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MAGIS COMBO V2



Range of "split" inverter reversible air/water hybrid heat pumps, composed of an outdoor condensing unit and an indoor unit (with hydronic exchange unit with chiller unit and condensation unit); a single "pack" code identifies the complete system (indoor unit + outdoor condensing unit). There are 3 instant versions (MAGIS COMBO 4 V2, MAGIS COMBO 6 V2 and MAGIS COMBO 9 V2) and 3 PLUS versions (MAGIS COMBO 4 PLUS V2, MAGIS COMBO 6 PLUS V2 and MAGIS COMBO 9 PLUS V2), all with single-phase supply voltage. The water circuit is fully protected against freezing because it can be installed inside the home (in this case there is no need to add antifreeze); it is, therefore, also particularly suitable for cold climate areas.

Make the refrigerant connections between the outdoor unit and the indoor unit.

MAGIS COMBO V2 is ideal for conditioning rooms in central heating mode (maximum flow temperature 80°C) in cooling mode, and can produce DHW instantaneously with plate heat exchanger, or coupled with a separate storage tank unit (PLUS model).

Thanks to the thrust integration of generators (heat pump and indoor condensation unit) there are advantages with regard to both installation and reduction of overall dimensions, compared to "D.I.Y." solutions.

The logic of integrated intelligent activation in the system's electronics is able to determine the most convenient source of energy at that time (heat pump / condensation unit) and - therefore - to chose the source to activate; allows simplifying the electrical connections (it is not usually necessary to provide the System Manager, which is still available as optional to manage special systems, such as systems spread over more than three zones).

The MAGIS COMBO V2 indoor unit is approved for outdoor use in partially protected environment with IPX4D protection degree.

MAGIS COMBO V2 also meets the requirements of the ErP Directive (2009/125/EC) and ELD (2010/30/EC); there are a number of optional kits available, which allow it to be used in different plant applications.

Compared to a single condensing boiler, the system allows a considerable energy saving; also, it occupies little space: it is ideal for new residential constructions (especially the PLUS version, which also uses the heat pump for the production of DHW, facilitating legal compliance), but also for the replacement of obsolete boilers in systems in which to encourage the use of renewable energy (in this case, the instant version is particularly suitable for the purpose).

It is ideal for very high energy classes in new residential constructions.

BENEFITS AND INCENTIVES FOR REPLACEMENT

Compared to a condensing boiler it obtains greater savings in operating costs and can also benefit from the subsidies in force and the new Thermal Account 2.0, in addition to the possible wall flue gas exhaust (ref. Legislative Decree 102/2014).



MAGIS COMBO V2

1 MAGIS COMBO 4 - 6 - 9 V2 (SINGLE-PHASE), INSTANT AND PLUS FEATURES

"Split" inverter reversible air/water hybrid heat pumps, composed of an Outdoor condensing unit and a Wall-hung indoor unit; a single "pack" code identifies the complete system consisting of the following main components:

- **Outdoor condensing unit** (AUDAX PRO V2) which mainly includes rotary compressor, inverter electronics, throttle valve, 4-way valve for cycle inversion, finned exchange coil with outdoor air (with single fan). The cooling circuit is already preloaded in the condensing unit (refrigerant R32); it is equipped with shut-off valves for the R32 circuit;
- **Wall-hung indoor unit**, which includes:
 - The hydraulic circuit components for connection to the system, as well as the relevant management and communication electronics with the condensing unit; in particular, it is composed of 72-plate R32 / water exchanger, 10-litre system expansion vessel, flow-meter, 24 Vdc power supply, management electronics;
 - Condensing unit with 24 kW nominal useful power (20,640 kcal/h) in central heating (27.3 kW in DHW) with total premixing combustion system with steel multigas cylindrical burner, complete with ignition electrode and ionisation control electrode and double shutter pneumatic gas valve, gas/water primary exchanger with composite casing and stainless steel internal coil; stainless steel combustion chamber internally insulated with ceramic panels, fan for flue gas evacuation at electronically variable speed, circuit for the disposal of condensate including siphon and flexible drain hose;
 - 14-plate stainless steel secondary water/water exchanger for the production of domestic hot water, D.H.W. flow switch for detection of withdrawal of D.H.W. (MAGIS COMBO V2 instant version);
 - Hydraulic unit consisting of 3-way electric valve, low consumption 7 m.c.a. circulation pump (associated with the condensation generator operation), low consumption 7 m.c.a. circulation pump (associated with cooling circuit operation), absolute pressure switch for the primary circuit, 3-bar primary circuit safety valve, system drain fitting and cock for system filling; in the MAGIS COMBO PLUS V2 there is an additional 3-way electric valve to manage the D.H.W. central heating with the heat pump circuit;
 - Control panel composed of central heating system pressure gauge, multifunction display and 7-digit keyboard for setting and adjusting the generator operating parameters: central heating/cooling flow temperature adjustment buttons, DHW temperature adjustment buttons, summer / winter mode button, reset button, menu button;
 - Self-diagnosis system with digital display of the functioning status and error codes;
 - Ignition delay device in C.H. mode, anti-freeze protection system (to -5°C), pump anti-block device function, three-way valve anti-block device function, chimney sweep function, automatic vent function, screed heater function;
 - IPX4D Electrical insulation rating;
 - Possibility of coupling to the system for ducting of existing flues Ø 50 mm, Ø 60 mm and Ø 80 mm (for condensation units).
 - Selection of C.H. temperature range via the programming menu;
 - Hydraulically the indoor unit is set-up for connection to 1 heating/cooling zone and for connection to the DHW storage tank (PLUS version) or to the D.H.W. circuit (instant); there are also the R32 connections for the condensing unit;
 - Compared with block heat pumps, the water circuit is fully protected against freezing because it can be installed inside the home (important in cold zones);

- The electronics of MAGIS COMBO V2 is designed to directly manage 3 zones (one direct and two mixed), for the third mixed zone it is necessary to provide the configurable relay interface kit code 3.015350) for both central heating and cooling operation; in this case MAGIS COMBO V2 can be connected to zone remote panels via Bus connections (up to 3 can be provided), or it can be connected with simple on/off contacts (e.g. CHRONO 7) to control the room temperature of the 3 zones. 3 humidistats or 3 Modbus temperature and humidity sensors can be connected to control humidity;
- Possibility of setting 3 climatic curves for hot and 3 climatic curves for cold (for the 3 zones), on the electronics of the hydronic module, no need to provide for the system manager;
- Possibility to set on each zone if the zone is only hot, hot/cold, only cold (dehumidification included, with dew point calculation);
- To manage the dehumidifiers, it is necessary to insert in the indoor wall-hung unit a 2 relay board kit (optional), to control 2 dehumidifiers (the third one is controlled by the configurable relay interface kit code 3.015350); the kit allows the dehumidifiers to be activated through a potential-free contact;
- It includes a 230 V output to control summer/winter diverter valves in heating systems with fan coil cold/radiant panels; switching occurs with the change of mode (summer/winter) from the control panel;
- The electronic of MAGIS COMBO V2 manages the anti-legionella function;
- Input to force activation with photovoltaic system that produces electricity;
- Possible connection to the System Manager (optional) to manage systems with more than 3 zones.

Supplied with sample points for combustion analysis, lower protection guard, connection group, cock with filter on system flow, cock on the system flow, gas interception cock and cold water cock.

Category II appliance_{2H3B/P} functions with a natural gas, L.P.G. and propane air.

It is available in the instant models:

- | | |
|-------------------------------|-------------------------|
| • MAGIS COMBO 4 V2 | code 3.030609 |
| • MAGIS COMBO 4 V2 LPG | code 3.030609LPG |
| • MAGIS COMBO 6 V2 | code 3.030611 |
| • MAGIS COMBO 6 V2 LPG | code 3.030611LPG |
| • MAGIS COMBO 9 V2 | code 3.030613 |
| • MAGIS COMBO 9 V2 LPG | code 3.030613LPG |

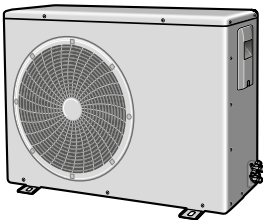
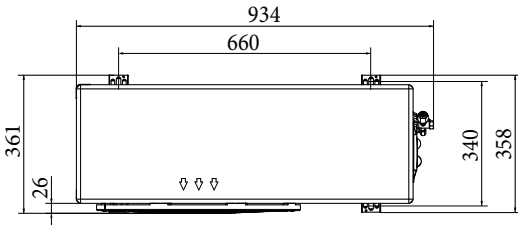
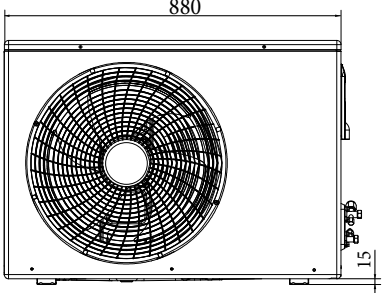
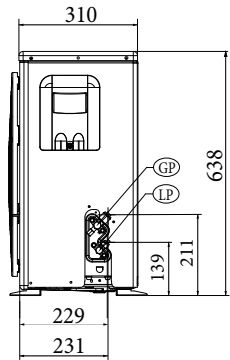
Or it is available in the PLUS models:

- | | |
|------------------------------------|-------------------------|
| • MAGIS COMBO 4 PLUS V2 | code 3.030615 |
| • MAGIS COMBO 4 PLUS V2 LPG | code 3.030615LPG |
| • MAGIS COMBO 6 PLUS V2 | code 3.030617 |
| • MAGIS COMBO 6 PLUS V2 LPG | code 3.030617LPG |
| • MAGIS COMBO 9 PLUS V2 | code 3.030619 |
| • MAGIS COMBO 9 PLUS V2 LPG | code 3.030619LPG |

- | | |
|--------------------------------|----------------------|
| • Installation template | code 3.016848 |
|--------------------------------|----------------------|

2 AUDAX PRO V2 DIMENSIONS AND CONNECTIONS (CONDENSING UNIT)

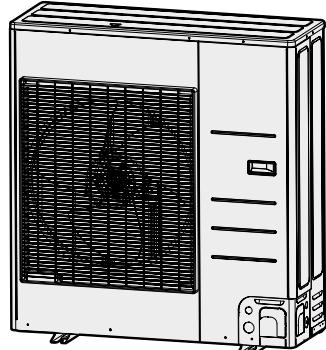
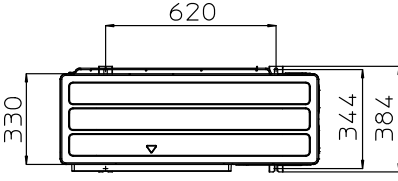
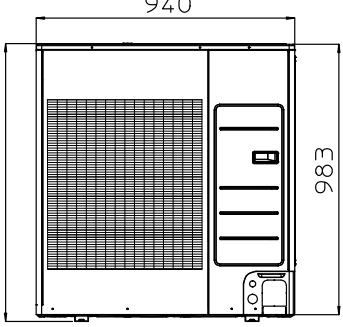
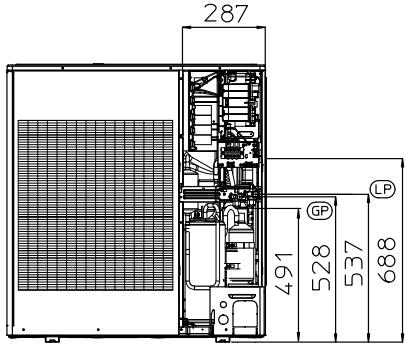
AUDAX PRO 4 / 6 V2

Height = 638 mm	Width = 880 mm	Depth = 361 mm	Condensate drain = Ø 20 mm
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	R32	
Model	LP (Cooling liquid)	GP (Gaseous liquid)
AUDAX PRO 4/6 V2	1/4" (6.35 mm)	5/8" (15.88 mm)

AUDAX PRO 9 V2

Height = 1010 mm	Width = 940 mm	Depth = 384 mm	Condensate drain = Ø 20 mm
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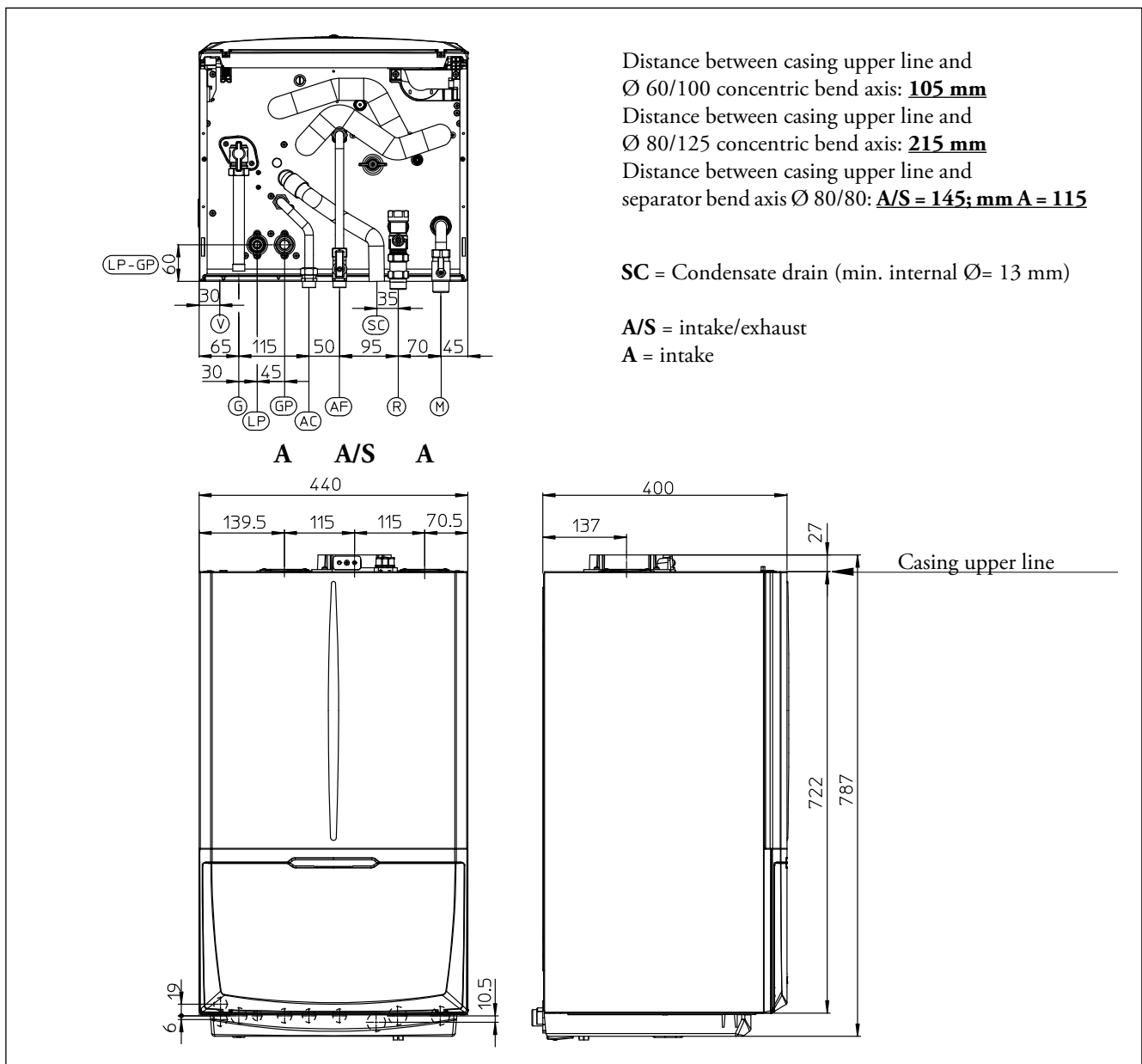
	R32	
Model	LP (Cooling liquid)	GP (Gaseous liquid)
AUDAX PRO 9 V2	1/4" (6.35 mm)	5/8" (15.88 mm)

MAGIS COMBO V2

3 MAGIS COMBO V2 MAIN DIMENSIONS

Model	Height mm	Width mm	Depth mm	Ø intake/exhaust mm
MAGIS COMBO V2	787	440	400	100/60 - 125/80 - 80/80

3.1 MAGIS COMBO V2 CONNECTIONS

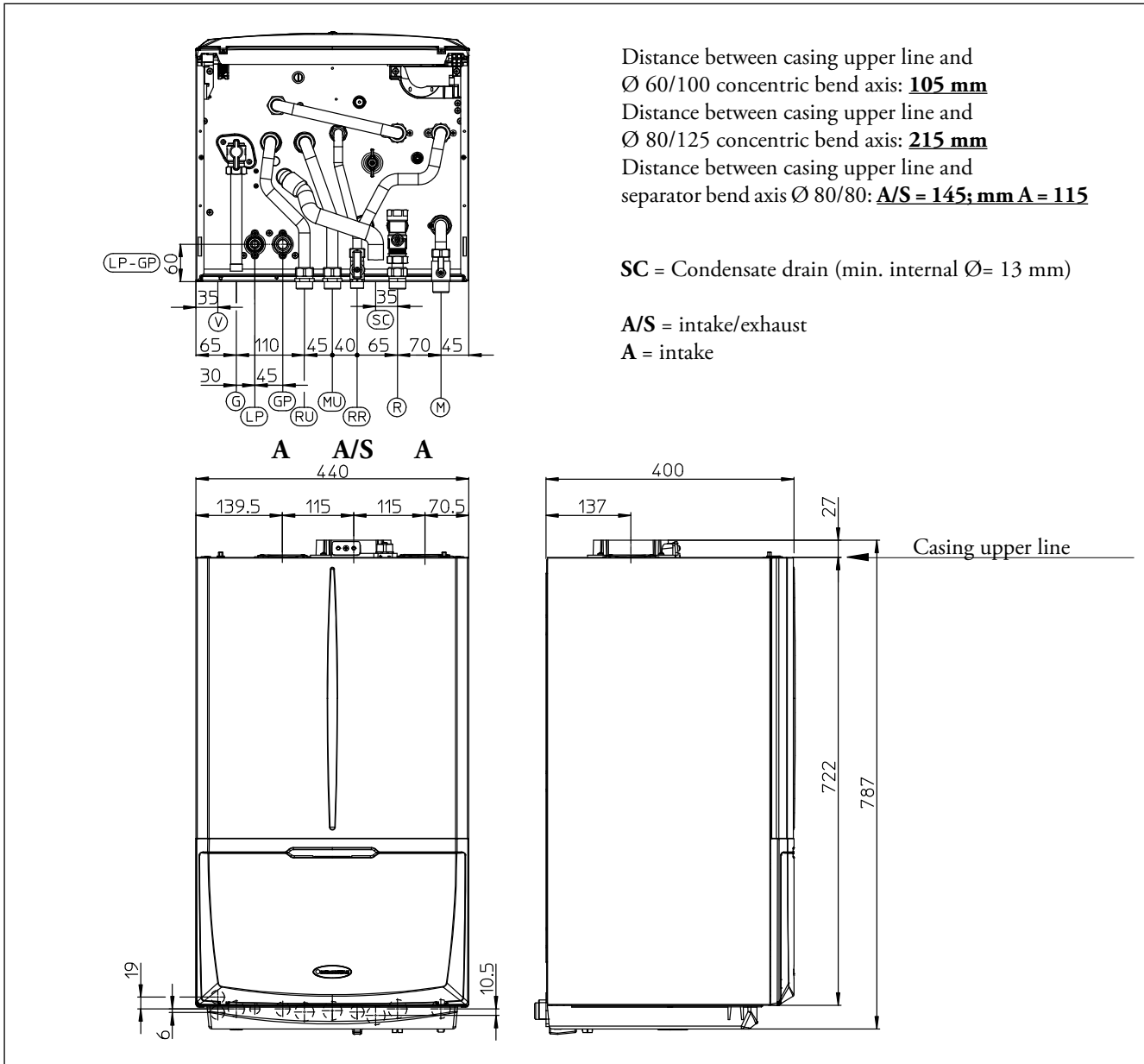


MAGIS COMBO V2							
Flow System	Return system	Inlet Cold	Hot Outlet AC	R32 LP	R32 GP	Gas G	Expansion vessel Litres
M	R	AF	1/2"	1/4"	5/8"	3/4"	10 (real 8.3)
3/4"	3/4"	1/2"		(6.35 mm)	(15.88 mm)		

4 MAGIS COMBO PLUS V2 MAIN DIMENSIONS

Model	Height mm	Width mm	Depth mm	Ø intake/exhaust mm
MAGIS COMBO PLUS V2	787	440	400	100/60 - 125/80 - 80/80

4.1 MAGIS COMBO PLUS V2 CONNECTIONS



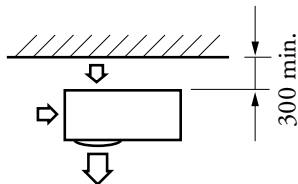
MAGIS COMBO PLUS V2

Flow System	Return System	System Filling	Storage tank	Storage tank	R32	R32	Gas	Expansion vessel
M	R	RR	Flow	return	LP	GP	G	Litres
3/4"	3/4"	1/2"	MU	RU	1/4"	5/8"	3/4"	10 (real 8.3)
			3/4"	3/4"	(6.35 mm)	(15.88 mm)		

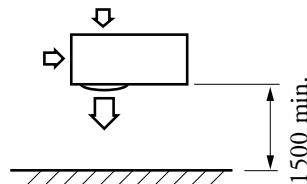
MAGIS COMBO V2

5 SINGLE AUDAX PRO V2 MINIMUM INSTALLATION DISTANCES

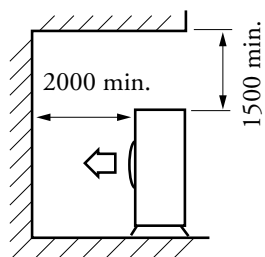
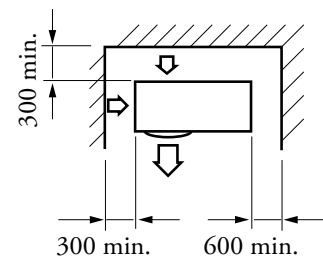
With the back side of the unit facing a wall



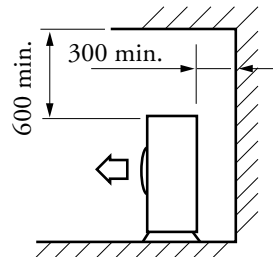
With the front side of the unit facing a wall



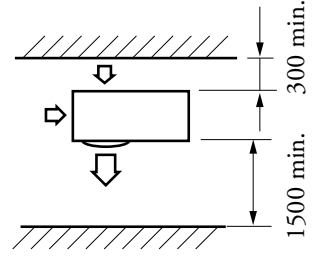
With three sides of the unit facing a wall



With the top and front sides of the unit facing a wall



With the top and back sides of the unit facing a wall



With the front and back sides of the unit facing a wall

(Unit: mm)

Place of installation:

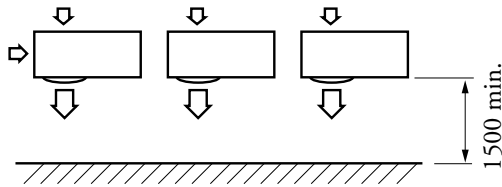
The place of installation is very important and must be established by the system's designer or by a specifically qualified person, and must consider the technical requirements, standards and laws in force.

- The condensing unit must be installed outside the building only; the indoor unit must be installed inside the building or outdoors in a partially protected place;
- It is recommended to avoid:
 - positioning in basement windows;
 - obstacles or barriers that cause recirculation of exhaust air;
 - places with aggressive atmospheres;
 - limited spaces or anyhow in places where sound levels from the appliance can be enhanced through reverberations or resonance;
 - positioning in corners where there is an accumulation of dust, leaves and anything else that can reduce the appliance's efficiency due to blocked passageways;

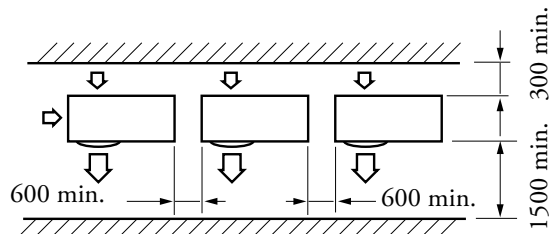
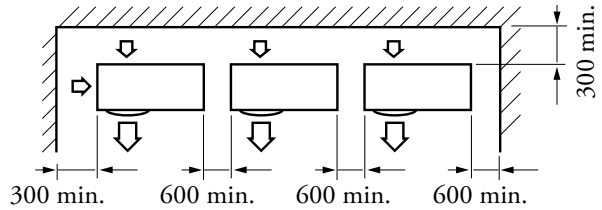
- prevent exhaust air from the device from coming into the rooms through doors or windows, thus disturbing people;
- The appliances must:
 - be placed on a level surface that is able to withstand its weight;
 - be placed on a slab that is hard enough and which does not transfer any vibrations to the underlying or adjacent rooms;
 - installed by means of the vibration-dampening supports supplied with the machine.
- If the unit is installed in zones subject to heavy snow, it will be necessary to raise the machine by at least the height of the strongest expected snowfall or, alternatively, use wall-support brackets (optional).

6 AUDAX PRO V2 MINIMUM INSTALLATION DISTANCES (SEVERAL APPLIANCES)

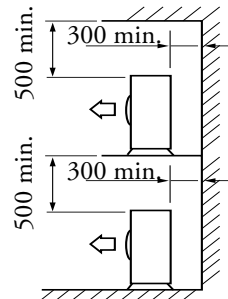
The front side of the unit facing a wall



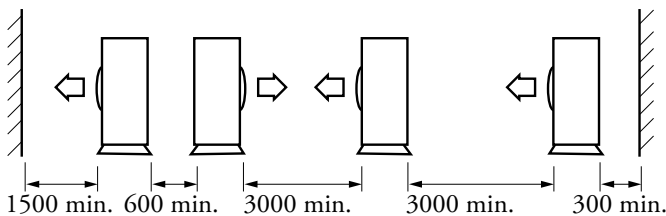
With three sides of the units facing a wall



With the front and back sides of the units facing a wall



With the top and back sides of the units facing a wall



With the units facing each other and with the front and back sides of the end units facing a wall

(Unit: mm)

In addition:

- the unit must be installed in a position protected from snow falling from above. If this is not possible, you must at least prevent the snow from clogging the air/coolant exchanger (even by constructing a small protective roof for the unit, if necessary);
- the effects of the wind can be minimised by installing the unit with the intake side facing a wall;
- the unit must not be installed with the intake side against the wind;
- the effects of the wind can be further minimised by installed a deflector plate facing the unit air flow side (not supplied).

N.B.: The spaces shown must be left free to allow air to circulate and to ensure accessibility for repairs or maintenance on every side of the units. In fact, it must be possible to disassemble all the unit components under the utmost safety conditions (both for objects and for people).

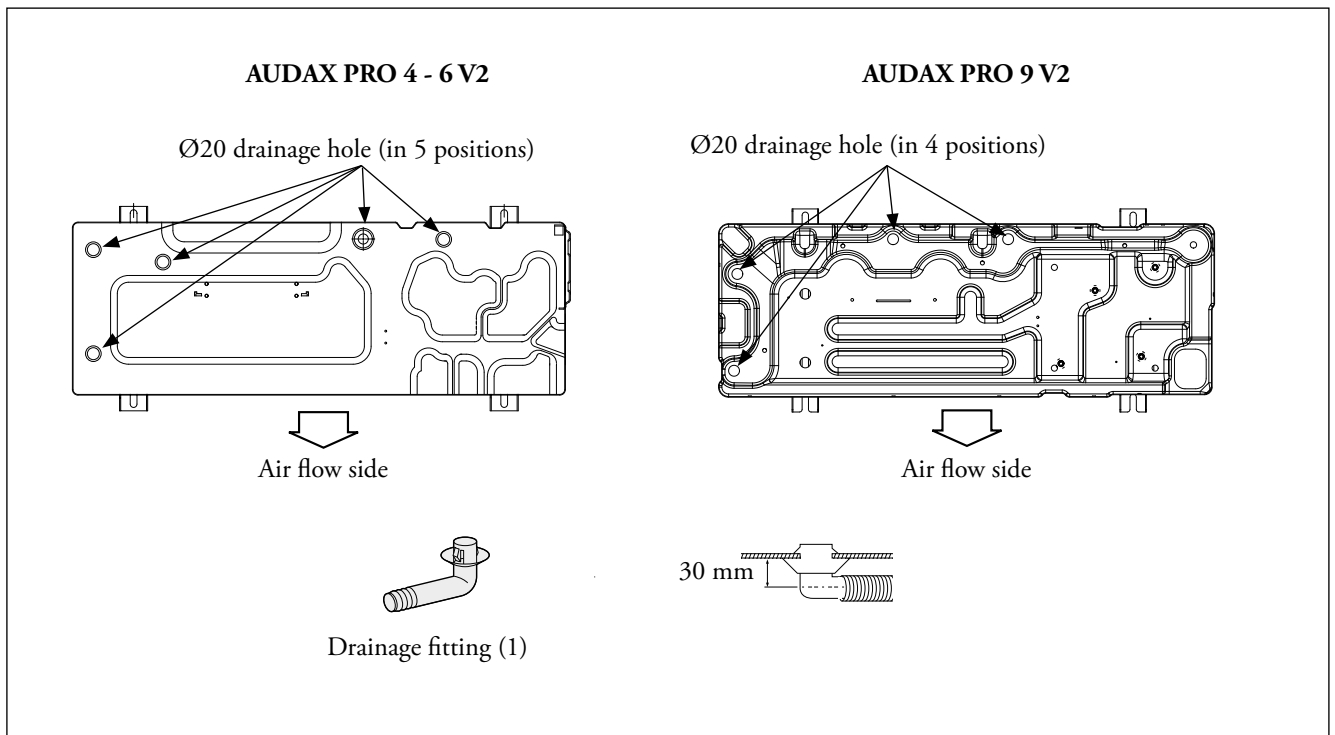
MAGIS COMBO V2

7

DRAIN HOLES AND CONDENSATE DRAIN

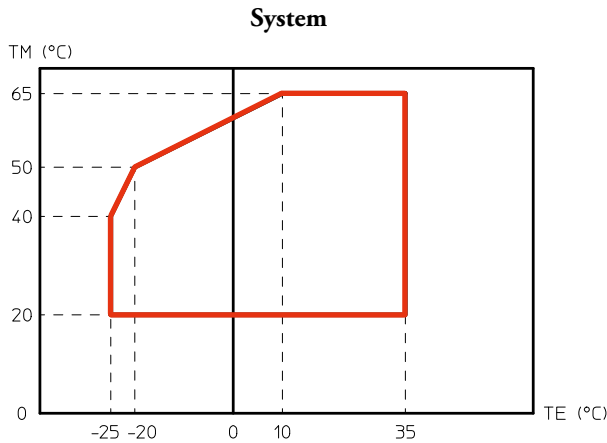
If the produced condensate is drained through the drain pipe, connect the standard supplied drain fitting (1) in one of the drainage holes on the bottom of the appliance and close the other holes with drain plugs (see drawings below) and use the drain pipe (16 mm internal diameter) commercially available so that it conveys the water to the desired location. In the event of installation in very cold zones or zones subject to heavy snow where the condensate drain pipe can freeze, take the necessary precautions to keep the drainage holes or the condensate drain pipe free.

N.B.: If the water produced by the unit is not properly drained, the performance of the entire system will suffer a negative impact and the system itself could be damaged.



8 COOLING CIRCUIT FUNCTIONING LIMITS

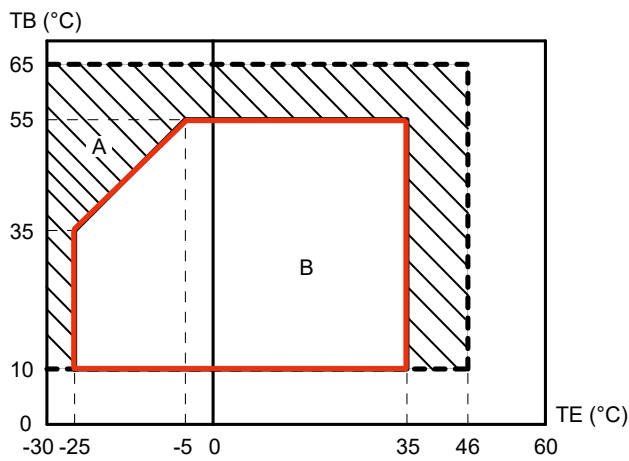
Central heating



KEY:
 TM - Flow water temperature (°C)
 TE - Outdoor air temperature (°C)

Work area covered by Heat pump

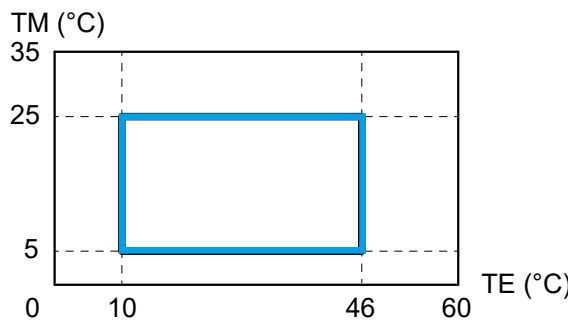
Domestic hot water (reference to MAGIS COMBO PLUS V2)



KEY:
 TB - Storage tank temperature probe (°C)
 TE - Outdoor air temperature (°C)

A = Work area covered by condensation generator
 B = Work area covered by Heat pump

Cooling

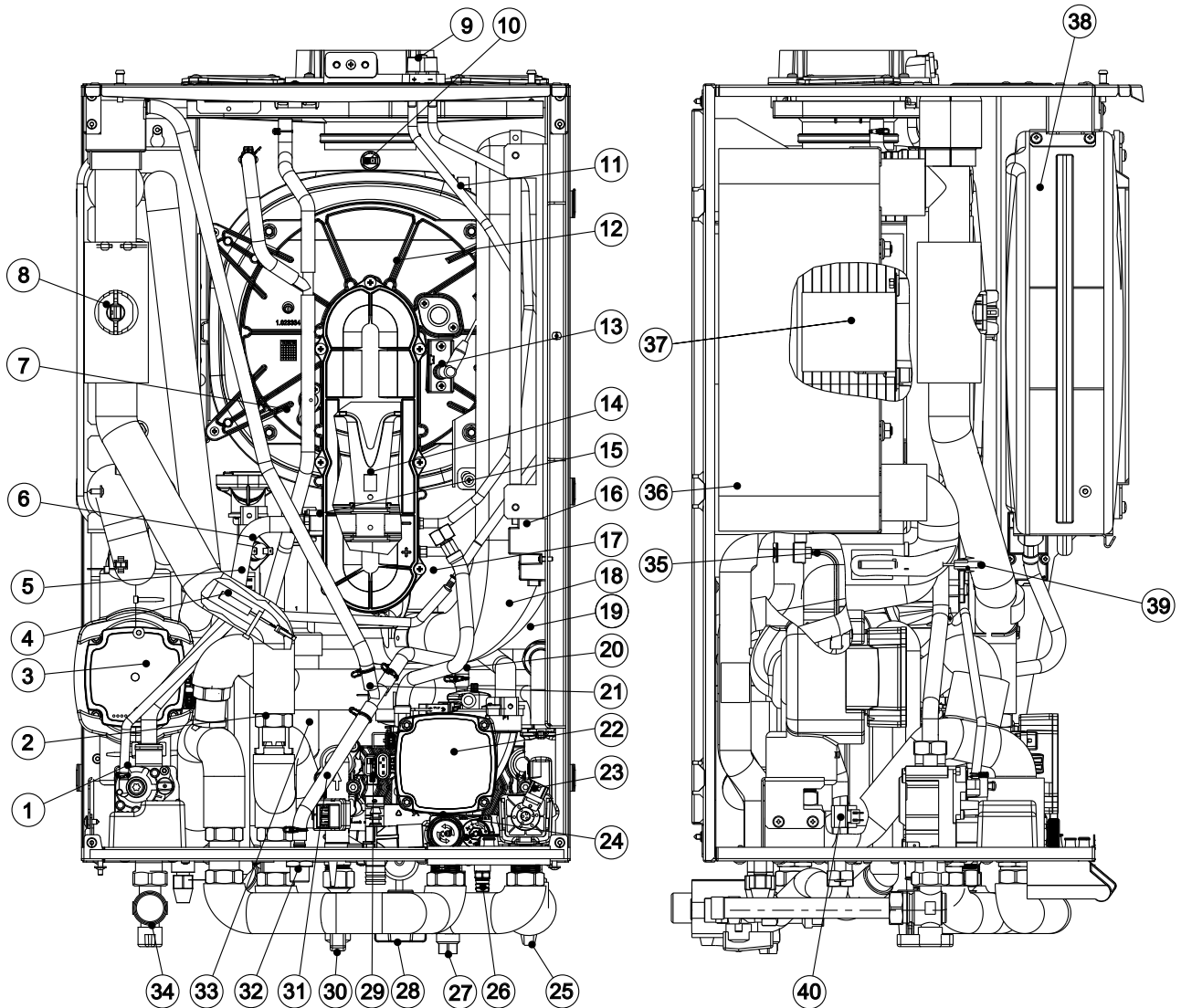


KEY:
 TM - Flow water temperature (°C)
 TE - Outdoor air temperature (°C)

MAGIS COMBO V2

9

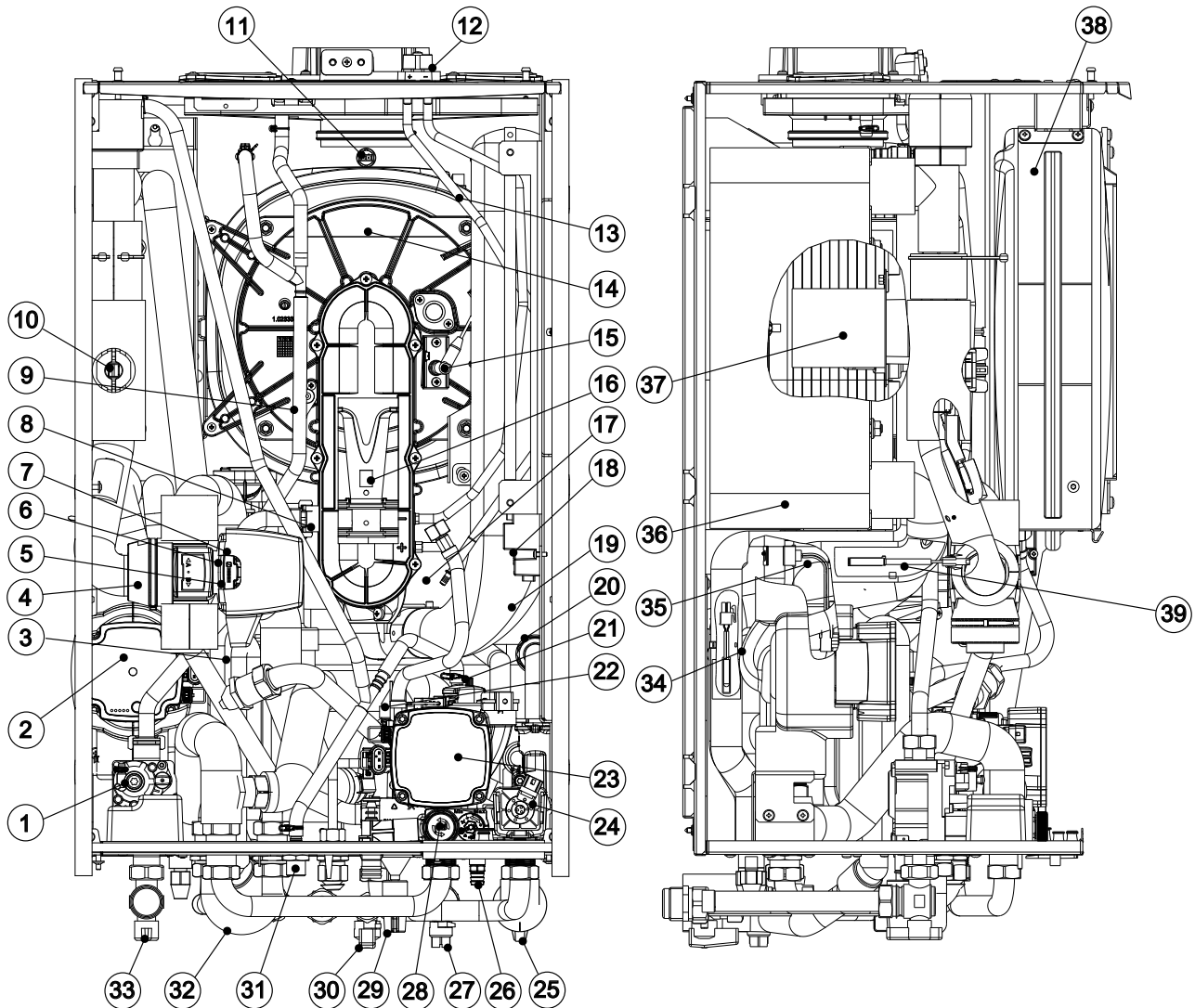
MAGIS COMBO V2 MAIN COMPONENTS (INDOOR UNIT)



KEY:

- | | | |
|---------------------------------------|--|----------------------------------|
| 1 - Gas valve | 19 - One-way valve | 37 - Burner |
| 2 - One-way valve | 20 - Air vent valve | 38 - System expansion vessel |
| 3 - Heat pump circuit circulator | 21 - System pressure switch | 39 - Heat generator return probe |
| 4 - Heat pump flow probe | 22 - Heat generator circuit circulator | 40 - DHW probe |
| 5 - Heat generator flow probe | 23 - Heat generator three-way valve | |
| 6 - Safety thermostat | 24 - 3 bar safety valve | |
| 7 - Detection electrode | 25 - System shut-off cock | |
| 8 - System flow-meter | 26 - System draining fitting | |
| 9 - Flange with sample points | 27 - System shut-off cock with filter | |
| 10 - Flue gas thermofuse | 28 - System filling cock | |
| 11 - Heat exchanger safety thermofuse | 29 - DHW plate heat exchanger | |
| 12 - Condensation module | 30 - Domestic hot water inlet cock | |
| 13 - Ignition electrode | 31 - D.H.W. flow switch | |
| 14 - Venturi | 32 - Air vent valve | |
| 15 - Gas nozzle | 33 - Condensate drain trap | |
| 16 - Igniter | 34 - Gas interception cock | |
| 17 - Fan | 35 - Liquid phase detection probe | |
| 18 - Air intake pipe | 36 - Water - gas plate exchanger | |

10 MAGIS COMBO PLUS V2 MAIN COMPONENTS (INDOOR UNIT)



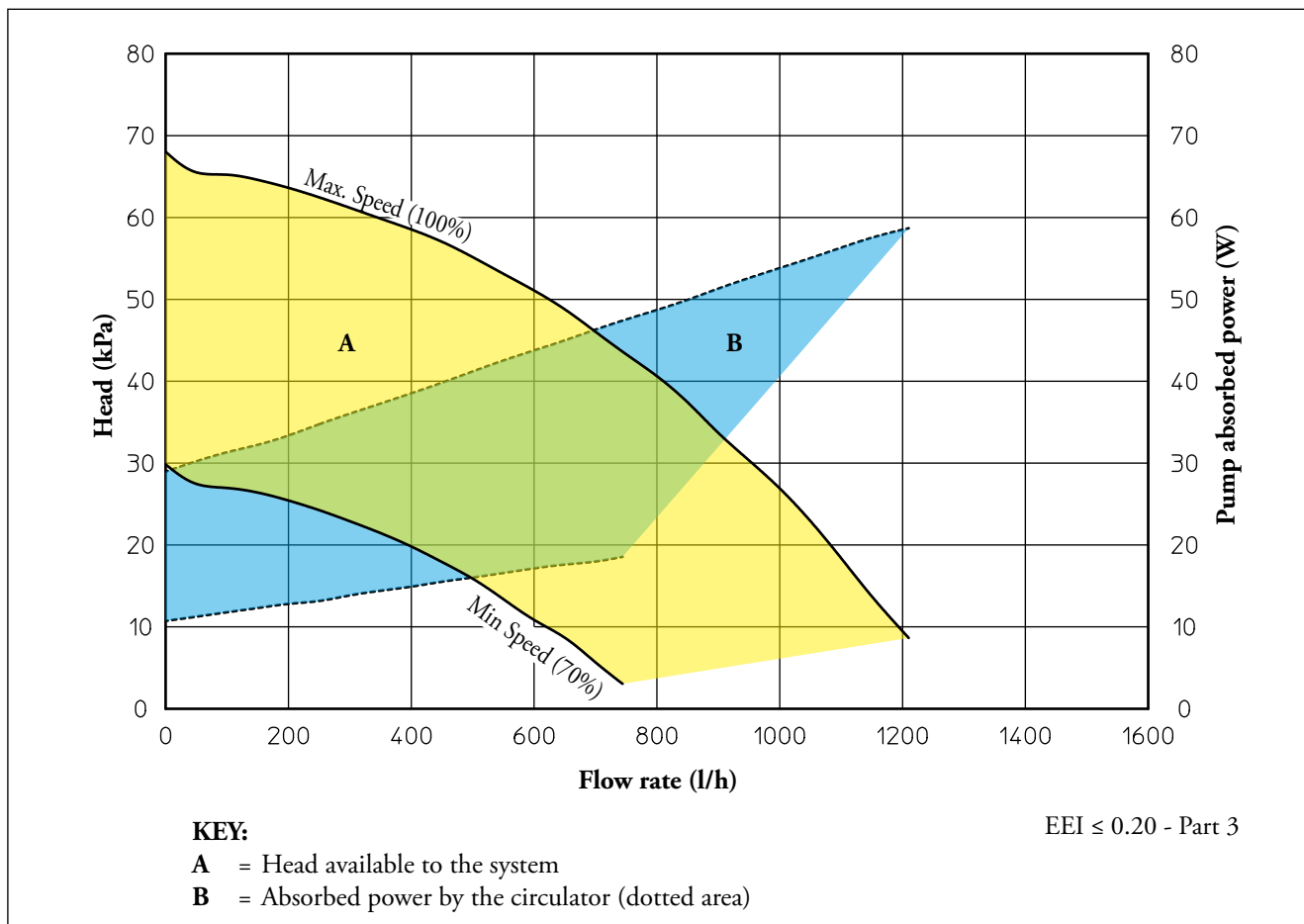
KEY:

- | | | |
|---------------------------------------|--|----------------------------------|
| 1 - Gas valve | 19 - Air intake pipe | 37 - Burner |
| 2 - Heat pump circuit circulator | 20 - One-way valve | 38 - System expansion vessel |
| 3 - Condensate drain trap | 21 - Air vent valve | 39 - Heat generator return probe |
| 4 - Three-way valve | 22 - System pressure switch | |
| 5 - 3-way valve motor | 23 - Heat generator circuit circulator | |
| 6 - DHW probe | 24 - Heat generator three-way valve | |
| 7 - Safety thermostat | 25 - System shut-off cock | |
| 8 - Gas nozzle | 26 - System draining fitting | |
| 9 - Detection electrode | 27 - System shut-off cock with filter | |
| 10 - System flow-meter | 28 - 3 bar safety valve | |
| 11 - Flue gas thermofuse | 29 - System filling cock | |
| 12 - Flange with sample points | 30 - Domestic hot water inlet cock | |
| 13 - Heat exchanger safety thermofuse | 31 - Air vent valve | |
| 14 - Condensation module | 32 - By-pass pipe | |
| 15 - Ignition electrode | 33 - Gas interception cock | |
| 16 - Venturi | 34 - Heat pump flow probe | |
| 17 - Fan | 35 - Liquid phase detection probe | |
| 18 - Igniter | 36 - Water-gas plate exchanger | |

MAGIS COMBO V2

11

GRAPH OF HEAT GENERATOR PUMP FLOW RATE/HEAD



11.1 GRUNDFOS UPM3 15-70 PUMP SETTINGS AND CONFIGURATIONS

The indoor units are equipped with low power consumption pump with variable speed control associated with the condensation generator operation (heat generator).

The pump speed is set via the following parameters:

Fixed ("A 05" = 0): the circulator speed is fixed and corresponds to the settings made through the "A 19" parameter.

ΔT constant ("A 05" = 5 ÷ 25 K): the pump speed varies to maintain the ΔT constant between the system flow and return. Also, you can adjust the pump operating range, by setting the maximum speed "A 19" and the minimum speed "A 18".

NOTE: for proper system operation, make sure that the minimum flow rate in operating conditions never drops below 500 l/h.

Treating the feed water allows you to prevent problems and maintain the function and efficiency of the generator over time.

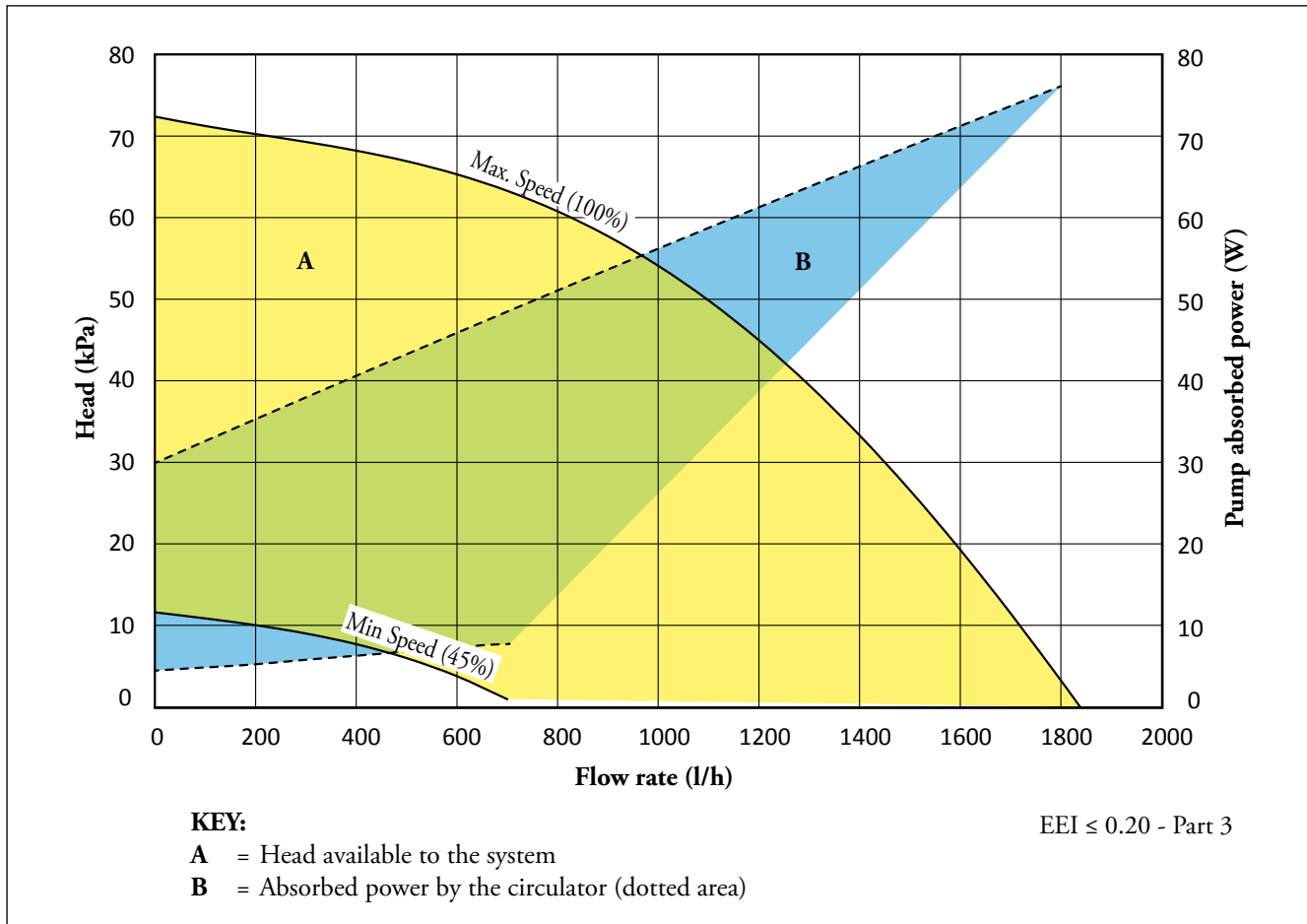
Legislative Decree 26/06/2015 requires a chemical treatment of the thermal system water, in compliance with the UNI 8065 standard, in the cases provided for by the Decree.

TECHNICAL NOTE: System minimum water content:

To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be **30 litres** for all kinds of system. So attention must be paid to the systems divided over several zones, where the water content available to the machine changes continuously. This is why it may be necessary to provide a heating flywheel that guarantees normal operation with systems divided into zones (with variable water content in circulation). This minimum content also guarantees proper operation with fan coils used for cooling (a condition in which the flow temperature is very low and has significant heat load variations that vary the number of active fan coils). It is also important to check that the dehumidifier line has a minimum of **3 UkW** of the machine (dehumidifier hydraulic circuit connection).

12

GRAPH OF HEAT PUMP FLOW RATE/HEAD



12.1 GRUNDFOS UPM3 K 15-75 PUMP SETTINGS AND CONFIGURATIONS

The indoor units are equipped with low power consumption pump with variable speed control associated with the heat pump operation (chiller circuit).

The pump speed is set via the following parameters:

Fixed ("A 05" = 0): the circulator speed is fixed and corresponds to the settings made through the "A 04" parameter.

ΔT constant ("A 05" = 5 ÷ 25 K): the pump speed varies to maintain the ΔT (5K) constant between the system flow and return. Also, you can adjust the pump operating range, by setting the maximum speed through the "A 04" parameter and the minimum speed through the "A 03" parameter.

NOTE: for proper system operation, make sure that the minimum flow rate in operating conditions never drops below 500 l/h.

Treating the feed water allows you to prevent problems and maintain the function and efficiency of the generator over time.

Legislative Decree 26/06/2015 requires a chemical treatment of the thermal system water, in compliance with the UNI 8065 standard, in the cases provided for by the Decree.

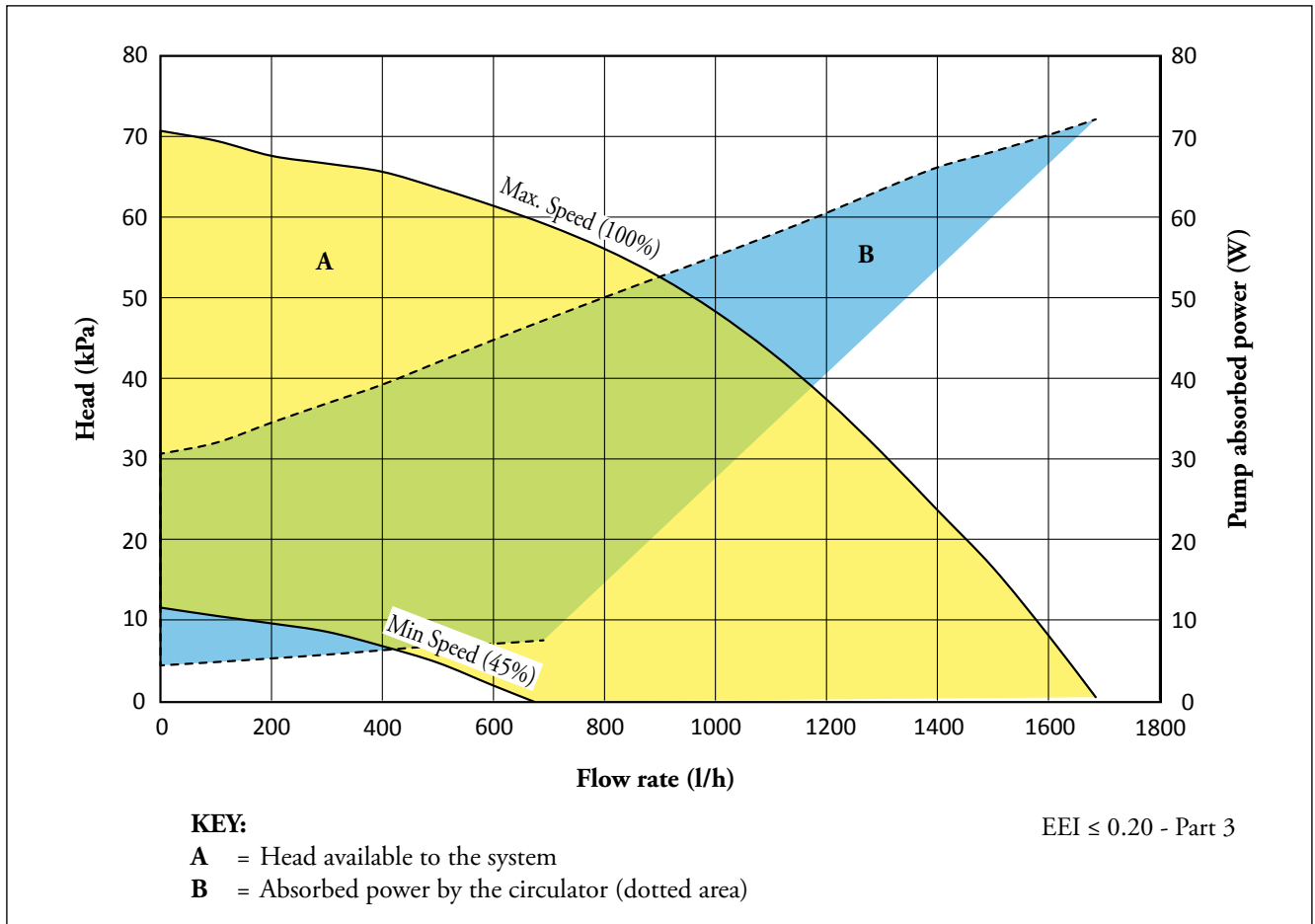
TECHNICAL NOTE: System minimum water content:

To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be **30 litres** for all kinds of system. So attention must be paid to the systems divided over several zones, where the water content available to the machine changes continuously. This is why it may be necessary to provide a heating flywheel that guarantees normal operation with systems divided into zones (with variable water content in circulation). This minimum content also guarantees proper operation with fan coils used for cooling (a condition in which the flow temperature is very low and has significant heat load variations that vary the number of active fan coils). It is also important to check that the dehumidifier line has a minimum of **3 l/kW** of the machine (dehumidifier hydraulic circuit connection).

MAGIS COMBO PLUS V2

12.2

GRAPH OF HEAT PUMP FLOW RATE/HEAD



12.3 GRUNDFOS UPM3 K 15-75 PUMP SETTINGS AND CONFIGURATIONS

The indoor units are equipped with low power consumption pump with variable speed control associated with the heat pump operation (chiller circuit).

The pump speed is set via the following parameters:

Fixed ("A 05" = 0): the circulator speed is fixed and corresponds to the settings made through the "A 04" parameter.

ΔT constant ("A 05" = 5 ÷ 25 K): the pump speed varies to maintain the ΔT (5K) constant between the system flow and return. Also, you can adjust the pump operating range, by setting the maximum speed through the "A 04" parameter and the minimum speed through the "A 03" parameter.

NOTE: for proper system operation, make sure that the minimum flow rate in operating conditions never drops below 500 l/h.

Treating the feed water allows you to prevent problems and maintain the function and efficiency of the generator over time.

Legislative Decree 26/06/2015 requires a chemical treatment of the thermal system water, in compliance with the UNI 8065 standard, in the cases provided for by the Decree.

TECHNICAL NOTE: System minimum water content:

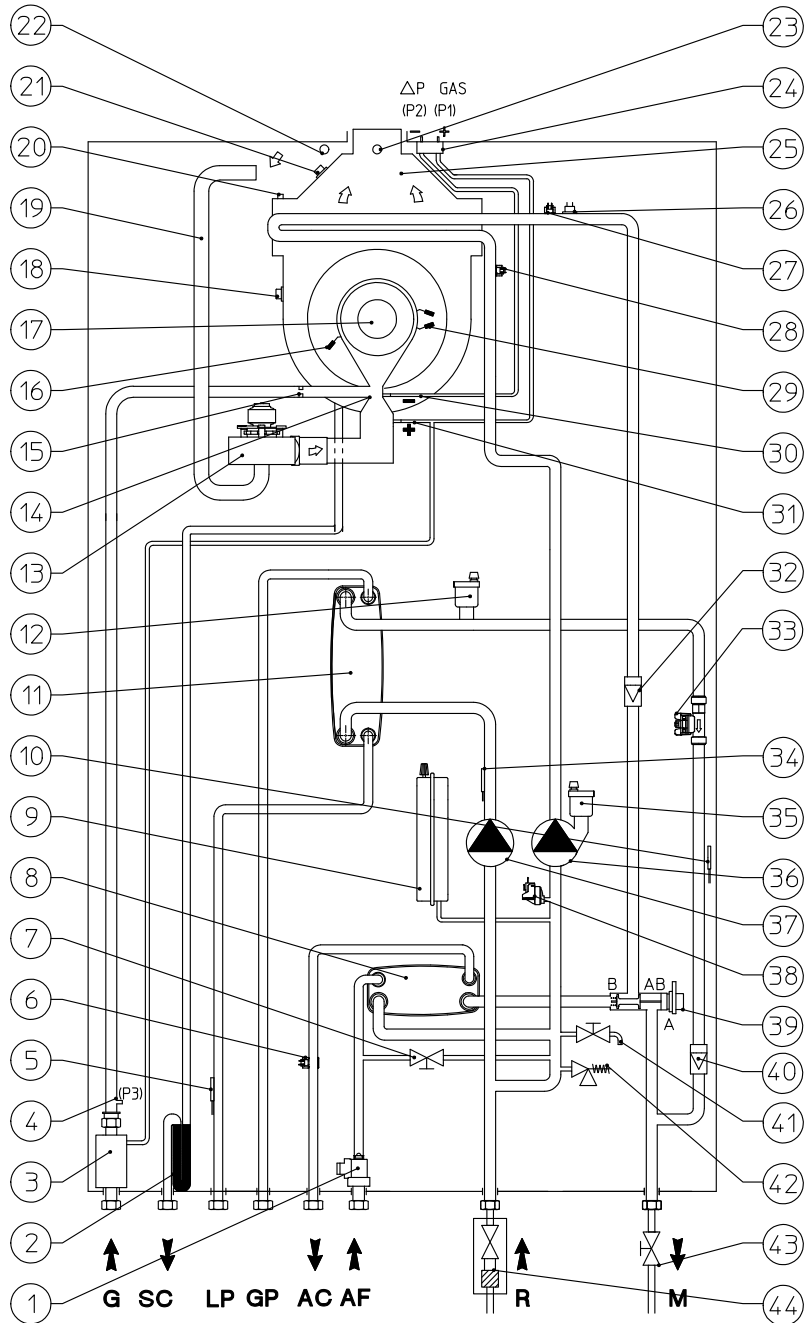
To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be **30 litres** for all kinds of system. So attention must be paid to the systems divided over several zones, where the water content available to the machine changes continuously. This is why it may be necessary to provide a heating flywheel that guarantees normal operation with systems divided into zones (with variable water content in circulation). This minimum content also guarantees proper operation with fan coils used for cooling (a condition in which the flow temperature is very low and has significant heat load variations that vary the number of active fan coils). It is also important to check that the dehumidifier line has a minimum of **3 UkW** of the machine (dehumidifier hydraulic circuit connection).

13

HYDRAULIC DIAGRAM MAGIS COMBO V2 (INDOOR UNIT)

KEY:

- 1 - D.H.W. flow switch
 - 2 - Condensate drain trap
 - 3 - Gas valve
 - 4 - Gas valve outlet pressure point (P3)
 - 5 - Liquid phase detection probe
 - 6 - DHW probe
 - 7 - System filling valve
 - 8 - DHW heat exchanger
 - 9 - System expansion vessel
 - 10 - Heat pump flow probe
 - 11 - Water - gas plate exchanger
 - 12 - Air vent valve
 - 13 - Fan
 - 14 - Air/gas Venturi manifold
 - 15 - Gas nozzle
 - 16 - Detection electrode
 - 17 - Burner
 - 18 - Flue safety thermostat
 - 19 - Air intake pipe
 - 20 - Manual air vent valve
 - 21 - Heat exchanger safety thermofuse
 - 22 - Air sample point
 - 23 - Flue sample point
 - 24 - ΔP gas pressure point
 - 25 - Fumes hood
 - 26 - Safety thermostat
 - 27 - Heat generator flow probe
 - 28 - Heat generator return probe
 - 29 - Ignition electrodes
 - 30 - Venturi negative signal (P2)
 - 31 - Venturi positive signal (P1)
 - 32 - One-way valve
 - 33 - System flow-meter
 - 34 - Heat pump return probe
 - 35 - Air vent valve
 - 36 - Heat generator circuit circulator
 - 37 - Heat pump circuit circulator
 - 38 - System pressure switch
 - 39 - Motorised 3-way valve
 - 40 - One-way valve
 - 41 - System draining cock
 - 42 - 3 bar safety valve
 - 43 - System interception cock
 - 44 - System interception cock with inspectable filter
-
- G - Gas supply
 - SC - Condensate drain
 - LP - Chiller line - liquid phase
 - GP - Chiller line - gaseous phase
 - AC - Domestic hot water outlet
 - AF - Domestic hot water inlet
 - R - System return
 - M - System flow



MAGIS COMBO V2

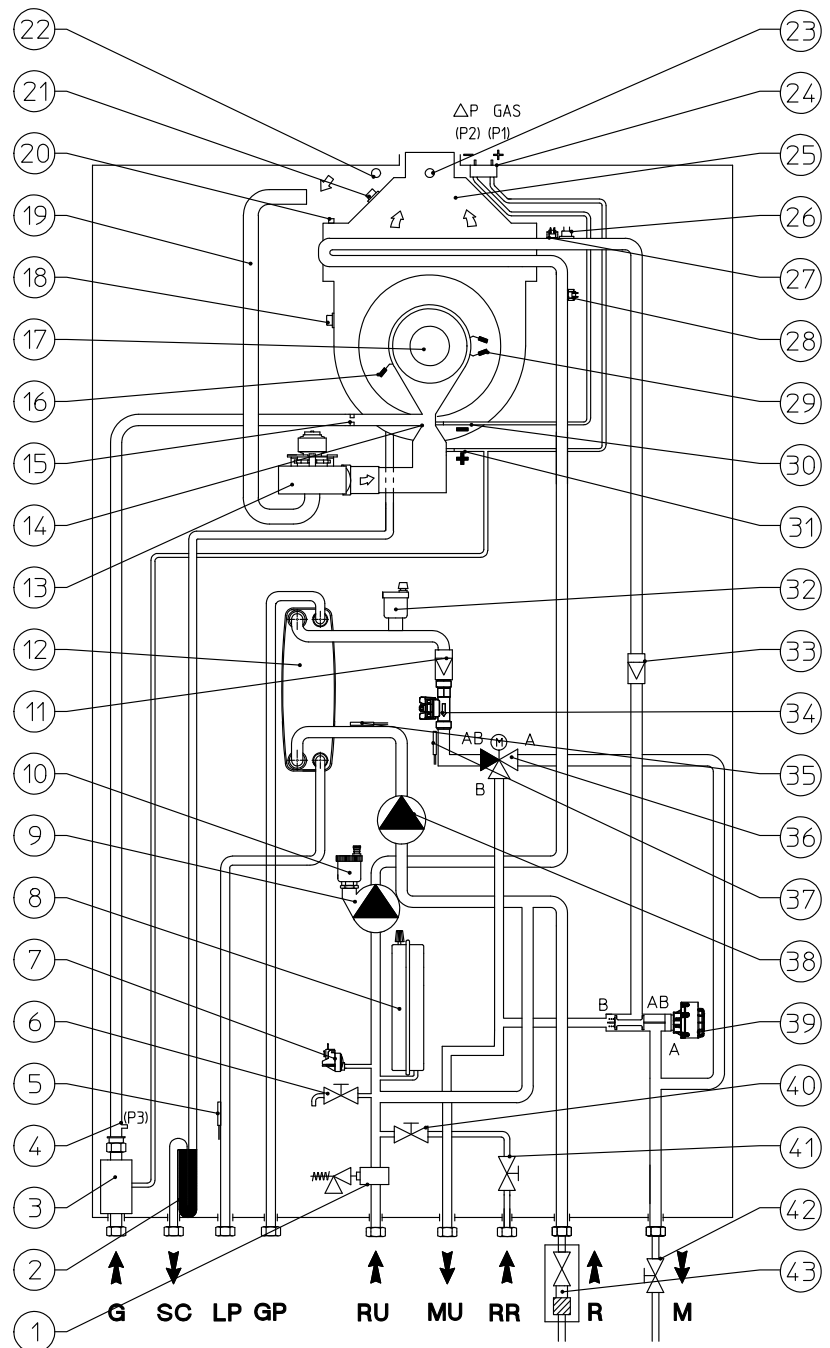
14

HYDRAULIC DIAGRAM MAGIS COMBO PLUS V2 (INDOOR UNIT)

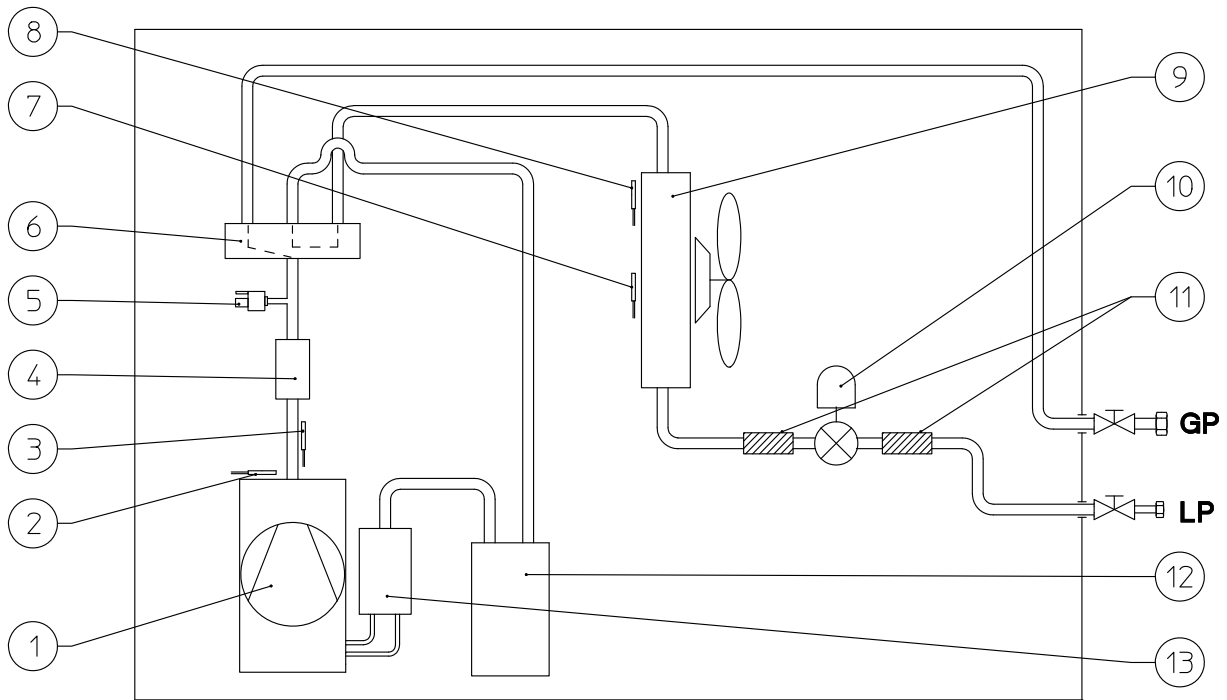
KEY:

- 1 - 3 bar safety valve
- 2 - Condensate drain trap
- 3 - Gas valve
- 4 - Gas valve outlet pressure point (P3)
- 5 - Liquid phase detection probe
- 6 - System draining cock
- 7 - System pressure switch
- 8 - System expansion vessel
- 9 - Heat generator circuit circulator
- 10 - Air vent valve
- 11 - One-way valve
- 12 - Water - gas plate exchanger
- 13 - Fan
- 14 - Air/gas Venturi manifold
- 15 - Gas nozzle
- 16 - Detection electrode
- 17 - Burner
- 18 - Flue gas thermofuse
- 19 - Air intake pipe
- 20 - Manual air vent valve
- 21 - Heat exchanger safety thermofuse
- 22 - Air sample point
- 23 - Flue sample point
- 24 - ΔP gas pressure point
- 25 - Fumes hood
- 26 - Safety thermostat
- 27 - Heat generator flow probe
- 28 - Heat generator return probe
- 29 - Ignition electrodes
- 30 - Venturi negative signal (P2)
- 31 - Venturi positive signal (P1)
- 32 - Air vent valve
- 33 - One-way valve
- 34 - System flow-meter
- 35 - Heat pump return probe
- 36 - Heat pump 3-way valve
- 37 - Heat pump flow probe
- 38 - Heat pump circuit circulator
- 39 - Heat generator 3-way valve
- 40 - System filling cock
- 41 - System filling
- 42 - System interception cock
- 43 - System interception cock with inspectable filter

- G - Gas supply
- SC - Condensate drain
- LP - Chiller line - liquid phase
- GP - Chiller line - gaseous phase
- RU - Storage tank unit return
- MU - Storage tank unit flow
- RR - System filling
- R - System return
- M - System flow



15 AUDAX PRO V2 (EXTERNAL CONDENSING UNIT) HYDRAULIC DIAGRAM



KEY:

- 1 - Compressor
- 2 - Compressor temperature
- 3 - Compressor outlet temperature
- 4 - Silencer
- 5 - High pressure switch
- 6 - 4-way valve
- 7 - Temperature of fluid in finned coil
- 8 - External probe/installation room temperature
- 9 - Finned coil + fan
- 10 - Electronic expansion valve
- 11 - Dryer filter
- 12 - Liquid receiver
- 13 - Liquid separator

LP - Chiller line - liquid phase
 GP - Chiller line - gaseous phase

MAGIS COMBO V2

16

MAGIS COMBO V2 ELECTRONIC MANAGEMENT FUNCTIONS



The electronic of MAGIS COMBO V2 is characterised by an integrated intelligent management system that establishes the most beneficial operating priority of the generator between Heat Pump or condensation unit, on the basis of the external climatic conditions and central heating system flow temperature set.

MAGIS COMBO V2 works at sliding temperature, using the external probe present on the condensing unit (placed outside); it is prepared to directly manage 3 zones (one direct and two mixed, for the third mixed zone it is necessary to provide the configurable relay interface kit code 3.015350) for operation in both heating and cooling, with the possibility of setting 3 curves in hot and 3 curves in cold (for the 3 zones) without the need to provide the System manager. In this case MAGIS COMBO V2 can be connected to zone remote panels (code 3.030863) via Bus connections (up to 3 can be provided), or it can be connected with simple on/off contacts (e.g. CHRONO 7) to control the room temperature of the 3 zones.

3 humidistats (code 3.023302) or 3 Modbus temperature and humidity sensors (code 3.030992) can be connected to control humidity.

When using the ModBus temperature and humidity sensor kit (code 3.030992), in order to make temperature requests it is necessary to match a room thermostat in the zone as it is not possible to set the room set directly from the control panel.

To manage the dehumidifiers, it is necessary to insert in the indoor wall-hung unit a 2 relay board kit (optional), to control 2 dehumidifiers (the third one is controlled by the configurable relay interface kit code 3.015350); the kit allows the dehumidifiers to be activated through a potential-free contact.

For each zone, from the MAGIS COMBO V2 electronics it is possible to set if the zone is only hot, hot/cold, only cold (dehumidification included, with dew point calculation).

There is an input for system activation in correspondence of electricity production by the photovoltaic system (if installed). This input (when active), if no system requests are in progress, forces the heating of a storage tank for the production of DHW at maximum storage temperature (if the storage tank is present e.g. MAGIS COMBO PLUS V2).

It includes a 230 V output to control summer/winter diverter valves in heating systems with fan coil cold/radiant panels; switching occurs with the change of mode (summer/winter) from the control panel or from the remote panel of the zone.

The electronic of MAGIS COMBO PLUS V2 also manages the anti-legionella function.

The electronics of MAGIS COMBO V2, in combination with the configurable relay interface kit (code 3.015350), also manages the activation of the recirculation pump.

In the presence of any "Puffer" which is heated by another energy source (e.g. thermal chimney), it is possible to connect the hydronic module with a temperature control probe (code 3.019375), exceeded the set temperature MAGIS COMBO V2 remains off, but the system zones can continue to operate (obviously in the presence of requests) *.

Whereas, to control a possible solar system, a solar control unit is required (to be purchased separately).

The integrated electronics also manage the screed heating function in order to perform the initial central heating cycle on new radiant panel systems.

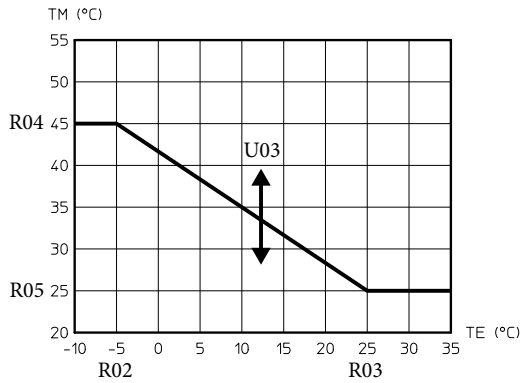
* Please note that the relays available within the configurable relay kit code 3.015350 are 3, therefore the functions described cannot all be used at the same time.

By setting the parameters in the "Temperature control" menu, you can adjust how the system operates.

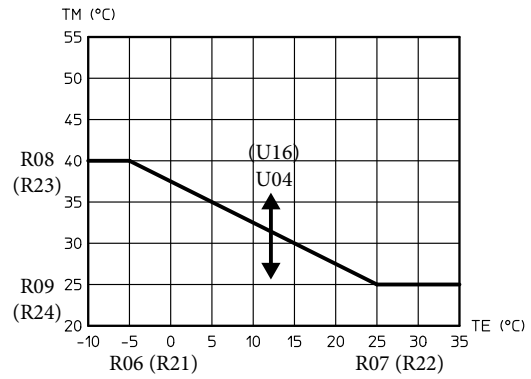
operating modes available both with external probe and without in relation to the different zones (direct or mixed).

The following graphs show the default settings in the various

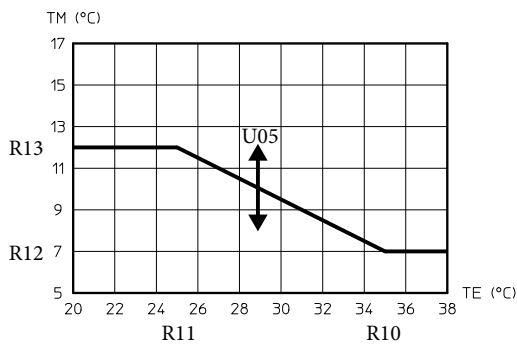
Zone 1 flow temperature in central heating mode, with external probe



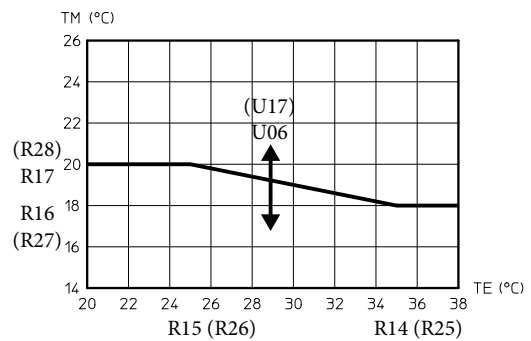
Zone 2 and 3 mixed flow temperature in central heating mode, with external probe



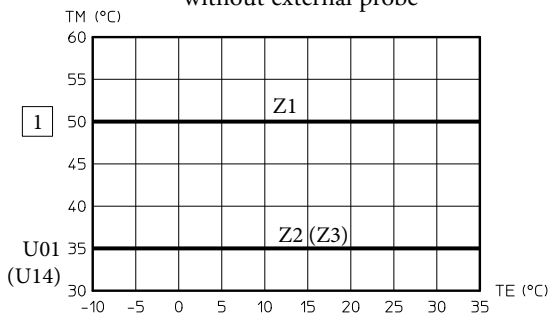
Zone 1 flow temperature in cooling mode, with external probe



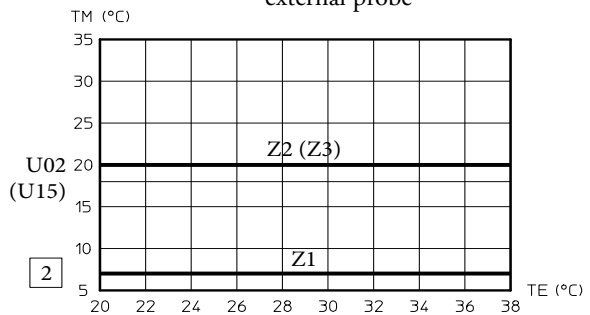
Zone 2 and 3 mixed flow temperature in cooling mode, with external probe



Flow temperature in central heating mode without external probe



Flow temperature in cooling mode without external probe



KEY:

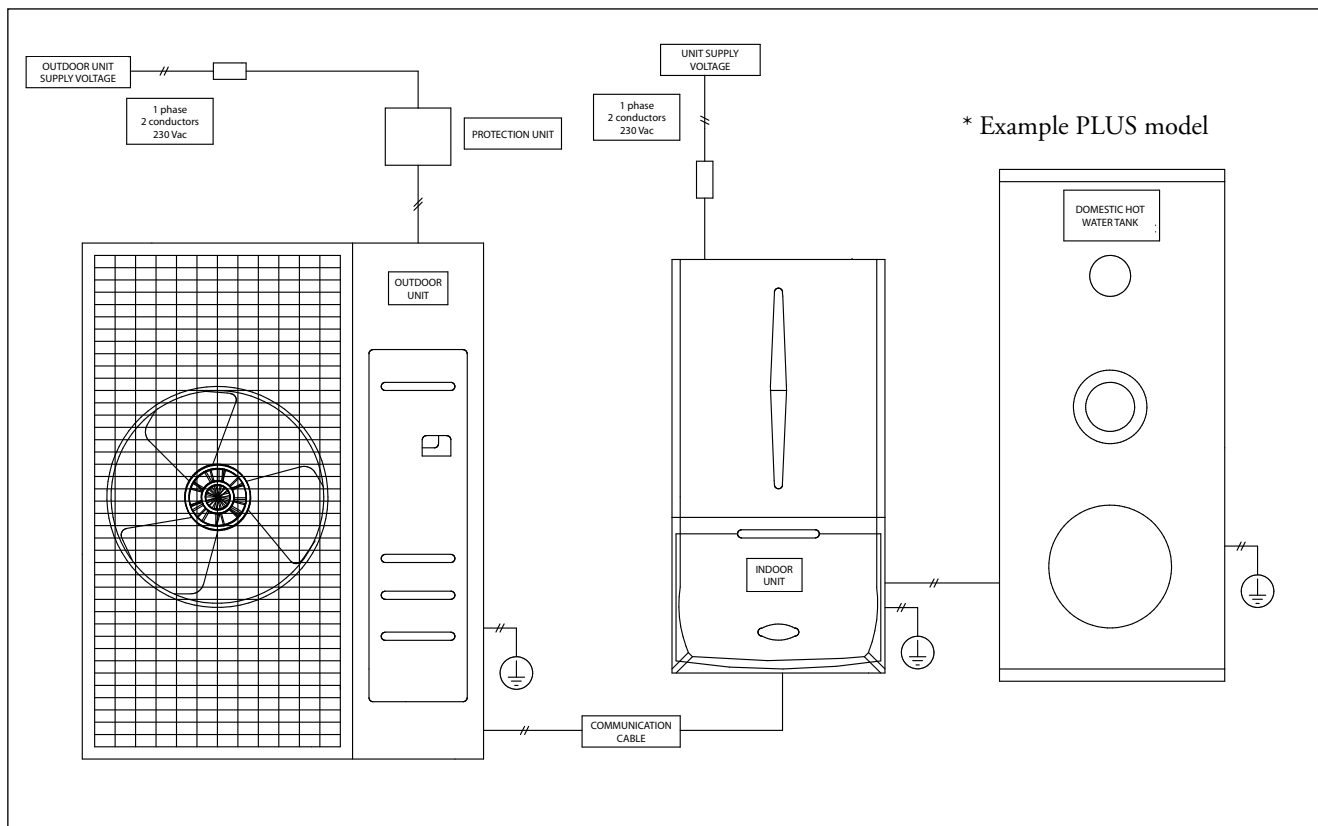
- Rxx - "Temperature control" menu parameter
- TE - Outside temperature
- TM - Flow temperature
- U01 - Zone 2 flow temperature in "User" menu central heating mode
- U02 - Zone 2 flow temperature in "User" menu cooling mode
- U03 - Offset value compared to the curve set by the external probe on central heating zone 1.
- U04 - Offset value compared to the curve set by the external probe on central heating zone 2.
- U05 - Offset value compared to the curve set by the

- external probe on cooling zone 1.
- U06 - Offset value compared to the curve set by the external probe on cooling zone 2.
- U14 - Zone 3 flow temperature in "User" menu central heating mode.
- U15 - Zone 3 flow temperature in "User" menu cooling mode.
- U16 - Offset value compared to the curve set by the external probe on central heating zone 3.
- U17 - Offset value compared to the curve set by the external probe on cooling zone 3.
- Zx - Heating system zone

MAGIS COMBO V2

17

ELECTRIC CONNECTION CABLES FEATURES



Features of the indoor unit connection. The outdoor unit power cable (not standard supplied) must be suitable for outdoor installation and must have at least a flexible polychloroprene sheath (code IEC:60245 IEC 57 / CENELEC:H05RN-F

or FG 16). Indicatively, the appropriate cable section can be 2.5 - 4 mm² for AUDAX PROX 4 and 6 V2 and of 4 - 6 mm² for AUDAX PRO 9 V2 to be checked depending on the specific installation conditions.

Outdoor Unit	Nominal Values		Field of Tolerable Voltage		Maximum absorbed current (MAC) in normal operation	MAC*1.25 + Additional Load	Flow rate of the protective device required for the device
	Hz	V	V	V			
AUDAX PRO 4 and 6 V2	50	220 - 240	198	264	16	20.0	20
AUDAX PRO 9 V2	50	220 - 240	198	264	22	27.5	32

Features of the connection between outdoor and indoor units.

Use H07RN-F or H05RN-F class cables to power the indoor unit.

If the indoor unit is installed in a room with a computer or internet server, you must use a double shielded FROHH2R class cable (Aluminium tape/Polyester + Copper braid).

MAGIS COMBO V2 (Indoor unit) supply voltage			BUS Communication cable between outdoor unit and indoor unit
Power supply	Max./Min.(V)	Connection cable	
Mono-phase, 220-240V, 50Hz	±10%	0,75 - 1.5 mm ² , 3 wires	0,75 - 1.5 mm ² , 2 wires

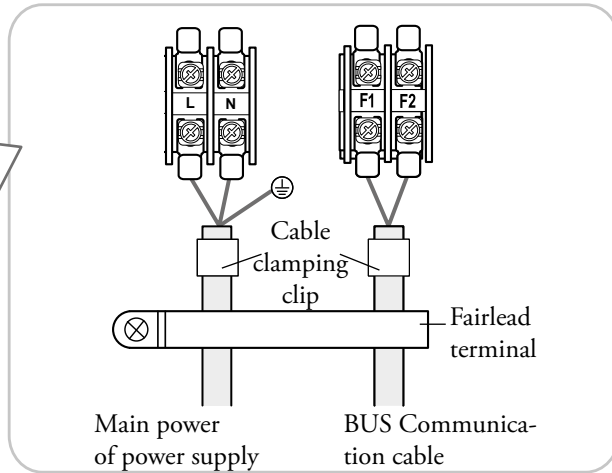
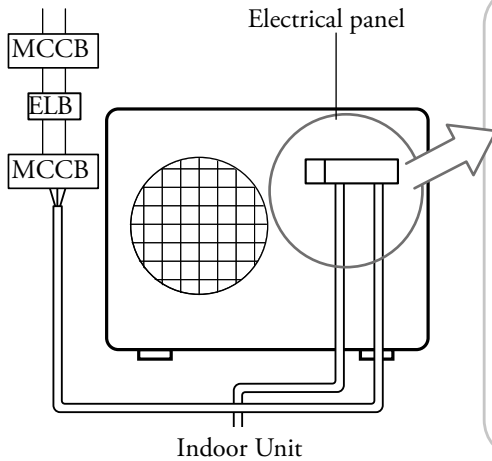
18 OUTDOOR UNIT TERMINAL BLOCK ELECTRICAL CONNECTIONS

With use of the mono-phase safety switch (ELB).

Depending on the model, the actual appearance of the unit may differ from the one shown in the figure.

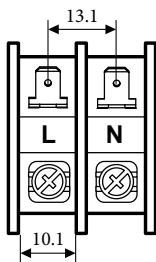
KEY:

- ELB - Safety Switch
- MCCB - Circuit breaker switch

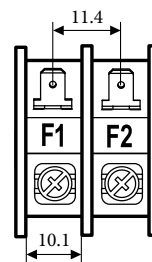


AUDAX PRO 4 and 6 V2 - Supply voltage in mono-phase AC.

M4 screw supply voltage

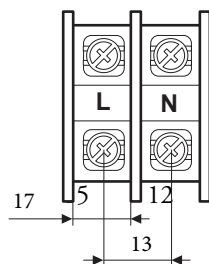


M4 screw communication BUS

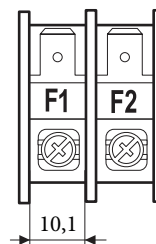


AUDAX PRO 9 V2 - Supply voltage in mono-phase AC.

Electric power supply
M5 screw

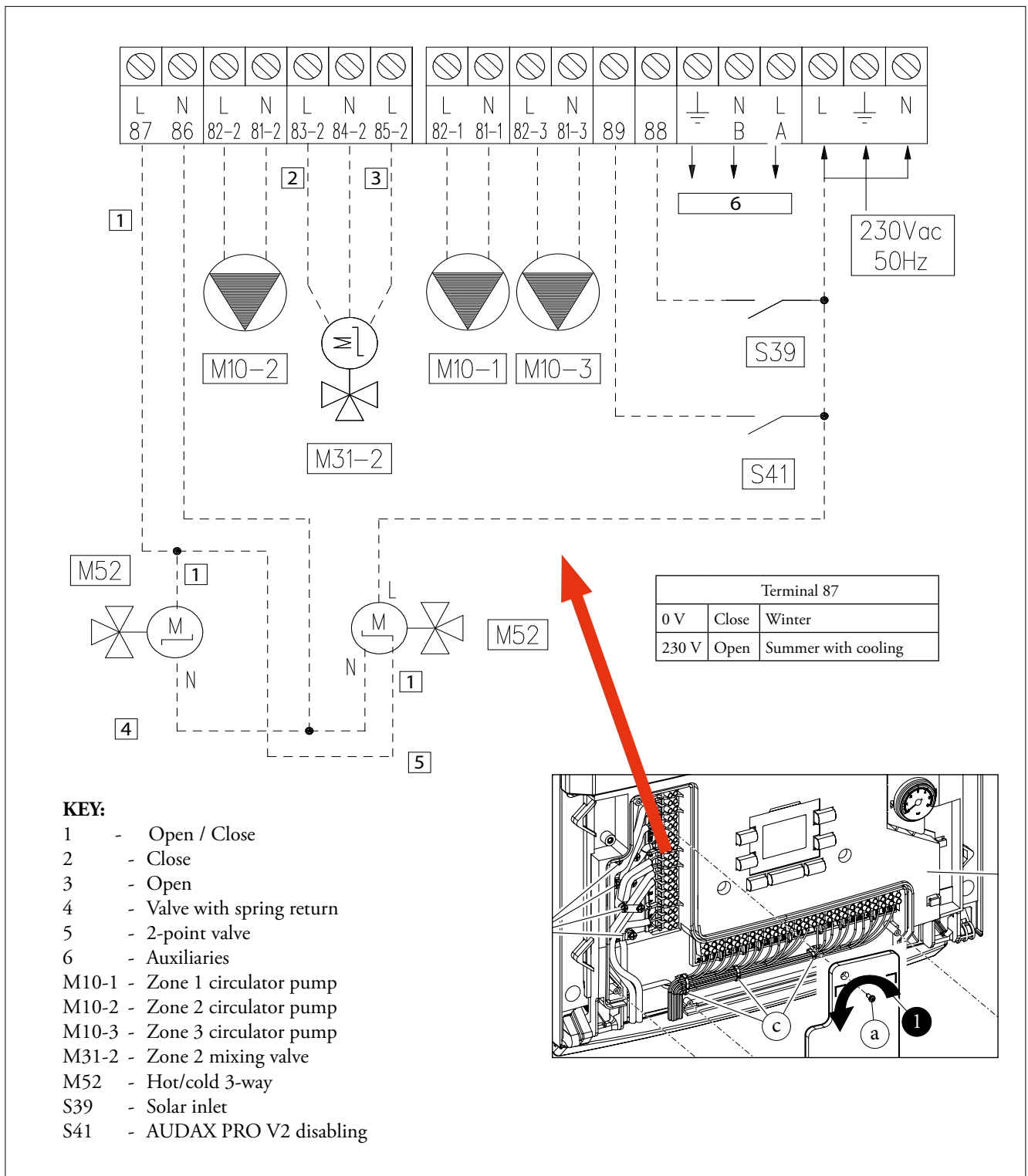


M4 screw communication BUS



MAGIS COMBO V2

19 MAGIS COMBO / COMBO PLUS HIGH VOLTAGE ELECTRICAL CONNECTIONS

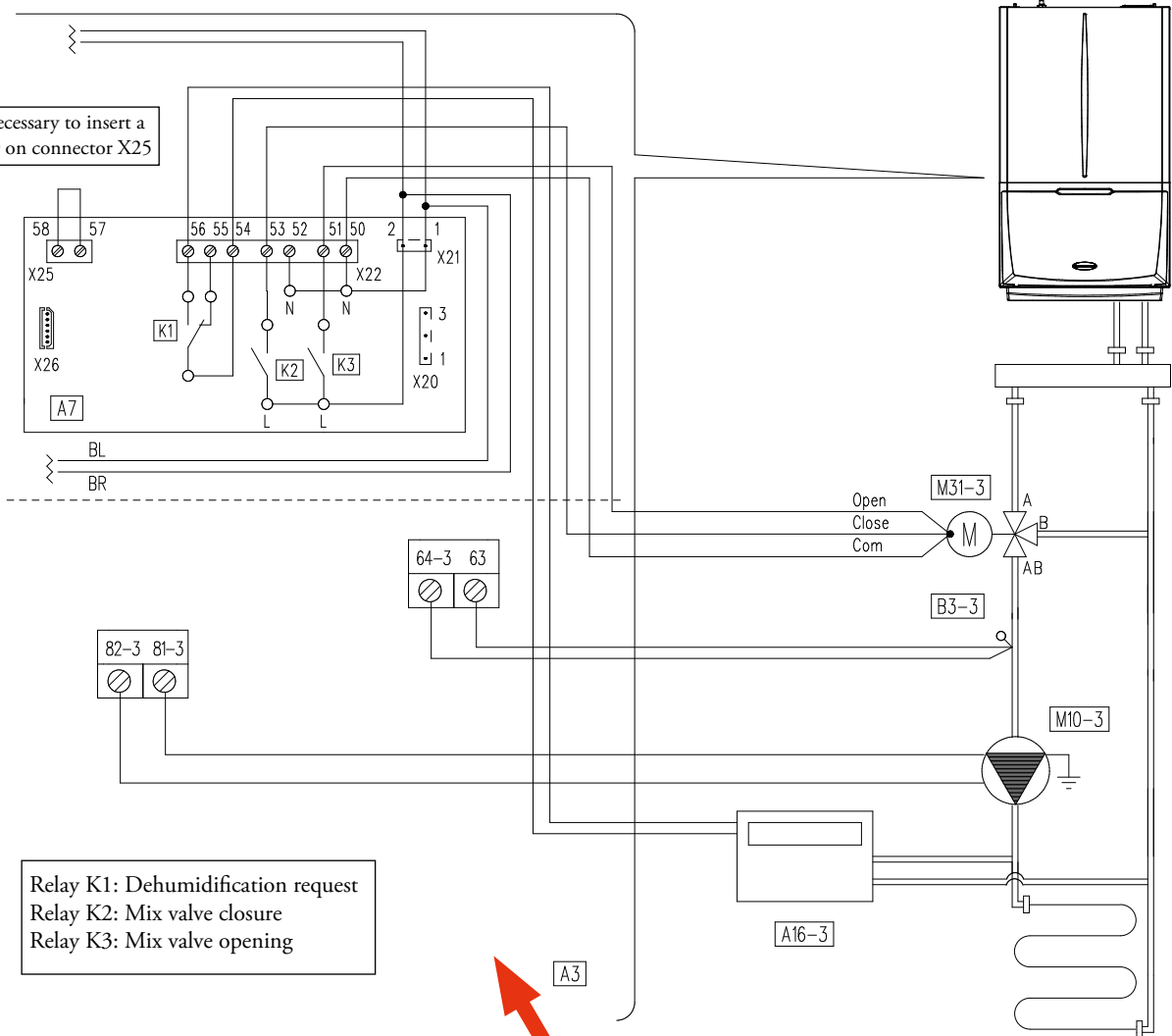


N.B.: To control the dehumidifiers, insert the relay board kit (optional) inside the MAGIS COMBO V2 wall-hung indoor unit, for the respective dehumidifiers of the two zones. The relay board kit has only one contact for each zone and, therefore, allows the dehumidifier to work either in neutral air or in cooled air. For further information see the chapter on dehumidifiers.

Through the configurable relay interface kit (optional) it is also possible to manage a 3rd zone (mixed) on the system, the pump of zone 3 will need to be connected as shown in the diagram (M10-3). The zone 3 dehumidifier, if any, will be managed by means of the configurable relay interface kit, which the zone 3 mixer will also be connected to. **In this way 1 direct zone + 2 mixed zones can be controlled.**

19.1 ELECTRICAL CONNECTIONS THIRD MIXED OR DIRECT ZONE

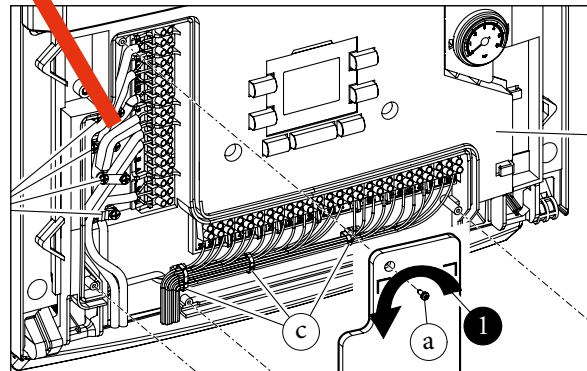
It is necessary to insert a jumper on connector X25



Relay K1: Dehumidification request
 Relay K2: Mix valve closure
 Relay K3: Mix valve opening

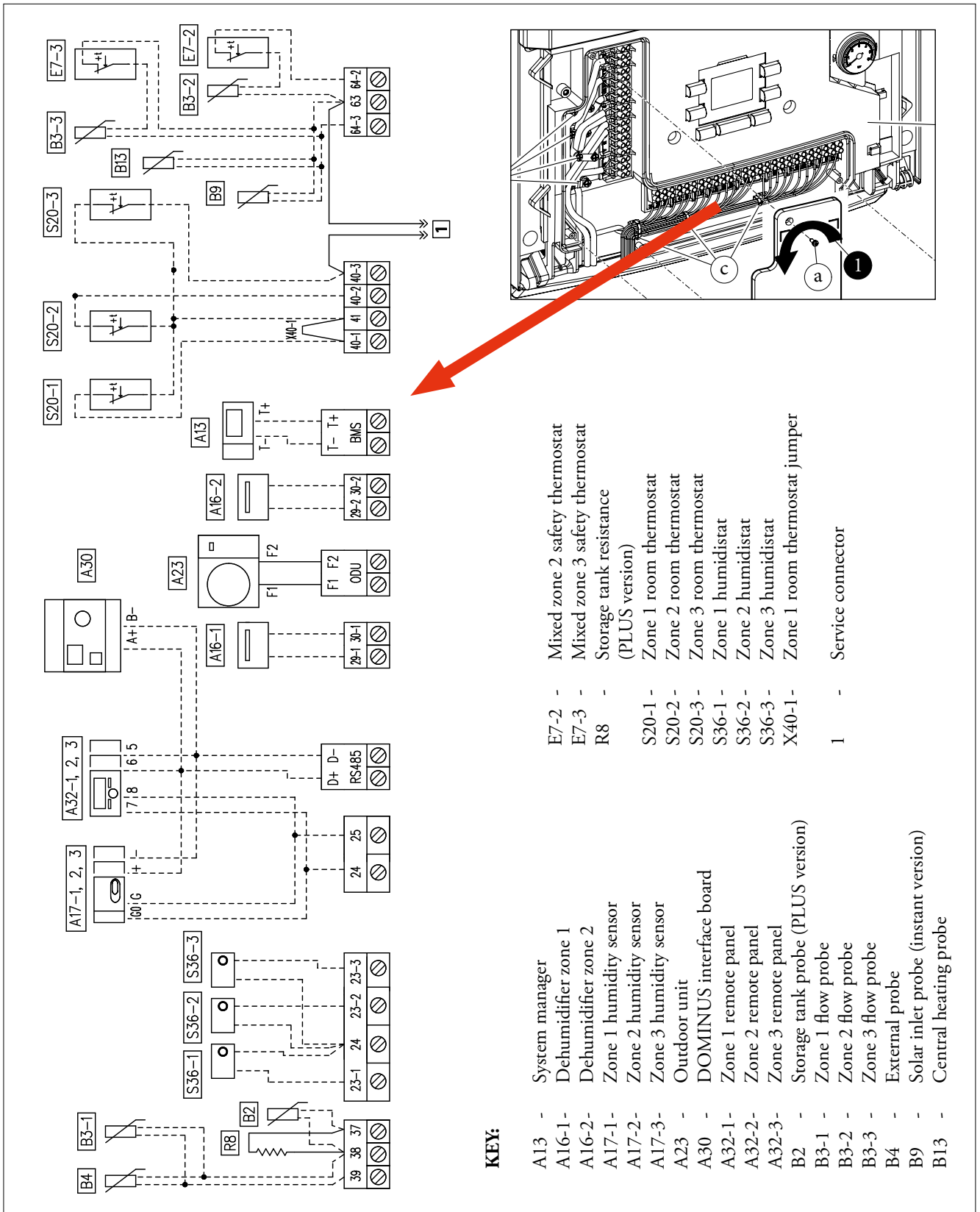
KEY:

- A3 - Integrated P.C.B.
- A7 - Configurable relay board
- A16-3 - Dehumidifier zone 3
- B3-3 - Zone 3 flow probe
- M10-3 - Zone 3 circulator pump
- M31-3 - Zone 3 mixing valve
- K1 - Configurable relay
- K2 - Configurable relay
- K3 - Configurable relay



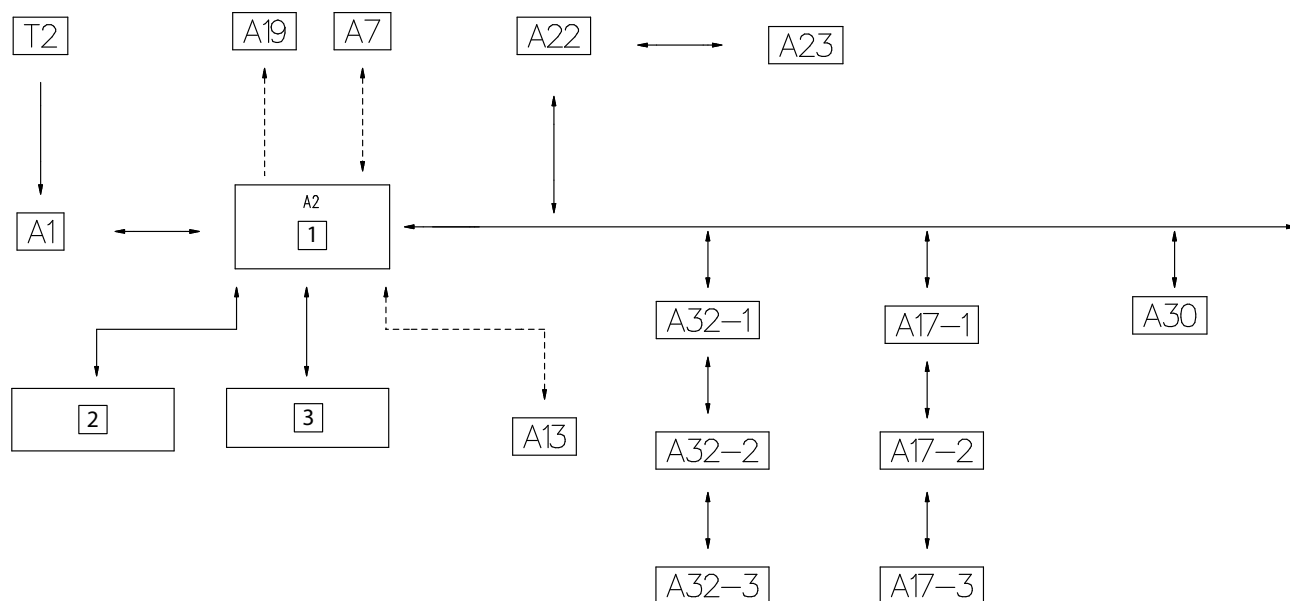
MAGIS COMBO V2

19.2 MAGIS COMBO / COMBO PLUS LOW VOLTAGE ELECTRICAL CONNECTIONS



NOTES: Eliminate the X40-1 jumper before connecting the S20-1 room thermostat. When the Zone 1 remote panel is connected, hold the X40-1 jumper.

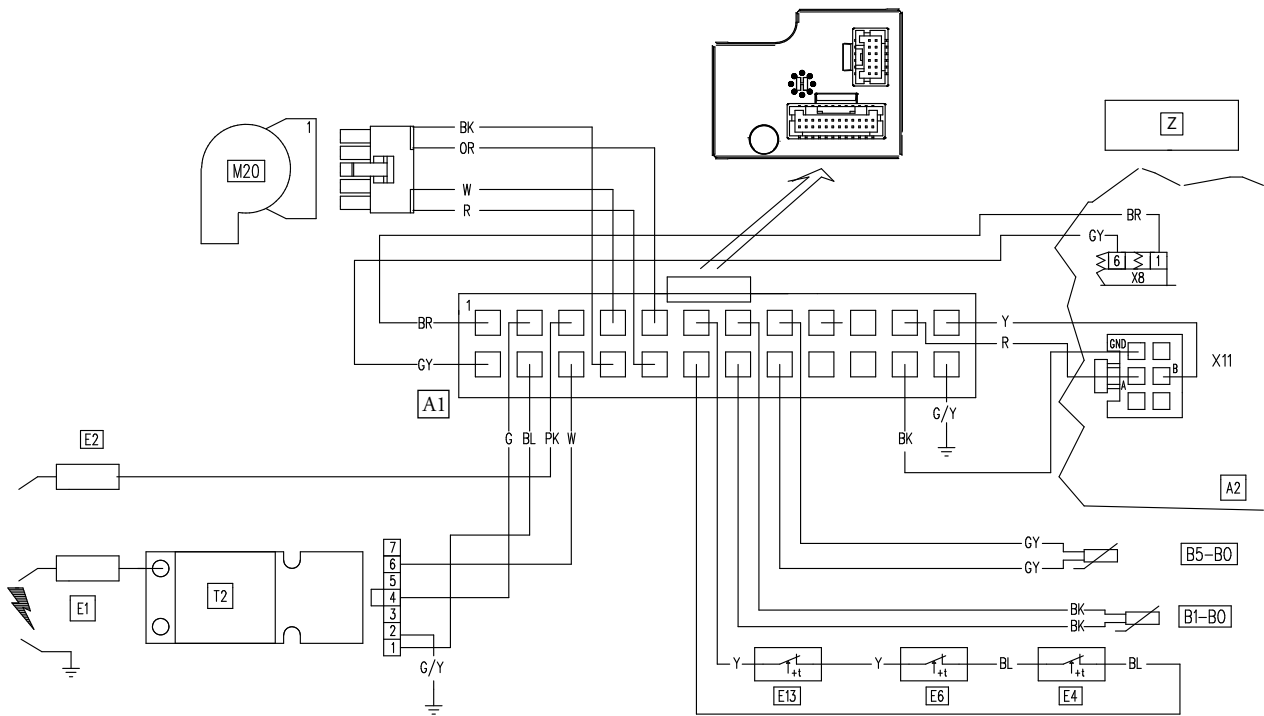
If Zone 2 and 3 remote panel is also connected, make sure there is a jumper between clamps 41 and 40-2 and 40-3.



KEY:

- 1 - P.C.B. adjustment
- 2 - Vertical terminal block electrical connections (230 Vac)
- 3 - Horizontal terminal block electrical connections (Very low safety voltage)
- A1 - Ignition board
- A2 - P.C.B.
- A7 - Three-relay board (optional)
- A13 - System manager (optional)
- A17-1 - Modbus zone 1 temp./humidity probe (optional)
- A17-2 - Modbus zone 2 temp./humidity probe (optional)
- A17-3 - Modbus zone 3 temp./humidity probe (optional)
- A19 - Two-relay board (optional)
- A22 - Interface board
- A23 - Outdoor unit
- A30 - Dominus (optional)
- A32-1 - Zone 1 remote panel (optional)
- A32-2 - Zone 2 remote panel (optional)
- A32-3 - Zone 3 remote panel (optional)
- T2 - Ignition transformer

Instant version / PLUS version



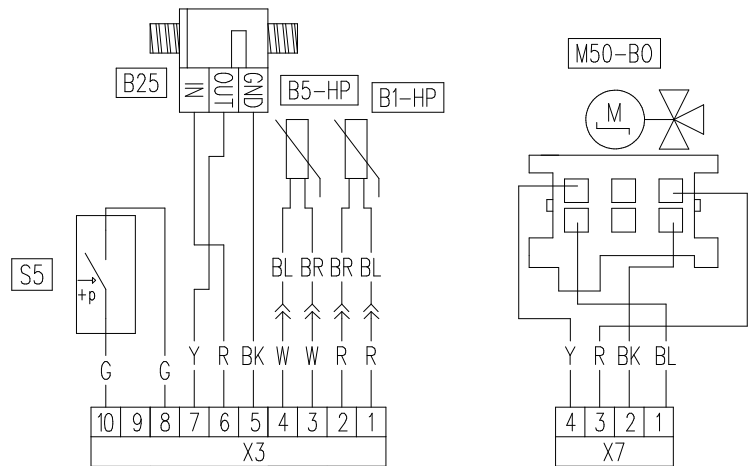
KEY:

- A2 - P.C.B.
- B1-BO - Heat unit flow probe
- B1-BO - Heat unit flow probe
- B5-BO - Heat unit return probe
- B1-HP - HP unit flow probe
- B5-HP - HP unit return probe
- B25 - System flow-meter
- E1 - Ignition electrode
- E2 - Detection electrode
- E4 - Safety thermostat
- E6 - Flue gas thermofuse
- E13 - Heat exchanger safety thermofuse
- M20 - Fan
- M50-BO - Heat unit 3-way valve
- S5 - System pressure switch
- T2 - Ignition transformer
- Z - Control panel electrical connections compartment terminal board

Colour code key:

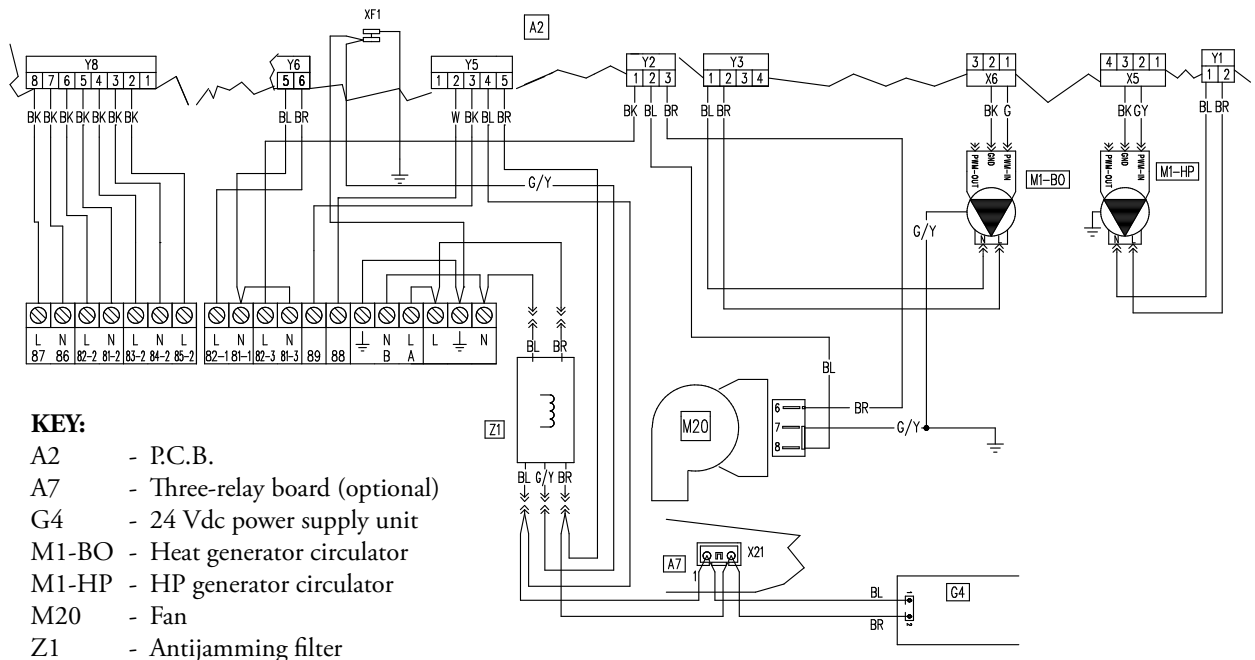
- BK - Black
- BL - Blue
- BR - Brown

- G - Green
- GY - Grey
- OR - Orange
- P - Purple
- PK - Pink
- R - Red
- W - White
- Y - Yellow
- Y/G - Yellow/Green
- W/BK - White/Black

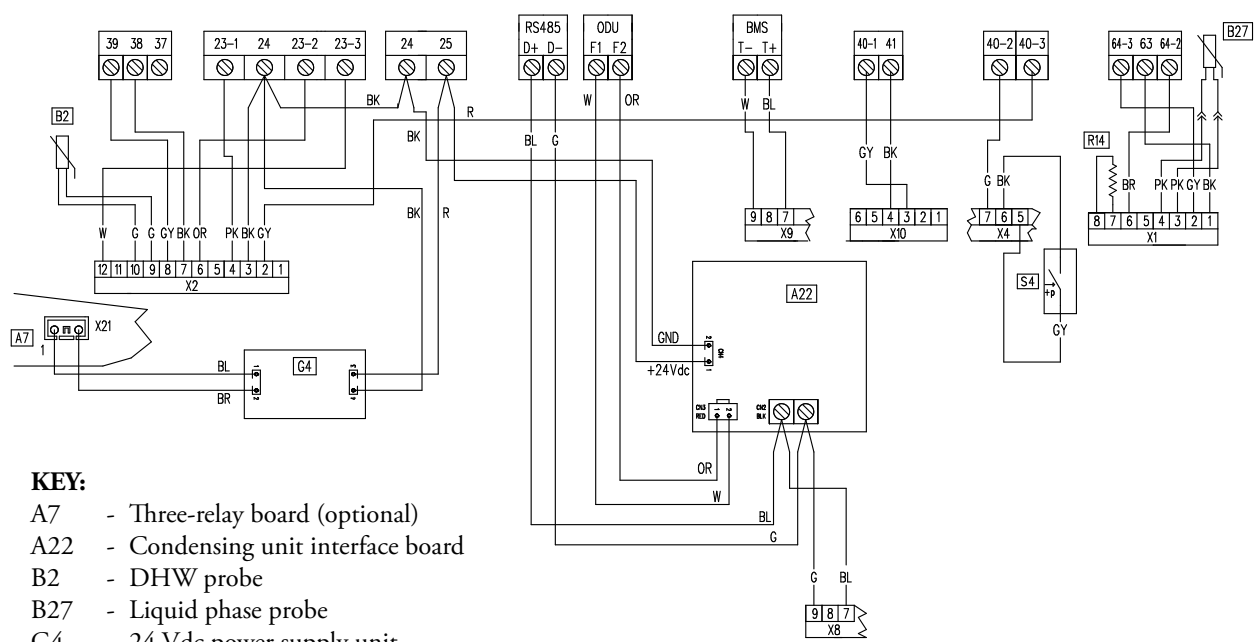


MAGIS COMBO V2

Instant version



- KEY:**
- A2 - P.C.B.
 - A7 - Three-relay board (optional)
 - G4 - 24 Vdc power supply unit
 - M1-BO - Heat generator circulator
 - M1-HP - HP generator circulator
 - M20 - Fan
 - Z1 - Antijamming filter

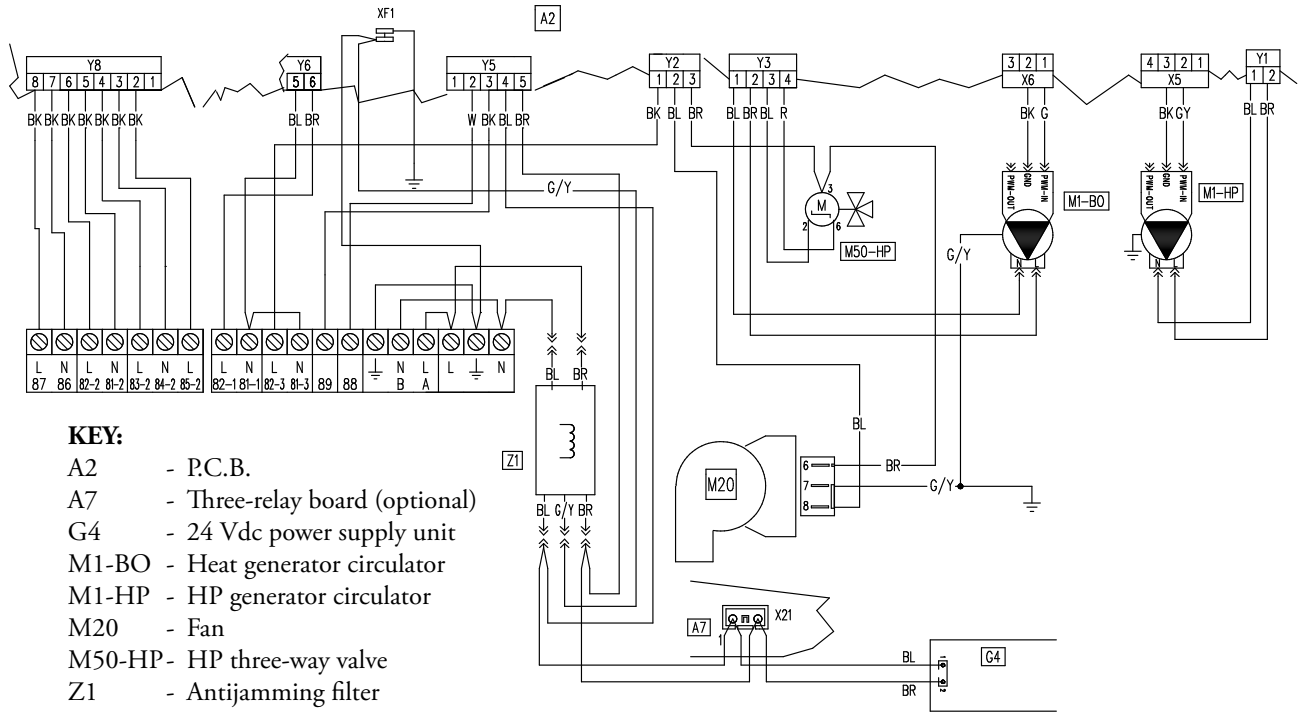


- KEY:**
- A7 - Three-relay board (optional)
 - A22 - Condensing unit interface board
 - B2 - DHW probe
 - B27 - Liquid phase probe
 - G4 - 24 Vdc power supply unit
 - R14 - Configuration resistance
 - S4 - D.H.W. flow switch

- Colour code key:**
- BK - Black
 - BL - Blue
 - BR - Brown
 - G - Green
 - GY - Grey

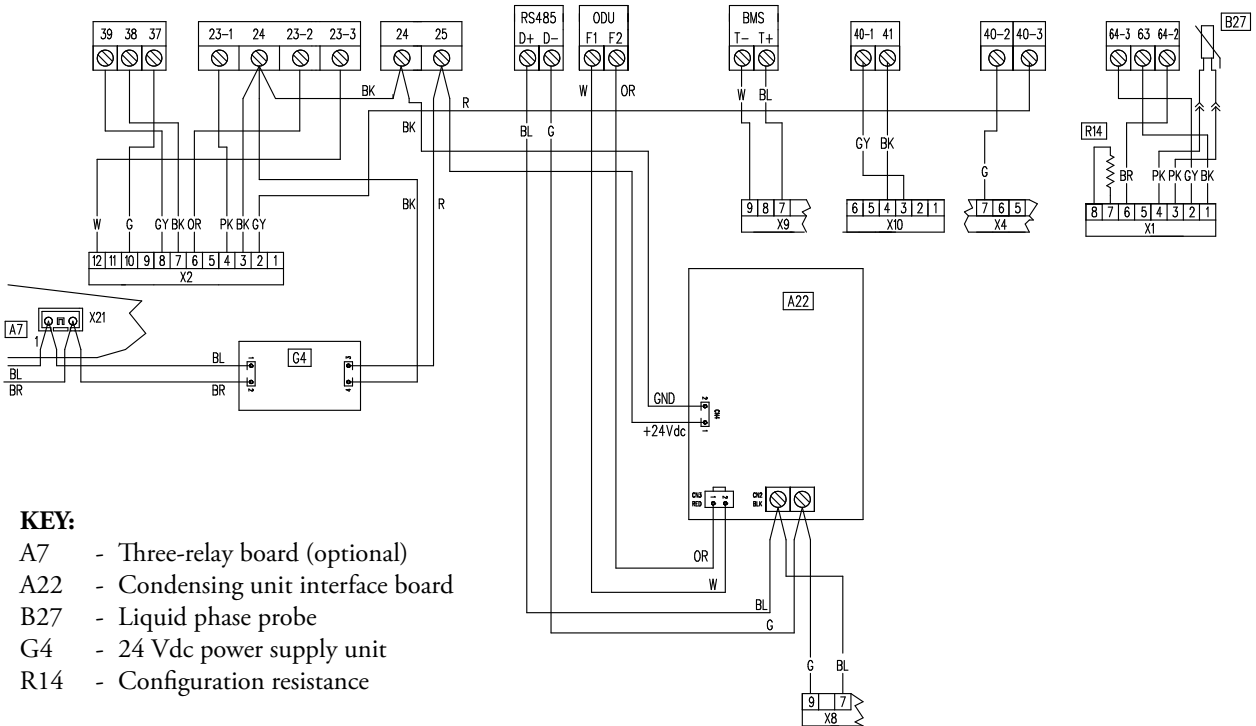
- OR - Orange
- P - Purple
- PK - Pink
- R - Red
- W - White
- Y - Yellow
- Y/G - Yellow/Green
- W/BK - White/Black

PLUS version



KEY:

- A2 - P.C.B.
- A7 - Three-relay board (optional)
- G4 - 24 Vdc power supply unit
- M1-BO - Heat generator circulator
- M1-HP - HP generator circulator
- M20 - Fan
- M50-HP - HP three-way valve
- Z1 - Antijamming filter



KEY:

- A7 - Three-relay board (optional)
- A22 - Condensing unit interface board
- B27 - Liquid phase probe
- G4 - 24 Vdc power supply unit
- R14 - Configuration resistance

Colour code key:

- | | |
|-------------|--------------------|
| BK - Black | PK - Pink |
| BL - Blue | R - Red |
| BR - Brown | W - White |
| G - Green | Y - Yellow |
| GY - Grey | Y/G - Yellow/Green |
| OR - Orange | W/BK - White/Black |
| P - Purple | |

MAGIS COMBO V2

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INSTALLING THE CHILLER LINES

The MAGIS COMBO V2 cooling circuit uses the refrigerant R32, therefore, it is necessary to take some measures for the proper operation of the machine:

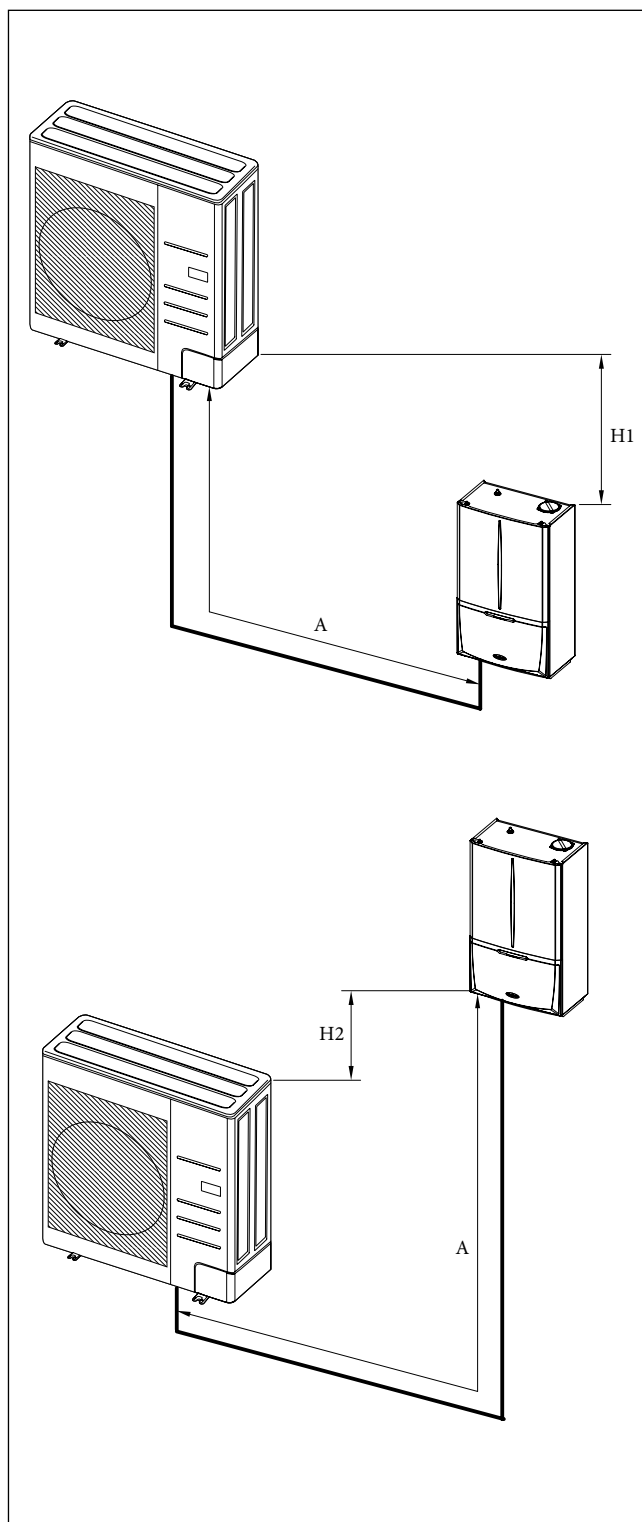
- The R32 is a high pressure refrigerant, the pipes and other parts subject to pressure must be compliant and suitable for the refrigerant itself. Therefore, the pipes must be certified for cooling and it is necessary to observe the methods of installation stated on the instruction manual supplied with the product.
- Only use clean pipes with no harmful elements, oxides, dust, traces of iron or moisture.
- The foreign materials inside the pipes (including manufacturing oil) must be $\leq 30\text{mg}/10\text{ m}$.
- Only use equipment and fittings for R32.
- The length of the pipes between the outdoor and indoor units and the difference must not exceed the specified limits. The maximum lengths of the chiller lines are listed below, based on the condensing unit model and the type of installation:

	AUDAX PRO 4 and 6 V2	AUDAX PRO 9 V2
A	$\leq 30\text{ m}$	$\leq 35\text{ m}$
H1	$\leq 20\text{ m}$	$\leq 20\text{ m}$
H2	$\leq 15\text{ m}$	$\leq 15\text{ m}$

NOTE: it is recommendable to provide for a siphon in the immediate vicinity of the outdoor condensing unit on the gas line pipe (pipe with larger diameter).

If the length of the chiller line is greater than the one given in the machine pre-load, it is recommendable to provide for a siphon halfway.

A siphon is also recommendable in the event of installation with drops between the outdoor condensing unit and indoor unit.



Selecting chiller line insulation.

- The gas and liquid chiller lines must be insulated with materials selected based on their respective diameters.
- Standard insulation is required at a temperature of 30°C with 85% relative humidity. Should the thermal-hygrometric conditions of the air be harsher, you must use insulations that can be selected from the table below.

NOTE: The insulation cannot be interrupted and for this reason, its junctions must be sealed with adhesive to prevent moisture from getting in.

Should the insulation be exposed to sunlight, it must be protected by wrapping it with electrical tape or material suitable for this type of application.

The insulation must be laid without its thickness being reduced in the bends and supports of the pipes.

Line	Pipe diameter (mm)	Insulation thickness		Notes
		Standard conditions (Less than 30 °C, RH 85%)	High humidity conditions (Exceeding 30 °C, RH 85%)	
		EPDM, NBR		
Liquid	Ø 6.35 - 19.05	9	9	The pre-selected material must be able to withstand temperatures exceeding 120°C
	Ø 12.70 - 19.05	13	13	
Gas	Ø 6.35	13	19	
	Ø 9.52	19	25	
	Ø 12.70			
	Ø 15.88			
Ø 19.05				

Topping up the coolant load.

Below is the default factory base load:
MAGIS COMBO V2 models with R32 coolant gas:

- AUDAX PRO 4 V2 = 1.2 kg
- AUDAX PRO 6 V2 = 1.2 kg
- AUDAX PRO 9 V2 = 1.4 kg

The top-up depends on the total length and diameter of the pipes. All the default factory loads are determined as follows, depending on the standard length of the pipes (see table below).

If the used pipes are longer than stated below, the load must be topped-up in the manner and quantities described in the instruction manual supplied with the product.

NOTE: If you have already prepared chiller pipes on the 3/8" (Ø 9.52 mm) instead of 1/4" (Ø 6.35 mm) liquid line, it should be noted that up to 7 m the machine works correctly without having to add coolant gas, if you exceed this length, you must add 50 g/m linear, but never exceed the total charge of 1.84 kg of R32 coolant (take into account the amount already preloaded in the machine).

N.B.: To avoid breaking the compressor, do not top-up the coolant beyond the specified amount.

Model MAGIS COMBO V2	Liquid line pipe external diameter (mm - inch)	Maximum length without base load top-up (liquid line pipe)	Top-up quantity for every additional metre of the liquid line pipe
AUDAX PRO 4 V2	Ø 6.35 - 1/4"	≤ 15 m	20 g/m
AUDAX PRO 6 V2	Ø 6.35 - 1/4"	≤ 15 m	20 g/m
AUDAX PRO 9 V2	Ø 6.35 - 1/4"	≤ 15 m	20 g/m

MAGIS COMBO V2

22 MAGIS COMBO V2 / MAGIS COMBO PLUS V2 (HEAT PUMP) TECHNICAL DATA

		4 V2	6 V2	9 V2
Central heating circuit				
Power in CH mode with water set at 35 °C ⁽¹⁾	kW	4.40	6.00	9.00
Power in CH mode with water set at 45 °C ⁽²⁾	kW	4.20	5.40	8.60
Power in CH mode with water set at 55 °C ⁽³⁾	kW	3.90	4.80	8.00
CH mode COP with water set at 35 °C ⁽¹⁾		5.20	4.92	4.81
CH mode COP with water set at 45 °C ⁽²⁾		3.85	3.58	3.69
CH mode COP with water set at 55 °C ⁽³⁾		2.95	2.65	2.93
Flow temperature range	°C	20 ÷ 65	20 ÷ 65	20 ÷ 65
Outdoor temp. limits for Heating mode operation	°C	- 25 ÷ 35	- 25 ÷ 35	- 25 ÷ 35
Cooling circuit				
Power in cooling mode with water set at 18 °C ⁽¹⁾	kW	5.00	6.50	8.70
Power in cooling mode with water set at 7 °C ⁽²⁾	kW	3.60	4.70	6.50
Cooling mode EER with water set at 18 °C ⁽¹⁾		4.59	4.42	4.12
Cooling mode EER with water set at 7 °C ⁽²⁾		3.24	3.26	3.33
Flow temperature range	°C	5 ÷ 25	5 ÷ 25	5 ÷ 25
Outdoor temp. limits for Cooling mode operation	°C	10 ÷ 46	10 ÷ 46	10 ÷ 46
Maximum power absorbed (condensing unit + Indoor unit)	W	2100	2900	4300
Max. head available to the system (with 1000 l/h flow rate)	kPa (m c.a.)	48.78 (5.0)	48.78 (5.0)	48.78 (5.0)
Cooling circuit circulator power absorption	W	75	75	75
General data				
C.H. sound power level	dB(A)	58	60	64
Hydronic module electric degree of protection	IP	X4D	X4D	X4D
Electric power supply	V - Hz	230-50	230-50	230-50
Permitted voltage range	V	198-264	198-264	198-264
Maximum absorbed current in normal operation	A	16	16	22
Fuse required	A	20	20	32
Refrigerant fluid load (R32)	g	1200	1200	1400
Condensing unit weight (net)	kg	49.5 (46.5)	49.5 (46.5)	81.5 (73.0)

THE REPORTED DATA REFERS TO THE FOLLOWING CONDITIONS (in compliance with EN 14511):

ROOM	CENTRAL HEATING PHASE (°C)	COOLING PHASE (°C)
Water TEMP. (F/R) ⁽¹⁾ - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (bs)
Water TEMP. (F/R) ⁽²⁾ - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (bs)
Water TEMP. (F/R) ⁽³⁾ - AIR (db/wb)	55/47 - 7/6	

Domestic hot water maximum heating power		kW (kcal/h)	28.1 (24,204)
Central heating maximum heat input		kW (kcal/h)	24.9 (21,452)
DHW maximum useful heat output		kW (kcal/h)	27.3 (23,478)
CH maximum useful heat output		kW (kcal/h)	24.0 (20,640)
Minimum nominal heat input		kW (kcal/h)	5.1 (4,382)
Minimum nominal heat output		kW (kcal/h)	4.8 (4,128)
Efficiency at 100% Pn (80/60°C)		%	96.2
Efficiency at 30% of the load (80/60°C)		%	98.4
Efficiency at 100% Pn (50/30°C)		%	104.6
Efficiency at 30% of the load (50/30°C)		%	106.1
Efficiency at 100% Pn (40/30°C)		%	106.8
Efficiency at 30% of the load (40/30°C)		%	106.1
Central heating circuit			
Adjustable central heating temperature (min. / max)		°C	20 ÷ 80
System max. working temperature		°C	90
System max. working pressure		bar	3
System expansion vessel nominal/(real) capacity		litres	10.0 / (8.3)
System expansion vessel factory-set pressure		bar	1.0
Head available with 1000 l/h flow rate		kPa (m c.a.)	26.91 (2.7)
DHW circuit			
Hot water production useful heat output		kW (kcal/h)	27.3 (23,478)
DHW adjustable temperature		°C	10 ÷ 65
Domestic hot water circuit / DHW Circuit max. pressure		bar	10
Domestic hot water circuit min. dynamic pressure		bar	0.3 (Instant version)
D.H.W. min. withdrawal		litres/min	1.5 (Instant version)
Flow rate in continuous service (ΔT 30°C)		litres/min	13.1 (Instant version)
Gas supply			
Gas flow rate at METHANE burner (G20)	MIN - MAX	m ³ /h	0.54 ÷ 2.64 (2.98 D.H.W.)
Gas flow rate at LPG burner (G30)	MIN - MAX	kg/h	0.40 ÷ 1.97 (2.22 D.H.W.)
Gas flow rate at LPG burner (G31)	MIN - MAX	kg/h	0.40 ÷ 1.94 (2.19 D.H.W.)
Electric power supply		V/Hz	230/50
Nominal power absorption		A	1.2
Installed electric power		W	160
Fan absorbed power		W	24
Power absorbed by the indoor unit pump		W	60
Power absorbed by the indoor unit in stand-by		W	10
Electric insulation rating	IP		X4D
Appliance water content		litres	2.8
Weight of empty generator		kg	55.8
Effective efficiency at 100% output (Italian Lgs. D. 192/05 as amended)			>93+2·log Pn (Pn = 24.0 kW)

MAGIS COMBO V2

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MAGIS COMBO V2 (HEAT GENERATOR) COMBUSTION FEATURES

		Methane (G20)	LPG (G30)	LPG (G31)
Combustion efficiency 100% Pn (80/60°C)	%	97.4	97.4	97.4
Combustion efficiency P min (80/60°C)	%	97.8	97.8	97.8
Effective efficiency at 100% Pn (80/60°C)	%	96.2	96.2	96.2
Effective efficiency P min (80/60°C)	%	94.2	94.2	94.2
Effective efficiency at 100% Pn (50/30°C)	%	104.6	104.6	104.6
Effective efficiency P min (50/30°C)	%	104.5	104.5	104.5
Effective efficiency at 100% Pn (40/30°C)	%	106.8	106.8	106.8
Effective efficiency P min (40/30°C)	%	106.3	106.3	106.3
Chimney losses with burner on (100% Pn) (80/60°C)	%	2.8	2.8	2.8
Chimney losses with burner on (P min) (80/60°C)	%	2.2	2.2	2.2
Chimney losses with burner off	%	0.01	0.01	0.01
Casing losses with burner on (100% Pn) (80/60°C)	%	0.2	0.2	0.2
Casing losses with burner on (P min) (80/60°C)	%	3.6	3.6	3.6
Casing losses with burner off	%	0.45	0.45	0.45
Flue gas temperature Maximum Heat Input	°C	70	76	70
Flue gas temperature Minimum Heat Input	°C	57	67	62
Flue flow rate at Central Heating Maximum Heat Input	kg/h	38	35	40
Flue flow rate at Maximum Domestic Hot Water Heat Input	kg/h	44	40	45
Flue flow rate at Minimum Heat Input	kg/h	9	8	9
CO ₂ at the Maximum Central Heating Heat Input	%	9.70	12.30	10.70
CO ₂ at Maximum Domestic Hot Water Heat Input	%	9.60	12.30	10.60
CO ₂ at Minimum Heat Input	%	8.60	11.20	10.00
CO at Maximum Heat Input	mg/kWh	267	721	234
CO at Minimum Heat Input	mg/kWh	7	10	6
NO _x at the Maximum Heat Input	mg/kWh	52	137	40
NO _x at Minimum Heat Input	mg/kWh	17	38	21
Weighted CO	mg/kWh	20	-	-
Weighted NO _x	mg/kWh	29	-	-
NO _x class	-	6	6	6
Intake / exhaust available head (Min. - Max.)	Pa	2 - 172		

NOTE: The condensation heat generator can also work with propane air.

Gas flow rates refer to the NHV at the temperature of 15° C and pressure of 1013 mbar.

Flue temperature values refer to an air inlet temperature of 15°C and flow/return temperature = 80/60°C.

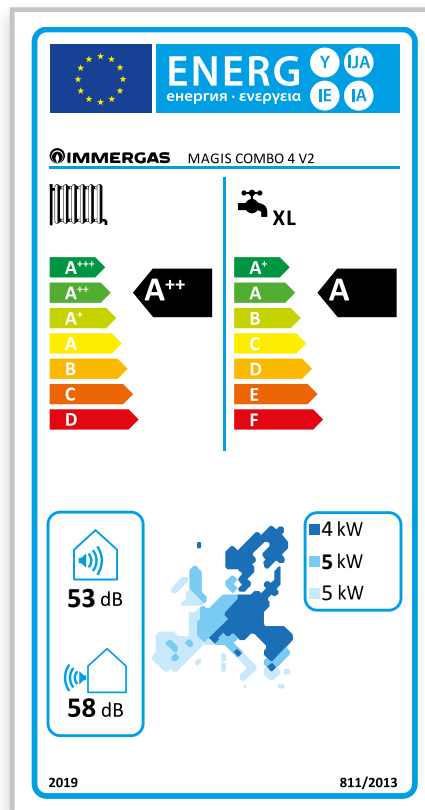
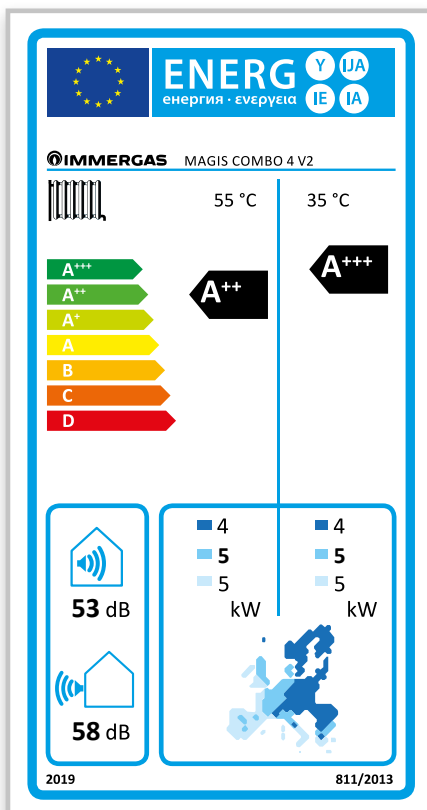
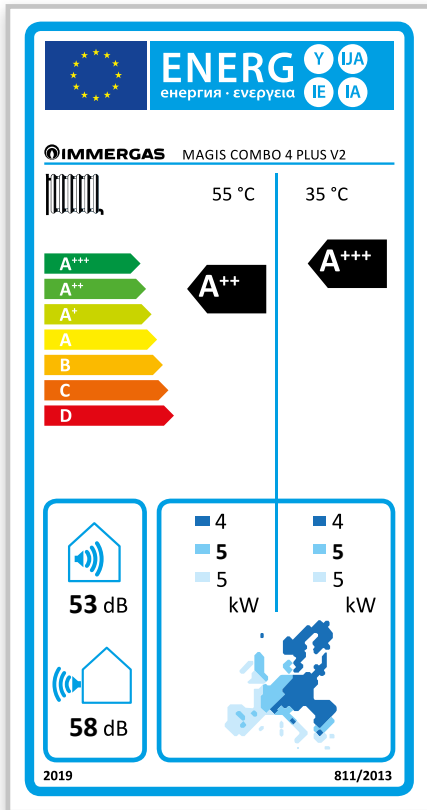
MAGIS COMBO 4 V2 / MAGIS COMBO 4 PLUS V2

Low temperature (30/35)

Parameter	Value	Colder zones	Zones zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	2768	2243	1125
Room central heating seasonal efficiency (η_s)	η_s %	140	181	235
Nominal heat output	kW	4.00	5.00	5.00

Average temperature (47/55)

Parameter	Value	Colder zones	Zones zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	3982	3163	1753
Room central heating seasonal efficiency (η_s)	η_s %	96	128	150
Nominal heat output	kW	4.00	5.00	5.00



MAGIS COMBO 4 V2

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“POWER” AND “ABSORPTION” IN CENTRAL HEATING MODE MAGIS COMBO 4 V2 - MAGIS COMBO 4 PLUS V2

MAGIS COMBO 4 V2		Water flow temperature °C					
		25		30		35	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)	3.76	1.21	3.65	1.30	3.48	1.46
-15	(-16)	4.28	1.28	4.16	1.37	3.96	1.54
-10	(-11)	4.87	1.32	4.73	1.41	4.51	1.59
-7	(-8)	4.97	1.29	4.83	1.38	4.60	1.55
-2	(-3)	4.75	1.10	4.62	1.18	4.40	1.33
2	(1)	4.54	0.91	4.41	0.98	4.20	1.10
7	(6)	4.75	0.70	4.62	0.75	4.40	0.85
10	(9)	5.19	0.71	5.05	0.76	4.81	0.85
15	(14)	5.92	0.72	5.76	0.77	5.48	0.87
20	(19)	6.65	0.73	6.47	0.78	6.16	0.88

MAGIS COMBO 4 V2		Water flow temperature °C					
		40		45		50	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)	3.34	1.56	3.21	1.72		
-15	(-16)	3.85	1.64	3.74	1.74	3.62	1.82
-10	(-11)	4.37	1.70	4.24	1.81	4.11	1.90
-7	(-8)	4.50	1.75	4.40	1.95	4.23	2.03
-2	(-3)	4.23	1.46	4.07	1.59	3.87	1.67
2	(1)	3.97	1.16	3.73	1.23	3.55	1.38
7	(6)	4.30	0.97	4.20	1.09	4.05	1.21
10	(9)	4.71	0.97	4.61	1.10	4.38	1.23
15	(14)	5.39	0.97	5.30	1.11	5.03	1.25
20	(19)	6.07	0.99	5.98	1.12	5.68	1.26

MAGIS COMBO 4 V2		Water flow temperature °C					
		55		60		65	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)						
-15	(-16)						
-10	(-11)	3.81	2.08				
-7	(-8)	4.05	2.10				
-2	(-3)	3.66	1.75	3.47	1.92		
2	(1)	3.36	1.53	3.18	1.70		
7	(6)	3.90	1.32	3.76	1.38	3.62	1.44
10	(9)	4.15	1.37	3.94	1.41	3.74	1.46
15	(14)	4.77	1.38	4.53	1.43	4.29	1.47
20	(19)	5.39	1.40	5.12	1.44	4.85	1.48

- Correction factor stated DC = 0.9
- TOL = -25 °C

26.1
**“POWER” AND “ABSORPTION” IN COOLING MODE
MAGIS COMBO 4 V2 - MAGIS COMBO 4 PLUS V2**

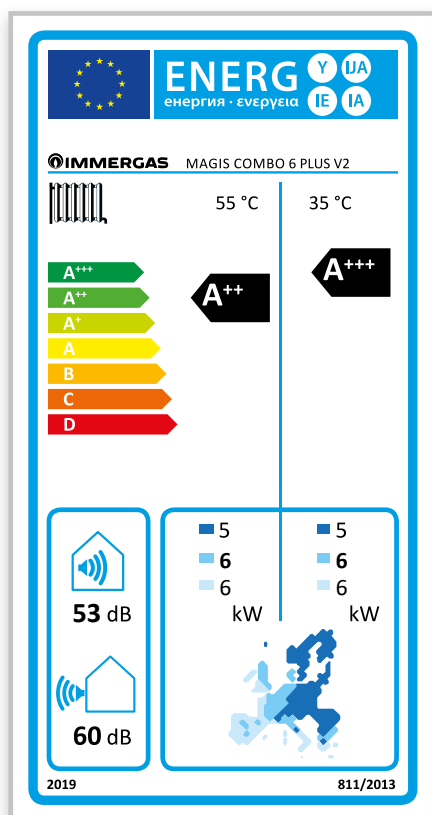
MAGIS COMBO 4 V2	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	3.99	0.83	4.37	0.82	4.76	0.82
20	3.83	0.94	4.21	0.93	4.58	0.93
30	3.68	1.05	4.04	1.04	4.39	1.04
35	3.60	1.11	3.95	1.11	4.30	1.10
46	3.43	1.23	3.76	1.22	4.10	1.22

MAGIS COMBO 4 V2	Water flow temperature °C					
	15		18		25	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	5.15	0.82	5.54	0.81	6.09	0.83
20	4.95	0.93	5.33	0.92	5.86	0.94
30	4.75	1.03	5.11	1.03	5.62	1.05
35	4.65	1.10	5.00	1.09	5.50	1.11
46	4.43	1.21	4.77	1.20	5.24	1.23

MAGIS COMBO 6 V2

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PRODUCT FICHE (REGULATION 811/2013)



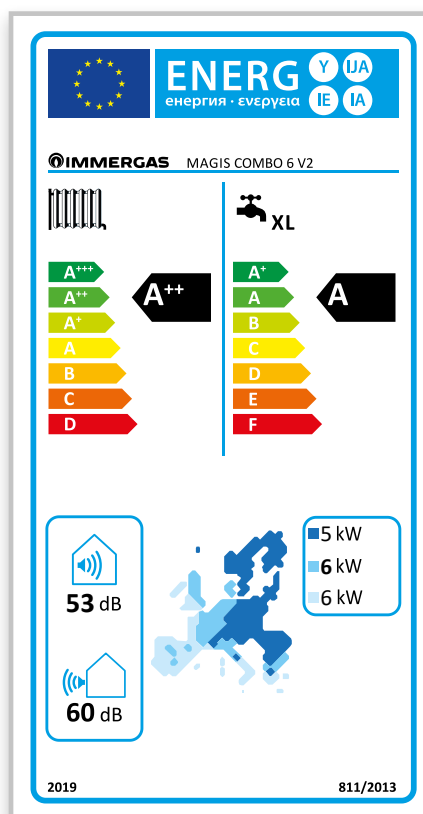
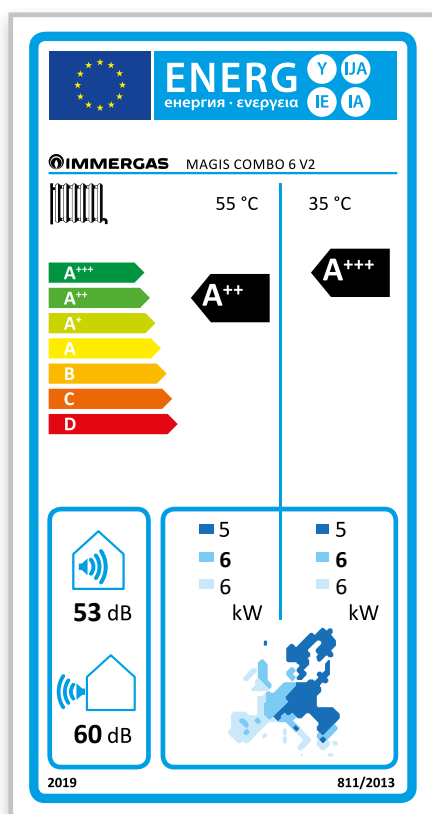
MAGIS COMBO 6 V2 / MAGIS COMBO 6 PLUS V2

Low temperature (30/35)

Parameter	Value	Colder zones	Zones zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	3305	2692	1254
Room central heating seasonal efficiency (η_s)	η_s %	140	181	236
Nominal heat output	kW	4.80	6.00	5.60

Average temperature (47/55)

Parameter	Value	Colder zones	Zones zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	4941	3727	1945
Room central heating seasonal efficiency (η_s)	η_s %	93	130	151
Nominal heat output	kW	4.80	6.00	5.60



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**“POWER” AND “ABSORPTION” IN CENTRAL HEATING MODE
MAGIS COMBO 6 V2 - MAGIS COMBO 6 PLUS V2**

MAGIS COMBO 6 V2		Water flow temperature °C					
		25		30		35	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)	4.69	1.63	4.56	1.75	4.35	1.97
-15	(-16)	5.35	1.73	5.20	1.85	4.95	2.08
-10	(-11)	5.77	1.78	5.61	1.91	5.34	2.15
-7	(-8)	5.94	1.66	5.78	1.78	5.50	2.00
-2	(-3)	5.78	1.44	5.62	1.55	5.35	1.74
2	(1)	5.62	1.23	5.46	1.32	5.20	1.48
7	(6)	6.48	1.01	6.30	1.09	6.00	1.22
10	(9)	7.08	1.02	6.88	1.10	6.55	1.23
15	(14)	8.08	1.04	7.85	1.11	7.48	1.25
20	(19)	9.07	1.05	8.82	1.13	8.40	1.27

MAGIS COMBO 6 V2		Water flow temperature °C					
		40		45		50	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)	4.18	2.10	4.01	2.32		
-15	(-16)	4.81	2.21	4.67	2.34	4.53	2.46
-10	(-11)	5.18	2.29	5.02	2.43	4.87	2.55
-7	(-8)	5.38	2.26	5.27	2.51	5.05	2.68
-2	(-3)	5.15	1.91	4.94	2.08	4.70	2.34
2	(1)	4.91	1.57	4.62	1.65	4.39	1.86
7	(6)	5.70	1.37	5.40	1.51	5.10	1.66
10	(9)	6.30	1.38	6.04	1.53	5.74	1.73
15	(14)	7.29	1.39	7.10	1.57	6.74	1.77
20	(19)	8.28	1.42	8.16	1.61	7.75	1.81

MAGIS COMBO 6 V2		Water flow temperature °C					
		55		60		65	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)						
-15	(-16)						
-10	(-11)	4.52	2.80				
-7	(-8)	4.84	2.84				
-2	(-3)	4.45	2.60	4.22	2.89		
2	(1)	4.16	2.06	3.94	2.29		
7	(6)	4.80	1.81	4.53	1.88	4.27	1.95
10	(9)	5.43	1.92	5.16	1.98	4.89	2.04
15	(14)	6.39	1.97	6.07	2.03	5.75	2.09
20	(19)	7.34	2.01	6.98	2.08	6.61	2.14

- Correction factor stated DC = 0.9

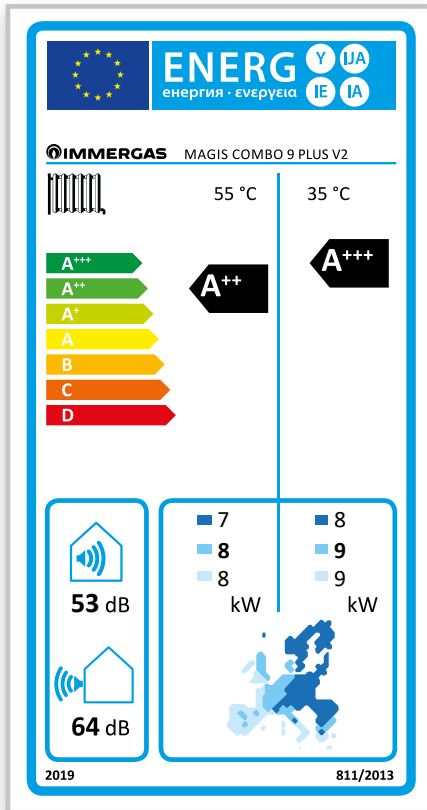
- TOL = -25 °C

MAGIS COMBO 6 V2

**28.1 “POWER” AND “ABSORPTION” IN COOLING MODE
MAGIS COMBO 6 V2 - MAGIS COMBO 6 PLUS V2**

MAGIS COMBO 6 V2	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	5.20	1.07	5.70	1.08	6.20	1.08
20	5.01	1.22	5.48	1.22	5.96	1.23
30	4.80	1.36	5.26	1.37	5.72	1.37
35	4.70	1.44	5.15	1.45	5.60	1.46
46	4.48	1.59	4.91	1.60	5.34	1.61

MAGIS COMBO 6 V2	Water flow temperature °C					
	15		18		25	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	6.70	1.09	7.20	1.10	7.92	1.12
20	6.44	1.24	6.92	1.24	7.61	1.27
30	6.18	1.38	6.64	1.39	7.31	1.42
35	6.05	1.46	6.50	1.47	7.15	1.50
46	5.77	1.62	6.19	1.62	6.81	1.66



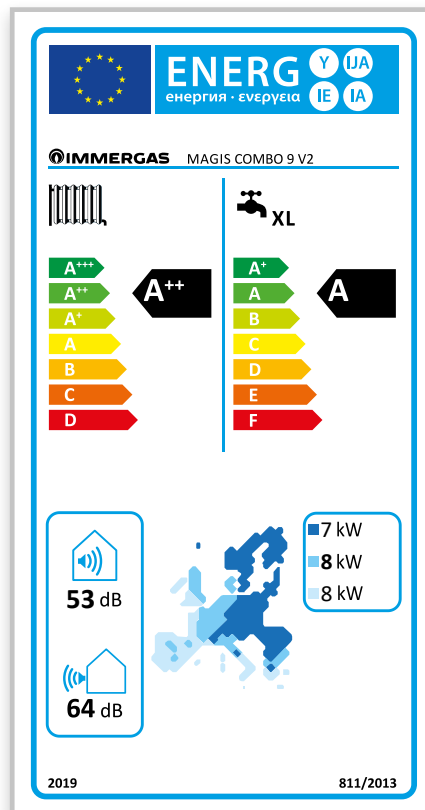
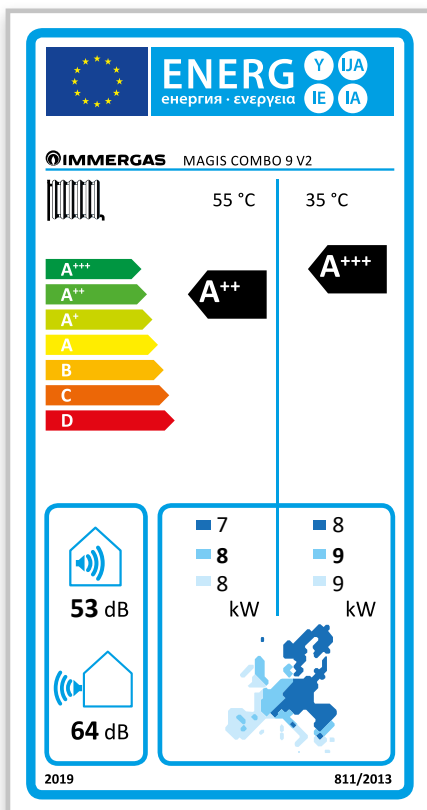
MAGIS COMBO 9 V2 / MAGIS COMBO 9 PLUS V2

Low temperature (30/35)

Parameter	Value	Colder zones	Zones zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	5243	3949	1855
Room central heating seasonal efficiency (η_s)	η_s %	138	176	242
Nominal heat output	kW	8.00	9.00	9.00

Average temperature (47/55)

Parameter	Value	Colder zones	Zones zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7223	5054	2709
Room central heating seasonal efficiency (η_s)	η_s %	93	128	155
Nominal heat output	kW	7.00	8.00	8.00



MAGIS COMBO 9 V2

30

“POWER” AND “ABSORPTION” IN CENTRAL HEATING MODE MAGIS COMBO 9 V2 - MAGIS COMBO 9 PLUS V2

MAGIS COMBO 9 V2		Water flow temperature °C					
		25		30		35	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)	6.90	2.28	6.71	2.44	6.39	2.74
-15	(-16)	7.86	2.41	7.64	2.58	7.28	2.90
-10	(-11)	8.47	2.52	8.23	2.70	7.84	3.04
-7	(-8)	8.53	2.41	8.30	2.58	7.90	2.90
-2	(-3)	8.42	2.14	8.19	2.30	7.80	2.58
2	(1)	8.32	1.88	8.09	2.01	7.70	2.26
7	(6)	9.72	1.55	9.45	1.66	9.00	1.87
10	(9)	10.62	1.57	10.32	1.68	9.83	1.89
15	(14)	12.11	1.59	11.78	1.70	11.22	1.91
20	(19)	13.61	1.61	13.23	1.73	12.60	1.94

MAGIS COMBO 9 V2		Water flow temperature °C					
		40		45		50	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)	6.14	2.93	5.90	3.23		
-15	(-16)	7.07	3.08	6.87	3.26	6.66	3.43
-10	(-11)	7.60	3.21	7.37	3.39	7.15	3.56
-7	(-8)	7.73	3.27	7.56	3.65	7.26	3.88
-2	(-3)	7.50	2.83	7.20	3.08	6.84	3.47
2	(1)	7.27	2.39	6.84	2.52	6.50	2.84
7	(6)	8.80	2.10	8.60	2.33	8.30	2.53
10	(9)	9.64	2.12	9.44	2.36	8.97	2.66
15	(14)	11.03	2.13	10.84	2.42	10.30	2.72
20	(19)	12.42	2.18	12.24	2.47	11.63	2.78

MAGIS COMBO 9 V2		Water flow temperature °C					
		55		60		65	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)						
-15	(-16)						
-10	(-11)	6.63	3.90				
-7	(-8)	6.96	4.12				
-2	(-3)	6.48	3.85	6.14	4.28		
2	(1)	6.16	3.15	5.84	3.50		
7	(6)	8.00	2.73	7.72	2.96	7.44	3.20
10	(9)	8.50	2.95	8.07	3.05	7.65	3.14
15	(14)	9.76	3.02	9.27	3.11	8.78	3.21
20	(19)	11.02	3.09	10.47	3.18	9.91	3.28

- Correction factor stated DC = 0.9
- TOL = -25 °C

MAGIS COMBO 9 V2

30.1

**“POWER” AND “ABSORPTION” IN COOLING MODE
MAGIS COMBO 9 V2 - MAGIS COMBO 9 PLUS V2**

MAGIS COMBO 9 V2	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	7.20	1.45	7.80	1.48	8.41	1.51
20	6.92	1.65	7.51	1.68	8.09	1.72
30	6.64	1.84	7.21	1.88	7.77	1.92
35	6.50	1.95	7.05	1.99	7.60	2.03
46	6.19	2.15	6.72	2.20	7.24	2.24

MAGIS COMBO 9 V2	Water flow temperature °C					
	15		18		25	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	9.02	1.54	9.63	1.57	10.59	1.60
20	8.68	1.75	9.27	1.78	10.19	1.82
30	8.33	1.96	8.89	1.99	9.78	2.03
35	8.15	2.07	8.70	2.11	9.57	2.15
46	7.77	2.29	8.29	2.33	9.12	2.38

MAGIS COMBO V2

31

KIT 2 ZONES FOR COUPLING MAGIS COMBO V2 (CODE 3.026301)



The 2 zone kit for coupling with MAGIS COMBO V2 is composed of a frame, open hydraulic manifold, low electric consumption solenoid valves, three-way mixing valve, hydraulic fitting and pipes and thermometers for temperature reading.

The pumps included in the kit are distinguished for being very elastic, also thanks to the operating modes that can be pre-set. All components are already assembled and ready to operate. All electrical connections are to be taken to the MAGIS COMBO V2 P.C.B.

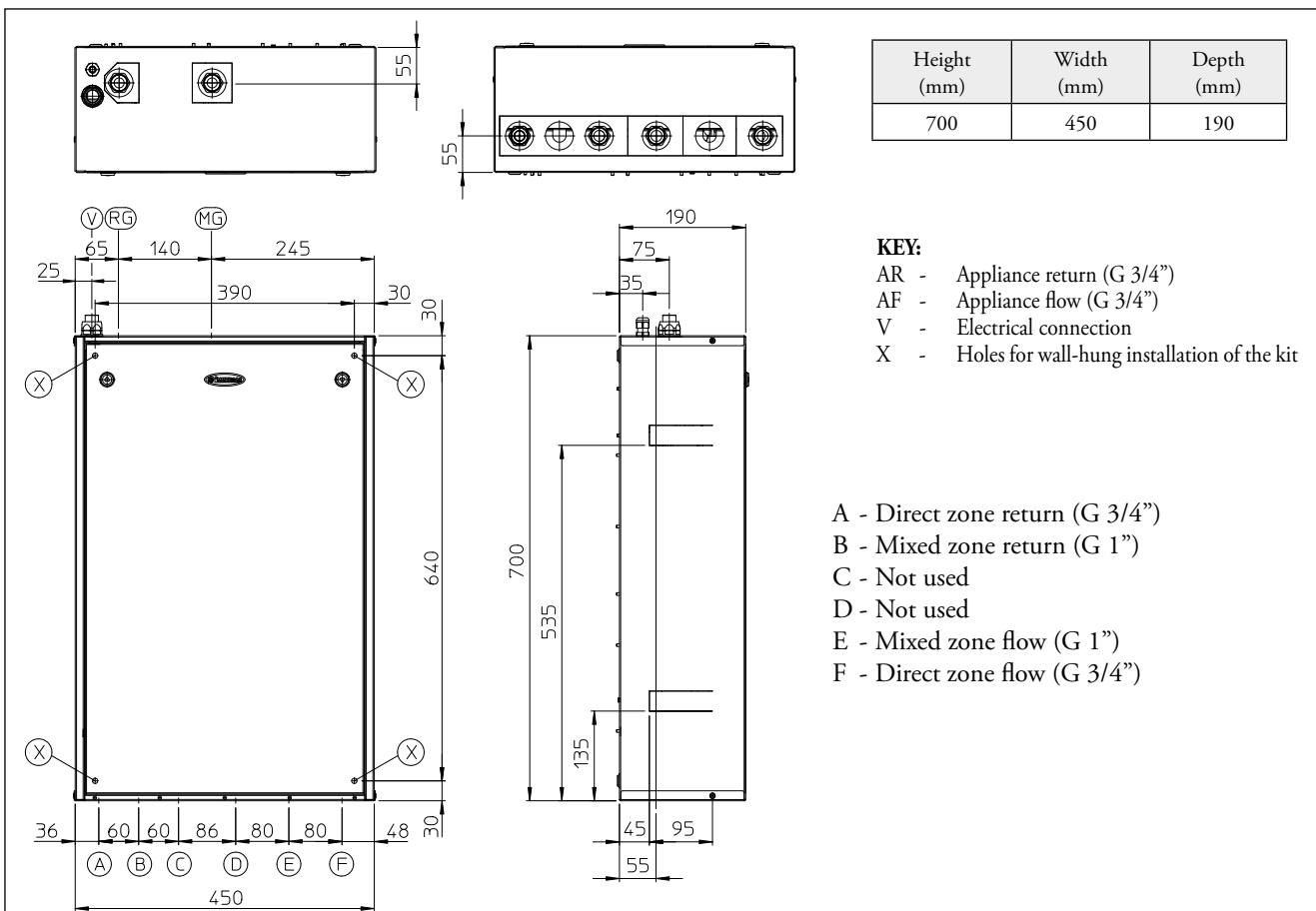
This kit is to be used to control differential temperature systems and/or divided into two distinct zones.

With the acquisition of the outdoor temperature, the MAGIS COMBO V2 electronics enables you to select independent flow temperature curves for each of the 2 zones of the system (both with C.H. and cooling).

Inserting these kits into the system enhances overall comfort and energy savings.

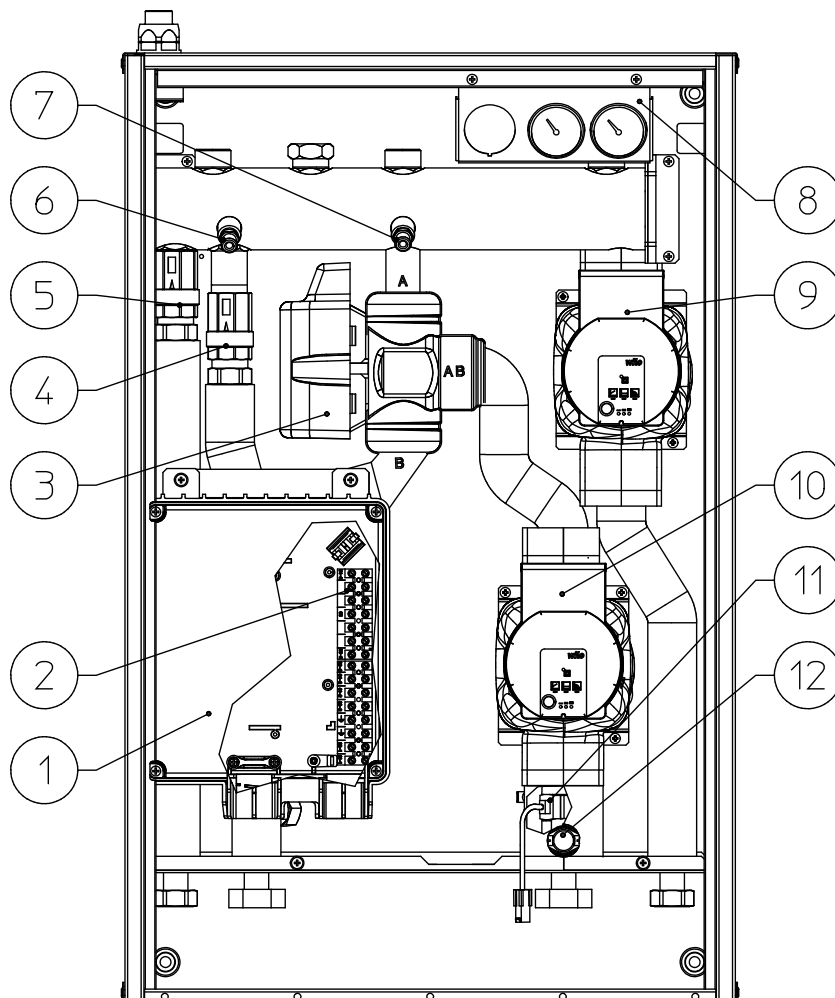
31.1

DIMENSIONS AND CONNECTIONS



31.2

MAIN COMPONENTS KIT 2 ZONES FOR COUPLING MAGIS COMBO V2



↑ ↑
RZ1 RZ2

↓ ↓
MZ2 MZ1

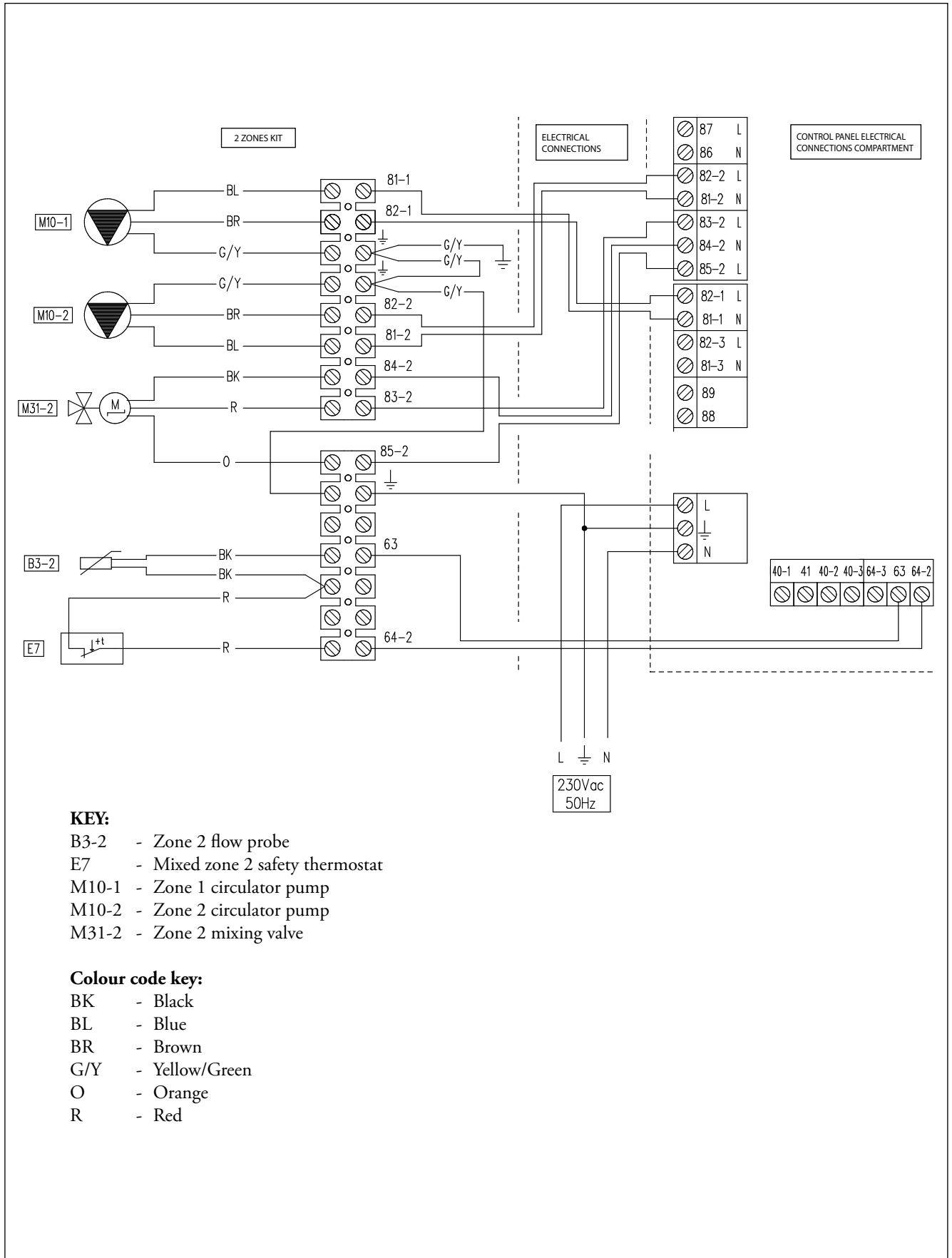
KEY:

- 1 - Connections box
- 2 - Connections terminal board
- 3 - Mixing valve
- 4 - Mixed zone return circuit "Europa" one-way valve
- 5 - Direct zone return circuit "Europa" one-way valve
- 6 - Drain fitting
- 7 - Drain fitting
- 8 - Flow temperature thermometers
- 9 - Direct zone pump
- 10 - Mixed zone pump
- 11 - Mixed zone flow probe
- 12 - Safety thermostat mixed zone

MAGIS COMBO V2

31.3

WIRING DIAGRAM KIT 2 ZONES FOR COUPLING MAGIS COMBO V2



31.4 TECHNICAL DATA KIT 2 ZONES FOR COUPLING MAGIS COMBO V2

		2 zones kit for MAGIS COMBO V2
Maximum nominal pressure	bar	3
Water content in device	litres	1.5
Total head available in non-mixed zone with 1000 l/h flow rate (max.)	kPa (m c.a.)	49.4 (5.00)
Total head available in mixed zone (mixing valve open) with 1000 l/h flow rate (max.)	kPa (m c.a.)	46.8 (4.80)
Empty device weight	kg	21.1
Full device weight	kg	22.6
Electrical connection	V/Hz	230/50
Maximum input	A	0.7
Installed electric power	W	135
EEI value	-	≤ 0.20 - Part. 3
Electric plant protection	-	IPX4D
Hydraulic side generator - kit maximum distance	m	15

31.5 CIRCULATION PUMP SETTINGS AND CONFIGURATIONS

The kits are supplied with circulating pumps fitted with speed regulator. These settings are suitable for most systems.

For proper use one must select the most suitable type of operation for the system.

By rotation, it is possible to select the following pump control mode:

Fixed speed I, II, III.

Proportional head I, II, III.

Constant head I, II, III.

- Fixed speed

Adjusts the pump speed in fixed mode.

It is possible to set 3 different speeds:

I: Minimum Speed.

II: Intermediate speed.

III: Maximum speed (factory set speed).

- Proportional head ($\Delta P-V$)

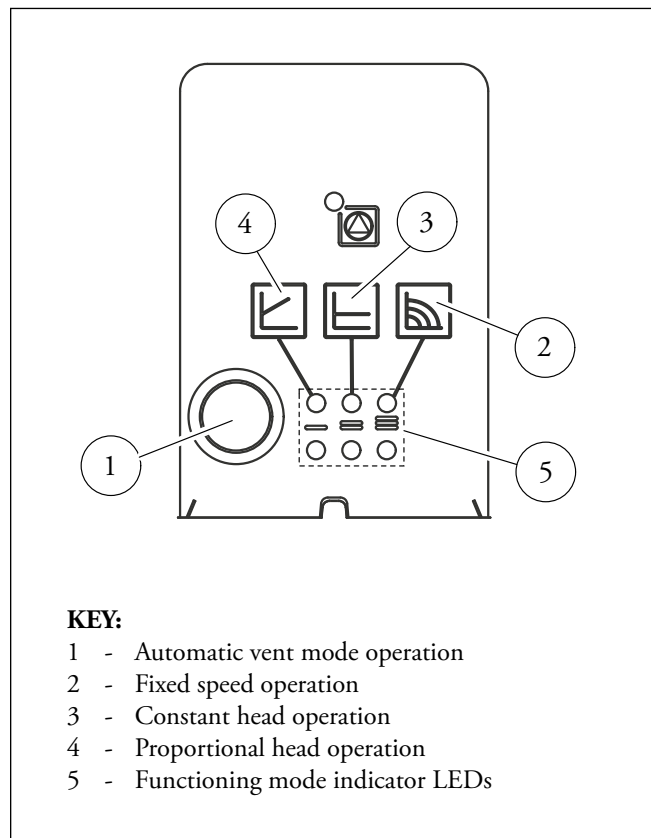
This allows the pressure level (head) to be proportionally reduced as the system heat demand decreases (flow rate reduction).

Thanks to this function, the electric power consumption of the circulator pump is reduced further: the energy (power) used by the pump decreases according to the pressure level and flow rate.

With this setting, the pump guarantees optimal performance in most heating systems, proving particularly suitable in single-pipe and two-pipe installations. Any noise originating from the water flow in the pipes, valves and radiators is eliminated by reducing the head. Optimal conditions for thermal comfort and acoustic well-being.

- Constant head ($\Delta P-C$)

The circulator pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the circulator pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.



KEY:

- 1 - Automatic vent mode operation
- 2 - Fixed speed operation
- 3 - Constant head operation
- 4 - Proportional head operation
- 5 - Functioning mode indicator LEDs

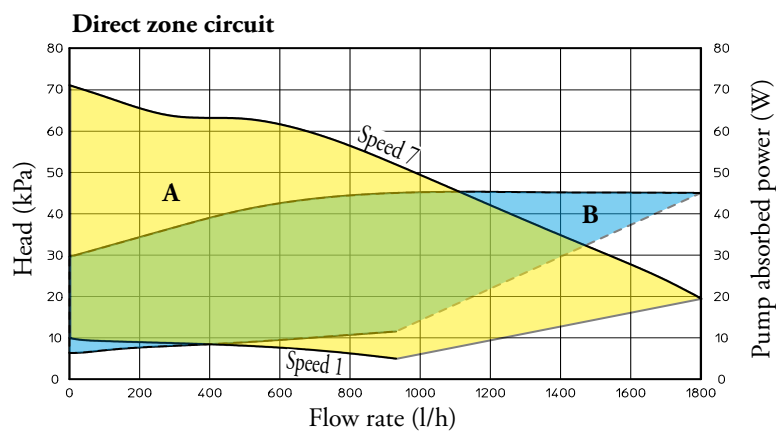
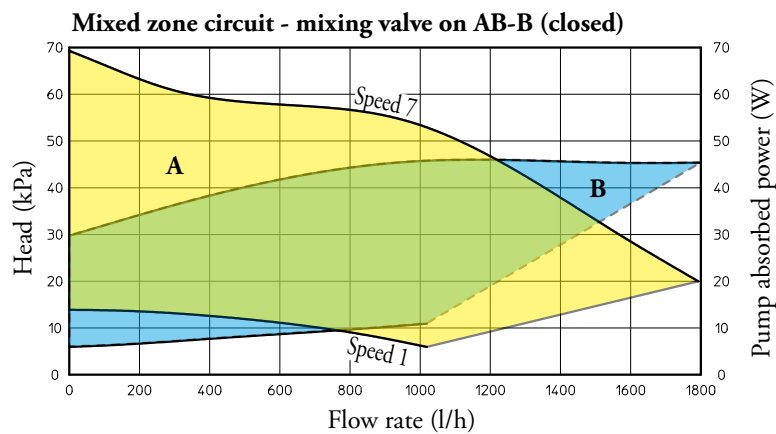
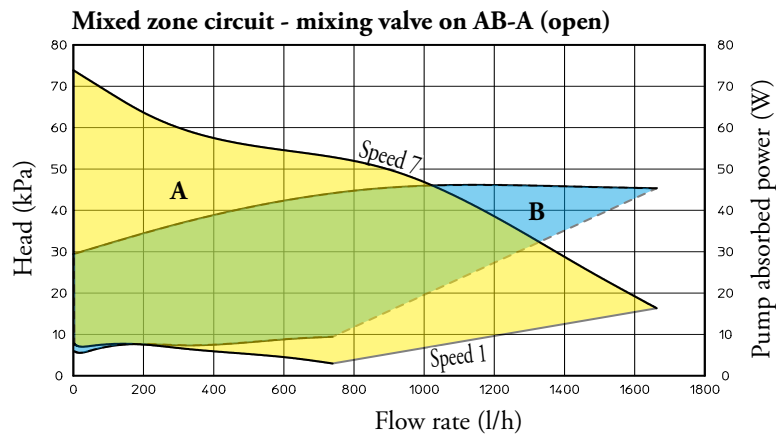
MAGIS COMBO V2

31.6 GRAPHICS PUMPS WITH CONSTANT HEAD PROGRAM

The kit contains an electronic low consumption circulation pump, whose flow rate/head features are shown in the graph below.

All pumps in the kit are suitable for operation with heat and cold carrying fluid.

WILO PARA 15-7 CM 130



KEY:

A = Head available at speed 1 ÷ 7

B = Power absorbed by the system pump (dotted area)

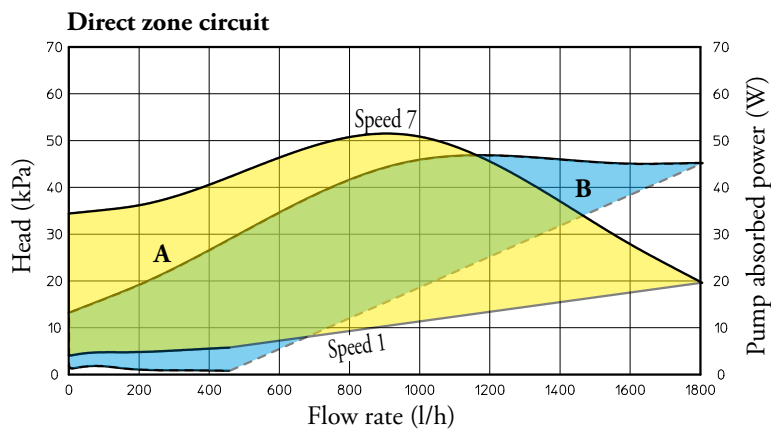
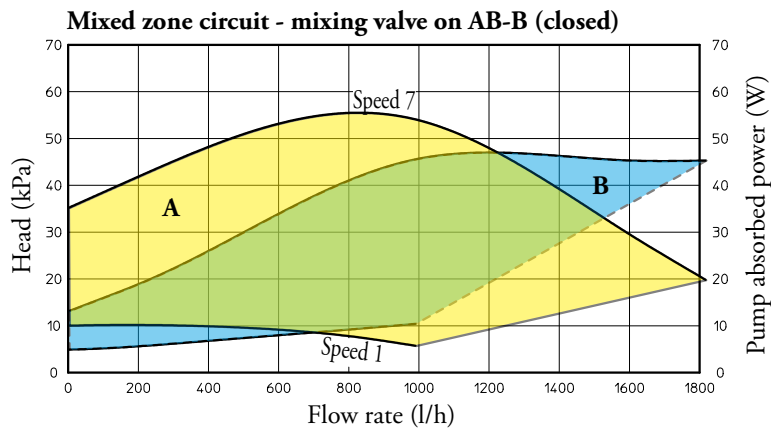
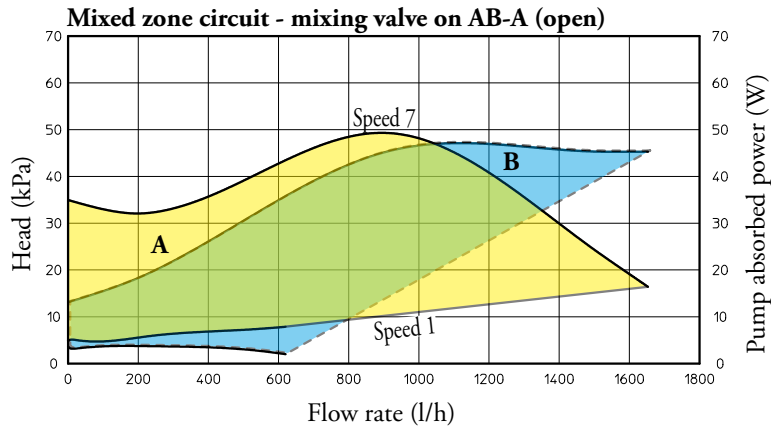
EEl ≤ 0.20

31.7 GRAPHICS PUMPS WITH PROPORTIONAL HEAD PROGRAM

The kit contains an electronic low consumption circulation pump, whose flow rate/head features are shown in the graph below.

All pumps in the kit are suitable for operation with heat and cold carrying fluid.

WILO PARA 15-7 CM 130



KEY:
A = Head available at speed 1 ÷ 7
B = Power absorbed by the system pump (dotted area)

EEI ≤ 0.20

MAGIS COMBO V2

32

SYSTEM MANAGER



The System manager (optional) is able to expand the number of zones that can be controlled by MAGIS COMBO V2 (more than 2 zones up to 8) and control up to 8 dehumidifiers.

Designed to enhance climatic comfort, it allows you to set different climatic curves for each zone, both for hot and cold. The user interface is made up from an LCD with matrix and a 6-key membrane keyboard. Installation takes place on a guide for electric components from control board.

Allows controlling, coupled with dedicated expansions, auxiliaries such as: circulation pump, mixing valve, dehumidifier, recirculation pump, 3-way diverter valve for cooling/heating.

32.1

TECHNICAL FEATURES

Using the system manager (integrated with the relative expansion kits) it is possible to control:

- MAGIS COMBO V2 / MAGIS COMBO PLUS V2;
- storage tank for D.H.W. production (the D.H.W. temperature is managed by the NTC probe);
- up to 2 solar circulation units for systems with manifolds arranged on different slopes;
- temperature probes (NTC - PT1000);
- on-off request dry contact;
- variable flow temperature of the heat pump and the boiler (using the required models), depending on the external temperature (a climatic curve is pre-selected);
- 8 expansion boards for the management of the air conditioning system the maximum number of manageable zones is 8, to which 2 expansions can be added for special functions (expansions with address 4 and 5). For each single zone, it is possible to decide whether it is a mixed zone, a direct zone, or a direct zone with water temperature probe (thus allowing the correction of the outlet temperature from the generator also according to the flow temperature detected on the direct zones, useful if upstream there is a hydraulic manifold in which mixing with the system return takes place);
- 2 expansion boards for the additional functions, namely:
 - hot/cold switch-over on distinct systems (for example systems with radiant panel heating and fan-coil cooling);
 - recirculation pump management for DHW;
 - acquisition of a signal from a system that generates electrical energy (e.g. photovoltaic system);

- as far as temperature/humidity control devices are concerned, a maximum of 4 Zone Panels/Controls can be associated only in zones 1-3 and HT (high temperature) zone. The Temperature/Humidity Sensor Kit can be used instead in all zones 1-8; another set-up is for room thermostats and on-off humidistats;
- up to 8 dehumidifiers.

On the other hand, in terms of the main settings that can/must be carried out, the System Manager allows you to acquire or programme:

- external temperature;
- system flow temperature;
- storage tank temperature (even through 2-3 probes, 1 of which refers to the solar-heated part of the boiler);
- by means of self-diagnosis, detection and display of error codes in the event of anomalies;
- date and time;
- differentiated selection and programming for each individual zone;
- programming the time periods for DHW production;
- anti-legionella function program;
- management of the heat/cooling sources.

• **SYSTEM MANAGER**

code 3.021522

33 ZONE REMOTE PANEL (WITH SYSTEM MANAGER)



It is an electronic device equipped with a back-lit display to control and adjust the room's temperature and humidity. Connection to the System manager occurs via two BUS cables. It programs the relative room heat adjustment. It can be applied to the wall using the supplied screws and plugs. The kit is powered at 24 V (directly from the Manager).

• **OPTIONAL** code 3.030863

34 REMOTE CONTROL OF ZONE (WITH SYSTEM MANAGER)



It is an electronic device equipped with a back-lit display to control and adjust the room's temperature and humidity. Connection to the System manager occurs via two BUS cables. It programs the relative room heat adjustment. It can be applied to the wall using the supplied screws and plugs. The kit must be powered at 230 Vac (externally).

• **OPTIONAL** code 3.023364

35 TEMPERATURE/HUMIDITY SENSOR (WITH SYSTEM MANAGER)



It is a room temperature and humidity probe, to be applied to the wall. Differently to the zone remote control kit, in this case, the settings of all room parameters take place on the System Manager. The kit must be connected directly to the expansion board for zone management. The kit is powered at 24 V.

• **OPTIONAL** code 3.021524

36 EXPANSION BOARD FOR ZONE MANAGEMENT (WITH SYSTEM MANAGER)



This component must be powered at 24 Vac and is mainly used for system zone management; in particular n°1 expansion kit must be used for each zone. The expansion kit manages pump, mixing valve and the dehumidifier of the same zone, acquiring the room request (temperature and humidity) for a determined zone. The following can be connected to this kit:

- the room temperature and humidity sensor;
- an on-off type request contact.

Installation takes place on a DIN guide for electric components from control board. **This board is envisioned as per standard in the 2 kits for zone systems** (see the following page).

• **OPTIONAL** code 3.021547

MAGIS COMBO V2

37

DISTRIBUTION KIT TO THE SYSTEM (WITH SYSTEM MANAGER)



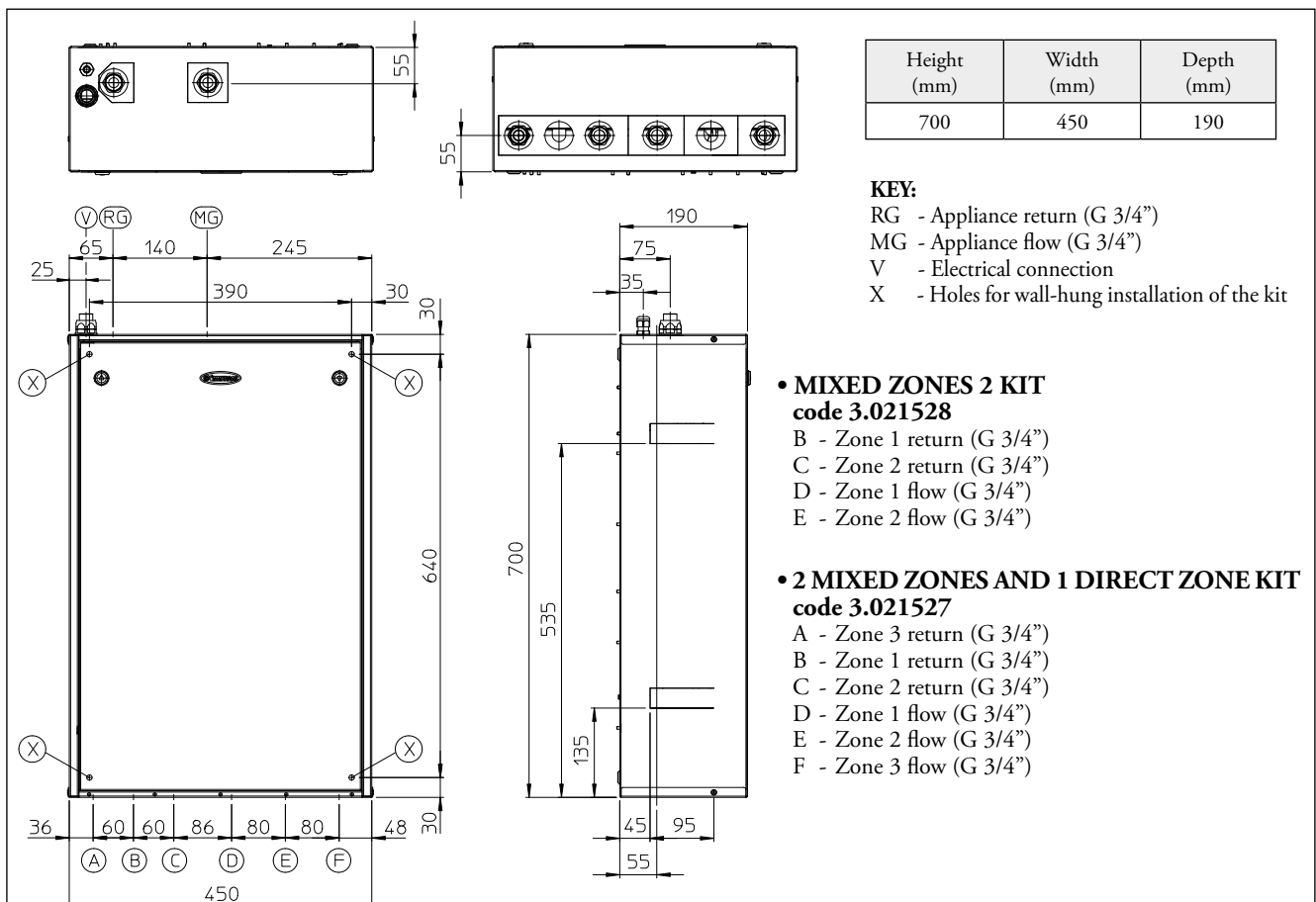
Two pre-packaged systems called: "**2 mixed zones kit**" and "**2 mixed zones and 1 direct zone kit**". They are comprised of 2 separate hydraulic manifolds (flow/return) + by-pass, thermometers to read the temperatures, motorised mixing valves, low energy consumption electro pumps and expansion boards for electric management.

The pumps included in the kit are distinguished for being very elastic, also thanks to the operating modes that can be pre-set. All parts are already assembled and ready for operation exclusively in combination with the System Manager. With the aid of the expansions the 2 kits are governed by the System Manager during the central heating and cooling phases.

Acquisition of the outdoor temperature from system Manager enables you to select independent flow temperature curves for each of the 2 or 3 zones of the system (both with C.H. and cooling). Inserting these kits into the technological system enhance overall comfort and energy savings.

37.1

DIMENSIONS AND CONNECTIONS



37.2

TECHNICAL DATA

		Mixed zones 2 kit	2 mixed zones and 1 direct zone kit
Maximum nominal pressure	bar	3	3
Maximum operating pressure	°C	90	90
Low temperature circuit minimum set point regulation temperature	°C	25	25
Low temperature circuit maximum set point regulation temperature	°C	50 ÷ 80	50 ÷ 80
Water content in device	litres	1.5	1.9
Total head available in non-mixed zone with 1000 l/h flow rate (max.)	kPa (m c.a.)	--	43.18 (4.40)
Total head available in mixed zone (mixing valve closed) with 1000 l/h flow rate (max.)	kPa (m c.a.)	42.07 (4.29)	42.07 (4.29)
Empty device weight	kg	21.1	23.1
Full device weight	kg	22.6	25.0
Electrical connection	V/Hz	230/50	230/50
Maximum input	A	0.9	1.2
Installed electric power	W	105	150
Power in Stand-by	W	9.5	9.5
Electric plant protection	-	IPX4D	IPX4D
Hydraulic side generator - kit maximum distance	m	15	15

37.3

CIRCULATION PUMP SETTINGS AND CONFIGURATIONS

The kits are supplied with circulating pumps fitted with speed regulator. These settings are suitable for most systems.

For proper use one must select the most suitable type of operation for the system.

By rotation, it is possible to select the following pump control mode:

Fixed speed I, II, III.

Proportional head I, II, III.

Constant head I, II, III.

- Fixed speed

Adjusts the pump speed in fixed mode.

It is possible to set 3 different speeds:

I: Minimum Speed.

II: Intermediate speed.

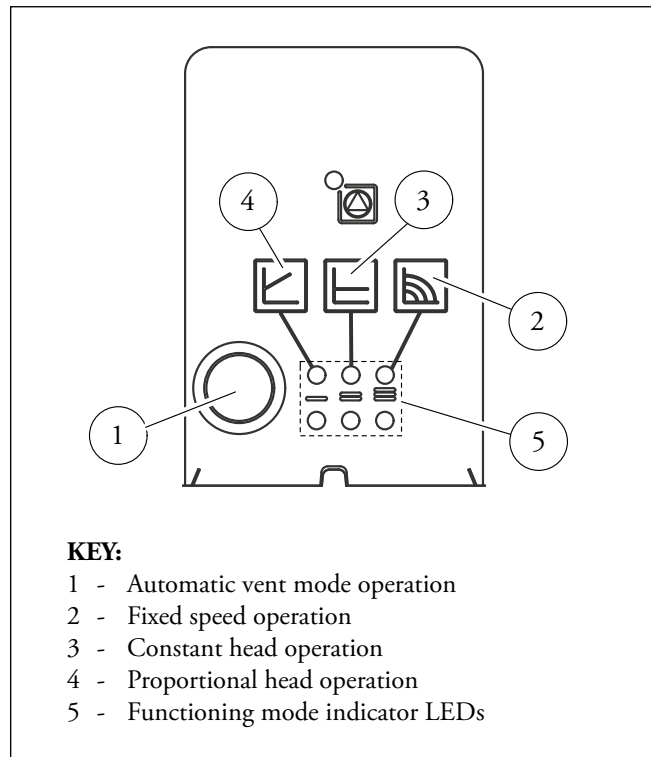
III: Maximum speed (factory set speed).

- Proportional head ($\Delta P-V$)

This allows the pressure level (head) to be proportionally reduced as the system heat demand decreases (flow rate reduction). Thanks to this function, the electric power consumption of the circulator pump is reduced further: the energy (power) used by the pump decreases according to the pressure level and flow rate. With this setting, the pump guarantees optimal performance in most heating systems, proving particularly suitable in single-pipe and two-pipe installations. Any noise originating from the water flow in the pipes, valves and radiators is eliminated by reducing the head. Optimal conditions for thermal comfort and acoustic well-being.

- Constant head ($\Delta P-C$)

The circulator pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the circulator pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.



MAGIS COMBO V2

37.4 GRAPHS OF CIRCULATION PUMP FLOW RATE-ABSORPTION-HEAD

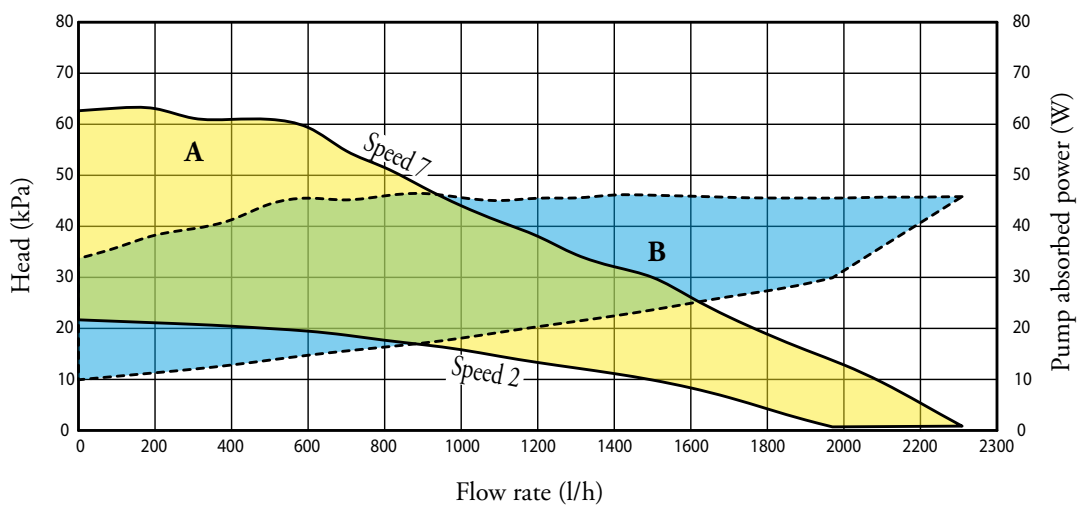
The kit contains an electronic low consumption circulation pump, whose flow rate/head features are shown in the graph below.

All pumps in the kit are suitable for operation with heat and cold carrying fluid.

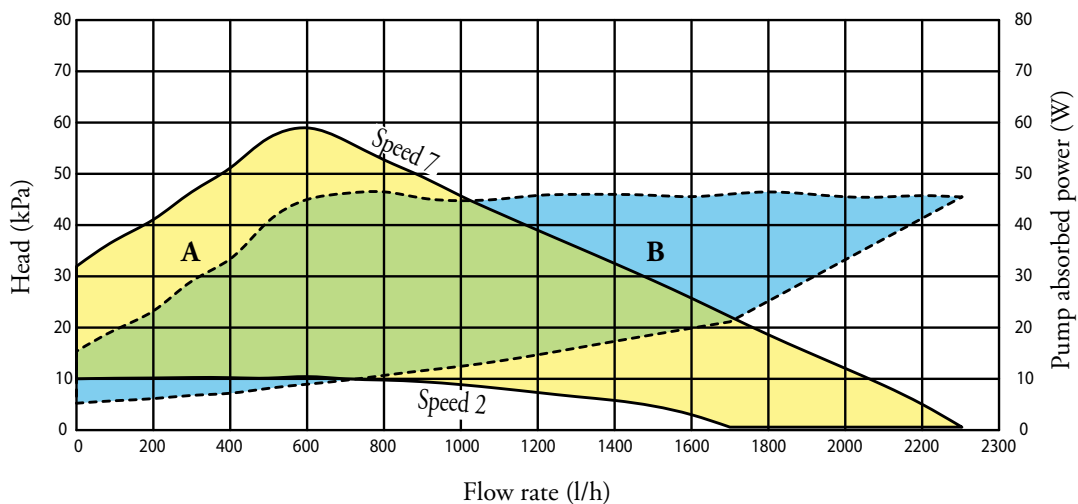
ZONE MIXED WITH A CLOSED MIXING VALVE AND OPEN BY-PASS COCK

WILO PARA 15-7 CM 130

Constant head ($\Delta P C$).



Proportional head ($\Delta P V$).



EEI \leq 0.20

KEY:

A = Head available at speed 2 + 7

B = Power absorbed by the system pump (dotted area)

NOTE: In case of closed by-pass cock, the available head also depends on the upstream circuit of the kit. Starting from the available head shown in the figure, to determine the available pump head it is necessary to subtract the head losses of the circuit upstream of the kit.

37.5 GRAPHS OF CIRCULATION PUMP FLOW RATE-ABSORPTION-HEAD

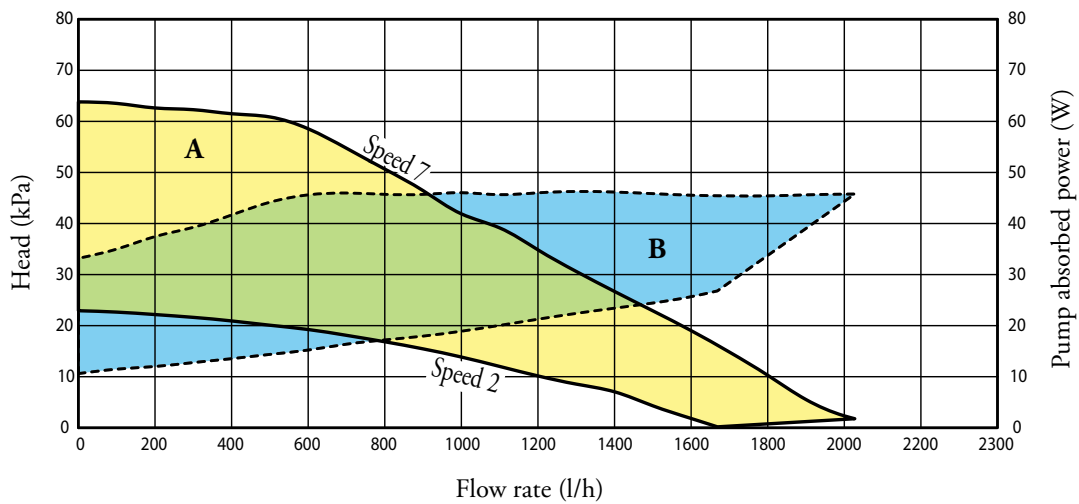
The kit contains an electronic low consumption circulation pump, whose flow rate/head features are shown in the graph below.

All pumps in the kit are suitable for operation with heat and cold carrying fluid.

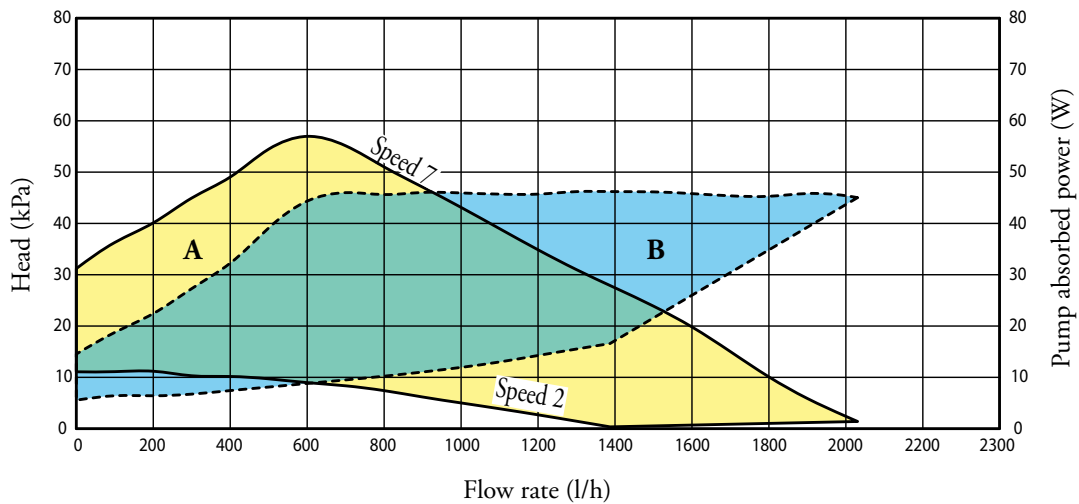
ZONE MIXED WITH AN OPEN MIXING VALVE AND DIRECT ZONE AND OPEN BY-PASS COCK

WILO PARA 15-7 CM 130

Constant head ($\Delta P C$).



Proportional head ($\Delta P V$).



EEI ≤ 0.20

KEY:

A = Head available at speed 2 ÷ 7

B = Power absorbed by the system pump (dotted area)

NOTE: In case of closed by-pass cock, the available head also depends on the upstream circuit of the kit. Starting from the available head shown in the figure, to determine the available pump head it is necessary to subtract the head losses of the circuit upstream of the kit.

MAGIS COMBO V2

38

DEHUMIDIFIER



Designed to be coupled to cooling plants with radiant panels, the dehumidifier allows to keep the percentage of relative humidity in the room within the comfort values, preventing the possible formation of condensate on the walls.

The dehumidifier, which is designed to be installed vertically on the wall (recessed), has pre- and post-cooling coils.

These components allow excellent control of the air temperature and humidity.

However, it can function without the aid of pre and post cooling water coils, thus allowing to dehumidify when the cooling system is off, typical of mid-season.

In compliance with European Directives, it has EC declaration of conformity.

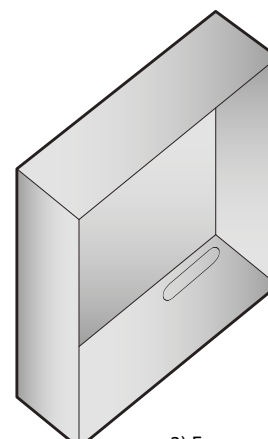
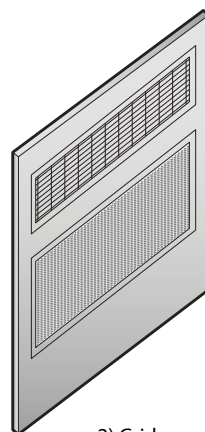
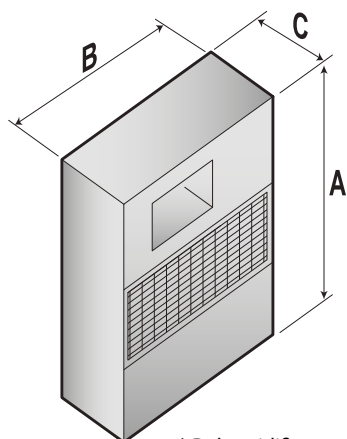
Dehumidification can take place:

- with **neutral air**: without variation of the air temperature, dehumidifies internal rooms;
- with **cooled air**: contributes to cooling the rooms, as well as reducing the internal relative humidity.

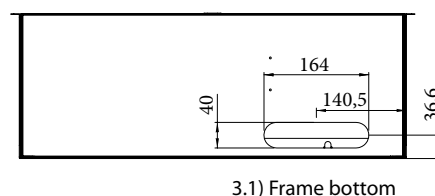
This operation can only be obtained with the System manager and its expansions, to couple the dehumidifier directly to MAGIS COMBO V2, see the paragraph "MAGIS COMBO V2 management electronic functions".

38.1

DIMENSIONS AND CONNECTIONS



Model	A (mm)	B (mm)	C (mm)
1	680	545	221
2	750	660	20
3	703	605	228



• **DEHUMIDIFIER** code 3.021529
(frame and grid to be purchased separately)

Connect the F-R (female) 1/2" fittings of the dehumidifier to the cooling system, using the measurements in fig. 3.1

38.2

TECHNICAL DATA

Coolant		R134a
Humidity removed in neutral air condition ⁽¹⁾	litres/24h	20.1
Cooling capacity ⁽¹⁾	W	1250
Nominal water input	l/h	150
Head losses	kPa	7.8
Water supply temperature operating field	°C	15 ÷ 45
work humidity field	%	40 ÷ 90
Air flow rate	m ³ /h	250
Fan useful static head (maximum speed)	Pa	43
Sound pressure ⁽³⁾	dB(A)	35
Sound power	dB(A)	43
Power absorbed ⁽¹⁾	W	340
Power supply	V/Ph/Hz	230/1~/50
Maximum power absorbed ⁽²⁾	W	450
Nominal current absorbed ⁽¹⁾	A	2.5
Maximum current absorbed ⁽²⁾	A	2.8
Hydraulic F-R connections		1/2"F
Weight	kg	38

The data given refer to the following conditions:

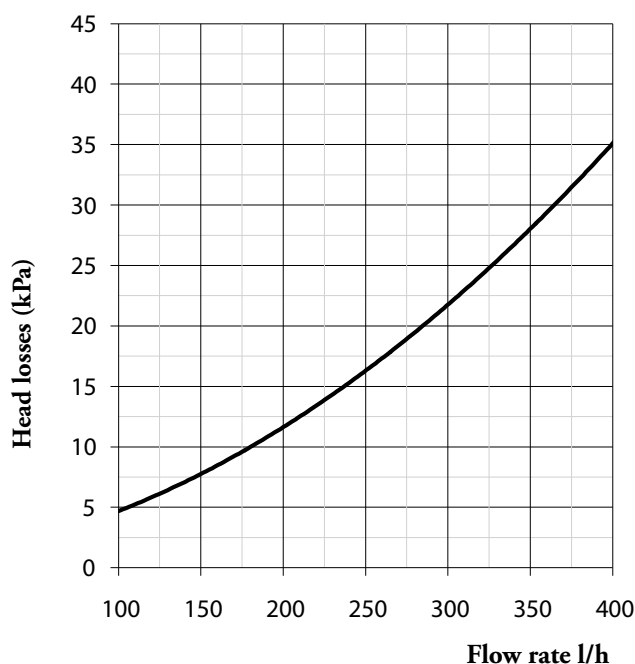
¹⁾ Room temperature 26 °C; relative humidity 65% with coil inlet water temperature of 15 °C.

²⁾ Room temperature 35 °C; relative humidity 80%.

³⁾ Sound pressure level measured in free field at 1 m from the machine, in compliance with UNI EN ISO 3746/97

38.3

HEAD LOSS OF THE HYDRAULIC CIRCUIT



MAGIS COMBO V2

39 OPTIONAL FOR DIRECT COUPLING TO MAGIS COMBO V2 / COMBO PLUS V2

TEMPERATURE CONTROL OPTIONALS	Code
Zone remote panel - (device class V* or VI)	3.030863
Temperature and humidity sensor kit ModBus - (device class V or VI*) - to make temperature requests, it is necessary to couple a chrono-thermostat code 3.021622 or 3.021624	3.030992
CRONO 7 (Digital weekly chrono-thermostat) - (device class IV* or VII)	3.021622
CRONO 7 WIRELESS (device class IV* or VII)	3.021624
External probe - (device class II* or VI or VII)	3.015266
Room hygrostat kit - (operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device)	3.023302
DOMINUS Interface board kit (for remote control via App)	3.026273
OTHER OPTIONALS	Code
2 zone kit (1 direct zone and 1 mixed zone) for MAGIS COMBO V2 coupling (wall-hung or recessed for mixed systems)	3.026301
Three-way deviator valve kit used as hot/cold system deviator	3.020632
Antifreeze kit up to -15 °C (for heat generator protection)	3.017324
2 relay board kit for MAGIS COMBO V2 coupling (for dehumidifier control)	3.026302
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
Polyphosphate dispenser kit (indoor only)	3.017323
Contact NTC probe kit for storage tank (can also be used to read the temperature of a possible Puffer)	3.019375
Configurable relay board kit (to manage 3rd ^{mixed} zones and other features)	3.015350
Flow temperature probe kit (to be used as a mixed zone control)	3.030913
Safety marker thermostat kit	3.019229
Connection kit for circuit R32 (to allow easy connection of the cooling circuit also in case of pipes that arrive at the rear)	3.030883
Inertial 50-litre recessed storage tank kit	3.027709
Inertial 75-Litre storage tank kit (can be installed wall-hung vertically or on floor)	3.027288
Bracket kit for wall mounting	3.027290
Inertial storage tank (for wall-hung installation)	3.022154
Wall installation brackets kit for outdoor condensing unit	3.022154
Condensate antifreeze heating cable kit (for outdoor unit 4 - 6 V2)	3.027385
Solar inlet probe kit (only for instant MAGIS COMBO V2)	3.021452
Cover kit B₂₃ MAGIS COMBO V2	3.027082
Condensate neutraliser kit	3.019857
Compact condensate drain pump kit	3.026374
Propane air kit	3.027664
HYDRO 3 range Wall-hung hydronic split, HYDRO FS range floor standing hydronic fan coil, HYDRO IN range recessed hydronic fan coil	Codes various

*Device class (REF. Communication of the European Commission 2014/C 207/02) with factory settings.

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OPTIONAL IN THE PRESENCE OF SYSTEM MANAGER

TEMPERATURE CONTROL OPTIONALS	Code
System manager kit - (device class V* or VIII)	3.021522
Zone remote panel - (device class V* or VI)	3.030863
CRONO 7 (Digital weekly chrono-thermostat) - (device class IV* or VII)	3.021622
CRONO 7 WIRELESS (device class IV* or VII)	3.021624
Zone remote control kit - (device class V or VI*)	3.023364
Room hygrostat kit - (operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device)	3.023302
Temperature and humidity sensor kit - (device class V or VI*)	3.021524
OTHER OPTIONALS	Code
Mixed zones 2 kit (wall-hung or recessed)	3.021528
2 mixed zones and 1 direct zone kit (wall-hung or recessed for mixed systems)	3.021527
Expansion kit to manage zone or for auxiliaries	3.021547
Three-way deviator valve kit used as hot/cold system deviator	3.020632
Low temperature safety kit for low temperature systems and system distribution kit	3.013794
Antifreeze kit up to -15 °C (for heat generator protection)	3.017324
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
Relay kit for dehumidifier cooling request (EMR 12 Vdc)	3.023945
Probe kit for solar collector temperature (coupled with a system manager)	3.019374
Contact NTC probe kit for storage tank (can also be used to read the flow temperature on the system zones)	3.019375
Connection kit for circuit R32 (to allow easy connection of the cooling circuit also in case of pipes that arrive at the rear)	3.030883
Inertial 50-litre recessed storage tank kit	3.027709
Inertial 75-Litre storage tank kit (can be installed wall-hung vertically or on floor)	3.027288
Bracket kit for wall mounting	3.027290
Inertial storage tank (for wall-hung installation)	3.027290
Wall installation brackets kit for outdoor condensing unit	3.022154
Condensate antifreeze heating cable kit (for outdoor unit 4 - 6 V2)	3.027385
Cover kit B₂₃ MAGIS COMBO V2	3.027082
Condensate neutraliser kit	3.019857
Compact condensate drain pump kit	3.026374
Propane air kit	3.027664
HYDRO 3 range Wall-hung hydronic split, HYDRO FS range floor standing hydronic fan coil, HYDRO IN range recessed hydronic fan coil	Codes various

*Device class (REF. Communication of the European Commission 2014/C 207/02) with factory settings.

MAGIS COMBO V2

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MAIN INERTIAL STORAGE TANK TECHNICAL FEATURES

Minimum water content is mainly important to provide proper execution of heat pump defrosting cycles.

In this regard, the minimum amount of water must be 30 litres for any type of system.

It is also important to check that the dehumidifier line has a minimum of **3 l/kW** of the machine (dehumidifier hydraulic circuit connection reference).

The flywheel naturally also guarantees normal operation of MAGIS COMBO V2 with systems divided into zones (therefore, with variable water content in circulation).

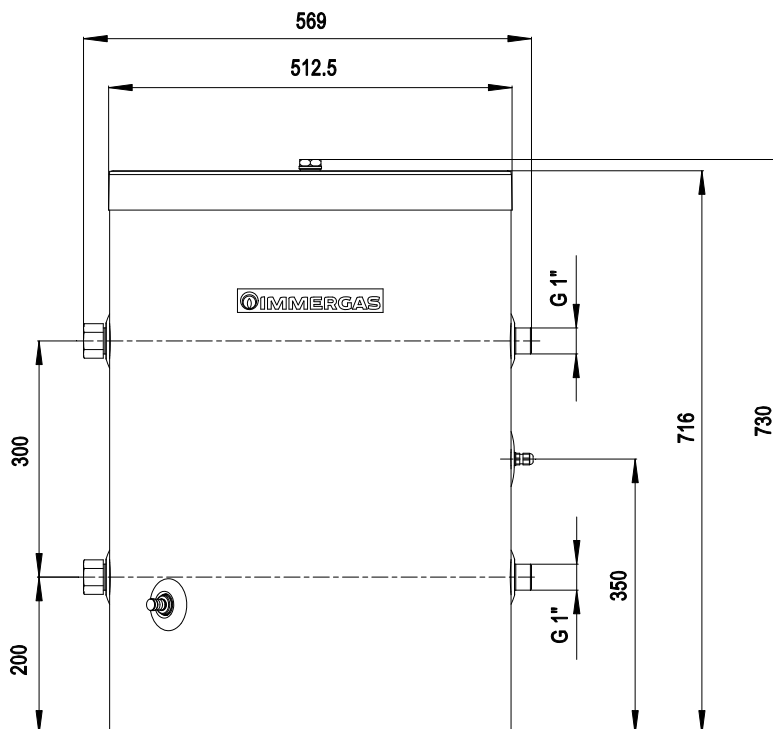
Improved operation with the thermal flywheel is obtained, for example, with fan coils used in cooling mode (a condition in which the flow temperature is very low and significant heat load changes vary according to the number of active fan coils).

MAIN FEATURES:

- Stainless steel cylindrical storage tank Ø 415 with 75-litre capacity;
The inertial storage tanks are fully insulated with 50 mm thick insulating material, complete with on-view PVC coating;
- For practical connection, the inertial storage tank has 4 M connections of G 1" and two plugs for unused fittings;
- G 1/2" draining valve located at the bottom;
- G 1/2" fitting including cap on the top of the inertial storage tank for possible air vent;
- There is a probe point;
- A kit is available (optional) consisting of a bracket with 4 plugs to be able to hang it on the wall;
- Any check valves on other connections must be provided separately;
- Thanks to the 4 connections present, the storage tank can also be used as hydraulic separator, as well as thermal flywheel.

41.1

75-LITRE INERTIAL STORAGE TANK (CodE 3.027288)



TECHNICAL DATA:

- Max. operating temperature = 90 °C
- Max. operating pressure = 3 bar
- Effective capacity = 77 litres
- Full weight = 95 kg
- Insulating thermal conductivity +20 °C = 0,038 W/(m•K)
- No.4 G 1" side connections



Number	KIP-16669/G	Replaces	—
Issue date	29-09-2020	Contract number	I6700
Due date	28-09-2030	Scope	(EU) 2016/426 (9 March 2016)
Report number	2001328/4	Module	B (Type testing)
PIN	0476CR1328		

EU TYPE-EXAMINATION CERTIFICATE (GAR)

Kiwa Cermet Italia declares that the central heating condensing boiler, type(s):

MAGIS COMBO V2 Indoor Unit
MAGIS COMBO PLUS V2 indoor unit

Manufacturer

Immergas S.p.A.
Via Cisa Ligure, 95
42041, Brescello (RE), Italy

Meet the essential requirements as described in the
Regulation (EU) 2016/426 relating to appliances burning gaseous fuels.

Reference standard: EN 15502-1:2012+A1:2015, EN 15502-2-1:2012+A1:2016

This certificate is only valid in combination with the appendix to this certificate, where specific information and/or conditions are given.

CERTIFICATE

Kiwa Cermet Italia S.p.A.
 Company with sole shareholder, subject to the management and coordination of Kiwa Italia Holding Srl
 Via Cadriano, 23
 40057 Granarolo dell'Emilia (BO)
 Local unit
 Via Treviso 32/34
 31020 San Vendemiano (TV)
 Tel +39. 0438 411755
 Fax +39.0438 22428
 E-mail: info@kiwacermet.it
www.kiwa.it
www.kiwacermet.it

GASTEC

Chief Operating Officer
Giampiero Belcredi

Digitally signed by:BELCREDI GIAMPIERO
 Date:01/10/2020 10:03:37





EU DECLARATION OF CONFORMITY

(N.800520/UE)

(3.030603) - AUDAX PRO 4 V2

(3.030604) - AUDAX PRO 6 V2

(3.030605) - AUDAX PRO 9 V2

Name and address of the manufacturer or of its legal representative:

IMMERGAS S.p.A via Cisa Ligure 95, 42041 Brescello RE Italy

This declaration of conformity is issued under the exclusive responsibility of the manufacturer.

Object of the declaration:

CONDENSING UNIT

The purpose of the above declaration complies with the relevant Union harmonisation legislation:

**EC DIRECTIVE ELECTROMAGNETIC COMPATIBILITY 2014/30/UE;
EC DIRECTIVE LOW VOL TAGE 2014/35/UE EC DIRECTIVE RoHS 2011/65/EU;
PED 2014/68/EU REG. EU 813/2013;
EC ECODESIGN DIRECTIVE 2009/125/EC;**

Reference to the relevant harmonised standards or references to the other technical specifications in relation to which conformity is declared:

EN 55014-1:2017 - EN 55014-2:2015
EN 61000-3-2:2014 - EN 61000-3-3:2013
EN 60335-1:2012 +A11:2014 +A13:2017
EN 60335-2-40:2003 +A11:2004 +A12:2005 +A1:2006 +A2:2009 +A13:2012
EN 62233:2008
EN 14276-1:2006 +A1:2011 ; EN 14276-2:2007 +A1:2011
EN 13445-1:2014 +A1:2014; EN 13445-2:2014 +A2:2018; EN 13445-5:2014
EN 378-2:2016
EN 14825:2016; EN 14511:2013; EN 12102:2017
EN 50581:2012

Signed in the name and on behalf of:

IMMERGAS S.p.A.

Brescello 21/04/2020


Vice President Alessandro CARRA

Vice President
IMMERGAS S.p.A.
CARRA Alessandro



IMMERGAS S.p.A. a socio unico - Via Cisa Ligure, 95 - 42041 Brescello (RE) Italia - Cap. Soc. Euro 7.251.348 i.v. - Reg. Imprese di RE n. 150292
P.I. e C.F. 00932830359 - Tel. [+39] 0522 680711 r.a. - Fax [+39] 0522 011 Generali & Amministrativa 680397 - Comm. Italia 689102 - Comm. It. Estero 689178
Ricerca e Sviluppo 680720 - Assistenza 680726 - Ordini e Spedizioni 680790 - Ufficio Acquisti 680878 - Magazzino Ricambi 680808 | immergas.com

APPENDIX A): LOGIC OF OPERATION AND ADJUSTMENT

42

MAGIS COMBO V2 OPERATING PRINCIPLES

The control logic of a MAGIS COMBO V2 systems, establishes various operating situations described below:

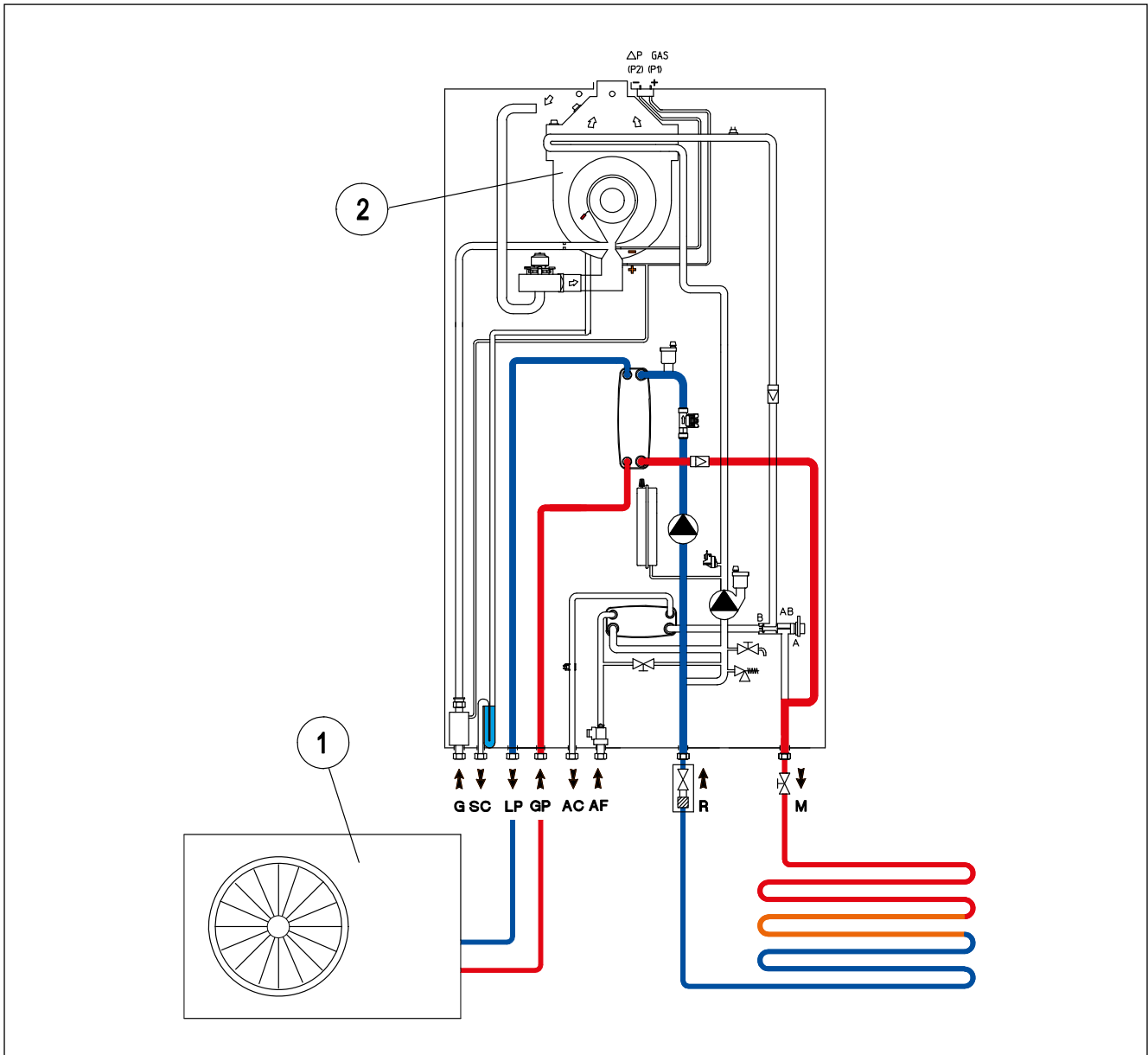
CENTRAL HEATING MODE

When operating in winter heating mode the switching logic between condensation generator and Heat Pump circuit can be selected between 2 options:

- With variable external switching temperature according to the flow temperature (“AUTO” mode);
- With fixed external switching temperature (“MANUAL” mode).

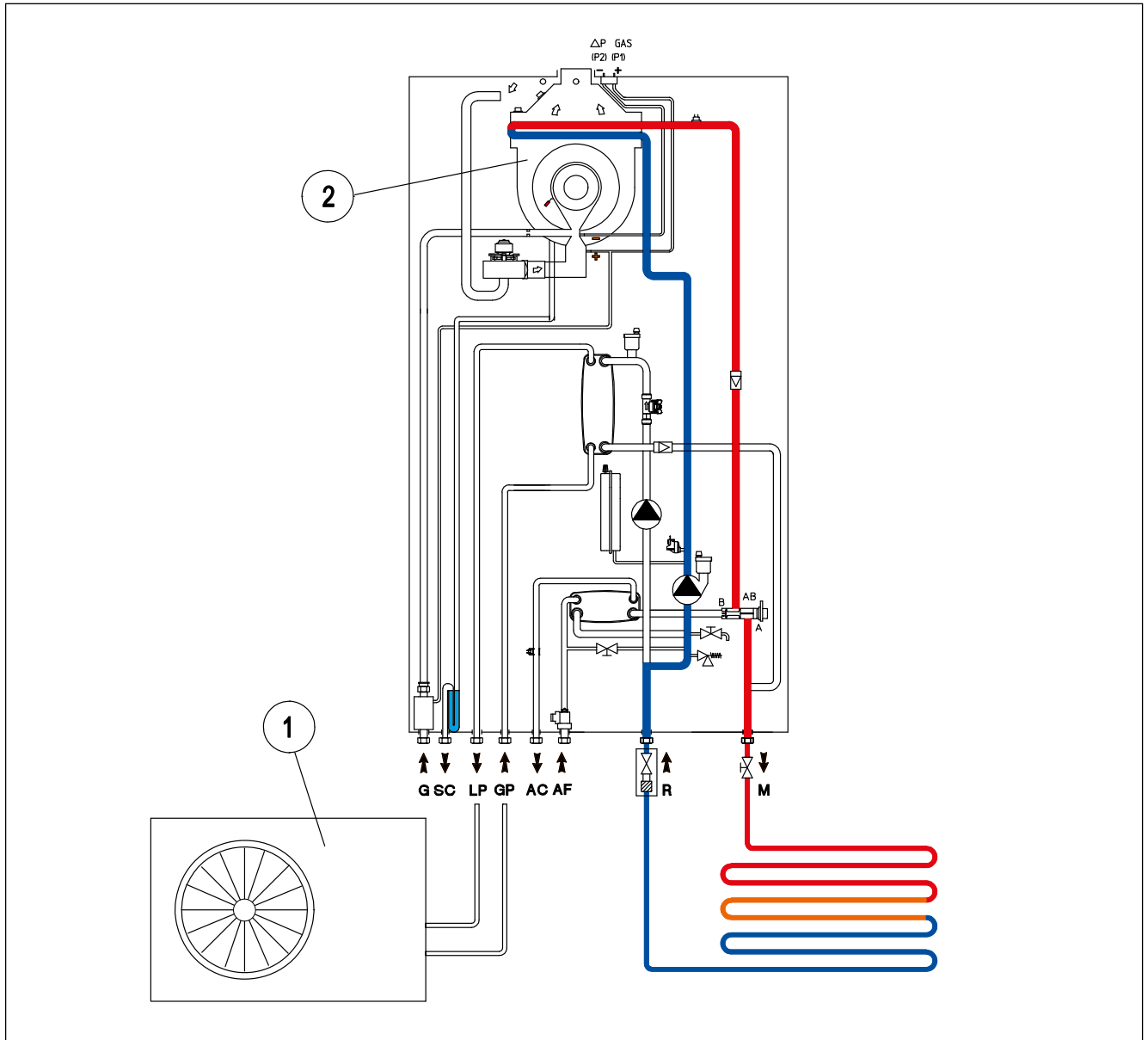
The diagram below shows the winter heating operation via the Heat Pump (1).

In these conditions, the condensation generator (2) may simultaneously activate to heat the D.H.W.



MAGIS COMBO V2

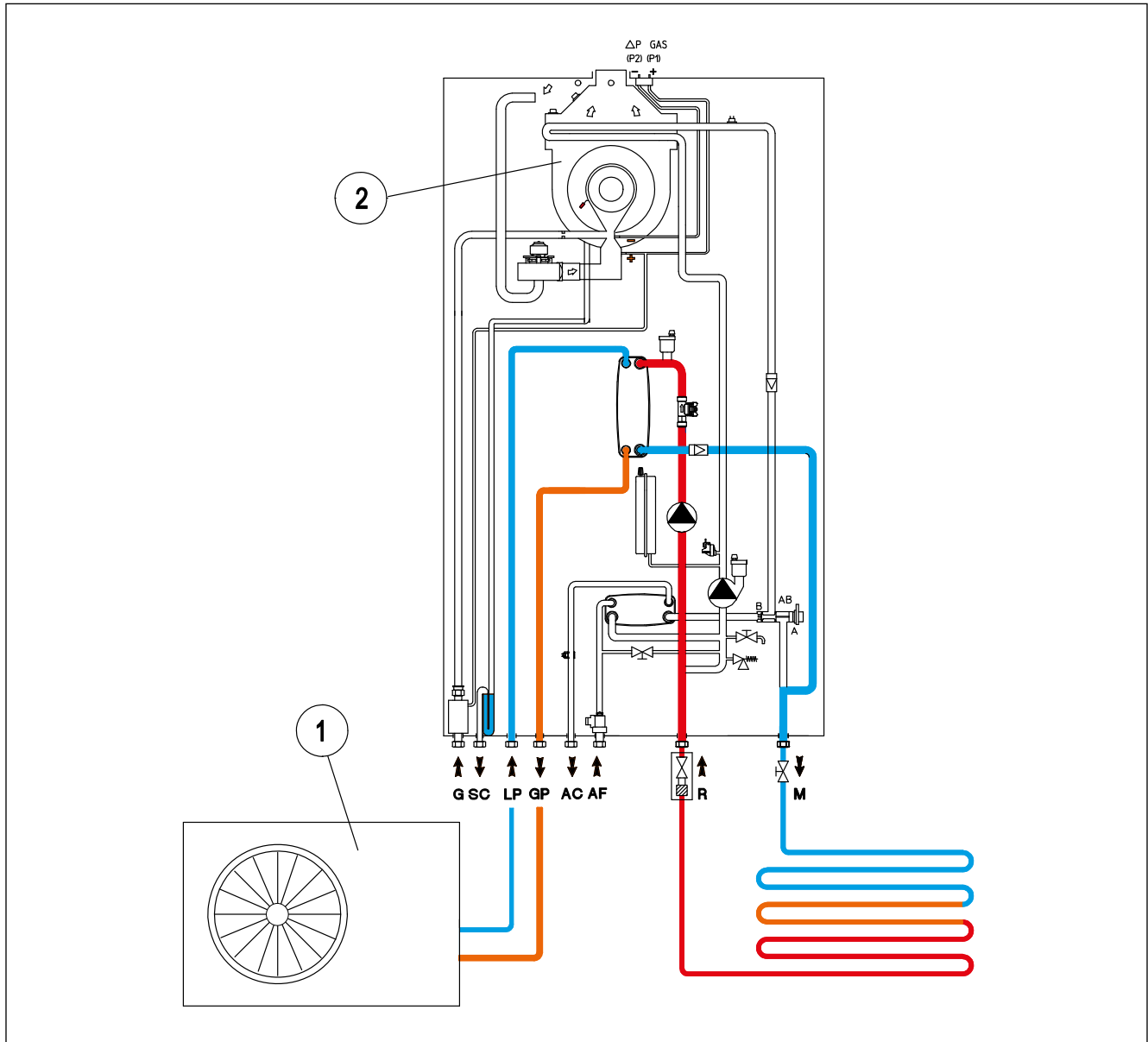
If the Heat Pump (1) is unable to bring the system to temperature within a certain time, the condensation generator (2) activates (see diagram below) and the Heat Pump is disabled.



COOLING MODE

During the summer season only the Heat Pump (1) will operate the system circuit.

It occurs through the activation of the cooling circuit, according to the diagram below.



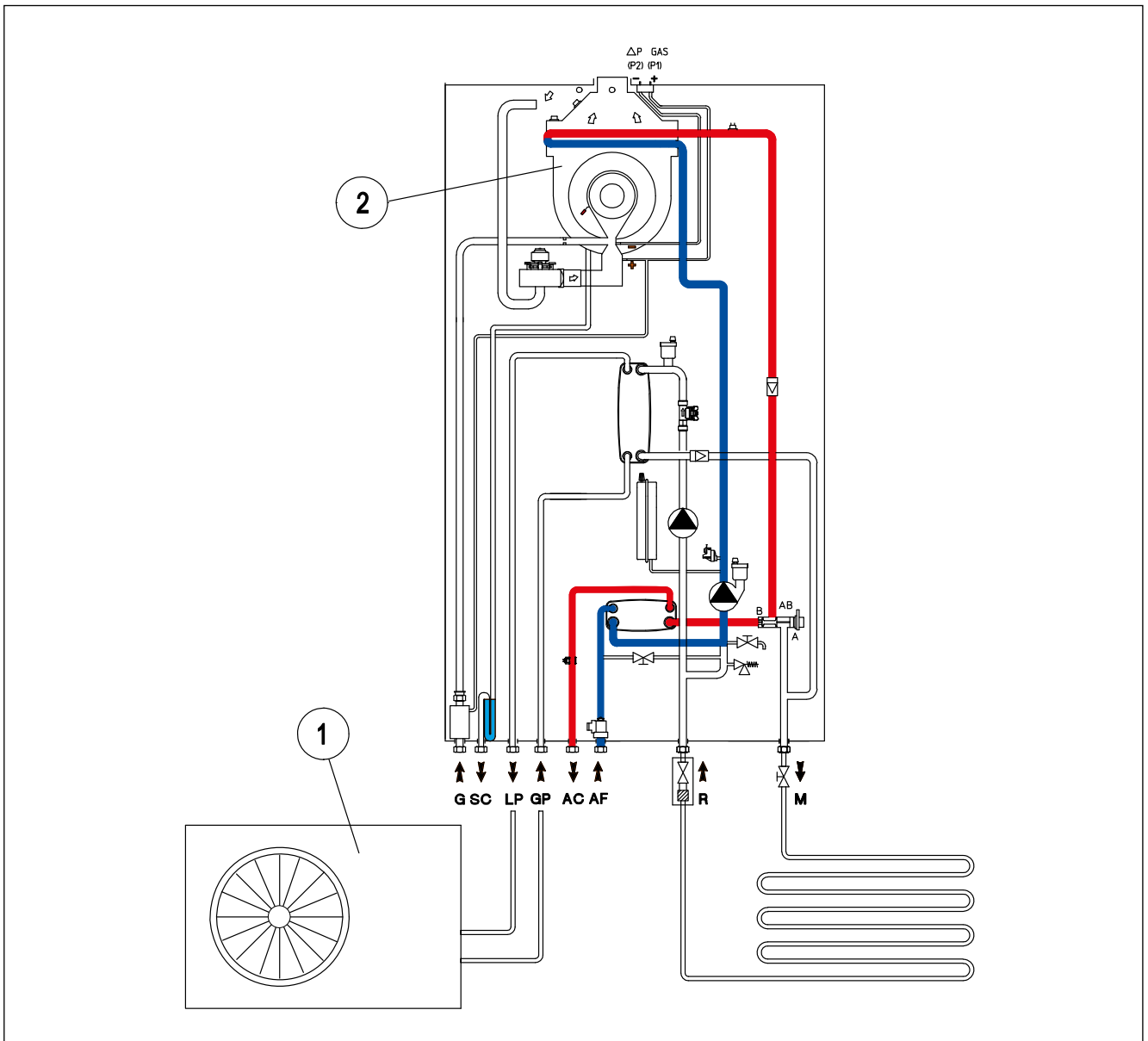
MAGIS COMBO V2

D.H.W. MODE

In Instant MAGIS COMBO V2 the D.H.W. is heated by the condensation generator (2) (obviously because of exchanged power).

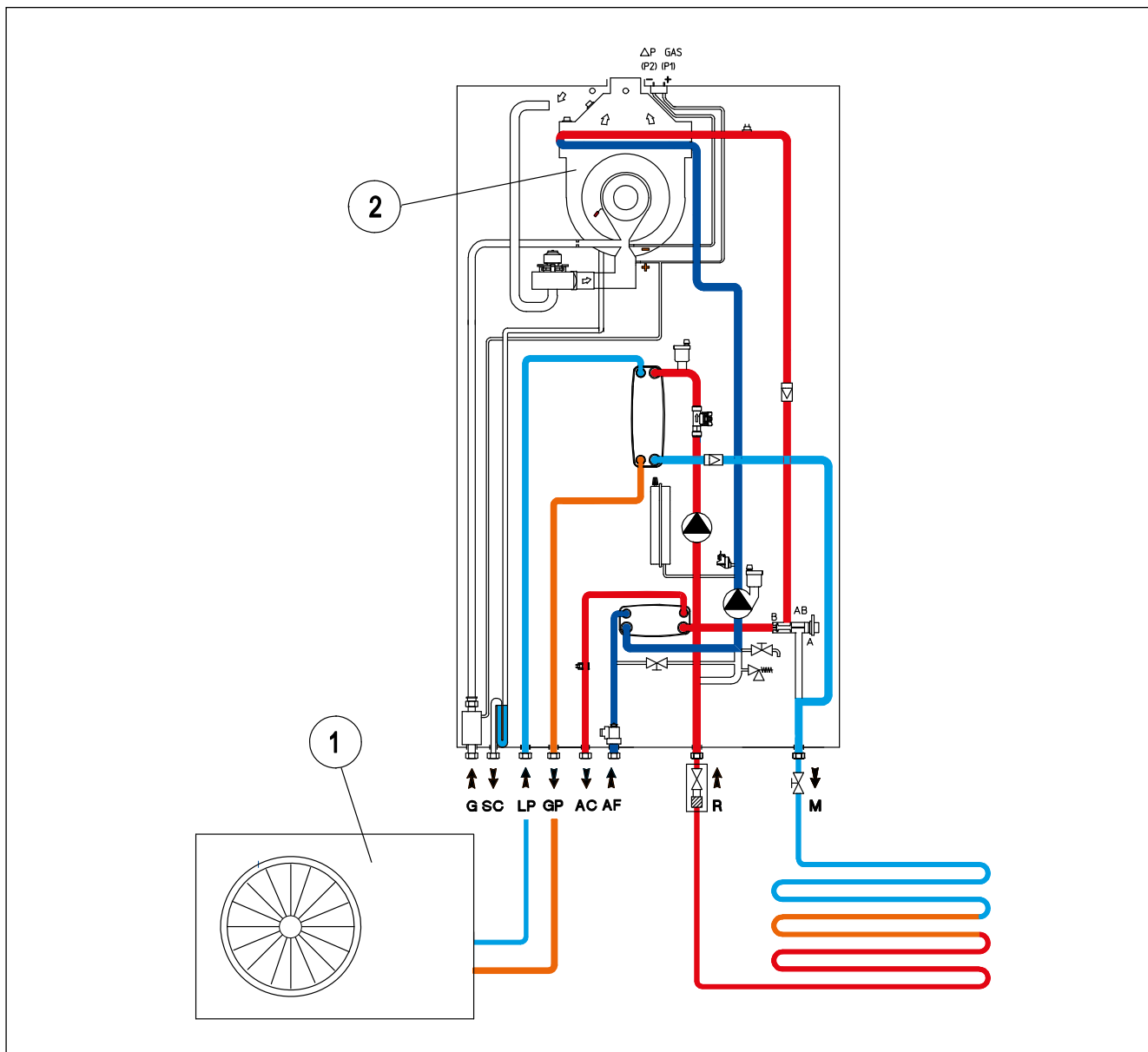
The Instant MAGIS COMBO V2 can be coupled with a separate storage tank unit, by connection in series: this also takes advantage of the Thermal Solar Systems as Renewable Energy Source (RES), to supplement the production of D.H.W.

Or you can use a heat pump water heater (e.g. RAPAX), to supplement the production of D.H.W., again to exploit the RES.



D.H.W. MODE + COOLING MODE

Given that in the Instant version it is the condensation generator (2) to ensure the production of D.H.W., in the summer the Heat Pump (1) can simultaneously activate to ensure cooling the rooms.



MAGIS COMBO PLUS V2

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MAGIS COMBO PLUS V2 OPERATING PRINCIPLES

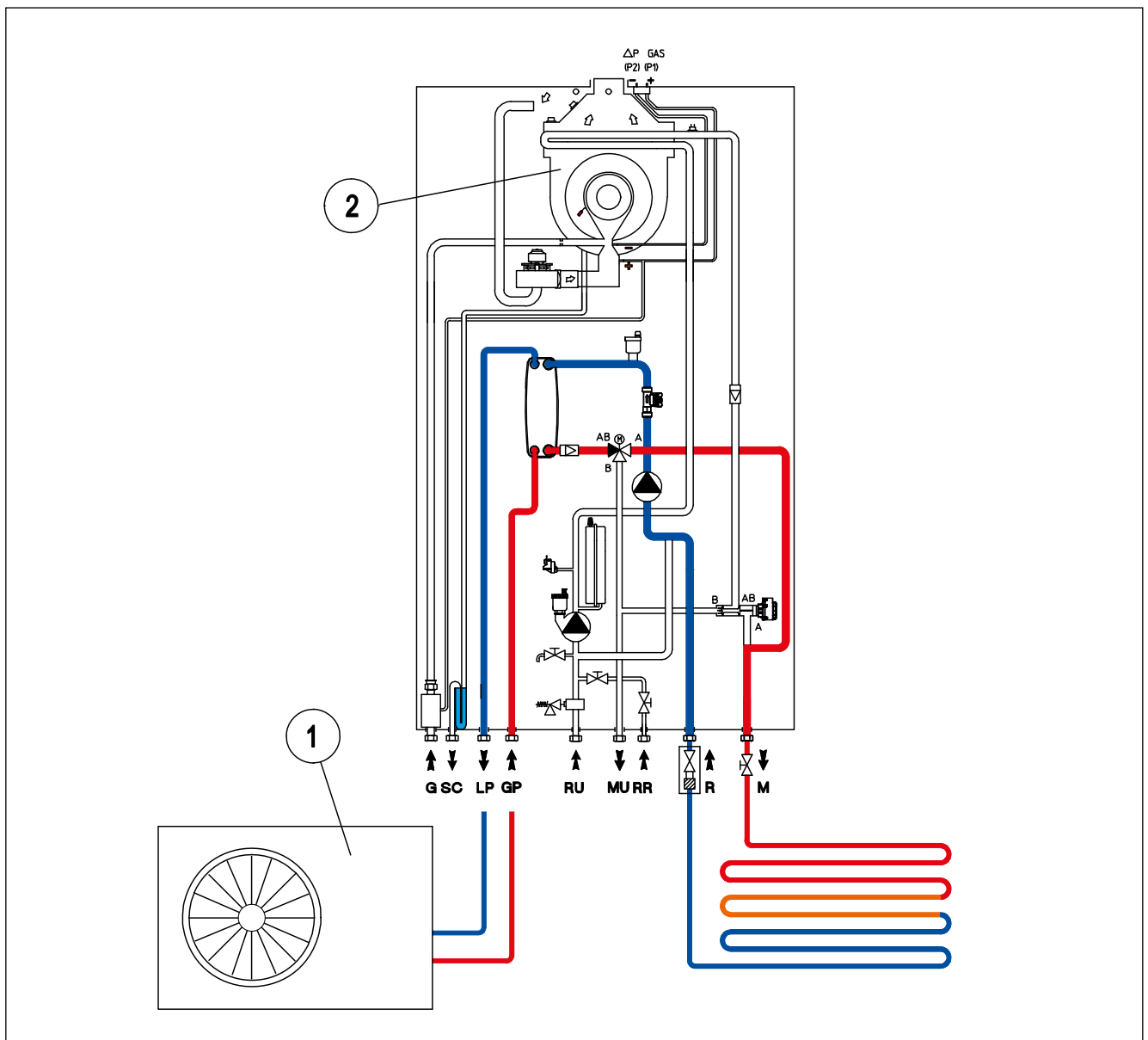
The control logic of a MAGIS COMBO PLUS V2 systems, establishes various operating situations described below:

CENTRAL HEATING MODE

When operating in winter heating mode the switching logic between condensation generator and Heat Pump circuit can be selected between 2 options:

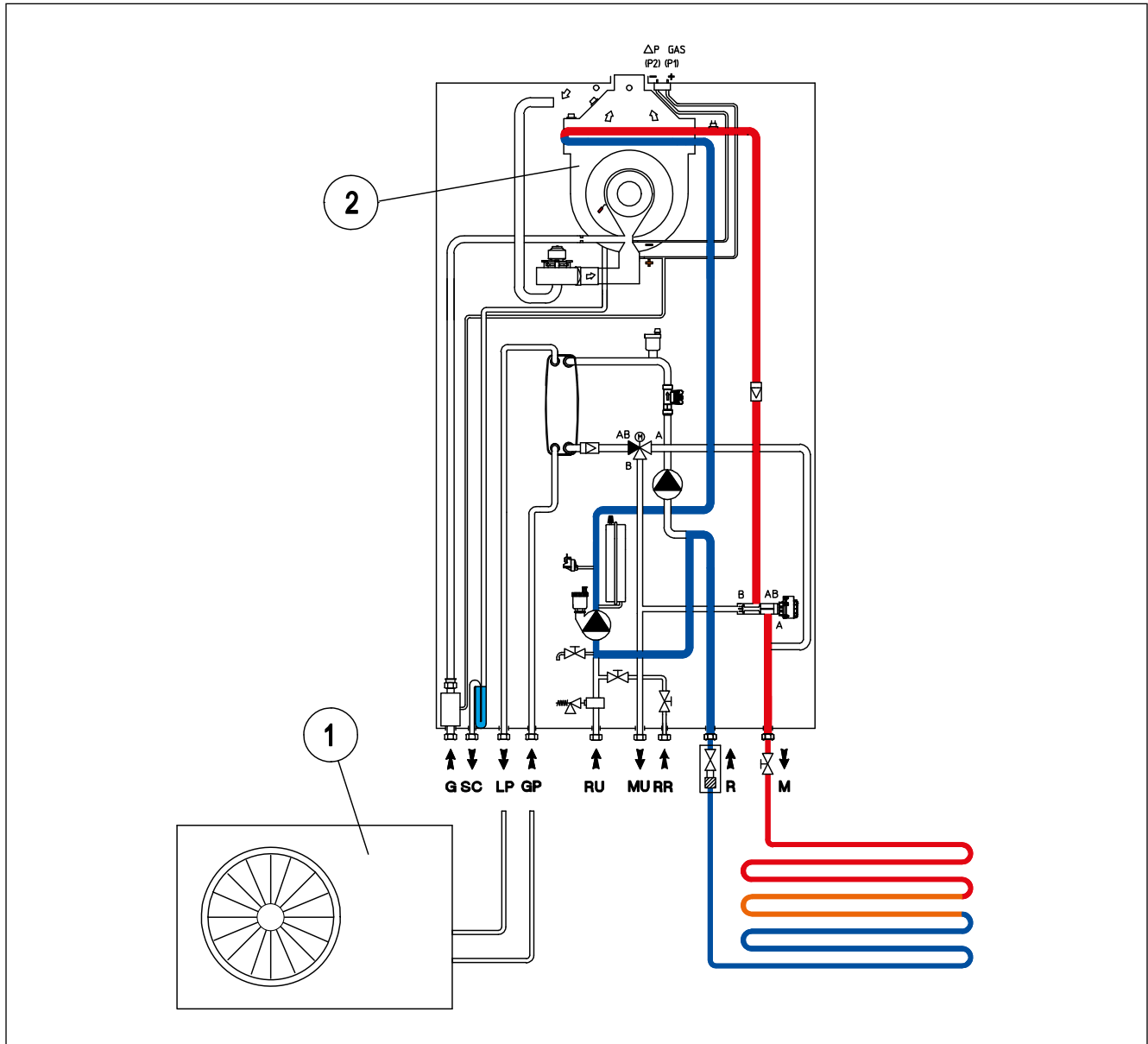
- With variable external switching temperature according to the flow temperature (“AUTO” mode);
- With fixed external switching temperature (“MANUAL” mode).

The diagram below shows the winter heating operation via the Heat Pump (1).



MAGIS COMBO PLUS V2

If the Heat Pump (1) is unable to bring the system to temperature within a certain time, the condensation generator (2) activates (see diagram below) and the Heat Pump is disabled.

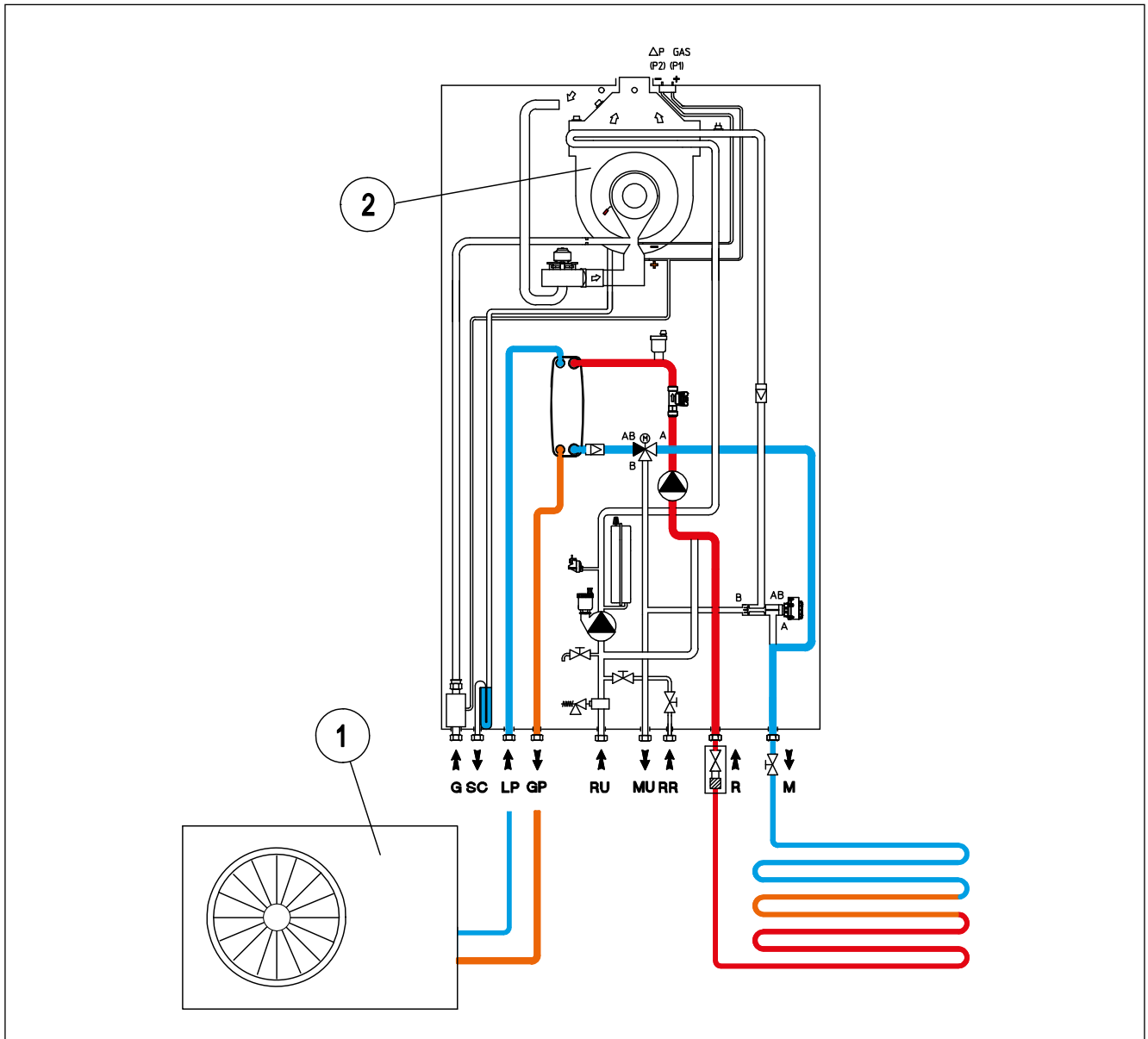


MAGIS COMBO PLUS V2

COOLING MODE

During the summer season only the Heat Pump (1) will operate the system circuit.

It occurs through the activation of the cooling circuit, according to the diagram below.



D.H.W. MODE

In D.H.W. operation, the condensation generator and Heat Pump work on a single boiler flow/return circuit.

At operating logic level, you can choose between 2 options on parameter I 08 from the INTEGRATION MENU:

I 08 = Simultaneous D.H.W. = OFF;

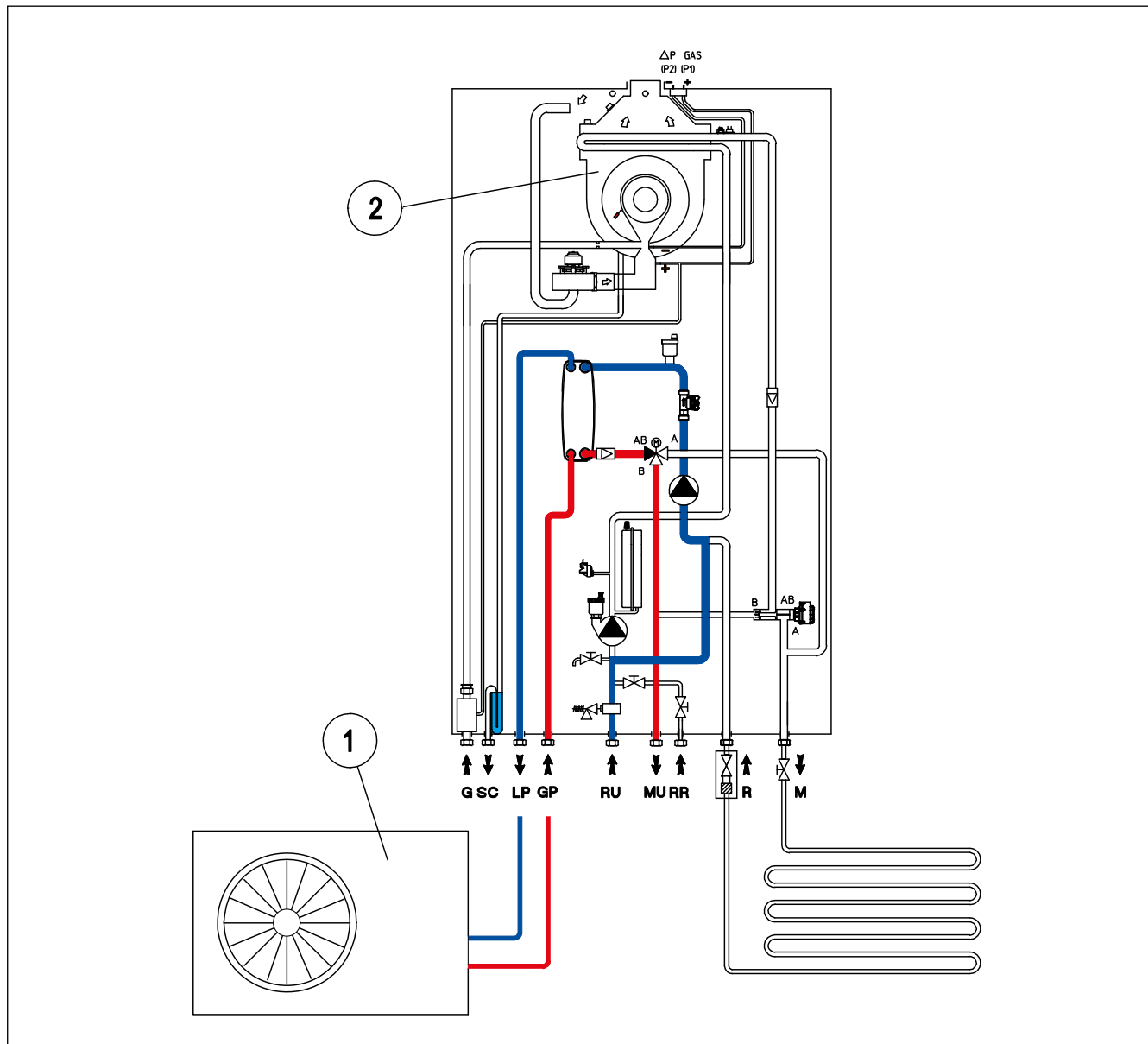
I 08 = Simultaneous D.H.W. = ON.

When setting OFF, in case of simultaneous system and D.H.W. request, the D.H.W. has priority; only one generator works (based on outdoor temperature and time of integration) - the following example shows operation with Heat Pump (1).

This setting is suitable, for example, for high inertia ai conditioning systems (e.g. radiant panels); it also favours the energy performances of the machine, making appropriate use of the Heat Pump (1) for domestic hot water.

The Heat Pump (1) is enabled and starts to work at a flow temperature of +10°C with respect to the DHW set (e.g. DHW set 45°C, the Heat Pump goes to the flow of 55°C), of course if the Heat Pump (1) is not able to bring the domestic hot water to temperature within a specific time, or if a domestic hot water set value greater than 55 °C is set, the condensing generator (2) is activated (see next figure).

The logic for activating the generators (AUTO mode) based on the outdoor temperatures also applies to operation in the DHW mode.



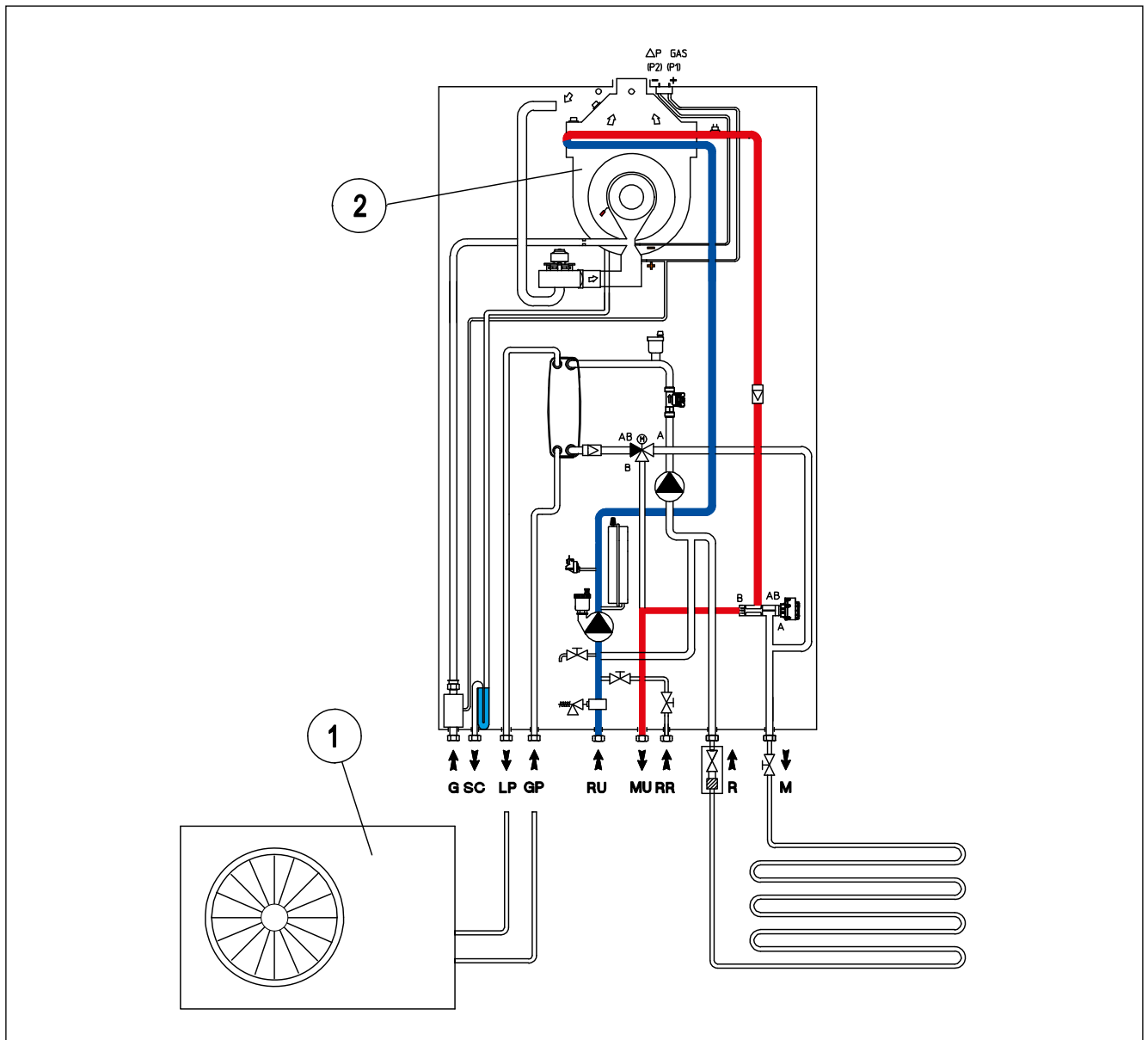
MAGIS COMBO PLUS V2

Whereas, by setting parameter I 08 from the INTEGRATION MENU:

I 08 = Simultaneous D.H.W. = ON, in case of simultaneous system and D.H.W. request, both requests are run together (both generators will be active).

In case of simultaneous request, this favours the operation of the condensation generator (2) for D.H.W. (the water circulates according to the following diagram).

This mode is useful, for example, with low inertia air conditioning systems (e.g. fan coils).



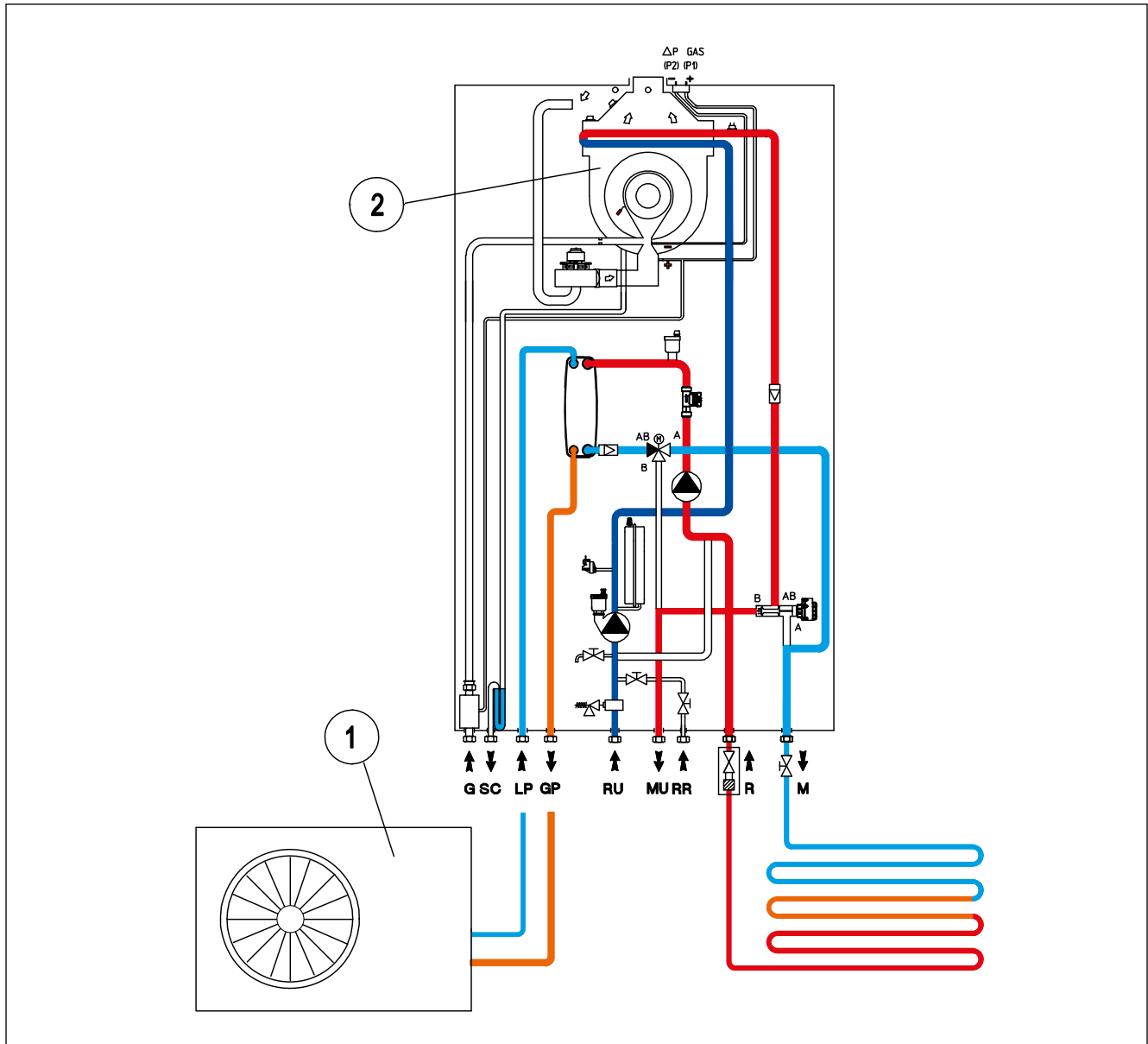
MAGIS COMBO PLUS V2

D.H.W. MODE + COOLING MODE

Example of operation by setting parameter I 08 from the INTEGRATION MENU:

I 08 = Simultaneous D.H.W. = ON, in the summer in cooling mode: The condensation generator (2) ensures the production of D.H.W.;

The Heat Pump (1) cools the rooms.



MAGIS COMBO V2

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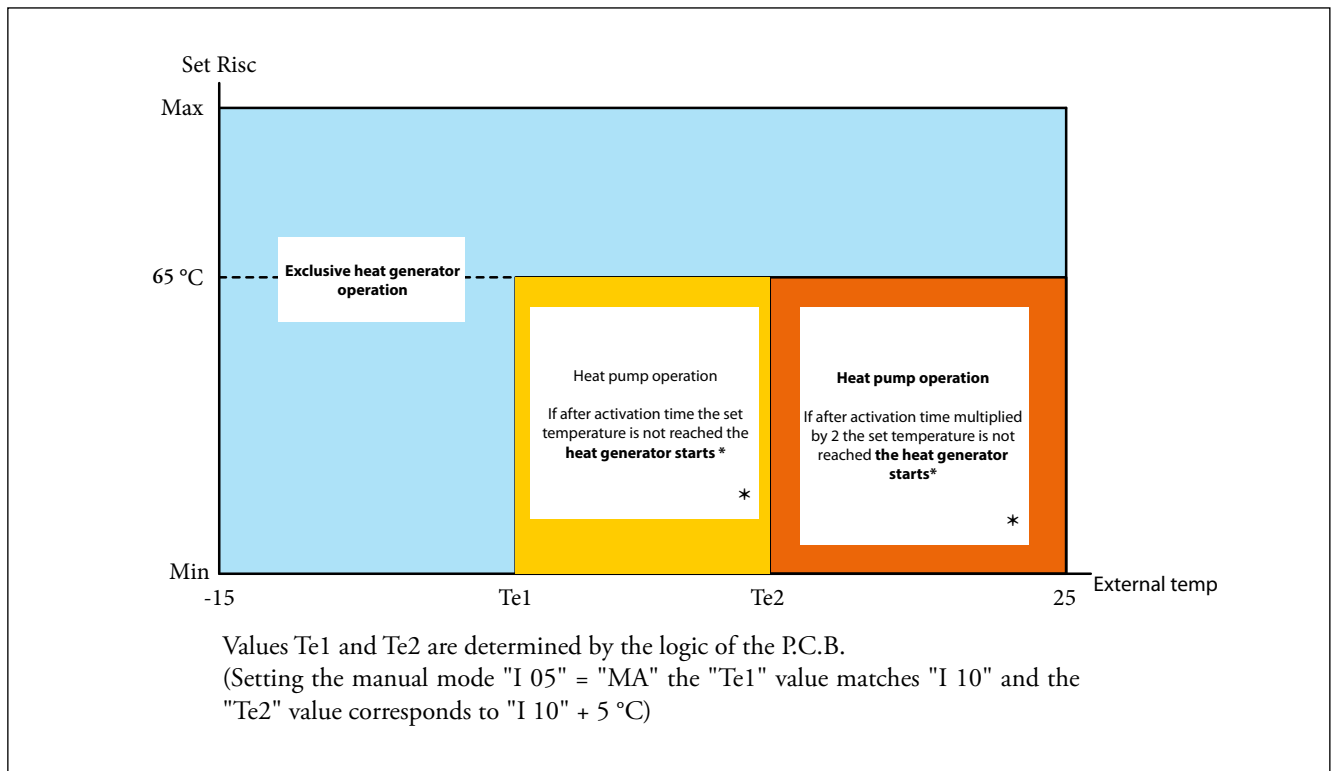
OPERATING PRINCIPLES: ACTIVATION LOGIC

OPERATION IN ROOM CENTRAL HEATING MODE:

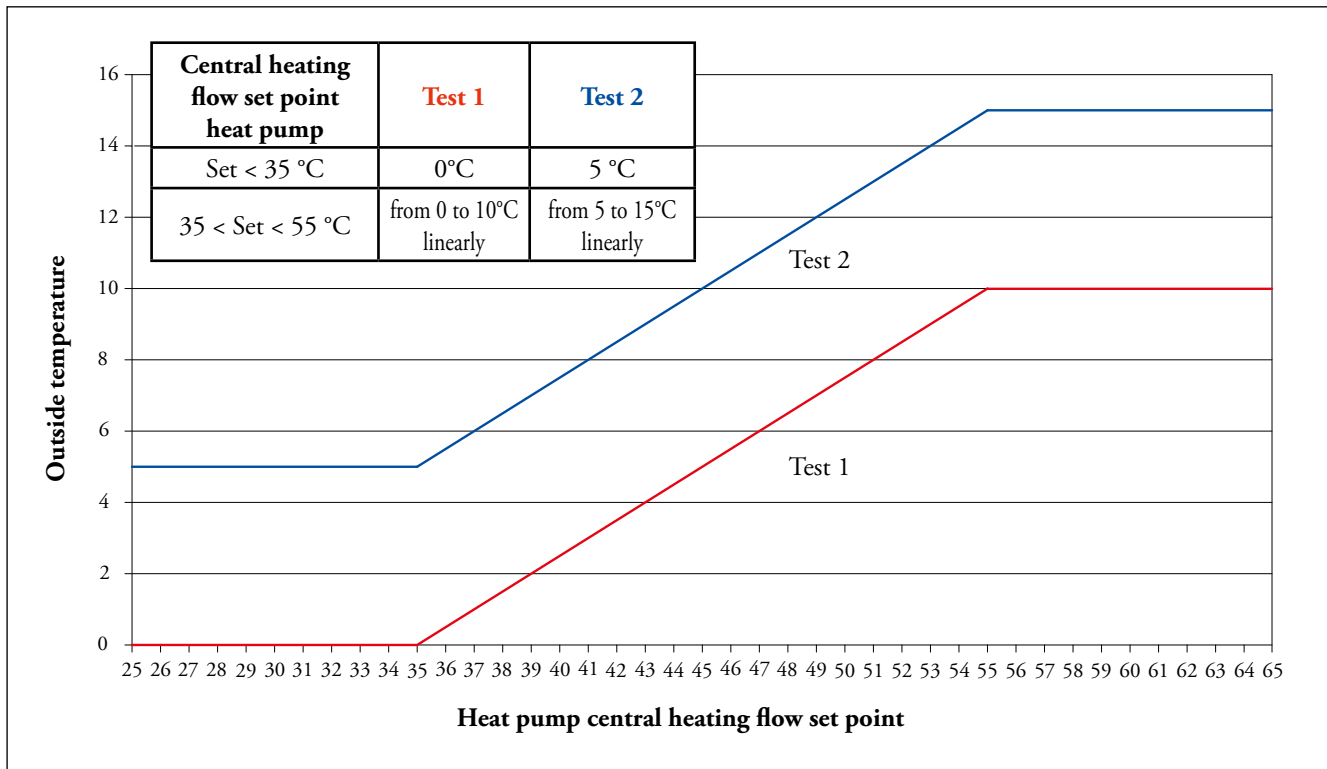
Following a request during the room heating mode, the electronics decide, according to the external temperature, whether to activate the heat pump, or (with cold outdoor temperatures) the condensation generator.

NOTE: Based on the outdoor temperature, if MAGIS COMBO V2 requires a flow temperature higher than 65 °C, the condensation generator is directly activated.

* The heat pump will then restart, thereby creating an alternating mechanism between the two generators.



Outdoor temperatures that determine the activation logic of the generators (AUTO mode).



The MAGIS COMBO V2 menu contains - among others - the INTEGRATION MENU with the following parameters:

INTEGRATION MENU			
Id	Parameter	Range	Default
I 02	System integration enabling	OFF - AL	AL
I 04	Central heating max. wait time	1 - 255 minutes (1 minute steps)	30
I 05	Integration activation mode	AU - MA	AU
I 07	Activation band	0 - 10 °C	4
I 08	Simultaneous D.H.W.	OFF - ON	ON
I 10	System manual activation temperature	-25 - +35 °C	2 °C

PAR. I 02 - System integration enabling - (settable AL - OFF, default value AL). Using this function, you can enable the condensation generator operation (A) to integrate thermal system central heating.

N.B.: With OFF Mode, always and only the Heat Pump will run, even in case of Heat Pump block, the condensation generator does NEVER activates for system integration.

PAR. I 04 - Central heating max. wait time - (settable from 1 - 255 minutes, default value 30 minutes). Establishes the reference time of the activation and deactivation timing of the central heating integration.

PAR. I 05 - Integration activation mode - (AU - MA settable, default value AU). Establishes when to activate the condensation generator, in "MA" mode (manual) it is activated an a fixed external temperature and is equivalent to the value set with parameter "I 06", in "AU" mode (automatic) the condensation generator is activated according to the operating conditions.

PAR. I 07 - Activation band - (settable from 0°C ÷ 10°C, default value 4°C). It is a hysteresis that is used to establish the achievement of the heating set-point, avoiding the activation of the condensation generator.

PAR. I 08 - Simultaneous D.H.W. (settable ON - OFF, default value ON). Enables the simultaneous operation in D.H.W. mode and room air conditioning mode. For instant MAGIS COMBO V2 the simultaneousness is always guaranteed regardless of what is set.

PAR. I 10 - System manual activation temperature - (settable from -25°C ÷ +35°C, default value +2°C). Establishes the outdoor temperature under which the central heating condensation generator is enabled.

It is possible to also use MAGIS COMBO V2 only as heat generator (if AUDAX PRO V2 is installed at a later time), setting the "A11" parameter at OFF. The management logic now becomes totally similar to that of a "normal" condensation generator.

MAGIS COMBO V2

45 INTRODUCTION WITH COMMENTARY TO THE DIAGRAMS: MAIN APPLICATIONS

46-46.1 Diagram with MAGIS COMBO V2 (instant) and 2 zone kit (1 direct and 1 mixed) + Thermal Solar System

Description of winter functioning:

- CH phase active:

One or more room sensors activate the consent during the winter phase.

When operating in winter heating mode the switching logic between condensation generator and heat pump circuit can be selected between 2 options:

- 1) With variable external switching temperature according to the flow temperature ("AUTO" mode);
- 2) With fixed external switching temperature ("MANUAL" mode).

If the heat pump is unable to bring the system to temperature within a certain time, the condensation generator activates.

The logic of intelligent activation of the generators (heat pump and condensation generator) is integrated in the MAGIS COMBO V2 electronics.

- DHW phase:

In Instant MAGIS COMBO V2 the D.H.W. is heated by the boiler (obviously because of exchanged power).

The diagram shows the coupling of a separate storage tank unit, by connection in series: this also takes advantage of the Solar as RES, to supplement the production of D.H.W.

47-47.1 Diagram with MAGIS COMBO PLUS V2 and 2 zone kit (1 direct and 1 mixed) + Photovoltaic

Description of winter functioning:

- Central heating mode active:

One or more room sensors activate the consent during the winter phase.

When operating in winter heating mode the switching logic between condensation generator and heat pump circuit can be selected between 2 options:

- 1) With variable external switching temperature according to the flow temperature ("AUTO" mode);
- 2) With fixed external switching temperature ("MANUAL" mode).

If the heat pump is unable to bring the system to temperature within a certain time, the condensation generator activates.

The logic of intelligent activation of the generators (heat pump and condensation generator) is integrated in the MAGIS COMBO PLUS V2 electronics.

- DHW phase:

In D.H.W. operation, condensation generator and heat pump work on a single boiler flow/return circuit.

At operating logic level, you can choose between 2 options:

- 1) SIMULTANEOUS D.H.W. = OFF (standard);
- 2) SIMULTANEOUS D.H.W. = ON.

Leaving OFF, in case of simultaneous system and D.H.W. request, the D.H.W. has priority; only one generator works (based on outdoor temperature and time of integration).

This setting is suitable for high inertia air conditioning system (e.g. radiant floor panels).

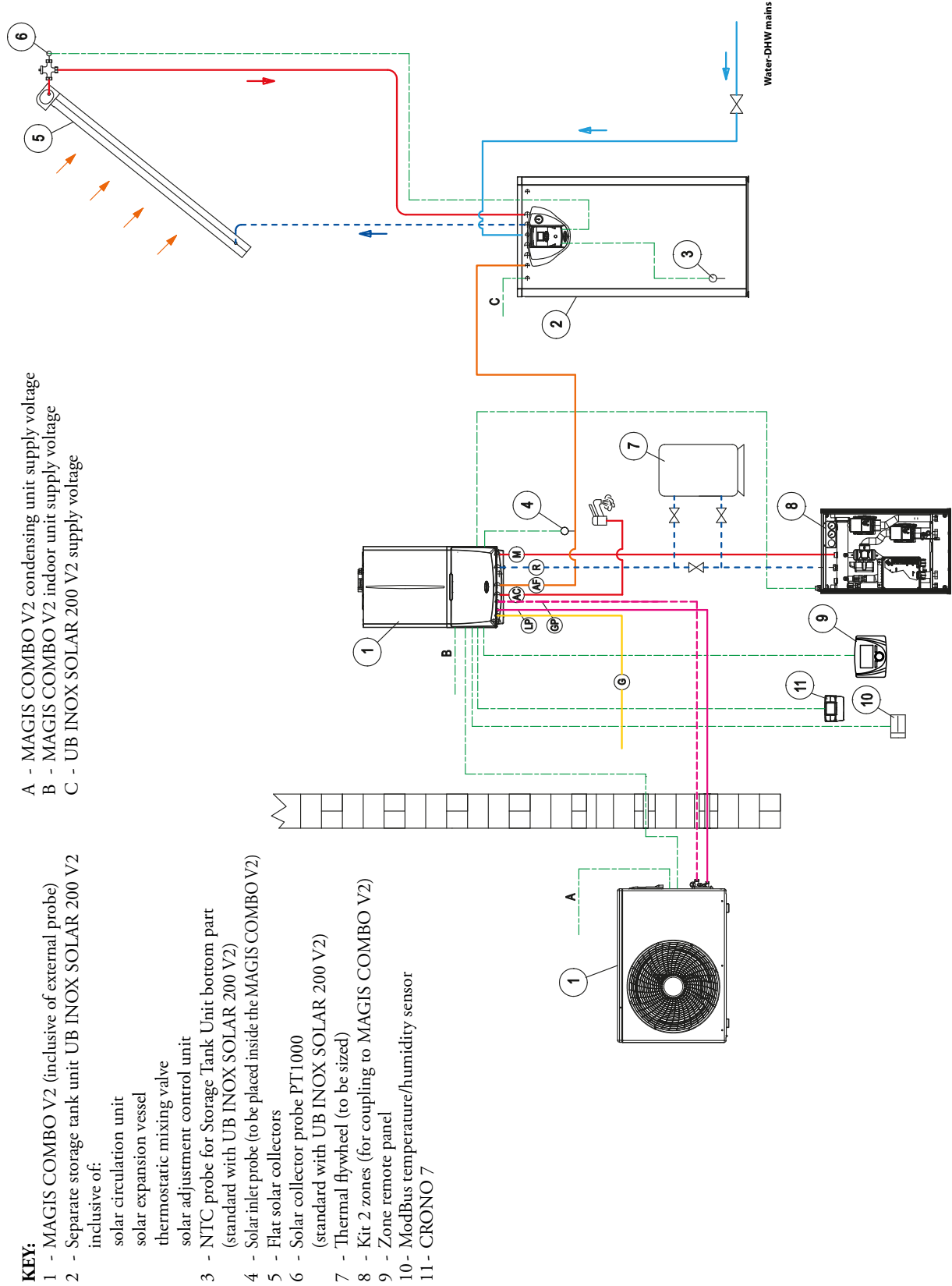
- Photovoltaic contact:

If the photovoltaic contact (contact "S 39") is closed, the minimum convenience outdoor temperature (automatically) is temporarily set to -25°C and the condensation generator is forced off; only the maximum operating time remains active.

If no system requests are in progress, the system forces the heating of a storage tank for the production of DHW at maximum storage temperature (if the storage tank is present e.g. MAGIS COMBO PLUS V2), then resumes any system requests occurred in the meantime.

46

**HYDRAULIC DIAGRAM: MAGIS COMBO V2 (INSTANT)
+ KIT 2 ZONES (1 DIRECT AND 1 MIXED) + THERMAL SOLAR SYSTEMS**



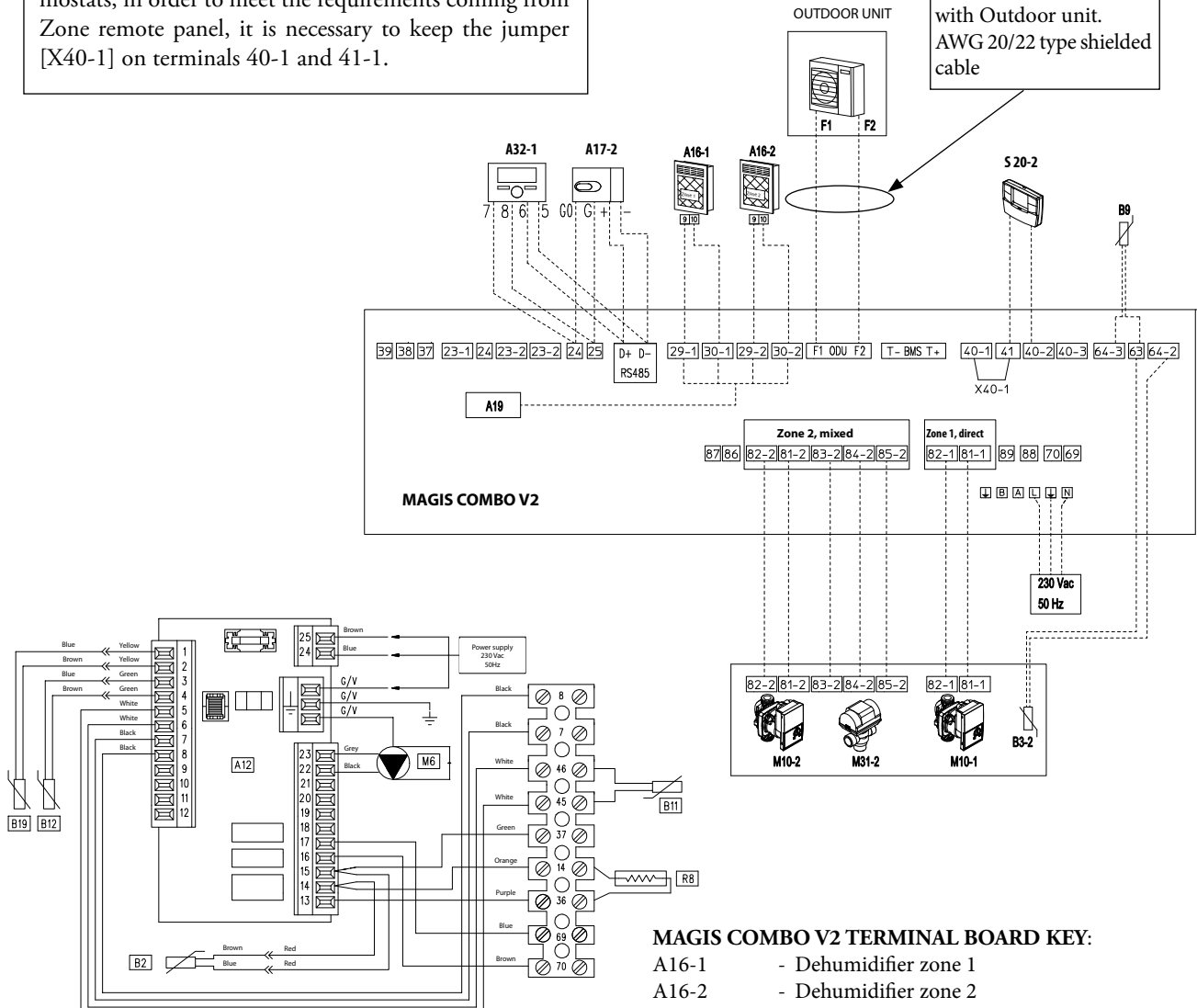
NOTE: this diagram is an example. It is also required to convey the condensate drain of the heat pump and condensation generator. In order to guarantee proper Heat Pump operation, each system must consider inserting a bypass to guarantee a minimum flow rate of 500 l/h.

MAGIS COMBO V2

46.1 WIRING DIAGRAM: MAGIS COMBO V2 (INSTANT) + KIT 2 ZONES (1 DIRECT AND 1 MIXED) + THERMAL SOLAR SYSTEMS

NOTE: please note that, in a setting without room thermostats, in order to meet the requirements coming from Zone remote panel, it is necessary to keep the jumper [X40-1] on terminals 40-1 and 41-1.

BUS communication connection Indoor unit with Outdoor unit.
AWG 20/22 type shielded cable



SOLAR CONTROL UNIT KEY:

- A12 - Solar management control unit
- B2 - NTC DHW probe (not used)
- B11 - Solar collector probe PT1000
- B12 - Solar storage tank probe NTC
- B19 - Domestic inhibition probe NTC (not used)
- M6 - Solar circuit pump
- R8 - Storage tank resistance (not used)

MAGIS COMBO V2 TERMINAL BOARD KEY:

- A16-1 - Dehumidifier zone 1
- A16-2 - Dehumidifier zone 2
- A17-2 - Zone 2 ModBus humidity sensor
- A32-1 - Zone 2 remote panel
- A19 - 2-relay board
- B9 - Solar inlet probe
- B3-2 - Zone 2 mixed flow probe
- M10-1 - Zone 1 circulator pump
- M10-2 - Zone 2 circulator pump
- M31-2 - Zone 2 mixing valve
- S20-1 - CRONO 7
- F1/F2 (ODU) - AUDAX PRO V2 communication Bus

NOTE: To control the 2 dehumidifiers provide the 2-relay board kit (A19) (optional) code 3.026302.

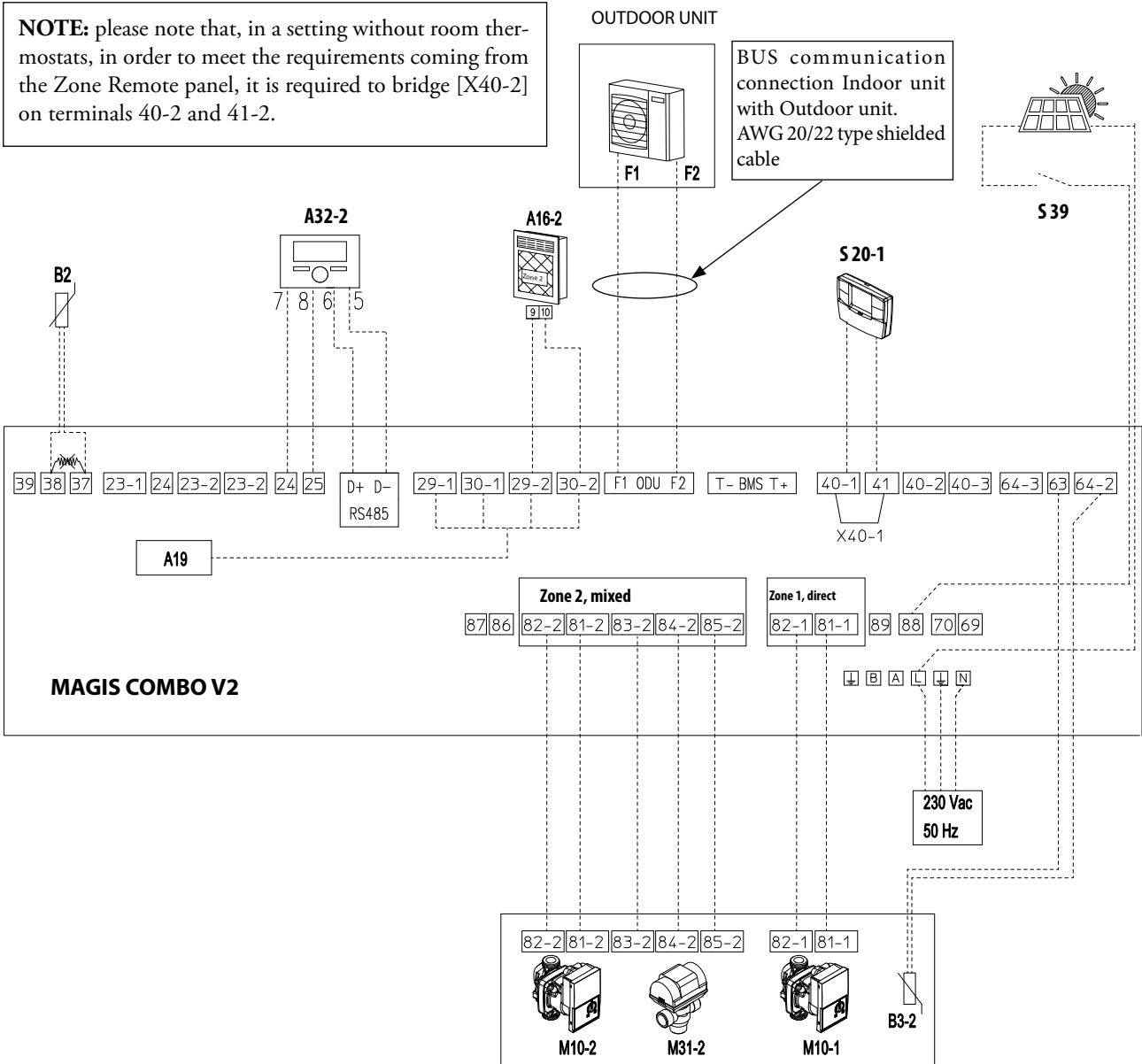
When using the ModBus temperature and humidity sensor kit (code 3.030992), in order to make temperature requests it is necessary to match a room thermostat in the zone as it is not possible to set the room set directly from the control panel.

MAGIS COMBO PLUS V2

47.1

WIRING DIAGRAM: MAGIS COMBO PLUS V2 + KIT 2 ZONES (1 DIRECT AND 1 MIXED) + PHOTOVOLTAIC

NOTE: please note that, in a setting without room thermostats, in order to meet the requirements coming from the Zone Remote panel, it is required to bridge [X40-2] on terminals 40-2 and 41-2.



KEY:

- A16-2 - Dehumidifier zone 2
- A32-2 - Zone 2 remote panel
- A19 - 2-relay board
- B2 - Storage tank temperature probe
- B3-2 - Zone 2 mixed flow probe
- M10-1 - Zone 1 circulator pump
- M10-2 - Zone 2 circulator pump
- M31-2 - Zone 2 mixing valve
- S20-1 - CRONO 7
- S39 - Photovoltaic inlet contact
- F2/F1 (ODU) - AUDAX PRO V2 communication Bus

NOTE: To control the 2 dehumidifiers provide the 2-relay board kit (A19) (optional) code 3.026302.

When using the ModBus temperature and humidity sensor kit (code 3.030992), in order to make temperature requests it is necessary to match a room thermostat in the zone as it is not possible to set the room set directly from the control panel.

MAGIS COMBO PLUS V2 RECESSED

APPENDIX B): MAGIS COMBO PLUS V2 RECESSED

48 MAGIS COMBO PLUS V2 RECESSED IN SOLAR CONTAINER COMBO

Recessed solution ideal for new buildings achieving high energy classes, it allows to recover living space thanks to the retractable installation.

The complete system consists of separate units that can be purchased separately and installed at different times:

- SOLAR CONTAINER COMBO (Recess frame);
- MAGIS COMBO PLUS V2 in its various power;
- Hydronic kit for MAGIS COMBO PLUS V2 recessed;
- Additional 2nd mixed zone kit for MAGIS COMBO PLUS V2 recessed (optional);
- Zone hydraulic connections kit for vertical, horizontal or rear outlet (optional);
- Air intake and flue exhaust kit (optional);
- Solar system coupling kit (optional).



SOLAR CONTAINER COMBO
(Recessed frame) code 3.028187

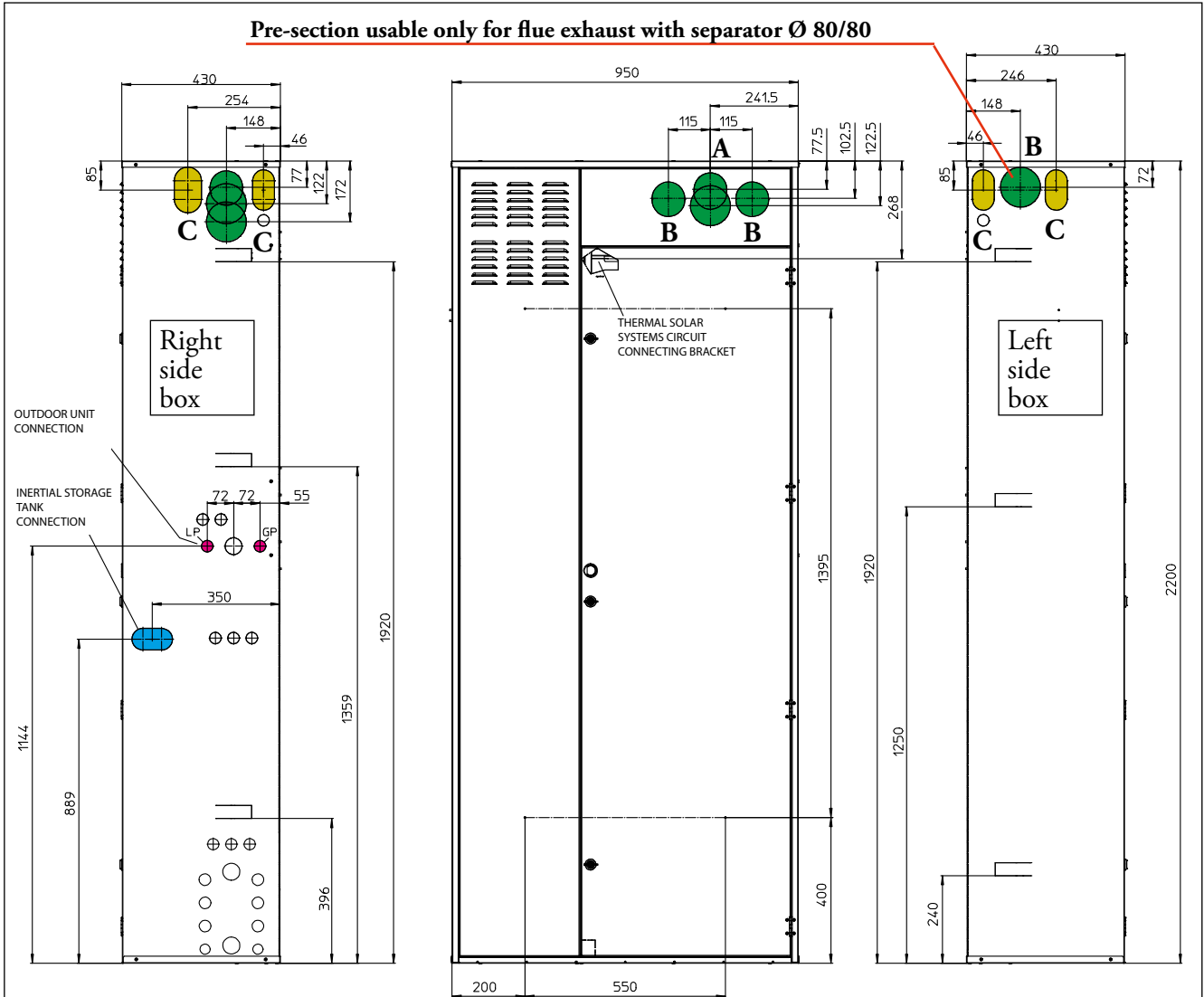
- INSTALLABLE MODELS:**
- 1) MAGIS COMBO 4 PLUS V2 code 3.030615
 - 2) MAGIS COMBO 4 PLUS V2 LPG code 3.030615LPG
 - 3) MAGIS COMBO 6 PLUS V2 code 3.030617
 - 4) MAGIS COMBO 6 PLUS V2 LPG code 3.030617LPG
 - 5) MAGIS COMBO 9 PLUS V2 code 3.030619
 - 6) MAGIS COMBO 9 PLUS V2 LPG code 3.030619LPG

HYDRONIC KIT FOR MAGIS COMBO PLUS code 3.027867

MAGIS COMBO PLUS V2 RECESSED

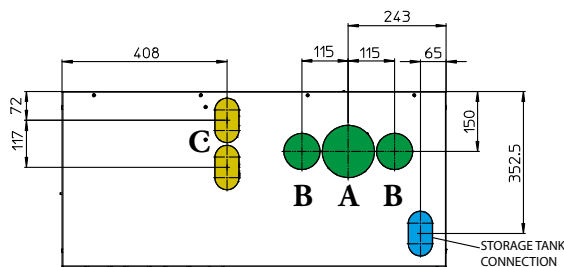
48.1 SOLAR CONTAINER COMBO RECESSED FRAME DIMENSIONS CODE 3.028187

Height 2200 mm	Width 950 mm	Depth 430 mm	Flue pre-sections \varnothing 60/100* mm or divided \varnothing 80/80 mm
-----------------------	---------------------	---------------------	---



The R32 gas connections of the MAGIS COMBO PLUS V2 system (LP and GP) can only be made on the right side of the frame (for recessed inertial storage tanks use the BLUE pre-sections - see dedicated chapter).

*For flue exhaust, **only** use the GREEN pre-sections, in the configuration with \varnothing 60/100 horizontal concentric pipe it is always necessary to use the \varnothing 60/100 flanged stub pipe kit (cod. 3.012086) and the curve kit \varnothing 60/100 (code 3.012093)



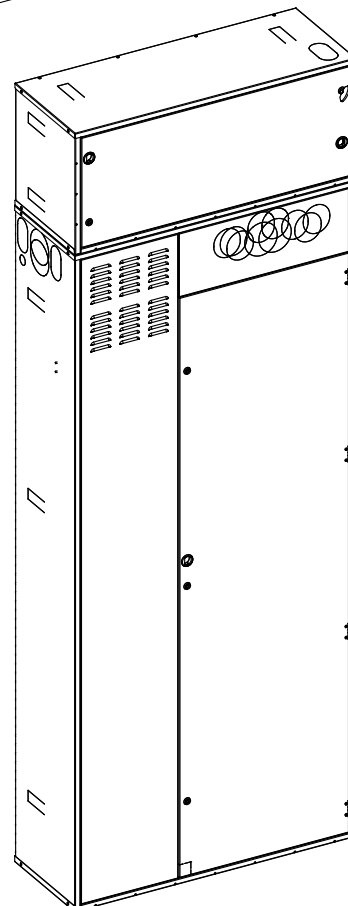
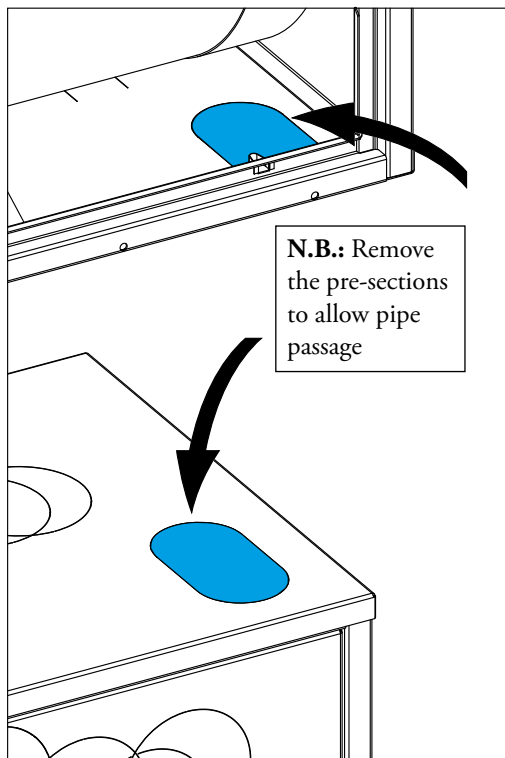
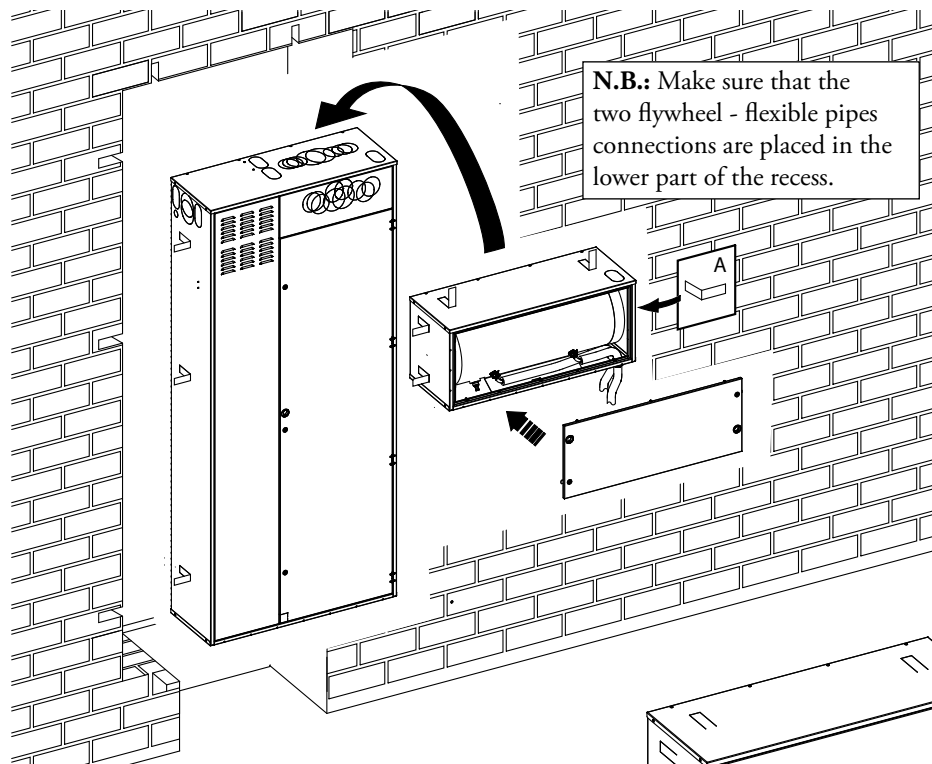
N.B.: System connection unit (OPTIONAL)

- A = Intake/exhaust
- B = Intake
- C = YELLOW pre-sections for flow and return pipes to the solar collector (Optional solar kit)

MAGIS COMBO PLUS V2 RECESSED

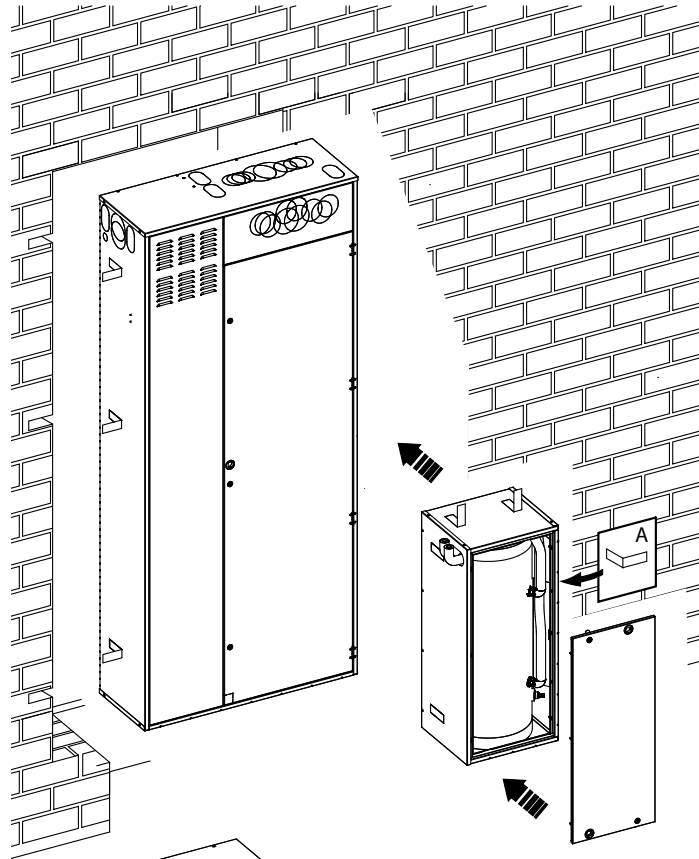
48.2 50-LITRE RECESSED INERTIAL STORAGE TANK KIT INSTALLATION CODE 3.027709 ON THE TOP OF THE COMBO SOLAR CONTAINER

NOTE: With the installation of the inertial storage tank in the upper part of the recessed frame, it is NOT possible to exit with the flue from the upper part of the frame, the pre-section on the LEFT side can only be used for flue exhaust with separator Ø 80/80, suction can take place on the right/rear or front side. The connection of the solar thermal pipes must also be done only on the right or left and NOT on the upper part.

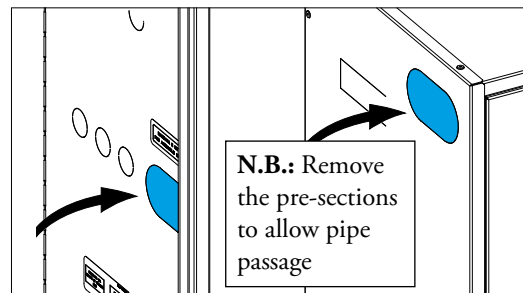
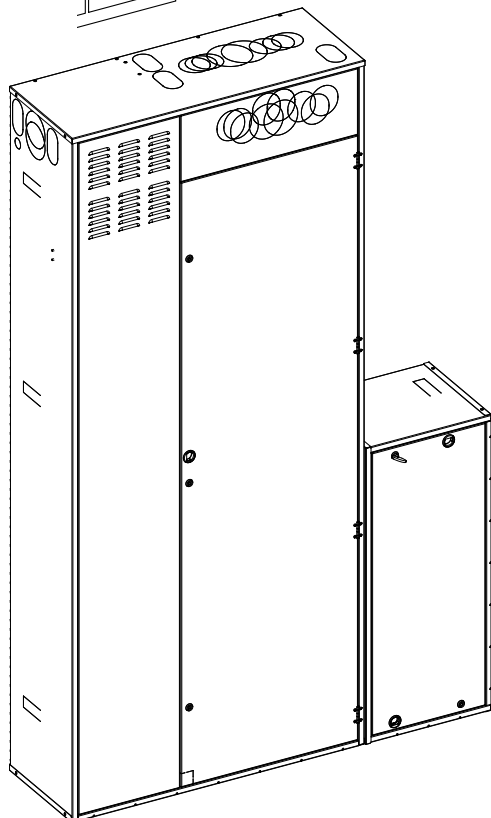


MAGIS COMBO PLUS V2 RECESSED

48.3 50-LITRE RECESSED INERTIAL STORAGE TANK KIT INSTALLATION CODE 3.027709 ON THE SIDE OF THE COMBO SOLAR CONTAINER



N.B.: Make sure that the two flywheel - flexible pipes connections are placed on the right side of the recess.



N.B.: Remove the pre-sections to allow pipe passage

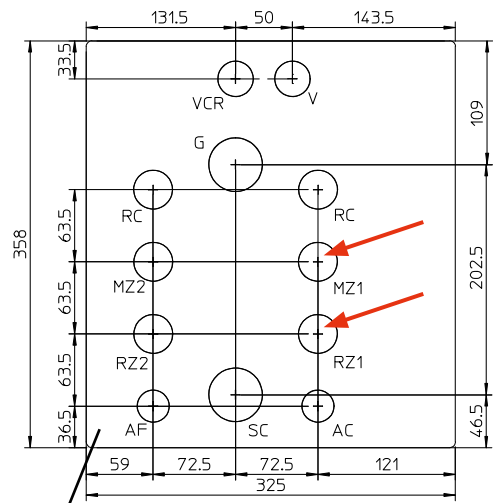
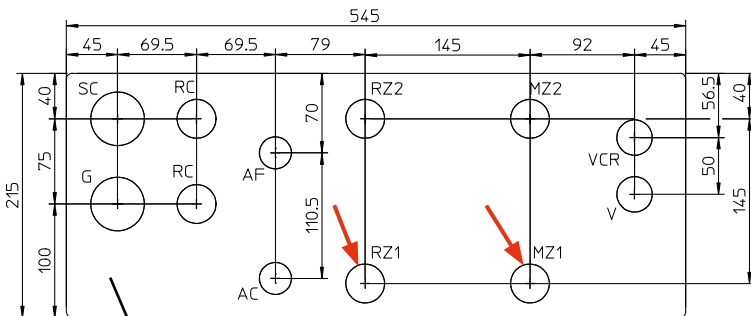
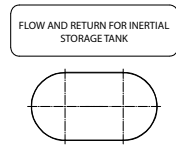
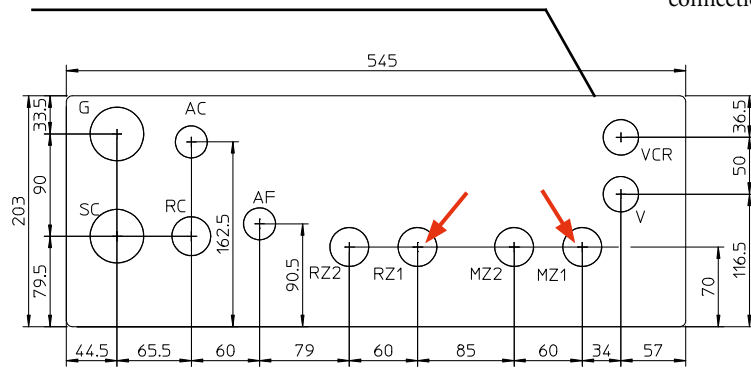
MAGIS COMBO PLUS V2 RECESSED

48.4 SOLAR CONTAINER COMBO RECESSED FRAME CONNECTIONS

REAR CONNECTION

Rear connection unit kit - code 3.020630

NOTE: For the hydronic kit code 3.027867 use the connections highlighted with the red arrow. ←



LOWER CONNECTION

Vertical connection unit kit - code 3.020575

RH SIDE CONNECTION

Horizontal connection unit kit code 3.020574

N.B.: OPTIONAL connection unit

	Ist Zone	IInd Zone
Kit 3.027867	Direct zone	NOT PRESENT
Kit 3.027865	Direct zone	Mixed zone

KEY:

- SC - Condensate drain
- V - Electrical connection
- VCR - Remote Panel Connection
- RC - DHW (Domestic hot water) recirculation

MAGIS COMBO PLUS RECESSED					Gas for thermal module	RC
Refrigerant R32 LP		1/4" (6.35 mm)				
Refrigerant R32 GP		5/8" (15.88 mm)			1/2"	1/2"
3.027867	Flow Ist zone MZ1	Return Ist zone RZ1			Hot Outlet AC	Cold Input AF
	3/4"	3/4"			1/2"	1/2"
3.027865			Flow IInd zone MZ2	Return IInd zone RZ2	Hot Outlet AC	Cold Input AF
			3/4"	3/4"	1/2"	1/2"

MAGIS COMBO PLUS V2 RECESSED

48.5 HYDRONIC KIT FOR MAGIS COMBO PLUS RECESSED CODE 3.027867

Hydronic kit for MAGIS COMBO PLUS V2 recessed to manage a direct zone, consisting of:

- 160 litre high stratification stainless steel DHW storage tank, including side inspection flange, external insulation made of pressed mineral fibre panels and 15 mm thick expanded polystyrene panel near the hydraulic connections that place the boiler in class "C", 2 stainless steel coils placed respectively in the lower and upper parts of the storage tank connected together, 2 magnesium anodes and inlet and outlet connections for any solar kit (optional);
- anti-freeze protection unit including heating cable (50 W absorption);
- hydraulic distribution unit including:
 - hydraulic manifold;
 - 1 low consumption modulating pump for heating and cooling systems;
 - 8 litre domestic hot water expansion vessel;
 - 8 bar domestic hot water safety valve;
 - 1 analogue thermometer for reading the system flow temperature;
 - DHW thermostatic mixing valve;
- accessories for coupling with MAGIS COMBO PLUS V2 in container including connection piping, hydraulic and refrigerant gas fittings, wall-mounted support bracket inside the recessed frame, DHW probe;
- electrical wiring.

All components are insulated.

It is available in the following version (single code):

- **Hydronic kit for MAGIS COMBO PLUS in SOLAR CONTAINER COMBO** code 3.027867

It is possible to couple the following optional additional components:

- Antifreeze resistance kit up to -15 °C for thermal generator protection code 3.017324;
- DHW recirculation kit (does not include pump) code 3.026169, any clock/timer to activate the pump is to be provided separately;
- Inertial 50-litre recessed storage tank kit code 3.027709;
- Polyphosphate dispenser kit code 3.020628;
- Solar thermal system coupling kit code 3.024719.

The above kits are the main ones; additional accessories are available to complete the installation (see section on optional kits).



MAGIS COMBO PLUS V2 RECESSED

48.6 ADDITIONAL 2ND MIXED ZONE KIT FOR MAGIS COMBO PLUS CODE 3.027865

For more complex systems, where there is the need to manage systems with differentiated temperatures and/or divided into two distinct zones, it is possible to provide the additional 2nd mixed zone kit for recessed MAGIS COMBO PLUS V2, the kit consists of:

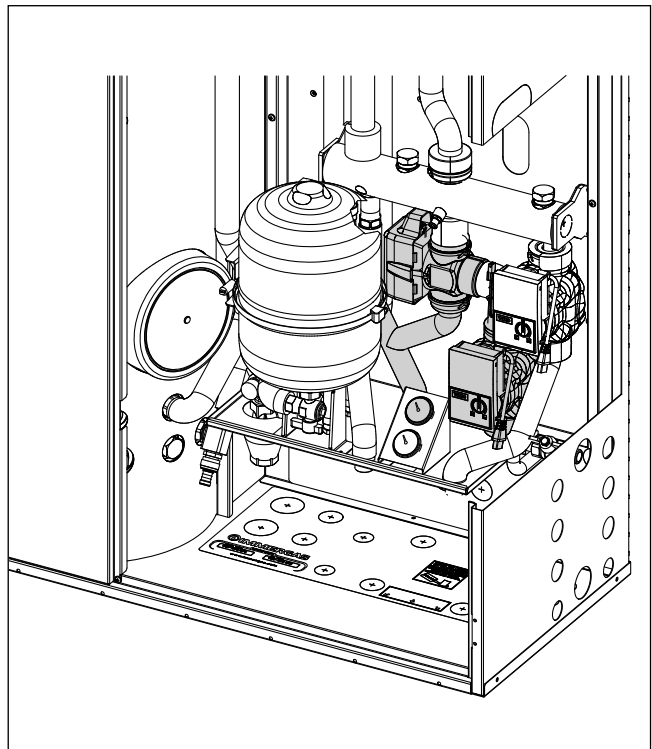
- 1 3-way mixing valve and hydraulic connection pipes;
- 1 low consumption modulating pump for heating and cooling systems;
- 1 flow probe;
- 1 overheating safety thermostat;
- 1 analogue thermometer for reading the system flow temperature;
- connection hydraulic fittings;
- electrical wiring.

With the acquisition of the outdoor temperature, the MAGIS COMBO PLUS V2 electronics enables you to select independent flow temperature curves for each of the zones of the system (both with C.H. and cooling).

All components are insulated.

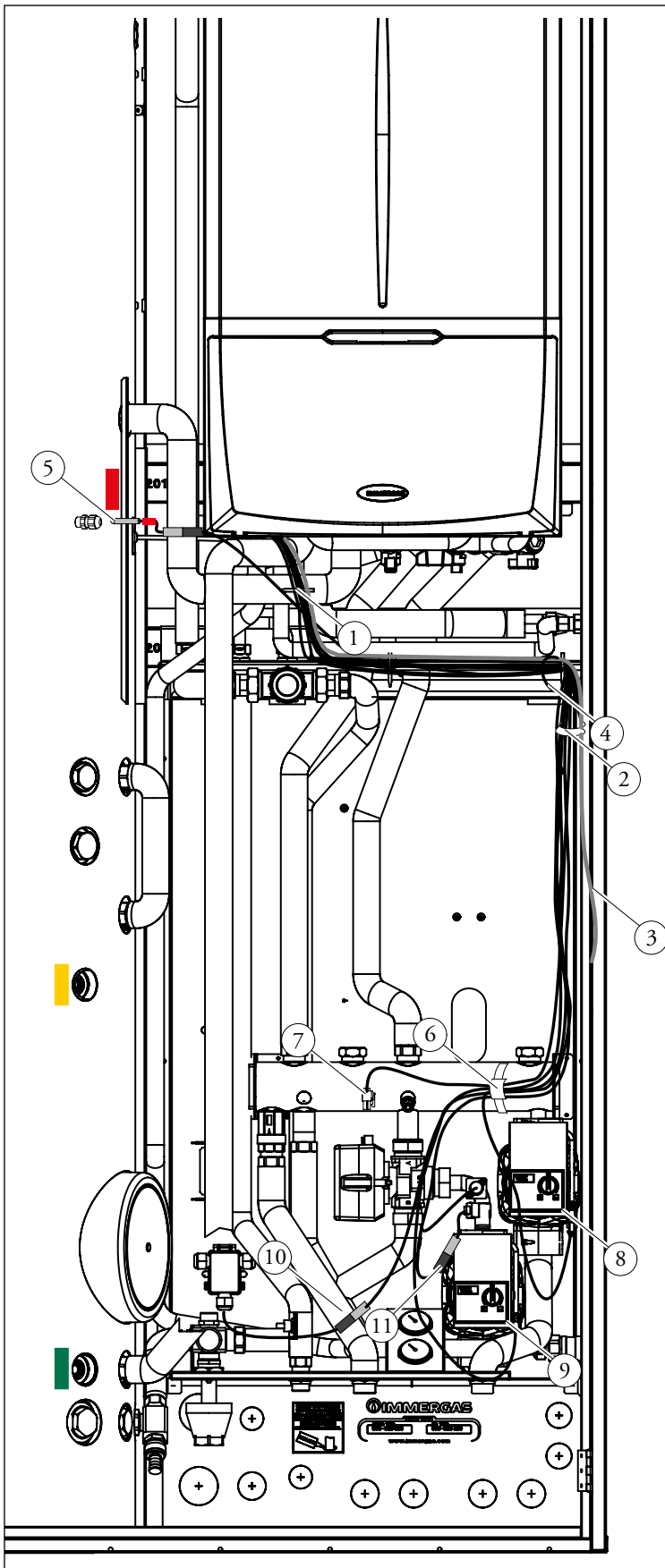
It is available in the following version (single code):

- **Additional kit 2nd mixed zone for MAGIS COMBO PLUS in SOLAR CONTAINER COMBO code 3.027865**



MAGIS COMBO PLUS V2 RECESSED

48.7 MAGIS COMBO PLUS AND HYDRONIC KIT ELECTRICAL WIRING

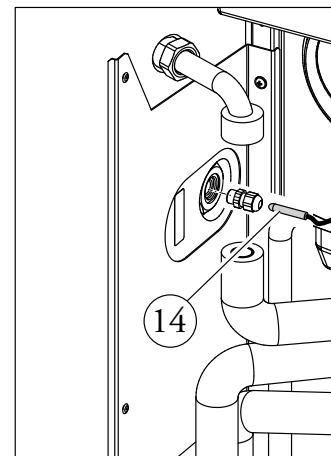


Once the kit is assembled, proceed with the wiring according to the diagram to the side.

- Connect the cables in the MAGIS COMBO PLUS V2 control panel following the electrical connection diagram.
- Lower the wiring exiting the MAGIS COMBO PLUS V2 until it can be secured with the clips (1 and 2).
- Fix the earthing eyelet (4) in the appropriate hole marked on the frame.
- Connect the storage tank probe connector (5) to the wiring marked with the label "SONDA-SAN" (DHW-PROBE), then place it on the storage tank in the appropriate seat (red band) using the relative cable clamp.
- Connect the connector with the red "M-Z1" label to the pump / circulator (8)
- Connect the connector of the antifreeze box (10) to the wiring connector with the "ANTIGELO" (ANTIFREEZE) label.
- Make the connection to the power supply using the cable (3) as shown in the wiring diagram.

Only for 2nd zone additional kit code 3.027865

- Connect the flow probe connector (11) to the wiring marked by the label "PROBE", then connect the wiring to the probe and connect the "T-SIC" connector to the safety thermostat.
 - Connect the connector with the green "M-Z2" label to the circulator (9).
 - Connect the connector of the mixing valve (7) marked with the "MIX.V" label.
 - Now group the various cables and join them with the clip (6) supplied with the hydraulic manifold.
- N.B.:** wind the uncovered fittings with the insulation present in the kit.

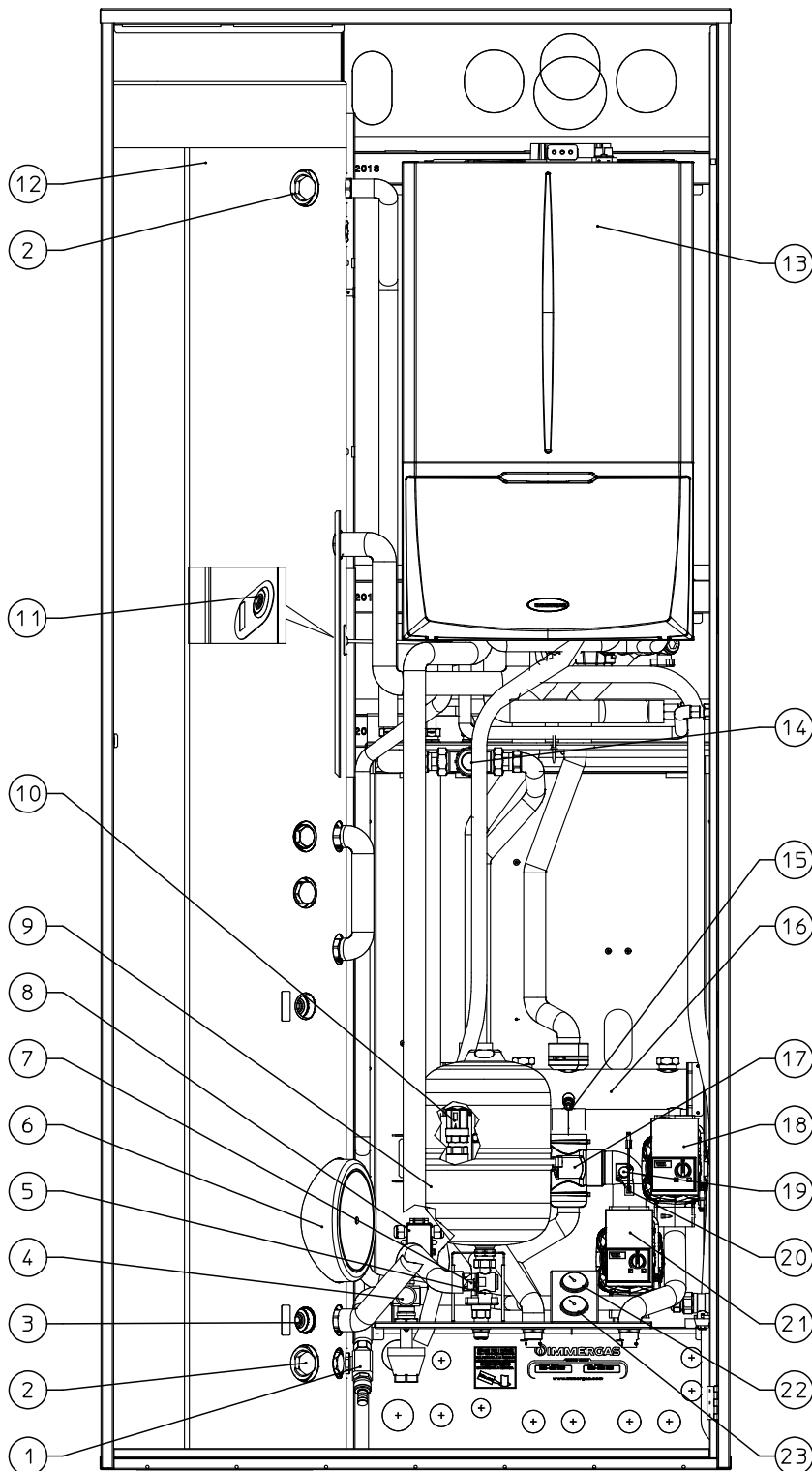


MAGIS COMBO PLUS V2 RECESSED

48.8 MAIN COMPONENTS MAGIS COMBO PLUS WITH 2nd ADDITIONAL ZONE KIT

KEY:

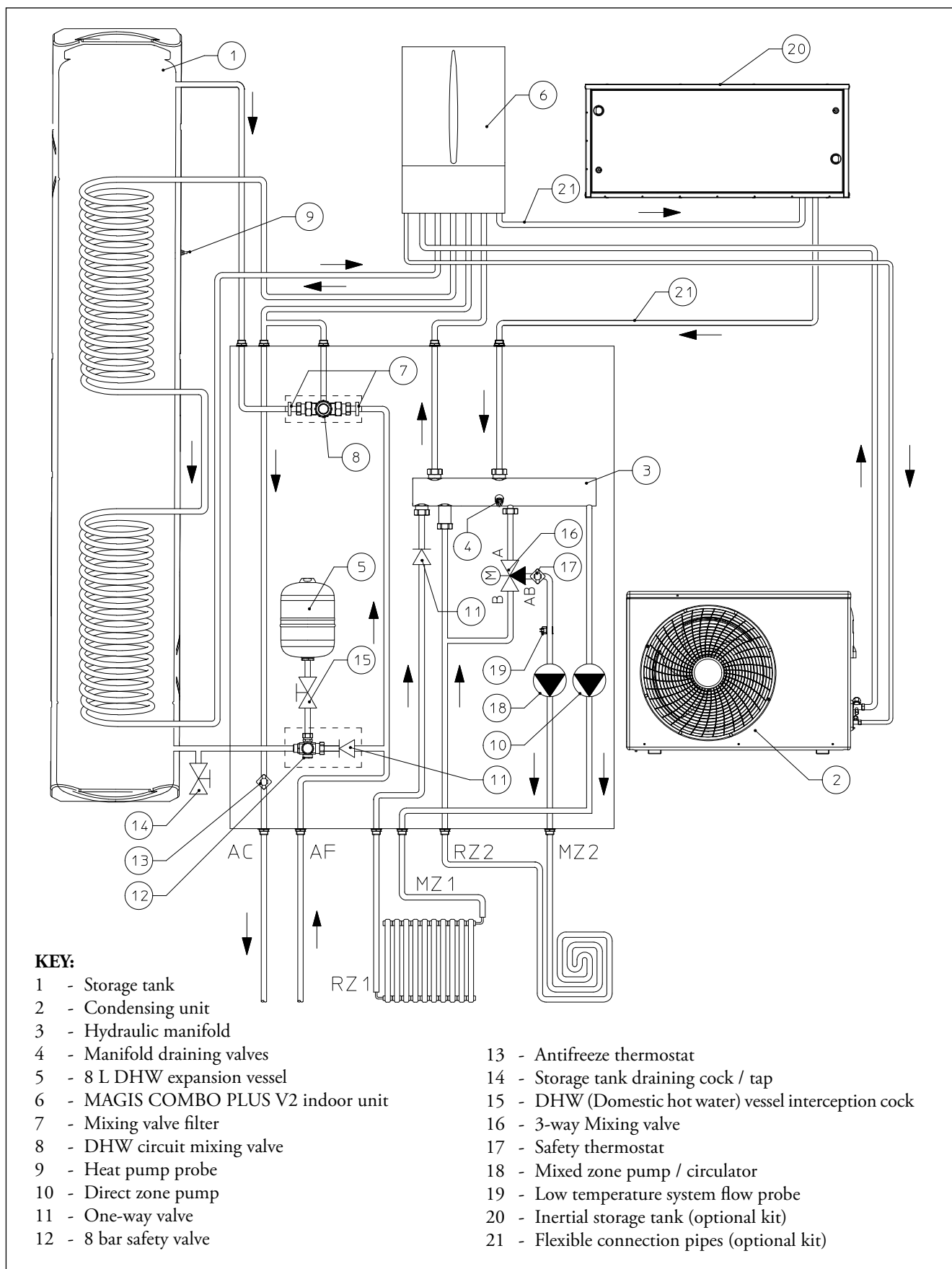
- 1 - Storage tank draining cock / tap
- 2 - Sacrificial anodes
- 3 - Solar probe (optional)
- 4 - 8 bar safety valve
- 5 - DHW (Domestic hot water) vessel interception cock
- 6 - Storage tank flange
- 7 - Antifreeze thermostat
- 8 - Antifreeze kit connection box
- 9 - 8 l domestic hot water expansion vessel
- 10 - One-way valve
- 11 - Heat pump probe
- 12 - Storage tank
- 13 - MAGIS COMBO PLUS V2 indoor unit
- 14 - DHW circuit mixing valve
- 15 - Manifold draining valves
- 16 - Hydraulic manifold
- 17 - 3-way Mixing valve (*)
- 18 - Direct zone pump
- 19 - Safety thermostat (*)
- 20 - Zone 2 flow probe (low temperature) (*)
- 21 - Mixed zone pump (*)
- 22 - Zone 2 flow temperature thermometer (low temperature) (*)
- 23 - Zone 1 flow temperature thermometer (high temperature)



(*) the following components are only present when including the additional second mixed zone kit (optional).

MAGIS COMBO PLUS V2 RECESSED

48.9 HYDRAULIC DIAGRAM MAGIS COMBO PLUS WITH 2nd ADDITIONAL ZONE KIT



MAGIS COMBO PLUS V2 RECESSED

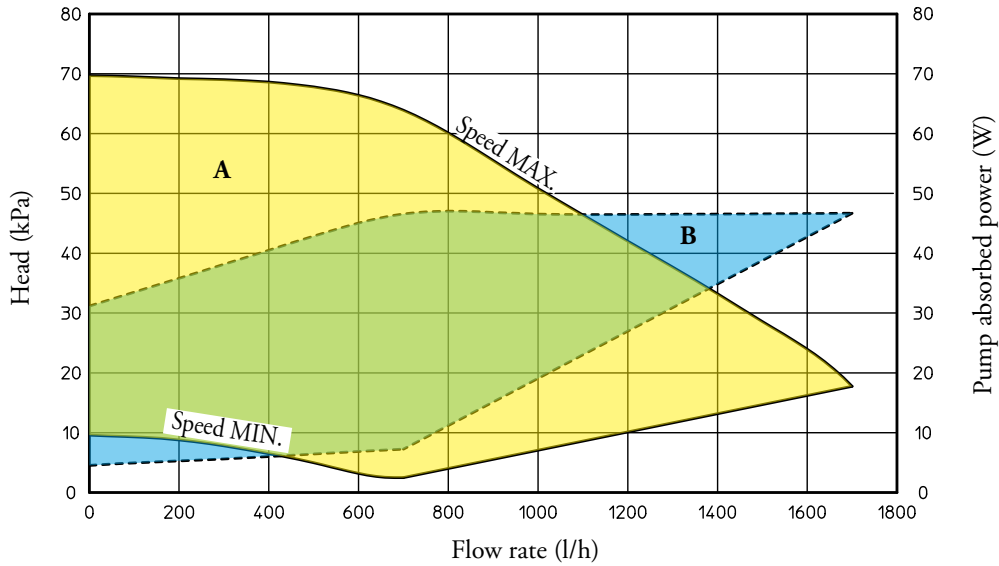
48.10 CHART OF THE HEAD FLOW RATE AVAILABLE TO THE DIRECT ZONE

Downstream of the hydraulic compensator, part of the hydronic kit of the MAGIS COMBO PLUS recessed system code 3.027867 inserted in SOLAR CONTAINER COMBO, there is a low consumption electronic booster pump to the system for the direct zone, whose flow rate/head characteristics are shown

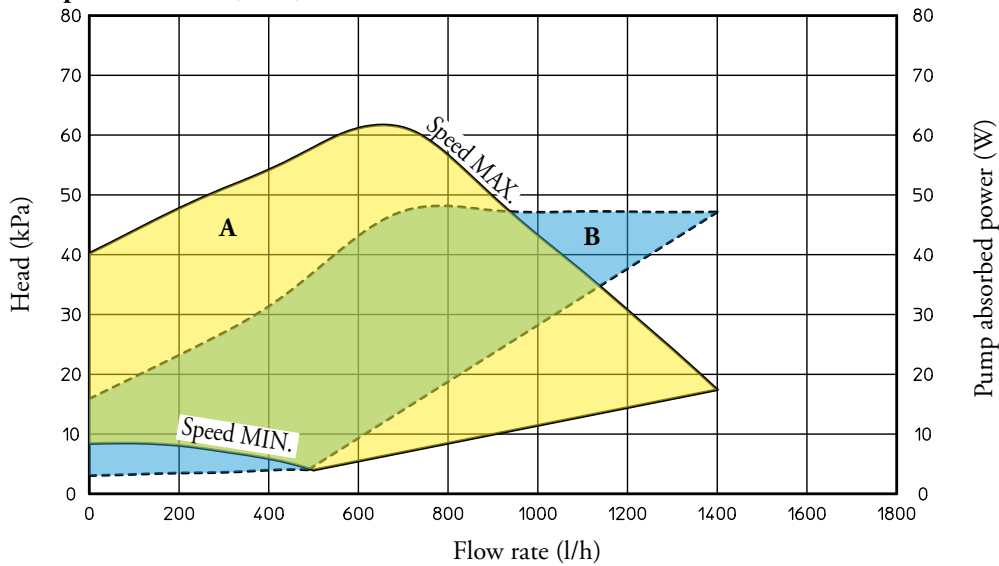
in the graphs below. The flow circulator to the direct zone is suitable for both central heating and cooling operation. The use of these pumps prevents the insertion/presence of any by-pass.

WILO PARA 15-7 CM 130

Constant head ($\Delta P C$).



Proportional head ($\Delta P V$).



EEI ≤ 0.20

KEY:

- A = Head available with Min. - Max. speed
- B = Power absorbed by the system pump (dotted area)

MAGIS COMBO PLUS V2 RECESSED

48.11 CHART OF THE HEAD FLOW RATE AVAILABLE TO THE MIXED ZONE (OPTIONAL)

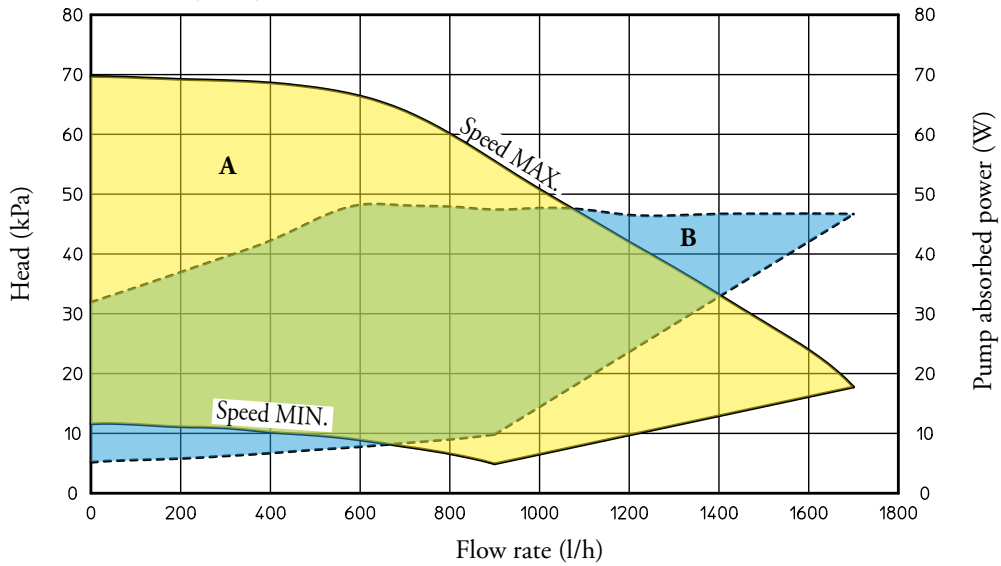
The additional 2nd mixed zone kit code 3.027865, contains a low consumption electronic booster pump to the system for the mixed zone, whose flow rate/head characteristics are shown in the graphs below.

The flow circulator to the mixed zone is suitable for both central heating and cooling operation.

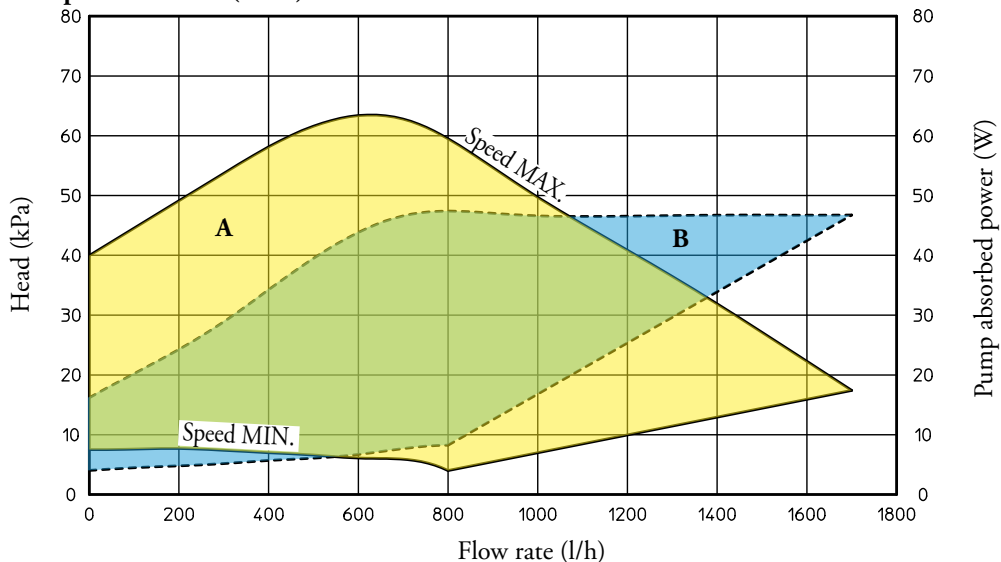
The use of these pumps prevents the insertion/presence of any by-pass.

WILO PARA 15-7 CM 130

Constant head ($\Delta P C$).



Proportional head ($\Delta P V$).



EEl \leq 0.20

KEY:

- A = Head available with Min. - Max. speed
- B = Power absorbed by the system pump (dotted area)

MAGIS COMBO PLUS V2 RECESSED

48.12 SYSTEM FLOW CIRCULATOR PUMP SETTINGS AND CONFIGURATIONS

The circulator pumps control the room heating or cooling requests downstream of the hydraulic manifold. In fact, the circulator pumps are equipped with electronic control that allows to set advanced functions. These settings are suitable for most systems.

For proper use one must select the most suitable type of operation for the system.

By rotation, it is possible to select the following pump control mode:

Fixed speed I, II, III.

Proportional head I, II, III.

Constant head I, II, III.

- Fixed speed

Adjusts the pump speed in fixed mode.

It is possible to set 3 different speeds:

I: Minimum Speed.

II: Intermediate speed.

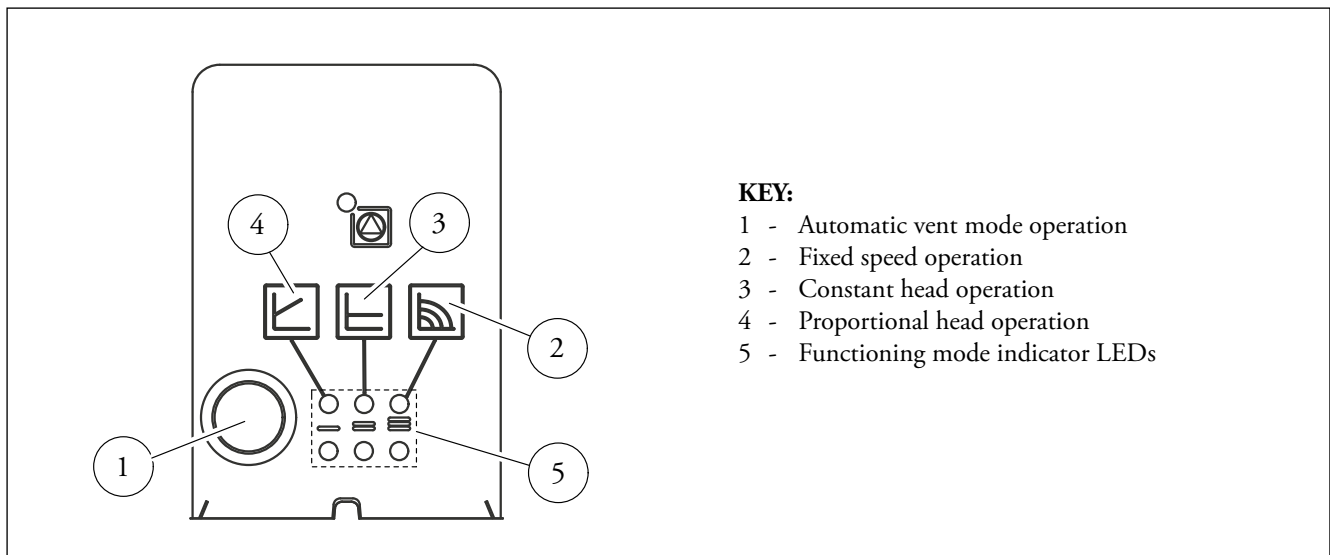
III: Maximum speed (factory set speed).

- Proportional head ($\Delta P-V$)

This allows the pressure level (head) to be proportionally reduced as the system heat demand decreases (flow rate reduction). Thanks to this function, the electric power consumption of the circulator pump is reduced further: the energy (power) used by the pump decreases according to the pressure level and flow rate. With this setting, the pump guarantees optimal performance in most heating systems, proving particularly suitable in single-pipe and two-pipe installations. Any noise originating from the water flow in the pipes, valves and radiators is eliminated by reducing the head. Optimal conditions for thermal comfort and acoustic well-being.

- Constant head ($\Delta P-C$)

The circulator pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the circulator pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.



KEY:

- 1 - Automatic vent mode operation
- 2 - Fixed speed operation
- 3 - Constant head operation
- 4 - Proportional head operation
- 5 - Functioning mode indicator LEDs

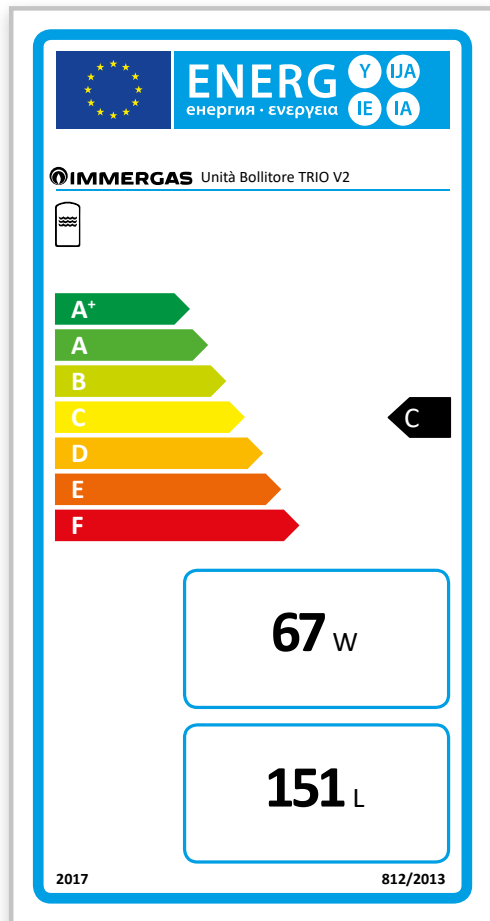
NOTE:

Treating the feed water allows you to prevent problems and maintain the function and efficiency of the generator over time. It. Legislative Decree 26/06/2015 requires a chemical treatment of the thermal system water, in compliance with the UNI 8065 standard, in the cases provided for by the Decree.

MAGIS COMBO PLUS V2 RECESSED

48.13

PRODUCT FICHE (REGULATION 811/2013)



REF. European Commission Notice 2014/C 207/02

6.2. Contribution to temperature controls of seasonal space heating energy efficiency of packages of space heaters, temperature control and solar devices or of packages of combination heaters, temperature control and solar devices

Class No.	I	II	III	IV	V	VI	VII	VIII
% Value	1	2	1.5	2	3	4	3.5	5

MAGIS COMBO PLUS V2 RECESSED

48.14
TECHNICAL DATA MAGIS COMBO PLUS RECESSED

		1st direct zone hydronic kit	Additional 2nd mixed zone kit
Maximum central heating circuit pressure	bar	3	3
Maximum domestic hot water circuit pressure	bar	8	8
Max. central heating circuit temperature	°C	90	90
Max. domestic hot water circuit operating temperature	°C	95	95
DHW adjustable temperature (see parameter programming)	°C	10÷65	10÷65
Central heating adjustable temperature (see parameter programming)	°C	25÷80	25÷80
Cooling adjustable temperature (see parameter programming)	°C	5÷25	5÷25
DHW expansion vessel capacity	litres	8.0	8.0
DHW expansion vessel pre-charged pressure	bar	3	3
Water content in the storage tank	litres	156.22	156.22
Specific flow rate for 10 min. ΔT 30 °C *	litres/min	20.5	20.5
Dispersions	kW/24h	1.60	1.60
P _{bsol}	W/K	1.48	1.48
Full hydronic unit weight	kg	33.2	33.2
Empty hydronic unit weight	kg	24.5	24.5
Full storage tank unit weight	kg	188.9	188.9
Empty storage tank unit weight	kg	32.7	32.7
Electrical connection	V/Hz	230/50	230/50
Nominal power absorption	A	1.4	1.75
Installed electric power	W	175	220
Power absorbed by the direct zone pump	W	47	--
Power absorbed by the mixed zone pump	W	--	47
Absorbed electric power in Stand-By	W	6	6
System electrical insulation rating	--	IPX5D	IPX5D
Solar circuit OPTIONAL			
Solar circuit maximum pressure	bar	6	6
Solar expansion vessel capacity	litres	12.0	12.0
Solar expansion vessel pre-charge	bar	2.5	2.5
Power absorbed by the solar pump (ref. Speed 3)	W	39	39
Solar pump head (ref. Speed 3)	m c.a.	6	6
Flow rate regulator control range	litres/min	1÷6	1÷6
Solar circuit maximum peak temperature	°C	150	150
Solar circuit maximum continuous working temperature	°C	120	120
Content of glycol in the solar circuit	litres	8.8	8.8

* Performance data referred to the thermal module.

MAGIS COMBO PLUS V2 RECESSED

48.15

OPTIONAL MAGIS COMBO PLUS RECESSED

OPTIONAL components but required to make the MAGIS COMBO PLUS recessed system	Code
SOLAR CONTAINER COMBO (Recessed frame)	3.028187
MAGIS COMBO 4 PLUS V2	3.030615
MAGIS COMBO 4 PLUS V2 LPG	3.030615LPG
MAGIS COMBO 6 PLUS V2	3.030617
MAGIS COMBO 6 PLUS V2 LPG	3.030617LPG
MAGIS COMBO 9 PLUS V2	3.030619
MAGIS COMBO 9 PLUS V2 LPG	3.030619LPG
Hydronic kit for MAGIS COMBO PLUS IN SOLAR CONTAINER COMBO	3.027867
Additional 2nd mixed zone kit for MAGIS COMBO PLUS (additional for two-zone system solutions)	3.027865
TEMPERATURE CONTROL OPTIONALS available	Code
Zone remote panel - (device class V* or VI)	3.030863
CRONO 7 (Digital weekly chrono-thermostat) - (device class IV* or VII)	3.021622
CRONO 7 WIRELESS (device class IV* or VII)	3.021624
External probe - if the condensing unit is installed under unfavourable conditions (device class II* or VI or VII)	3.015266
Room hygrostat kit - (operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device)	3.023302
Temperature and humidity sensor kit ModBus - (device class V or VI*) - to make temperature requests, it is necessary to couple a chrono-thermostat code 3.021622 or 3.021624	3.030992
OTHER OPTIONALS available	Code
Vertical connection unit kit for lower connection	3.020575
Horizontal connection unit kit for side connection	3.020574
Rear connection unit kit for rear connection	3.020630
Three-way deviator valve kit used as hot/cold system deviator	3.020632
Configurable relay board kit	3.015350
Two relay board kit (for dehumidifier management)	3.026302
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
Condensate antifreeze heating cable kit (for outdoor unit 4 - 6 V2)	3.027385
Antifreeze resistance kit up to -15 °C (for heat generator)	3.017324
Wall installation brackets kit for outdoor condensing unit	3.022154
Solar thermal system coupling kit**	3.024719
Inertial 50-litre recessed storage tank kit	3.027709
DHW recirculation kit ⁽¹⁾ (including circulator pump)	3.026169
Polyphosphate dispenser kit ⁽¹⁾	3.020628
Safety thermostat kit	3.013794
Propane air kit	3.027664
HYDRO 3 range Wall-hung hydronic split, HYDRO FS range floor standing hydronic fan coil, HYDRO IN range recessed hydronic fan coil	Codes various

*Device class (REF. Communication of the European Commission 2014/C 207/02) with factory settings.

** In case of application with solar heating, as well as Kit code 3.024719, the solar heating components on the list are available. We recommend using flat solar manifolds.

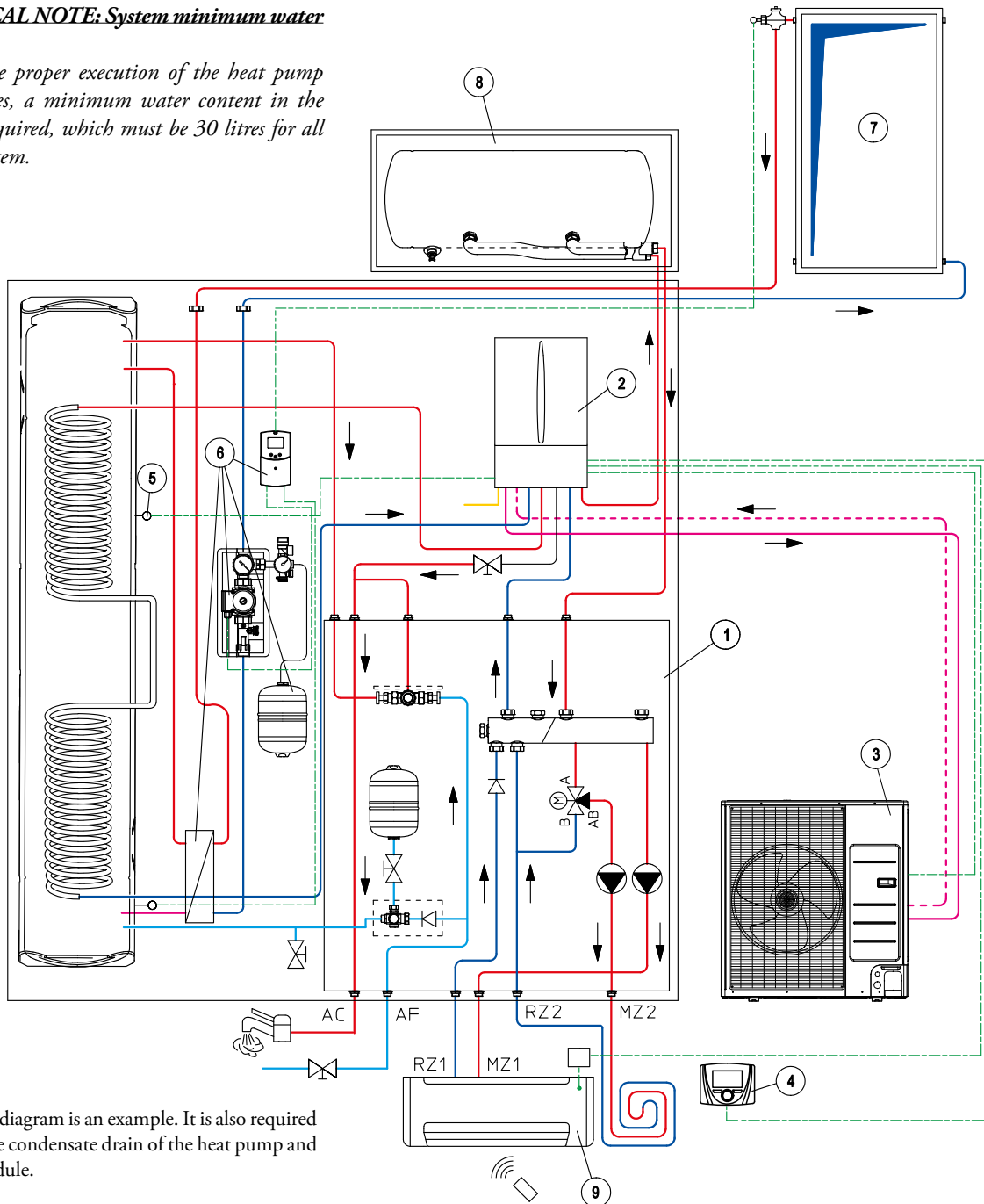
(1) The DHW recirculation Kit and the polyphosphate dispenser kit CANNOT coexist together within the SOLAR CONTAINER COMBO.

MAGIS COMBO PLUS V2 RECESSED

48.16 MAGIS COMBO PLUS RECESSED SYSTEM DIAGRAM SYSTEM WITH ONE RADIANT PANEL HEATING ZONE + ONE COOLING AND HEATING ZONE WITH HYDRONIC SPLITS

TECHNICAL NOTE: System minimum water content:

To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be 30 litres for all kinds of system.



NOTE: this diagram is an example. It is also required to convey the condensate drain of the heat pump and thermal module.

KEY:

- | | |
|--|---------------------------------------|
| 1 - MAGIS COMBO PLUS hydronic kit | 6 - Solar thermal system coupling kit |
| 2 - MAGIS COMBO PLUS V2 indoor unit | 7 - Solar collector |
| 3 - AUDAX PRO V2 Condensing unit | 8 - Recess inertial storage tank |
| 4 - Zone Remote panel | 9 - HYDRO wall-hung hydronic split |
| 5 - DHW probe (standard with Hydronic kit) | |

MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

APPENDIX C): MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

49 MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO IN SOLAR CONTAINER COMBO

Recessed solution, ideal for high energy class and small apartments, it allows the recovery of living space thanks to the retractable installation.

The complete system consists of separate units that can be purchased separately and installed at different times:

- SOLAR CONTAINER COMBO (Recess frame);
- MAGIS COMBO PLUS V2 in its various power;
- BASIC MAGIS PRO package with 160 litre DHW tank in Stainless steel;
- MAGIS COMBO PLUS application kit with BASIC MAGIS PRO;
- Hydraulic connections kit for vertical, horizontal or rear outlet (optional);
- Solar system coupling kit (optional).



SOLAR CONTAINER COMBO
(Recessed frame) code 3.028187

INSTALLABLE MODELS:

- 1) MAGIS COMBO 4 PLUS V2 code 3.030615
- 2) MAGIS COMBO 4 PLUS V2 LPG code 3.030615LPG
- 3) MAGIS COMBO 6 PLUS V2 code 3.030617
- 4) MAGIS COMBO 6 PLUS V2 LPG code 3.030617LPG
- 5) MAGIS COMBO 9 PLUS V2 code 3.030619
- 6) MAGIS COMBO 9 PLUS V2 LPG code 3.030619LPG

BASIC MAGIS PRO pack code 3.029721

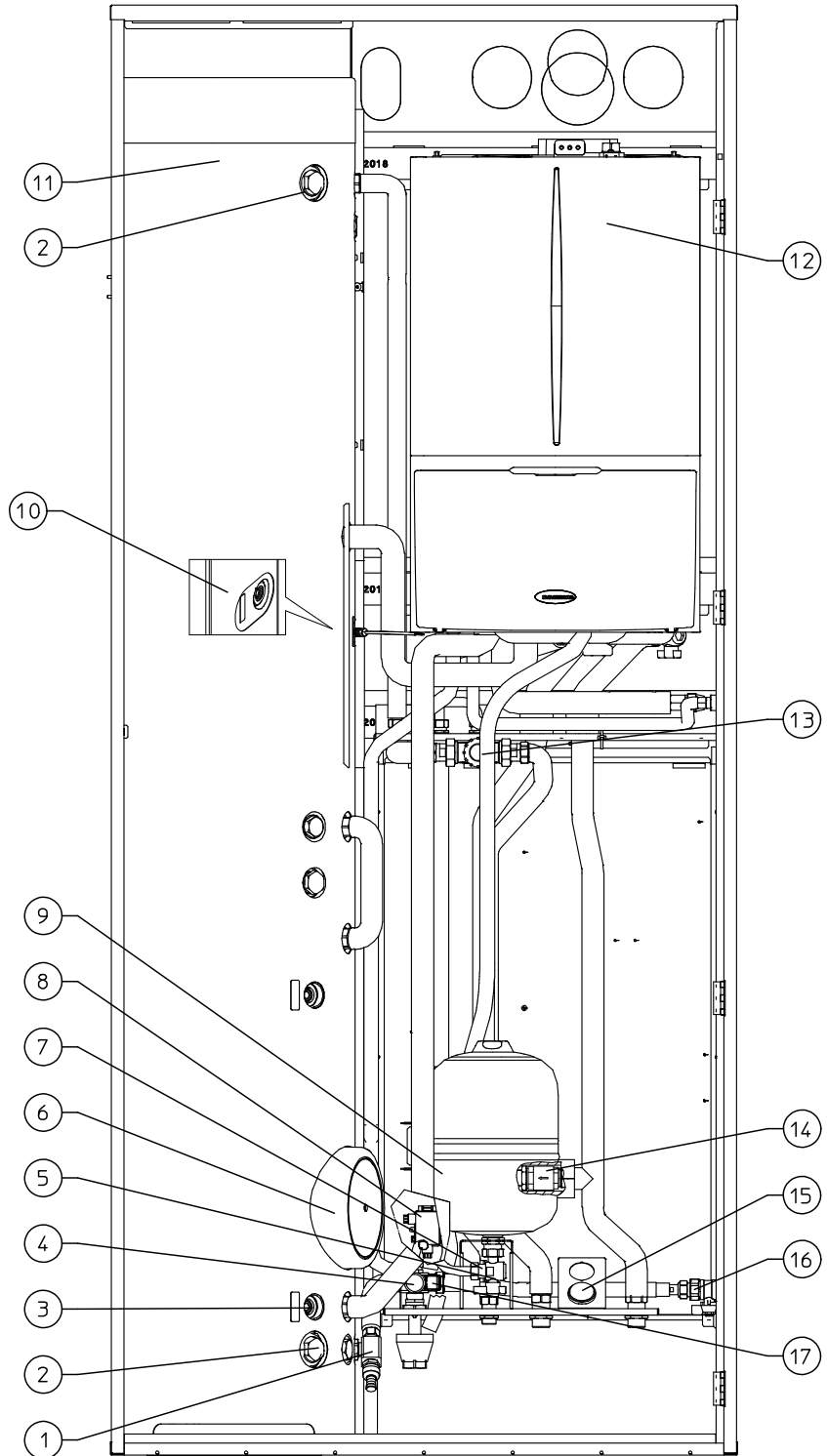
+ MAGIS COMBO PLUS application kit with BASIC MAGIS PRO code 3.029947

MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

49.1 MAIN COMPONENTS MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

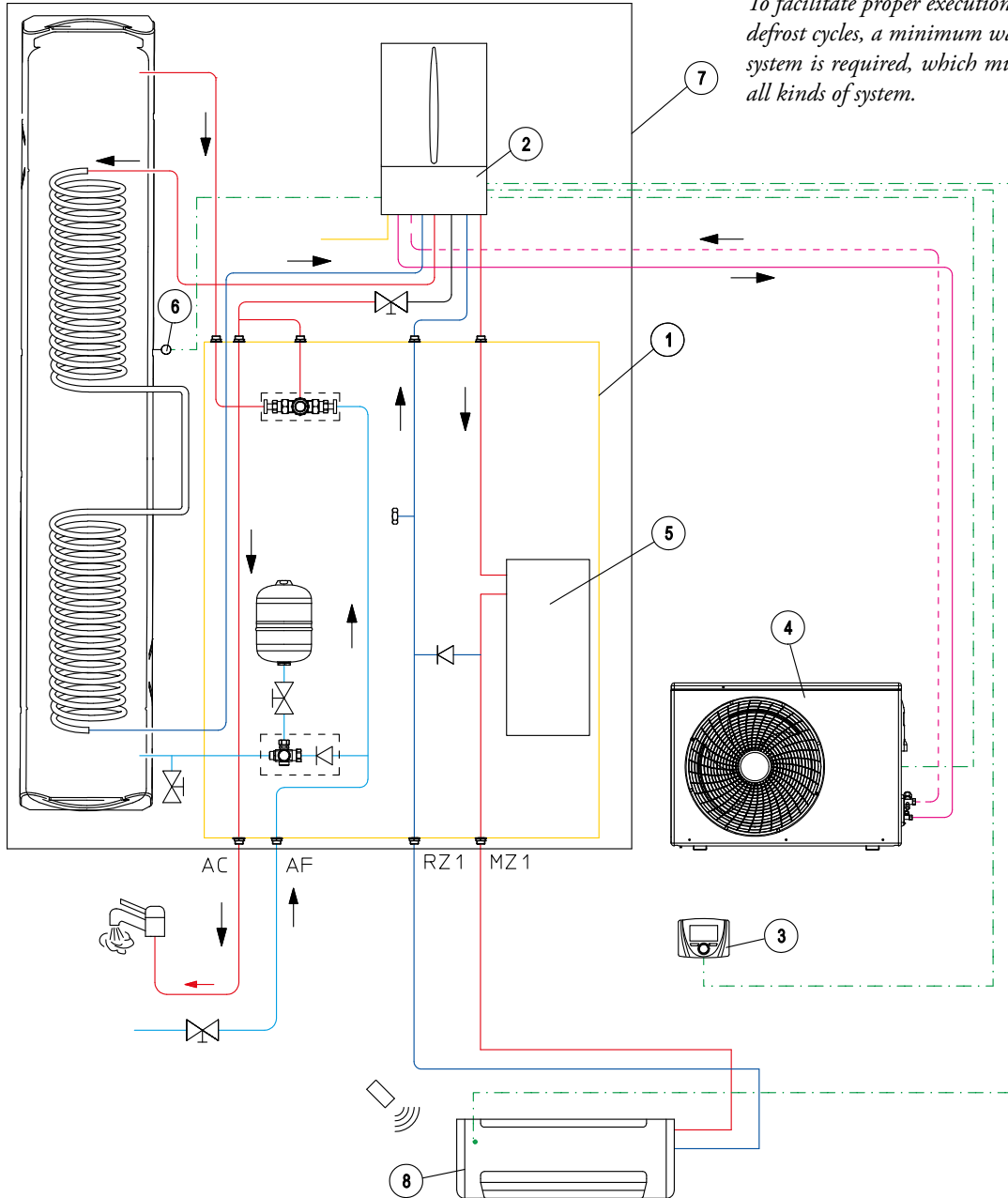
KEY:

- 1 - Storage tank draining cock / tap
- 2 - Sacrificial anodes
- 3 - Solar probe (optional)
- 4 - 8 bar safety valve
- 5 - DHW (Domestic hot water) vessel interception cock
- 6 - Storage tank flange
- 7 - Antifreeze thermostat
- 8 - Antifreeze kit connection box
- 9 - 8 l domestic hot water expansion vessel
- 10 - DHW probe
- 11 - Storage tank
- 12 - MAGIS COMBO PLUS V2 indoor unit
- 13 - Circuit mixing valve domestic hot water
- 14 - By-pass
- 15 - Zone 1 flow temperature thermometer (direct zone)
- 16 - Gas cock
- 17 - One-way valve



MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

49.2 RECESS MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO SYSTEM DIAGRAM: SYSTEM WITH HEATING AND COOLING WITH HYDRONIC SPLITS



TECHNICAL NOTE: System minimum water content:
 To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be 30 litres for all kinds of system.

NOTE: this diagram is an example. It is also required to convey the outdoor condensing unit condensate drain.

KEY:

- | | |
|---|--|
| 1 - BASIC MAGIS PRO system composed of: | 4 - AUDAX PRO thermal condensing unit |
| • Double coil 160 litre storage tank | 5 - 15-Litre inertial storage kit 3.029928 |
| • Hydronic unit and connection unit | 6 - DHW probe |
| 2 - MAGIS COMBO PLUS V2 indoor unit | 7 - SOLAR CONTAINER COMBO |
| 3 - Zone remote panel | 8 - HYDRO wall-hung hydronic split |

MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

49.3 OPTIONAL MAGIS COMBO PLUS V2 WITH BASIC MAGIS PRO

OPTIONAL components but necessary to make the BASIC MAGIS PRO system	Code
SOLAR CONTAINER COMBO (Recessed frame)	3.028187
BASIC MAGIS PRO Pack	3.029721
MAGIS COMBO PLUS application kit with BASIC MAGIS PRO	3.029947
MAGIS COMBO 4 PLUS V2	3.030615
MAGIS COMBO 4 PLUS V2 LPG	3.030615LPG
MAGIS COMBO 6 PLUS V2	3.030617
MAGIS COMBO 6 PLUS V2 LPG	3.030617LPG
MAGIS COMBO 9 PLUS V2	3.030619
MAGIS COMBO 9 PLUS V2 LPG	3.030619LPG
TEMPERATURE CONTROL OPTIONALS available for the BASIC MAGIS PRO system	Code
Zone remote panel - (device class V* or VI)	3.030863
Temperature and humidity sensor kit ModBus - (device class V or VI*) - to make temperature requests, it is necessary to couple a chrono-thermostat code 3.021622 or 3.021624	3.030992
CRONO 7 (Digital weekly chrono-thermostat) - (device class IV* or VII)	3.021622
CRONO 7 WIRELESS (device class IV* or VII)	3.021624
External probe - if the condensing unit is installed under unfavourable conditions (device class II* or VI or VII)	3.015266
Room hygrostat kit - (operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device)	3.023302
OTHER OPTIONALS available for the BASIC MAGIS PRO system	Code
Antifreeze resistance kit up to -15 °C for hydronic module	3.017324
Vertical connection unit kit for lower connection	3.020575
Horizontal connection unit kit for side connection	3.020574
Rear connection unit kit for rear connection	3.020630
Three-way deviator valve kit used as hot/cold system deviator	3.020632
Configurable relay board kit	3.015350
Two relay board kit (for dehumidifier management)	3.026302
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
Condensate antifreeze heating cable kit (for outdoor unit 4 - 6 V2)	3.027385
Wall installation brackets kit for outdoor condensing unit	3.022154
Solar thermal system coupling kit**	3.024719
15-litre inertial storage kit for BASIC MAGIS PRO (it <u>ONLY</u> can be inserted in SOLAR CONTAINER)	3.029928
Inertial 50-litre recessed storage tank kit	3.027709
DHW recirculation kit ⁽¹⁾ (including circulator pump)	3.026169
Polyphosphate dispenser kit ⁽¹⁾	3.020628
Safety thermostat kit	3.019229
DOMINUS Interface board kit	3.026273
HYDRO 3 range Wall-hung hydronic split, HYDRO FS range floor standing hydronic fan coil, HYDRO IN range recessed hydronic fan coil	Codes various

*Device class (REF. Communication of the European Commission 2014/C 207/02) with factory settings.

** In case of application with solar heating, as well as Kit code 3.024719, the solar heating components on the list are available. We recommend using flat solar manifolds.

(1) The DHW recirculation Kit and the polyphosphate dispenser kit CANNOT coexist together within the SOLAR CONTAINER COMBO.

MAGIS COMBO PLUS V2 WITH SUPER TRIO

APPENDIX D): MAGIS COMBO PLUS V2 WITH SUPER TRIO

50

MAGIS COMBO PLUS V2 WITH SUPER TRIO IN CONTAINER FOR SUPER TRIO

SUPER TRIO is the solution for new buildings, designed to build hybrid systems or with heat pump only in large apartments and villas, to easily meet the obligations on the use of renewable energy in new systems and major renovations; ideal in those situations where you have to cope with the need for a lot of hot water (e.g. whirlpool baths) or where you expect more simultaneous withdrawals, thanks to a DHW storage of 250 litres.

The system can be built with extreme flexibility and with great ease of installation in recessed or technical cabinet, the SUPER TRIO hydronic unit in fact integrates into the structures of the building

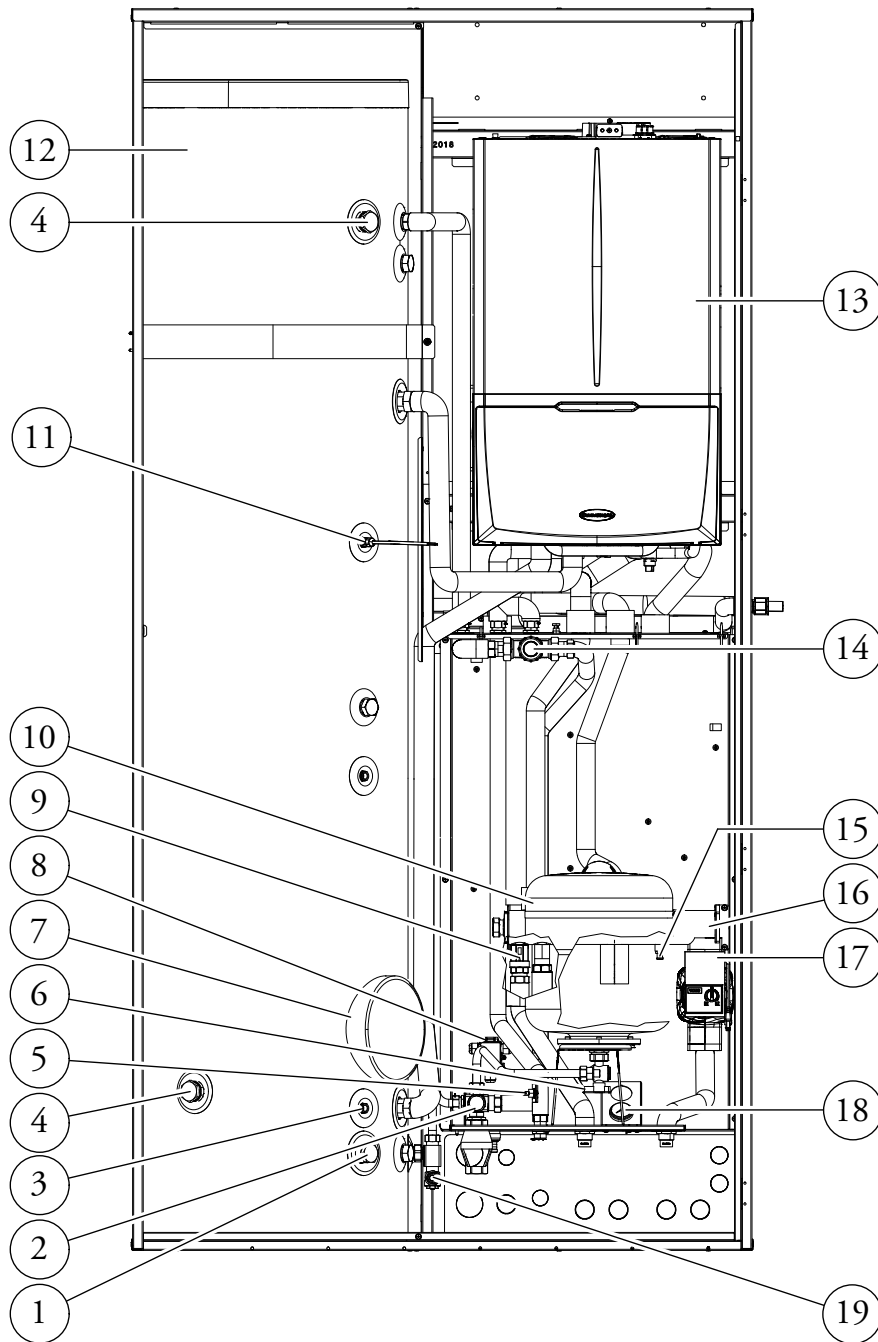
and saves living space thanks to the specific recessed CONTAINER. The complete system consists of separate units that can be purchased separately and installed at different times:

- SOLAR CONTAINER for SUPER TRIO (Recessed frame);
- DOMUS CONTAINER for SUPER TRIO (Technical cabinet);
- SUPER TRIO pack;
- MAGIS COMBO PLUS V2 in its various power;
- MAGIS COMBO PLUS connection kit with SUPER TRIO;
- 2nd additional mixed zone kit (optional);
- Solar system coupling kit (optional).



MAGIS COMBO PLUS V2 WITH SUPER TRIO

50.1 MAIN COMPONENTS MAGIS COMBO PLUS V2 WITH SUPER TRIO



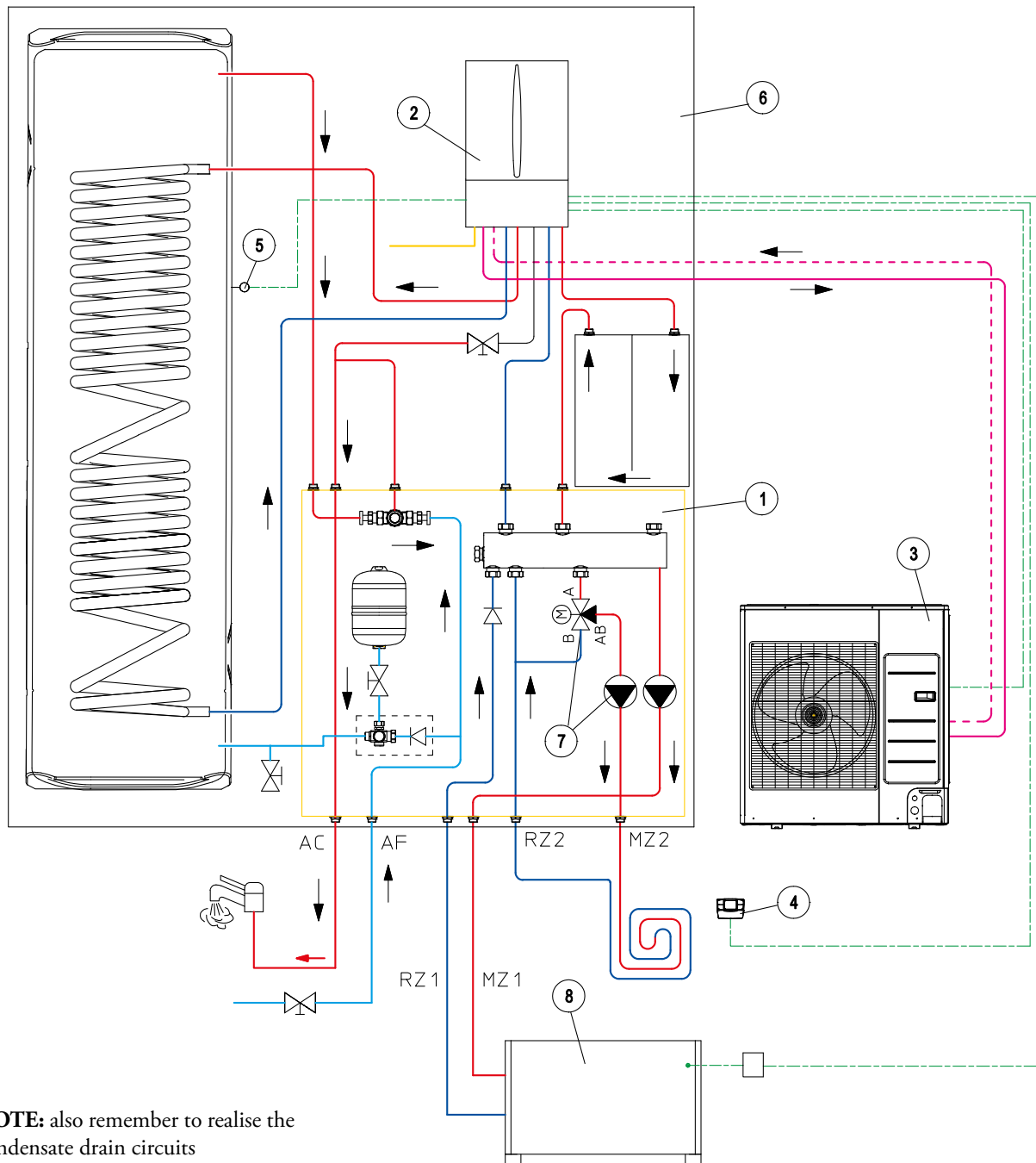
KEY:

- | | |
|---|---|
| 1 - DHW integration resistance | 10 - DHW (Domestic hot water) 16 l expansion vessel |
| 2 - 8 bar safety valve | 11 - DHW probe |
| 3 - Solar probe (optional) | 12 - Storage tank |
| 4 - Sacrificial anodes | 13 - MAGIS COMBO PLUS V2 indoor unit |
| 5 - Antifreeze thermostat | 14 - DHW circuit mixing valve |
| 6 - Domestic hot water vessel shut-off cock | 15 - Manifold draining valves |
| 7 - Storage tank flange | 16 - Hydraulic manifold |
| 8 - Antifreeze kit connection box | 17 - Direct zone pump |
| 9 - One-way valve | 18 - Zone 1 flow temperature thermometer (direct) |
| | 19 - Storage tank draining cock / tap |

MAGIS COMBO PLUS V2 WITH SUPER TRIO

50.2

**SYSTEM DIAGRAM MAGIS COMBO PLUS V2 WITH SUPER TRIO:
SYSTEMS WITH A HEATING AND COOLING ZONE
WITH FAN COILS + A RADIANT PANEL ZONE**



NOTE: also remember to realise the condensate drain circuits

KEY:

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 - SUPER TRIO system consisting of: <ul style="list-style-type: none"> • 250-Litre single coil storage tank • Hydronic unit with direct pump • DHW vessel • 30-Litre inertial storage tank 2 - MAGIS COMBO PLUS V2 indoor unit | <ul style="list-style-type: none"> 3 - AUDAX PRO 9 V2 Condensing unit 4 - CRONO 7 5 - DHW probe 6 - CONTAINER for SUPER TRIO 7 - Second mixed zone kit 8 - HYDRO FS fan coil |
|---|--|

MAGIS COMBO PLUS V2 WITH SUPER TRIO

50.3 OPTIONAL SYSTEM MAGIS COMBO PLUS V2 WITH SUPER TRIO

OPTIONAL components but necessary to complete the SUPER TRIO SYSTEM	Code
SUPER TRIO	3.030395
CONTAINER for SUPER TRIO	3.030394
DOMUS CONTAINER for SUPER TRIO	3.030393
Top guard kit for DOMUS CONTAINER for SUPER TRIO	3.030484
Exclusive SUPER TRIO SYSTEM optional components with MAGIS COMBO PLUS	Code
MAGIS COMBO 4 PLUS V2	3.030615
MAGIS COMBO 4 PLUS V2 LPG	3.030615LPG
MAGIS COMBO 6 PLUS V2	3.030617
MAGIS COMBO 6 PLUS V2 LPG	3.030617LPG
MAGIS COMBO 9 PLUS V2	3.030619
MAGIS COMBO 9 PLUS V2 LPG	3.030619LPG
MAGIS COMBO PLUS connection kit with SUPER TRIO	3.030599
OPTIONAL components available for all SUPER TRIO systems	Code
Zone remote panel - (device class V* or VI)	3.030863
Temperature and humidity sensor kit ModBus - (device class V or VI*) - to make temperature requests, it is necessary to couple a chrono-thermostat code 3.021622 or 3.021624	3.030992
CRONO 7 (Digital weekly chrono-thermostat) - (device class IV* or VII)	3.021622
CRONO 7 WIRELESS (device class IV* or VII)	3.021624
External probe - if the condensing unit is installed under unfavourable conditions (device class II* or VI or VII)	3.015266
Room hygrostat kit - (operates on the Dehumidifier according to the humidity detected in the room)	3.023302
Additional 2nd mixed zone kit	3.027865
Antifreeze resistance kit up to -15 °C for hydronic module	3.017324
Vertical connection unit kit for lower connection	3.020575
Horizontal connection unit kit for side connection	3.020574
Rear connection unit kit for rear connection	3.020630
Three-way deviator valve kit used as hot/cold system deviator	3.020632
Configurable relay board kit	3.015350
Two relay board kit (for dehumidifier management)	3.026302
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
Condensate antifreeze heating cable kit (for outdoor unit 4 - 6 V2)	3.027385
Wall installation brackets kit for outdoor condensing unit	3.022154
DHW recirculation kit ⁽¹⁾ (including circulator pump)	3.030483
Polyphosphate dispenser kit ⁽¹⁾	3.020628
Safety marker thermostat kit	3.019229
DOMINUS Interface board kit	3.026273
Solar thermal system coupling kit:**	
consisting of a single solar circulation unit, solar control unit, 16-plate heat exchanger, connection tubes, 18-litre solar expansion vessel and temperature sensors (for storage tank and solar collector)	3.030482

*Device class (REF. Communication of the European Commission 2014/C 207/02) with factory settings.

** In case of application with solar heating, as well as Kit code 3.030482, the solar heating components on the list are available. We recommend using 2 flat solar manifolds at most.

(1) The DHW recirculation Kit and the polyphosphate dispenser kit CANNOT coexist together within the CONTAINER and/ or DOMUS CONTAINER for SUPER TRIO.

During the useful life of the products, performance is affected by external factors, e.g. the hardness of the DHW, atmospheric agents, deposits in the system and so on.

The declared data refer to new products that are correctly installed and used in observance of the Standards in force.

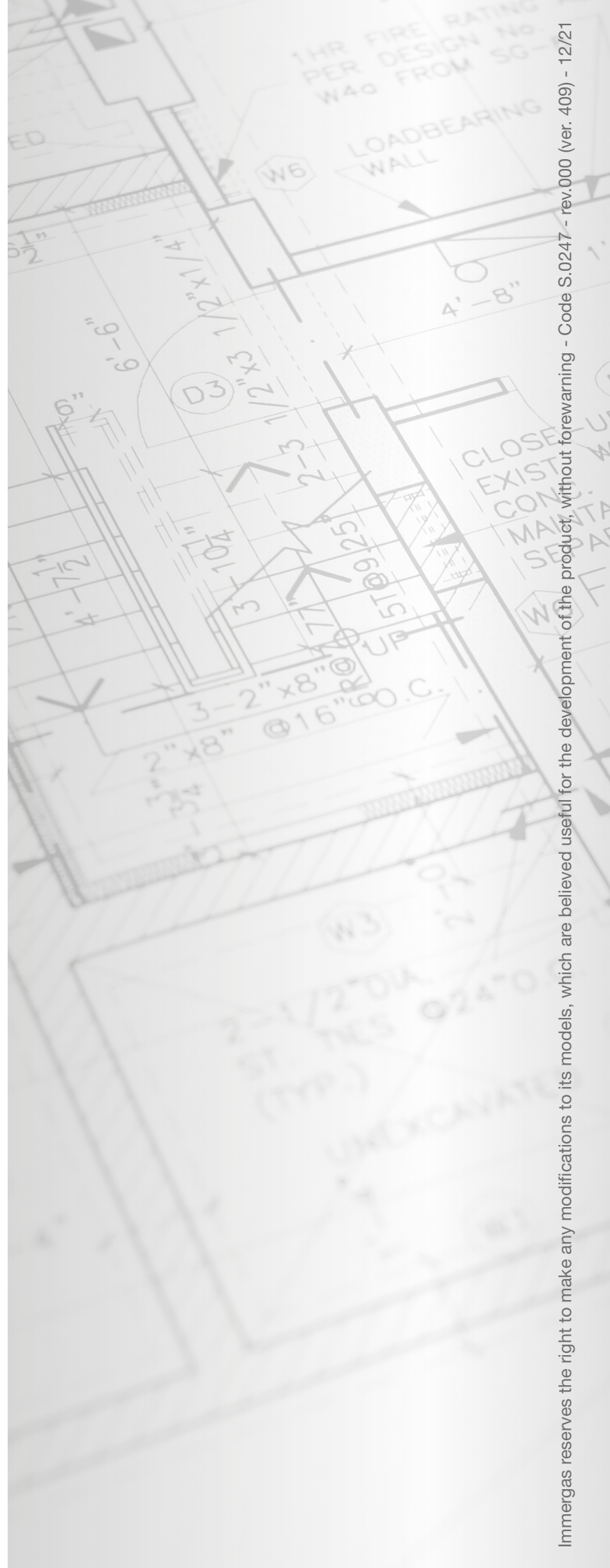
N.B.: correct periodic maintenance is highly recommended.

NOTE: Depending on the specific design and installation conditions, the diagrams and drawings provided in this documentation can require further integration or modifications, according to what is set forth by the Standards and technical regulations in force and applicable (as an example, the R stamp - edition 2009 is mentioned). It is the professional's responsibility to identify the applicable provisions, to evaluate compliance with these in each case and the necessity of any changes to diagrams and drawings.



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