and +35 °C, while the leaving water temperature interval is 20-60 °C: this means that the heat pump can be used with radiant floor systems, fan coil units and also medium-temperature radiators.

Cooling mode

from -15 °C* to 48 °C
from 5 °C** to 25 °C



* +10 °C for split and all-in-one models
** +7 °C for split and all-in-one models
*** 60 °C for split and all-in-one models

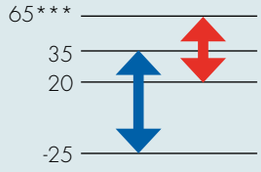
DHM production

from -25 °C to 45 °C
from 40 °C to 60 °C
(80 °C with electric heater)

Outdoor air temperature
Water temperature

Heating mode

from -25 °C to 35 °C
from 20 °C to 65 °C***



VERSATILITY AND EASE OF INSTALLATION

The unit is compact and has reduced overall dimensions: it can therefore be used also in tight spaces and is easy to carry and to install. In addition, it can be paired with heating systems that use medium-temperature radiators, as well as with radiant floor systems and fan coil units. It is not necessary to create any connection to the cooling circuit: the hydraulic connections are sufficient.

R32 REFRIGERANT WITH LOW ENVIRONMENTAL IMPACT

Heat pumps run on GREEN technology that uses renewable energy: this system captures the thermal energy present in the air and transfers it from one place to another, multiplying it. For every kW consumed, it produces over 4 kW of thermal energy: 75% of the energy is free, renewable and clean. The use of R32, a refrigerant gas with a low global environmental impact, makes these heat pumps even more environment-friendly.

REMOTE CONTROL

The unit can be integrated with a BMS supervision system, using the Modbus protocol.
By installing the EWPE application on the smartphone, most of the heat pump's parameters can be controlled remotely in a comfortable way.


MONOBLOC
SPLIT
ALL IN ONE

THE ADVANTAGES

HIGH ENERGY EFFICIENCY

Steam-injection compressor

- With low outdoor temperatures, the compressor with steam injection reduces the thermal capacity losses and has a greater efficiency compared to a traditional compressor.
- In the same conditions, the compressor's high discharge temperatures and other problems can be completely avoided, making the compressor significantly more reliable.
- Two-stage compression, two-stage lamination and steam injection increase the leaving water temperature and improve the control accuracy.

Heat exchanger fins

The heat exchange batteries are subjected to a special "Golden Fin" anti-corrosion protective treatment. The battery fins, made of aluminium-manganese (Al-Mn), are coated with a special layer of epoxy resin, which gives them their typical golden colour, and a further hydrophilic layer.
This special treatment is able to protect the heat exchanger against rust and corrosion in zones where the air is very salty, typical of coastal areas.

Circulator pump

The high-efficiency Class A inverter hydronic pump satisfies the requirements imposed by the European ErP directive. Its operating frequency adapts to the system's load. In this way, it is possible to improve the efficiency and temperature control of the heat transfer fluid.

DC brushless axial fans

The DC inverter axial fan with high air flow rate controls the volume of air delivered in a precise way and guarantees operating stability.

Plate heat exchanger

- The heat exchanger has a compact structure, minimal overall dimensions and a reduced pressure loss. Moreover, it guarantees a highly efficient heat exchange and boasts excellent resistance to corrosion.
- It is coated externally with anti-condensate material and is equipped with a heating element to protect it against frost build-up.

TOUCH-SCREEN CONTROL PANEL

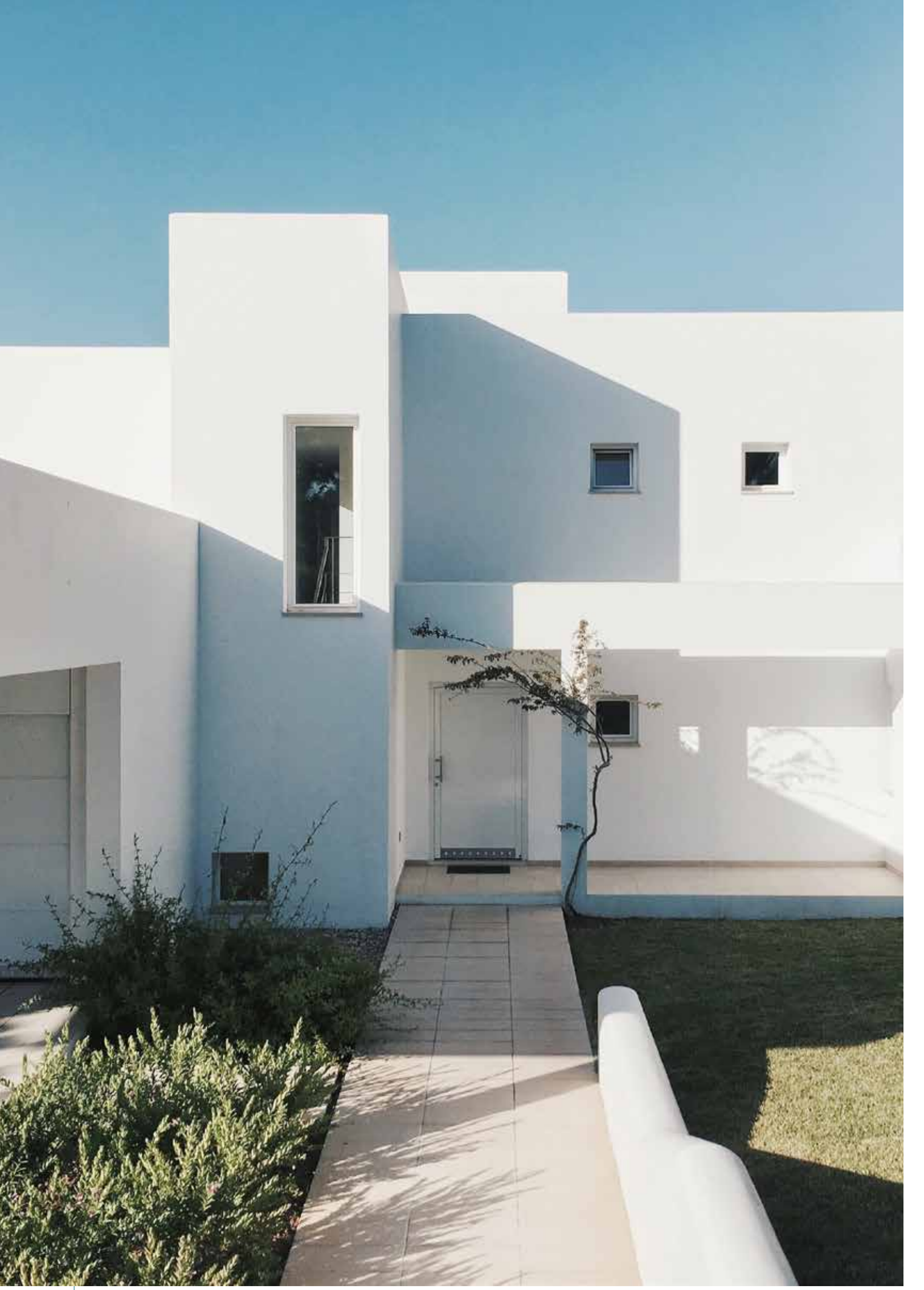
The control panel, supplied with the heat pump or installed on board the corresponding internal unit, allows the complete management and set-up of the unit.

In particular it is possible to:

- Define the operating mode of the heat pump and its priorities (heating, cooling, production of Domestic Hot Water)
- Set all the main operating parameters (set point, hysteresis, etc.)
- Activate external (or internal) systems to integrate or replace the heating and Domestic Hot Water production unit
- Manage the commissioning of the unit
- Display the status of the operating parameters of the main components of the heat pump
- Manage the unit remotely via MODBUS gateway or WiFi module directly integrated into the panel.

Specific auxiliary functions are also available in the control panel, including:

- Automatic management of the flow temperature of the fluid according to the external temperature (climate curve)
- Programming of weekly and hourly operation
- Activation of "silent" operation
- Emergency management in case of unit failure
- Programmable activation of the anti-legionella cycle
- Automatic activation of the antifreeze protection.



MONOBLOC

Single-phase 6-8 kW range

Single/three-phase 10-12-14-16 kW range

MONOBLOC HEAT PUMPS

MAIN FEATURES

(Standard)
Touch-screen control panel

- Monobloc Air/Water heat pump with new-generation DC Inverter technology.
- Equipped with the heating, cooling and domestic hot water production functions.
- Single-phase version with 6-8 kW heating capacity.
- Single/three-phase version with 10-12-14-16 kW heating capacity.
- Achieves very high efficiency levels in heating mode, up to 5 COP.
- Its integrated structure, which includes all the hydraulic components, ensures easy installation and, consequently, savings on the relative costs.
- It uses R32, a refrigerant with low impact on global warming and ozone layer, characterised by high energy efficiency and a 30% lower charge compared to R410A.
- The vapour-injection compressor, thanks to its special technology, guarantees exceptional performances and a wide operating range.
- The leaving water temperature range is 20 °C-65 °C: this means that the heat pump can be used with radiant floor systems, fan coil units and also medium-temperature radiators.
- The DC brushless axial fans are designed to ensure aerodynamic optimisation: they guarantee low noise levels coupled with high efficiency and a high air flow rate.
- It is equipped with a heating element on the base to prevent ice build-up during winter operation.
- It is equipped with an electronic expansion valve.

Internal copper groove | Quiet mode | Weekly timer | Heating down to low temperatures | Door control | Full protection | Timer | Child lock | Wide operating range | Wide voltage range | Auto diagnosis | Low-voltage start-up

Auto restart memory | Intelligent defrosting | °C / °F switching | Long-distance monitoring | Exch. condenser gold fin treatment | -25 °C Min. outdoor temp. heating | +35 °C Max. outdoor temp. heating | -15 °C Min. outdoor temp. cooling | +48 °C Max. outdoor temp. cooling | -25 °C Min. outdoor temp. DHW | +45 °C Max. outdoor temp. DHW | 60 °C Max. output temp. DHW

A+++ Heating mode 35 °C **A++** Heating mode 55 °C **A** DHW

THE RANGE

	Model	Code			Rated capacity according to EN14511 (kW)	
			1PH	3PH	Heating (1)	Cooling (2)
	AG4HP061PH	398600069	●		6.0	6.5
	AG4HP081PH	398600071	●		8.2	8.3
	AG4HP101PH	398600072	●		10.2	10.2
	AG4HP121PH	398600073	●		12.0	12.0
	AG4HP141PH	398600074	●		14.2	13.7
	AG4HP161PH	398600075	●		15.7	15.5
	AG4HP103PH	398600076		●	10.2	10.2
	AG4HP123PH	398600077		●	12.0	12.0
	AG4HP143PH	398600078		●	14.2	13.9
	AG4HP163PH	398600079		●	15.7	15.4

(1) Water temperature 30 °C/35 °C, outdoor air temperature 7 °C D.B./6 °C W.B.
(2) Water temperature 23 °C/18 °C, outdoor air temperature 35 °C

INCLUDED ACCESSORIES

Ambient air temperature sensor
DHW temperature sensor
Additional system water temperature sensor
Y-shaped filter
Remote control panel

TECHNICAL DATA 6 kW

Model					AG4HP061PH	
Matchable units for domestic hot water production (DHW)					**200/300 liters external tank with diverting valve**	
					Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	6.50	6.00
			Rated electrical power input	kW_{el}	1.27	1.11
			EER/COP		5.10	5.40
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	5.70	6.80
			Rated electrical power input	kW_{el}	1.65	1.66
			EER/COP		3.45	4.10
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	6	
			Seasonal energy efficiency η_s	%	199	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	5	
			Seasonal energy efficiency η_s	%	135	
			Energy efficiency class		A++	
DHW	**DHW performance according to EN 16147**	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL	
			Energy efficiency class		A+	
			ERP efficiency	%	127	
Unit operation data			Maximum delivery water temperature	°C	Up to 65	
			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	-15/+48	
			Nominal water flow rate	m^3/h	at 35 °C	1.03
					at 45 °C	1.01
					at 55 °C	0.97
					at 7 °C	0.84
					at 18 °C	1.12
			Minimum efficient water volume of the system	liters	40	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50	
			Maximum electricity consumption	A	25	
			Sound pressure level (cooling mode)	dB(A)	56	
			Sound pressure level (heating mode)	dB(A)	58	
Components and dimensions			Expansion vessel	liters	2	
			Maximum circulator pump head	kPa	(see H/Q graphs)	
			Hydraulic connections	inches	G1"	
			Safety valve	bar	3	
			Weight	kg	90	
			Dimensions (H/W/D)	mm	733/1150/372	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2eq	
			Quantity	kg	0.95	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to Regulations (EU) 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

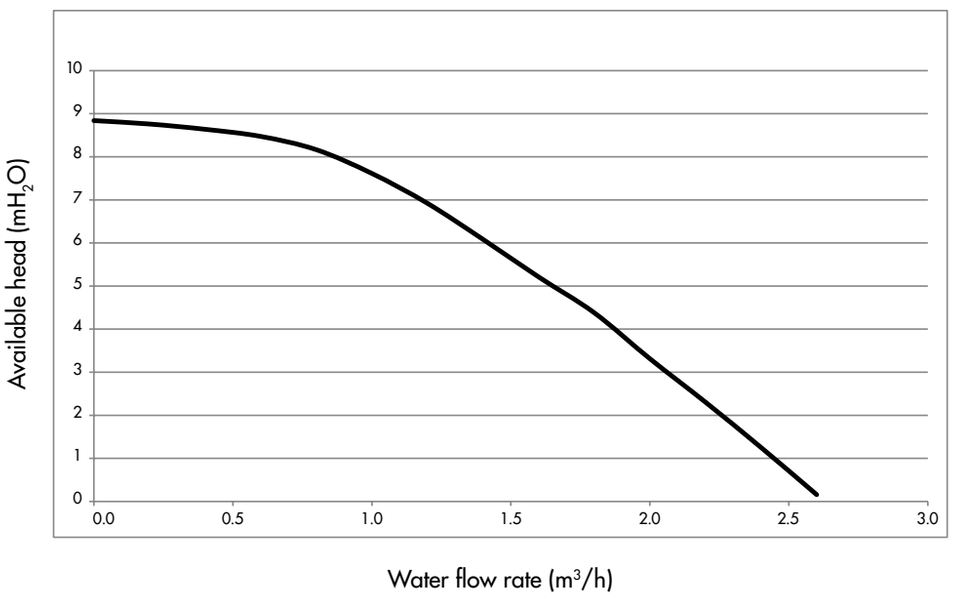
	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP061PH)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	5.25	6.31	5.00	5.69	4.79	5.11	6.16	4.52	5.87	3.97	5.70	3.45	3.13	2.99	2.27	2.37	2.08	1.92
8	5.42	6.53	5.16	5.89	4.94	5.28	6.35	4.68	6.06	4.11	5.88	3.57	3.23	3.09	2.34	2.45	2.15	1.99
9	5.59	6.75	5.32	6.09	5.09	5.46	6.55	4.83	6.25	4.24	6.06	3.69	3.33	3.20	2.41	2.53	2.21	2.06
10	5.75	6.97	5.48	6.28	5.25	5.64	6.75	4.99	6.43	4.38	6.25	3.81	3.43	3.30	2.49	2.61	2.28	2.12
11	5.92	7.19	5.64	6.48	5.40	5.81	6.94	5.15	6.62	4.52	6.43	3.93	3.53	3.40	2.56	2.70	2.35	2.19
12	6.09	7.41	5.80	6.68	5.55	5.99	7.14	5.30	6.81	4.65	6.61	4.05	3.63	3.50	2.63	2.78	2.41	2.26
13	6.26	7.62	5.96	6.87	5.71	6.17	7.34	5.46	7.00	4.79	6.79	4.17	3.73	3.61	2.70	2.86	2.48	2.32
14	6.43	7.84	6.12	7.07	5.86	6.34	7.53	5.61	7.19	4.93	6.98	4.28	3.83	3.71	2.78	2.94	2.54	2.39
15	6.59	8.06	6.28	7.27	6.01	6.52	7.73	5.77	7.37	5.06	7.16	4.40	3.93	3.81	2.85	3.02	2.61	2.46
18	7.07	8.71	6.73	7.86	6.44	7.05	8.29	6.24	7.90	5.48	6.50	5.10	4.21	4.12	3.05	3.27	2.80	2.66
20	7.43	9.14	7.08	8.24	6.78	7.39	8.72	6.54	8.31	5.74	8.07	5.00	4.43	4.33	3.21	3.43	2.94	2.79
23	7.91	9.80	7.53	8.83	7.21	7.92	9.27	7.01	8.84	6.16	8.58	5.35	4.71	4.64	3.42	3.67	3.13	2.99
25	8.21	10.23	7.82	9.22	7.49	8.27	9.63	7.32	9.18	6.43	8.91	5.59	4.89	4.84	3.55	3.84	3.25	3.12

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	2.31	2.24	2.48	2.64	2.97	3.04	3.25	3.56	3.58	3.96	4.02	4.52	4.35	5.02	5.94	6.60	6.12	6.77	6.84	7.36	5.88	7.82	6.44	8.28	5.36	8.66	5.80	8.99
30	2.37	2.06	2.53	2.42	3.03	2.79	3.30	3.27	3.63	3.64	4.07	4.15	4.40	4.60	6.00	6.06	6.18	6.21	6.90	6.76	5.92	7.18	6.49	7.60	5.40	7.95	5.83	8.26
35	2.37	1.84	2.53	2.16	3.03	2.49	3.30	2.92	3.63	3.25	4.07	3.71	4.40	4.11	6.00	5.41	6.18	5.55	6.90	6.03	5.92	6.41	6.49	6.79	5.40	7.10	5.83	7.37
40	2.37	1.62	2.53	1.90	3.03	2.19	3.30	2.57	3.63	2.86	4.07	3.26	4.40	3.62	6.00	4.76	6.18	4.88	6.90	5.31	5.92	5.64	6.49	5.97	5.40	6.25	5.83	6.49
45	2.37	1.47	2.53	1.73	3.03	1.99	3.30	2.34	3.63	2.60	4.07	2.96	4.40	3.29	6.80	4.10	6.18	4.44	6.90	4.83	5.92	5.13	6.49	5.43	5.40	5.68	5.83	5.90
50			2.48	1.56	2.97	1.79	3.25	2.10	3.58	2.34	4.02	2.67	4.35	2.96	5.94	3.90	6.12	3.99	6.84	4.34	5.88	4.62	6.44	4.89	5.36	5.11	5.77	5.31
55					2.97	1.57	3.25	1.84	3.58	2.04	4.02	2.33	4.35	2.59	5.80	3.15	6.12	3.49	6.84	3.80	5.88	4.04	6.44	4.28	5.36	4.47	5.77	4.64
60									3.52	1.82	3.96	2.08	4.29	2.30	5.88	3.03	6.06	3.11	6.76	3.38	5.80	3.59	6.36	3.80	5.29	3.98	5.72	4.13
65															5.82	2.71	5.99	2.77	6.69	3.02	5.74	3.21						

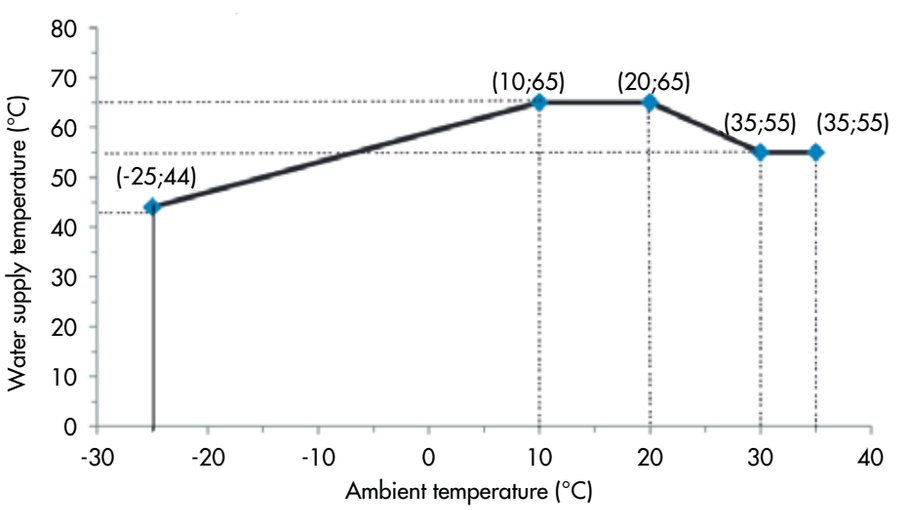
LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

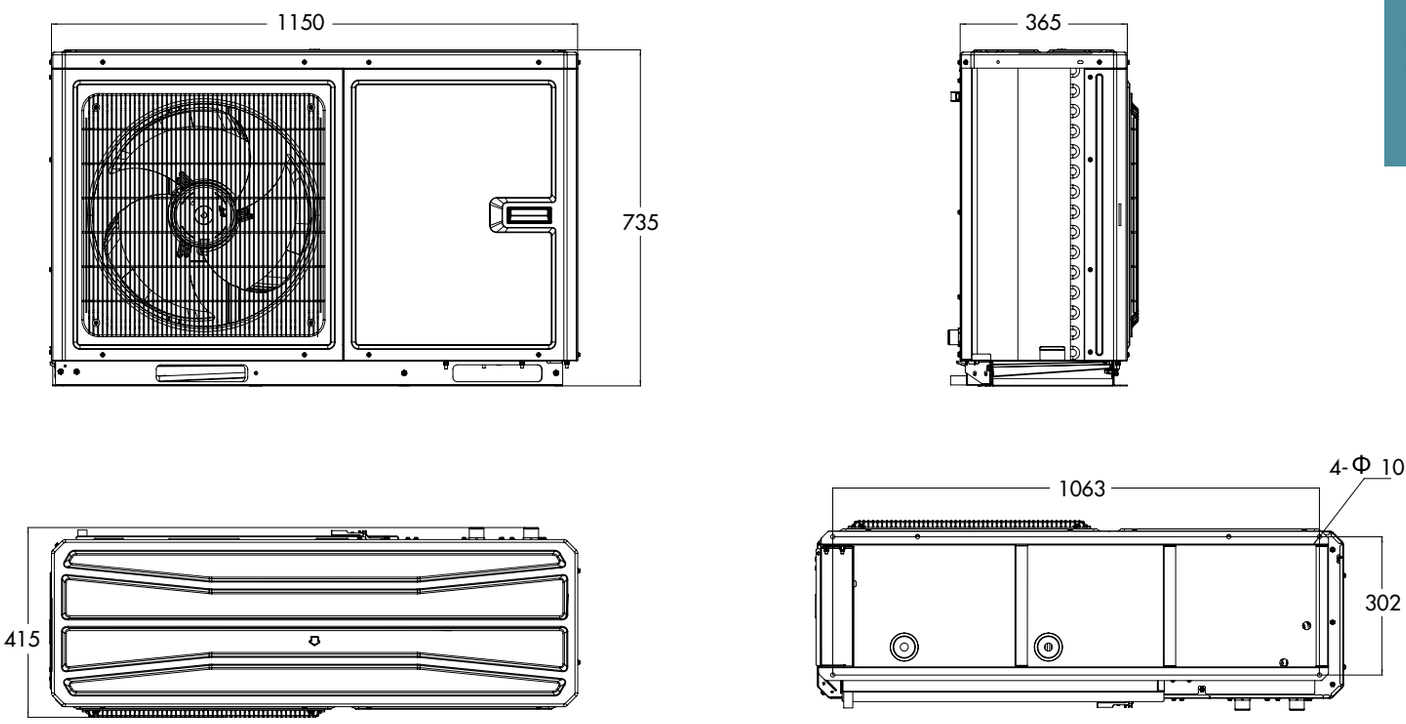
FLOW RATE CURVES FOR 6 kW



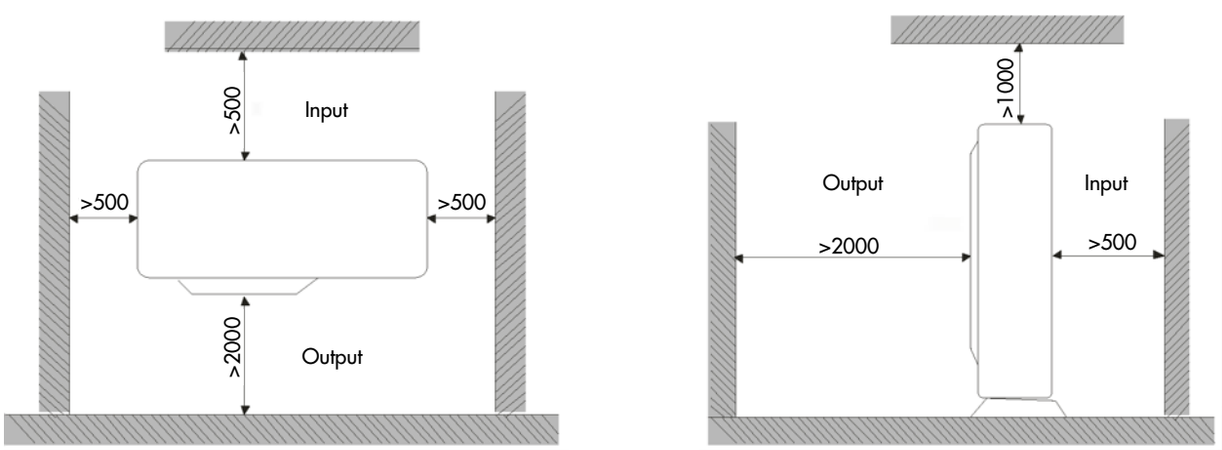
MAXIMUM TEMPERATURE IN HEATING 6 kW



DIMENSIONAL DRAWINGS 6 kW



SPACE REQUIRED FOR INSTALLATION 6 kW



TECHNICAL DATA FOR 8-10-12-14-16 kW

Model					AG4HP081PH	
Matchable units for domestic hot water production (DHW)					**200/300 liters external tank with diverting valve**	
					Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	8.30	8.20
			Rated electrical power input	kW_{el}	1.56	1.54
			EER/COP		5.32	5.32
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	7.40	8.30
			Rated electrical power input	kW_{el}	2.00	1.90
			EER/COP		3.70	4.36
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	8	
			Seasonal energy efficiency η_s	%	187	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	9	
			Seasonal energy efficiency η_s	%	146	
			Energy efficiency class		A++	
DHW	**DHW performance according to EN 16147**	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL	
			Energy efficiency class		A	
			ERP efficiency	%	123	
Unit operation data			Maximum delivery water temperature	°C	Up to 65	
			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	-15/+48	
			Nominal water flow rate	m^3/h	at 35 °C	1.41
					at 45 °C	1.40
					at 55 °C	1.34
					at 7 °C	0.98
					at 18 °C	1.43
			Minimum efficient water volume of the system	liters	40	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50	
			Maximum electricity consumption	A	25	
			Sound pressure level (cooling mode)	dB(A)	60	
			Sound pressure level (heating mode)	dB(A)	62	
Components and dimensions			Expansion vessel	liters	3	
			Maximum circulator pump head	kPa	(see H/Q graphs)	
			Hydraulic connections	inches	G1"	
			Safety valve	bar	3	
			Weight	kg	120	
			Dimensions (H/W/D)	mm	878/1206/445	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2eq	
			Quantity	kg	1.6	

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CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP081PH)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	9.25	6.77	8.81	6.11	8.44	5.48	7.99	4.85	7.62	4.26	7.40	3.70	5.15	3.07	4.70	2.37	3.73	1.98
8	9.55	7.01	9.09	6.32	8.71	5.67	8.25	5.02	7.87	4.40	7.64	3.83	5.32	3.18	4.85	2.45	3.85	2.05
9	9.84	7.24	9.37	6.53	8.98	5.86	8.50	5.18	8.11	4.55	7.87	3.96	5.48	3.28	5.01	2.53	3.97	2.11
10	10.14	7.48	9.65	6.74	9.25	6.05	8.76	5.35	8.35	4.70	8.11	4.08	5.65	3.39	5.16	2.61	4.09	2.18
11	10.43	7.71	9.93	6.95	9.52	6.23	9.01	5.52	8.60	4.84	8.35	4.21	5.81	3.50	5.31	2.70	4.21	2.25
12	10.73	7.94	10.21	7.16	9.79	6.42	9.27	5.69	8.84	4.99	8.58	4.34	5.98	3.60	5.46	2.78	4.33	2.32
13	11.03	8.18	10.50	7.37	10.06	6.61	9.53	5.85	9.09	5.14	8.82	4.47	6.14	3.71	5.61	2.86	4.45	2.39
14	11.32	8.41	10.78	7.58	10.33	6.80	9.78	6.02	9.33	5.28	9.06	4.60	6.31	3.81	5.76	2.94	4.57	2.45
15	11.62	8.64	11.06	7.79	10.60	6.99	10.04	6.19	9.57	5.43	9.29	4.72	6.47	3.92	5.91	3.02	4.69	2.52
18	12.45	9.34	11.85	8.42	11.35	7.56	10.76	6.69	10.26	5.87	8.30	5.32	6.93	4.24	6.33	3.27	5.03	2.73
20	13.10	9.80	12.47	8.84	11.95	7.93	11.32	7.02	10.79	6.16	10.48	5.36	7.30	4.45	6.66	3.43	5.29	2.86
23	13.93	10.51	13.26	9.47	12.70	8.50	12.04	7.52	11.48	6.60	11.14	5.74	7.76	4.76	7.08	3.67	5.62	3.07
25	14.47	10.97	13.77	9.89	13.19	8.87	12.50	7.85	11.92	6.90	11.57	6.00	8.06	4.98	7.36	3.84	5.84	3.20

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	4.73	2.17	4.95	2.56	6.27	2.94	6.49	3.45	7.15	3.84	7.48	4.26	8.10	4.73	8.12	6.49	8.36	6.65	9.35	7.24	8.75	6.48	9.59	6.86	8.94	8.92	9.66	9.26
30	4.84	2.00	5.06	2.35	6.38	2.70	6.60	3.17	7.26	3.52	7.59	3.91	8.20	4.34	8.20	5.96	8.45	6.11	9.43	6.64	8.82	5.95	9.66	6.30	9.00	8.18	9.72	8.50
35	4.84	1.78	5.06	2.10	6.38	2.41	6.60	2.83	7.26	3.14	7.59	3.49	8.20	3.88	8.20	5.32	8.45	5.45	9.43	5.93	8.82	5.31	9.66	5.62	9.00	7.31	9.72	7.59
40	4.84	1.57	5.06	1.84	6.38	2.12	6.60	2.49	7.26	2.77	7.59	3.07	8.20	3.41	8.20	4.68	8.45	4.80	9.43	5.22	8.82	4.67	9.66	4.95	9.00	6.43	9.72	6.68
45	4.84	1.43	5.06	1.68	6.38	1.93	6.60	2.26	7.26	2.52	7.59	2.79	8.20	3.10	8.30	4.36	8.45	4.36	9.43	4.75	8.82	4.25	9.66	4.50	9.00	5.85	9.72	6.07
50			4.95	1.51	6.27	1.74	6.49	2.04	7.15	2.26	7.48	2.52	8.10	2.79	8.12	3.83	8.36	3.93	9.35	4.27	8.75	3.82	9.59	4.05	8.94	5.26	9.62	5.46
55					6.27	1.52	6.49	1.78	7.15	1.98	7.48	2.20	8.10	2.44	7.81	3.20	8.36	3.44	9.35	3.74	8.75	3.34	9.59	3.54	8.94	4.60	9.62	4.78
60									7.04	1.76	7.38	1.96	8.00	2.17	8.04	2.98	8.28	3.05	9.24	3.32	8.64	2.97	9.47	3.15	8.82	4.09	9.53	4.25
65															7.95	2.66	8.19	2.73	9.15	2.97	8.56	2.65						

LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

TECHNICAL DATA FOR 8-10-12-14-16 kW

Model					AG4HP101PH		AG4HP103PH	
Matchable units for domestic hot water production (DHW)					**200/300 liters external tank with diverting valve**		**200/300 liters external tank with diverting valve**	
					Cooling	Heating	Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	10.20	10.20	10.20	10.20
			Rated electrical power input	kW_{el}	2.00	2.02	2.13	2.06
			EER/COP		5.10	5.05	4.79	4.95
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	9.00	10.20	9.10	10.20
			Rated electrical power input	kW_{el}	2.65	2.50	2.80	2.60
			EER/COP		3.40	4.08	3.25	3.92
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	9		9	
			Seasonal energy efficiency η_s	%	178		190	
			Energy efficiency class		A+++		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	10		10	
			Seasonal energy efficiency η_s	%	136		141	
			Energy efficiency class		A++		A++	
DHW	**DHW performance according to EN 16147**	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL		XL	
			Energy efficiency class		A		A	
			ERP efficiency	%	123		123	
Unit operation data			Maximum delivery water temperature	°C	Up to 65		Up to 65	
			Outdoor temperature range (heating)	°C	-25/+35		-25/+35	
			Outdoor temperature range (cooling)	°C	-15/+48		-15/+48	
			Nominal water flow rate	m^3/h	at 35 °C	1.75	at 35 °C	1.75
					at 45 °C	1.74	at 45 °C	1.74
					at 55 °C	1.67	at 55 °C	1.67
					at 7 °C	1.24	at 7 °C	1.24
					at 18 °C	1.75	at 18 °C	1.75
			Minimum efficient water volume of the system	liters	80		80	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50		400/3/50	
			Maximum electricity consumption	A	25		9	
			Sound pressure level (cooling mode)	dB(A)	60		57	
			Sound pressure level (heating mode)	dB(A)	62		60	
Components and dimensions			Expansion vessel	liters	3		3	
			Maximum circulator pump head	kPa	(see H/Q graphs)		(see H/Q graphs)	
			Hydraulic connections	inches	G1"		G1"	
			Safety valve	bar	3		3	
			Weight	kg	120		134	
			Dimensions (H/W/D)	mm	878/1206/445		878/1206/445	
			Compressor type		Twin Rotary with vapour injection		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2eq		R32/675 kg CO_2eq	
			Quantity	kg	1.6		1.6	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

PRELIMINARY data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP101PH)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.25	6.22	10.71	5.61	10.26	5.03	9.72	4.45	9.27	3.91	9.00	3.40	5.65	3.07	5.16	2.37	3.87	1.98
8	11.61	6.44	11.05	5.81	10.59	5.21	10.03	4.61	9.57	4.05	9.29	3.52	5.83	3.18	5.32	2.45	4.00	2.05
9	11.97	6.65	11.40	6.00	10.92	5.38	10.34	4.76	9.86	4.18	9.58	3.64	6.01	3.28	5.49	2.53	4.12	2.11
10	12.33	6.87	11.74	6.19	11.24	5.56	10.65	4.92	10.16	4.32	9.86	3.75	6.19	3.39	5.65	2.61	4.24	2.18
11	12.69	7.08	12.08	6.39	11.57	5.73	10.96	5.07	10.46	4.45	10.15	3.87	6.37	3.50	5.82	2.70	4.37	2.25
12	13.05	7.30	12.42	6.58	11.90	5.90	11.28	5.22	10.75	4.59	10.44	3.99	6.55	3.60	5.98	2.78	4.49	2.32
13	13.41	7.51	12.77	6.77	12.23	6.08	11.59	5.38	11.05	4.72	10.73	4.11	6.73	3.71	6.15	2.86	4.62	2.39
14	13.77	7.73	13.11	6.97	12.56	6.25	11.90	5.53	11.35	4.86	11.02	4.22	6.91	3.81	6.31	2.94	4.74	2.45
15	14.13	7.94	13.45	7.16	12.89	6.42	12.21	5.69	11.64	4.99	11.30	4.34	7.09	3.92	6.48	3.02	4.86	2.52
18	15.14	8.59	14.42	7.74	13.81	6.94	13.08	6.15	12.48	5.40	10.20	5.10	7.60	4.24	6.94	3.27	5.21	2.73
20	15.93	9.01	15.17	8.12	14.53	7.29	13.76	6.45	13.13	5.66	12.74	4.92	8.00	4.45	7.30	3.43	5.48	2.86
23	16.94	9.65	16.13	8.70	15.45	7.81	14.64	6.91	13.96	6.07	13.55	5.28	8.51	4.76	7.77	3.67	5.83	3.07
25	17.60	10.08	16.75	9.09	16.05	8.15	15.20	7.22	14.50	6.34	14.08	5.51	8.83	4.98	8.07	3.84	6.06	3.20

	HEATING - Dry bulb outdoor air temperature in °C																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.07	2.03	5.31	2.39	6.73	2.75	6.96	3.23	7.67	3.59	8.03	4.38	8.69	4.86	10.10	6.16	10.40	6.32	11.63	6.87	9.25	7.95	10.14	8.42	9.69	8.92	10.47	9.26
30	5.19	1.87	5.43	2.20	6.84	2.52	7.08	2.96	7.79	3.29	8.14	4.02	8.80	4.46	10.20	5.66	10.51	5.80	11.73	6.31	9.32	7.30	10.21	7.73	9.75	8.18	10.53	8.50
35	5.19	1.67	5.43	1.96	6.84	2.25	7.08	2.65	7.79	2.94	8.14	3.59	8.80	3.98	10.20	5.05	10.51	5.18	11.73	5.63	9.32	6.52	10.21	6.90	9.75	7.31	10.53	7.59
40	5.19	1.47	5.43	1.72	6.84	1.98	7.08	2.33	7.79	2.59	8.14	3.16	8.80	3.50	10.20	4.44	10.51	4.56	11.73	4.96	9.32	5.74	10.21	6.07	9.75	6.43	10.53	6.68
45	5.19	1.33	5.43	1.57	6.84	1.80	7.08	2.12	7.79	2.35	8.14	2.87	8.80	3.19	10.20	4.08	10.51	4.14	11.73	4.50	9.32	5.21	10.21	5.52	9.75	5.85	10.53	6.07
50			5.31	1.41	6.73	1.62	6.96	1.91	7.67	2.12	8.03	2.58	8.69	2.87	10.10	3.64	10.40	3.73	11.63	4.05	9.25	4.69	10.14	4.97	9.69	5.26	10.42	5.46
55					6.73	1.42	6.96	1.67	7.67	1.85	8.03	2.26	8.69	2.51	10.30	3.12	10.40	3.26	11.63	3.55	9.25	4.11	10.14	4.35	9.69	4.60	10.42	4.78
60									7.55	1.65	7.92	2.01	8.58	2.23	10.00	2.83	10.30	2.90	11.50	3.15	9.14	3.65	10.01	3.87	9.56	4.09	10.32	4.25
65															9.89	2.53	10.19	2.59	11.38	2.82	9.04	3.26						

	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP103PH)																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.07	2.05	5.31	2.42	6.73	2.78	6.96	3.26	7.67	3.62	8.03	4.17	8.69	4.63	10.10	6.04	10.40	6.19	11.63	6.73	9.25	7.45	10.14	7.89	9.69	8.34	10.47	8.66
30	5.19	1.88	5.43	2.22	6.84	2.55	7.08	2.99	7.79	3.33	8.14	3.83	8.80	4.25	10.20	5.54	10.51	5.68	11.73	6.18	9.32	6.84	10.21	7.24	9.75	7.66	10.53	7.95
35	5.19	1.68	5.43	1.98	6.84	2.28	7.08	2.67	7.79	2.97	8.14	3.42	8.80	3.79	10.20	4.95	10.51	5.07	11.73	5.52	9.32	6.10	10.21	6.46	9.75	6.84	10.53	7.10
40	5.19	1.48	5.43	1.74	6.84	2.00	7.08	2.35	7.79	2.61	8.14	3.01	8.80	3.34	10.20	4.36	10.51	4.46	11.73	4.86	9.32	5.37	10.21	5.69	9.75	6.02	10.53	6.25
45	5.19	1.35	5.43	1.58	6.84	1.82	7.08	2.14	7.79	2.38	8.14	2.73	8.80	3.03	10.20	3.92	10.51	4.06	11.73	4.42	9.32	4.88	10.21	5.17	9.75	5.47	10.53	5.68
50			5.31	1.43	6.73	1.64	6.96	1.92	7.67	2.14	8.03	2.46	8.69	2.73	10.10	3.56	10.40	3.65	11.63	3.97	9.25	4.39	10.14	4.65	9.69	4.92	10.42	5.11
55					6.73	1.43	6.96	1.68	7.67	1.87	8.03	2.15	8.69	2.39	10.30	3.05	10.40	3.20	11.63	3.48	9.25	3.84	10.14	4.07	9.69	4.31	10.42	4.47
60									7.55	1.66	7.92	1.91	8.58	2.12	10.00	2.77	10.30	2.84	11.50	3.09	9.14	3.42	10.01	3.62	9.56	3.83	10.32	3.98
65															9.89	2.48	10.19	2.54	11.38	2.76	9.04	3.05						

	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.25	5.89	10.71	5.31	10.26	4.77	9.72	4.22	9.27	3.70	9.10	3.25	5.65	2.81	5.16	2.16	3.87	1.93
8	11.61	6.10	11.05	5.50	10.59	4.93	10.03	4.37	9.57	3.83	9.29	3.33	5.83	2.90	5.32	2.24	4.00	2.00
9	11.97	6.30	11.40	5.68	10.92	5.10	10.34	4.51	9.86	3.96	9.58	3.44	6.01	3.00	5.49	2.31	4.12	2.06
10	12.33	6.51	11.74	5.87	11.24	5.26	10.65	4.66	10.16	4.09	9.86	3.55	6.19	3.10	5.65	2.39	4.24	2.13
11	12.69	6.71	12.08	6.05	11.57	5.43	10.96	4.80	10.46	4.22	10.15	3.67	6.37	3.19	5.82	2.46	4.37	2.20
12	13.05	6.91	12.42	6.23	11.90	5.59	11.28	4.95	10.75	4.34	10.44	3.78	6.55	3.29	5.98	2.54	4.49	2.26
13	13.41	7.12	12.77	6.42	12.23	5.75	11.59	5.09	11.05	4.47	10.73	3.89	6.73	3.39	6.15	2.61	4.62	2.33
14	13.77	7.32	13.11	6.60	12.56	5.92	11.90	5.24	11.35	4.60	11.02	4.00	6.91	3.48	6.31	2.69	4.74	2.40
15	14.13	7.52	13.45	6.78	12.89	6.08	12.21	5.38	11.64	4.73	11.30	4.11	7.09	3.58	6.48	2.76	4.86	2.46
18	15.14	8.13	14.42	7.33	13.81	6.58	13.08	5.82	12.48	5.11	10.20	4.79	7.60	3.87	6.94	2.99	5.21	2.66
20	15.93	8.53	15.17	7.69	14.53	6.90	13.76	6.11	13.13	5.36	12.74	4.66	8.00	4.06	7.30	3.13	5.48	2.79
23	16.94	9.14	16.13	8.24	15.45	7.39	14.64	6.54	13.96	5.75	13.55	5.00	8.51	4.35	7.77	3.36	5.83	2.99
25	17.60	9.55	16.75	8.61	16.05	7.72	15.20	6.84	14.50	6.00	14.08	5.22	8.83	4.55	8.07	3.51	6.06	3.13

LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

TECHNICAL DATA FOR 8-10-12-14-16 kW

Model					AG4HP121PH		AG4HP123PH	
Matchable units for domestic hot water production (DHW)					**200/300 liters external tank with diverting valve**		**200/300 liters external tank with diverting valve**	
					Cooling	Heating	Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	12.00	12.00	12.00	12.00
			Rated electrical power input	kW_{el}	2.45	2.43	2.61	2.49
			EER/COP		4.90	4.94	4.60	4.82
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	11.10	13.00	11.10	13.00
			Rated electrical power input	kW_{el}	3.58	3.45	3.58	3.45
			EER/COP		3.10	3.77	3.10	3.77
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	12		12	
			Seasonal energy efficiency η_s	%	188		180	
			Energy efficiency class		A+++		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	12		12	
			Seasonal energy efficiency η_s	%	144		137	
			Energy efficiency class		A++		A++	
DHW	**DHW performance according to EN 16147**	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL		XL	
			Energy efficiency class		A		A	
			ERP efficiency	%	110		110	
Unit operation data			Maximum delivery water temperature	°C	Up to 65		Up to 65	
			Outdoor temperature range (heating)	°C	-25/+35		-25/+35	
			Outdoor temperature range (cooling)	°C	-15/+48		-15/+48	
			Nominal water flow rate	m^3/h	at 35 °C	2.06	at 35 °C	2.06
					at 45 °C	2.06	at 45 °C	2.06
					at 55 °C	1.98	at 55 °C	1.98
					at 7 °C	1.49	at 7 °C	1.49
					at 18 °C	2.06	at 18 °C	2.06
			Minimum efficient water volume of the system	liters	80		80	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50		400/3/50	
			Maximum electricity consumption	A	29		11.5	
			Sound pressure level (cooling mode)	dB(A)	61		61	
			Sound pressure level (heating mode)	dB(A)	63		63	
Components and dimensions			Expansion vessel	liters	3		3	
			Maximum circulator pump head	kPa	(see H/Q graphs)		(see H/Q graphs)	
			Hydraulic connections	inches	G1"		G1"	
			Safety valve	bar	3		3	
			Weight	kg	138		144	
			Dimensions (H/W/D)	mm	878/1206/445		878/1206/445	
			Compressor type		Twin Rotary with vapour injection		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2eq		R32/675 kg CO_2eq	
			Quantity	kg	2.2 kg		2.2 kg	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

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CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP121PH)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.88	5.67	11.31	5.12	10.83	4.59	10.26	4.06	9.79	3.57	11.10	3.10	8.19	2.95	6.72	2.37	6.16	1.92
8	12.26	5.87	11.67	5.29	11.18	4.75	10.59	4.20	10.10	3.69	11.46	3.21	8.45	3.05	6.94	2.45	6.36	1.99
9	12.64	6.07	12.03	5.47	11.52	4.91	10.92	4.34	10.41	3.81	11.81	3.32	8.71	3.15	7.15	2.53	6.55	2.06
10	13.02	6.26	12.39	5.65	11.87	5.07	11.24	4.48	10.72	3.94	12.17	3.42	8.97	3.25	7.37	2.61	6.75	2.12
11	13.40	6.46	12.75	5.82	12.22	5.22	11.57	4.62	11.04	4.06	12.52	3.53	9.24	3.35	7.58	2.70	6.95	2.19
12	13.78	6.65	13.11	6.00	12.56	5.38	11.90	4.76	11.35	4.18	12.88	3.64	9.50	3.46	7.80	2.78	7.15	2.26
13	14.16	6.85	13.48	6.18	12.91	5.54	12.23	4.90	11.66	4.30	13.23	3.74	9.76	3.56	8.01	2.86	7.34	2.32
14	14.54	7.05	13.84	6.35	13.26	5.70	12.56	5.04	11.98	4.43	13.59	3.85	10.02	3.66	8.23	2.94	7.54	2.39
15	14.92	7.24	14.20	6.53	13.60	5.86	12.89	5.18	12.29	4.55	13.94	3.96	10.28	3.76	8.44	3.02	7.74	2.46
18	15.98	7.83	15.22	7.06	14.58	6.33	13.81	5.60	13.17	4.92	12.00	4.90	11.02	4.07	9.05	3.27	8.29	2.66
20	16.82	8.21	16.01	7.41	15.34	6.64	14.53	5.88	13.86	5.16	15.72	4.49	11.59	4.27	9.52	3.43	8.72	2.79
23	17.88	8.80	17.03	7.94	16.31	7.12	15.45	6.30	14.74	5.53	16.72	4.81	12.33	4.57	10.12	3.67	9.28	2.99
25	18.57	9.19	17.68	8.29	16.94	7.43	16.05	6.58	15.30	5.78	17.36	5.02	12.81	4.77	10.51	3.84	9.63	3.12

	HEATING - Dry bulb outdoor air temperature in °C																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.80	2.03	6.21	2.39	7.45	2.74	8.14	3.22	8.97	3.58	10.07	4.09	10.90	4.53	11.88	6.03	12.24	6.18	13.68	6.72	11.25	7.60	12.33	8.05	11.92	8.57	12.88	8.89
30	5.93	1.86	6.35	2.19	7.59	2.52	8.28	2.96	9.11	3.29	10.21	3.75	11.04	4.16	12.00	5.53	12.36	5.67	13.80	6.17	11.34	6.98	12.42	7.39	12.00	7.86	12.96	8.16
35	5.93	1.66	6.35	1.96	7.59	2.25	8.28	2.64	9.11	2.93	10.21	3.35	11.04	3.72	12.00	4.94	12.36	5.06	13.80	5.51	11.34	6.23	12.42	6.60	12.00	7.02	12.96	7.29
40	5.93	1.46	6.35	1.72	7.59	1.98	8.28	2.32	9.11	2.58	10.21	2.95	11.04	3.27	12.00	4.35	12.36	4.46	13.80	4.85	11.34	5.49	12.42	5.81	12.00	6.18	12.96	6.42
45	5.93	1.33	6.35	1.56	7.59	1.80	8.28	2.11	9.11	2.35	10.21	2.68	11.04	2.97	13.00	3.77	12.36	4.05	13.80	4.41	11.34	4.99	12.42	5.28	12.00	5.62	12.96	5.83
50			6.21	1.41	7.45	1.62	8.14	1.90	8.97	2.11	10.07	2.41	10.90	2.68	11.88	3.56	12.24	3.65	13.68	3.97	11.25	4.49	12.33	4.75	11.92	5.06	12.83	5.25
55					7.45	1.42	8.14	1.66	8.97	1.85	10.07	2.11	10.90	2.34	12.00	3.05	12.24	3.19	13.68	3.47	11.25	3.93	12.33	4.16	11.92	4.42	12.83	4.59
60									8.83	1.64	9.94	1.88	10.76	2.08	11.76	2.77	12.11	2.84	13.52	3.08	11.11	3.49	12.17	3.70	11.76	3.93	12.70	4.08
65															11.64	2.47	11.99	2.53	13.39	2.75	11.00	3.12						

	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP123PH)																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.80	1.95	6.21	2.29	7.45	2.63	8.14	3.09	8.97	3.43	10.07	3.92	10.90	4.35	11.88	5.88	12.24	6.03	13.68	6.56	11.25	7.30	12.33	7.73	11.92	8.22	12.88	8.53
30	5.93	1.79	6.35	2.10	7.59	2.42	8.28	2.84	9.11	3.15	10.21	3.60	11.04	3.99	12.00	5.40	12.36	5.53	13.80	6.02	11.34	6.70	12.42	7.10	12.00	7.54	12.96	7.83
35	5.93	1.59	6.35	1.88	7.59	2.16	8.28	2.53	9.11	2.81	10.21	3.21	11.04	3.56	12.00	4.82	12.36	4.94	13.80	5.37	11.34	5.98	12.42	6.34	12.00	6.73	12.96	6.99
40	5.93	1.40	6.35	1.65	7.59	1.90	8.28	2.23	9.11	2.48	10.21	2.83	11.04	3.14	12.00	4.24	12.36	4.35	13.80	4.73	11.34	5.27	12.42	5.58	12.00	5.93	12.96	6.15
45	5.93	1.28	6.35	1.50	7.59	1.73	8.28	2.03	9.11	2.25	10.21	2.57	11.04	2.85	13.00	3.77	12.36	3.95	13.80	4.30	11.34	4.79	12.42	5.07	12.00	5.39	12.96	5.59
50			6.21	1.35	7.45	1.55	8.14	1.82	8.97	2.03	10.07	2.31	10.90	2.57	11.88	3.47	12.24	3.56	13.68	3.87	11.25	4.31	12.33	4.56	11.92	4.85	12.83	5.03
55					7.45	1.36	8.14	1.60	8.97	1.77	10.07	2.02	10.90	2.25	12.00	2.91	12.24	3.11	13.68	3.39	11.25	3.77	12.33	3.99	11.92	4.24	12.83	4.40
60									8.83	1.58	9.94	1.80	10.76	2.00	11.76	2.70	12.11	2.77	13.52	3.01	11.11	3.35	12.17	3.55	11.76	3.77	12.70	3.92
65															11.64	2.41	11.99	2.47	13.39	2.69	11.00	2.99						

	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.88	5.67	11.31	5.12	10.83	4.59	10.26	4.06	9.79	3.57	11.10	3.10	8.19	2.80	6.72	2.25	6.16	1.83
8	12.26	5.87	11.67	5.29	11.18	4.75	10.59	4.20	10.10	3.69	11.46	3.21	8.45	2.89	6.94	2.33	6.36	1.89
9	12.64	6.07	12.03	5.47	11.52	4.91	10.92	4.34	10.41	3.81	11.81	3.32	8.71	2.99	7.15	2.41	6.55	1.96
10	13.02	6.26	12.39	5.65	11.87	5.07	11.24	4.48	10.72	3.94	12.17	3.42	8.97	3.09	7.37	2.49	6.75	2.02
11	13.40	6.46	12.75	5.82	12.22	5.22	11.57	4.62	11.04	4.06	12.52	3.53	9.24	3.18	7.58	2.56	6.95	2.08
12	13.78	6.65	13.11	6.00	12.56	5.38	11.90	4.76	11.35	4.18	12.88	3.64	9.50	3.28	7.80	2.64	7.15	2.15
13	14.16	6.85	13.48	6.18	12.91	5.54	12.23	4.90	11.66	4.30	13.23	3.74	9.76	3.38	8.01	2.72	7.34	2.21
14	14.54	7.05	13.84	6.35	13.26	5.70	12.56	5.04	11.98	4.43	13.59	3.85	10.02	3.47	8.23	2.80	7.54	2.27
15	14.92	7.24	14.20	6.53	13.60	5.86	12.89	5.18	12.29	4.55	13.94	3.96	10.28	3.57	8.44	2.88	7.74	2.34
18	15.98	7.83	15.22	7.06	14.58	6.33	13.81	5.60	13.17	4.92	12.00	4.60	11.02	3.86	9.05	3.11	8.29	2.53
20	16.82	8.21	16.01	7.41	15.34	6.64	14.53	5.88	13.86	5.16	15.72	4.49	11.59	4.05	9.52	3.26	8.72	2.65
23	17.88	8.80	17.03	7.94	16.31	7.12	15.45	6.30	14.74	5.53	16.72	4.81	12.33	4.34	10.12	3.50	9.28	2.84
25	18.57	9.19	17.68	8.29	16.94	7.43	16.05	6.58	15.30	5.78	17.36	5.02	12.81	4.53	10.51	3.65	9.63	2.97

LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

TECHNICAL DATA FOR 8-10-12-14-16 kW

Model						AG4HP141PH		AG4HP143PH	
Matchable units for domestic hot water production (DHW)						**200/300 liters external tank with diverting valve**		**200/300 liters external tank with diverting valve**	
						Cooling	Heating	Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW		13.7	14.20	13.90	14.20
			Rated electrical power input	kW_{el}		3.00	2.99	3.32	3.09
			EER/COP			4.57	4.75	4.19	4.60
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW		13.30	14.20	13.30	14.20
			Rated electrical power input	kW_{el}		4.75	3.84	4.75	3.84
			EER/COP			2.80	3.70	2.80	3.70
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW		13		13	
			Seasonal energy efficiency η_s	%		185		179	
			Energy efficiency class			A+++		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW		13		13	
			Seasonal energy efficiency η_s	%		145		138	
			Energy efficiency class			A++		A++	
DHW	**DHW performance according to EN 16147**	With 300 liters tank and diverting valve AVERAGE climate	Load profile			XL		XL	
			Energy efficiency class			A		A	
			ERP efficiency	%		110		110	
Unit operation data			Maximum delivery water temperature	°C		Up to 65		Up to 65	
			Outdoor temperature range (heating)	°C		-25/+35		-25/+35	
			Outdoor temperature range (cooling)	°C		-15/+48		-15/+48	
			Nominal water flow rate	m^3/h	at 35 °C	2.44	at 35 °C	2.44	
					at 45 °C	2.42	at 45 °C	2.42	
					at 55 °C	2.32	at 55 °C	2.32	
					at 7 °C	1.64	at 7 °C	1.64	
					at 18 °C	2.36	at 18 °C	2.36	
			Minimum efficient water volume of the system	liters		80		80	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz		230/1/50		400/3/50	
			Maximum electricity consumption	A		30		12	
			Sound pressure level (cooling mode)	dB(A)		61		61	
			Sound pressure level (heating mode)	dB(A)		63		63	
Components and dimensions			Expansion vessel	liters		3		3	
			Maximum circulator pump head	kPa		(see H/Q graphs)		(see H/Q graphs)	
			Hydraulic connections	inches		G1"		G1"	
			Safety valve	bar		3		3	
			Weight	kg		138		144	
			Dimensions (H/W/D)	mm		878/1206/445		878/1206/445	
			Compressor type			Twin Rotary with vapour injection		Twin Rotary with vapour injection	
Refrigerant			Type and GWP			R32/675 kg CO_2eq		R32/675 kg CO_2eq	
			Quantity	kg		2.2		2.2	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

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CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP141PH)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	12.69	5.12	12.08	4.62	11.57	4.14	10.96	3.67	10.45	3.22	13.30	2.80	8.42	2.95	6.80	2.37	6.24	1.92
8	13.09	5.30	12.47	4.78	11.94	4.29	11.31	3.80	10.79	3.33	13.73	2.90	8.69	3.05	7.02	2.45	6.44	1.99
9	13.50	5.48	12.85	4.94	12.31	4.43	11.66	3.92	11.12	3.44	14.15	2.99	8.96	3.15	7.24	2.53	6.64	2.06
10	13.91	5.66	13.24	5.10	12.68	4.57	12.01	4.05	11.46	3.55	14.58	3.09	9.23	3.25	7.46	2.61	6.84	2.12
11	14.31	5.83	13.62	5.26	13.05	4.72	12.37	4.18	11.79	3.67	15.00	3.19	9.50	3.35	7.67	2.70	7.04	2.19
12	14.72	6.01	14.01	5.42	13.42	4.86	12.72	4.30	12.13	3.78	15.43	3.28	9.77	3.46	7.89	2.78	7.23	2.26
13	15.12	6.19	14.40	5.58	13.79	5.00	13.07	4.43	12.46	3.89	15.85	3.38	10.04	3.56	8.11	2.86	7.43	2.32
14	15.53	6.36	14.78	5.74	14.16	5.15	13.42	4.56	12.80	4.00	16.28	3.48	10.31	3.66	8.33	2.94	7.63	2.39
15	15.94	6.54	15.17	5.90	14.53	5.29	13.77	4.68	13.13	4.11	16.70	3.57	10.58	3.76	8.55	3.02	7.83	2.46
18	17.08	7.07	16.26	6.38	15.57	5.72	14.75	5.06	14.07	4.44	13.70	4.57	11.34	4.07	9.16	3.27	8.40	2.66
20	17.97	7.42	17.10	6.69	16.38	6.00	15.52	5.31	14.80	4.66	18.83	4.05	11.93	4.27	9.63	3.43	8.83	2.79
23	19.11	7.95	18.19	7.17	17.43	6.43	16.51	5.69	15.74	5.00	20.03	4.34	12.68	4.57	10.25	3.67	9.39	2.99
25	19.84	8.30	18.89	7.49	18.10	6.72	17.14	5.94	16.35	5.22	20.80	4.54	13.17	4.77	10.64	3.84	9.75	3.12

	HEATING - Dry bulb outdoor air temperature in °C																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	6.22	2.01	6.66	2.37	7.99	2.72	8.73	3.20	9.62	3.55	10.80	4.05	11.69	4.50	14.06	5.80	14.48	5.94	16.19	6.46	11.50	7.60	12.60	8.05	12.22	8.53	13.20	8.86
30	6.36	1.85	6.81	2.17	8.14	2.50	8.88	2.93	9.77	3.26	10.95	3.72	11.84	4.13	14.20	5.32	14.63	5.45	16.33	5.93	11.59	6.98	12.70	7.39	12.30	7.83	13.28	8.13
35	6.36	1.65	6.81	1.94	8.14	2.23	8.88	2.62	9.77	2.91	10.95	3.32	11.84	3.69	14.20	4.75	14.63	4.87	16.33	5.30	11.59	6.23	12.70	6.60	12.30	6.99	13.28	7.26
40	6.36	1.45	6.81	1.71	8.14	1.96	8.88	2.30	9.77	2.56	10.95	2.92	11.84	3.24	14.20	4.18	14.63	4.28	16.33	4.66	11.59	5.49	12.70	5.81	12.30	6.16	13.28	6.39
45	6.36	1.32	6.81	1.55	8.14	1.78	8.88	2.10	9.77	2.33	10.95	2.66	11.84	2.95	14.20	3.70	14.63	3.90	16.33	4.24	11.59	4.99	12.70	5.28	12.30	5.60	13.28	5.81
50			6.66	1.40	7.99	1.61	8.73	1.89	9.62	2.10	10.80	2.39	11.69	2.65	14.06	3.42	14.48	3.51	16.19	3.81	11.50	4.49	12.60	4.75	12.22	5.04	13.15	5.23
55					7.99	1.41	8.73	1.65	9.62	1.83	10.80	2.09	11.69	2.32	13.80	2.95	14.48	3.07	16.19	3.34	11.50	3.93	12.60	4.16	12.22	4.41	13.15	4.58
60									9.47	1.63	10.66	1.86	11.54	2.06	13.92	2.66	14.33	2.73	16.00	2.97	11.36	3.49	12.44	3.70	12.05	3.92	13.02	4.07
65															13.77	2.38	14.19	2.43	15.84	2.65	11.24	3.12						

	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP143PH)																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	6.22	1.93	6.66	2.27	7.99	2.61	8.73	3.06	9.62	3.40	10.80	3.89	11.69	4.31	14.06	5.61	14.48	5.75	16.19	6.26	11.50	7.30	12.60	7.73	12.22	8.18	13.20	8.50
30	6.36	1.77	6.81	2.08	8.14	2.40	8.88	2.81	9.77	3.12	10.95	3.57	11.84	3.96	14.20	5.15	14.63	5.28	16.33	5.74	11.59	6.70	12.70	7.10	12.30	7.51	13.28	7.80
35	6.36	1.58	6.81	1.86	8.14	2.14	8.88	2.51	9.77	2.79	10.95	3.19	11.84	3.53	14.20	4.60	14.63	4.72	16.33	5.13	11.59	5.98	12.70	6.34	12.30	6.71	13.28	6.96
40	6.36	1.39	6.81	1.64	8.14	1.88	8.88	2.21	9.77	2.46	10.95	2.80	11.84	3.11	14.20	4.05	14.63	4.15	16.33	4.51	11.59	5.27	12.70	5.58	12.30	5.90	13.28	6.13
45	6.36	1.26	6.81	1.49	8.14	1.71	8.88	2.01	9.77	2.23	10.95	2.55	11.84	2.83	14.20	3.70	14.63	3.77	16.33	4.10	11.59	4.79	12.70	5.07	12.30	5.37	13.28	5.57
50			6.66	1.34	7.99	1.54	8.73	1.81	9.62	2.01	10.80	2.29	11.69	2.54	14.06	3.31	14.48	3.39	16.19	3.69	11.50	4.31	12.60	4.56	12.22	4.83	13.15	5.01
55					7.99	1.35	8.73	1.58	9.62	1.76	10.80	2.01	11.69	2.23	13.80	2.85	14.48	2.97	16.19	3.23	11.50	3.77	12.60	3.99	12.22	4.23	13.15	4.39
60									9.47	1.56	10.66	1.78	11.54	1.98	13.92	2.58	14.33	2.64	16.00	2.87	11.36	3.35	12.44	3.55	12.05	3.76	13.02	3.90
65															13.77	2.30	14.19	2.36	15.84	2.56	11.24	2.99						

	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	12.69	5.12	12.08	4.62	11.57	4.14	10.96	3.67	10.45	3.22	13.30	2.80	8.42	2.80	6.80	2.25	6.24	1.83
8	13.09	5.30	12.47	4.78	11.94	4.29	11.31	3.80	10.79	3.33	13.73	2.90	8.69	2.89	7.02	2.33	6.44	1.89
9	13.50	5.48	12.85	4.94	12.31	4.43	11.66	3.92	11.12	3.44	14.15	2.99	8.96	2.99	7.24	2.41	6.64	1.96
10	13.91	5.66	13.24	5.10	12.68	4.57	12.01	4.05	11.46	3.55	14.58	3.09	9.23	3.09	7.46	2.49	6.84	2.02
11	14.31	5.83	13.62	5.26	13.05	4.72	12.37	4.18	11.79	3.67	15.00	3.19	9.50	3.18	7.67	2.56	7.04	2.08
12	14.72	6.01	14.01	5.42	13.42	4.86	12.72	4.30	12.13	3.78	15.43	3.28	9.77	3.28	7.89	2.64	7.23	2.15
13	15.12	6.19	14.40	5.58	13.79	5.00	13.07	4.43	12.46	3.89	15.85	3.38	10.04	3.38	8.11	2.72	7.43	2.21
14	15.53	6.36	14.78	5.74	14.16	5.15	13.42	4.56	12.80	4.00	16.28	3.48	10.31	3.47	8.33	2.80	7.63	2.27
15	15.94	6.54	15.17	5.90	14.53	5.29	13.77	4.68	13.13	4.11	16.70	3.57	10.58	3.57	8.55	2.88	7.83	2.34
18	17.08	7.07	16.26	6.38	15.57	5.72	14.75	5.06	14.07	4.44	13.90	4.19	11.34	3.86	9.16	3.11	8.40	2.53
20	17.97	7.42	17.10	6.69	16.38	6.00	15.52	5.31	14.80	4.66	18.83	4.05	11.93	4.05	9.63	3.26	8.83	2.65
23	19.11	7.95	18.19	7.17	17.43	6.43	16.51	5.69	15.74	5.00	20.03	4.34	12.68	4.34	10.25	3.50	9.39	2.84
25	19.84	8.30	18.89	7.49	18.10	6.72	17.14	5.94	16.35	5.22	20.80	4.54	13.17	4.53	10.64	3.65	9.75	2.97

LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

TECHNICAL DATA FOR 8-10-12-14-16 kW

Model						AG4HP161PH		AG4HP163PH	
Matchable units for domestic hot water production (DHW)						**200/300 liters external tank with diverting valve**		**200/300 liters external tank with diverting valve**	
						Cooling	Heating	Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW		15.50	15.70	15.40	15.70
			Rated electrical power input	kW_{el}		3.60	3.45	4.05	3.57
			EER/COP			4.31	4.55	3.80	4.40
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW		13.80	16.20	13.80	16.20
			Rated electrical power input	kW_{el}		5.09	4.49	5.09	4.49
			EER/COP			2.71	3.61	2.71	3.61
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW		14		13	
			Seasonal energy efficiency η_s	%		184		179	
			Energy efficiency class			A+++		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW		14		14	
			Seasonal energy efficiency η_s	%		144		138	
			Energy efficiency class			A++		A++	
DHW	**DHW performance according to EN 16147**	With 300 liters tank and diverting valve AVERAGE climate	Load profile			XL		XL	
			Energy efficiency class			A		A	
			ERP efficiency	%		110		110	
Unit operation data			Maximum delivery water temperature	°C		Up to 65		Up to 65	
			Outdoor temperature range (heating)	°C		-25/+35		-25/+35	
			Outdoor temperature range (cooling)	°C		-15/+48		-15/+48	
			Nominal water flow rate	m^3/h	at 35 °C	2.70	at 35 °C	2.70	
					at 45 °C	2.69	at 45 °C	2.69	
					at 55 °C	2.58	at 55 °C	2.58	
					at 7 °C	1.86	at 7 °C	1.86	
					at 18 °C	2.67	at 18 °C	2.67	
			Minimum efficient water volume of the system	liters		80		80	
			Power supply (Voltage/Phases/ Frequency)	V/Ph/Hz		230/1/50		400/3/50	
			Maximum electricity consumption	A		30		12.5	
			Sound pressure level (cooling mode)	dB(A)		61		61	
			Sound pressure level (heating mode)	dB(A)		63		63	
Components and dimensions			Expansion vessel	liters		3		3	
			Maximum circulator pump head	kPa		(see H/Q graphs)		(see H/Q graphs)	
			Hydraulic connections	inches		G1"		G1"	
			Safety valve	bar		3		3	
			Weight	kg		138		144	
			Dimensions (H/W/D)	mm		878/1206/445		878/1206/445	
			Compressor type			Twin Rotary with vapour injection		Twin Rotary with vapour injection	
Refrigerant			Type and GWP			R32/675 kg CO_2eq		R32/675 kg CO_2eq	
			Quantity	kg		2.2		2.2	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP161PH)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	13.49	4.96	12.84	4.47	12.30	4.01	11.65	3.55	11.11	3.12	13.80	2.71	9.02	2.95	7.14	2.37	6.55	1.92
8	13.92	5.13	13.25	4.63	12.69	4.15	12.03	3.67	11.47	3.23	14.24	2.80	9.30	3.05	7.37	2.45	6.75	1.99
9	14.35	5.30	13.66	4.78	13.09	4.29	12.40	3.80	11.82	3.33	14.68	2.90	9.59	3.15	7.60	2.53	6.96	2.06
10	14.78	5.48	14.07	4.94	13.48	4.43	12.77	3.92	12.18	3.44	15.12	2.99	9.88	3.25	7.83	2.61	7.17	2.12
11	15.21	5.65	14.48	5.09	13.88	4.57	13.14	4.04	12.54	3.55	15.57	3.09	10.17	3.35	8.05	2.70	7.38	2.19
12	15.65	5.82	14.89	5.25	14.27	4.70	13.52	4.16	12.89	3.66	16.01	3.18	10.46	3.46	8.28	2.78	7.59	2.26
13	16.08	5.99	15.31	5.40	14.66	4.84	13.89	4.29	13.25	3.76	16.45	3.27	10.75	3.56	8.51	2.86	7.80	2.32
14	16.51	6.16	15.72	5.55	15.06	4.98	14.26	4.41	13.60	3.87	16.89	3.37	11.04	3.66	8.74	2.94	8.01	2.39
15	16.94	6.33	16.13	5.71	15.45	5.12	14.64	4.53	13.96	3.98	17.33	3.46	11.32	3.76	8.97	3.02	8.22	2.46
18	18.15	6.84	17.28	6.17	16.56	5.53	15.69	4.90	14.96	4.30	15.50	4.31	12.14	4.07	9.61	3.27	8.81	2.66
20	19.10	7.18	18.18	6.47	17.42	5.81	16.50	5.14	15.74	4.51	19.54	3.92	12.77	4.27	10.11	3.43	9.27	2.79
23	20.31	7.69	19.34	6.94	18.52	6.22	17.55	5.51	16.74	4.84	20.78	4.20	13.58	4.57	10.75	3.67	9.86	2.99
25	21.09	8.04	20.08	7.25	19.24	6.50	18.23	5.75	17.38	5.05	21.58	4.39	14.10	4.77	11.17	3.84	10.24	3.12

	HEATING - Dry bulb outdoor air temperature in °C																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	6.64	2.00	7.11	2.35	8.53	2.70	9.32	3.18	10.27	3.53	11.53	4.03	12.48	4.47	15.54	5.55	16.01	5.69	17.90	6.19	11.75	7.53	12.88	7.98	13.11	8.42	14.17	8.74
30	6.79	1.84	7.27	2.16	8.69	2.48	9.48	2.92	10.43	3.24	11.69	3.70	12.64	4.10	15.70	5.10	16.17	5.22	18.06	5.68	11.84	6.91	12.97	7.32	13.20	7.73	14.26	8.03
35	6.79	1.64	7.27	1.93	8.69	2.22	9.48	2.60	10.43	2.89	11.69	3.30	12.64	3.66	15.70	4.55	16.17	4.66	18.06	5.07	11.84	6.17	12.97	6.54	13.20	6.90	14.26	7.17
40	6.79	1.44	7.27	1.70	8.69	1.95	9.48	2.29	10.43	2.54	11.69	2.91	12.64	3.22	15.70	4.00	16.17	4.10	18.06	4.46	11.84	5.43	12.97	5.75	13.20	6.08	14.26	6.31
45	6.79	1.31	7.27	1.54	8.69	1.77	9.48	2.08	10.43	2.31	11.69	2.64	12.64	2.93	16.20	3.61	16.17	3.73	18.06	4.06	11.84	4.94	12.97	5.23	13.20	5.52	14.26	5.73
50			7.11	1.39	8.53	1.60	9.32	1.87	10.27	2.08	11.53	2.38	12.48	2.64	15.54	3.28	16.01	3.36	17.90	3.65	11.75	4.45	12.88	4.71	13.11	4.97	14.11	5.16
55					8.53	1.40	9.32	1.64	10.27	1.82	11.53	2.08	12.48	2.31	15.40	2.90	16.01	2.94	17.90	3.20	11.75	3.89	12.88	4.12	13.11	4.35	14.11	4.52
60									10.11	1.62	11.38	1.85	12.32	2.05	15.39	2.55	15.85	2.61	17.69	2.84	11.61	3.46	12.71	3.66	12.94	3.87	13.97	4.01
65															15.23	2.28	15.69	2.33	17.51	2.54	11.49	3.09						

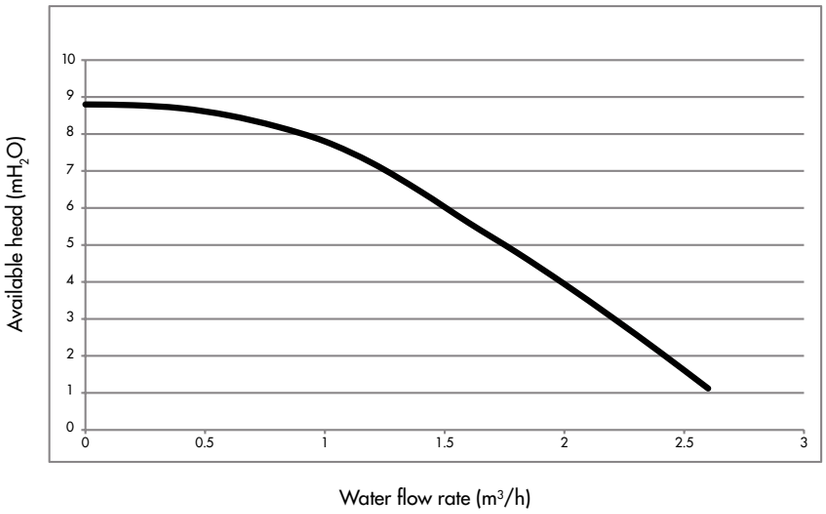
	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP163PH)																							
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	6.64	1.92	7.11	2.25	8.53	2.59	9.32	3.04	10.27	3.38	11.53	3.86	12.48	4.28	15.54	5.37	16.01	5.50	17.90	5.99	11.75	7.23	12.88	7.66	13.11	8.07	14.17	8.38
30	6.79	1.76	7.27	2.07	8.69	2.38	9.48	2.79	10.43	3.10	11.69	3.54	12.64	3.93	15.70	4.93	16.17	5.05	18.06	5.49	11.84	6.64	12.97	7.03	13.20	7.41	14.26	7.69
35	6.79	1.57	7.27	1.85	8.69	2.13	9.48	2.49	10.43	2.77	11.69	3.16	12.64	3.51	15.70	4.40	16.17	4.51	18.06	4.91	11.84	5.93	12.97	6.28	13.20	6.62	14.26	6.87
40	6.79	1.38	7.27	1.63	8.69	1.87	9.48	2.20	10.43	2.44	11.69	2.78	12.64	3.09	15.70	3.87	16.17	3.97	18.06	4.32	11.84	5.21	12.97	5.52	13.20	5.82	14.26	6.05
45	6.79	1.26	7.27	1.48	8.69	1.70	9.48	2.00	10.43	2.22	11.69	2.53	12.64	2.81	16.20	3.61	16.17	3.61	18.06	3.92	11.84	4.74	12.97	5.02	13.20	5.29	14.26	5.50
50			7.11	1.33	8.53	1.53	9.32	1.80	10.27	2.00	11.53	2.28	12.48	2.53	15.54	3.17	16.01	3.25	17.90	3.53	11.75	4.27	12.88	4.52	13.11	4.76	14.11	4.95
55					8.53	1.34	9.32	1.57	10.27	1.75	11.53	1.99	12.48	2.21	15.40	2.75	16.01	2.84	17.90	3.09	11.75	3.73	12.88	3.95	13.11	4.17	14.11	4.33
60									10.11	1.55	11.38	1.77	12.32	1.97	15.39	2.46	15.85	2.53	17.69	2.75	11.61	3.32	12.71	3.51	12.94	3.71	13.97	3.85
65															15.23	2.20	15.69	2.26	17.51	2.45	11.49	2.96						

	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	13.49	4.96	12.84	4.47	12.30	4.01	11.65	3.55	11.11	3.12	13.80	2.71	9.02	2.25	7.14	1.73	6.55	1.41
8	13.92	5.13	13.25	4.63	12.69	4.15	12.03	3.67	11.47	3.23	14.24	2.80	9.30	2.33	7.37	1.80	6.75	1.46
9	14.35	5.30	13.66	4.78	13.09	4.29	12.40	3.80	11.82	3.33	14.68	2.90	9.59	2.41	7.60	1.85	6.96	1.51
10	14.78	5.48	14.07	4.94	13.48	4.43	12.77	3.92	12.18	3.44	15.12	2.99	9.88	2.48	7.83	1.91	7.17	1.56
11	15.21	5.65	14.48	5.09	13.88	4.57	13.14	4.04	12.54	3.55	15.57	3.09	10.17	2.56	8.05	1.97	7.38	1.60
12	15.65	5.82	14.89	5.25	14.27	4.70	13.52	4.16	12.89	3.66	16.01	3.18	10.46	2.64	8.28	2.03	7.59	1.65
13	16.08	5.99	15.31	5.40	14.66	4.84	13.89	4.29	13.25	3.76	16.45	3.27	10.75	2.72	8.51	2.09	7.80	1.70
14	16.51	6.16	15.72	5.55	15.06	4.98	14.26	4.41	13.60	3.87	16.89	3.37	11.04	2.79	8.74	2.15	8.01	1.75
15	16.94	6.33	16.13	5.71	15.45	5.12	14.64	4.53	13.96	3.98	17.33	3.46	11.32	2.87	8.97	2.21	8.22	1.80
18	18.15	6.84	17.28	6.17	16.56	5.53	15.69	4.90	14.96	4.30	15.40	3.80	12.14	3.10	9.61	2.39	8.81	1.94
20	19.10	7.18	18.18	6.47	17.42	5.81	16.50	5.14	15.74	4.51	19.54	3.92	12.77	3.26	10.11	2.51	9.27	2.04
23	20.31	7.69	19.34	6.94	18.52	6.22	17.55	5.51	16.74	4.84	20.78	4.20	13.58	3.49	10.75	2.69	9.86	2.19
25	21.09	8.04	20.08	7.25	19.24	6.50	18.23	5.75	17.38	5.05	21.58	4.39	14.10	3.64	11.17	2.81	10.24	2.28

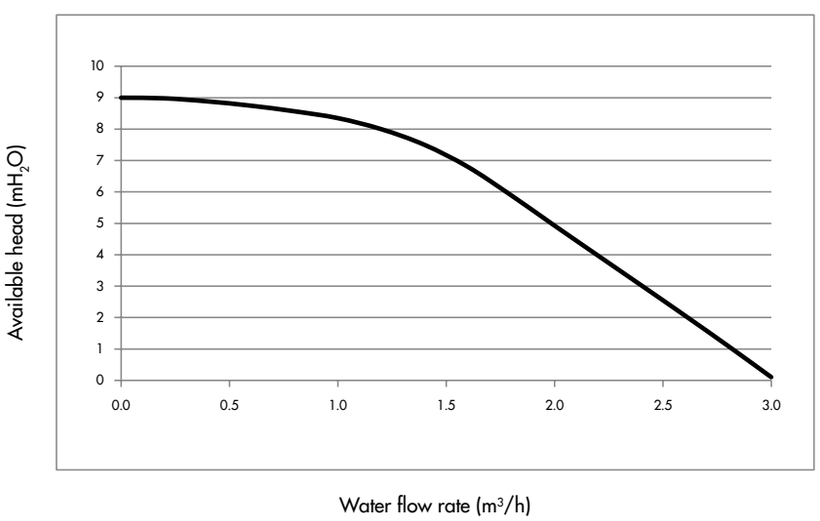
LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

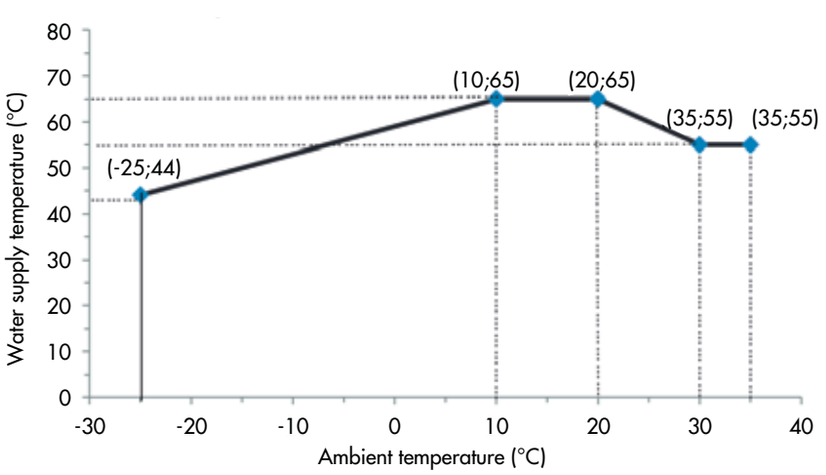
FLOW RATE CURVES FOR 8-10 kW



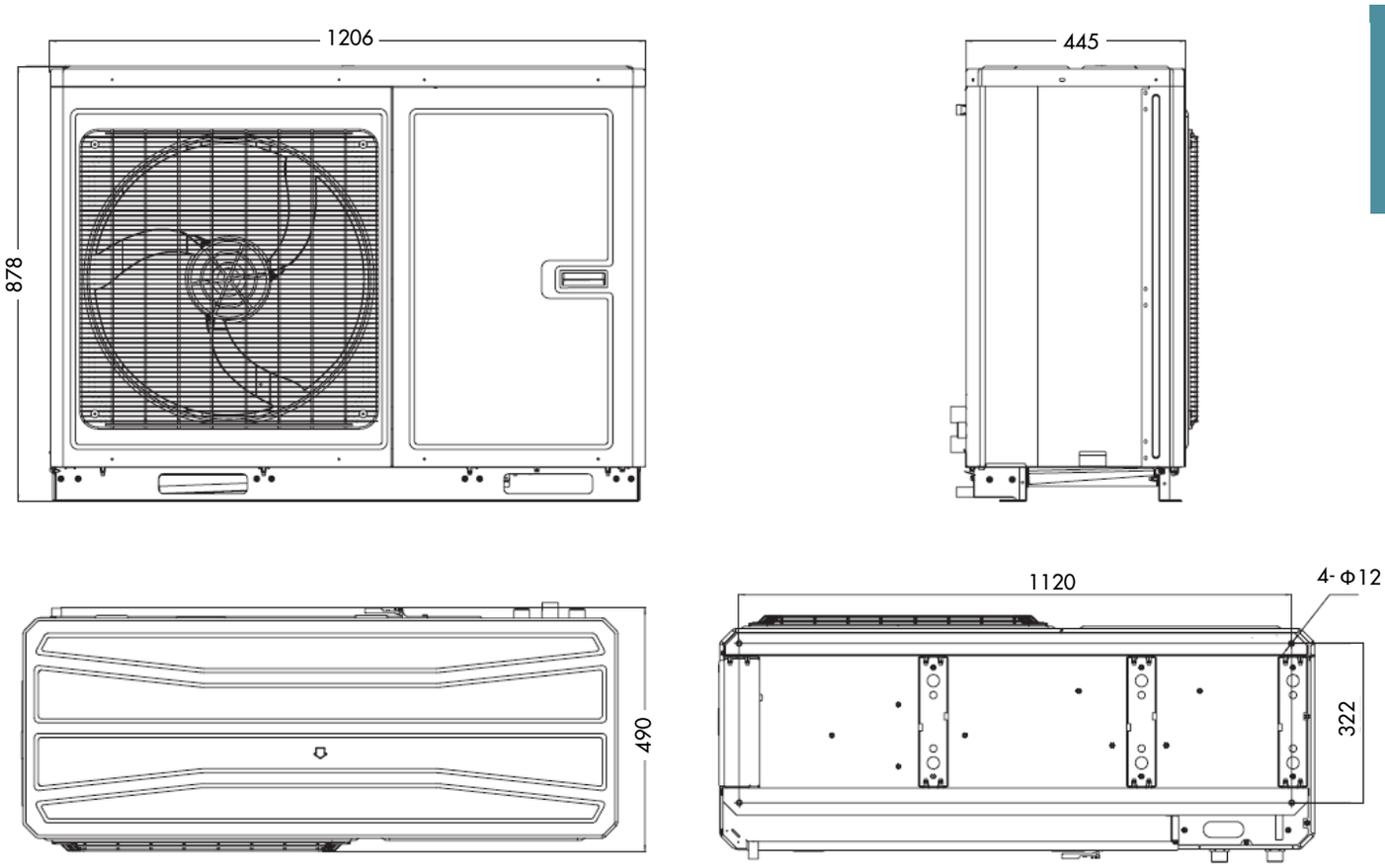
FLOW RATE CURVES FOR 12-14-16 kW



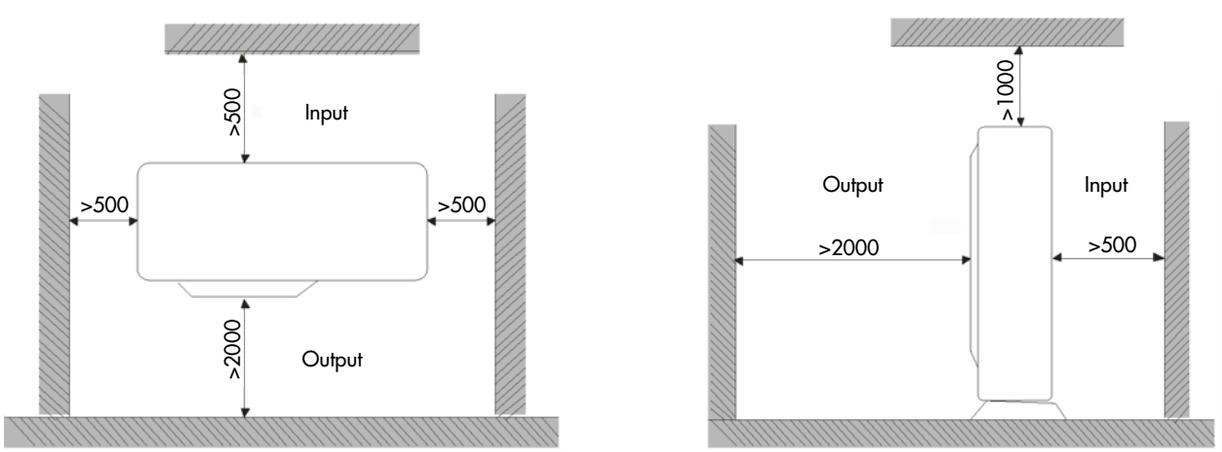
MAXIMUM TEMPERATURE IN HEATING 8-10-12-14-16 kW



DIMENSIONAL DRAWINGS 8-10-12-14-16 kW



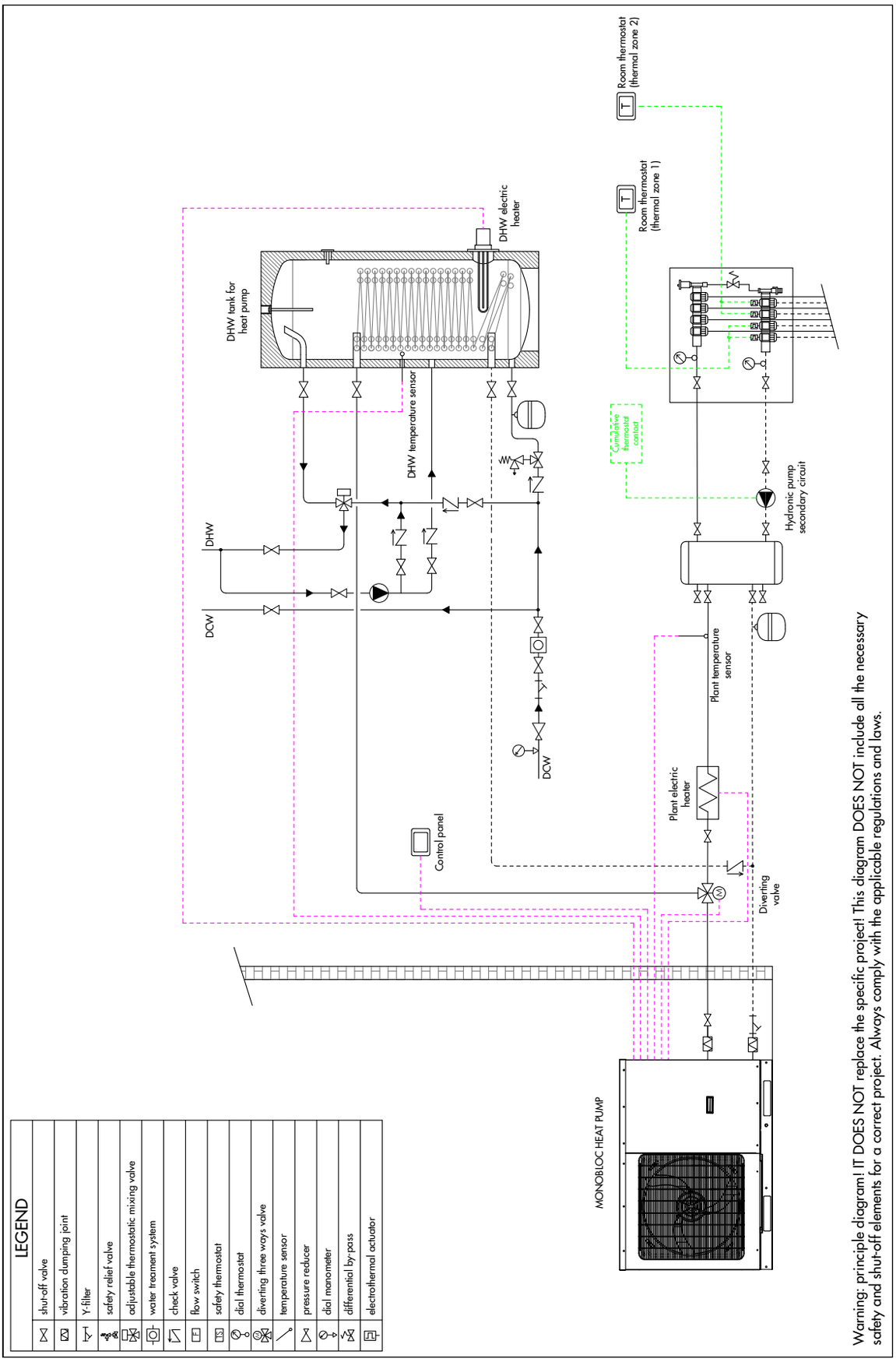
SPACE REQUIRED FOR INSTALLATION 8-10-12-14-16 kW



INSTALLATION EXAMPLES

EXAMPLE 1

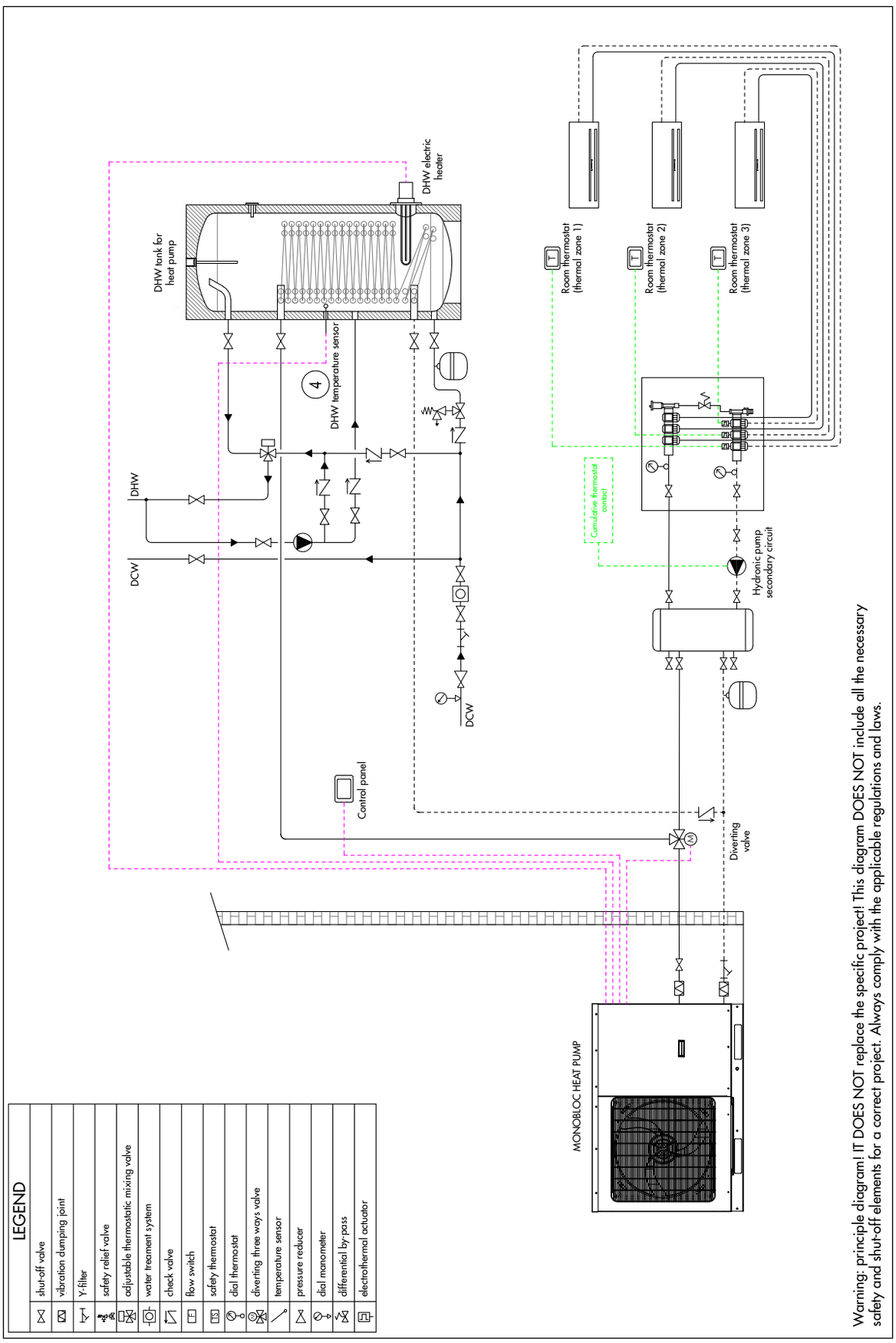
Radiant heating and DHW with three-way valve and tank



INSTALLATION EXAMPLES

EXAMPLE 2

Heating (cooling) with fan coil units and DHW with three-way valve and tank

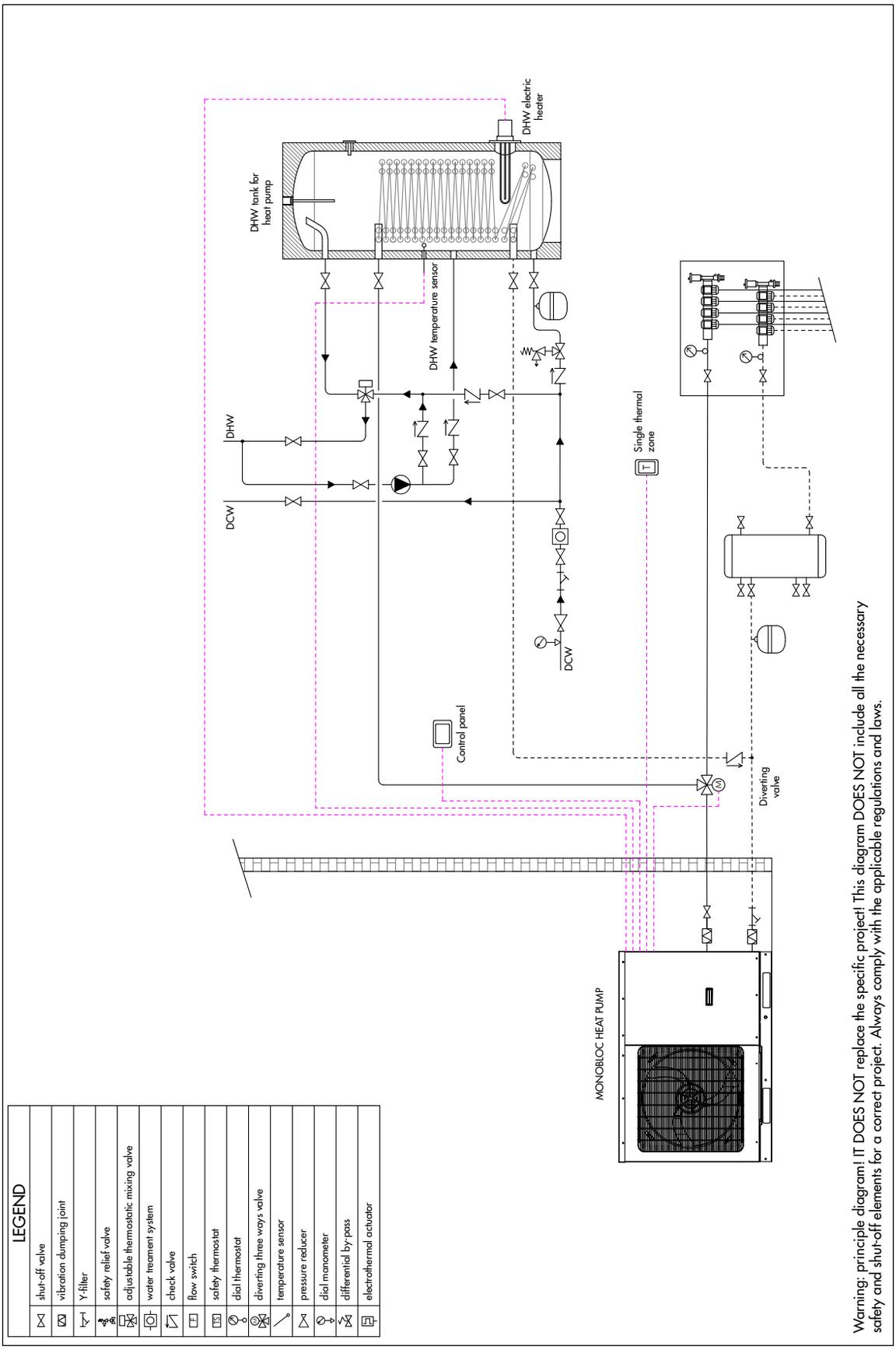


Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

INSTALLATION EXAMPLES

EXAMPLE 3

Radiant heating, single thermal zone and DHW with three-way valve and tank

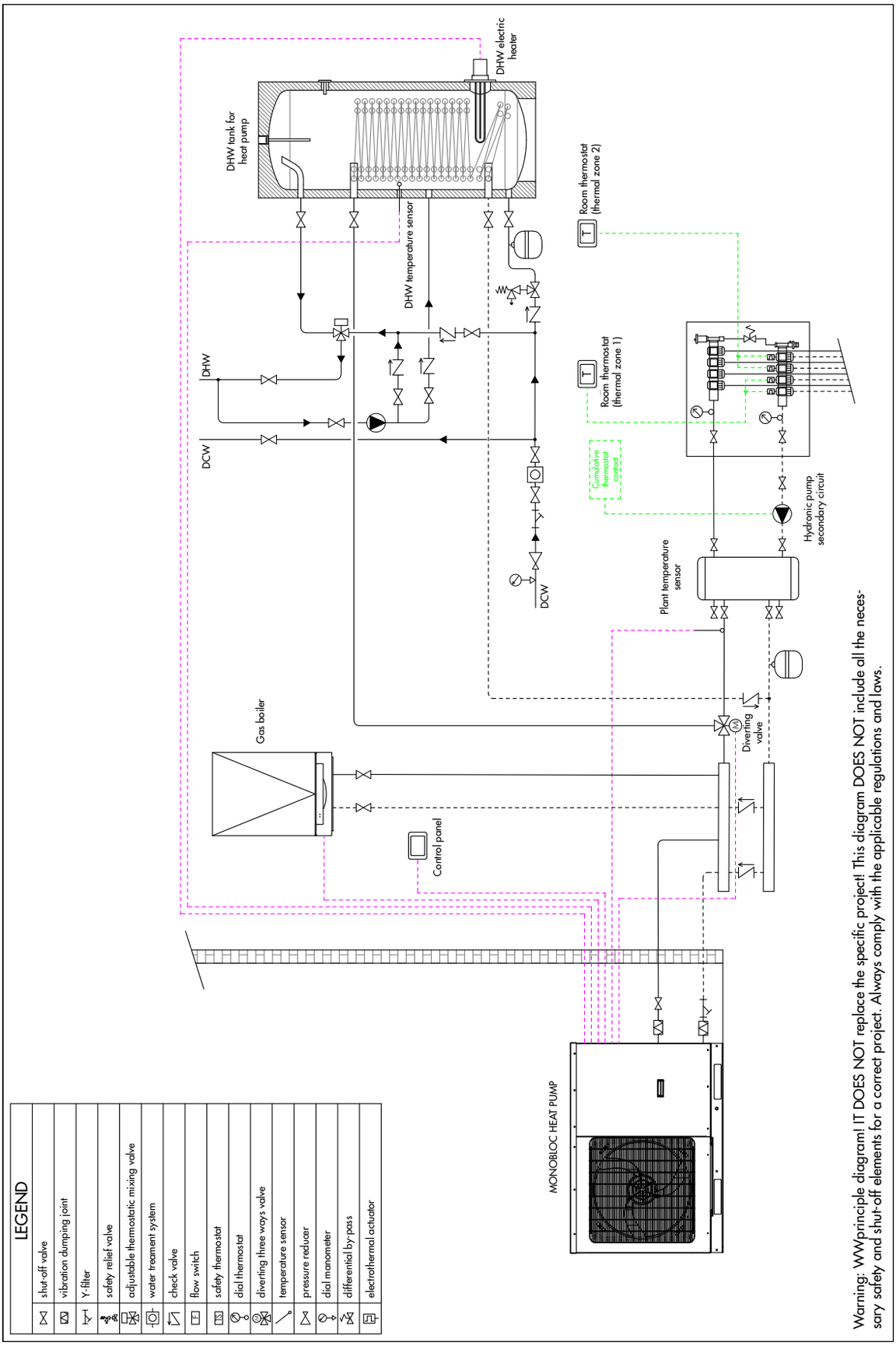


Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

INSTALLATION EXAMPLES

EXAMPLE 4

Radiant heating, integration with gas boiler and DHW with three-way valve and tank



Warning: WWprinciple diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

SPLIT

Single-phase 6-8-10 kW range

SPLIT HEAT PUMPS

MAIN FEATURES

(Standard on the indoor unit)

Touch-screen control panel installed on the indoor unit

- Split Air/Water heat pump with new-generation DC Inverter technology.
- Equipped with the heating, cooling and domestic hot water production functions.
- Single-phase version with 6-8-10 kW heating capacity.
- Achieves very high efficiency levels in heating mode, up to 5 COP.
- It uses R32, a refrigerant with low impact on global warming and ozone layer, characterised by high energy efficiency and a 30% lower charge compared to R410A.
- The vapour-injection compressor, thanks to its special technology, guarantees exceptional performances within a wide operating range.
- The leaving water temperature range is 20 °C-60 °C: this means that the heat pump can be used with radiant floor systems, fan coil units and also medium-temperature radiators.
- The DC brushless axial fans are designed to ensure aerodynamic optimisation: they guarantee low noise levels coupled with high efficiency and a high air flow rate.
- It is equipped with a heating element on the base to prevent ice build-up during winter operation.
- The outdoor unit is equipped with an electronic expansion valve, while the indoor unit contains all the hydraulic components: inverter pump, plate heat exchanger, expansion vessel, safety valve, flow switch and water filter supplied (installation mandatory).

Internal copper groove	Quiet mode	Weekly timer	Heating down to low temperatures	Door control	Full protection	Timer	Child lock	Wide operating range	Wide voltage range	Auto diagnosis	Low-voltage start-up	
Auto restart memory	Intelligent defrosting	°C / °F switching	Long-distance monitoring	Exch. condenser gold fin treatment	-25 °C Min. outdoor temp. heating	+35 °C Max. outdoor temp. heating	+10 °C Min. outdoor temp. cooling	+48 °C Max. outdoor temp. cooling	-25 °C Min. outdoor temp. DHW	+45 °C Max. outdoor temp. DHW	60 °C Max. output temp. DHW	

A+++ Heating mode 35 °C

A++ Heating mode 55 °C

A DHW

THE RANGE

		Model	Code	1PH	Rated capacity according to EN14511 (kW) Heating (1)	Cooling (2)
OUTDOOR UNIT - 1PH		AGHPSA061SH	398600012	●	6.0	5.8
		AGHPSA081SH	398600013	●	8.0	7.0
		AGHPSA101SH	398600014	●	9.5	8.5
HYDRONIC INDOOR UNIT		AGHPS061W	398600016	●	6.0	5.8
		AGHPS081W	398600017	●	8.0	7.0
		AGHPS101W	398600018	●	9.5	8.5

(1) Water temperature 30 °C/35 °C, outdoor air temperature 7 °C D.B./6 °C W.B.
(2) Water temperature 23 °C/18 °C, outdoor air temperature 35 °C

INCLUDED ACCESSORIES

Ambient air temperature sensor
DHW temperature sensor
Y-shaped filter
Control panel (integrated into the indoor unit)

TECHNICAL DATA FOR 6 kW

MODEL					AGHPSA061	
Outdoor unit model					AGHPSA061SH	
Hydronic indoor unit model					AGHPS061W	
Matchable units for domestic hot water production (DHW)					200/300 liters external tank with diverting valve	
					Cooling	Heating
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	5.80	6.00
			Rated electrical power input	kW_{el}	1.32	1.20
			EER/COP		4.39	5.00
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	4.09	5.90
			Rated electrical power input	kW_{el}	1.28	1.51
			EER/COP		3.20	3.91
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	6.00	
			Seasonal energy efficiency η_s	%	178.7	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	5.00	
			Seasonal energy efficiency η_s	%	127.4	
			Energy efficiency class		A++	
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL	
			Energy efficiency class		A	
			Water heating efficiency - ERP η_{wh}	%	107.5	
Indoor unit			Nominal water flow rate	m^3/h	at 35 °C	1.03
					at 45 °C	1.02
					at 7 °C	0.70
					at 18 °C	1.00
			Minimum efficient water volume of the system	liters	40	
			Maximum delivery water temperature	°C	Up to 60	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	220-240/1/50	
			Electrical power input	kW	3.10	
			Heating element	nxkW	2x1.5	
			Expansion vessel	liters	10	
			Maximum circulator pump head	kPa	see H/Q graph	
			Hydraulic connections	inches	G1" female	
			Safety valve	bar	3	
			Indoor unit sound pressure	dB(A)	29	29
			Net weight	kg	62	
			Dimensions (H/W/D)	mm	860/460/318	
Outdoor unit			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	+10/+48	
			Electrical power supply	V/Ph/Hz	220-240~/1/50	
			Maximum power input (cooling)	kW	2.30	
			Maximum power input (heating)	kW	2.30	
			Maximum current draw (cooling)	A	10	
			Maximum current draw (heating)	A	10	
			Liquid cooling pipe diameter	mm (inches)	6.35 (1/4)	
			Gas cooling pipe diameter	mm (inches)	12.7 (1/2)	
			Outdoor unit sound pressure	dB(A)	52	52
			Fan air flow rate	m^3/h	3200	
			Net weight	kg	55	
			Dimensions (H/W/D)	mm	702/975/396	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2 eq.	
			Quantity		1 kg/0.675 tons CO_2 eq.	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2013 STANDARD

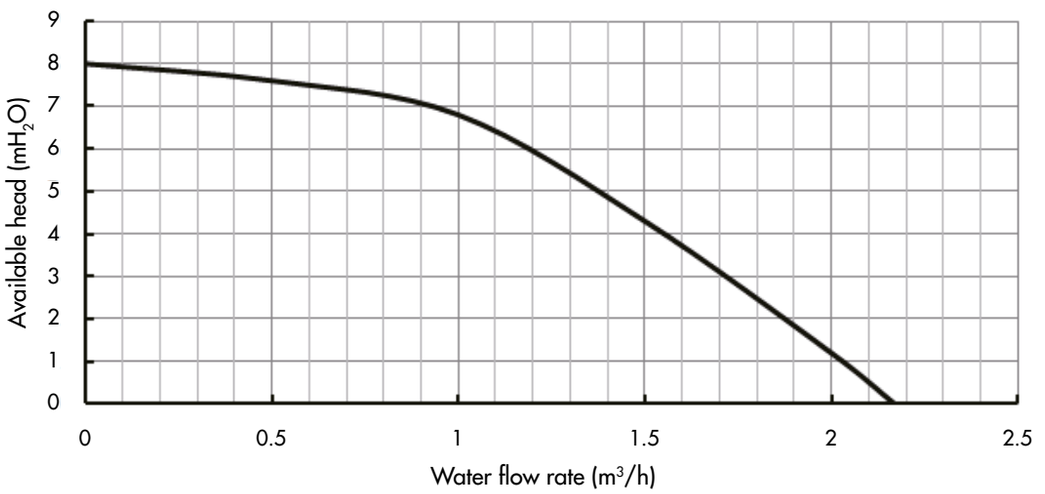
	COOLING - Dry bulb outdoor air temperature in °C - (AGHPSA061)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	3.35	4.35	3.72	4.19	3.93	4.06	4.17	3.87	4.25	3.55	4.09	3.20	3.72	2.65	2.90	1.95	2.45	1.57
8	3.48	4.47	3.89	4.31	4.09	4.19	4.34	3.99	4.42	3.64	4.25	3.29	3.89	2.75	3.03	2.01	2.54	1.63
9	3.64	4.67	4.01	4.47	4.21	4.35	4.46	4.12	4.54	3.80	4.38	3.42	4.01	2.84	3.15	2.08	2.66	1.66
10	3.72	4.79	4.13	4.60	4.38	4.47	4.62	4.25	4.70	3.90	4.54	3.51	4.13	2.91	3.23	2.17	2.74	1.73
11	3.84	4.92	4.29	4.76	4.50	4.60	4.79	4.41	4.91	4.06	4.70	3.64	4.29	3.00	3.31	2.20	2.82	1.76
12	3.97	5.08	4.42	4.92	4.66	4.76	4.95	4.54	5.07	4.15	4.87	3.74	4.42	3.10	3.44	2.30	2.90	1.85
13	4.13	5.24	4.58	5.05	4.79	4.89	5.11	4.67	5.19	4.28	4.99	3.87	4.58	3.20	3.56	2.33	2.99	1.89
14	4.25	5.40	4.66	5.21	4.95	5.05	5.28	4.79	5.36	4.41	5.15	3.96	4.66	3.29	3.68	2.43	3.07	1.95
15	4.34	5.53	4.83	5.34	5.11	5.18	5.44	4.92	5.52	4.51	5.32	4.09	4.83	3.39	3.76	2.49	3.19	1.98
18	4.74	5.98	5.24	5.75	5.52	5.59	5.89	5.34	6.01	4.89	5.77	4.41	5.24	3.64	4.09	2.68	3.48	2.17
20	4.95	6.29	5.52	6.07	5.85	5.88	6.18	5.59	6.30	5.14	6.05	4.63	5.52	3.83	4.34	2.84	3.64	2.27
23	5.36	6.74	5.93	6.49	6.26	6.33	6.67	6.01	6.79	5.50	6.54	4.95	5.93	4.12	4.62	3.00	3.93	2.43
25	5.60	7.03	6.22	6.77	6.54	6.58	6.95	6.29	7.12	5.75	6.83	5.18	6.22	4.31	4.87	3.16	4.09	2.56

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	2.94	4.34	3.12	4.57	3.72	4.88	4.26	5.08	5.16	5.39	5.76	5.63	6.36	5.86	6.24	6.10	6.42	6.37	6.78	6.95	6.72	7.38	6.12	7.31	5.34	7.97	4.20	8.44
30	2.70	3.52	3.06	3.79	3.60	4.06	4.14	4.30	4.74	4.53	5.22	4.77	5.82	5.00	6.18	5.55	6.36	5.90	6.72	6.29	6.66	6.72	6.06	6.72	5.34	7.27	4.14	7.78
35	2.52	2.97	2.88	3.13	3.36	3.32	3.90	3.59	4.26	3.83	4.80	4.06	5.22	4.18	6.00	5.00	6.30	5.27	6.66	5.74	6.60	5.98	6.00	5.98	5.28	6.64	4.08	7.03
40	2.46	2.54	2.88	2.81	3.36	3.05	3.90	3.24	4.26	3.40	4.74	3.67	5.16	3.91	6.00	4.45	6.24	4.69	6.60	5.08	6.54	5.35	5.94	5.31	5.22	5.86	4.08	6.25
45			2.88	2.46	3.36	2.70	3.90	2.93	4.20	3.05	4.68	3.24	5.10	3.44	6.00	3.91	6.18	4.10	6.54	4.45	6.48	4.69	5.88	4.92	5.16	5.16	4.02	5.47
50					3.24	2.27	3.78	2.46	4.14	2.58	4.62	2.77	5.04	2.85	5.94	3.36	6.12	3.52	6.48	3.87	6.42	4.02	5.82	4.22	5.10	4.42	3.96	4.73
55							3.60	2.03	4.14	2.11	4.56	2.31	4.98	2.42	5.88	2.81	6.06	2.97	6.42	3.20	6.36	3.40	5.76	3.52	5.04	3.71	3.96	3.99
60									4.08	1.72	4.56	1.80	4.92	1.91	5.82	2.27	6.00	2.34	6.36	2.50	6.30	2.62	5.70	2.77	4.98	2.89	3.90	3.09

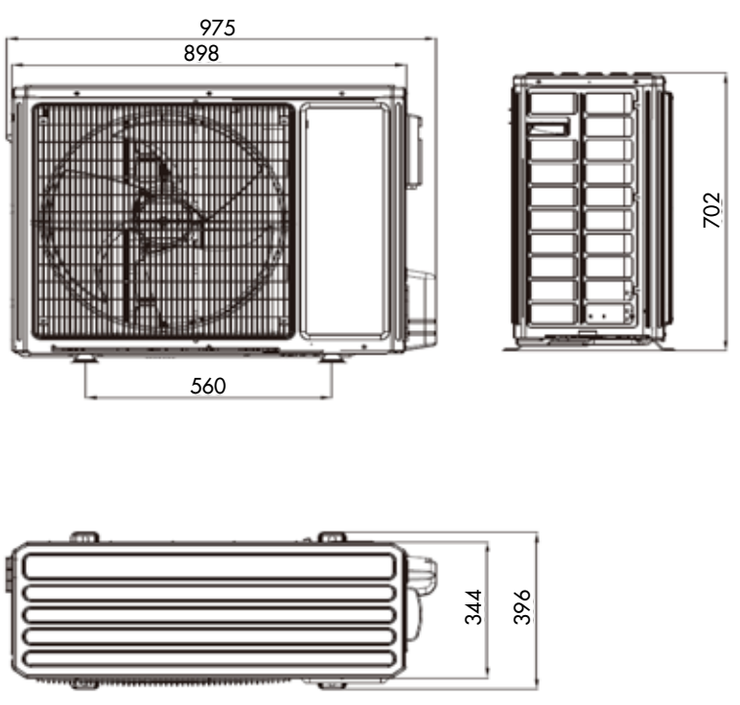
LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

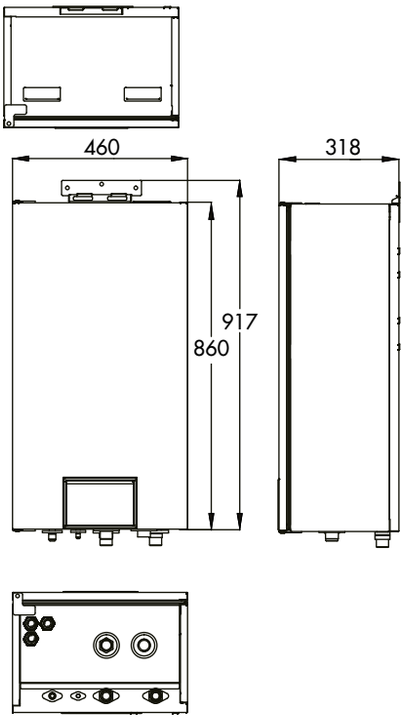
FLOW RATE CURVES FOR 6 kW



DIMENSIONAL DRAWINGS 6 kW

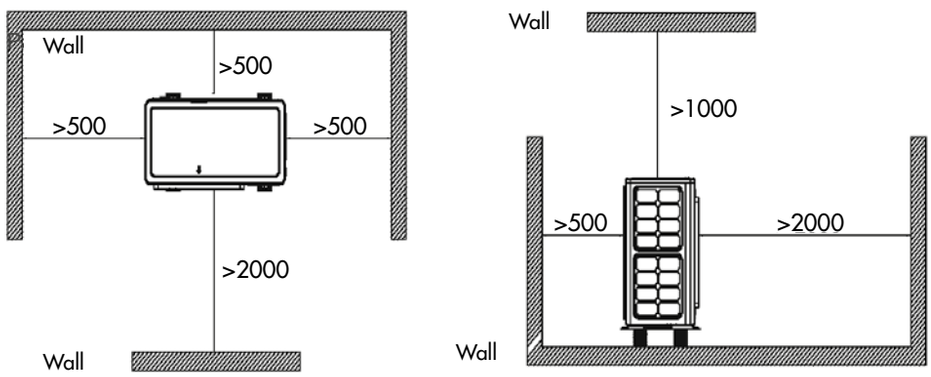


OUTDOOR UNIT 6 kW

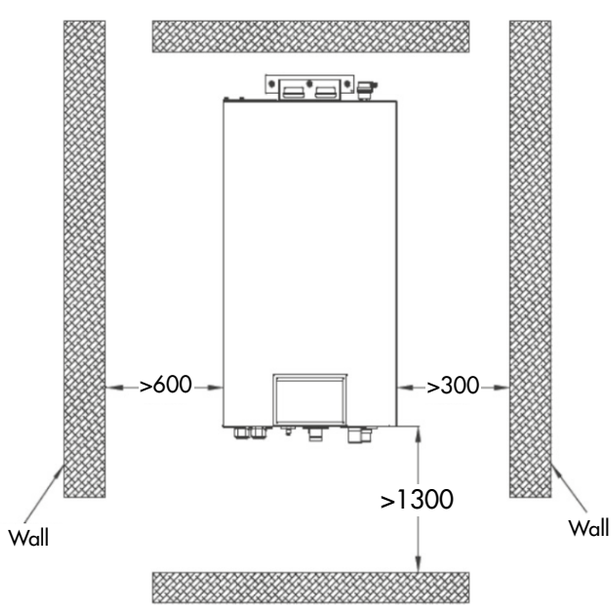


INDOOR UNIT 6 kW

SPACE REQUIRED FOR OUTDOOR UNIT INSTALLATION 6 kW



SPACE REQUIRED FOR INDOOR UNIT INSTALLATION 6 kW



TECHNICAL DATA FOR 8 kW

MODEL					AGHPSA081	
Outdoor unit model					AGHPSA081SH	
Hydronic indoor unit model					AGHPS081W	
Matchable units for domestic hot water production (DHW)					200/300 liters external tank with diverting valve	
					Cooling	Heating
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	7.00	8.00
			Rated electrical power input	kW_{el}	1.75	1.70
			EER/COP		4.00	4.71
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	5.30	8.00
			Rated electrical power input	kW_{el}	1.73	2.14
			EER/COP		3.06	3.74
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	7.00	
			Seasonal energy efficiency η_s	%	181	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	7.00	
			Seasonal energy efficiency η_s	%	129	
			Energy efficiency class		A++	
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL	
			Energy efficiency class		A	
			Water heating efficiency - ERP η_{wh}	%	111	
Indoor unit			Nominal water flow rate	m^3/h	at 35 °C	1.38
					at 45 °C	1.38
					at 7 °C	0.91
					at 18 °C	1.20
			Minimum efficient water volume of the system	liters	40	
			Maximum delivery water temperature	°C	Up to 60	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	220-240/1/50	
			Electrical power input	kW	3.10	
			Heating element	nxkW	2x3	
			Expansion vessel	liters	10	
			Maximum circulator pump head	kPa	see H/Q graph	
			Hydraulic connections	inches	G1" female	
			Safety valve	bar	3	
			Indoor unit sound pressure	dB(A)	29	29
			Net weight	kg	62	
			Dimensions (H/W/D)	mm	860/460/318	
Outdoor unit			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	+10/+48	
			Electrical power supply	V/Ph/Hz	220-240~/1/50	
			Maximum power input (cooling)	kW	4.32	
			Maximum power input (heating)	kW	3.00	
			Maximum current draw (cooling)	A	19	
			Maximum current draw (heating)	A	13	
			Liquid cooling pipe diameter	mm (inches)	6.35 (1/4)	
			Gas cooling pipe diameter	mm (inches)	12.7 (1/2)	
			Outdoor unit sound pressure	dB(A)	55	55
			Fan air flow rate	m^3/h	3300	
			Net weight	kg	82	
			Dimensions (H/W/D)	mm	787/982/427	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2 eq.	
			Quantity		1.6 kg/1.08 tons CO_2 eq.	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2013 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AGHPSA081)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	4.35	4.17	4.82	4.01	5.09	3.89	5.41	3.71	5.51	3.40	5.30	3.06	4.82	2.54	3.76	1.87	3.18	1.50
8	4.51	4.26	4.98	4.11	5.25	4.01	5.57	3.80	6.04	3.49	5.46	3.16	4.98	2.60	3.87	1.90	3.29	1.53
9	4.56	4.41	5.09	4.23	5.35	4.11	5.72	3.92	6.20	3.58	5.62	3.25	5.09	2.70	3.98	1.96	3.34	1.56
10	4.72	4.50	5.25	4.35	5.51	4.23	5.88	4.01	6.36	3.68	5.78	3.31	5.25	2.76	4.08	1.99	3.45	1.62
11	4.88	4.63	5.41	4.47	5.72	4.35	6.04	4.14	6.57	3.80	5.94	3.40	5.41	2.85	4.19	2.08	3.55	1.68
12	4.98	4.75	5.57	4.56	5.88	4.44	6.25	4.20	6.73	3.89	6.10	3.49	5.57	2.91	4.35	2.14	3.66	1.72
13	5.09	4.87	5.67	4.72	5.99	4.56	6.31	4.35	6.89	3.98	6.20	3.58	5.67	3.00	4.40	2.18	3.71	1.75
14	5.25	4.99	5.83	4.81	6.10	4.66	6.47	4.44	7.05	4.07	6.36	3.68	5.83	3.06	4.51	2.24	3.82	1.78
15	5.35	5.15	5.99	4.93	6.25	4.78	6.68	4.53	7.21	4.17	6.52	3.77	5.99	3.12	4.66	2.30	3.92	1.84
18	5.78	5.45	6.36	5.27	6.73	5.12	7.16	4.84	7.69	4.44	7.00	4.01	6.36	3.31	4.98	2.45	4.24	1.96
20	5.99	5.70	6.63	5.48	7.00	5.33	7.42	5.09	8.06	4.66	7.31	4.20	6.63	3.46	5.14	2.54	4.40	2.05
23	6.41	6.04	7.10	5.79	7.47	5.64	7.90	5.39	8.53	4.93	7.79	4.44	7.10	3.68	5.51	2.73	4.66	2.18
25	6.63	6.28	7.37	6.07	7.79	5.85	8.22	5.58	8.85	5.12	8.06	4.63	7.37	3.83	5.72	2.82	4.82	2.27

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	3.44	4.04	4.16	4.26	4.96	4.56	5.68	4.75	6.08	5.05	6.80	5.27	7.52	5.46	7.36	5.72	7.60	5.94	8.00	6.50	7.92	6.88	7.20	6.84	6.32	7.44	4.96	7.89
30	3.36	3.29	4.08	3.59	4.80	3.81	5.52	4.04	5.92	4.26	6.56	4.49	7.28	4.71	7.76	5.23	8.00	5.53	8.48	5.94	8.40	6.32	7.60	6.32	6.64	6.84	5.20	7.29
35	3.28	2.77	3.84	2.92	4.48	3.10	5.20	3.40	5.60	3.59	6.24	3.81	6.80	3.93	8.00	4.71	8.24	4.97	8.72	5.38	8.64	5.61	7.84	5.61	6.88	6.24	5.36	6.62
40	3.28	2.39	3.84	2.65	4.48	2.92	5.20	3.10	5.60	3.25	6.24	3.51	6.80	3.70	8.00	4.22	8.24	4.45	8.72	4.86	8.64	5.08	7.84	5.05	6.88	5.57	5.36	5.94
45			3.84	2.36	4.48	2.58	5.20	2.80	5.60	2.92	6.24	3.10	6.80	3.29	8.00	3.74	8.24	3.93	8.72	4.26	8.64	4.49	7.84	4.71	6.88	4.93	5.36	5.23
50					4.32	2.21	5.04	2.39	5.44	2.50	6.08	2.69	6.56	2.77	7.76	3.25	8.00	3.40	8.48	3.74	8.40	3.93	7.60	4.11	6.64	4.30	5.20	4.60
55							4.80	1.98	5.12	2.09	5.76	2.28	6.24	2.39	7.36	2.77	7.60	2.92	8.00	3.18	7.92	3.33	7.20	3.48	6.32	3.66	4.96	3.93
60									4.88	1.72	5.44	1.79	5.92	1.91	6.96	2.28	7.20	2.32	7.60	2.50	7.52	2.62	6.80	2.77	6.00	2.88	4.64	3.10

LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

TECHNICAL DATA FOR 10 kW

MODEL					AGHPSA101	
Outdoor unit model					AGHPSA101SH	
Hydronic indoor unit model					AGHPS101W	
Matchable units for domestic hot water production (DHW)					200/300 liters external tank with diverting valve	
					Cooling	Heating
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	8.50	9.50
			Rated electrical power input	kW_{el}	2.24	2.07
			EER/COP		3.79	4.59
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	6.50	9.50
			Rated electrical power input	kW_{el}	2.27	2.64
			EER/COP		2.86	3.60
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	9.00	
			Seasonal energy efficiency η_s	%	181	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	8.00	
			Seasonal energy efficiency η_s	%	127	
			Energy efficiency class		A++	
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL	
			Energy efficiency class		A	
			Water heating efficiency - ERP η_{wh}	%	111	
Indoor unit			Nominal water flow rate	m^3/h	at 35 °C	1.63
					at 45 °C	1.63
					at 7 °C	1.12
					at 18 °C	1.46
			Minimum efficient water volume of the system	liters	80	
			Maximum delivery water temperature	°C	Up to 60	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	220-240/1/50	
			Electrical power input	kW	3.10	
			Heating element	nxkW	2x3	
			Expansion vessel	liters	10	
			Maximum circulator pump head	kPa	see H/Q graph	
			Hydraulic connections	inches	G1" female	
			Safety valve	bar	3	
			Indoor unit sound pressure	dB(A)	29	29
			Net weight	kg	62	
			Dimensions (H/W/D)	mm	860/460/318	
Outdoor unit			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	+10/+48	
			Electrical power supply	V/Ph/Hz	220-240~/1/50	
			Maximum power input (cooling)	kW	5.06	
			Maximum power input (heating)	kW	3.40	
			Maximum current draw (cooling)	A	22	
			Maximum current draw (heating)	A	15	
			Liquid cooling pipe diameter	mm (inches)	6.35 (1/4)	
			Gas cooling pipe diameter	mm (inches)	12.7 (1/2)	
			Outdoor unit sound pressure	dB(A)	55	55
			Fan air flow rate	m^3/h	3300	
			Net weight	kg	82	
			Dimensions (H/W/D)	mm	787/982/427	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2 eq.	
			Quantity		1.6 kg/1.08 tons CO_2 eq.	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

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CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2013 STANDARD

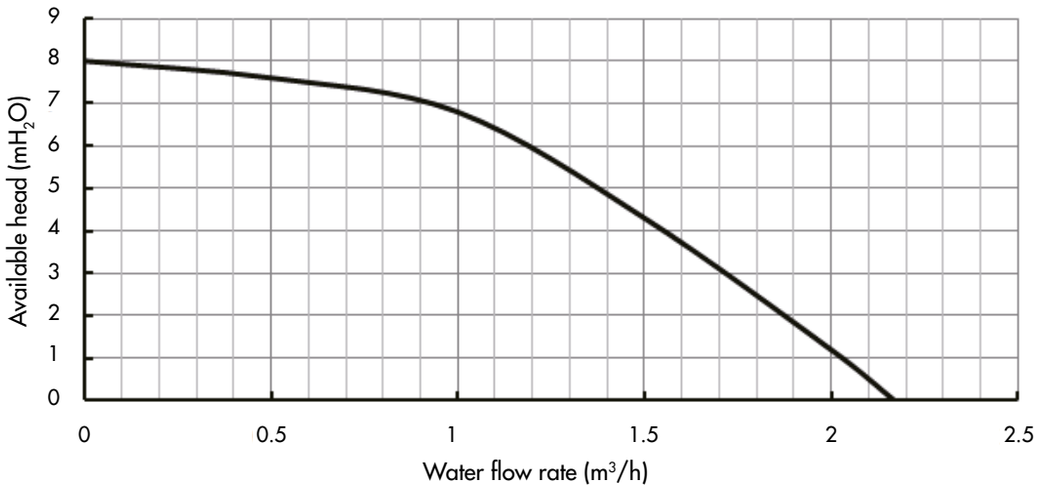
	COOLING - Dry bulb outdoor air temperature in °C - (AGHPSA101)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	5.33	3.89	5.92	3.75	6.24	3.64	6.63	3.46	6.76	3.18	6.50	2.86	5.92	2.38	4.62	1.75	3.90	1.40
8	5.46	4.01	6.11	3.87	6.44	3.75	6.83	3.58	6.96	3.26	6.70	2.95	6.11	2.43	4.75	1.78	4.03	1.46
9	5.66	4.15	6.24	4.01	6.57	3.87	7.02	3.69	7.15	3.38	6.89	3.04	6.24	2.52	4.94	1.86	4.10	1.52
10	5.79	4.24	6.37	4.09	6.70	3.95	7.22	3.81	7.35	3.46	7.02	3.12	6.37	2.58	5.01	1.92	4.23	1.52
11	5.92	4.35	6.57	4.21	6.96	4.07	7.35	3.87	7.54	3.58	7.22	3.21	6.57	2.66	5.07	1.95	4.36	1.57
12	6.11	4.47	6.70	4.30	7.15	4.18	7.54	3.98	7.67	3.67	7.41	3.29	6.70	2.72	5.27	2.00	4.49	1.60
13	6.24	4.61	6.89	4.44	7.35	4.30	7.74	4.09	7.87	3.78	7.61	3.38	6.89	2.83	5.40	2.09	4.55	1.66
14	6.44	4.70	7.15	4.52	7.48	4.41	7.93	4.21	8.13	3.84	7.80	3.46	7.15	2.89	5.53	2.12	4.68	1.72
15	6.57	4.84	7.28	4.64	7.67	4.50	8.19	4.30	8.32	3.92	8.00	3.55	7.28	2.95	5.72	2.15	4.81	1.75
18	7.02	5.18	7.74	5.01	8.13	4.84	8.65	4.61	8.91	4.24	8.52	3.81	7.74	3.15	6.05	2.32	5.14	1.86
20	7.35	5.44	8.13	5.21	8.58	5.10	9.10	4.84	9.30	4.44	8.91	3.98	8.13	3.32	6.31	2.43	5.33	1.98
23	7.74	5.76	8.58	5.53	9.04	5.38	9.62	5.13	9.82	4.70	9.43	4.24	8.58	3.49	6.63	2.58	5.66	2.06
25	8.00	5.98	8.91	5.78	9.36	5.58	10.01	5.33	10.21	4.90	9.82	4.41	8.91	3.67	6.96	2.69	0.00	2.18

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	4.09	3.99	4.94	4.21	5.89	4.50	6.75	4.68	7.22	4.97	8.08	5.18	8.93	5.40	8.74	5.61	9.03	5.87	9.50	6.41	9.41	6.80	8.55	6.73	7.51	7.34	5.89	7.77
30	3.99	3.24	4.85	3.49	5.70	3.74	6.56	3.96	7.03	4.17	7.79	4.39	8.65	4.61	9.22	5.11	9.50	5.43	10.07	5.79	9.98	6.19	9.03	6.19	7.89	6.69	6.18	7.16
35	3.90	2.73	4.56	2.88	5.32	3.06	6.18	3.31	6.65	3.53	7.41	3.74	8.08	3.85	9.50	4.61	9.79	4.86	10.36	5.29	10.26	5.51	9.31	5.51	8.17	6.12	6.37	6.48
40	3.90	2.34	4.56	2.59	5.32	2.81	6.18	2.99	6.65	3.13	7.41	3.38	8.08	3.60	9.50	4.10	9.79	4.32	10.36	4.68	10.26	4.93	9.31	4.89	8.17	5.40	6.37	5.76
45			4.56	2.27	5.32	2.48	6.18	2.70	6.65	2.81	7.41	2.99	8.08	3.17	9.50	3.60	9.79	3.78	10.36	4.10	10.26	4.32	9.31	4.53	8.17	4.75	6.37	5.04
50					5.13	2.09	5.99	2.27	6.46	2.38	7.22	2.55	7.79	2.63	9.22	3.09	9.50	3.24	10.07	3.56	9.98	3.71	9.03	3.89	7.89	4.07	6.18	4.35
55							5.70	1.87	6.08	1.94	6.84	2.12	7.41	2.23	8.74	2.59	9.03	2.73	9.50	2.95	9.41	3.13	8.55	3.24	7.51	3.42	5.89	3.67
60									5.80	1.58	6.46	1.66	7.03	1.76	8.27	2.09	8.55	2.16	9.03	2.30	8.93	2.41	8.08	2.55	7.13	2.66	5.51	2.84

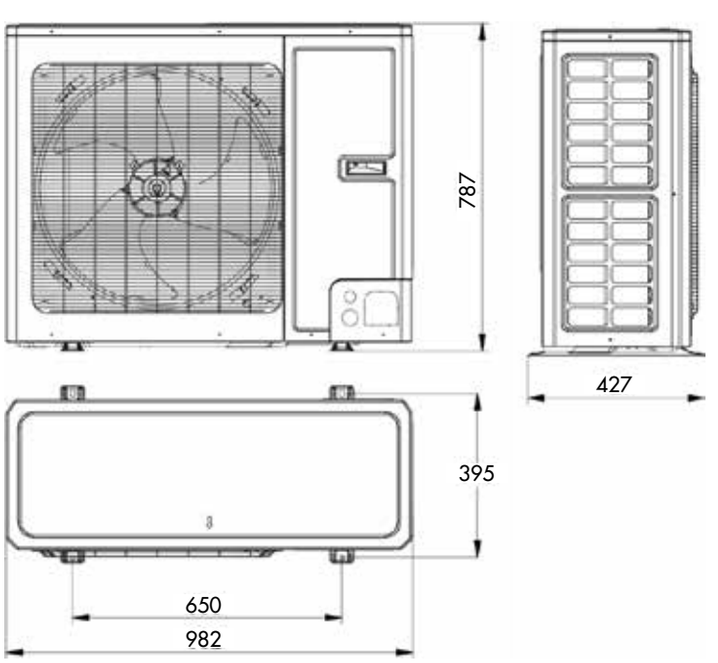
LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

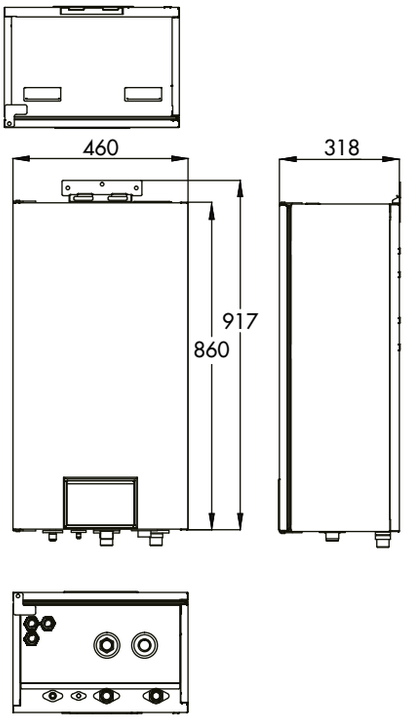
FLOW RATE CURVES 8-10 kW



DIMENSIONAL DRAWINGS 8-10 kW

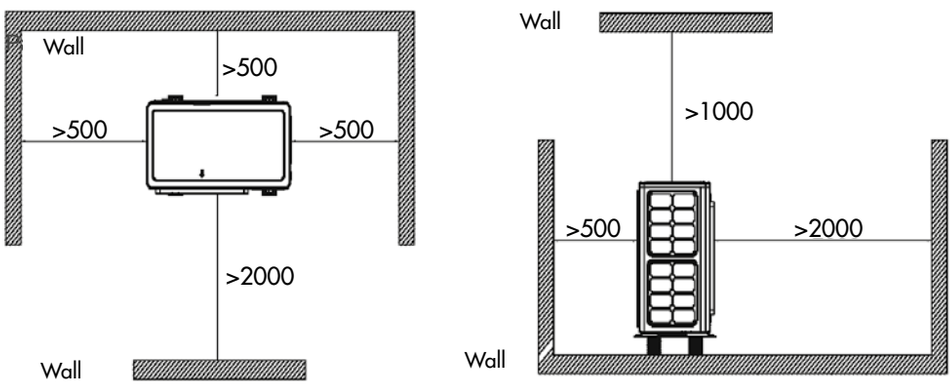


OUTDOOR UNIT 8-10 kW

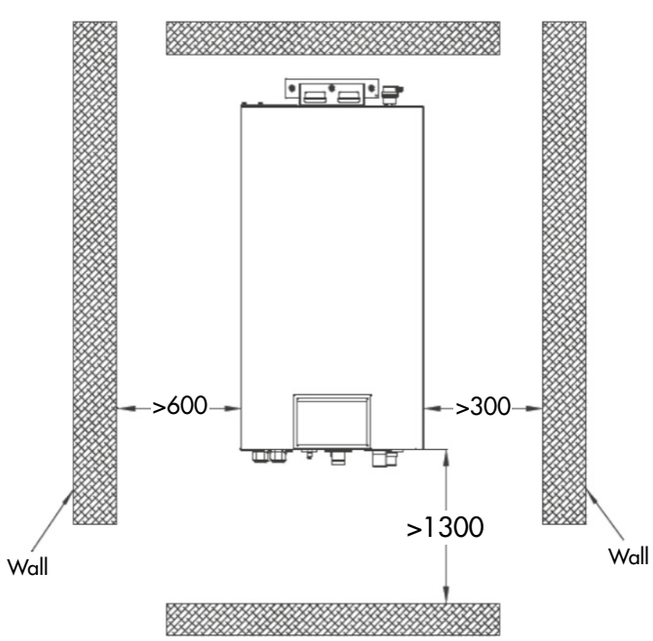


INDOOR UNIT 8-10 kW

SPACE REQUIRED FOR OUTDOOR UNIT INSTALLATION 8-10 kW



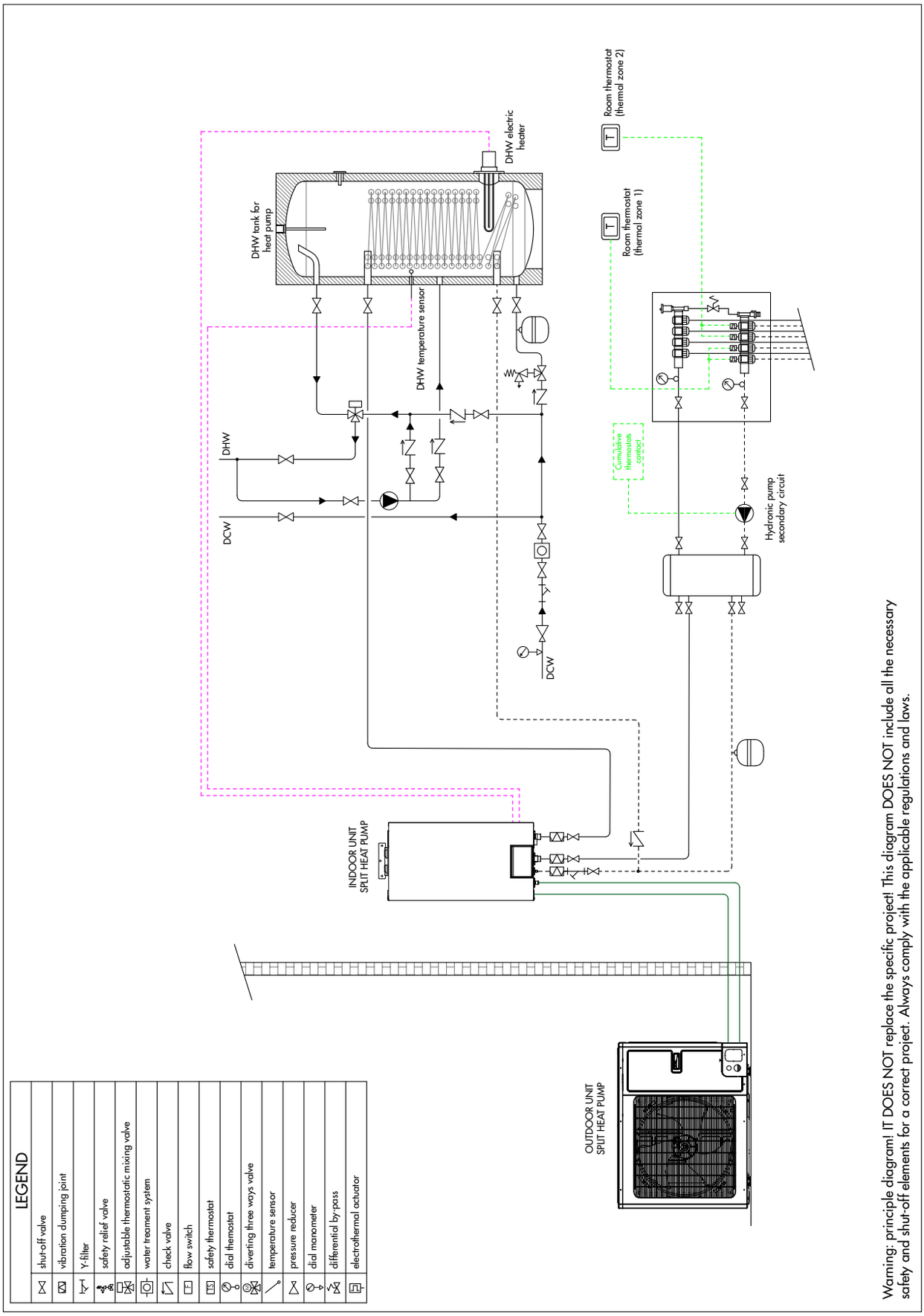
SPACE REQUIRED FOR INDOOR UNIT INSTALLATION 8-10 kW



INSTALLATION EXAMPLES

EXAMPLE 1

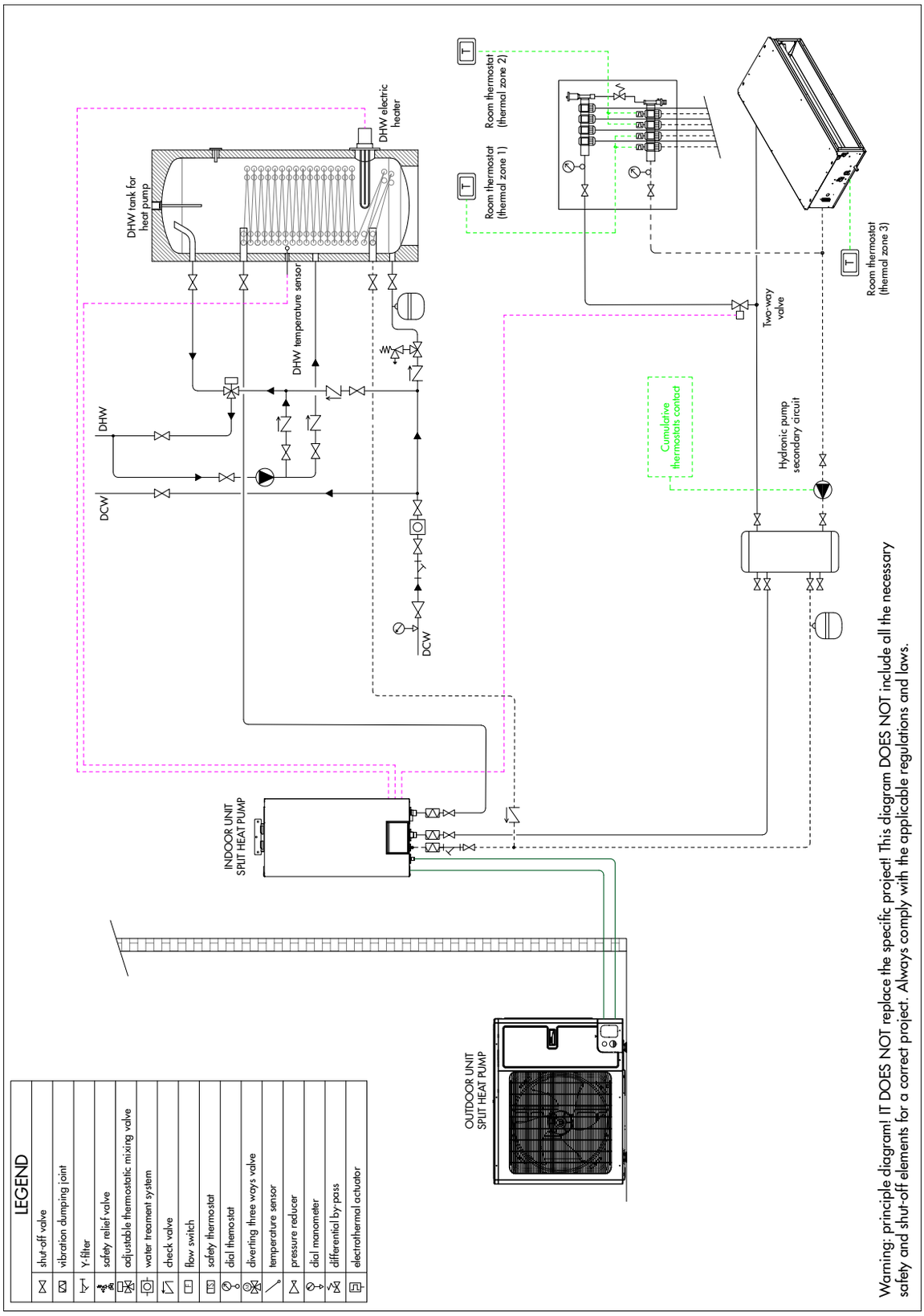
Radiant heating and DHW with three-way valve and tank



Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

EXAMPLE 2

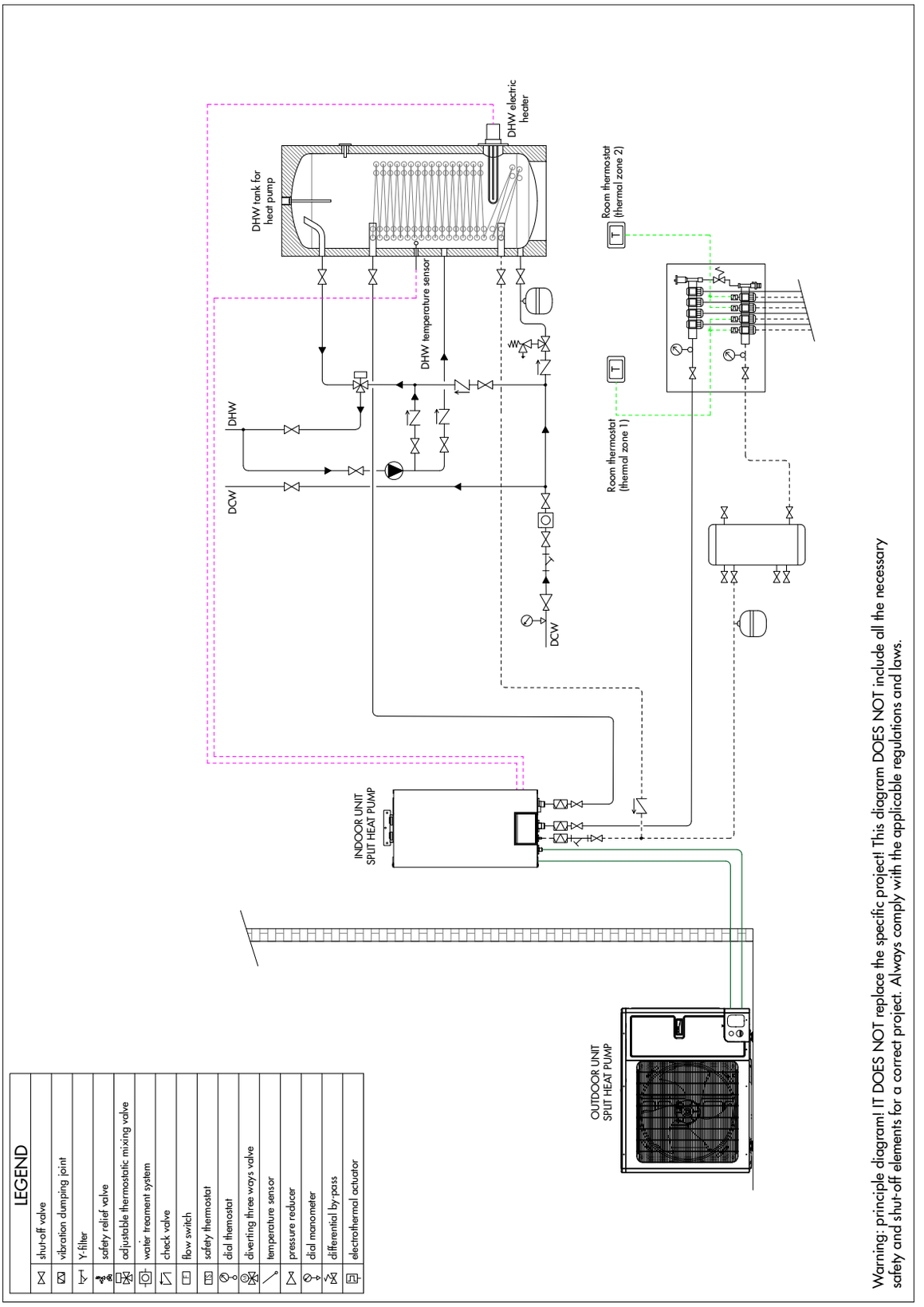
Heating (cooling) with fan coil units and DHW with three-way valve and tank



INSTALLATION EXAMPLES

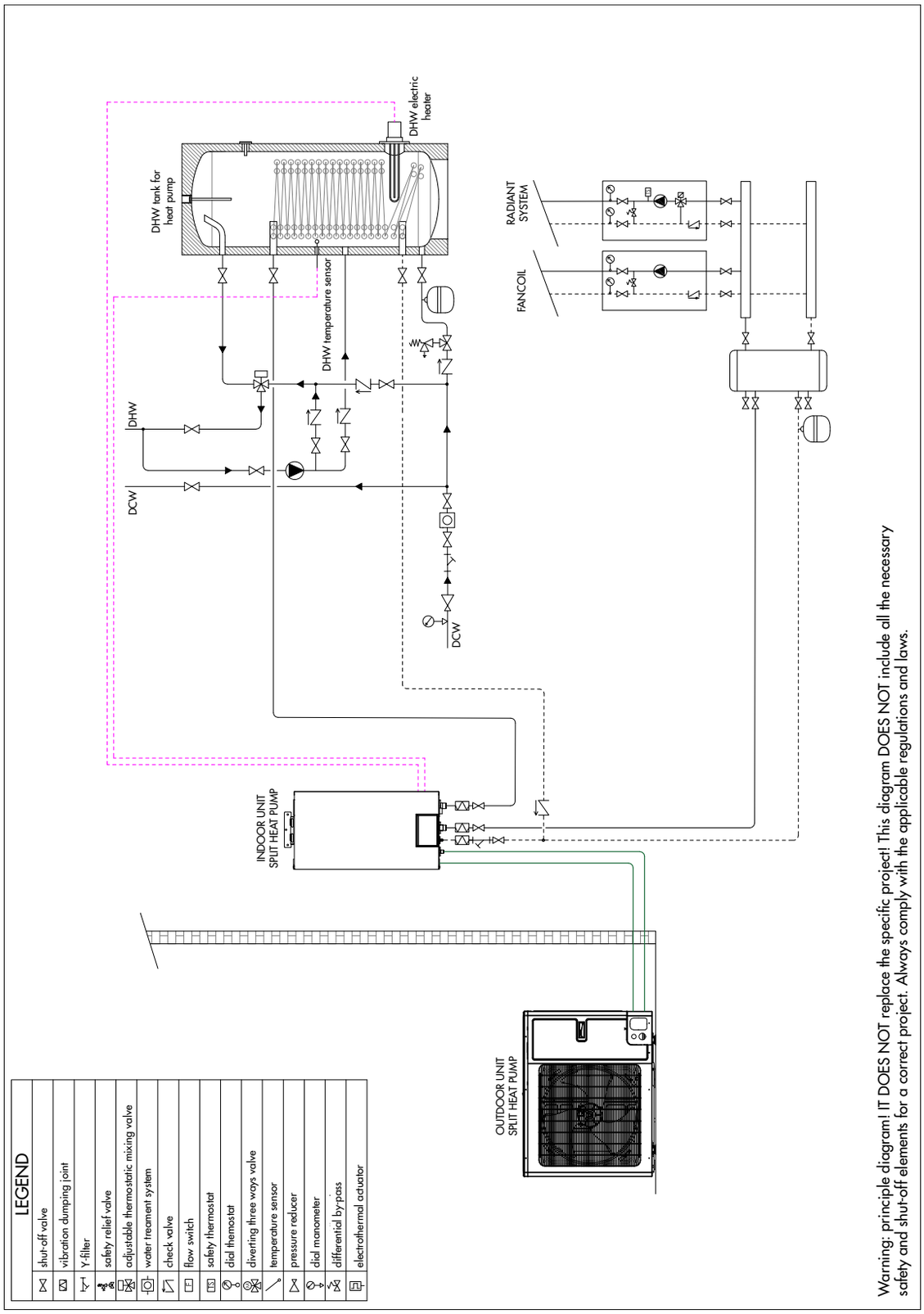
EXAMPLE 3

Radiant heating, single thermal zone and DHW with three-way valve and tank



EXAMPLE 4

Heating and Cooling with mixing modules and DHW with three-ways valve and tank



Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

BUILT-IN SOLUTION

For SPLIT heat pumps

BUILT-IN SOLUTION
FOR SPLIT HEAT PUMPS

MAIN FEATURES

With the cabinet, the hydronic indoor unit of the X3 ARGO split heat pump can be installed built-in. This specific solution allows for reducing and optimising the installation spaces.
The production of DHW occurs by means of a three-way valve, installed directly on the unit. The cabinet, which is made of galvanised sheet steel, contains all the elements for setting up a space heating and/or cooling system and for producing DHW:

- Stainless steel DHW storage tank, equipped with a spiral corrugated fixed heat exchanger for increasing the heat exchange surface;
- Kit for connection to the indoor unit, with adequately configured and insulated pipes and an inertial storage tank. It is possible to directly use the pump supplied with the unit or a second pump in the primary/secondary circuit configuration;
- Safety and control device on the DHW and system sides.

BUILT-IN SOLUTION COMPONENTS (to be added to the indoor hydronic unit)

Code	Description
387030626	Built-in cabinet 2242 mm (H) x 998 mm (W) x 415 mm (D)
387030637	200 liters DHW storage tank with heat exchanger
387030638	X3 connection kit

ACCESSORIES

Code	Description
387030630	DHW inlet filter 3/4"
387030631	Pair of DHW shut-off valves 3/4"
387030632	Electrical resistance 1.5 kW for DHW tank
387030633	System output filter 3/4"
387030634	Pair of system shut-off valves 1"

MAIN COMPONENTS

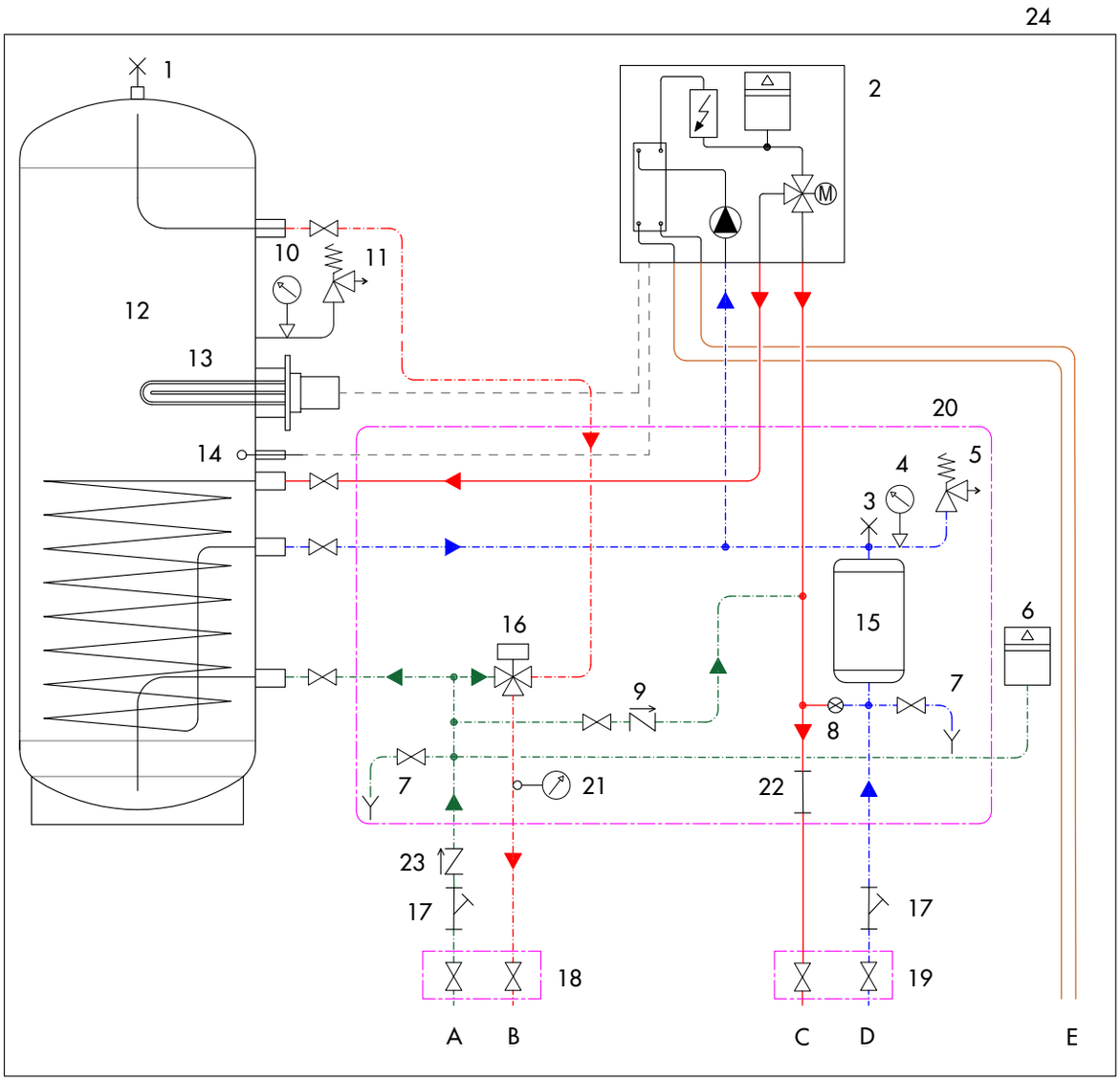
1 X3 ARGO split hydronic indoor unit

2 DHW tank with the following characteristics:
- volume: 200 liters;
- AISI 316 L stainless steel structure;
- AISI 316 L stainless steel fixed heat exchanger;
- EPS insulation with graphite, thickness 25 mm.

3 Hydraulic kit for connection to the indoor unit, the main components of which include:
- AISI 316 L stainless steel 25 liters inertial tank;
- thermostatic mixer 25-50 °C;
- DHW-side expansion vessel, 6 bar, 12 liters;
- 6 bar safety valve on DHW side and 3 bar safety valve on system side;
- insulated connecting pipes.

4 Built-in metal cabinet, made of galvanised sheet steel

REFERENCE HYDRAULIC DIAGRAM



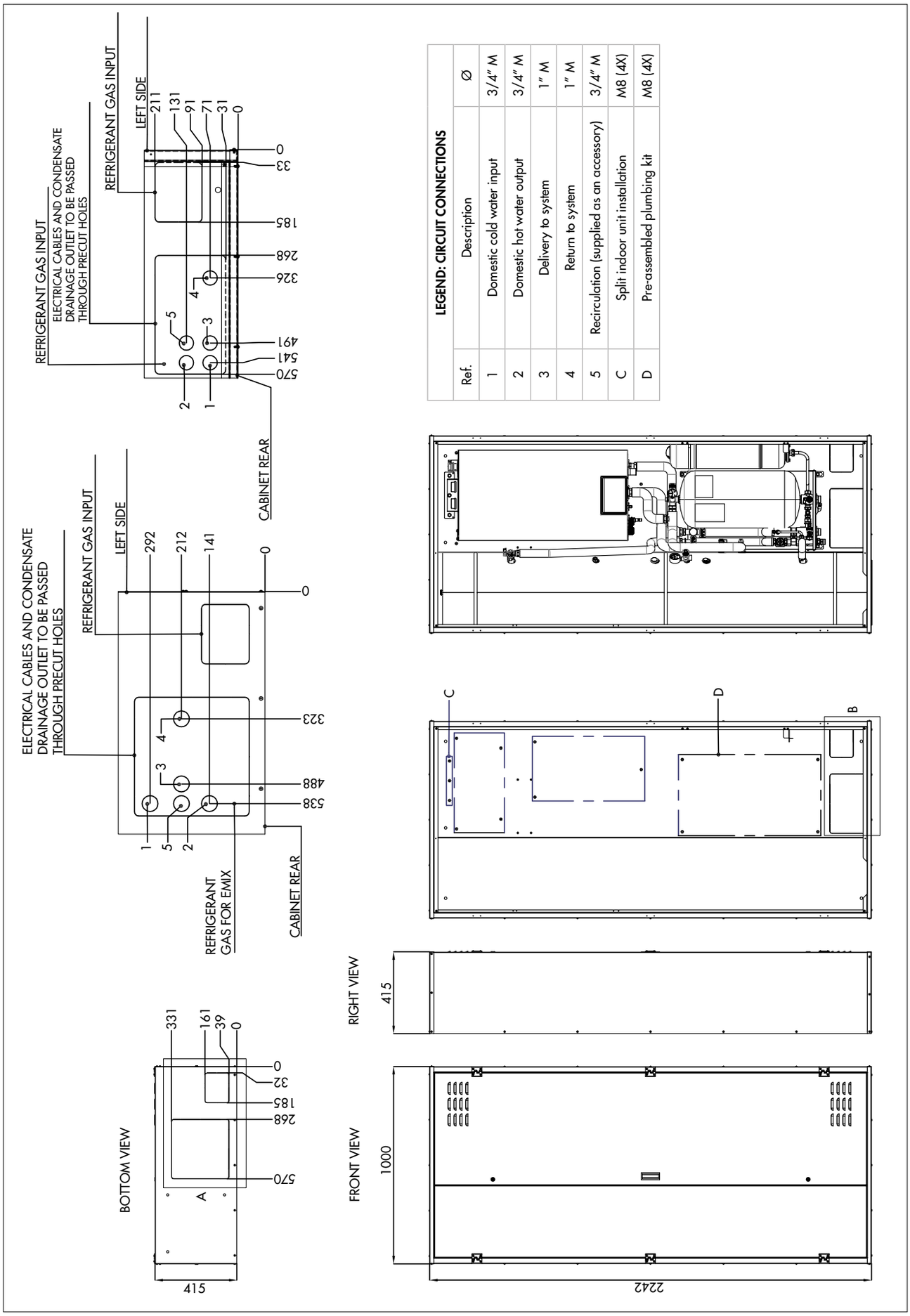
Key to components

1. DHW tank manual air relief valve
2. X3 ARGO split indoor unit
3. system manual air relief valve
4. 0-4 bar system pressure gauge
5. safety valve for system, 3 bar
6. DHW expansion vessel, 6 bar - 12 liters
7. discharge valve Ø 1/2"
8. shut-off valve
9. system filling non-return valve
10. 0-6 bar pressure gauge
11. safety valve for DHW, 6 bar
12. grade AISI 316 L stainless steel 200 liters DHW storage tank - pmax 8 bar
13. heating element 1.5 kW (optional)
14. thermowell Ø 6 mmx130 mm
15. grade AISI 316 L stainless steel system technical storage tank - 25 liters
16. thermostatic mixing valve 25 °C-50 °C Kv=2.3
17. system and DHW filters
18. 3/4" shut-off valve (optional)
19. 1" M shut-off valve (optional)
20. pre-assembled hydronic module limits
21. contact thermometer
22. stub for secondary circuit hydronic pump configuration (not managed by the unit)
23. DHW non-return valve
24. metal cabinet limit

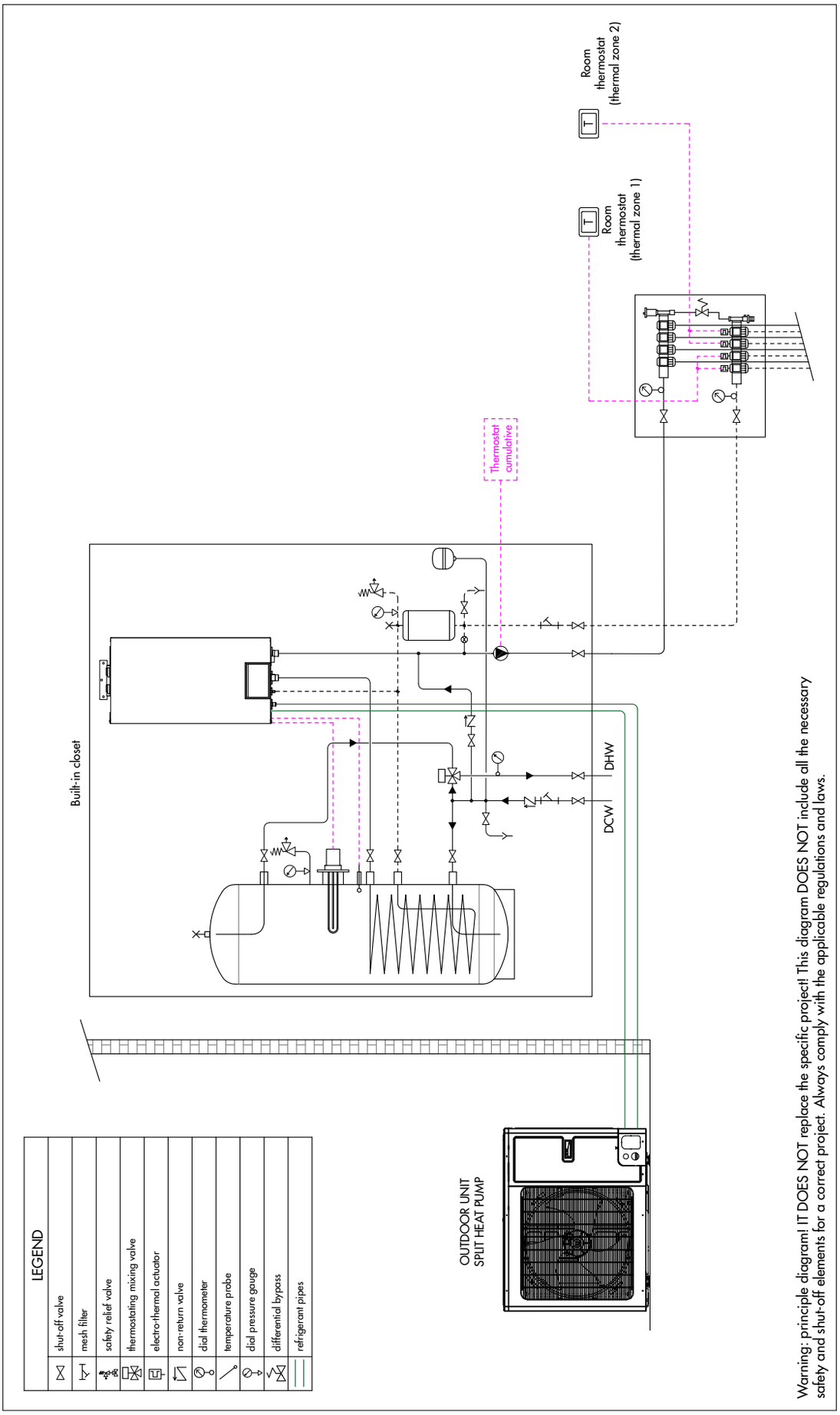
Key to fittings

A. 3/4" M domestic cold water inlet
B. 3/4" M domestic hot water outlet
C. 1" M system supply
D. 1" M system return
E. connection for indoor unit refrigerant pipes

DIMENSIONAL DRAWINGS

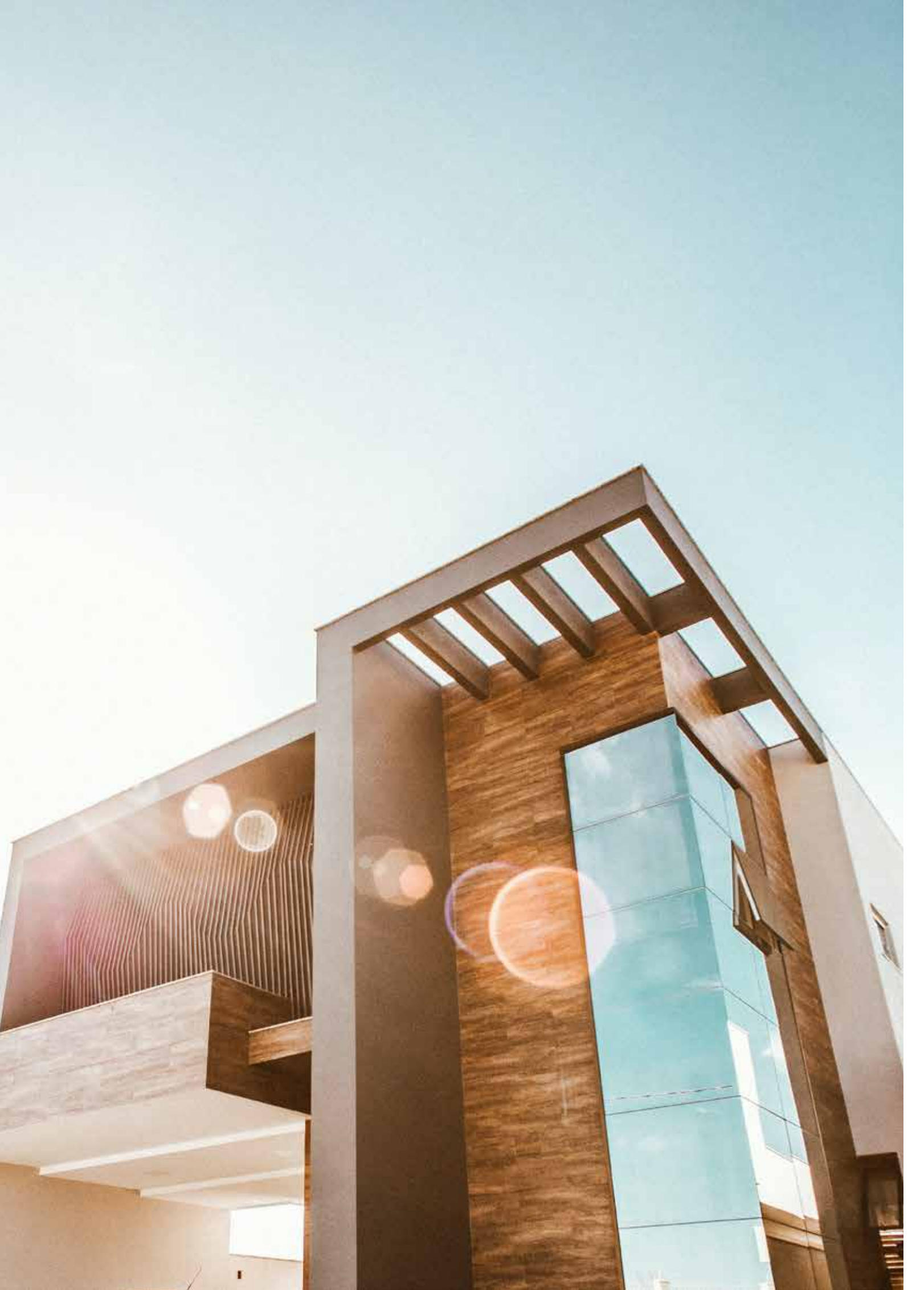


INSTALLATION EXAMPLE



Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

NOTES



ALL IN ONE

Single-phase 6-8-10 kW range

ALL-IN-ONE HEAT PUMPS

MAIN FEATURES

(Standard on the indoor unit)

Touch-screen control panel installed on the indoor unit

- All in one Air/Water heat pump with integrated tank for the production of domestic hot water.
- New-generation DC Inverter technology.
- Equipped with the heating, cooling and domestic hot water production functions.
- Single-phase version with 6-8-10 kW heating capacity.
- Achieves very high efficiency levels in heating mode, up to 5 COP.
- It uses R32, a refrigerant with low impact on global warming and ozone layer, characterised by high energy efficiency and a 30% lower charge compared to R410A.
- The vapour-injection compressor, thanks to its special technology, guarantees exceptional performances within a wide operating range.
- The leaving water temperature range is 20 °C-60 °C: this means that the heat pump can be used with radiant floor systems, fan coil units and also medium-temperature radiators.
- The DC brushless axial fans are designed to ensure aerodynamic optimisation: they guarantee low noise levels coupled with high efficiency and a high air flow rate.
- It is equipped with a heating element on the base to prevent ice build-up during winter operation.
- The outdoor unit is equipped with an electronic expansion valve, while the indoor unit contains - besides the tank - all the hydraulic components: inverter pump, plate heat exchanger, expansion vessel, safety valve, flow switch and water filter supplied (installation mandatory).

Internal copper groove | Quiet mode | Weekly timer | Heating down to low temperatures | Door control | Full protection | Timer | Child lock | Wide operating range | Wide voltage range | Auto diagnosis | Low-voltage start-up

Auto restart memory | Intelligent defrosting | °C / °F switching | Long-distance monitoring | Exch. condenser gold fin treatment | Min. outdoor temp. heating -25 °C | Max. outdoor temp. heating +35 °C | Min. outdoor temp. cooling +10 °C | Max. outdoor temp. cooling +48 °C | Min. outdoor temp. DHW -25 °C | Max. outdoor temp. DHW +45 °C | Max. output temp. DHW 60 °C

A+++ Heating mode 35 °C **A++** Heating mode 55 °C **A** DHW

THE RANGE

		Model	Code	1PH	Rated capacity according to EN14511 (kW)		Integrated DHW tank capacity (l)
					Heating (1)	Cooling (2)	
OUTDOOR UNIT - 1PH		AGHPSA061SH	398600012	●	6.0	5.8	
		AGHPSA081SH	398600013	●	8.0	7.0	
		AGHPSA101SH	398600014	●	9.5	8.5	
HYDRONIC INDOOR UNIT		AGHPA061F	398600028	●	6.0	5.8	185
		AGHPA081F	398600029	●	8.0	7.0	185
		AGHPA101F	398600030	●	9.5	8.5	185

(1) Water temperature 30 °C/35 °C, outdoor air temperature 7 °C D.B./6 °C W.B.
(2) Water temperature 23 °C/18 °C, outdoor air temperature 35 °C

INCLUDED ACCESSORIES

Ambient air temperature sensor
Y-shaped filter
Control panel (integrated into the indoor unit)

TECHNICAL DATA FOR 6 kW

MODEL					AGHPSA061	
Outdoor unit model					AGHPSA061SH	
Hydronic indoor unit model					AGHPA061F	
Matchable units for domestic hot water production (DHW)					**Tank integrated into the indoor unit 185 liters - diverting valve included in the indoor unit**	
					Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	5.80	6.00
			Rated electrical power input	kW_{el}	1.32	1.20
			EER/COP		4.39	5.00
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	4.09	5.90
			Rated electrical power input	kW_{el}	1.28	1.51
			EER/COP		3.20	3.91
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	6.00	
			Seasonal energy efficiency η_s	%	179	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	5.00	
			Seasonal energy efficiency η_s	%	127	
			Energy efficiency class		A++	
DHW	**DHW performance according to EN 16147**	AVERAGE climate	Load profile		L	
			Energy efficiency class		A	
			Water heating efficiency - ERP η_{wh}	%	101	
Indoor unit			Nominal water flow rate	m^3/h	at 35 °C	1.03
					at 45 °C	1.02
					at 7 °C	0.70
					at 18 °C	1.00
			Minimum efficient water volume of the system	liters	40	
			Maximum delivery water temperature	°C	Up to 60	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	220-240/1/50	
			Electrical power input	kW	3.10	
			Heating element	nxkW	2x1.5	
			Expansion vessel	liters	10	
			Maximum circulator pump head	kPa	see H/Q graph	
			Hydraulic connections	inches	G1" female	
			Safety valve	bar	3	
			Indoor unit sound pressure	dB(A)	29	29
			Net weight	kg	210	
			Dimensions (H/W/D)	mm	1756/600/600	
			DHW integrated capacity tank	liters	185	
Outdoor unit			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	+10/+48	
			Electrical power supply	V/Ph/Hz	220-240~/1/50	
			Maximum power input (cooling)	kW	2.30	
			Maximum power input (heating)	kW	2.30	
			Maximum current draw (cooling)	A	10	
			Maximum current draw (heating)	A	10	
			Liquid cooling pipe diameter	mm (inches)	6.35 (1/4)	
			Gas cooling pipe diameter	mm (inches)	12.7 (1/2)	
			Outdoor unit sound pressure	dB(A)	52	52
			Fan air flow rate	m^3/h	3200	
			Net weight	kg	55	
			Dimensions (H/W/D)	mm	702/975/396	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2 eq.	
			Quantity		1 kg/0.675 tons CO_2 eq.	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2013 STANDARD

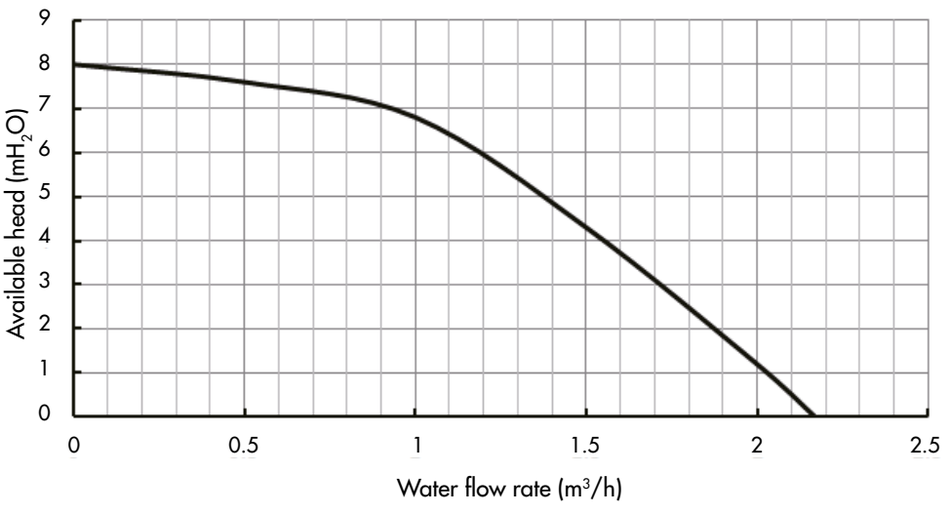
	COOLING - Dry bulb outdoor air temperature in °C - (AGHPSA061)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	3.35	4.35	3.72	4.19	3.93	4.06	4.17	3.87	4.25	3.55	4.09	3.20	3.72	2.65	2.90	1.95	2.45	1.57
8	3.48	4.47	3.89	4.31	4.09	4.19	4.34	3.99	4.42	3.64	4.25	3.29	3.89	2.75	3.03	2.01	2.54	1.63
9	3.64	4.67	4.01	4.47	4.21	4.35	4.46	4.12	4.54	3.80	4.38	3.42	4.01	2.84	3.15	2.08	2.66	1.66
10	3.72	4.79	4.13	4.60	4.38	4.47	4.62	4.25	4.70	3.90	4.54	3.51	4.13	2.91	3.23	2.17	2.74	1.73
11	3.84	4.92	4.29	4.76	4.50	4.60	4.79	4.41	4.91	4.06	4.70	3.64	4.29	3.00	3.31	2.20	2.82	1.76
12	3.97	5.08	4.42	4.92	4.66	4.76	4.95	4.54	5.07	4.15	4.87	3.74	4.42	3.10	3.44	2.30	2.90	1.85
13	4.13	5.24	4.58	5.05	4.79	4.89	5.11	4.67	5.19	4.28	4.99	3.87	4.58	3.20	3.56	2.33	2.99	1.89
14	4.25	5.40	4.66	5.21	4.95	5.05	5.28	4.79	5.36	4.41	5.15	3.96	4.66	3.29	3.68	2.43	3.07	1.95
15	4.34	5.53	4.83	5.34	5.11	5.18	5.44	4.92	5.52	4.51	5.32	4.09	4.83	3.39	3.76	2.49	3.19	1.98
18	4.74	5.98	5.24	5.75	5.52	5.59	5.89	5.34	6.01	4.89	5.77	4.41	5.24	3.64	4.09	2.68	3.48	2.17
20	4.95	6.29	5.52	6.07	5.85	5.88	6.18	5.59	6.30	5.14	6.05	4.63	5.52	3.83	4.34	2.84	3.64	2.27
23	5.36	6.74	5.93	6.49	6.26	6.33	6.67	6.01	6.79	5.50	6.54	4.95	5.93	4.12	4.62	3.00	3.93	2.43
25	5.60	7.03	6.22	6.77	6.54	6.58	6.95	6.29	7.12	5.75	6.83	5.18	6.22	4.31	4.87	3.16	4.09	2.56

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	2.94	4.34	3.12	4.57	3.72	4.88	4.26	5.08	5.16	5.39	5.76	5.63	6.36	5.86	6.24	6.10	6.42	6.37	6.78	6.95	6.72	7.38	6.12	7.31	5.34	7.97	4.20	8.44
30	2.70	3.52	3.06	3.79	3.60	4.06	4.14	4.30	4.74	4.53	5.22	4.77	5.82	5.00	6.18	5.55	6.36	5.90	6.72	6.29	6.66	6.72	6.06	6.72	5.34	7.27	4.14	7.78
35	2.52	2.97	2.88	3.13	3.36	3.32	3.90	3.59	4.26	3.83	4.80	4.06	5.22	4.18	6.00	5.00	6.30	5.27	6.66	5.74	6.60	5.98	6.00	5.98	5.28	6.64	4.08	7.03
40	2.46	2.54	2.88	2.81	3.36	3.05	3.90	3.24	4.26	3.40	4.74	3.67	5.16	3.91	6.00	4.45	6.24	4.69	6.60	5.08	6.54	5.35	5.94	5.31	5.22	5.86	4.08	6.25
45			2.88	2.46	3.36	2.70	3.90	2.93	4.20	3.05	4.68	3.24	5.10	3.44	6.00	3.91	6.18	4.10	6.54	4.45	6.48	4.69	5.88	4.92	5.16	5.16	4.02	5.47
50					3.24	2.27	3.78	2.46	4.14	2.58	4.62	2.77	5.04	2.85	5.94	3.36	6.12	3.52	6.48	3.87	6.42	4.02	5.82	4.22	5.10	4.42	3.96	4.73
55							3.60	2.03	4.14	2.11	4.56	2.31	4.98	2.42	5.88	2.81	6.06	2.97	6.42	3.20	6.36	3.40	5.76	3.52	5.04	3.71	3.96	3.99
60									4.08	1.72	4.56	1.80	4.92	1.91	5.82	2.27	6.00	2.34	6.36	2.50	6.30	2.62	5.70	2.77	4.98	2.89	3.90	3.09

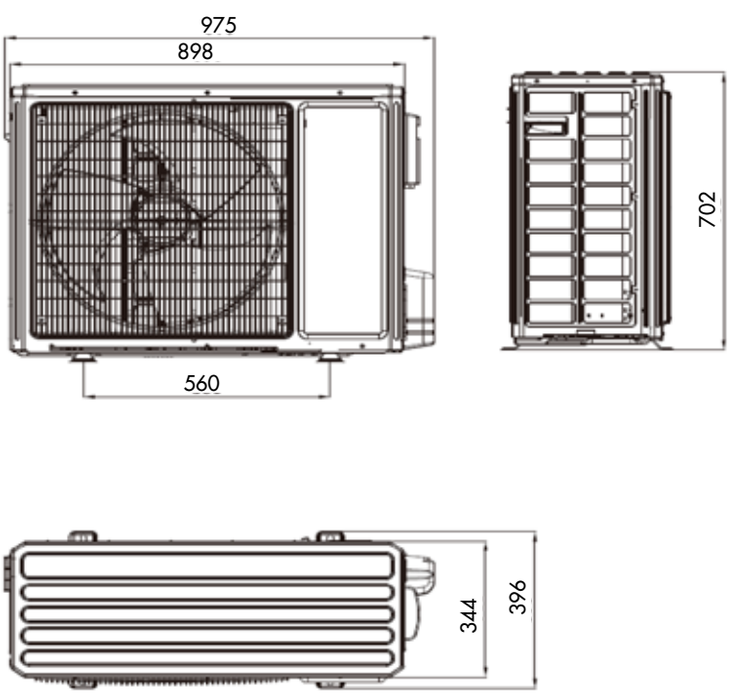
LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

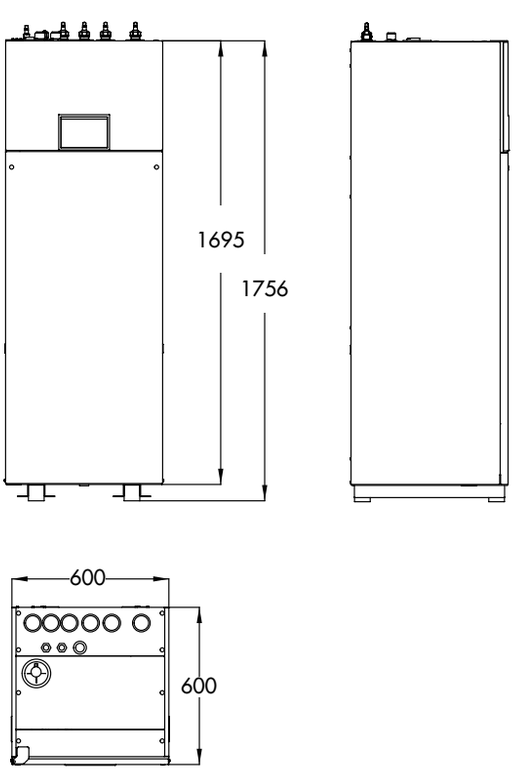
FLOW RATE CURVES 6 kW



DIMENSIONAL DRAWINGS 6 kW



OUTDOOR UNIT 6 kW



INDOOR UNIT 6 kW

TECHNICAL DATA FOR 8-10 kW

MODEL					AGHPSA081	
Outdoor unit model					AGHPSA081SH	
Hydronic indoor unit model					AGHPA081F	
Matchable units for domestic hot water production (DHW)					**Tank integrated into the indoor unit 185 liters - diverting valve included in the indoor unit**	
					Cooling	Heating
COMFORT IN ENVIRONMENT	**Performance according to EN 14511**	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	7.00	8.00
			Rated electrical power input	kW_{el}	1.75	1.70
			EER/COP		4.00	4.71
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	5.30	8.00
			Rated electrical power input	kW_{el}	1.73	2.14
			EER/COP		3.06	3.74
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	7.00	
			Seasonal energy efficiency η_s	%	181	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	7.00	
			Seasonal energy efficiency η_s	%	129	
			Energy efficiency class		A++	
DHW	**DHW performance according to EN 16147**	AVERAGE climate	Load profile		L	
			Energy efficiency class		A	
			Water heating efficiency - ERP η_{wh}	%	89	
Indoor unit			Nominal water flow rate	m^3/h	at 35 °C	1.38
					at 45 °C	1.38
					at 7 °C	0.91
					at 18 °C	1.20
			Minimum efficient water volume of the system	liters	40	
			Maximum delivery water temperature	°C	Up to 60	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	220-240/1/50	
			Electrical power input	kW	3.10	
			Heating element	nxkW	2x3	
			Expansion vessel	v	10	
			Maximum circulator pump head	kPa	see H/Q graph	
			Hydraulic connections	inches	G1" female	
			Safety valve	bar	3	
			Indoor unit sound pressure	dB(A)	29	29
			Net weight	kg	210	
			Dimensions (H/W/D)	mm	1756/600/600	
			DHW integrated capacity tank	liters	185	
Outdoor unit			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	+10/+48	
			Electrical power supply	V/Ph/Hz	220-240~/1/50	
			Maximum power input (cooling)	kW	4.32	
			Maximum power input (heating)	kW	3.00	
			Maximum current draw (cooling)	A	19	
			Maximum current draw (heating)	A	13	
			Liquid cooling pipe diameter	mm (inches)	6.35 (1/4)	
			Gas cooling pipe diameter	mm (inches)	12.7 (1/2)	
			Outdoor unit sound pressure	dB(A)	55	55
			Fan air flow rate	m^3/h	3300	
			Net weight	kg	82	
			Dimensions (H/W/D)	mm	787/982/427	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2 eq.	
			Quantity		1.6 kg/1.08 tons CO_2 eq.	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

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TECHNICAL DATA FOR 8-10 kW

MODEL					AGHPSA101	
Outdoor unit model					AGHPSA101SH	
Hydronic indoor unit model					AGHPA101F	
Matchable units for domestic hot water production (DHW)					Tank integrated into the indoor unit 185 liters - diverting valve included in the indoor unit	
					Cooling	Heating
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	8.50	9.50
			Rated electrical power input	kW_{el}	2.24	2.07
			EER/COP		3.79	4.59
		Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	6.50	9.50
			Rated electrical power input	kW_{el}	2.27	2.64
			EER/COP		2.86	3.60
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	9.00	
			Seasonal energy efficiency η_s	%	181	
			Energy efficiency class		A+++	
		MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load ($Pdesign_h$)	kW	8.00	
			Seasonal energy efficiency η_s	%	127	
			Energy efficiency class		A++	
DHW	DHW performance according to EN 16147	AVERAGE climate	Load profile		L	
			Energy efficiency class		A	
			Water heating efficiency - ERP η_{wh}	%	89	
Indoor unit			Nominal water flow rate	m^3/h	at 35 °C	1.63
					at 45 °C	1.63
					at 7 °C	1.12
					at 18 °C	1.46
			Minimum efficient water volume of the system	liters	80	
			Maximum delivery water temperature	°C	Up to 60	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	220-240/1/50	
			Electrical power input	kW	3.10	
			Heating element	nxkW	2x3	
			Expansion vessel	liters	10	
			Maximum circulator pump head	kPa	see H/Q graph	
			Hydraulic connections	inches	G1" female	
			Safety valve	bar	3	
			Indoor unit sound pressure	dB(A)	29	29
			Net weight	kg	210	
			Dimensions (H/W/D)	mm	1756/600/600	
			DHW integrated capacity tank	liters	185	
Outdoor unit			Outdoor temperature range (heating)	°C	-25/+35	
			Outdoor temperature range (cooling)	°C	+10/+48	
			Electrical power supply	V/Ph/Hz	220-240~/1/50	
			Maximum power input (cooling)	kW	5.06	
			Maximum power input (heating)	kW	3.40	
			Maximum current draw (cooling)	A	22	
			Maximum current draw (heating)	A	15	
			Liquid cooling pipe diameter	mm (inches)	6.35 (1/4)	
			Gas cooling pipe diameter	mm (inches)	12.7 (1/2)	
			Outdoor unit sound pressure	dB(A)	55	55
			Fan air flow rate	m^3/h	3300	
			Net weight	kg	82	
			Dimensions (H/W/D)	mm	787/982/427	
			Compressor type		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO_2 eq.	
			Quantity		1.6 kg/1.08 tons CO_2 eq.	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2013 STANDARD

	COOLING - Dry bulb outdoor air temperature in °C - (AGHPSA081)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	4.35	4.17	4.82	4.01	5.09	3.89	5.41	3.71	5.51	3.40	5.30	3.06	4.82	2.54	3.76	1.87	3.18	1.50
8	4.51	4.26	4.98	4.11	5.25	4.01	5.57	3.80	6.04	3.49	5.46	3.16	4.98	2.60	3.87	1.90	3.29	1.53
9	4.56	4.41	5.09	4.23	5.35	4.11	5.72	3.92	6.20	3.58	5.62	3.25	5.09	2.70	3.98	1.96	3.34	1.56
10	4.72	4.50	5.25	4.35	5.51	4.23	5.88	4.01	6.36	3.68	5.78	3.31	5.25	2.76	4.08	1.99	3.45	1.62
11	4.88	4.63	5.41	4.47	5.72	4.35	6.04	4.14	6.57	3.80	5.94	3.40	5.41	2.85	4.19	2.08	3.55	1.68
12	4.98	4.75	5.57	4.56	5.88	4.44	6.25	4.20	6.73	3.89	6.10	3.49	5.57	2.91	4.35	2.14	3.66	1.72
13	5.09	4.87	5.67	4.72	5.99	4.56	6.31	4.35	6.89	3.98	6.20	3.58	5.67	3.00	4.40	2.18	3.71	1.75
14	5.25	4.99	5.83	4.81	6.10	4.66	6.47	4.44	7.05	4.07	6.36	3.68	5.83	3.06	4.51	2.24	3.82	1.78
15	5.35	5.15	5.99	4.93	6.25	4.78	6.68	4.53	7.21	4.17	6.52	3.77	5.99	3.12	4.66	2.30	3.92	1.84
18	5.78	5.45	6.36	5.27	6.73	5.12	7.16	4.84	7.69	4.44	7.00	4.01	6.36	3.31	4.98	2.45	4.24	1.96
20	5.99	5.70	6.63	5.48	7.00	5.33	7.42	5.09	8.06	4.66	7.31	4.20	6.63	3.46	5.14	2.54	4.40	2.05
23	6.41	6.04	7.10	5.79	7.47	5.64	7.90	5.39	8.53	4.93	7.79	4.44	7.10	3.68	5.51	2.73	4.66	2.18
25	6.63	6.28	7.37	6.07	7.79	5.85	8.22	5.58	8.85	5.12	8.06	4.63	7.37	3.83	5.72	2.82	4.82	2.27

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	3.44	4.04	4.16	4.26	4.96	4.56	5.68	4.75	6.08	5.05	6.80	5.27	7.52	5.46	7.36	5.72	7.60	5.94	8.00	6.50	7.92	6.88	7.20	6.84	6.32	7.44	4.96	7.89
30	3.36	3.29	4.08	3.59	4.80	3.81	5.52	4.04	5.92	4.26	6.56	4.49	7.28	4.71	7.76	5.23	8.00	5.53	8.48	5.94	8.40	6.32	7.60	6.32	6.64	6.84	5.20	7.29
35	3.28	2.77	3.84	2.92	4.48	3.10	5.20	3.40	5.60	3.59	6.24	3.81	6.80	3.93	8.00	4.71	8.24	4.97	8.72	5.38	8.64	5.61	7.84	5.61	6.88	6.24	5.36	6.62
40	3.28	2.39	3.84	2.65	4.48	2.92	5.20	3.10	5.60	3.25	6.24	3.51	6.80	3.70	8.00	4.22	8.24	4.45	8.72	4.86	8.64	5.08	7.84	5.05	6.88	5.57	5.36	5.94
45			3.84	2.36	4.48	2.58	5.20	2.80	5.60	2.92	6.24	3.10	6.80	3.29	8.00	3.74	8.24	3.93	8.72	4.26	8.64	4.49	7.84	4.71	6.88	4.93	5.36	5.23
50					4.32	2.21	5.04	2.39	5.44	2.50	6.08	2.69	6.56	2.77	7.76	3.25	8.00	3.40	8.48	3.74	8.40	3.93	7.60	4.11	6.64	4.30	5.20	4.60
55							4.80	1.98	5.12	2.09	5.76	2.28	6.24	2.39	7.36	2.77	7.60	2.92	8.00	3.18	7.92	3.33	7.20	3.48	6.32	3.66	4.96	3.93
60									4.88	1.72	5.44	1.79	5.92	1.91	6.96	2.28	7.20	2.32	7.60	2.50	7.52	2.62	6.80	2.77	6.00	2.88	4.64	3.10

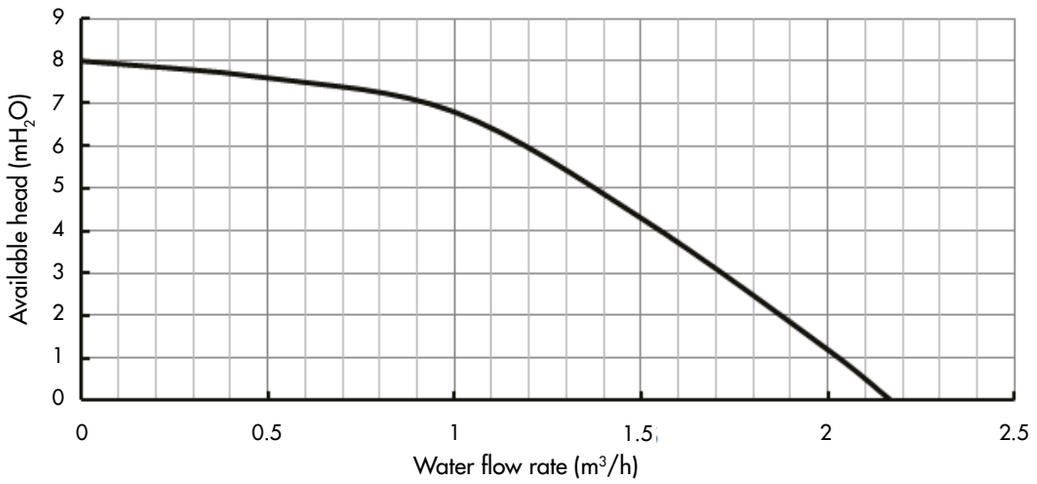
	COOLING - Dry bulb outdoor air temperature in °C - (AGHPSA101)																	
	10		15		20		25		30		35		40		45		48	
LWT [°C]	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	5.33	3.89	5.92	3.75	6.24	3.64	6.63	3.46	6.76	3.18	6.50	2.86	5.92	2.38	4.62	1.75	3.90	1.40
8	5.46	4.01	6.11	3.87	6.44	3.75	6.83	3.58	6.96	3.26	6.70	2.95	6.11	2.43	4.75	1.78	4.03	1.46
9	5.66	4.15	6.24	4.01	6.57	3.87	7.02	3.69	7.15	3.38	6.89	3.04	6.24	2.52	4.94	1.86	4.10	1.52
10	5.79	4.24	6.37	4.09	6.70	3.95	7.22	3.81	7.35	3.46	7.02	3.12	6.37	2.58	5.01	1.92	4.23	1.52
11	5.92	4.35	6.57	4.21	6.96	4.07	7.35	3.87	7.54	3.58	7.22	3.21	6.57	2.66	5.07	1.95	4.36	1.57
12	6.11	4.47	6.70	4.30	7.15	4.18	7.54	3.98	7.67	3.67	7.41	3.29	6.70	2.72	5.27	2.00	4.49	1.60
13	6.24	4.61	6.89	4.44	7.35	4.30	7.74	4.09	7.87	3.78	7.61	3.38	6.89	2.83	5.40	2.09	4.55	1.66
14	6.44	4.70	7.15	4.52	7.48	4.41	7.93	4.21	8.13	3.84	7.80	3.46	7.15	2.89	5.53	2.12	4.68	1.72
15	6.57	4.84	7.28	4.64	7.67	4.50	8.19	4.30	8.32	3.92	8.00	3.55	7.28	2.95	5.72	2.15	4.81	1.75
18	7.02	5.18	7.74	5.01	8.13	4.84	8.65	4.61	8.91	4.24	8.52	3.81	7.74	3.15	6.05	2.32	5.14	1.86
20	7.35	5.44	8.13	5.21	8.58	5.10	9.10	4.84	9.30	4.44	8.91	3.98	8.13	3.32	6.31	2.43	5.33	1.98
23	7.74	5.76	8.58	5.53	9.04	5.38	9.62	5.13	9.82	4.70	9.43	4.24	8.58	3.49	6.63	2.58	5.66	2.06
25	8.00	5.98	8.91	5.78	9.36	5.58	10.01	5.33	10.21	4.90	9.82	4.41	8.91	3.67	6.96	2.69	0.00	2.18

LWT: Leaving water temperature
Qh: Heating capacity
COP: Coefficient of performance

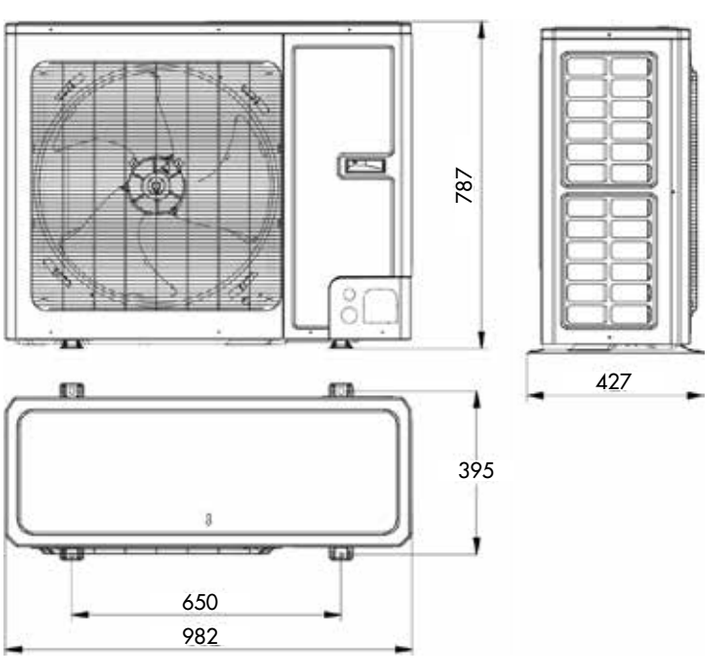
LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

	HEATING - Dry bulb outdoor air temperature in °C																									
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	4.09	3.99	4.94	4.21	5.89	4.50	6.75	4.68	7.22	4.97	8.08	5.18	8.93	5.40	8.74	5.61	9.03	5.87	9.50	6.41	9.41	6.80	8.55	6.73	7.51	7.34	5.89	7.77
30	3.99	3.24	4.85	3.49	5.70	3.74	6.56	3.96	7.03	4.17	7.79	4.39	8.65	4.61	9.22	5.11	9.50	5.43	10.07	5.79	9.98	6.19	9.03	6.19	7.89	6.69	6.18	7.16
35	3.90	2.73	4.56	2.88	5.32	3.06	6.18	3.31	6.65	3.53	7.41	3.74	8.08	3.85	9.50	4.61	9.79	4.86	10.36	5.29	10.26	5.51	9.31	5.51	8.17	6.12	6.37	6.48
40	3.90	2.34	4.56	2.59	5.32	2.81	6.18	2.99	6.65	3.13	7.41	3.38	8.08	3.60	9.50	4.10	9.79	4.32	10.36	4.68	10.26	4.93	9.31	4.89	8.17	5.40	6.37	5.76
45			4.56	2.27	5.32	2.48	6.18	2.70	6.65	2.81	7.41	2.99	8.08	3.17	9.50	3.60	9.79	3.78	10.36	4.10	10.26	4.32	9.31	4.53	8.17	4.75	6.37	5.04
50					5.13	2.09	5.99	2.27	6.46	2.38	7.22	2.55	7.79	2.63	9.22	3.09	9.50	3.24	10.07	3.56	9.98	3.71	9.03	3.89	7.89	4.07	6.18	4.35
55							5.70	1.87	6.08	1.94	6.84	2.12	7.41	2.23	8.74	2.59	9.03	2.73	9.50	2.95	9.41	3.13	8.55	3.24	7.51	3.42	5.89	3.67
60									5.80	1.58	6.46	1.66	7.03	1.76	8.27	2.09	8.55	2.16	9.03	2.30	8.93	2.41	8.08	2.55	7.13	2.66	5.51	2.84

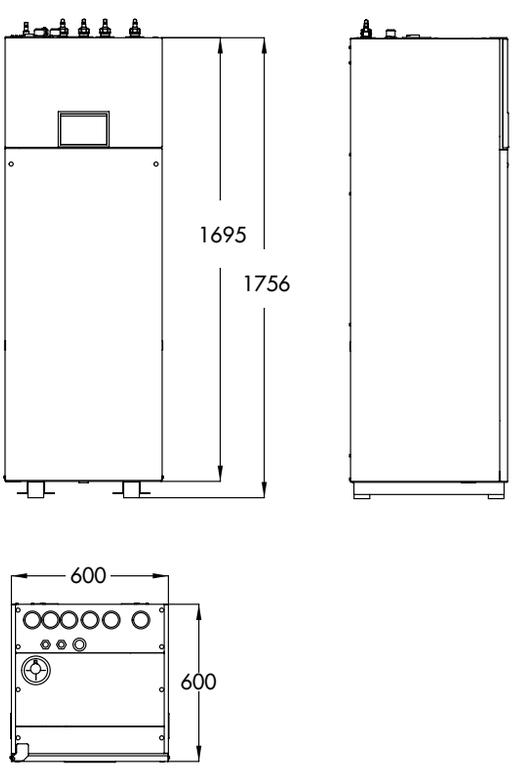
FLOW RATE CURVES 8-10 kW



DIMENSIONAL DRAWINGS 8-10 kW

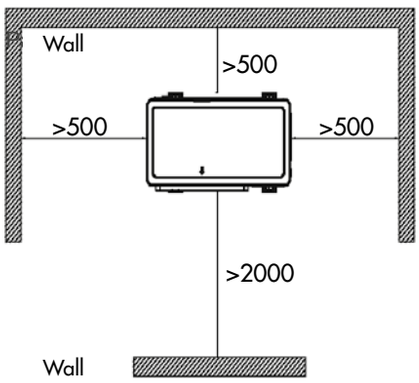


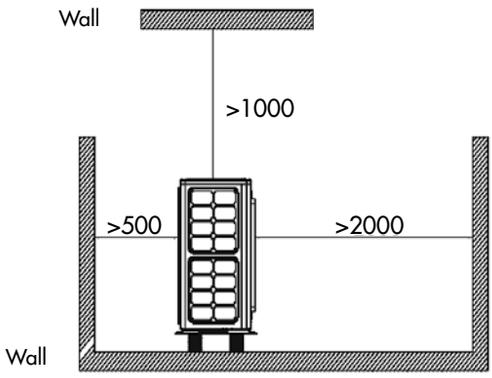
OUTDOOR UNIT 8-10 kW



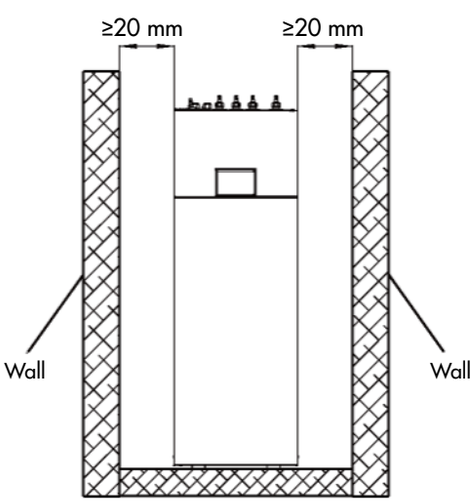
INDOOR UNIT 8-10 kW

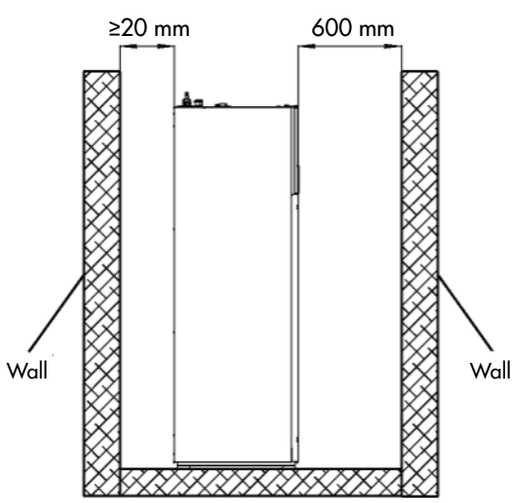
SPACE REQUIRED FOR OUTDOOR UNIT INSTALLATION 6-8-10 kW





SPACE REQUIRED FOR INDOOR UNIT INSTALLATION 6-8-10 kW

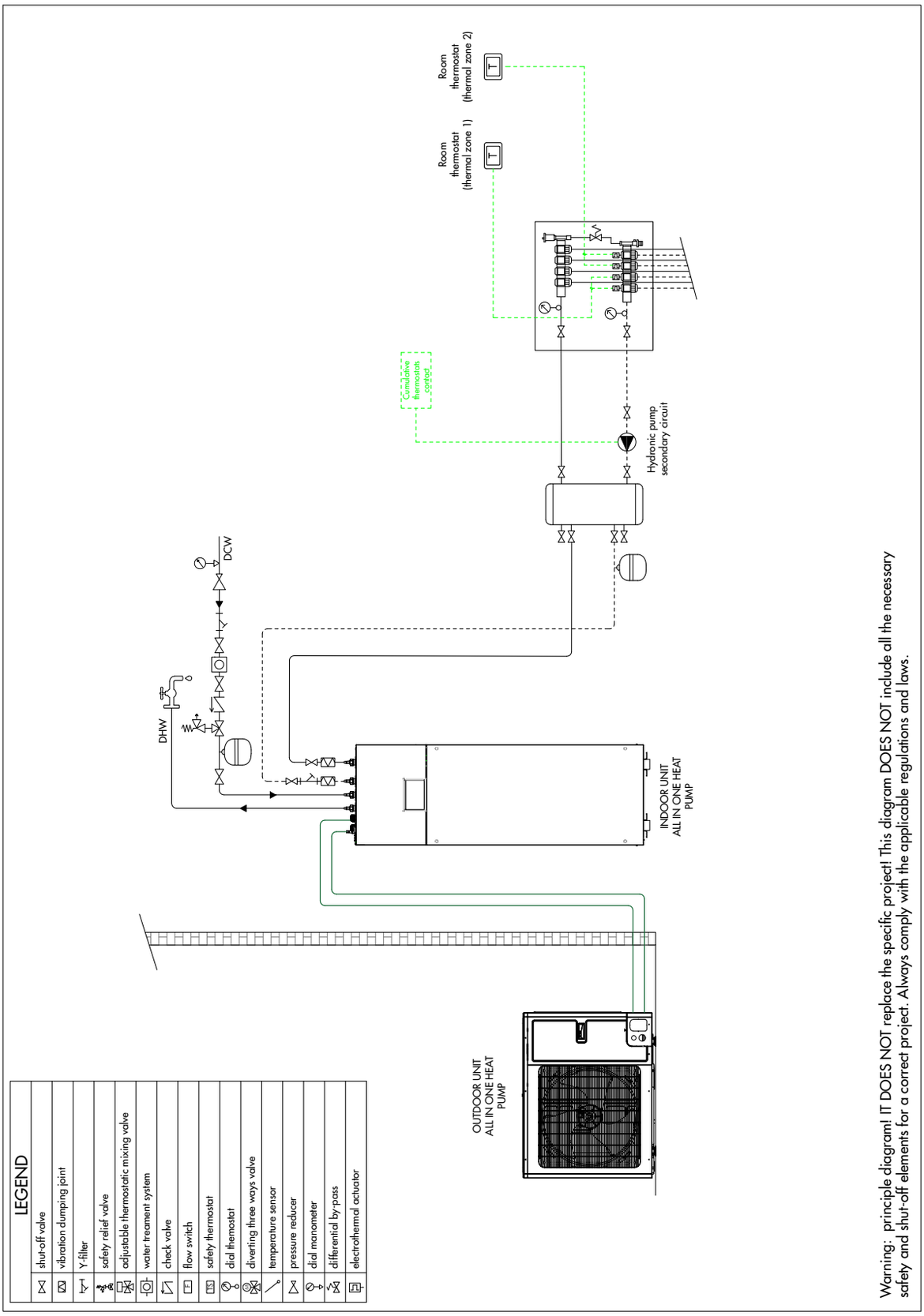




INSTALLATION EXAMPLES

EXAMPLE 1

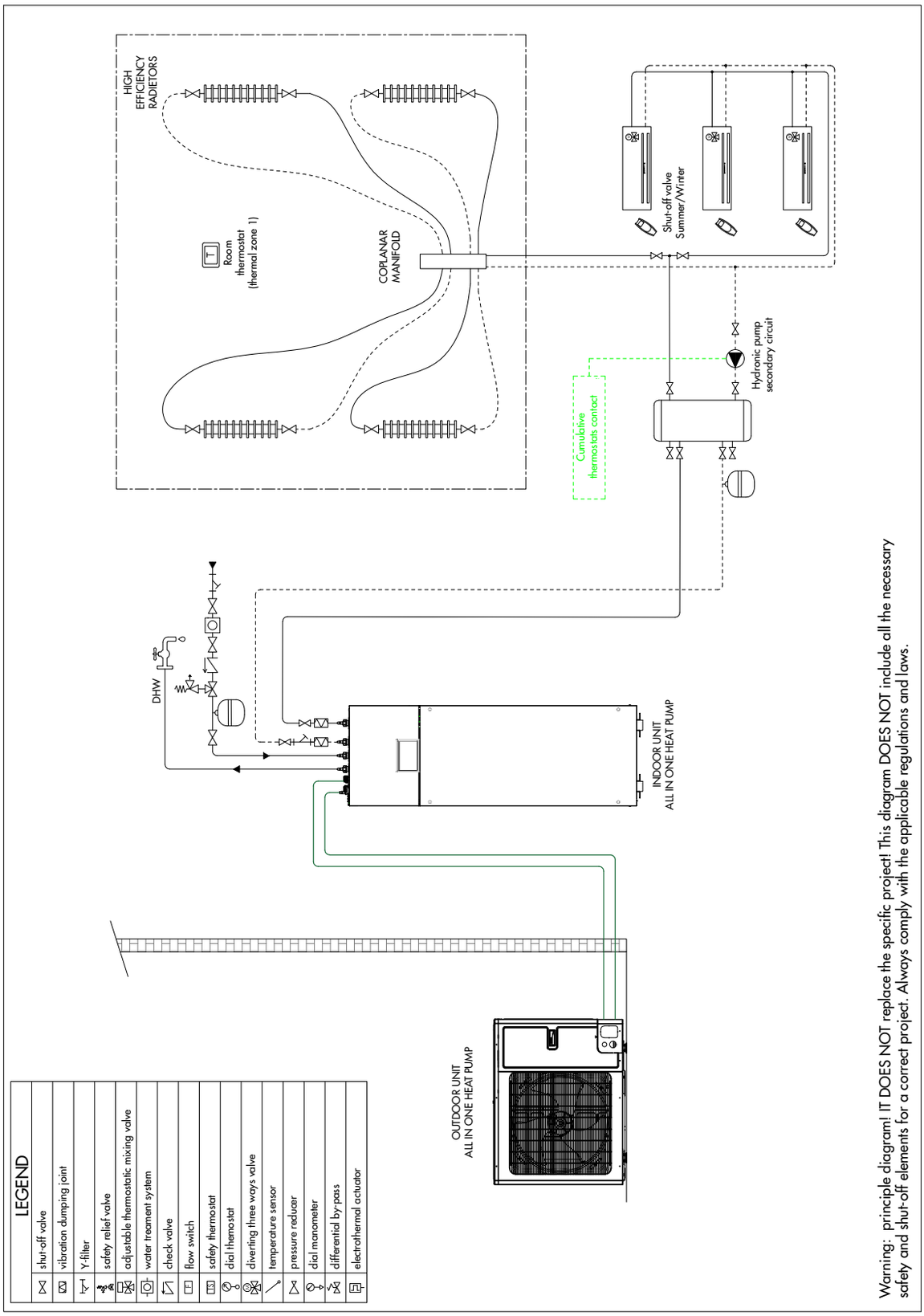
Radiant heating and DHW integrated in the indoor unit



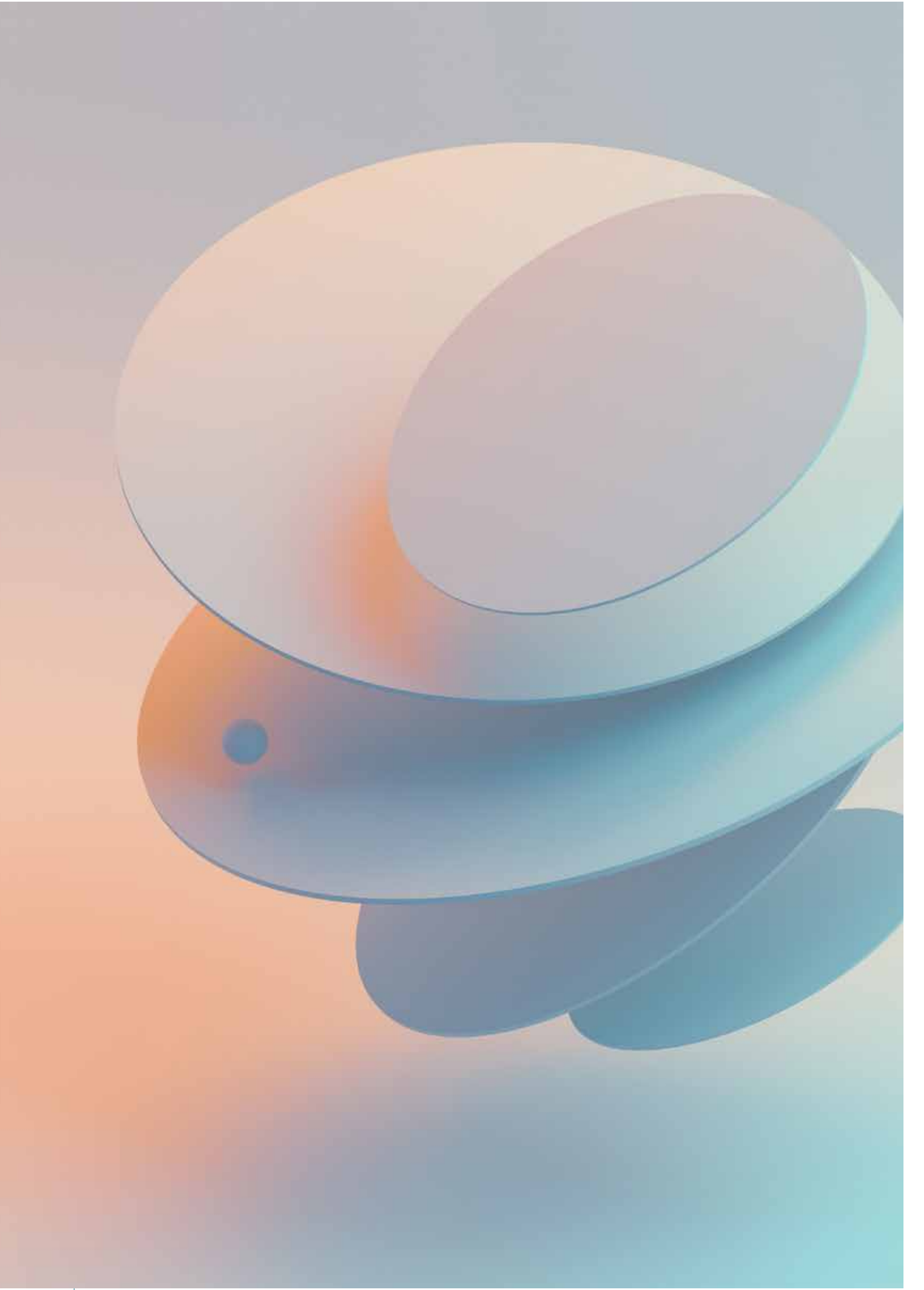
Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

EXAMPLE 2

Heating by high efficiency radiators, cooling by FCU units and DHW integrated in the indoor unit



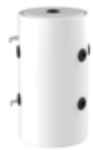
Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.



HEAT PUMPS ACCESSORIES

ACCESSORIES

Image	Code	Description	Applicability				
			iSERIES	iM	X3 MONOBLOC heat pumps	X3 SPLIT heat pumps	X3 ALL IN ONE heat pumps
	387030211	Control panel for management of DHW production		●			
	387030210	Bidirectional servomotor for diverting valve, 230 Vac, three points	●	●	●		
	387030209	3-way diverting valve, 1"	●	●	●		
	387030701	200 liters DHW Tank - 1 heat exchanger for heat pump	●	●	●	●	
	387030702	300 liters DHW Tank - 1 heat exchanger for heat pump	●	●	●	●	
	387030700	300 liters DHW Tank - 2 heat exchangers for heat pump and solar power system	●	●	●	●	
	387030208	3 kW electric heater for DHW tank	●	●	●	●	
	387030727	Additional electric heating element for internal installation 3 kW 1ph	●	●	●		
	387030728	Additional electric heating element for internal installation 3 kW 3ph	●	●	●		

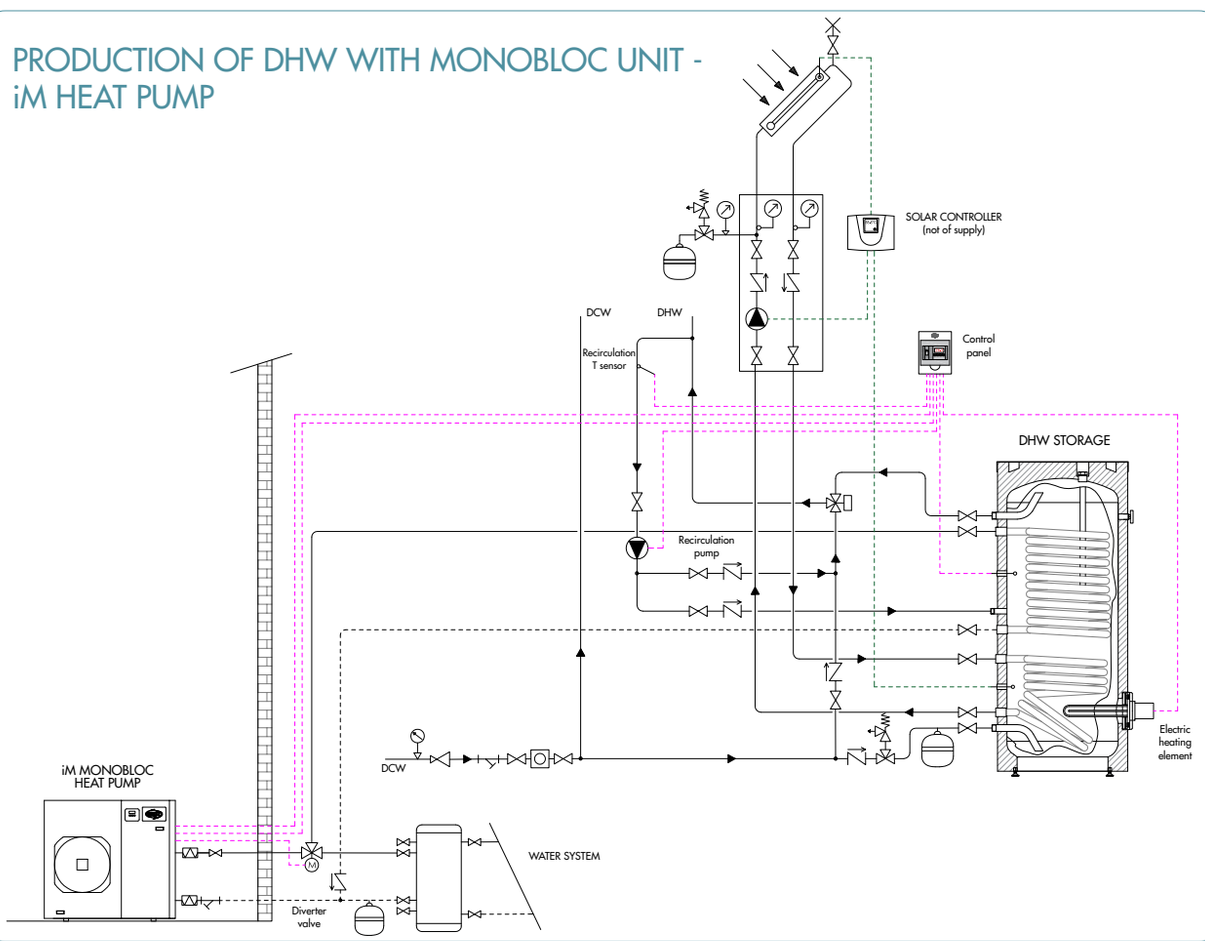
Image	Code	Description	Applicability				
			iSERIES	iM	X3 MONOBLOC heat pumps	X3 SPLIT heat pumps	X3 ALL IN ONE heat pumps
	387030705	45 liters tank/ isolated separator, 6 connections	●	●	●	●	●
	387030706	85 liters tank/ isolated separator, 6 connections	●	●	●	●	●
	387030215	Gateway modbus		●			
	387030214	Remote panel for iM		●			
	387030220	Wired control for iSERIES indoor units - **Mandatory accessory**	●				

ACCESSORIES

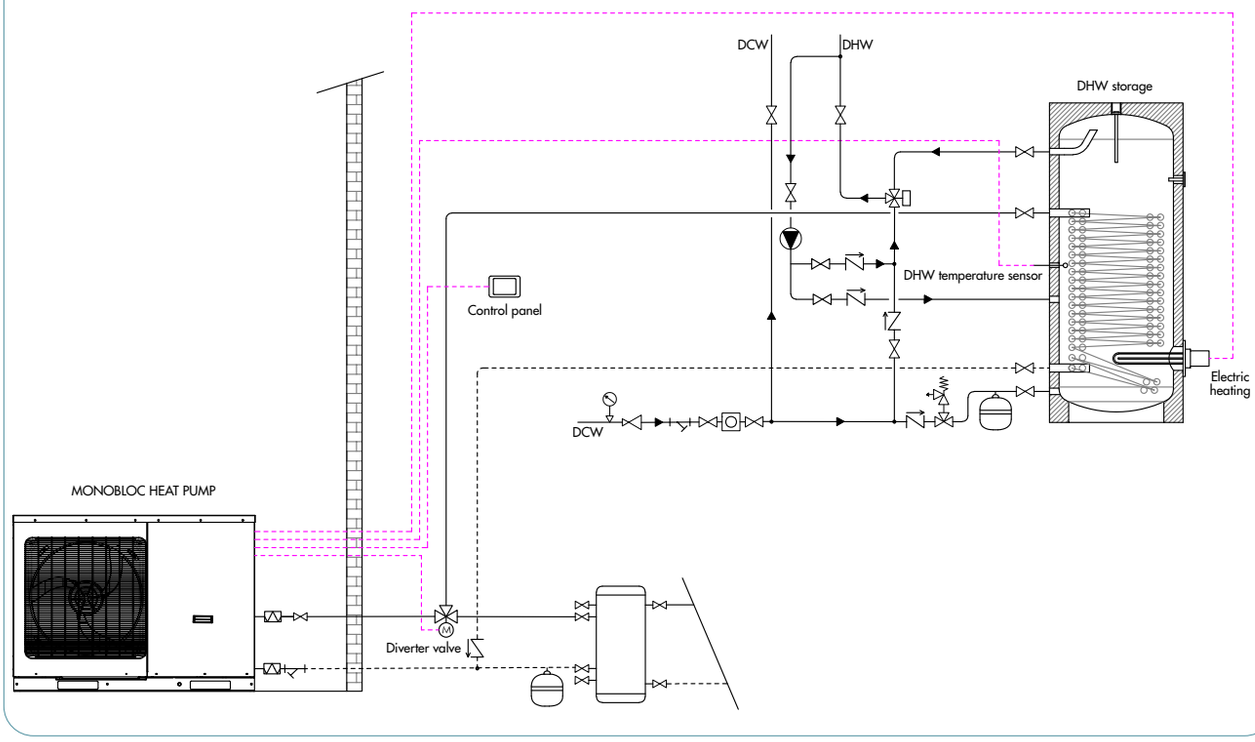
THE PRODUCTION OF DHW

It is possibile to produce domestic hot water using iM unit and AQUA UNIT (as an alternative to EMIX/EMIX TANK) managing the switching of the heat supply from the heating system to a specific storage tank.
The DHW system, therefore, consists of a domestic hot water tank (with internal exchanger suitable for heat exchange with a heat pump), an electric heating element, a control panel with temperature probe and a diverting valve. Moreover, it features auxiliary functions such as the anti-legionella cycle management, a backup, if provided, and the domestic water recirculation function.

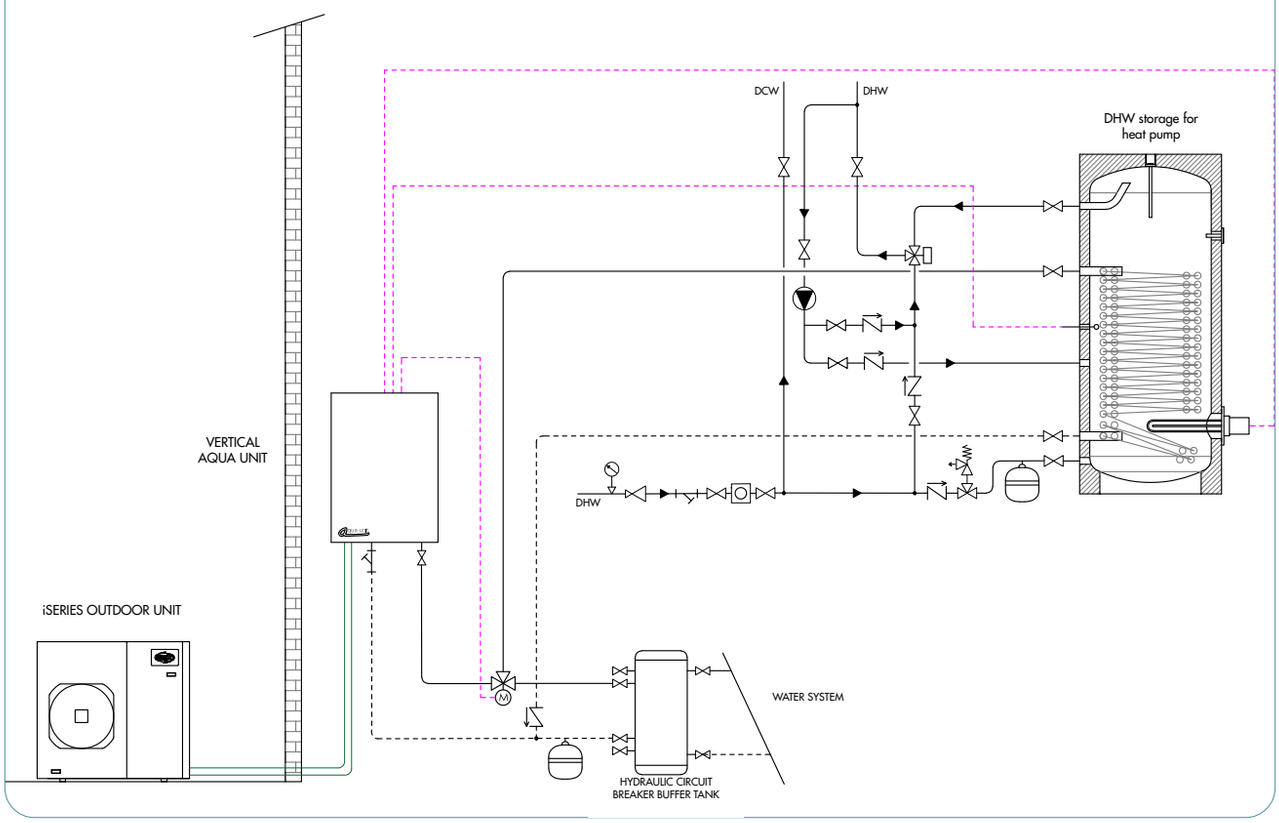
PRODUCTION OF DHW WITH MONOBLOC UNIT - iM HEAT PUMP



PRODUCTION OF DHW WITH X3 AIR TO WATER HEAT PUMPS - MONOBLOC UNIT



PRODUCTION OF DHW WITH iSERIES SPLIT UNIT - VERTICAL AQUA UNIT



ACCESSORIES

CONTROL PANEL

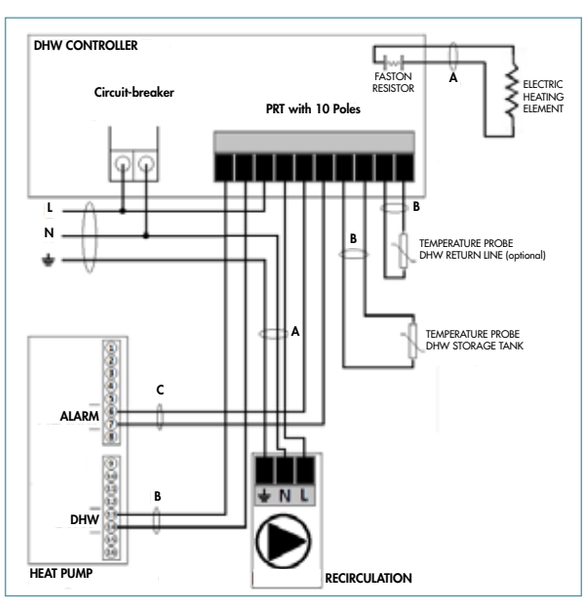
Code	Description
387030211	Control panel for management of DHW production

The control panel of the DHW KIT is an electronic device installed in a special electric panel for the control and management of the domestic hot water production in the iM/iSERIES systems. The unit is capable of controlling a heat pump and a heating element (up to 4 kW) using them to activate the multiple functions and optimising energy consumption.

What the system can do:

- produce Domestic Hot Water in a storage tank using a heat pump and/or a heating element;
- control the recirculation pump of the domestic water circuit;
- control the anti-legionella cycle;
- anti-freeze protection;
- manage any alarm/unavailability of the heat pump.

REFERENCE WIRING DIAGRAM

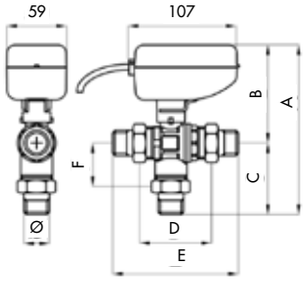


CONTROL PANEL TECHNICAL DATA

ELECTRICAL SPECIFICATIONS	
Voltage	230 Vac
Power consumption	7 VA
Total breaking capacity	460 VA (relay outputs 1+153)
Breaking capacity for relay	460 VA per R1/185 W
Internal fuse	5 A delayed
Protection category	IP40
Protection calss	II
Measuring range	-40 °C up to 110 °C
PERMITTED CLIMATIC CONDITIONS	
Room temperature for a correct operation	0 °C/40 °C
Ambient temperature for transportation/storage	0 °C/40 °C
Room humidity for a correct operation	85% UR with DBS 25 °C
Ambient humidity for transportation/storage	85% UR with DBS 25 °C
OTHER SPECIFICATIONS	
Casing	Plastic ABS
Type of installation	Wall-mounting
Total dimension	200x147x95 (mm)
Display	LED display 7 seg. 3 digits
	4 LED (red, yellowe, green and white)
Programming	4 buttons

DIVERTING VALVE

The diverting valve consists of 2 elements: the valve body and the servomotor, supplied separately.



DIMENSIONS (mm)

ND	Ø OUTLETS	Ø VALVE BODY	A	B	C	D	E	F
20	3/4"	1"	170	100	70	67	128	40

SERVOMOTOR

Code	Description
387030210	Bidirectional servomotor for diverting valve, 230 Vac, three points

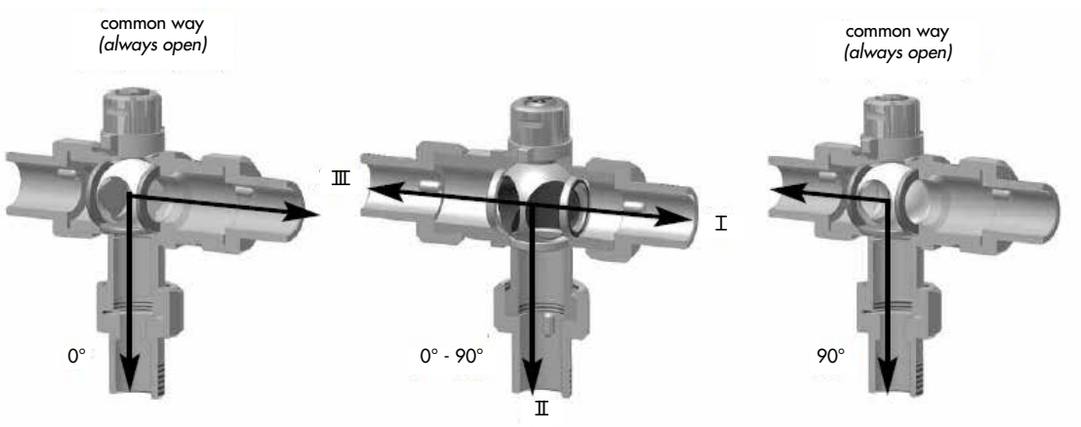
TECHNICAL DATA

TECHNICAL SPECIFICATIONS	
Electric control	3 points
Valve body connection	quick fitting
Operating mode	ON/OFF
Rotation	90° clockwise and anticlockwise
Internal fuse	5 A delayed
Position indicator	rotating arrow wich indicates the position of the sphere
Motor	bidirectional
Electrical power supply	230 Vac - 50/60 Hz
Power cable lenght	80 cm
Diverting time and related starting torque	15 seconds - 5 Nm
Power usage	3.9 VA
Phase electric capacity in output to grey wire	1 A resistive
Electric capacity of the supplementary micro-switch	1 A resistive - 250 V
Indoor operating temperature	+5 °C ÷ +50 °C
Protection degree	IP 54
Insulation class	II - double insulation
External casing material	polyamide PA 6, 30% glass fibre
Certification	CE

VALVE BODY

Code	Description
387030209	3-way diverting valve, 1"

The main characteristic of the valve body is the presence of a 3-hole sphere, which has a hole directed to the common way (always open) and two other orthogonal holes to the first and between them.
When one of the last two holes is positioned on one of the two inlet ways, the second way is closed. The sphere turns 90° and the second hole is directed onto the second inlet way, thus closing the first. The 3-way valve body includes a condition in which the 3 ways are simultaneously communicating with one another while the sphere is rotating to switch from one position to the other. When the rotation completes, the valve goes completely back to its diverter function.



TECHNICAL DATA	
Type	3-way vertical, diverting
Body dimension	1" total flow
Valve body material	brass CW617N UNI EN 12165
Sleeve material	brass CW617N UNI EN 12165
Sphere material	brass CW617N UNI EN 12165
Seal material	P.T.F.E.
Kv_s	18.3 m^3/h
Nominal operating pressure	30 bar
Maximum pressure differential	16 bar
Minimum fluid temperature	+5 °C
Maximum fluid temperature	+160 °C
Suitable fluid	water and fluids compatible with EPDM and P.T.F.E.

ENAMELED STEEL TANKS FOR HEAT PUMPS

DHW tank
200-300 L
1 heat exchanger

DHW tank
300 L
2 heat exchangers

Made in enameled steel for the storage of domestic hot water (DHW). They are fitted with one or two fixed internal heat exchangers that can be powered by a heat pump and by a solar power system. The heat exchangers have a large surface area which means that the power supplied by the source can be transmitted faster and more effectively, thus reducing the number of start-up and shutdown cycles of the heat pump that will benefit the duration and reliability of the system. They are also designed and ready to allow the installation of an additional electric heating element

Accessories:
Electric heating element kit for DHW tank

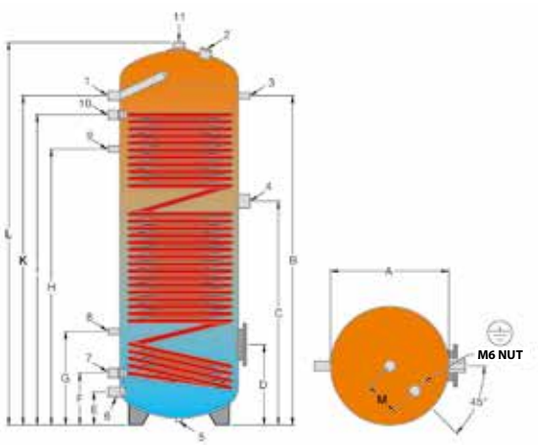
Model	Code	Description
ACS 200 LT - 1S	387030701	200 liters DHW Tank - 1 heat exchanger for heat pump
ACS 300 LT - 1S	387030702	300 liters DHW Tank - 1 heat exchanger for heat pump
ACS 300 LT - 2S	387030700	300 liters DHW Tank - 2 heat exchangers for heat pump and solar power system

TECHNICAL DATA

DOMESTIC WATER STORAGE TANK	
Material	Glazed, ceramic-coated S 235 Jr carbon steel
Internal protective treatment	Inorganic enamelling (DIN 4753-3)
Use limits (P max./T max.)	10 bar/95 °C
Cathodic protection	Magnesium anode
HEAT EXCHANGER	
Material	Glazed, ceramic-coated S 235 Jr carbon steel
Internal protective treatment	Untreated
External protective treatment	Inorganic enamelling (DIN 4753-3)
Type	Fixed coil heat exchanger
Use limits (P max./T max.)	10 bar/95 °C
GENERAL SPECIFICATIONS	
Capacity	200-300 liters
Warranty	2 years
Thermal insulation	Rigid polyurethane + PVC: Fire resistance class B3 (DIN 4102)
Reference legislation	Directive 2014/68/EU (PED) Art. 4 par. 3 (pressure equipment)
	Ministerial Decree No. 174 of 6 April 2004 (suitability of materials in contact with DHW)
	Directive 2009/125/EC (Energy Related Products)

200-300 L DHW TANK - 1 HEAT EXCHANGER

Model	Total diameter	Total height	Diagonal height	Insulation thickness	ErP class	Dispersion	Real capacity	Weight - no-load
	mm	mm	mm	mm		W	L	kg
ACS 200 LT - 1S	640	1215	1375	70	B	51	190	90
ACS 300 LT - 1S	640	1615	1735	70	B	63	263	124



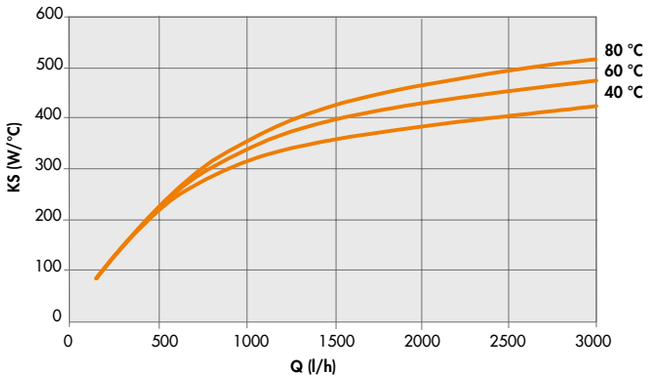
No.	TYPE OF CONNECTION	200-300
1	Hot water supply	1″
2	Anode	1″ 1/4
3	Thermometer - Probe	1/2"
4	Electric heater connection	1″ 1/2
5	Blind connection for fastening	1/2"
6	Cold water intake	1″
7	Return heat exchanger	1″
8	Probe	1/2"
9	Recirculation	1/2"
10	Supply heat exchanger	1″
11	Hot water supply	1″ 1/4

Model	A	B	C	D	E	F	G	H	I	K	L	M
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
ACS 200 LT - 1S	500	995	735	320	140	220	370	835	990	1070	1215	150
ACS 300 LT - 1S	500	1390	945	340	140	220	395	1165	1310	1390	1615	150

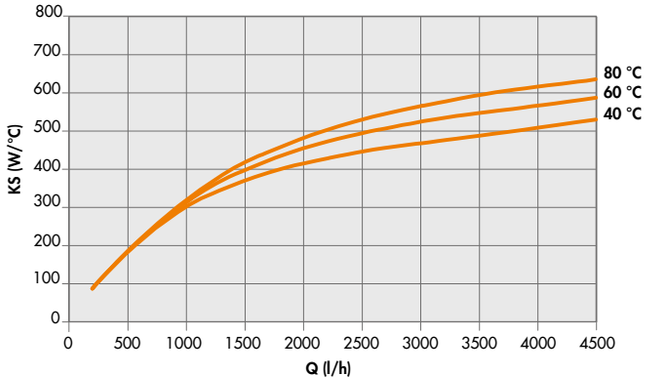
Model	Heat exchanger surface	Heat exchanger water content	Heating water	Power output	DHW production
			60 °C/50 °C	60 °C/50 °C	10 °C/45 °C
	m^2	L	m^3/h	kW	m^3/h
ACS 200 LT - 1S	3	17.2	1.2	14	0.3
ACS 300 LT - 1S	4	23	1.6	19	0.5

SPECIFIC PERFORMANCE DIAGRAMS BASED ON HEAT EXCHANGER INLET TEMPERATURE

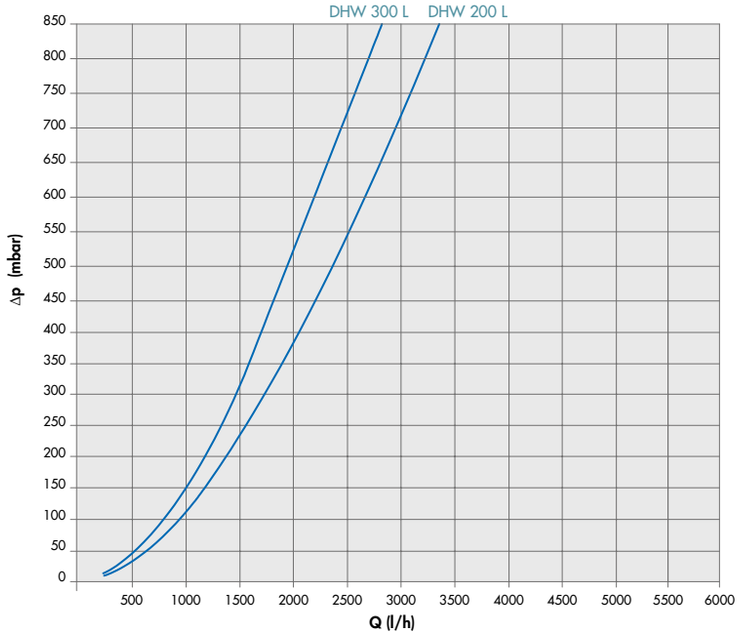
DHW 200 L



DHW 300 L



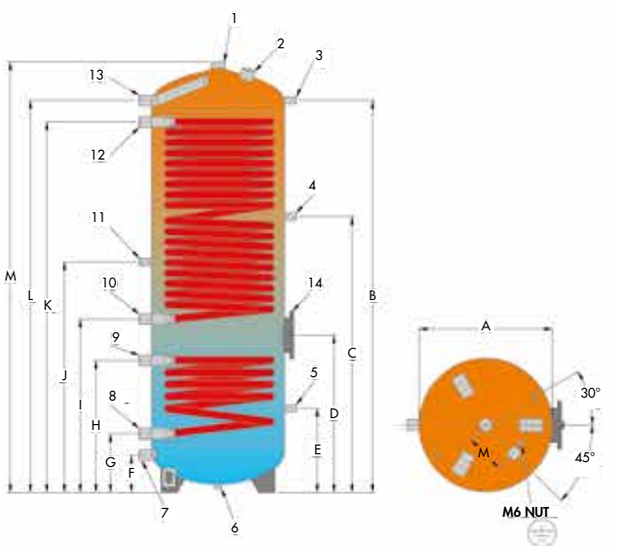
PRESSURE DROP HEAT EXCHANGERS



DHW TANK 300 L - DOUBLE HEAT EXCHANGER

Model	ErP class	Dispersion	Total diameter	Total height	Diagonal height	Insulation thickness
		W	mm	mm	mm	mm
ACS 300 LT - 2S	B	63	640	1615	1735	70

Model	Real capacity	Weight - no-load	Top heat exchanger		Bottom heat exchanger	
			Surface	Water content	Surface	Water content
	L	kg	m^2	L	m^2	L
ACS 300 LT - 2S	260	131	3.7	18	1.2	8



No.	TYPE OF CONNECTION	300
1	Hot water supply	1″ 1/4
2	Anode	1″ 1/4
3	Thermometer - Probe	1/2"
4	Thermostat	1/2"
5	Thermostat	1/2"
6	Blind connection for fastening	1/2"
7	Cold water intake	1″
8	Return bottom heat exchanger	1″
9	Supply bottom heat exchanger	1″
10	Return top heat exchanger	1″
11	Recirculation	1/2"
12	Supply top heat exchanger	1″
13	Hot water supply	1″
14	Flange with electric heater connection	1″ 1/2

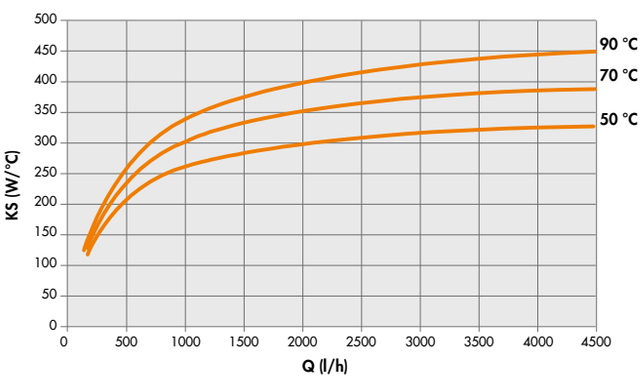
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
ACS 300 LT - 2S	500	1470	1035	590	315	140	220	495	650	865	1390	1470	1615	150

PERFORMANCE

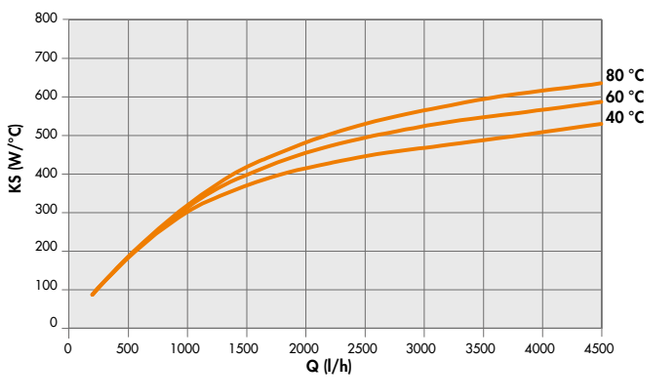
Model	Performance			
ACS 300 LT - 2S	Top heat exchanger			
	Heating water	Power output	DHW production	Pressure drop
	60 °C/50 °C	60 °C/50 °C	10 °C/45 °C	60 °C/50 °C
	m^3/h	kW	m^3/h	mbar
	1.59	18.5	0.45	31
	Bottom heat exchanger			
	Heating water	Power output	DHW production	Pressure drop
	80 °C/60 °C	80 °C/60 °C	10 °C/45 °C	80 °C/60 °C
	m^3/h	kW	m^3/h	mbar
	1.25	29	0.71	17

SPECIFIC PERFORMANCE DIAGRAMS BASED ON HEAT EXCHANGER INLET TEMPERATURE

Bottom heat exchanger

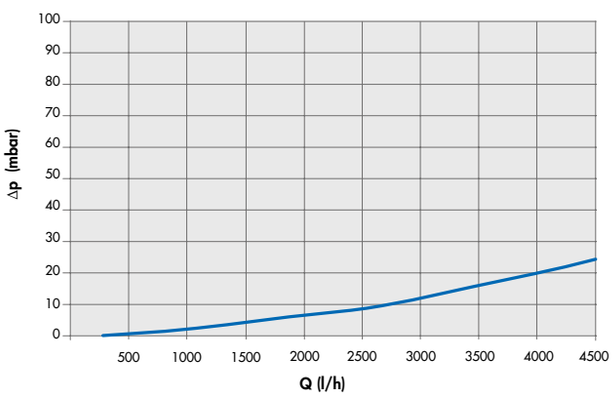


Top heat exchanger

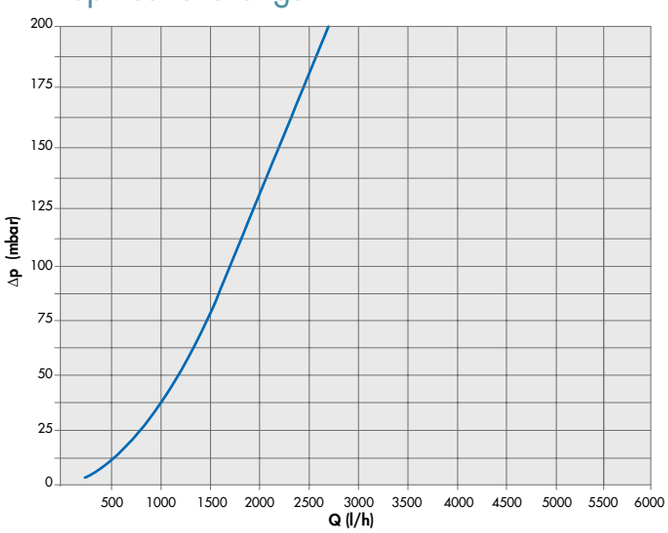


PRESSURE DROP HEAT EXCHANGERS

Bottom heat exchanger



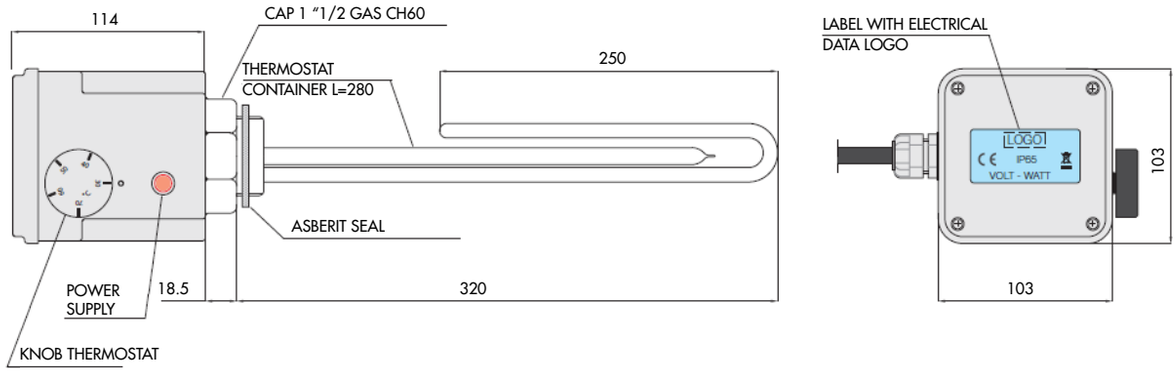
Top heat exchanger



ELECTRIC HEATER FOR DHW TANK

Code	Decription
387030208	3 kW electric heater for DHW tank

The 3 kW electric heater is used in the domestic hot water storage tank as an integrative element and as a backup if needed.



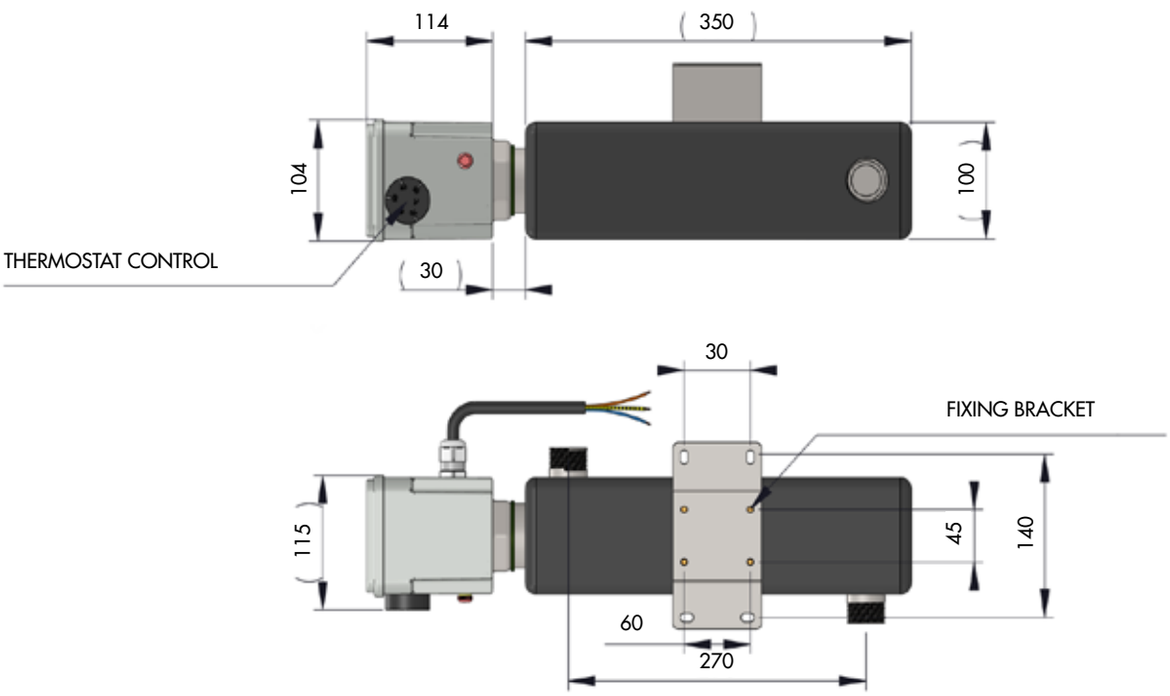
TECHNICAL DATA	
Nominal output	3 kW
Version	MgO
Class	I
Outdoor diameter	8.5 mm
Power supply voltage	230 V
Maximum specific load	13 W/cm^2
Seal material	AISI 316L
Threaded cup	1"1/2 gas in AISI 304
Protection cover	PP V0 IP 65
Temperature regulation	thermostat 30 ÷ 70 °C
Safaty	thermostat 90 °C
Wiring	cable in PVC 3x1.5 mm^2
Approvals	CE
Tests	EN 60335-1, EN 50106

ADDITIONAL ELECTRIC HEATER FOR HEATING SYSTEM - INTERNAL INSTALLATION

Code	Description
387030727	Additional electric heating element for internal installation 3 kW 1ph
387030728	Additional electric heating element for internal installation 3 kW 3ph

This accessory is an electric heat exchanger supporting heat pumps which is activated, when necessary, for providing the heat required by the thermal demand. The component must be installed inside.

DIMENSIONAL DRAWING



TECHNICAL DATA		
	387030727	**387030728**
Nominal output	3 kW	3 kW
Power supply voltage - phases	230 V - 1 PH	400 V - 3 PH
Class	I	I
Electrical connection	PVC cable 3x1,5 mm^2	PVC cable 4x1,5 mm^2
Length of power cord	2 m	2 m
Maximum specific load	13,5 W/cm^2	13,1 W/cm^2
Heating elements material	INCOLOY 800	INCOLOY 800
Seal material	AISI 304	AISI 304
Protection cover	UL94V0	UL94V0
Temperature regulation	thermostat 30 ÷ 70 °C	thermostat 30 ÷ 70 °C
Safaty	thermostat 90 °C	thermostat 90 °C
Hydraulic connections	1″	1″
Approvals	CE	CE
Tests	EN 60335-1/EN50106	EN 60335-1/EN50106

BUFFER TANKS/HYDRAULIC DISJUNCTORS

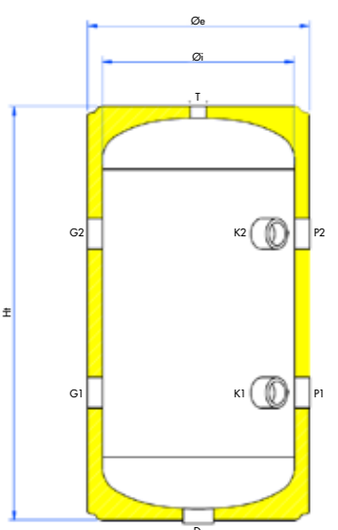
45 liters 85 liters

Code	Description
387030705	45 liters tank/isolated separator, 6 connections
387030706	85 liters tank/isolated separator, 6 connections

Indoor buffer tanks for air conditioning and heating systems, available in two different capacities, 45 liters and 85 liters. They are particularly suitable to be combined with reversible heat pumps acting as hydraulic circuit breaker (by making the various circuits of the system independent) and as thermal flywheel (minimising the start-ups and ensuring the minimum water supply for the correct operation of the heat pump). The tanks are provided with additional connections for the integration of an additional heat source.

KEY OF CONNECTIONS:

D: drain
G2/G1: plant oulet/inlet
K1/K2: auxiliary
P2/P1: energy source oulet/inlet
T: vent



CONNECTIONS:

Model	D	G1	G2	K1	K2	P1	P2	T
	(inch)							
45 L	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1/2"
85 L	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1/2"

DIMENSIONS:

Model	Øi	Øe	Ht	R*	G1	G2	K1	K2	P1	P2
	(mm)									
45 L	320	370	700	770	220	485	220	485	220	485
85 L	400	460	780	905	185	535	185	535	185	535

TECHNICAL DATA	
Volume	45 and 85 liters
Material	Carbon steel
Covering	White galvanised sheet metal
Thermal insulation	High-density polyurethane foam
Minimum operating temperature	-10 °C
Maximum operating temperature	90 °C
Maximum operating pressure	6 bar
Energy class	B

GATEWAY MODBUS - iMODBUS

Code	Description
387030215	Gateway modbus

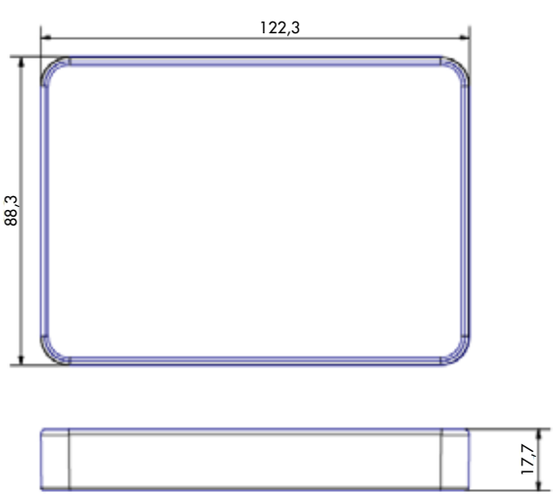
iMODBUS is an communication device between the iM heating, cooling and DHW units and remote control systems using the MODBUS protocol.
iMODBUS uses the industrial MODBUS protocol for a simple and reliable connection to external monitoring systems.
The device is fitted with two types of MODBUS ports (RS232 and RS485) and has the size of two DIN modules.
The gateway provides several reading, and reading and writing parameters in order to ensure an efficient and accurate management of the iM units. Detailed specifications can be found in the installation manual provided with the device.

REMOTE PANEL FOR iM

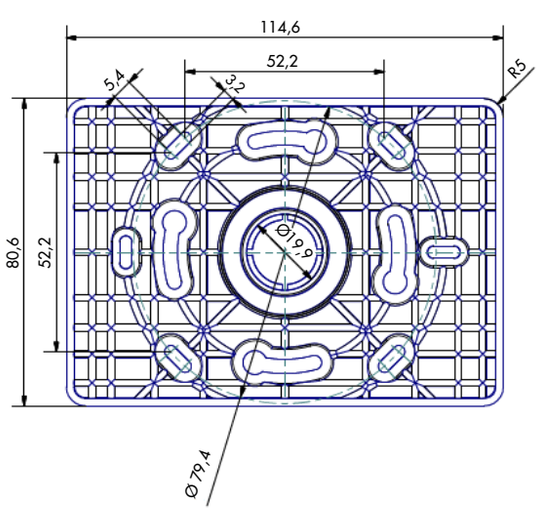
Code	Description
387030214	Remote panel for iM

The remote control panel can be installed on the units in combination with the existing one and provides for the same functions (it is NOT a room temperature probe). The panel requires a separate 12 VDC power supply (by external supply).

DIMENSIONS (mm)



INSTALLATION



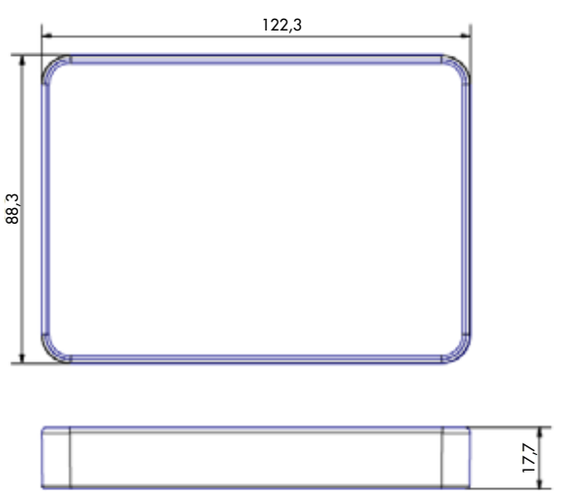
- Directly in a hole on the wall
- On electrical box mod. 503
- On circular electrical box

WIRED CONTROL UNIT FOR AQUA UNIT

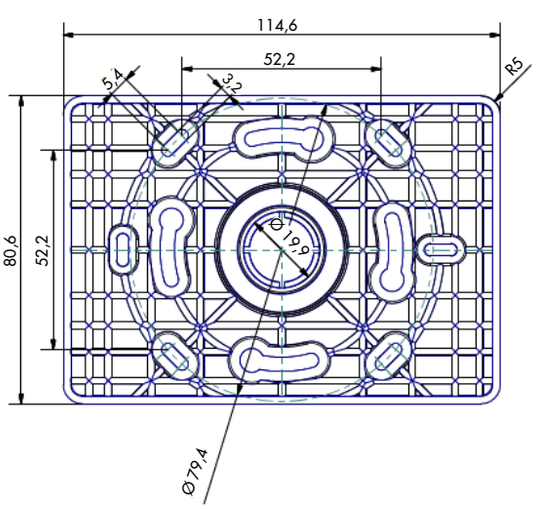
Code	Description
387030220	Wired control for iSERIES indoor units - **Mandatory accessory**

The wired control for internal units can be set during installation for the management for Aqua Unit. Equipped with touch buttons and graphic display is intuitive to use by the end user. In addition, it can be easily installed both on a recessed box or directly on the wall.
To be paired with the latest versions of Aqua Unit.
The control can be interfaced with third-party BMS systems (via Modbus protocol). The wire control is a mandatory accessory for the operation of the latest versions Aqua Unit, which no longer include the panel on the unit.

DIMENSIONS (mm)



INSTALLATION



- Directly in a hole on the wall
- On electrical box mod. 503
- On circular electrical box

NOTES


argo
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X3 MODULAR HEAT PUMPS

Commercial applications - R32 DC Inverter

X3 MODULAR HEAT PUMPS

MAIN FEATURES

Code	Model	Cooling capacity [kW] (1)	Heating capacity [kW] (2)
398600050	AGCH353PH	32	35
398600051	AGCH603PH	60	65

(1) Water temperature 12 °C/7 °C, outdoor air temperature 35 °C
(2) Water temperature 40 °C/45 °C, outdoor air temperature 7 °C D.B./6 °C W.B.

Code	Model	Description	Applicability
398610050	MOD. CH	Wired control*	All

*Mandatory accessory, one for each modular system

The AGCH series is made up of reversible, modular, full inverter heat pumps for cooling and heating of predominantly commercial environments that use environment-friendly R32 refrigerant. Available in two sizes, they can be used to create single configurations or configurations with up to 16 units, connected by a single central control unit. The versatility and simplicity of the configuration or installation allow these units to easily adapt to the various types of systems.
The series is also equipped with external hydronic modules, with or without inertial tank, with single or double circulator pump, so as to fulfil the various needs of the systems they serve.

Internal copper groove
Quiet mode
Weekly timer
Heating down to low temperatures
Door control
Full protection
Timer on/off
Save energy
Easy maintenance
High efficiency
Auto restart memory

Intelligent defrosting
Central control
Wide operating range
Low-voltage start-up
Wide voltage range
Auto diagnosis
-20 °C Min. outdoor temp. heating
+40 °C Max. outdoor temp. heating
-15 °C Min. outdoor temp. cooling
+52 °C Max. outdoor temp. cooling

PLUS

SILENT OPERATION

- Active noise reduction: broad plastic blades of the fans
- Passive noise reduction: special design of the fan zone
- Passive noise reduction: "QUIET MODE" function
- Passive noise reduction: acoustic insulation of the compressor

At partial loads, the noise generated by the running unit can drop down to 52 dB(A)

HIGH EFFICIENCY

The units are equipped with a heat exchanger featuring a "DUAL FLOW" design of the tube bundle, for increasing the unit's efficiency and capacity. The special design of the plate and of the relative bottlenecks at the entry to the heat exchanger ensure a regular and uniform refrigerant flow in order to improve the heat exchange efficiency. The U-shaped thread inside the copper pipes improves the laminar flow of the fluid and facilitates the heat exchange.

The unit is able to estimate the building's thermal load on the basis of the outdoor air temperature, thus modifying the delivery water temperature set-point so as to reduce energy consumption.

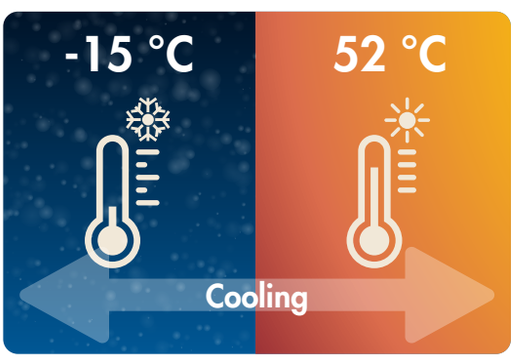
RELIABILITY

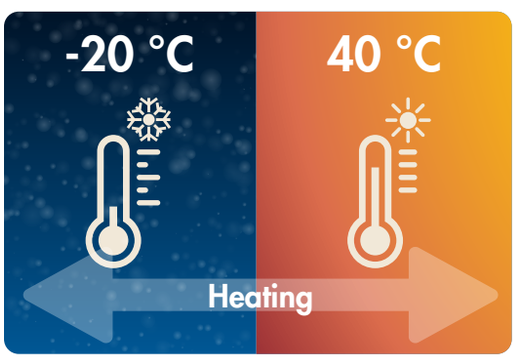
With the central control unit, it is possible to balance the work time of the compressors so as to avoid excess work only for some of them, as well as improve the system's efficiency and service life.
Only **one-third of the outdoor units** are simultaneously allowed to perform defrosting, thus reducing fluctuations of the leaving water temperature and, consequently, improving the environmental comfort.

- Each unit can be a MASTER unit;
- Timely communication between the units of the same system;
- A problem on one unit does not hinder the normal operation of the others.

The anti-freeze protection is automatically activated by the unit when the outdoor temperature drops to below 5 °C, regardless of whether it is operating in heating or cooling mode.

WIDE OPERATING RANGE





TOUCH-SCREEN CONTROL PANEL

The control panel, supplied separatly as a mandatory accessory, allows the management and set-up of one or more units (up to 16).

In particular it is possible to:

- Define the operating mode of the heat pump and its priorities (heating, cooling)
- Set all the main operating parameters (set point, hysteresis, etc.)
- Activate external (or internal) systems to integrate or replace the heating production unit
- Manage the commissioning of the unit
- Display the status of the operating parameters of the main components of the heat pump
- Manage the unit remotely via MODBUS gateway or Wi-Fi module directly integrated into the panel.

Specific auxiliary functions are also available in the control panel, including:

- Automatic management of the flow temperature of the fluid according to the external temperature (climate curve)
- Programming of weekly and hourly operation
- Activation of "silent" operation
- Emergency management in case of unit failure
- Programmable activation of the anti-legionella cycle
- Automatic activation of the antifreeze protection.

TECHNICAL DATA

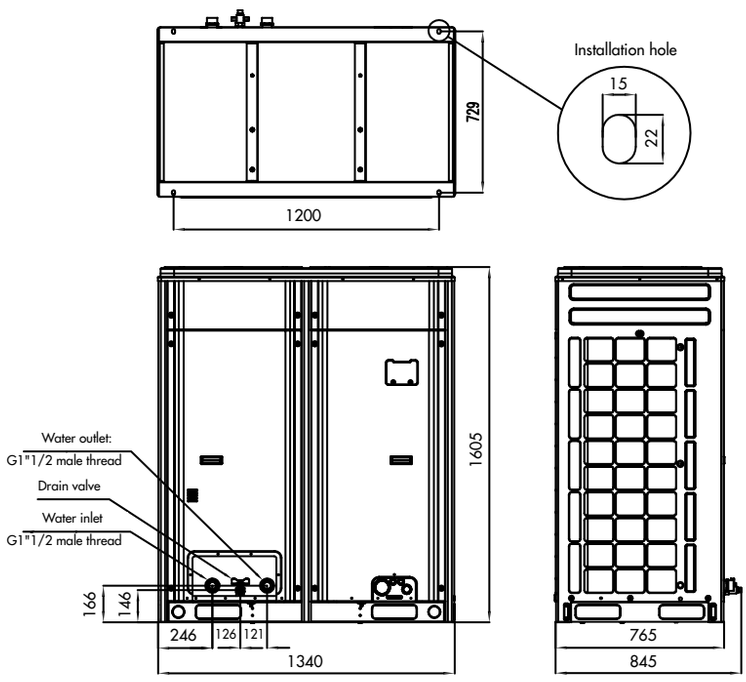
MODEL				AGCH353PH	
Characteristics				**Cooling**	**Heating**
Performances according to EN 14511	Air +35 °C - Water +12/7 °C Air +7 °C - Water +40/45 °C	Rated capacity	kW	32.00	35.00
		EER/COP		2.74	3.3
	Air +35 °C - Water +23 °C/18 °C Air +7 °C - Water +30 °C/35 °C	Rated capacity	kW	41.38	36.00
		EER/COP		3.70	4.09
		Maximum electrical power input	kW	13.40	
		Capacity correction range	%	31% ~ 100%	
Performances according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Nominal heat output	kW	24.00	
		Seasonal energy efficiency η_s	%	153	
		Annual energy consumption	kWh	12504	
		SEER/SCOP		4.4	3.9
		Energy efficiency class		A++	
	LOW TEMPERATURE (35 °C) WARMER climate	Nominal heat output	kW	26.00	
		Seasonal energy efficiency η_s	%	138.9	
		Annual energy consumption	kWh	18068	
	LOW TEMPERATURE (35 °C) COOLER climate	Nominal heat output	kW	20.00	
		Seasonal energy efficiency η_s	%	218	
		Annual energy consumption	kWh	4834	
Unit operation data		Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	380-415~/3N/50	
		Sound power level	dB(A)	78	
		Sound pressure level (distance 1 m)	dB(A)	62	
	Refrigerant	Compressor type/no.		Inverter Rotary/1	
		Type and GWP		R32/675 kg CO_2 eq.	
		Quantity		5.5 kg/3.71 tons CO_2 eq.	
	Fan	Type		Axial	
		Number	No.	2	
		Air flow rate	m^3/h	2x6300	
	Water side heat exchanger	Water flow rate	m^3/h	5.5	
		Head loss	kPa	80.0	
		Hydraulic connections (IN and OUT)	inches	1"1/2	
Water side operating limits		Leaving water temperature	°C	5~20	35~50
		Water input/output temperature difference	°C	2.5~6	
Air side operating limits			°C	-15~52	-20~40
Components and dimensions		Net weight /Weight during operation	kg	405/445	
		Dimensions (H/W/D)	mm	1605/1340/920	

TECHNICAL DATA

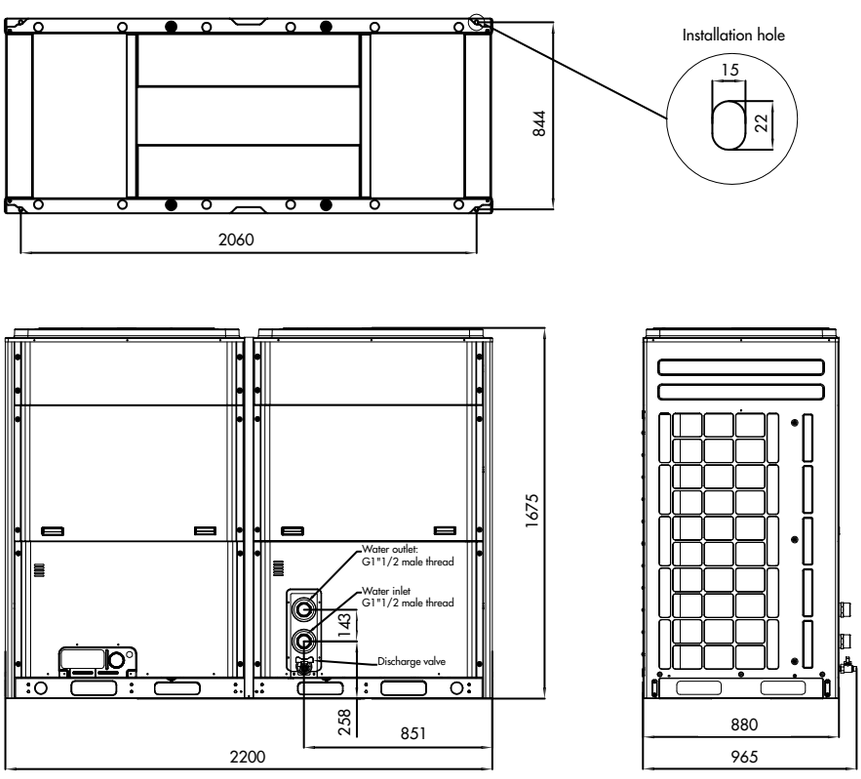
MODEL				AGCH603PH	
Characteristics				**Cooling**	**Heating**
Performances according to EN 14511	Air +35 °C - Water +12/7 °C Air +7 °C - Water +40/45 °C	Rated capacity	kW	60.00	65.00
		EER/COP		2.88	3.27
	Air +35 °C - Water +23 °C/18 °C Air +7 °C - Water +30 °C/35 °C	Rated capacity	kW	72.18	62.60
		EER/COP		3.88	4.15
		Maximum electrical power input	kW	28.80	
		Capacity correction range	%	15% ~ 100%	
Performances according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Nominal heat output	kW	51.00	
		Seasonal energy efficiency η_s	%	153	
		Annual energy consumption	kWh	25964	
		SEER/SCOP		4.6	3.9
		Energy efficiency class		A++	
	LOW TEMPERATURE (35 °C) WARMER climate	Nominal heat output	kW	39.00	
		Seasonal energy efficiency η_s	%	238.8	
		Annual energy consumption	kWh	8620	
	LOW TEMPERATURE (35 °C) COOLER climate	Nominal heat output	kW	48.00	
		Seasonal energy efficiency η_s	%	135.1	
		Annual energy consumption	kWh	34271	
Unit operation data		Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	380-415~/3N/50	
		Sound power level	dB(A)	86	
		Sound pressure level (distance 1 m)	dB(A)	68	
	Refrigerant	Compressor type/no.		Inverter Rotary/1	
		Type and GWP		R32/675 kg CO_2 eq.	
		Quantity		5.5x2 kg/3.71x2 tons CO_2 eq.	
	Fan	Type		Axial	
		Number	No.	2	
		Air flow rate	m^3/h	2x12000	
	Water side heat exchanger	Water flow rate	m^3/h	10.3	
		Head loss	kPa	55.0	
		Hydraulic connections (IN and OUT)	inches	2"	
Water side operating limits		Leaving water temperature	°C	5~20	35~50
		Water input/output temperature difference	°C	2.5~6	
Air side operating limits			°C	-15~52	-20~40
Components and dimensions		Net weight/Weight during operation	kg	686/755	
		Dimensions (H/W/D)	mm	1675/2200/965	

DIMENSIONAL DRAWINGS

Model AGCH353PH



Model AGCH603PH



HYDRONIC UNITS

MOD-HYDRO

MOD-HYDRO VT

They are used to distribute the heat transfer fluid, in heating and cooling mode. Easy to install, they can be positioned outdoors and are equipped with one or two circulator pumps and, sometimes, an buffer tank.

HYDRONIC KITS

Code	Model	Tank	No. of pumps	Applicability
387030644	MOD-HYDRO 1P 30	-	1	30 kW
387030645	MOD-HYDRO 2P 30		2	
387030646	MOD-HYDRO 1P 60		1	60 kW
387030647	MOD-HYDRO 2P 60		2	
387030648	MOD-HYDRO 1P 90		1	90 kW and 120 kW
387030649	MOD-HYDRO 2P 90		2	
387030650	MOD-HYDRO V T100 1P 30	100	1	30 kW
387030651	MOD-HYDRO V T100 2P 30		2	
387030652	MOD-HYDRO V T200 1P 60	200	1	60 kW
387030653	MOD-HYDRO V T200 2P 60		2	
387030654	MOD-HYDRO V T300 1P 90	300	1	90 kW and 120 kW
387030655	MOD-HYDRO V T300 2P 90		2	

HYDRONIC KIT ACCESSORIES

Code	Description	Applicability
387030660	Vibration dampers	MOD-HYDRO V T
387030661	Vibration dampers	MOD-HYDRO
387030656	Fitting kit 1"1/2*	MOD-HYDRO 1P/2P 30
387030657	Fitting kit 2"1/2*	MOD-HYDRO 1P/2P 60-90

*Mandatory accessory for adapting from Victaulic to threaded connections

MOD-HYDRO KIT

It can be combined with any type of modular chiller with single or multiple configuration (up to 120 kW) of the proposed range.

The unit includes:

- pipes insulated with anti-condensate elastomer;
- single or double centrifugal pump with shut-off valve;
- power electrical panel with device for pump alternation at every start-up (version with 2 pumps), reserve pump start-up in case of pump malfunction (version with 2 pumps), residual-current devices, contacts for remote signalling of running pumps, IP55 protection rating;
- safety valve;
- deaerator;
- pressure gauge;
- filling/discharge valve;
- base and panel made of galvanised and coated sheet metal, suitable for outdoor installations;
- easily and quickly removable panels.

MOD-HYDRO KIT VT

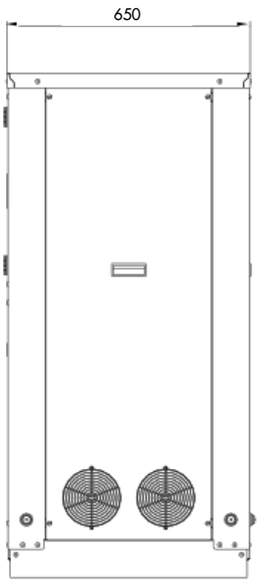
It can be combined with any type of modular chiller with single or multiple configuration (up to 120 kW) of the proposed range.

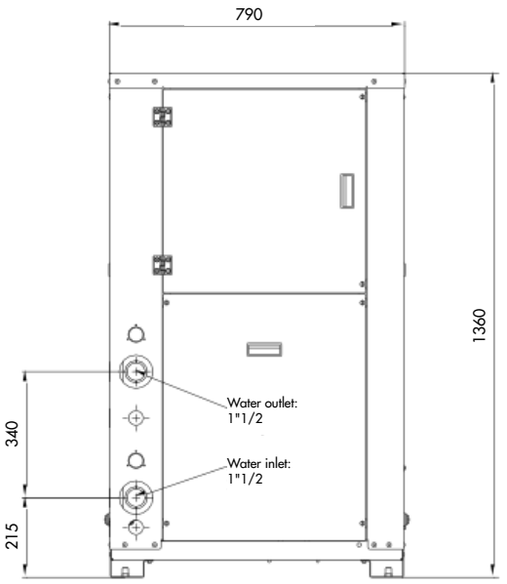
The unit includes:

- carbon steel tanks and pipes insulated with anti-condensate elastomer (100, 200 and 300 liters);
- single or double centrifugal pump with shut-off valves;
- power electrical panel with device for pump alternation at every start-up (version with 2 pumps), reserve pump start-up in case of pump malfunction (version with 2 pumps), residual-current devices, dry contacts for remote signalling of running pumps, IP55 protection rating;
- expansion vessel;
- safety valve;
- deaerator;
- pressure gauge;
- filling/discharge valves;
- base and panel made of galvanised and coated sheet metal, suitable for outdoor installations.

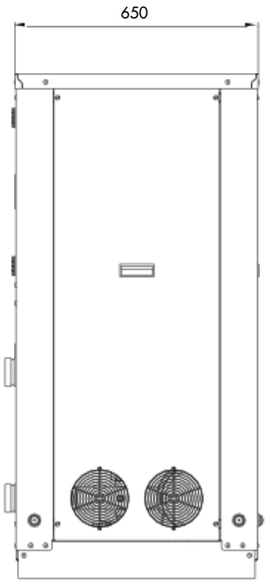
DIMENSIONAL DRAWINGS

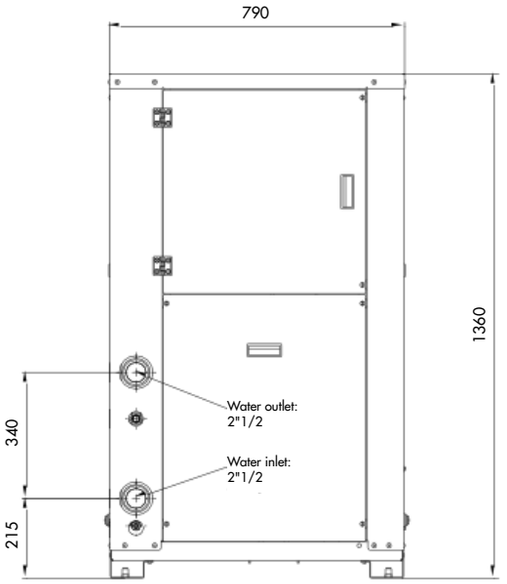
MOD-HYDRO 1P 30 - MOD-HYDRO 2P 30



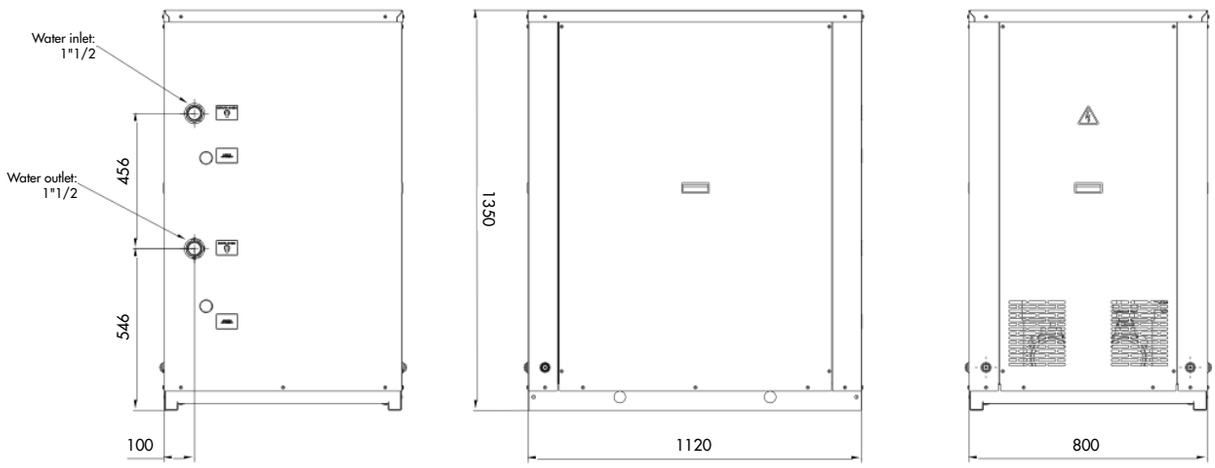


MOD-HYDRO 1P 60 - MOD-HYDRO 2P 60
MOD-HYDRO 1P 90 - MOD-HYDRO 2P 90

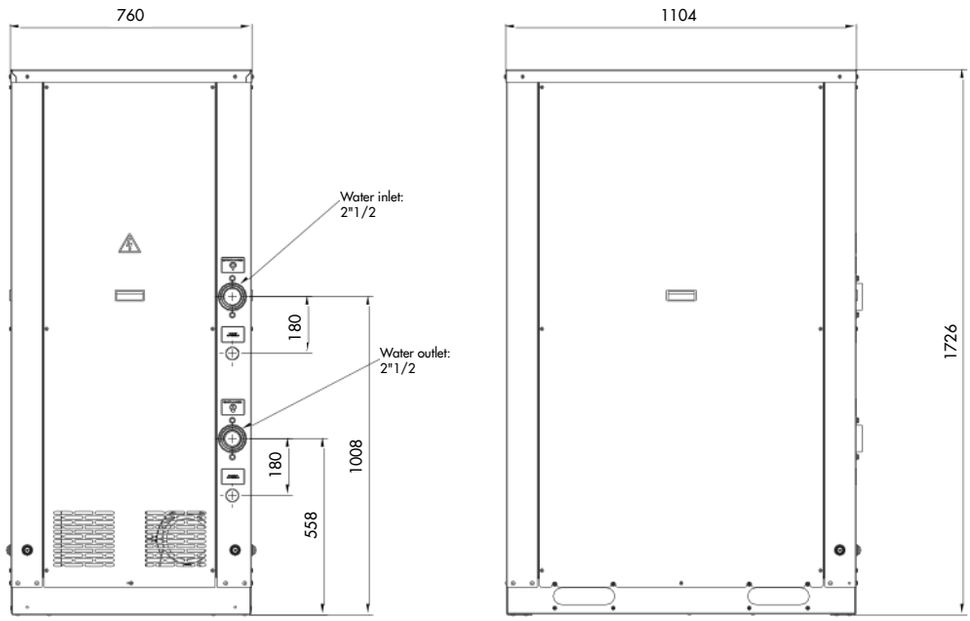




MOD-HYDRO V T100 1P 30
MOD-HYDRO V T100 2P 30

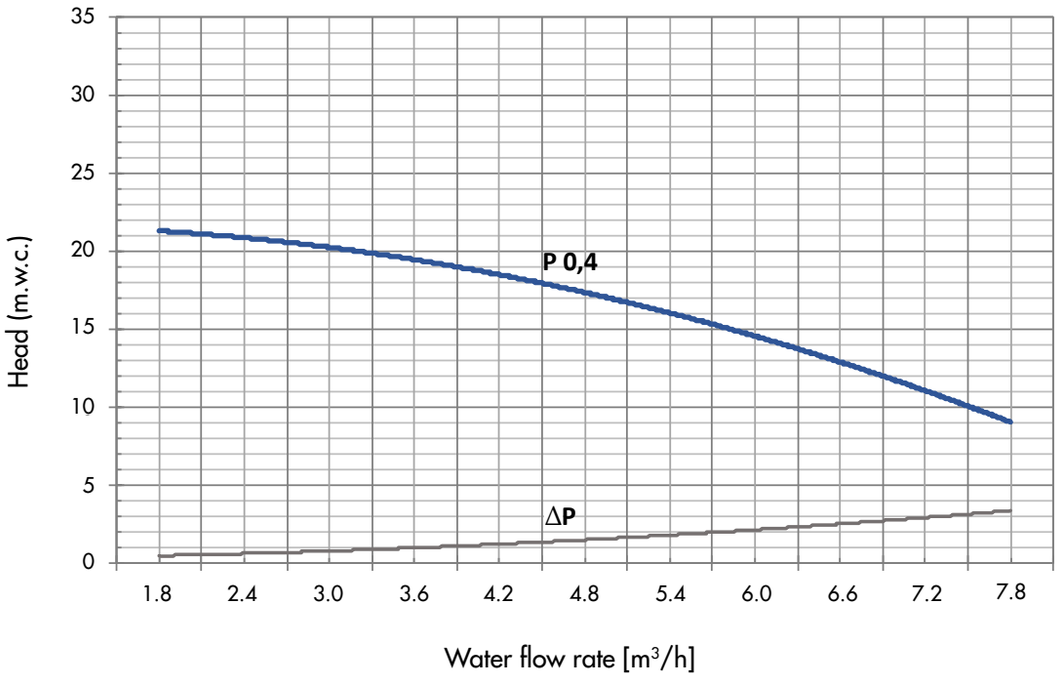


MOD-HYDRO V T200 1P 60 - MOD-HYDRO V T200 2P 60
MOD-HYDRO V T300 1P 90 - MOD-HYDRO V T300 2P 90

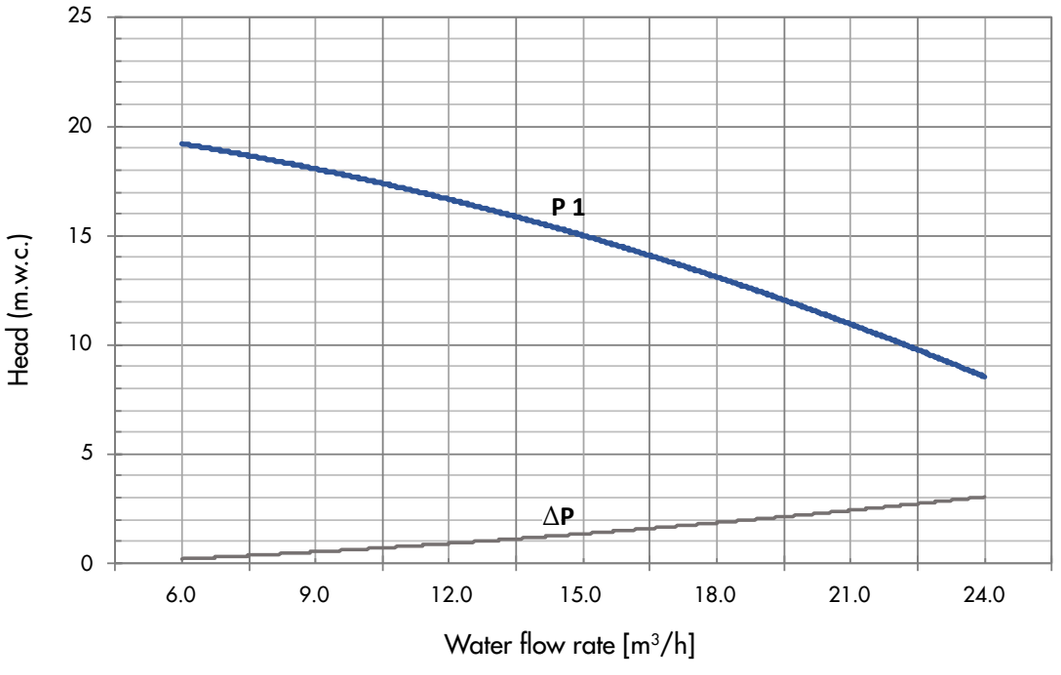


DIAGRAMS OF THE CIRCULATOR PUMPS FLOW/HEAD

MOD-HYDRO 1P 30 - MOD-HYDRO V T100 1P 30
MOD-HYDRO 2P 30 - MOD-HYDRO V T100 2P 30

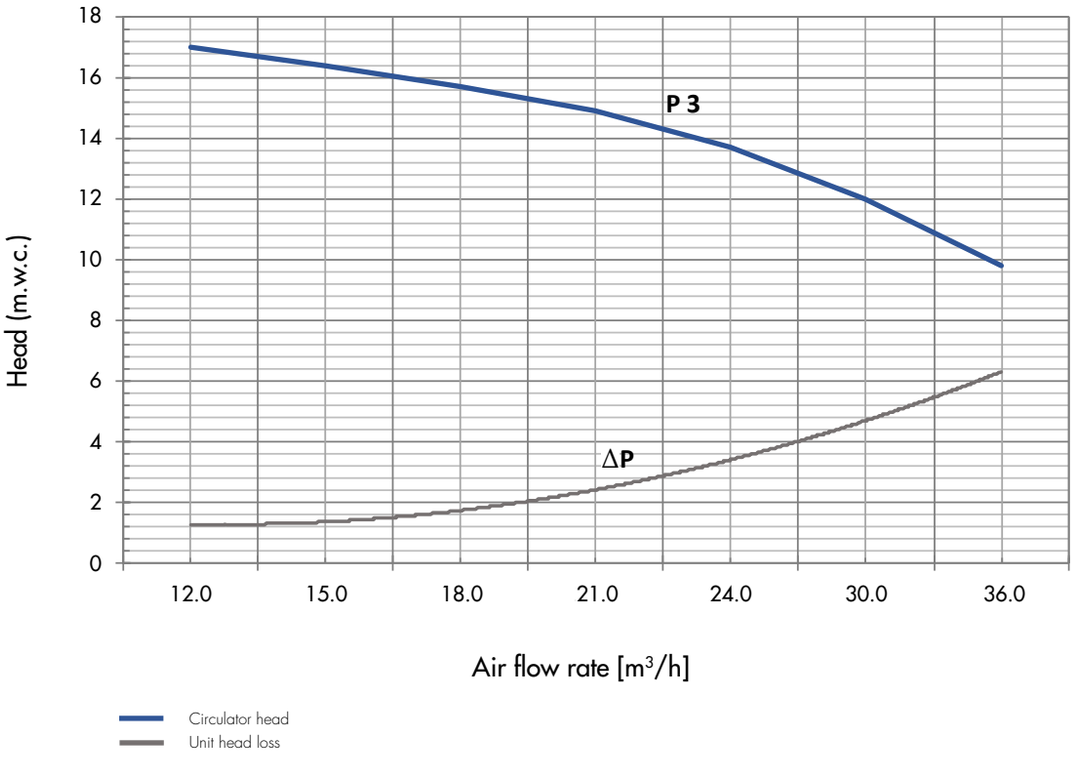


MOD-HYDRO 1P 60 - MOD-HYDRO V T200 1P 60
MOD-HYDRO 2P 60 - MOD-HYDRO V T200 2P 60



DIAGRAMS OF THE CIRCULATOR PUMPS FLOW/HEAD

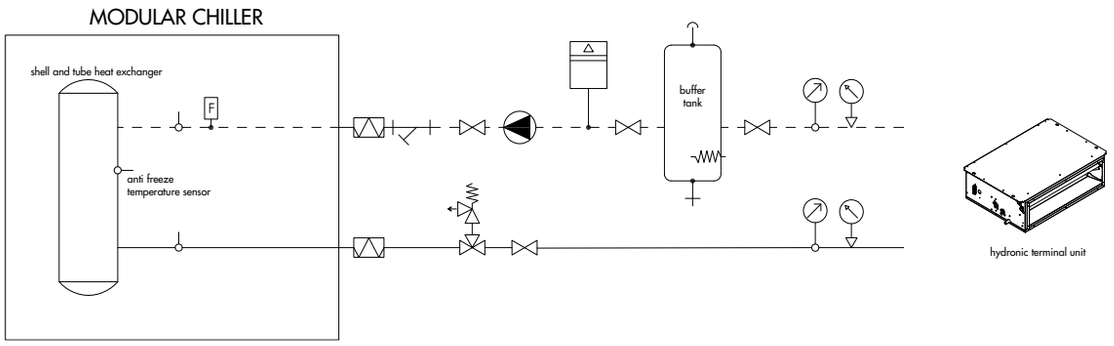
MOD-HYDRO 1P 90 - MOD-HYDRO V T300 1P 90
MOD-HYDRO 2P 90 - MOD-HYDRO V T300 2P 90



HYDRONIC UNITS INSTALLATION EXAMPLES

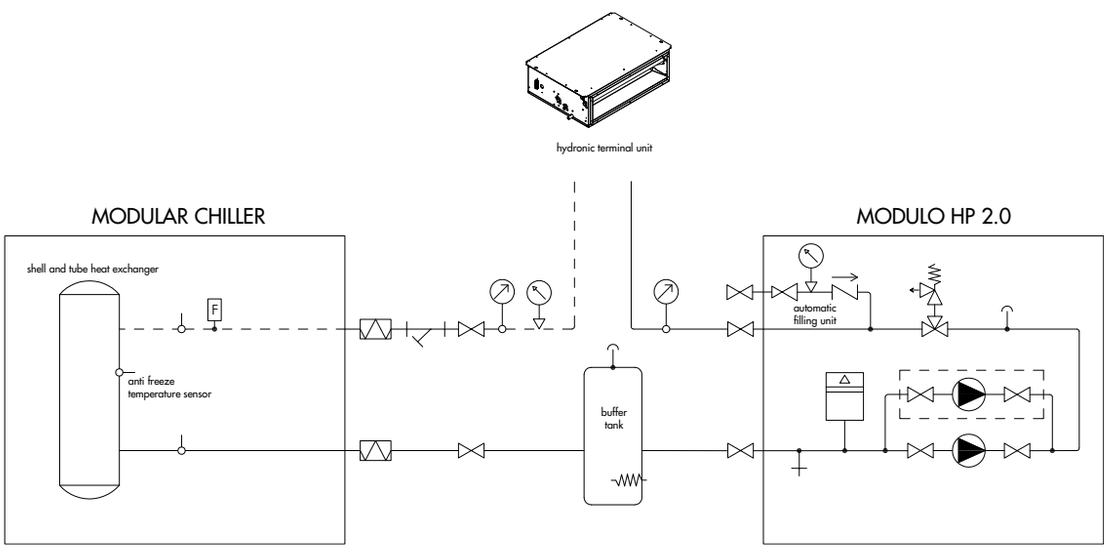
SOLUTION ONLY UNIT

LEGEND	
	shut-off valve
	vibration dumping joint
	Y-filter
	safety relief valve
	flow switch
	dial thermostat
	check valve
	dial manometer
	temperature sensor
	drain valve
	air reliet valve
	electrical heater



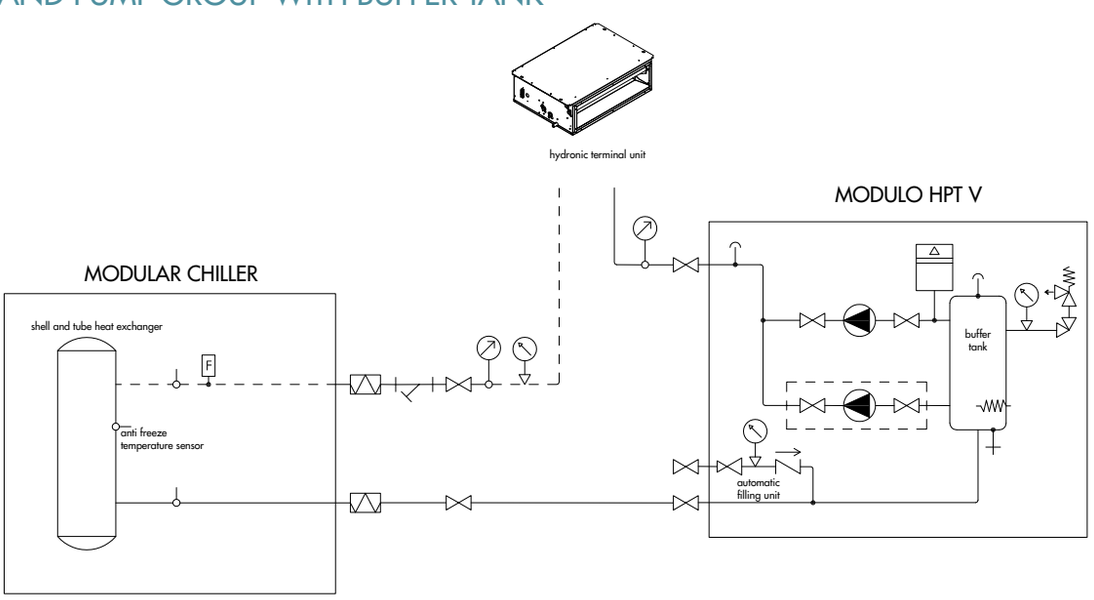
SOLUTION UNIT AND PUMP GROUP

LEGEND	
	shut-off valve
	vibration dumping joint
	Y-filter
	safety relief valve
	flow switch
	dial thermostat
	check valve
	dial manometer
	temperature sensor
	drain valve
	air reliet valve
	electrical heater



SOLUTION UNIT AND PUMP GROUP WITH BUFFER TANK

LEGEND	
	shut-off valve
	vibration dumping joint
	Y-filter
	safety relief valve
	flow switch
	dial thermostat
	check valve
	dial manometer
	temperature sensor
	drain valve
	air reliet valve
	electrical heater



NOTES

X3 HEAT PUMPS FOR DOMESTIC HOT WATER

X3 DHW HEAT PUMPS

MAIN FEATURES

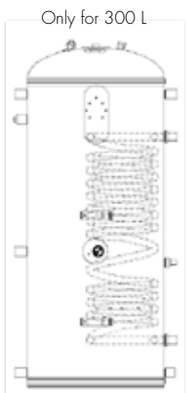
Code	Model	Description
398600080	APHPDHW200	DHW Heat pump - 200 L
398600081	APHPDHW300S	DHW Heat pump with solar coil - 300 L

ARGO introduces the latest generation of heat pump water heater, using ecologic R290 refrigerant. A performing solution, in A+ class, with a modern and pleasant appearance, distinguished for its low noise operation, the noise pressure at 1 m distance is 43 dB(A). The handy touch display easily allows controlling all operating conditions and optimizing the parameters for the best comfort and saving. Two models are available, the size 200 liters is equipped with an integrative electrical resistance, while the size 300 liters has also in addition an internal heat exchanger for solar integration. Thanks to the use of R290 refrigerant and of inverter motor these products stand out for their high performances. With a high COP, above 3, heating time and relevant consumption are greatly reduced.

Material: carbon steel. Internal protective treatment: Food-grade inorganic glass-coating complying with DIN 4753-3.

OTHER FEATURES

- Micro-channel heat exchanger (heat pump)
- Spiroidal internal heat exchanger (solar, only for model APHPDHW300S)
- Simplified accessibility
- Installation flexibility
- PV contact



INSTALLATION

The unit must be installed indoors, preferably in spaces where the temperature is always > 5 °C (e.g. laundry, garage, technical room,...). Both the air intake and exhaust, or none, may be ducted to the outside. A 600 mm clearance must be left all around the unit for maintenance. The room must have a minimum surface of 7 m^2.

TECHNICAL DATA

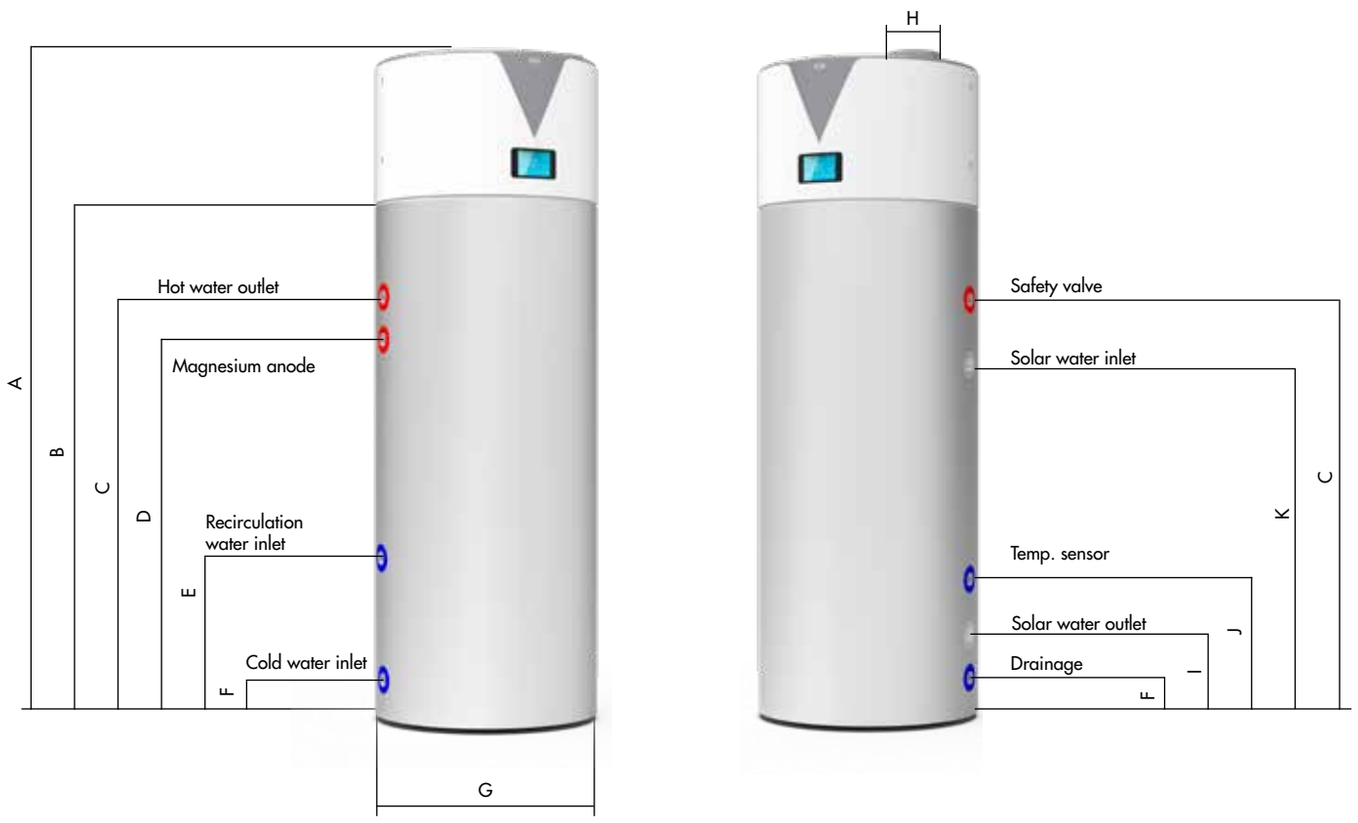
Model		APHPDHW300S	APHPDHW200
Power supply	/	230 V~/50 Hz	230 V~/50 Hz
Water-Dust Resistance	IPX	IPX1	IPX1
Electrical Shockproof	I	I	I
Heating capacity	kW	1.5	1.5
Heating Power Input	kW	0.41	0.41
Heating Current Input	A	1.8	1.8
COP*		3.51	3.53
COP**		3.02	3.08
Heating time (Heat pump only)***	h	8.25	5.45
Auxiliary E-heater	kW	1.5	1.5
Max. Power Input	kW	2.2	2.2
Max. Current Input	A	9.3	9.3
Refrigerant/Quantity	g	R290/150 g	R290/150 g
Unit dimensions (H./L./W.)	mm	Ø 640x1905	Ø 640x1600
Net weight	kg	112	96
Rated Outlet Water Temperature	°C	55	55
Air Volume	m^3/h	350	350
Air Pressure	Pa	40	40
Air Duct Diameter	mm	150	150
Water Inlet-Outlet Size	inch	3/4"	3/4"
Compressor		Rotary	Rotary
Solar coil heat exchange surface	m^2	1.1	/
Solar coil pressure drop	mbar	see chart	/
Solar coil max. pressure	MPa	1.6	/
Solar coil max. temperature	°C	90	/

Measurement conditions:
*Ambient temperature 14 °C/13 °C, water inlet 15 °C, water outlet 55 °C (EN16147).
**Ambient temperature 7 °C/6 °C, water inlet 15 °C, water outlet 55 °C (EN16147).
***Ambient temperature 15 °C, water inlet 15 °C, water outlet 55 °C.

Work range:
(1) Ambient temperature is -5 °C~43 °C (Heat Pump).
(2) The max temperature of water tank is 60 °C.

Operating parameters:
The range of the operating water temperatures: 10~60 °C.
The range of the operating water pressures: 0.15~0.7 MPa.

DIMENSIONS AND FITTINGS



		A	B	C	D	E	F	G	H	I	J	K
APHPDHW300S	[mm]	1905	1467	1208	1088	576	128	Ø 640	Ø 150	226	531	1026
APHPDHW200	[mm]	1600	1162	903	783	-	128	Ø 640	Ø 150	-	-	-
CONNECTIONS	[inch]	-	-	G3/4"	G3/4"	G3/4"	G3/4"	-	-	G3/4"	G3/4"	G3/4"

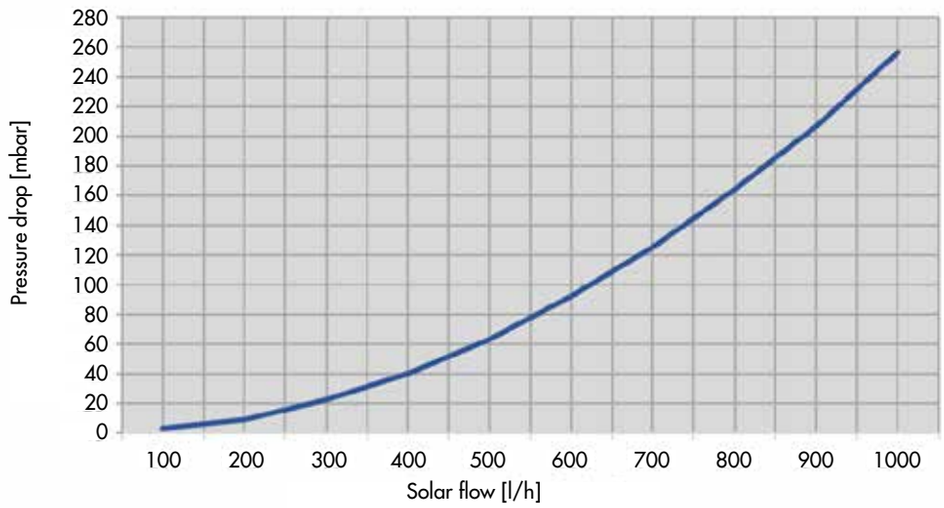
OPERATION MODES

Five different operating modes can be selected. In Standard mode the heat pump starts according to the actual temperature and target temperature. The electric heater will not start immediately, but only after a set time, if the target temperature has not been reached. In Eco mode only the heat pump is activated, the electric heater is always off. In High Requirement mode, besides the heat pump also the electric heater is turned on immediately.

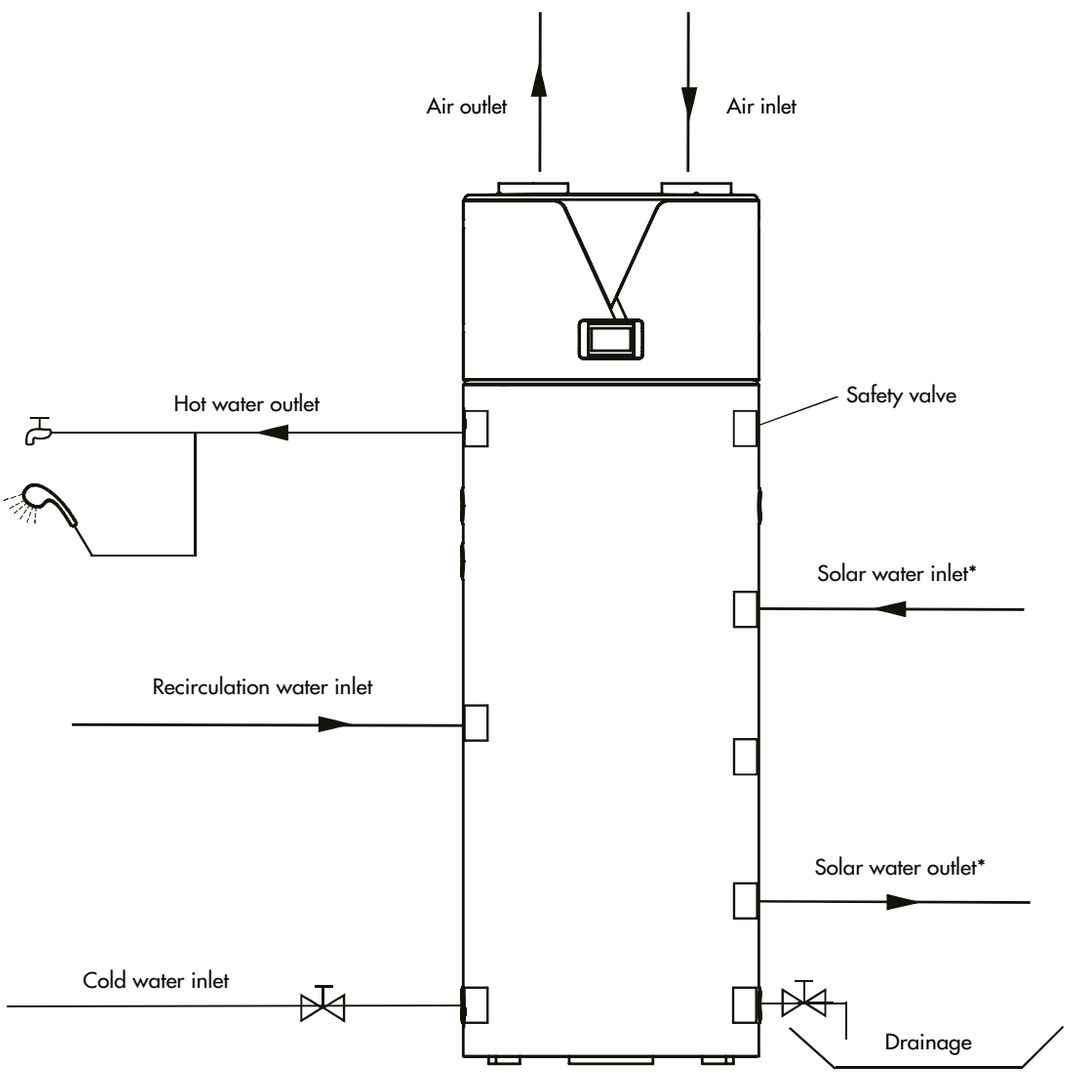
In Intelligent mode, the operation changes automatically depending on the ambient temperature. Above a 'high' threshold the unit operates in Eco mode, below a 'low' threshold the unit operates in High Requirement mode, while in the intermediate condition the Standard mode is adopted.

It is also available a Vacation mode, for which a vacation 'end' can be set so that the unit re-starts automatically on the desired date. The disinfection cycle can be activated, so that the unit automatically carries out the periodic high temperature process.

SOLAR HEAT EXCHANGER PRESSURE DROPS



EXAMPLE SCHEME



*Only APHPDHW300S

702023003 - 02/2023

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Argo is a brand of Argoclima S.p.A., a leading European company in climate control, heating and air treatment.