

1 SPECIFICATION OF SUPPLY

The Gitié AHAY/4 C0 group consists of a GAHP A heat pump and a AY00-120 condensing boiler.

For the specifications of supply of the individual units making up the group refer to Section B01 (GAHP A) and Section B06 (AY00-120).

1.1 AHAY INTEGRATED PACKAGE FEATURES

The Gitié AHAY group is available in the following versions

Table 1.1 Gitié AHAY package versions

Version	Pipes	Circulating pumps	Motorised 2-way valves	Hydraulic circuits	Fan
/4 C0	4	No	No	independent	standard
/4 C0 S1	4	No	No	independent	silenced modulating
/4 C1	4	Yes	No	independent	standard
/4 C1 S1	4	Yes	No	independent	silenced modulating
/2 C0	2	No	Yes	single	standard
/2 C0 S1	2	No	Yes	single	silenced modulating
/2 C1	2	Yes	No	single	standard
/2 C1 S1	2	Yes	No	single	silenced modulating

(Picture 2.5 p. 4):

- ▶ **Version /4 C0 (standard or silenced)**
- ▶ **Version /4 C1 (standard or silenced)**
- ▶ **Version /2 C0 (standard or silenced)**
- ▶ **Version /2 C1 (standard or silenced)**

In all versions units operation may be simultaneous or independent.

The Table 1.1 p. 1 shows the features of the various versions in detail.

2 FEATURES AND TECHNICAL DATA

2.1 DIMENSIONS

Figure 2.1 Dimensions (Standard ventilation) - Front and side view (dimensions in mm)

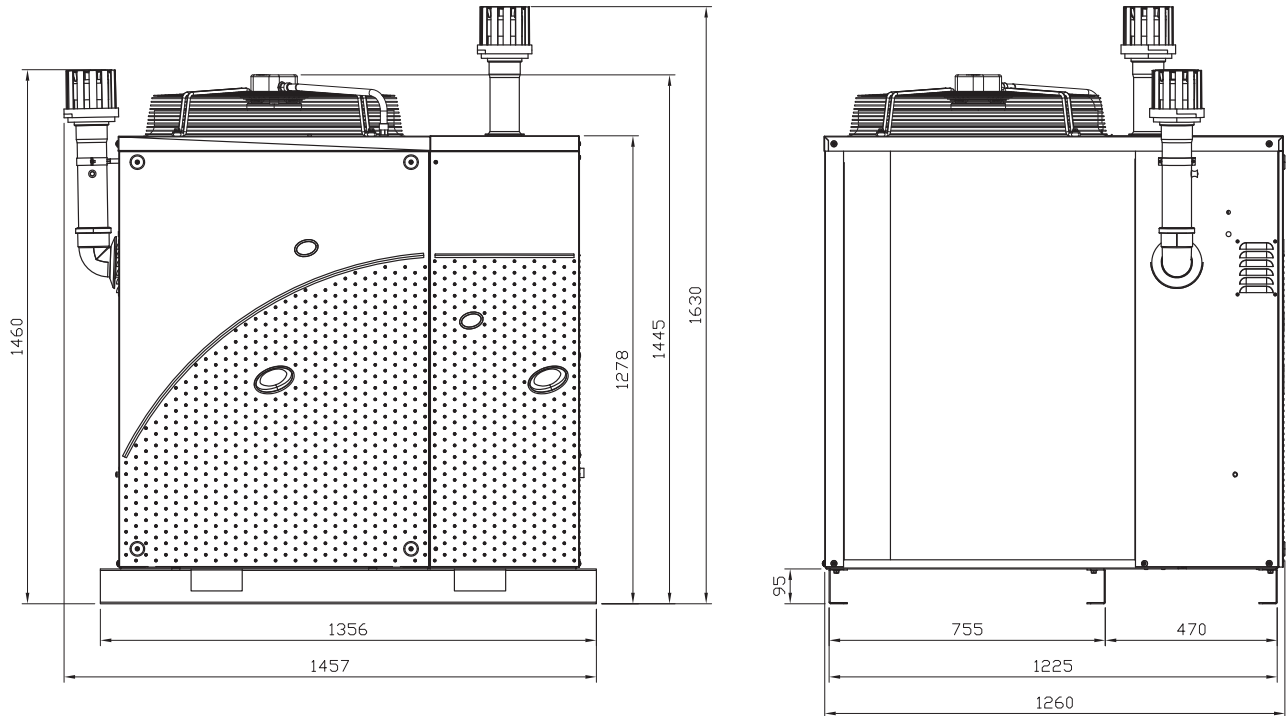


Figure 2.2 Dimensions (S1 Silenced ventilation) - Front and side view (dimensions in mm)

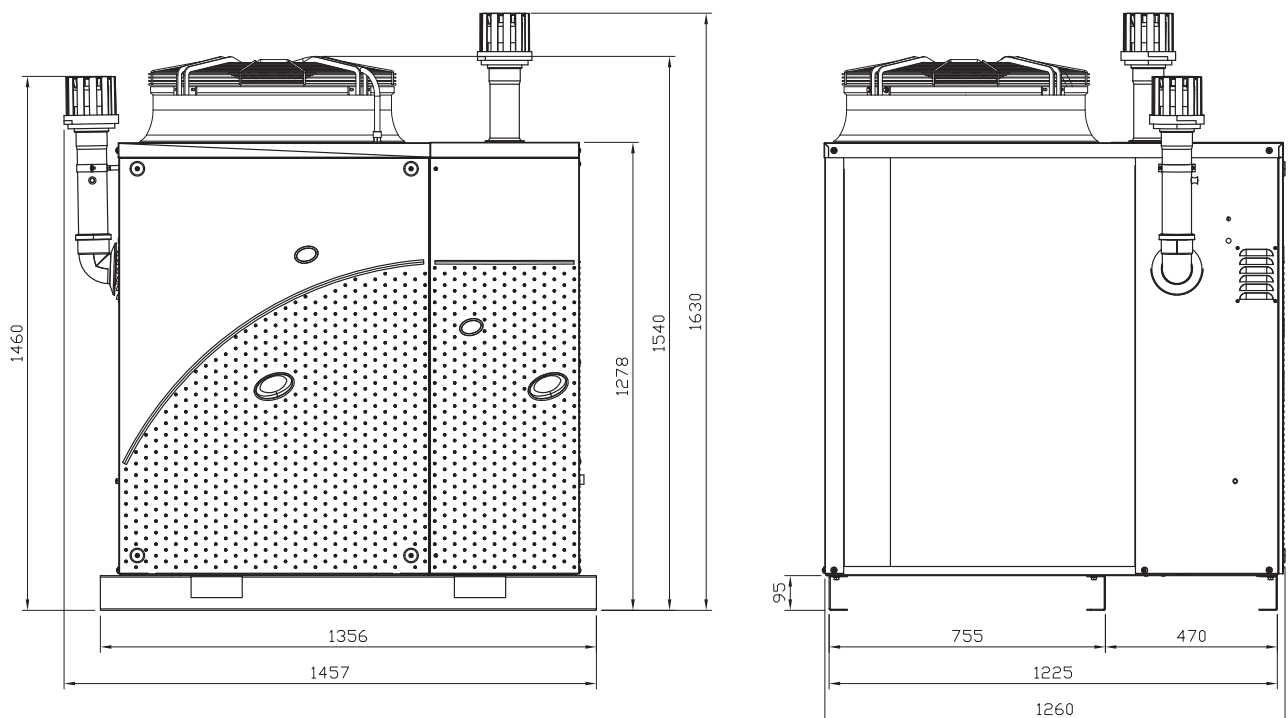
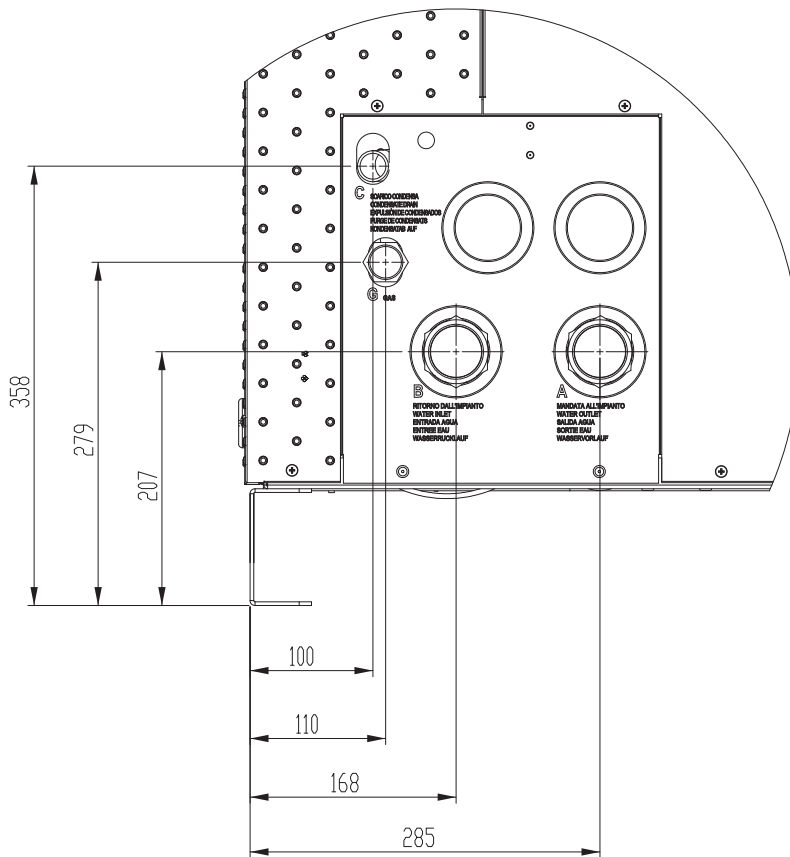
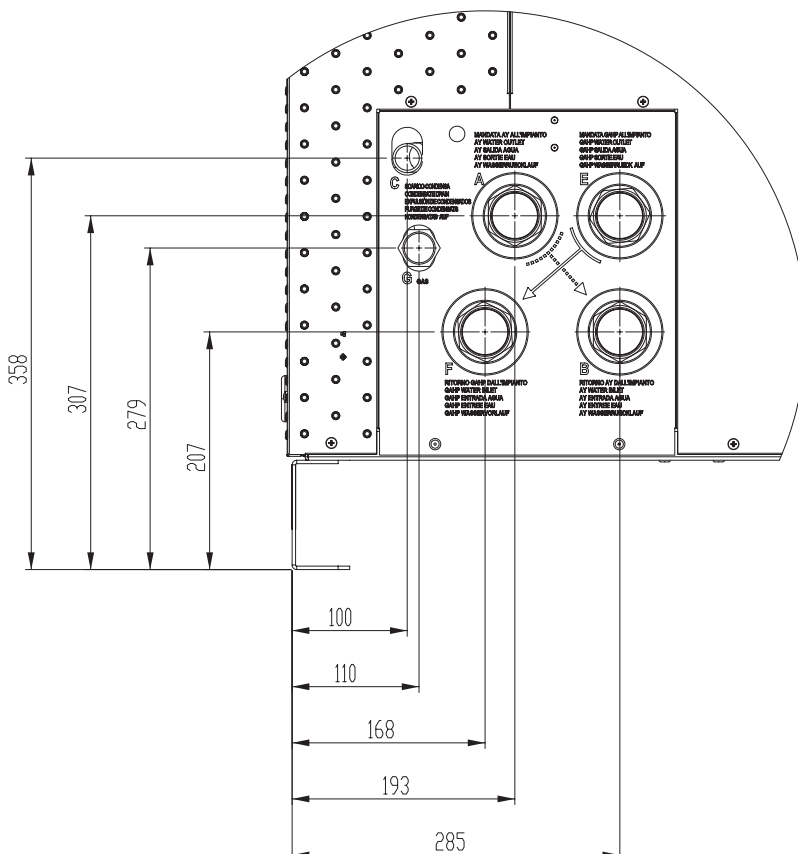


Figure 2.3 Service plate 2-pipe group (KIT/2 C0 and C1) - Detail of water/gas fittings



- A Outlet water fitting Ø 1 1/2"F
- B Inlet water fitting Ø 1 1/2"F
- C Boiler condensate drain AY00-120
- G Gas fitting Ø 3/4"M

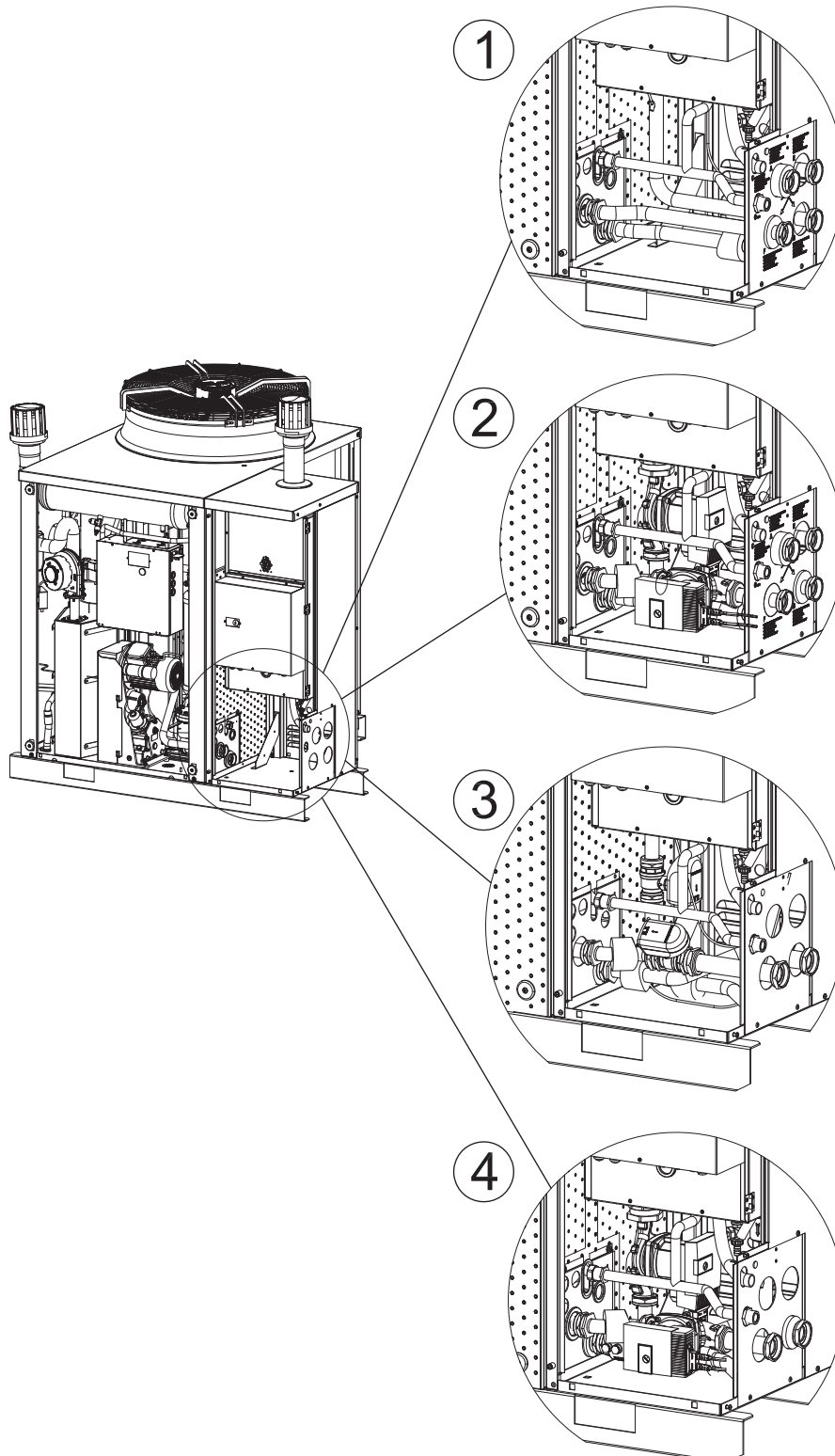
Figure 2.4 Service plate 4-pipe group (base version and KIT/4 C1) - Detail of water/gas fittings



- A AY - Water outlet fitting Ø 1 1/4"F
- B AY - Water inlet fitting Ø 1 1/4"F
- C Boiler condensate drain AY00-120
- E GAHP/GA - Water outlet fitting Ø 1 1/4"F
- F GAHP/GA - Water inlet fitting Ø 1 1/4"F
- G Gas fitting Ø 3/4"M

2.2 VERSIONS

Figure 2.5 Version components



- 1 BASE version (2 independent circuits without circulating pumps)
- 2 Kit/4 C1 (2 independent circuits with on board circulating pumps)
- 3 Kit/2 C0 (single circuit with two 2-way motorised valves)
- 4 Kit/2 C1 (single circuit with on board circulating pumps)

2.3 OPERATION MODE

The Gitié AHAY unit may only work in the ON/OFF mode, i.e. ON (at full power) or OFF, with circulating pump at constant flow.

2.4 CONTROLS

Control device

The appliance may only work if it is connected to a control device, selected from:

- ▶ (1) **pre-configured DDC control**
- ▶ (2) **external enables**

2.4.1 Adjustment system (1) with pre-configured DDC control

The DDC controller is able to control the appliances, a single GAHP unit, or even several Robur GAHP/GA/AY units in cascade, only in ON/OFF mode (non modulating). For more information see Section C1.12.

2.4.2 Adjustment system (2) - control with external enables

The appliance may also be controlled via generic enable devices (e.g. thermostats, clocks, buttons, contactors...) fitted with voltage-free NO contacts. This system only provides elementary control (on/off, with fixed set-point temperature), without the important functions of system (1). Control of the cascade between GAHP/GA and AY00-120 is left to the user.

2.5 TECHNICAL CHARACTERISTICS

2.5.1 AHAY Integrated package technical specifications

Table 2.1 Technical specifications Gitié AHAY

			AHAY/4 C0	AHAY/4 C1	AHAY/2 C0	AHAY/2 C1	AHAY/4 C0 S1	AHAY/4 C1 S1	AHAY/2 C0 S1	AHAY/2 C1 S1
Heating mode										
Seasonal space heating energy efficiency class (ErP)	medium-temperature application (55 °C)	-	A++							
	low-temperature application (35 °C)	-	A+							
Heating capacity	real	kW	60,1							
Ambient air temperature (dry bulb)	maximum	°C	40							
	minimum	°C	-15 (1)							
Water flow rate 4 pipes	maximum (GAHP)	l/h	4000	-	-	-	4000	-	-	-
	nominal (GAHP)	l/h	3000	-	-	-	3000	-	-	-
	minimum (GAHP)	l/h	1400	-	-	-	1400	-	-	-
	maximum (AY120)	l/h	3200	-	-	-	3200	-	-	-
	nominal (AY120)	l/h	2950	-	-	-	2950	-	-	-
	minimum (AY120)	l/h	1500	-	-	-	1500	-	-	-
Water flow rate 2 pipes	maximum	l/h	-	-	7200	-	-	-	7200	-
	nominal	l/h	-	-	5950	-	-	-	5950	-
	minimum	l/h	-	-	2900	-	-	-	2900	-
Pressure loss at nominal flow rate	version /4 C0 GAHP	bar	0,43	-	-	-	0,43	-	-	-
	version /4 C0 AY120	bar	0,40	-	-	-	0,40	-	-	-
	version /2 C0	bar	-	-	0,56	-	-	-	0,56	-
Residual pressure head at nominal flow rate	version /4 C1 GAHP	bar	-	0,56	-	-	-	0,56	-	-
	version /4 C1 AY120	bar	-	0,60	-	-	-	0,60	-	-
	version /2 C1	bar	-	-	-	0,52	-	-	-	0,52
Electrical specifications										
Power supply	voltage	V	230							
	type	-	single-phase							
	frequency	50 Hz supply	50							
Electrical power absorption	nominal	kW	1,02 (2)	1,40 (2)	1,02 (2)	1,40 (2)	0,95 (2)	1,33 (2)	0,95 (2)	1,33 (2)
Degree of protection	IP	-	X5D							
Installation data										
Gas consumption	G20 (maximum)	m ³ /h	6,4 (3)							
	G25 (maximum)	m ³ /h	7,5 (4)							
	G30 (maximum)	kg/h	4,8 (5)							
	G30 (maximum)	kg/h	4,7 (5)							
Water fitting	delivery/inlet	"F	1 1/4		1 1/2		1 1/4		1 1/2	
Gas connection	thread	"M	3/4							

(1) As an option, a version for operation down to -30 °C is available.

(2) ±10% depending on power voltage and absorption tolerance of electric motors.

(3) PCI (G20) 34,02 MJ/m³ (15 °C - 1013 mbar).

(4) PCI (G25) 29,25 MJ/m³ (15 °C - 1013 mbar).

(5) PCI (G30/G31) 46,34 MJ/kg (15 °C - 1013 mbar).

(6) Sound power values detected in compliance with the intensity measurement methodology set forth by standard EN ISO 9614.

(7) Maximum sound pressure levels in free field, with directionality factor 2, obtained from the sound power level in compliance with standard EN ISO 9614.

			AHAY/4 C0	AHAY/4 C1	AHAY/2 C0	AHAY/2 C1	AHAY/4 C0 S1	AHAY/4 C1 S1	AHAY/2 C0 S1	AHAY/2 C1 S1
Dimensions	width	mm	1457							
	depth	mm	1260							
	height	mm	1630							
Weight	in operation	kg	490	515	490	515	500	525	500	525
Sound power L_w (max)		dB(A)	79,6 (6)				74,0 (6)			
Sound pressure L_p at 5 metres (max)		dB(A)	57,6 (7)				52,0 (7)			
Minimum storage temperature		°C	-30							
Maximum water pressure in operation		bar	4							
Water content inside the apparatus		l	6							

- (1) As an option, a version for operation down to -30 °C is available.
(2) ±10% depending on power voltage and absorption tolerance of electric motors.
(3) PCI (G20) 34,02 MJ/m³ (15 °C - 1013 mbar).
(4) PCI (G25) 29,25 MJ/m³ (15 °C - 1013 mbar).
(5) PCI (G30/G31) 46,34 MJ/kg (15 °C - 1013 mbar).
(6) Sound power values detected in compliance with the intensity measurement methodology set forth by standard EN ISO 9614.
(7) Maximum sound pressure levels in free field, with directionality factor 2, obtained from the sound power level in compliance with standard EN ISO 9614.

2.5.2 GAHP A Unit technical data

Table 2.2 GAHP A Unit technical data

				GAHP A HT Standard	GAHP A HT S1
Heating mode					
Unitary heating power	Outdoor temperature/Delivery temperature	A7W35	kW	41,3	
		A7W50	kW	38,3	
		A7W65	kW	31,1	
		A-7W50	kW	32,0	
GUE efficiency	Outdoor temperature/Delivery temperature	A7W35	%	164	
		A7W50	%	152	
		A7W65	%	124	
		A-7W50	%	127	
Heating capacity	nominal (1013 mbar - 15 °C)		kW	25,7	
	real		kW	25,2	
Hot water delivery temperature	maximum for heating		°C	65	
	maximum for DHW		°C	70	
Hot water return temperature	maximum for heating		°C	55	
	maximum for DHW		°C	60	
	minimum temperature in continuous operation		°C	30 (1)	
Installation data					
NO_x emission class			-	5	
NO_x emission			ppm	25,0	
CO emission			ppm	36,0	
Maximum flow flue condensate			l/h	4,0	
Fume outlet	diameter (Ø)		mm	80	
	residual head		Pa	80	
Type of installation			-	B23P, B33, B53P	
General information					
Cooling fluid	ammonia R717		kg	7,0	
	water H ₂ O		kg	10,0	
Maximum pressure of the cooling circuit			bar	32	
PED data					
Components under pression	generator		l	18,6	
	leveling chamber		l	11,5	
	evaporator		l	3,7	
	cooling volume transformer		l	4,5	
	cooling absorber solution		l	6,3	
	solution pump		l	3,3	
Test pressure (in air)			bar g	55	
Filling ratio			kg of NH ₃ /l	0,146	
Fluid group			-	GROUP 1°	

- (1) In transient operation, lower temperatures are allowed.

2.5.3 AY00-120 Unit technical data

Table 2.3 Technical specifications AY00-120

		AY00-120
Heating mode		

				AY00-120
Operating point 80/60	Nominal thermal capacity	effective power	kW	34,4
	Minimal thermal capacity	efficiency	%	97,3
	Nominal thermal capacity	efficiency	%	98,6
	Mean thermal capacity	efficiency	%	98,3
Operating point 70/50	Nominal thermal capacity	efficiency	%	100,6
Operating point 50/30	Nominal thermal capacity	efficiency	%	104,6
Operating point Tr = 30 °C	Thermal capacity 30%	efficiency	%	107,5
Operating point Tr = 47 °C	Thermal capacity 30%	efficiency	%	100,3
Heating capacity	nominal (1013 mbar - 15 °C)		kW	34,9
	average		kW	21,5
	minimum		kW	8,0
Hot water delivery temperature	maximum		°C	80
	minimum		°C	25
	nominal		°C	60
Hot water return temperature	maximum		°C	70
	minimum		°C	20
	nominal		°C	50
Efficiency class				****
Heat loss	to jacket in operation		kW	0,15
	to jacket in operation		%	0,44
	to flue in operation		kW	0,86
	to flue in operation		%	2,54
	in off mode		kW	0,058
	in off mode		%	0,17
Installation data				
NO_x emission class			-	5
NO_x emission			ppm	19,5
CO emission			ppm	8,4
Maximum flow flue condensate			l/h	5,5
Fume outlet	diameter (Ø)		mm	80
	residual head		Pa	100
Type of installation			-	B32P, B33, B35P, C13, C33, C34, C53, C63, C83

2.5.4 Pressure drop table

Table 2.4 GAHP A and GAHP A Indoor pressure drops

Water flow rate	Vector fluid temperature at outlet		
	35 °C	50 °C	60 °C
	Bar	Bar	Bar
2000 l/h	0,23	0,21	0,19
3000 l/h	0,46	0,43	0,40
4000 l/h	0,78	0,72	0,67

Table 2.5 Pressure drop AY

Water flow rate	Outlet water temperature	
	20 °C	
	Bar	
2007 l/h	0,20	
2400 l/h	0,27	
3000 l/h	0,41	

2.5.5 Performance table

Table 2.6 p. 8 shows the unitary thermal power at full load and stable operation, depending on hot water outlet temperature to the system and outdoor temperature, for the single GAHP A unit.

For AY00-120 see Table 2.3 p. 6.

Please consider that, according to the actual heating request, the unit may often need to operate under partial load conditions and in non stationary operation.

Table 2.6 GAHP A and GAHP A Indoor heating power for each unit

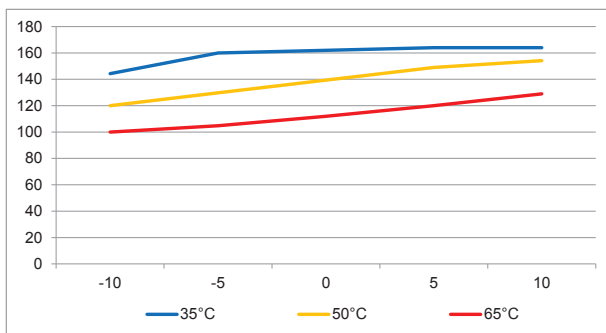
External air temperature	Water delivery temperature							
	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C (1)
	KW	KW	KW	KW	KW	KW	KW	KW
-20 °C	33,9	31,5	29,6	27,7	25,7	23,7	22,7	9,3
-15 °C	35,2	32,8	30,9	29,0	27,0	24,9	23,9	10,0
-10 °C	36,4	34,0	32,1	30,2	28,2	26,2	25,2	10,6
-5 °C	40,3	37,7	35,2	32,7	30,6	28,5	26,4	11,1
0 °C	40,8	39,2	37,1	35,1	32,7	30,3	28,2	11,3
5 °C	41,3	40,0	38,8	37,5	34,8	32,0	30,2	11,8
7 °C	41,3	40,2	39,3	38,3	35,7	33,0	31,1	12,0
10 °C	41,3	40,6	39,8	38,9	36,6	34,4	32,5	12,4
15 °C	41,6	41,3	40,6	39,8	38,3	36,8	34,8	13,1
20 °C	41,6	41,4	40,8	40,2	39,5	38,5	37,1	13,8
25 °C	41,7	41,5	41,0	40,4	39,9	39,2	38,2	14,2
30 °C	41,8	41,6	41,1	40,5	40,1	39,4	38,4	14,4
35 °C	41,9	41,7	41,2	40,6	40,2	39,5	38,5	14,5

(1) Thermal input reduced to 50%

Picture 2.6 p. 8 shows the GUE trend at full load and in stable operation for three representative delivery temperatures, according to outdoor temperature, for the GAHP A unit.

Please consider that, according to the actual heating request, the unit may often need to operate under partial load conditions and in non stationary operation.

Figure 2.6 GAHP A and GAHP A Indoor GUE



In abscissa the outdoor temperature
In ordinate the full load GUE rate

3 DESIGN

Compliance with installation standards

Design and installation must comply with applicable regulations in force, based on the installation Country and site, in matters of safety, design, implementation and maintenance of:

- heating systems;
- cooling systems;
- gas systems;
- flue gas exhaust;
- flue gas condensate discharge.

Design and installation must also comply with the manufacturer's provisions.

3.1 PLUMBING DESIGN

Please refer to Section C1.04.

3.2 FUEL GAS SUPPLY

Please refer to Section C1.09.

3.3 GAHP A UNIT COMBUSTION PRODUCTS EXHAUST

Compliance with standards

The appliance is approved for connection to a combustion products exhaust duct for the types shown in Table 2.2 p. 6.

3.3.1 Flue gas exhaust connection

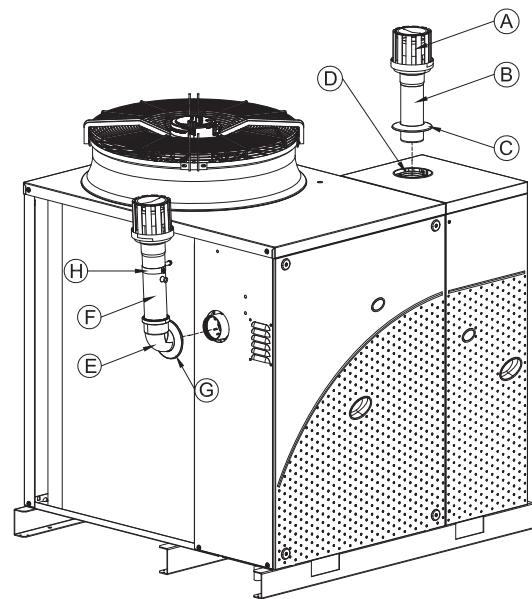
- ▶ Ø 80 mm (with gasket), on the left, at the top (Figure 3.1 p. 9).

3.3.2 Flue gas exhaust kit

The appliance is supplied with flue gas exhaust kit, to be fitted by the installer, including (Figure 3.1 p. 9):

- ▶ 1 pipe Ø 80 mm, length 300 mm, with terminal and socket for flue gas analysis;
- ▶ 1 support collar;
- ▶ 1 90° elbow Ø 80 mm;
- ▶ 1 rain cover.

Figure 3.1 Fume outlet



- A Terminal
- B Pipe
- C Rain cover
- D Flanged fitting
- E 90° bend
- F Pipe w/terminal
- G Rain cover
- H Collar

3.4 AY00-120 UNIT COMBUSTION PRODUCTS EXHAUST

Compliance with standards

The appliance is approved for connection to a combustion products exhaust duct for the types shown in Table 2.3 p. 6.

3.4.1 Flue gas exhaust connection

- ▶ Ø 80 mm in the upper part (Figure 3.1 p. 9).

3.4.2 Flue gas exhaust kit

The appliance is supplied with flue gas exhaust kit, to be fitted by the installer, including (Figure 3.1 p. 9):

- ▶ 1 terminal;
- ▶ 1 extension pipe Ø 80 mm, length 209 mm;
- ▶ 1 rain cover;

3.5 COMBUSTION PRODUCTS EXHAUST THROUGH THE FLUE

If required, the appliance may be connected to a flue appropriate for condensing appliances.

- ▶ For flue sizing please refer to the specification sheet in Section C1.10.
- ▶ If the flue gas exhaust of the GAHP A and that of the AY00-120 boiler are connected to a single flue, it is mandatory to install a flap valve on the exhaust of each.

- ▶ The flue must be designed, sized, tested and constructed by a skilled form, with materials and components complying with the regulations in force in the country of installation.
- ▶ Always provide a socket for flue gas analysis, in an accessible position.



In case the flap valves are installed outside, an appropriate UV ray protection must be assured (if the valve is constructed in plastic material) as well as protection from potential winter freezing of condensate backflow into the siphon.

3.6 FLUE GAS CONDENSATE DISCHARGE

The GAHP A and AY00-120 units are condensing appliances and therefore produce condensation water from combustion flue gas.



Condensate acidity and exhaust regulations

The flue gas condensate contains aggressive acid substances. Refer to applicable regulations in force for condensate exhaust and disposal.

- ▶ If required, install an acidity neutraliser of adequate capacity (Tables 2.2 p. 6 e 2.3 p. 6).



Do not use gutters to discharge the condensate

Do not discharge the fume condensate in gutters, due to the risk of materials corrosion and ice formation.

3.6.1 GAHP A unit flue gas condensate fitting

The fitting for flue gas condensate discharge is located on the left side of the appliance (Figure 3.2 p. 10).

- ▶ The distance L between the sleeve and the base must not exceed 110 mm.
- ▶ The corrugated condensate discharge pipe must be connected to a suitable discharge manifold.
- ▶ The junction between the pipe and the manifold must remain visible.

3.6.2 AY00-120 Unit flue gas condensate fitting

The connection for flue gas condensate discharge is located

on the right side of the appliance at the service plate (Figure 2.3 p. 3 and Figure 2.4 p. 3).

- ▶ The condensate discharge pipe must be connected to a suitable discharge manifold.
- ▶ The junction between the pipe and the manifold must remain visible.

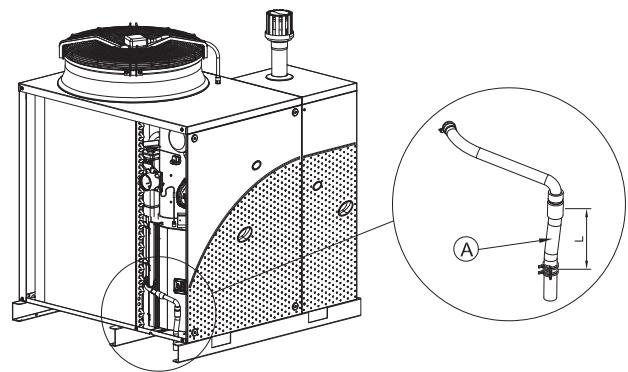
3.6.3 Flue gas condensate discharge manifold

If necessary the condensate discharge manifold may be in common between the 2 units the Gitié group consists of.

To make the condensate discharge manifold:

- ▶ Size the ducts for maximum condensation capacity (Tables 2.2 p. 6 and 2.3 p. 6).
- ▶ Use plastic materials resistant to acidity pH 3-5.
- ▶ Provide for min. 1% slope, i.e. 1 cm for each m of the length (otherwise a booster pump is required).
- ▶ Prevent icing.
- ▶ Dilute, if possible, with domestic waste water (e.g. bathrooms, washing machines, dish washers...), basic and neutralising.

Figure 3.2 Condensate drain position



A Condensate discharge hose
L ≤ 110 mm

3.7 ELECTRICAL AND CONTROL CONNECTIONS

3.7.1 Warnings



Earthing

- The appliance must be connected to an effective earthing system, installed in compliance with regulations in force.
- It is forbidden to use gas pipes as earthing.



Cable segregation

Keep power cables physically separate from signal ones.



Do not use the power supply switch to turn the appliance on/off

- Never use the external isolation switch (GS) to turn the appliance on and off, since it may be damaged in the

long run (occasional black outs are tolerated).

- To turn the appliance on and off, exclusively use the suitably provided control device (DDC or external enable).

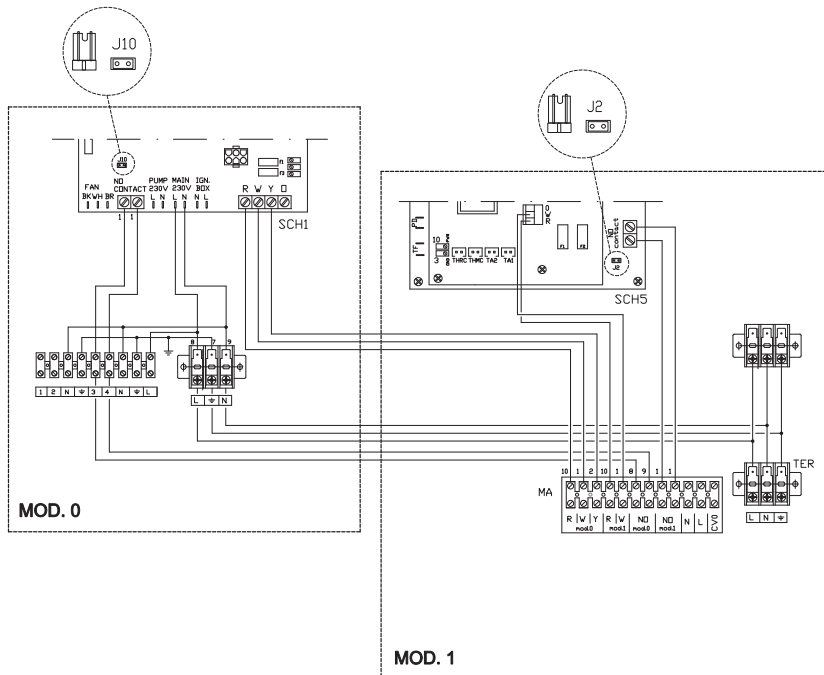


Control of water circulation pump

The water circulation pumps of the hydraulic circuit must mandatorily be controlled by the unit's electronic boards. It is not admissible to start/stop circulating pumps with no enable from the appliance.

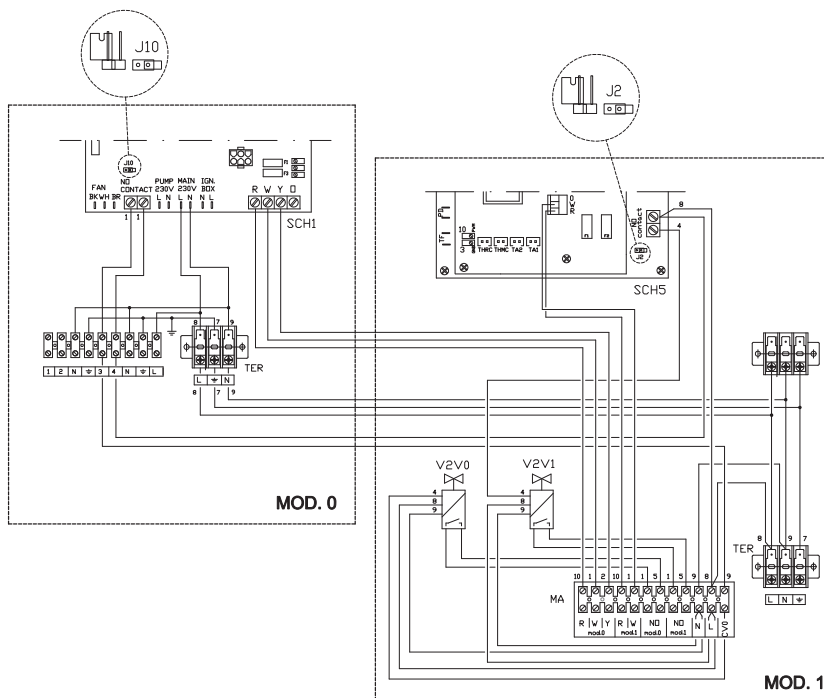
3.7.2 Wiring diagrams

Figure 3.3 Gitié package wiring diagram - base version



- MA Terminal block
- MOD.0 GAHP or ACF unit
- MOD.1 unit AY00-120
- SCH1 electronic board S61
- SCH5 electronic boards S70+AY10
- TER unit power supply terminal box
- J2-J10 control jumpers of system water pumps ("closed")

Figure 3.4 Gitié package wiring diagram with KIT/2 C0



- MOD.0 GAHP or ACF unit
- MOD.1 unit AY00-120
- SCH1 electronic board S61
- SCH5 electronic boards S70+AY10
- TER unit power supply terminal box
- J2-J10 control jumpers of system water pump ("open")
- MA connection terminal block
- V2V0-V2V1 motorised valves

Figure 3.5 Gitié package wiring diagram with KIT/2 C1 or with KIT/4 C1

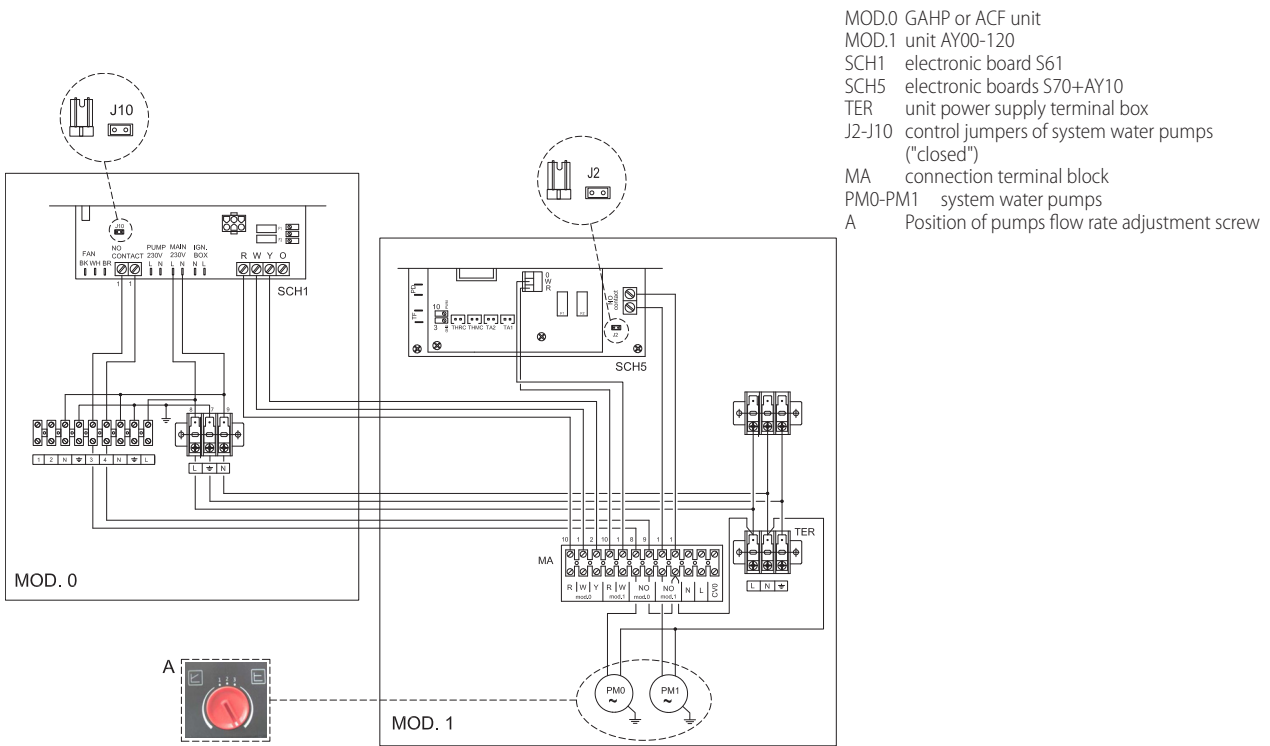
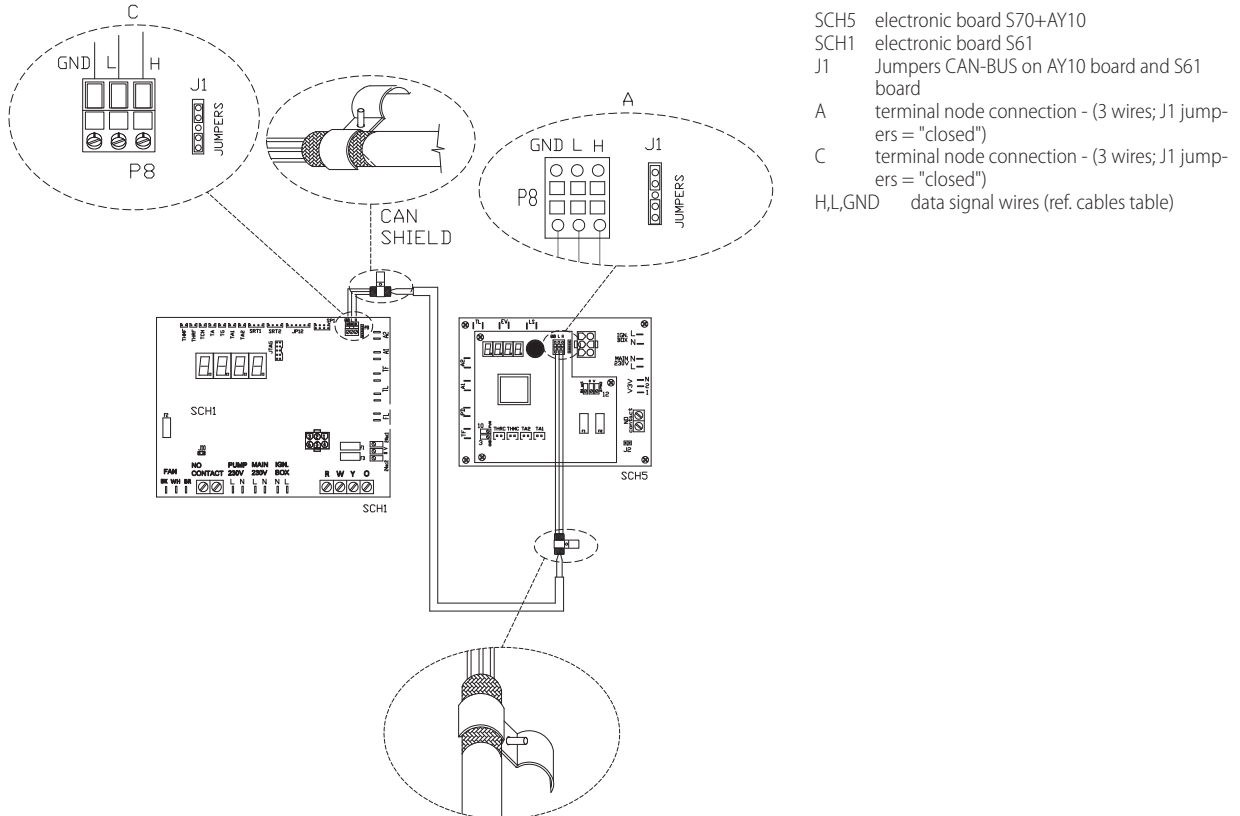


Figure 3.6 CAN connection between AY10 board and S61 (pre-wired in the factory)



3.7.3 Electrical systems

Electrical connections must provide:

- ▶ (a) power supply;
- ▶ (b) control system.

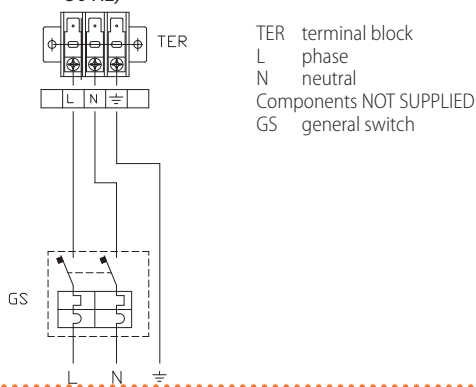
3.7.4 Electrical power supply

Power supply line

Provide (by the installer) a protected single phase line (230 V 1-N 50 Hz) with:

- ▶ 1 three-pole cable type FG7(O)R 3Gx1.5;
- ▶ 1 two-pole switch with 2 8A type T fuses, (GS) or 1 10A magnetothermic breaker.

Figure 3.7 Appliance connection to the mains power supply (230V 1N - 50 Hz)



The switches must also provide disconnecter capability, with min contact opening 4 mm.

3.7.5 Set-up and control

Control systems, options (1) (2)

Two separate adjustment systems are provided, each with specific features, components and diagrams (see Paragraph 2.4 p. 5):

- ▶ System (1), with **DDC control** (with CAN-BUS connection).
- ▶ System (2), with **external enables**.

Control with DDC

CAN-BUS communication network

The CAN-BUS communication network, implemented with the cable of the same name, makes it possible to connect and remotely control one or more Robur appliances with the DDC control device.

It entails a certain number of serial nodes, distinguished in:

- ▶ intermediate nodes, in variable number;
- ▶ terminal nodes, always and only two (beginning and end).

Each component of the Robur system, appliance (GAHP, GA, AY00-120, Gitié, ...) or control device (DDC, RB100, RB200, CCI, ...), corresponds to a node, connected to two more elements (if it is an intermediate node) or to just one other element (if it is a terminal node) through two/one CAN-BUS cable section/s, forming an open linear communication network (never star or loop-shaped).

CAN-BUS signal cable

The DDC controller is connected to the appliance through the CAN-BUS signal cable, shielded, compliant to Table 3.1 p. 13 (admissible types and maximum distances).

For lengths ≤200 m and max 4 nodes (e.g. 1 DDC + 1 Gitié), a simple 3x0.75 mm shielded cable may even be used.

Table 3.1 CAN BUS cables type

CABLE NAME	SIGNALS / COLOR			MAX LENGTH	Note	
Robur						
ROBUR NETBUS	H= BLACK	L= WHITE	GND= BROWN	450 m	Ordering Code OCVO008	
Honeywell SDS 1620						
BELDEN 3086A	H= BLACK	L= WHITE	GND= BROWN	450 m	In all cases the fourth conductor should not be used	
TURCK type 530						
DeviceNet Mid Cable						
TURCK type 5711	H= BLUE	L= WHITE	GND= BLACK	450 m		
Honeywell SDS 2022						
TURCK type 531	H= BLACK	L= WHITE	GND= BROWN	200 m		

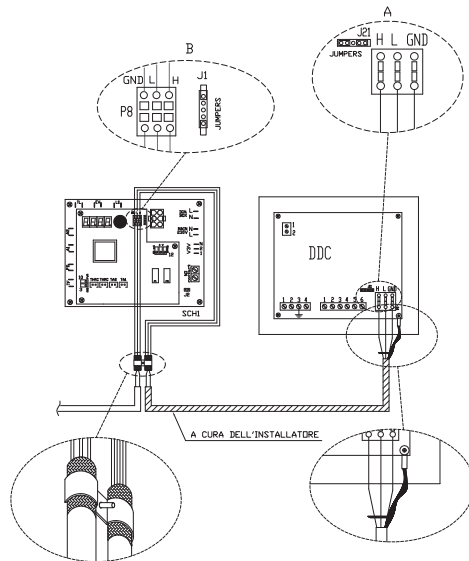


How to connect the CAN BUS cable to the appliance

To connect the CAN-BUS cable to the AY10 electronic board, located in the Electrical Panel inside the AY00-120 unit, Picture 3.8 p. 14, Details A and B:

1. Access the Electrical Board of the appliance according to the Procedure 3.7.3 p. 12);
2. Connect the CAN-BUS cable to terminals GND + L and H (shielding/earthing + two signal conductors) of the AY10 board;
3. Place the Jumper J1, of the AY10 board, OPEN;
4. Connect the DDC to the CAN-BUS cable to terminals GND + L and H (shielding/earthing + two signal conductors) of the DDC;
5. The CAN connection between the AY10 board and the S61 board is pre-wired (Picture 3.9 p. 14);

Figure 3.8 CAN-BUS connection between Gitié and DDC



- DDC Direct Digital Control
- SCH5 electronic board S70+AY10
- J1 Jumpers CAN-BUS on AY10 board
- J21 Jumper CAN-BUS in board DDC
- A terminal node connection - (3 wires; J21 jumpers = "closed")
- B intermediate node connection - (3 wires; J1 jumpers = "open")
- H,L,GND data signal wires (ref. cables table)

Control with external enables

(System (2), see also Paragraph 2.4 p. 5).

For each external request to be provided, it is required to arrange:

- request device (e.g. thermostat, clock, button, ...) fitted with a voltage-free NO contact.

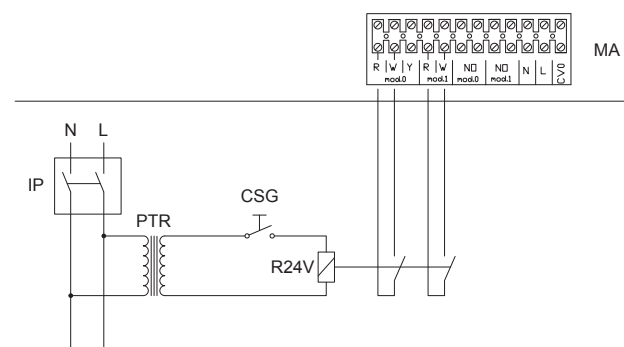


How to connect external enables

Connection of external requests is effected on the terminal block located in the Electrical Panel inside the AY00-120 unit.

If you wish the heating enables of the two units to be simultaneous follow the connection diagram shown in Figure 3.9 p. 14. Should you wish the enables of the two units to be separate follow the connection diagram shown in Figure 3.10 p. 14.

Figure 3.9 Connection diagram of simultaneous hot external enables

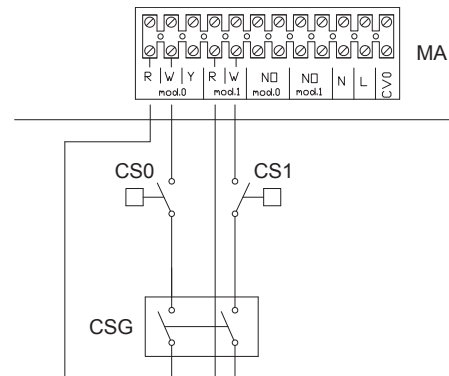


MA unit terminal block

Components NOT SUPPLIED

- IP two-pole switch
- PTR safety transformer SELV
- CSG general enable
- R24V 24V relay

Figure 3.10 Connection diagram of separate hot external enables



MA unit terminal block

Components NOT SUPPLIED

- CSG general enable
- CS0 heating request AY00-120
- CS1 heating request AY00-120

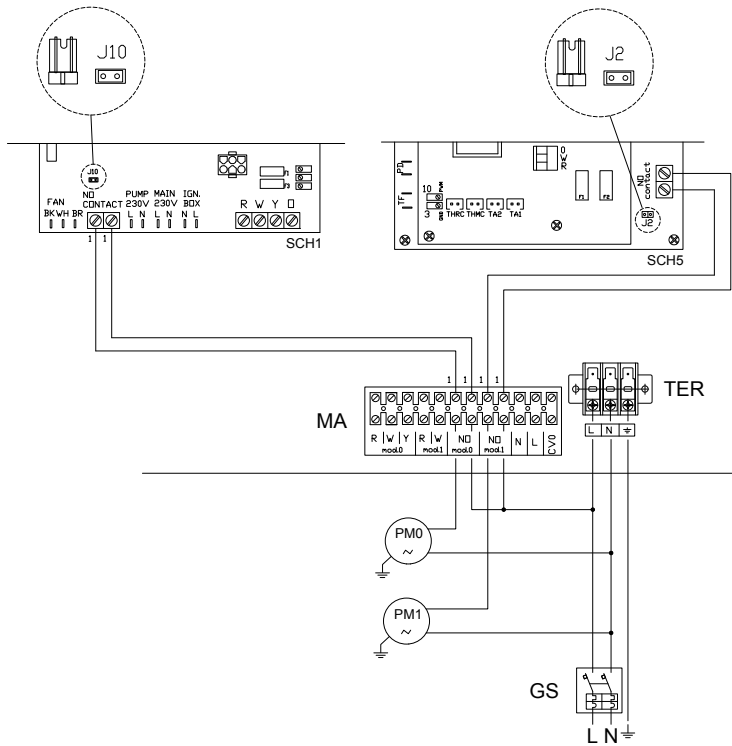
3.7.6 Water circulation pumps (versions C0)



System water pumps will be controlled at constant flow.

4-pipe versions

Figure 3.11 System pump connection diagram Gitié package BASE version (P < 700 W)



- SCH1 electronic board S61
- SCH5 electronic boards S70+AY10
- MA unit terminal block
- J2-J10 control jumpers of system water pumps ("closed")

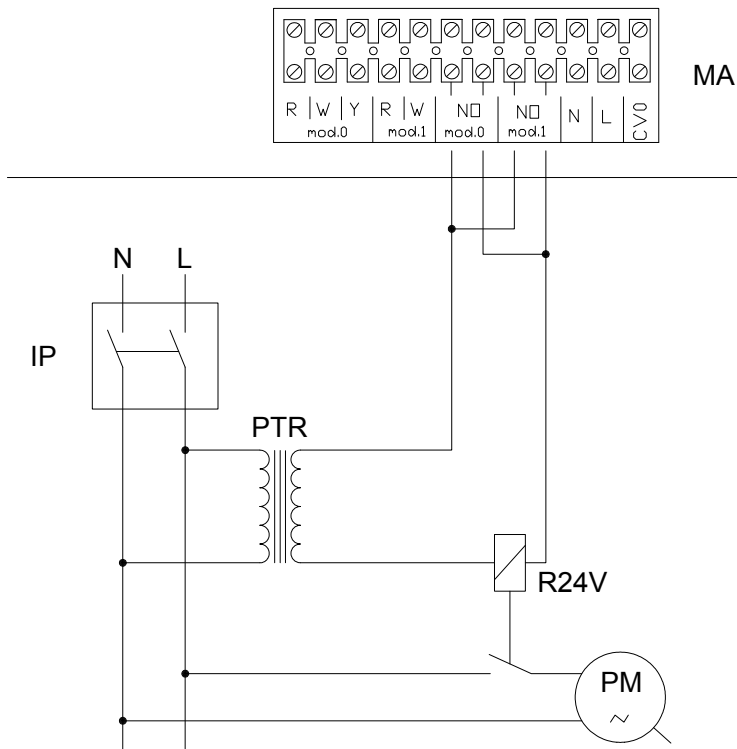
Components NOT SUPPLIED

- PM0 water pump (P < 700 W) unit GAHP or ACF
- PM1 water pump (P < 700 W) AY00-120 unit
- GS general switch

The diagram in Figure 3.11 p. 15 is for pumps < 700 W. For pumps > 700 W it is necessary to add a control relay and arrange Jumpers J10 and J2 OPEN.

2-pipe versions

Figure 3.12 System pump connection diagram Gitié package 2 pipe version (KIT/2 C0)



- MA unit terminal block

Components NOT SUPPLIED

- PM water pump
- IP two-pole switch
- PTR safety transformer SELV
- R24V pump control relay