



ALFÉA HYBRID DUO GAS

SPLIT-SYSTEM AIR-WATER INVERTER HEATING PUMP
WITH BUILT-IN GAS BURNER

- 6 models: 10 to 16kW single and 3-phase
- Replacement for existing gas boiler
- Domestic hot water tank 120L integrated
- COP up to 4,3



Indoor hydraulic module

Hybrid
Technology



Outdoor inverter unit

Alféa Hybrid Duo Gas



MULTI-ENERGY HIGH-TEMPERATURE - HYBRID TECHNOLOGY

This is the high temperature solution for replacements where water temperature requirements may be up to 80°C. Alféa Hybrid Duo Gas includes a heat pump exchanger, an auxiliary condensing gas boiler and a hot water tank with in its hydraulic module. This combination meets the most demanding installation requirements.

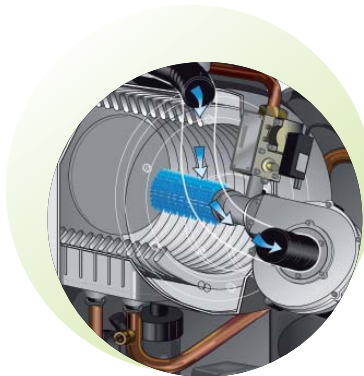
PERFORMANCE COEFFICIENT (COP)

COP is an indicator of the heat pump performance. It corresponds to the difference between the amount of heat generated by the heat pump and the energy consumed for the equipment to work. A COP of 4 means that the heat pump generates four times what it needs to function. So the higher COP is, the more performing the heat pumps is.

HEAT PUMP ENERGY SAVINGS COMBINED WITH BURNER POWER

OPTIMUM SOLUTION FOR GAZ BURNER INSTALLATIONS RENOVATION

A SPLIT HEAT-PUMP FOR IMPROVED PERFORMANCES



Gas boiler (with in indoor module)



Indoor hydraulic module



Outdoor inverter unit

CHARACTERISTICS

- Heating controller with outdoor sensor optimising operation of the heat pump and boiler
- High temperature: up to 80°C water flow temperature
- Coaxial exchanger for direct connection to the heating circuit
- 120 litre hot water tank, glass-lined with ACI anti-corrosion protection (specific flow rate 20 l/min)
- Power supply: single or 3-phase.

SUPPLIES

Outdoor inverter unit:

- Outdoor inverter unit with Twin Rotary or Scroll compressor (depending on model)

Indoor module:

- Coaxial exchanger
- Condensing boiler, 24kW supplied with propane option (natural gas diaphragm supplied).
- 120 l steel hot water tank with ACI protection

- Heating and hot water circulating pump
- Water curve control, room sensor (optional)
- Expansion vessel, valve, pressure meter
- Outdoor sensor
- Motorised mixing valve

INDOOR HYDRAULIC MODULE

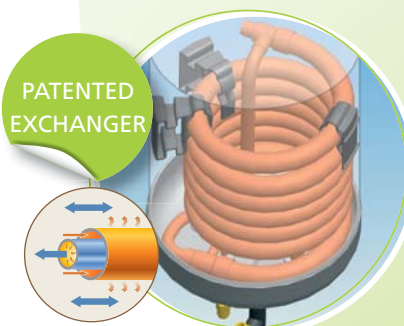
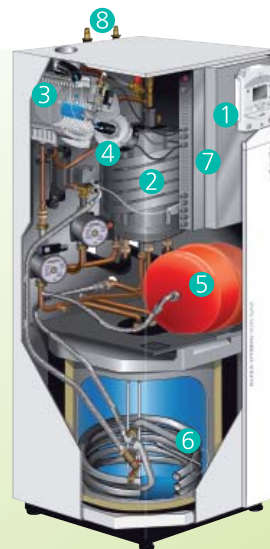
A dedicated hydraulic conception for improved performances

The Alféa range beneficiates from a coaxial heat exchanger, a technology developed and patented by Atlantic to maximize the heat pump performance.

It provides the wheat pump with the most advantages:

- Low heat losses
- Antifreeze is unnecessary
- Not sensitive to the loaded water
- Resistance to fouling
- Stainless steel buffer tank: no corrosion
- Maintenance cover in the upper section of the buffer tank

- 1 Control interface
- 2 Coaxial exchanger
- 3 Gaz condensing unit
- 4 Gas burner
- 5 Heating expansion vessel
- 6 Hot water tank
- 7 Electrical distribution board
- 8 Refrigerant connections



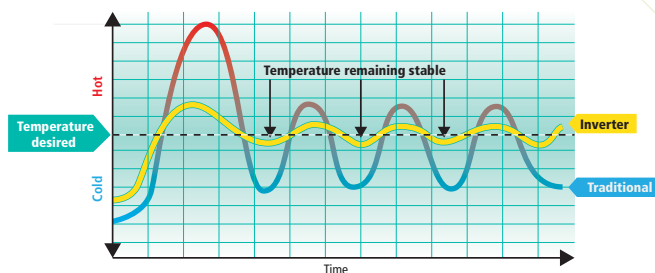
→ Refrigerant fluid
 ↔ Hot water heating circuit

OUTDOOR INVERTER UNIT

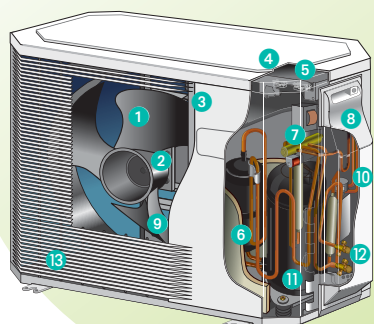
An optimized control to maximize savings

The inverter control adapts its power supply according to outside temperature in order to provide the exact amount of energy for a constant and economical heat. The inverter control allows savings up to 30% compared to a conventional regulation system.

Comparison between inverter and traditional heat control



Control: VPAM inverter



10 kW model

- 1 High-performance, low noise propeller
- 2 "Inverter" variable speed electric motor
- 3 "Inverter" control module
- 4 Pump down button and control diode
- 5 Connector terminals (power supply and interconnection)
- 6 Refrigerant storage cylinder
- 7 Cycle inversion valve
- 8 Anti-corrosion treated metal cover
- 9 High performance evaporator with optimized heat exchange surface; anti-corrosion, hydrophilic aluminium vanes, grooved copper tubes
- 10 Electronic expansion valve
- 11 Phonically and thermally insulated inverter scroll compressor
- 12 Refrigerating connection valves (flare connection) with protective cover
- 13 Condensate basin with drain

Technical characteristics and performances

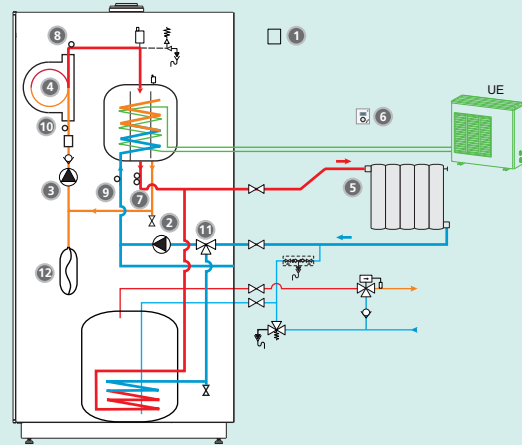
	UNITÉ	ALFÉA HYBRID DUO GAS 10	ALFÉA HYBRID DUO GAS 13	ALFÉA HYBRID DUO GAS 16	ALFÉA HYBRID DUO GAS TRI 11	ALFÉA HYBRID DUO GAS TRI 14	ALFÉA HYBRID DUO GAS TRI 16
		R410A	R410A	R410A	R410A	R410A	R410A
REFRIGERANT							
MAIN CHARACTERISTICS							
THERMODYNAMIC PERFORMANCE							
Heating capacity +7°C/+35°C – Floor Heating	W	9 750	13 200	15 500	10 800	13 500	15 170
Input power +7°C/+35°C – Floor Heating	W	2 500	3 300	4 306	2 510	3 200	3 700
COP +7°C/35°C - Floor Heating		3,90	4,00	3,60	4,30	4,22	4,10
Heating capacity -7°C/+35°C – Floor Heating	W	8 097	10 300	12 152	10 800	13 000	13 500
Input power -7°C/+35°C – Floor Heating	W	3 519	3 960	4,865	4 280	5 180	5 400
COP -7°C/+35°C - Floor Heating		2,30	2,60	2,50	2,52	2,51	2,50
Heating capacity +7°C/+45°C – Low T°radiators	W	7 971	10 300	13 034	10 099	12 600	13 000
Input power +7°C/+45°C – Low T°radiators	W	2 611	3 250	4 536	3 010	3 810	4 000
COP +7°C/45°C – Low T°radiators		3,05	3,17	2,87	3,36	3,31	3,25
Heating capacity -7°C/+45°C – Low T°radiators	W	6 963	9 250	10 780	10 019	12 500	13 000
Input power -7°C/+45°C – Low T°radiators	W	3 397	4 200	5 263	4 631	6 000	6 370
COP -7°C/+45°C – Low T°radiator		2,05	2,20	2,04	2,16	2,08	2,04
CONDENSING GAS BACK-UP BURNER PERFORMANCES							
Class according to efficiency directive 92/42/CEE		Condensation	Condensation	Condensation	Condensation	Condensation	Condensation
OUTPUT							
Charge 30 % - return water T° 30°C	%	108,30	108,30	108,30	108,30	108,30	108,30
Charge 100 % - return water T° 100°C	%	96,30	96,30	96,30	96,30	96,30	96,30
NOx type		5	5	5	5	5	5
Gas type		Naturel / Propane	Naturel / Propane	Naturel / Propane	Naturel / Propane	Naturel / Propane	Naturel / Propane
Heating power range	kW	5,5 à 24	5,5 à 24	5,5 à 24	5,5 à 24	5,5 à 24	5,5 à 24
DHW power range	kW	5,5 à 24	5,5 à 24	5,5 à 24	5,5 à 24	5,5 à 24	5,5 à 24
INDOOR HYDRAULIC MODULE							
Dimensions h x w x d	mm	1 800 x 598 x 647	1 800 x 598 x 647	1 800 x 598 x 647	1 800 x 598 x 647	1 800 x 598 x 647	1 800 x 598 x 647
Net weight/filled weight	kg	135 / 278	135 / 278	135 / 278	135 / 278	135 / 278	135 / 278
Sound pressure according to EN 12102	dB (A)	39	39	39	39	39	39
HYDRAULIC CHARACTERISTICS							
DHW tank capacity	L	23	23	23	23	23	23
Expansion vessel capacity	L	18	18	18	18	18	18
Heating system min./max. flow for 4°<Δ T<8° (nominal conditions)	l/h	1 000 / 2 100	1 380 / 2 700	1 670 / 3 300	1 200 / 2 400	1 500 / 3 000	1 700 / 3 400
Tank capacity	L	120	120	120	120	120	120
DHW flow according to regulation EN 13203	l/min	20	20	20	20	20	20
ELECTRICAL CONNECTIONS							
Outside unit power supply	V / Hz	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz
Standby mode consumption	W	8,5	8,5	8,5	8,5	8,5	8,5
Power absorbed by circulators (132-93)	W	225	225	225	225	225	225
Max input power	W	244	244	244	244	244	244
CONNECTIONS							
Ø Heating circ. inlet and outlet	" / mm	1 / 26 x 34	1 / 26 x 34	1 / 26 x 34	1 / 26 x 34	1 / 26 x 34	1 / 26 x 34
Ø DHW circ. inlet and outlet (male thread)	" / mm	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27
Gas diameter	" / mm	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27	3/4 / 20 x 27
BALANCE FLUE CONNECTION (VERTICAL AND HORIZONTAL)							
Ø Smock tubes/ air sucking (C13,C33)	mm	80 / 125	80 / 125	80 / 125	80 / 125	80 / 125	80 / 125
Ø Smock tubes (C53)	mm	80	80	80	80	80	80
Max length authorized (straight line)	m	11	11	11	11	11	11
Power loss per bend (90°/45°)	m	1 / 0,5	1 / 0,5	1 / 0,5	1 / 0,5	1 / 0,5	1 / 0,5
Terminal and compatible material		UBBINK et POUJOLAT					
CHIMNEY CONNECTION							
Ø Smock tubes	mm	80	80	80	80	80	80
Burner optimum depression (type B23)	Pa	15	15	15	15	15	15
Available pressure at nozzle (B23P)	Pa	70	70	70	70	70	70
OPERATING RANGE							
Min./max. hot/cold outdoor temperature (Thermodynamic)	°C	-15 / +24	-15 / +24	-15 / +24	-25 / +35	-25 / +35	-25 / +35
Heating inlet water max T°	°C	80	80	80	80	80	80
Max water T°(Thermodynamic)	°C	52	52	52	60	60	60
OUTDOOR UNIT							
Noise level	dB(A)	41	40	44	39	41	42
Sound pressure according to EN 12102	dB(A)	68	67	71	66	68	69
Dimensions h x w x d	mm	830 x 900 x 330	1 290 x 900 x 330	1 290 x 900 x 330	1 290 x 900 x 400	1 290 x 900 x 400	1 290 x 900 x 400
Operating weight	kg	64	98	105	99	99	99
REFRIGERANT CHARACTERISTICS							
Gas diameter	inch	5/8	5/8	5/8	5/8	5/8	5/8
Liquid diameter	inch	3/8	3/8	3/8	3/8	3/8	3/8
Factory charge of HFC R410 A refrigerant	g	2 100	3 350	3 400	2 500	2 500	2 500
Min./max. length	m	5 / 20	5 / 20	5 / 20	5 / 20	5 / 20	5 / 20
Max. diff. in height	m	20	20	20	20	20	20
Max. length without adding gas	m	20	20	20	15	15	15
Added gas volume per additional m	m	40	50	40	50	50	50
ELECTRICAL CONNECTIONS							
Power supply	V / Hz	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz
Standby mode consumption	W	7,5	7,5	7,5	11,5	11,5	11,5
Rated current	A	11,7	16,7	20,6	3,6	4,8	5,5
Maxi current	A	17	20	26	10,5	10,5	10,5
Circuit breaker rating curve D	A	20	25	32	20	20	20
Outside unit power supply cable	mm ²	3G2,5	3G4	3G6	5G2,5	5G2,5	5G2,5
Outside unit-Indoor module interconnection cables	mm ²	4G1,5	4G1,5	4G1,5	4G1,5	4G1,5	4G1,5

Alféa Hybrid Duo Gas

INSTALLATION SCHEMES

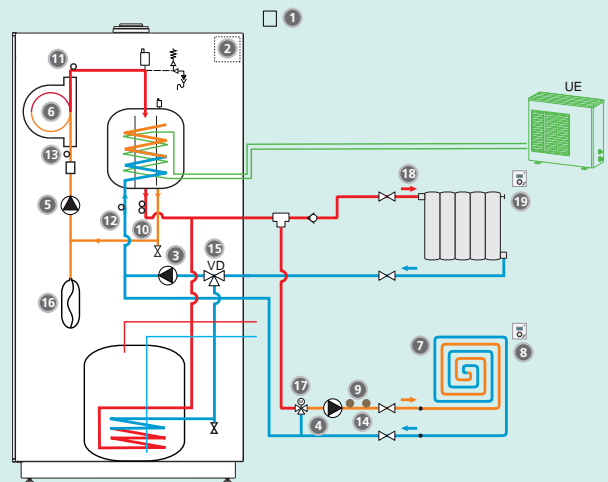
A - Alféa Hybrid Duo Gas : 1 heating zone with panel heaters

- 1 Outdoor sensor
- 2 DHW and direct heating pump
- 3 Gas exchanger pump
- 4 Gas exchanger
- 5 Panel heaters
- 6 Room control sensor 2 zones (optional)
- 7 Flow sensor
- 8 Gas exchanger flow sensor
- 9 Return sensor
- 10 Gas exchanger return sensor
- 11 Directional valve
- 12 Expansion vessel



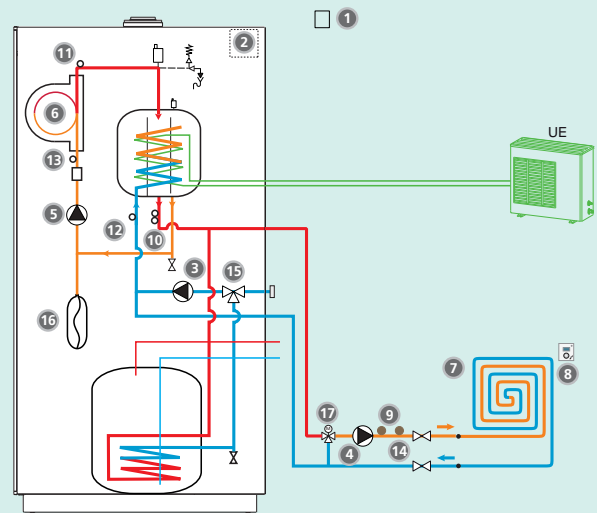
B - Alféa Hybrid Duo Gas: 2 heating zone

- 1 Outdoor sensor
- 2 2 zone kit/ heating floor extension card
- 3 DHW and direct heating pump
- 4 Mixed circuit heating pump
- 5 Gas exchanger pump
- 6 Gas exchanger
- 7 Floor heating
- 8 Room control sensor 1 zone (optional)
- 9 Mixed circuit flow sensor
- 10 Flow sensor
- 11 Gas exchanger flow sensor
- 12 Return sensor
- 13 Gas exchanger return sensor
- 14 Floor heating safety kit (additional)
- 15 Directional valve
- 16 Expansion vessel
- 17 Mixing valve mixed circuits
- 18 Panel heaters
- 19 Room control sensor 2 zones (optional)



C - Alféa Hybrid Duo Gas: 1 heating zone with heating floor

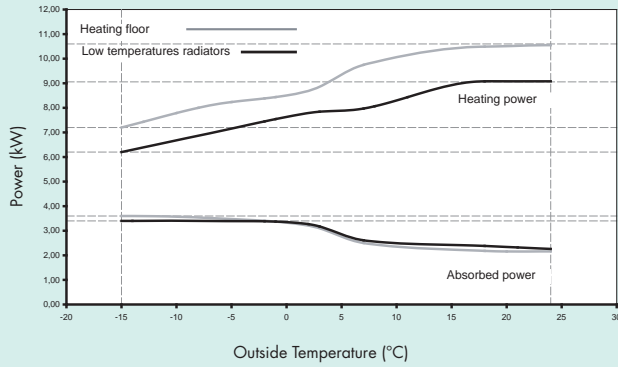
- 1 Outdoor sensor
- 2 2 zone kit/ heating floor extension card
- 3 DHW pump
- 4 Mixed circuit heating pump
- 5 Gas exchanger pump
- 6 Gas exchanger
- 7 Floor heating
- 8 Room control sensor 1 zone (optional)
- 9 Mixed circuit flow sensor
- 10 Flow sensor
- 11 Gas exchanger flow sensor
- 12 Return sensor
- 13 Gas exchanger return sensor
- 14 Floor heating safety kit (additional)
- 15 Directional valve
- 16 Expansion vessel
- 17 Mixing valve mixed circuits



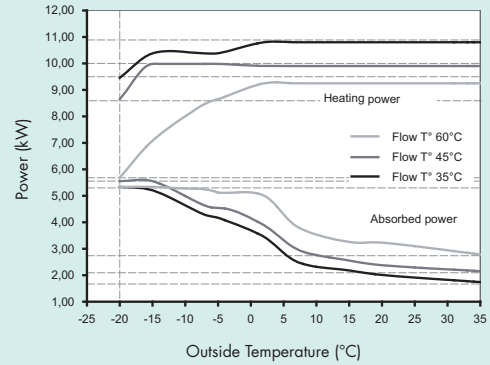
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POWER CURVES

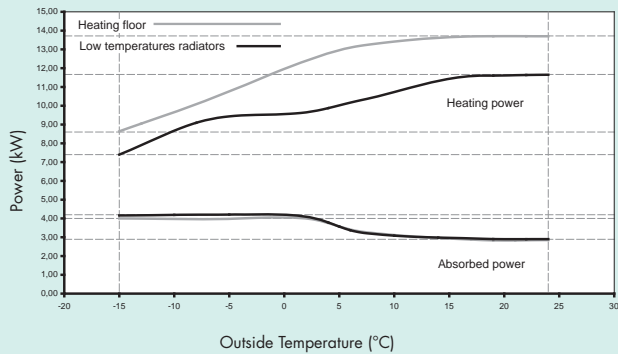
Heating and absorbed power curves - Thermodynamic mode



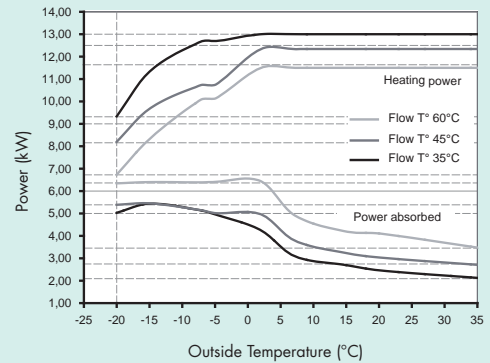
Power curves Alféa Hybrid Duo Gas 10



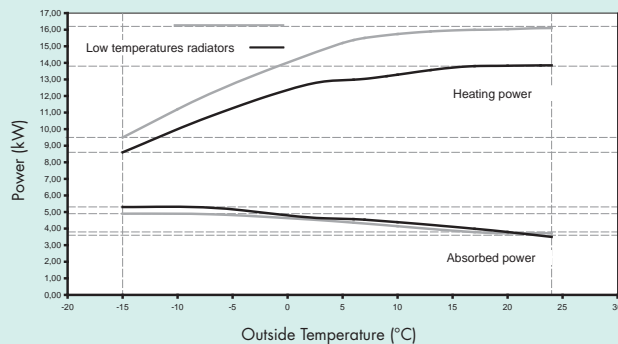
Power curves Alféa Hybrid Duo Gas Tri 11



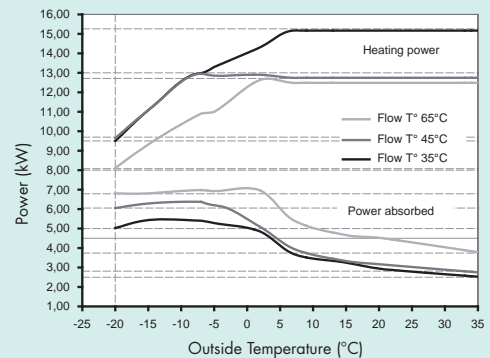
Power curves Alféa Hybrid Duo Gas 13



Power curves Alféa Hybrid Duo Gas Tri 14



Power curves Alféa Hybrid Duo Gas 16



Power curves Alféa Hybrid Duo Gas Tri 16