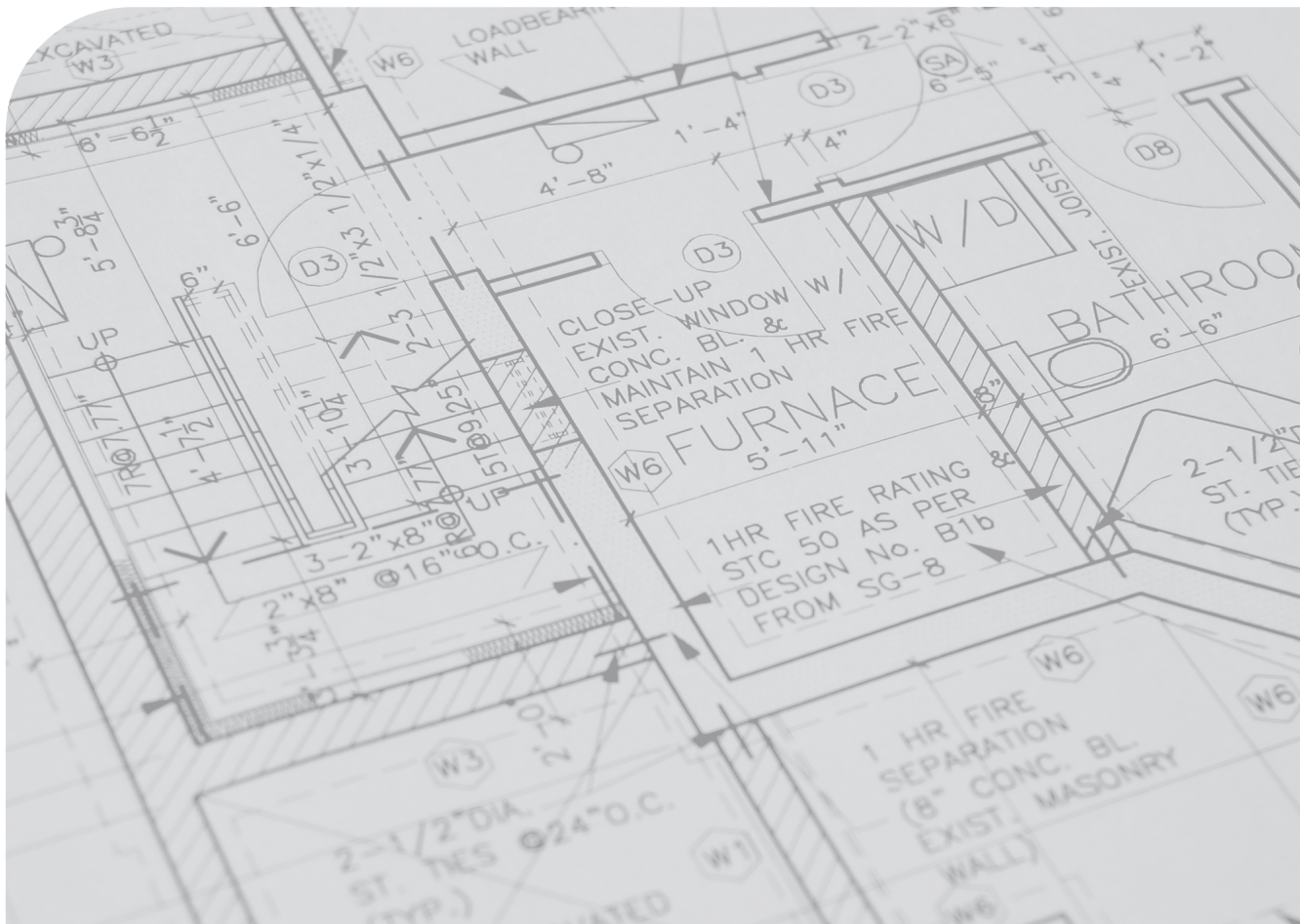


HEAT PUMPS

MAGIS HERCULES PRO MINI MAGIS HERCULES PRO MINI EH

Split heat pump with a 180 liters DHW storage tank



MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH



MAGIS HERCULES PRO MINI is the range of split inverter air-water heat pumps with outdoor unit and floor-standing indoor unit, including a 180 litre domestic hot water storage tank (single product, with single code for indoor unit + outdoor unit).

This is a line of compact all-in-one heat pump solutions that can be installed even where there is little space available. All components are accessible from the front, reducing installation space to just 60 cm wide. These solutions are particularly suitable for new homes or mid-sized homes undergoing renovation (characterised by high thermal insulation and integrated with a photovoltaic system).

MAGIS HERCULES PRO MINI combines the advantages of having within the same casing a DHW storage tank unit and a 25 litre inertia storage tank (sufficient to allow correct operation of the machine for any type of system). This is an important plant engineering simplification, as this component is often not present as standard in this type of product, but must be supplied separately. With the same heat pump, it is also possible to meet heating requirements during the winter and cooling requirements during the summer, as well as the production of domestic hot water. The range includes 2 versions, with outputs of 6 and 9 kW (single-phase); the refrigerant used is R32 for both machines, which allows a flow temperature of 65°C for water in central heating systems. The product's P.C.B. allows programming of the DHW tank functions directly from the control panel and to control 2 different zones (1 zone as standard - booster pumps for up to 2 optional zones outside the casing). For temperature/humidity control of the system zones, various temperature control devices are available (optional for all zones).

In terms of electrical integration, MAGIS HERCULES PRO MINI models are equipped with a 2.3 kW DHW integrative resistance as per standard; a 3 kW system integrative resistance can also be combined (already equipped for MAGIS HERCULES PRO MINI EH). Among the accessories, it is also possible to combine a specific kit for connection to a solar thermal system (optional outside of the casing).

At installation level, the floor standing indoor unit has an IPX5D degree of protection (indoor installation only); on the other hand, the outdoor unit can be installed outdoors. The water circuit is fully protected against freezing because installed inside the home (there is no need to add antifreeze); it is, therefore, also particularly suitable for cold climate areas. Having to make the cooling connections between the outdoor unit and the floor standing indoor unit, the F-GAS license is required for the connection.

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

35 °C  **A+++** MAGIS HERCULES PRO MINI 6 - 9

55 °C  **A++** MAGIS HERCULES PRO MINI 6 - 9

MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

1

MAGIS HERCULES PRO MINI 6 - 9 FEATURES (SINGLE-PHASE)

Split inverter reversible single-phase air/water heat pumps, composed of an outdoor unit and an indoor floor standing unit; a single code identifies the complete system.

Main components:

- **Outdoor 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. The cooling circuit is already preloaded (R32 refrigerant) in the outdoor unit, equipped with the relative shut-off valves;
- **Floor standing indoor unit** (UI MHPM/UI MHPM EH), which includes the hydraulic circuit components for connection to the system, as well as the related management and communication electronics with the outdoor unit. The indoor unit consists of:
 - R32 / water 72-plate heat exchanger unit and flowmeter DN15;
 - 180-litre domestic hot water storage tank in stainless steel with a high exchange surface area, fully insulated, equipped as standard with a 2.3 kW DHW integration resistance;
 - 25-litre stainless steel inertial storage tank;
 - 3 kW system integration resistance (optional, already equipped only for MAGIS HERCULES PRO MINI EH);
 - Grundfos Hydraulic unit UPM4XL 15-90 130 9 m w.c. low consumption and 3-way DHW priority valve; Y-filter on system return as standard;
 - 10-litre system expansion vessel and 3 bar system safety valve, 2 DHW expansion vessels of 6 litres each and 8 bar DHW safety valve;
 - Electronics including electrical installation control panel (for programming all DHW tank functions directly and programming the time slots for all circuits and relative climatic curves, in heating and cooling mode) + main power panel (electrical connection terminal block of the various electrical devices - e.g. resistances);
 - Control panel with control covering door equipped with opening for the large display; controls composed of 7 keys + 2 encoder knobs to make adjustments;
The system zones can be managed via:
 - Zone remote panel (optional, for zone 1 also), it is possible to install up to 2, one for each system zone;
 - ModBus temperature and humidity sensor kit;
 - On-off room chrono-thermostat and on-off humidistat;
 - DOMINUS interface kit for remote control commands from smartphone application;
 - Shifting temperature operation, using the external probe on the outdoor unit. Possibility to set 2 heating curves and 2 cooling curves (from control panel); if the outdoor unit is installed in “unfavourable” conditions for detecting the outdoor temperature, another external probe can be combined (optional) in place of the one fitted as standard on the outdoor unit;
 - BOOST function for DHW - allows you to use all the available power (HP + electric resistance) with a logic that minimises the filling time of the storage tank;

- Silent Mode function - schedule to reduce the sound power of the outdoor unit to 35 dB (comparable to a quiet living environment at night);
- Input to force activation with photovoltaic system producing electricity (the domestic hot water storage tank is heated to the maximum storage temperature exclusively by the heat pump). In case of simultaneous DHW and system demand, the system will decide which service to satisfy, in order to ensure the best comfort available;
- Recirculation kit management with pump (optional, with 2-relay Kit) - programming of activation time slots from control panel + temperature probe (on recirculation network return, this probe does not allow the installation of an additional external probe) to switch off the pump for the heating loop;
- Programmable anti-legionella function (with resistance);
- Screed heater function;
- 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);
- Minimum system water content required of 30 litres for both available sizes. The thermal flywheel supplied as standard (25 litres) avoids the installation of an additional external inertia storage tank;
- The electronics of MAGIS HERCULES PRO MINI, in combination with the two relay kit (code 3.031943 optional), allows you to manage the recirculation pump (optional) or to control summer/winter diverter valves in radiant panel heating/cooling fan coil systems; switching takes place by changing the mode (summer/winter) from the control panel, from the Remote Panel (optional) or from a dedicated external selector (optional). Alternatively, each relay can activate any dehumidifier in neutral or cooled air mode.
- By integrating the electronics in MAGIS HERCULES PRO MINI with the expansion kit (code 3.031944 optional) you may:
 - a) enable a multifunction relay to control summer/winter diverter valves or, alternatively, activate any dehumidifier in neutral or cooled air mode;
 - (b) display any system dehumidifier faults;
 - (c) manage possible 3rd system zone.

The model includes:

- **MAGIS HERCULES PRO MINI 6** code 3.034093
- **MAGIS HERCULES PRO MINI 9** code 3.034094
- **MAGIS HERCULES PRO MINI 6 EH** code 3.034095
- **MAGIS HERCULES PRO MINI 9 EH** code 3.034096

Installation TEMPLATE code 2.017847

EC Declaration Of Conformity.

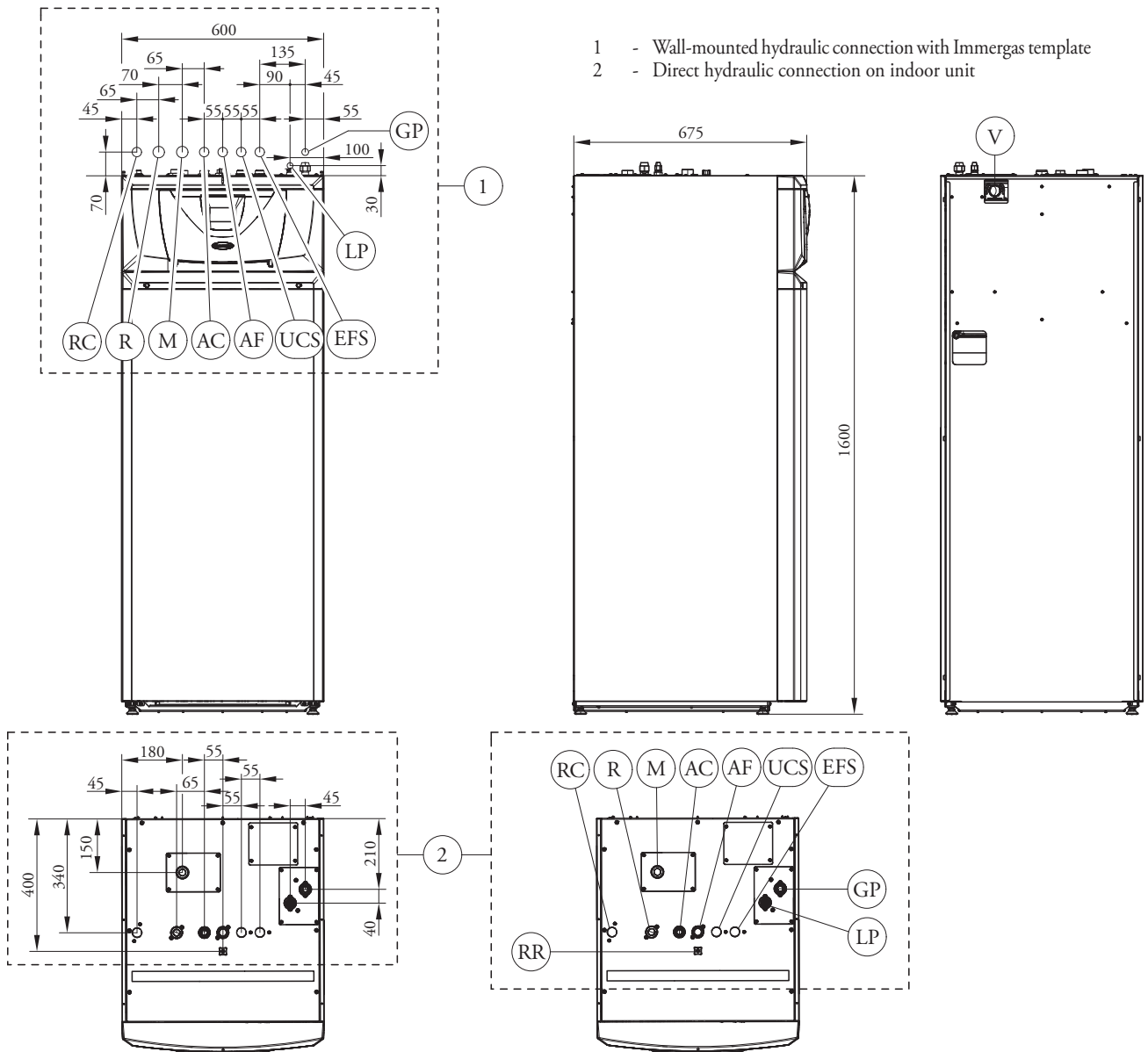


MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

2 MAGIS HERCULES PRO MINI DIMENSIONS AND CONNECTIONS (INDOOR UNIT)

Model MAGIS HERCULES PRO MINI MAGIS HERCULES PRO MINI EH	Height mm 1600	Width mm 600	Depth mm 675
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KEY:

- GP - Chiller line - gaseous phase
- LP - Chiller line - liquid phase
- R - System return
- M - System flow
- AC - Domestic hot water outlet

- AF - Domestic cold water inlet
- RC - Pump (optional)
- UCS - Solar heat exchanger outlet (optional)
- EFS - Solar heat exchanger cooling inlet (optional)
- V - Electrical connections
- RR - Filling

DIRECT CONNECTIONS ON MAGIS HERCULES PRO MINI (INDOOR UNIT)

LP SAE 1/4"	GP SAE 5/8"	M - R G 1"	AC G 3/4"	AF G 1"	RC G 3/4"	UCS G 3/4"	EFS G 3/4"
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WALL CONNECTIONS WITH TEMPLATE

LP SAE 1/4"	GP SAE 5/8"	M - R G 1"	AC G 3/4"	AF G 3/4"	RC G 3/4"	UCS G 3/4"	EFS G 3/4"
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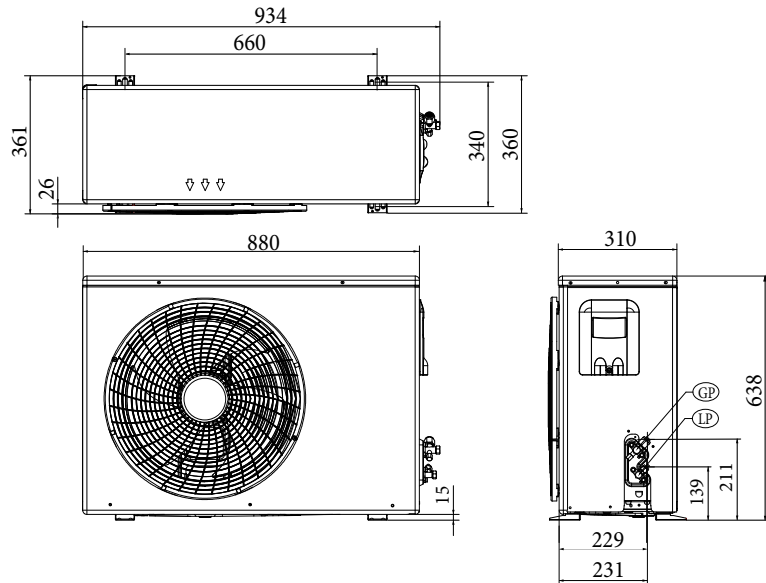
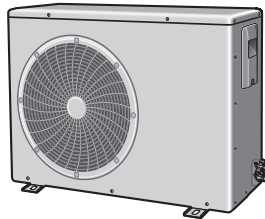


AUDAX PRO V2

3

AUDAX PRO V2 DIMENSIONS AND CONNECTIONS (outdoor unit)

AUDAX PRO 6 V2



Height = 638 mm

Width = 880 mm

Depth = 361 mm

Condensate drain = Ø 20 mm

R32

Model

LP (Cooling liquid)

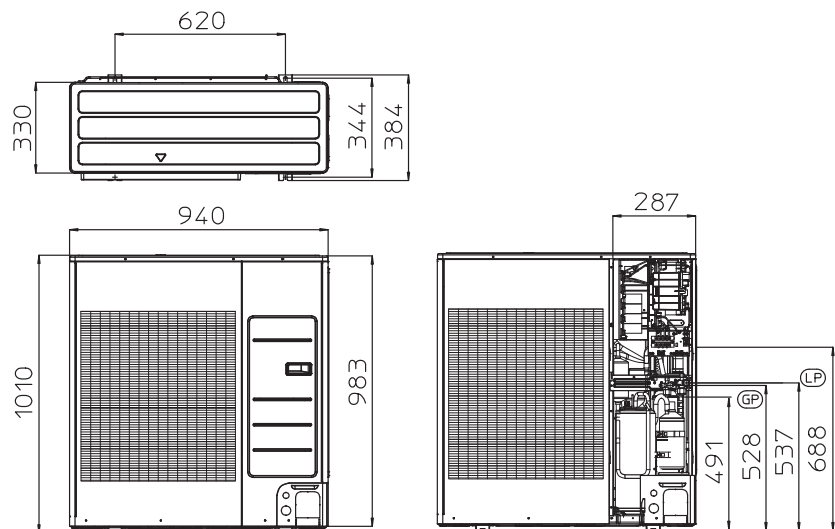
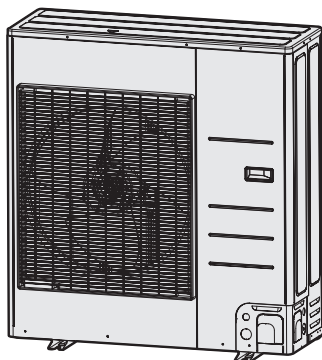
GP (Gaseous liquid)

AUDAX PRO 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

R32

Model

LP (Cooling liquid)

GP (Gaseous liquid)

AUDAX PRO 9 V2

1/4" (6.35 mm)

5/8" (15.88 mm)

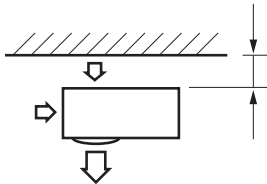


AUDAX PRO V2

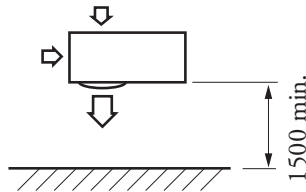
4

SINGLE AUDAX PRO V2 MINIMUM INSTALLATION DISTANCES

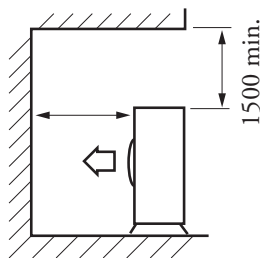
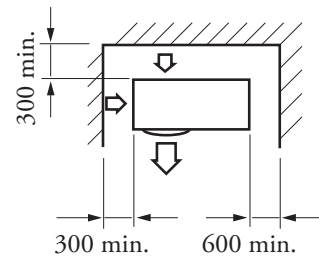
With the back side of the unit facing a wall



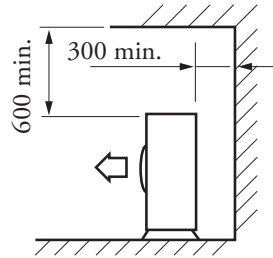
With the front side of the unit facing a wall



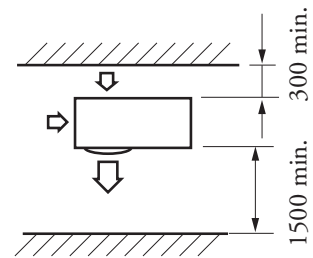
With three sides of the unit facing a wall



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 outdoor 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;

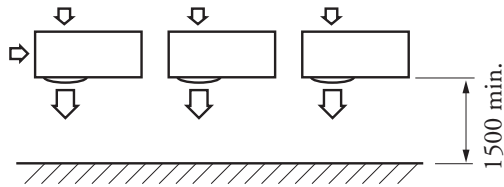
- prevent exhaust air from the device from coming into the rooms through doors or windows, thus disturbing people;
- The appliances must:
 - be placed on a level surface that is able to withstand its weight;
 - be placed on a slab that is hard enough and which does not transfer any vibrations to the 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).



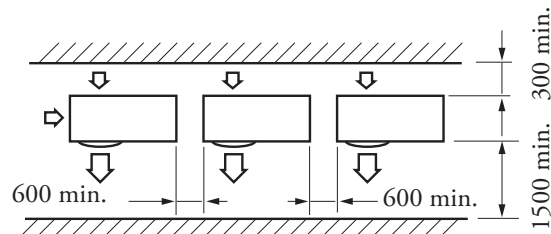
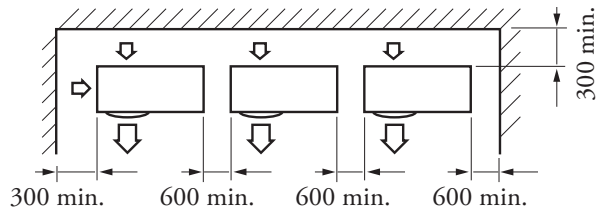
AUDAX PRO V2

5 AUDAX PRO V2 MINIMUM INSTALLATION DISTANCES (SEVERAL APPLIANCES)

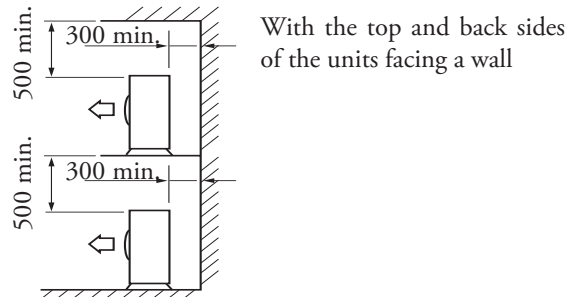
The front side of the unit facing a wall



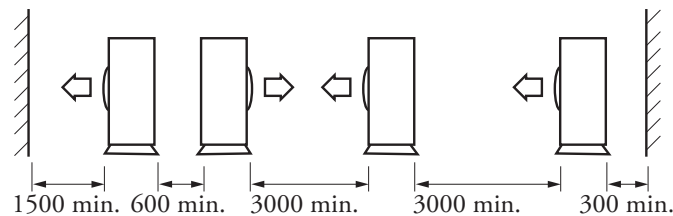
With three sides of the units facing a wall



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/refrigerant heat 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).



AUDAX PRO V2

6

DRAIN HOLES AND CONDENSATE DRAIN

During central heating, ice can deposit on the outer surface of the refrigerant-air heat exchanger.

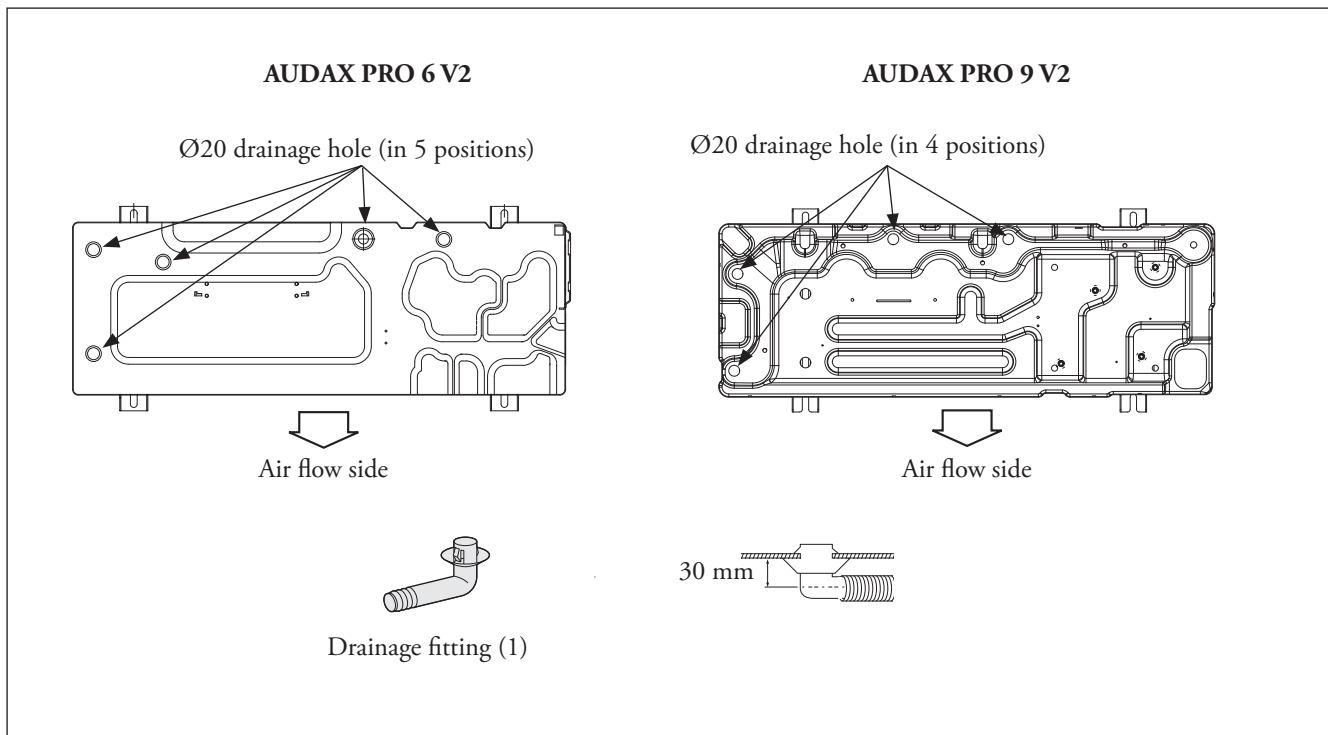
To prevent these deposits from becoming excessive, the unit runs defrosting cycles to melt these deposits.

The water resulting from this process is eliminated via drainage holes to prevent it from re-solidifying at the bottom of the unit when the outdoor temperature is quite low.

If, for whatever reason, this water cannot be allowed to drain freely, you must leave the appliance raised at least 100 mm above the floor level and the drain sleeve supplied as standard should be used.

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 (2) (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.



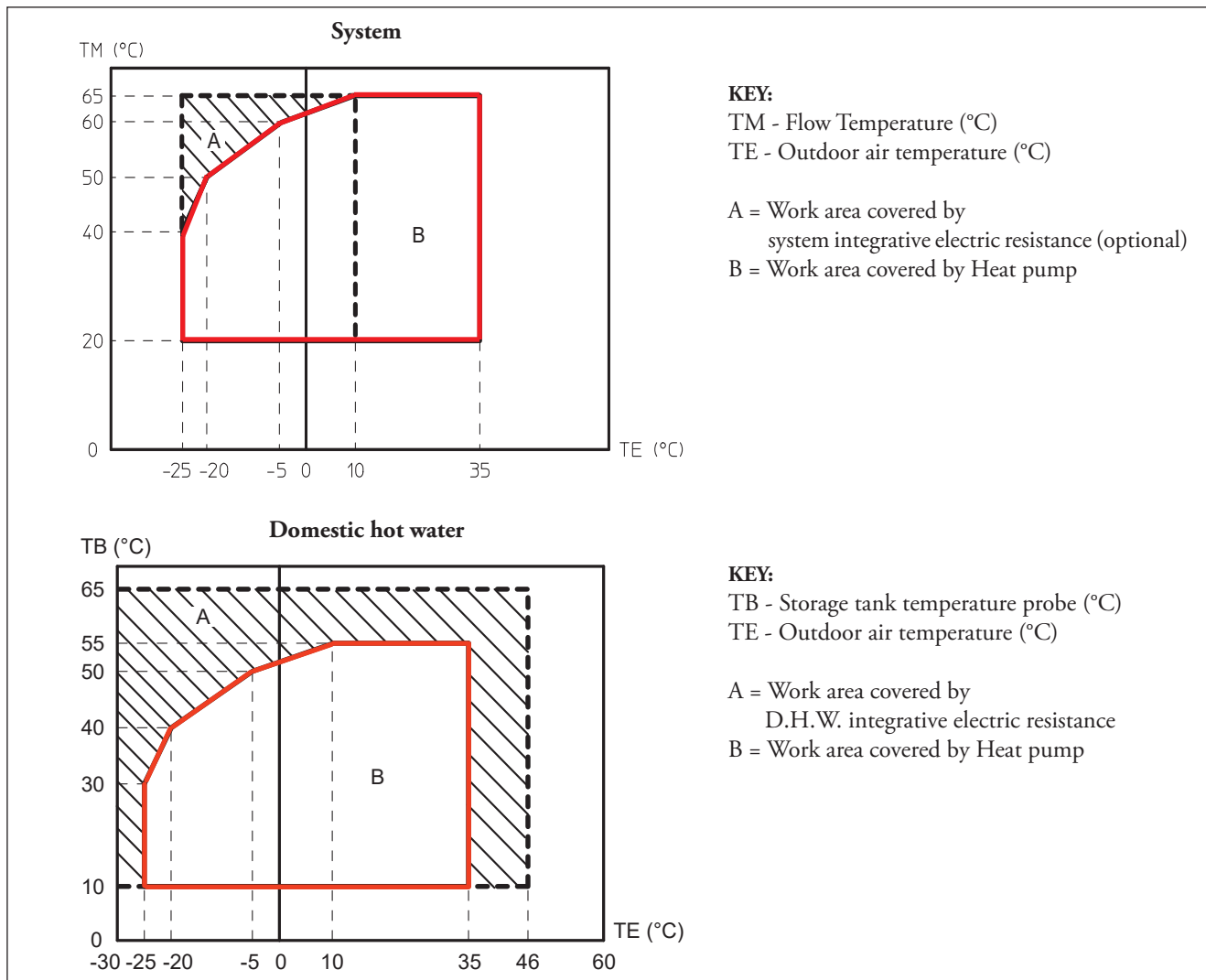
MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

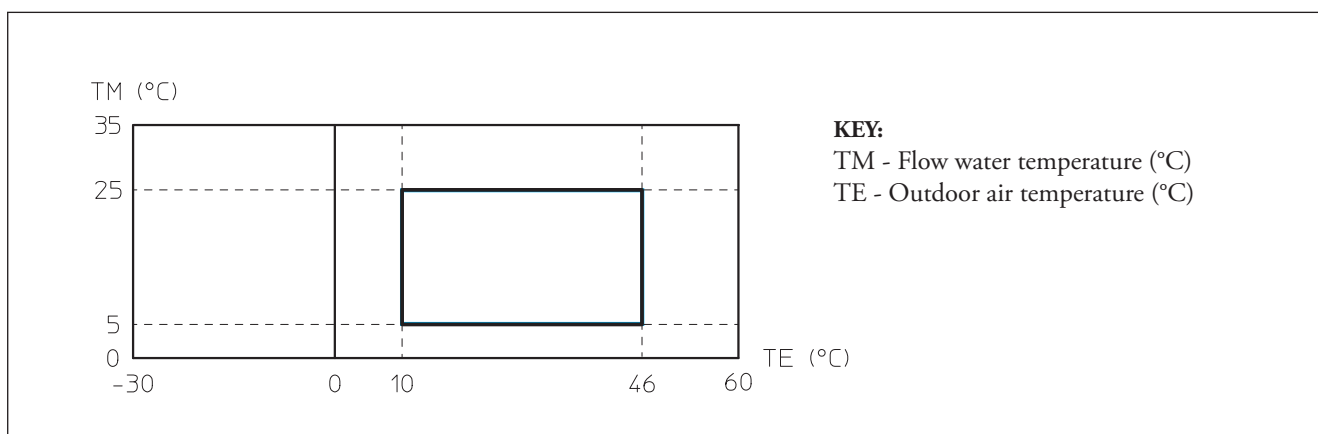
7

COOLING CIRCUIT WITH R32 FUNCTIONING LIMITS

Central heating



Cooling

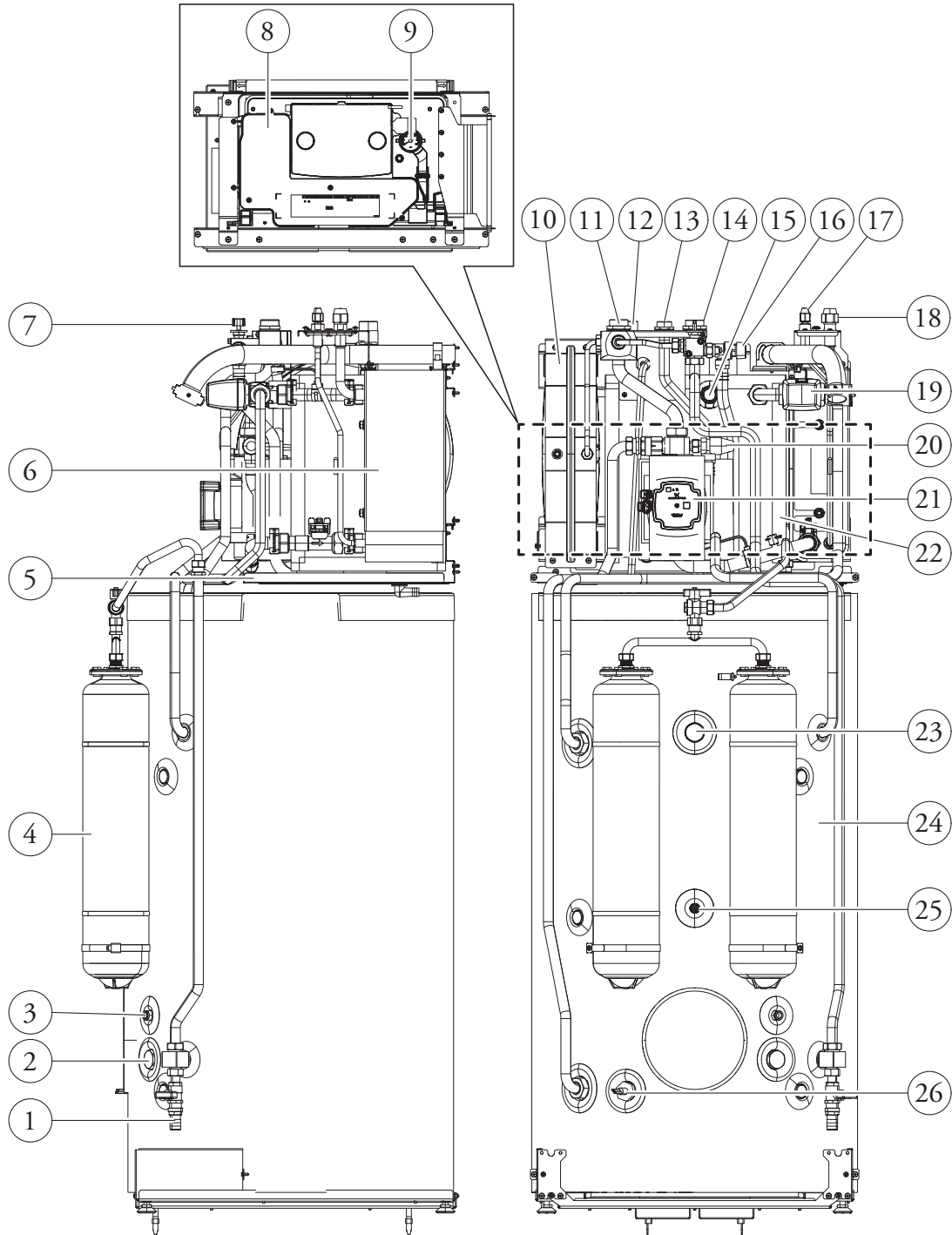


MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

8

INDOOR UNIT MAIN COMPONENTS



KEY:

- | | | |
|---------------------------------------|---|-------------------------------------|
| 1 - Storage tank unit draining valve | 10 - System expansion vessel | 19 - 3-way valve (motorised) |
| 2 - Sacrificial anode | 11 - System return fitting | 20 - System safety valve |
| 3 - Solar probe | 12 - System flow fitting | 21 - Heat pump |
| 4 - DHW expansion vessel | 13 - Cold water inlet fitting | 22 - 25 Litre inertial storage tank |
| 5 - Condensate collection tray | 14 - Hot water outlet fitting | 23 - Sacrificial anode |
| 6 - Water/gas plate heat exchanger | 15 - System electric resistance | 24 - Stainless steel storage tank |
| 7 - Filling cock | 16 - 8 bar safety valve | 25 - DHW probe |
| 8 - Electrical connection compartment | 17 - Chiller line connection liquid status | 26 - DHW electric resistance |
| 9 - System pressure gauge | 18 - Chiller line connection gaseous status | |

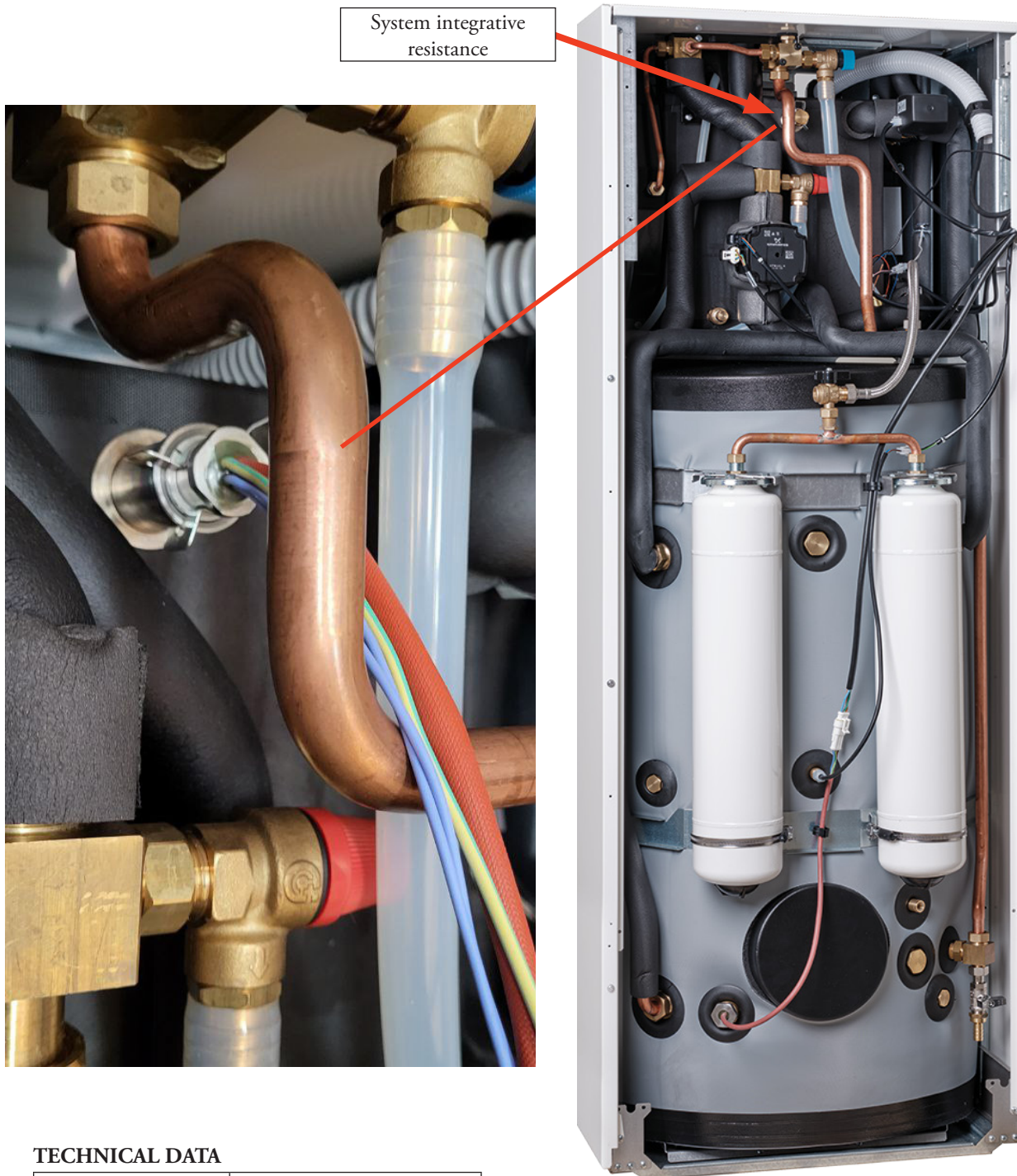


MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

9

3 kW SYSTEM INTEGRATIVE RESISTANCE KIT POSITION (CODE 3.030899)



TECHNICAL DATA

Electric power supply	230V-50Hz single phase+earthing
Max. Input	2,8 kW
Absorption	12,2 A
Working temperature	65°C
Maximum temperature	70 °C

N.B.: The system integrative resistance is already equipped only for MAGIS HERCULES PRO MINI EH, optional for MAGIS HERCULES PRO MINI

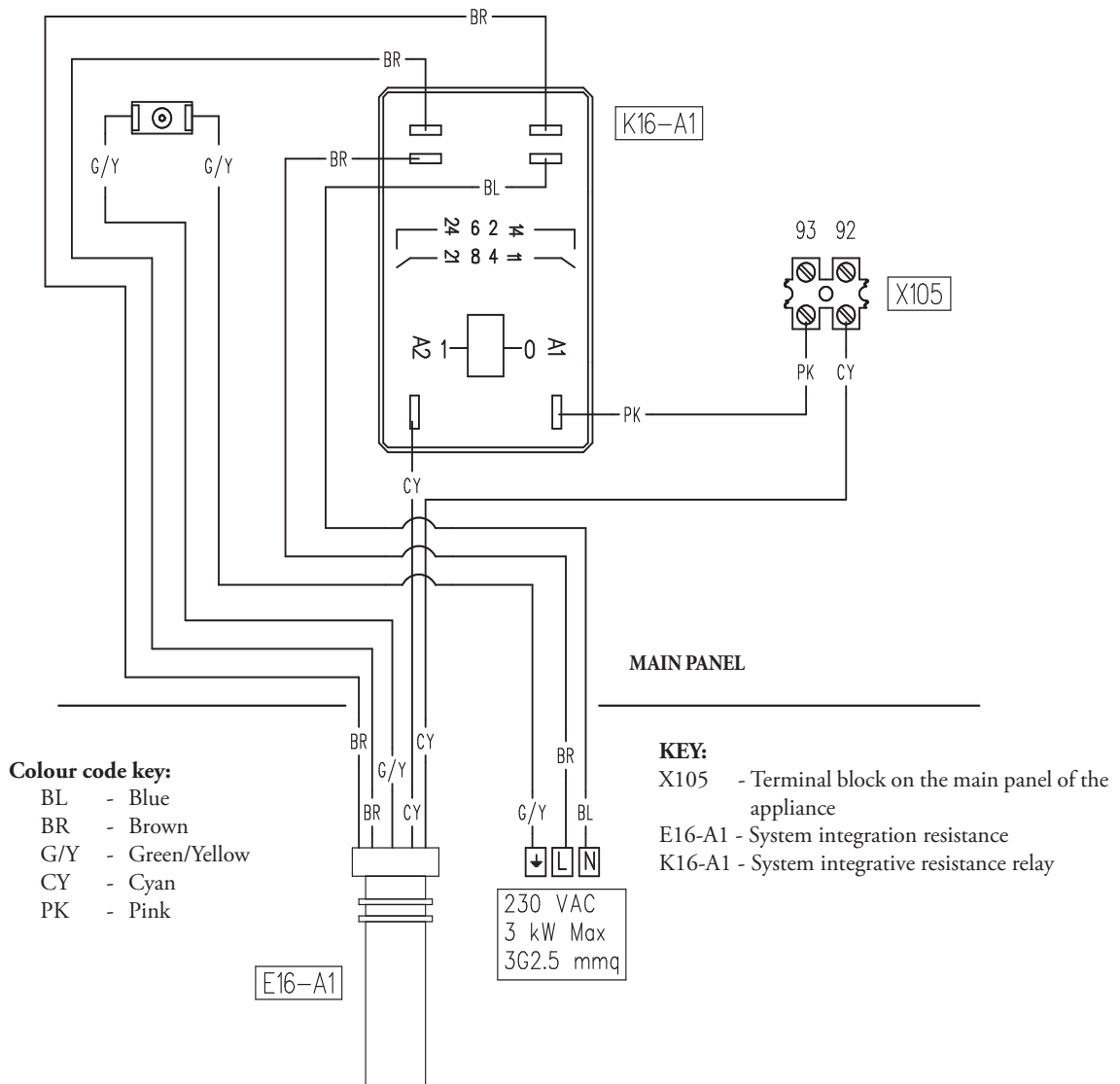
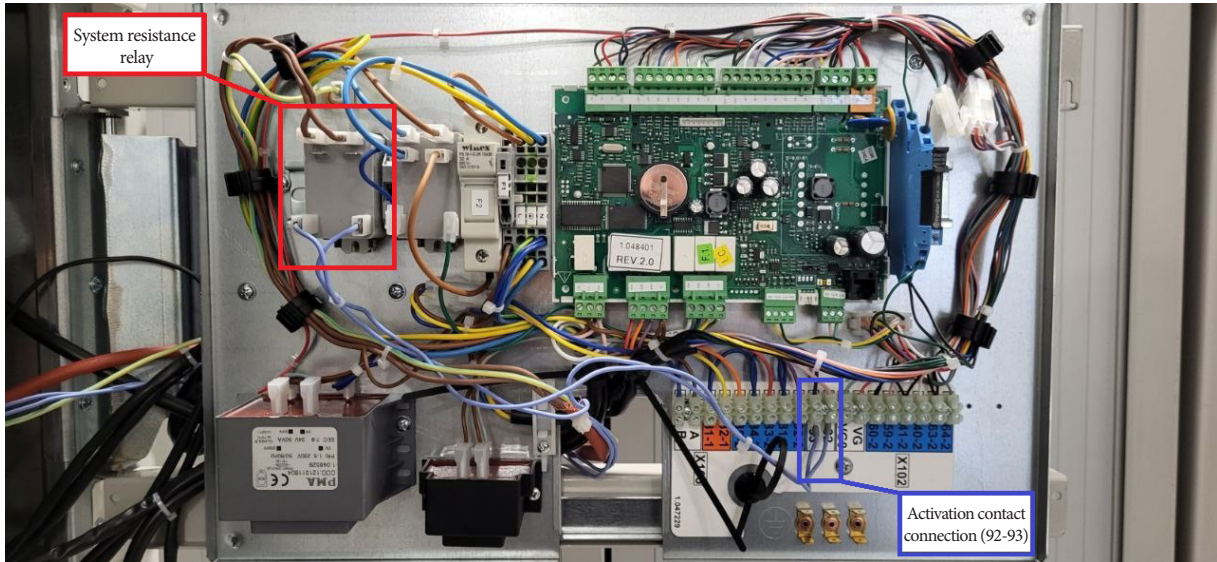


MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

9.1

ELECTRICAL CONNECTION OF 3 kW SYSTEM INTEGRATIVE RESISTANCE KIT (CODE 3.030899)



MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

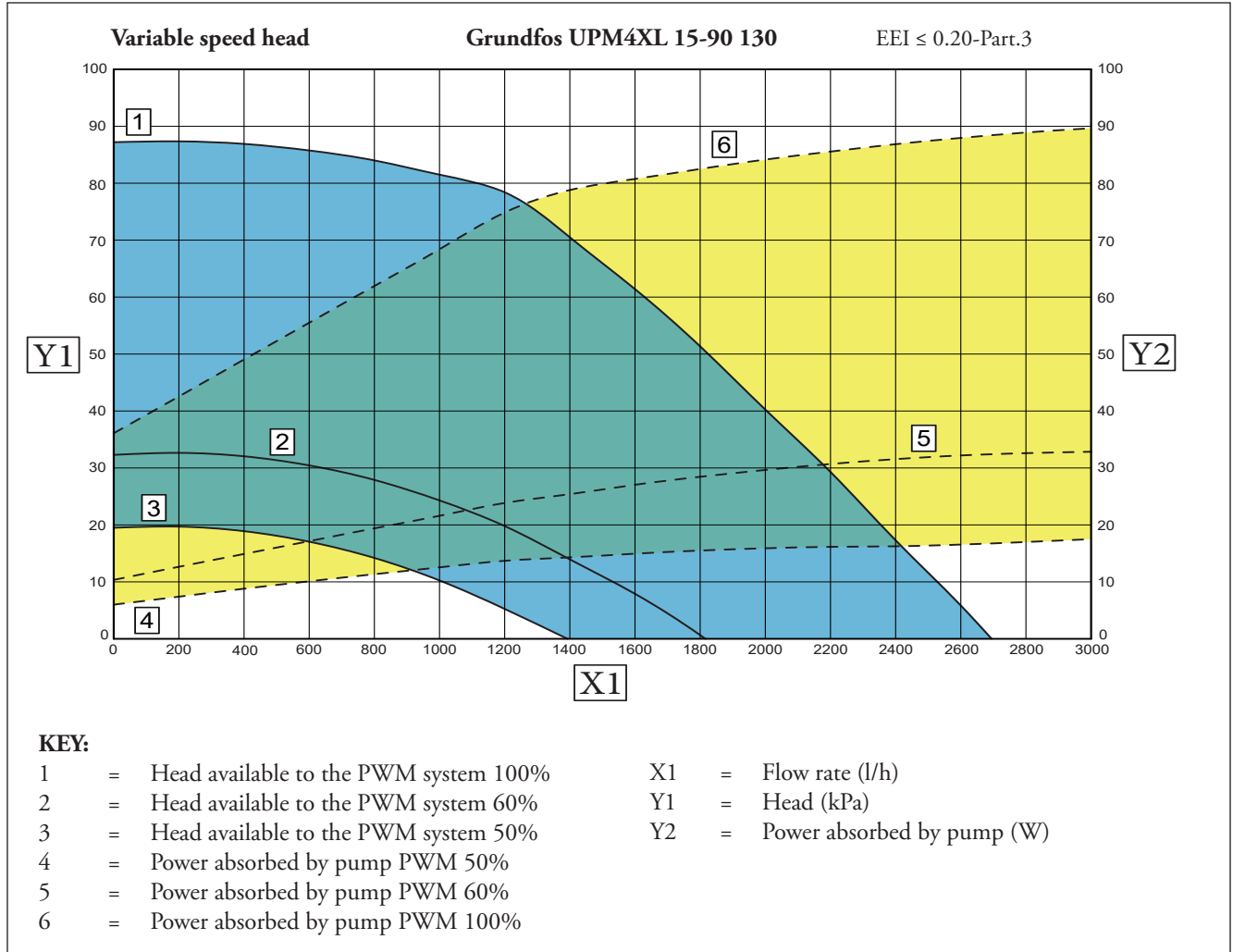
10

HEAD FLOW RATE AVAILABLE TO THE SYSTEM GRAPH

MAGIS HERCULES PRO MINI is equipped as standard with a variable-speed, modulating pump with low power consumption (factory settings are suitable to guarantee the best possible performance), through which you can operate directly on the

air-conditioning system.

The flow rate/head characteristics of this pump are shown in the graph below, and it is suitable for both space heating and cooling operation.



10.1

GRUNDFOS UPM4XL 15-90 130 PUMP SETTINGS AND CONFIGURATIONS

The pump speed is set via the following parameters:
Fixed (Pump Mode = Max. Speed): the speed of the pump is fixed and corresponds to the maximum set speed.

ΔT constant (Pump mode = Modul.): the speed of the pump varies to keep the system flow and return ΔT (5°C) constant. Also, you can adjust the pump operating range, by setting the maximum speed and the minimum speed.

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 DHW tank 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:

Having a minimum water content (25 litres as per standard) 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 power of 3 U/kW of the machine (dehumidifier hydraulic circuit connection).



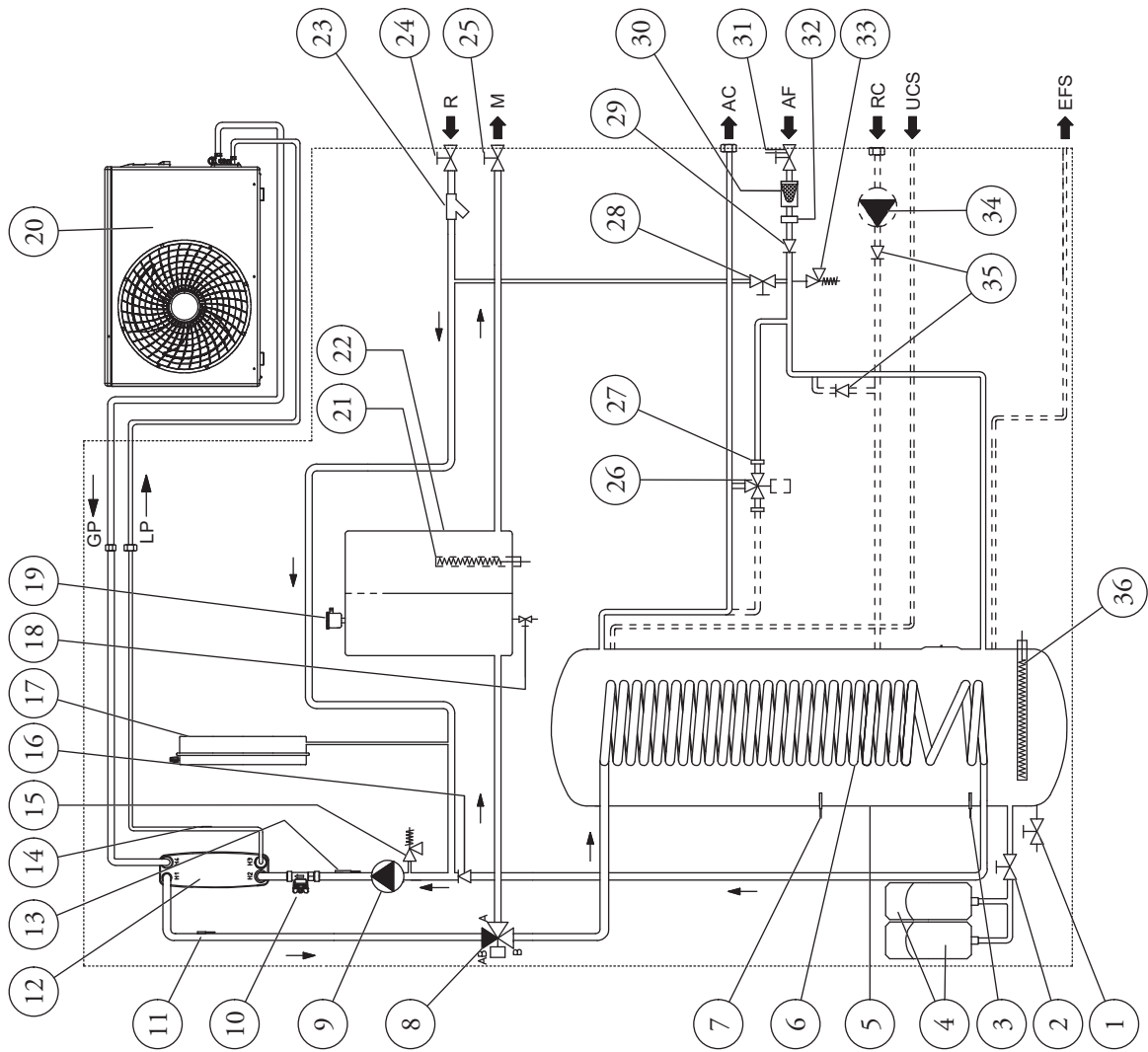
MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

11 MAGIS HERCULES PRO MINI (INDOOR UNIT) HYDRAULIC DIAGRAM

KEY:

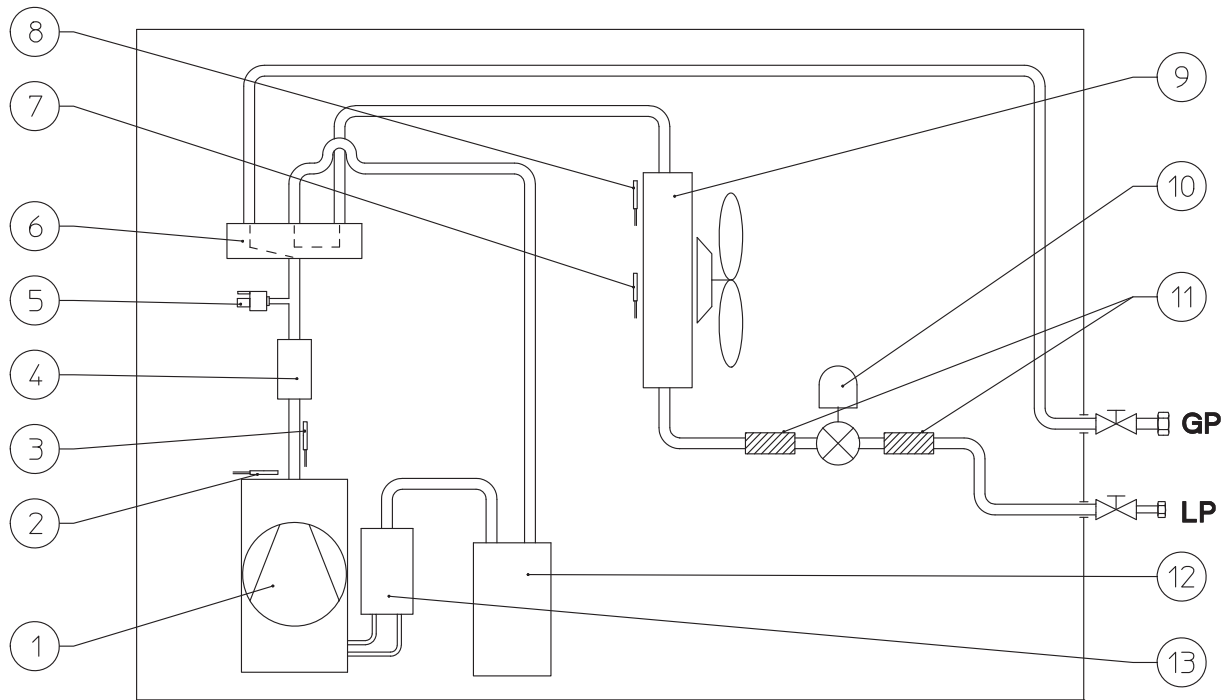
- 1 - Storage tank unit draining valve
 - 2 - DHW expansion vessel valve
 - 3 - Storage tank solar probe (Optional)
 - 4 - DHW expansion vessel
 - 5 - Stainless steel storage tank
 - 6 - Stainless steel coil for storage tank
 - 7 - DHW probe
 - 8 - Motorised 3-way valve
 - 9 - Heat pump
 - 10 - System flow-meter
 - 11 - Heat pump flow probe
 - 12 - Water/gas plate heat exchanger
 - 13 - Heat pump return probe
 - 14 - Liquid phase detection probe
 - 15 - 3 bar safety valve
 - 16 - Non-return valve
 - 17 - 10 litre system expansion vessel
 - 18 - System draining valve
 - 19 - Air vent valve
 - 20 - AUDAXPRO V2 outdoor unit
 - 21 - 3 kW system electric resistance (optional)
 - 22 - 25-litre inertial storage tank
 - 23 - Y-Filter that can be inspected
 - 24 - System return shut-off cock (Optional)
 - 25 - System flow shut-off cock (Optional)
 - 26 - DHW mixing valve (solar system kit optional)
 - 27 - Cap for solar kit installation
 - 28 - System filling valve
 - 29 - Cold water inlet non-return valve
 - 30 - Cold water inlet filter
 - 31 - Cold water inlet cock
 - 32 - Flow limiter
 - 33 - 8 bar safety valve
 - 34 - DHW recirculation pump (Optional)
 - 35 - DHW recirculation one-way valve (Optional)
 - 36 - 2.3 kW DHW electric resistance
-
- R - System return
 - M - System flow
 - AC - Domestic hot water outlet
 - AF - Domestic cold water inlet
 - UCS - Solar heat exchanger outlet (optional)
 - EFS - Solar heat exchanger cold inlet (optional)
 - RC - Recirculation (Optional)
 - GP - Chiller line - gaseous phase
 - LP - Chiller line - liquid phase



AUDAX PRO V2

11.1

AUDAX PRO V2 (OUTDOOR UNIT) HYDRAULIC DIAGRAM



KEY:

- 1 - Compressor
- 2 - Compressor temperature probe
- 3 - Compressor outlet temperature probe
- 4 - Silencer
- 5 - High pressure switch
- 6 - 4-way valve
- 7 - Temperature of fluid in finned coil probe
- 8 - External probe/installation room temperature probe
- 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 HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

12 MAGIS HERCULES PRO MINI ELECTRONIC MANAGEMENT FUNCTIONS



The electronics of MAGIS HERCULES PRO MINI are characterised by an integrated intelligent management system that establishes the system operating priority, on the basis of the external climatic conditions and central heating system flow temperature set.

It is characterised by a user interface made up of a control panel with a large backlit display, controls consisting of lit touch keys with sound effect and encoders for making adjustments.

It activates the electric resistances for both the central heating system (optional) and the domestic hot water system (the power supply must be taken separately); the logic plans for the activation of the resistances if I do not reach the set temperature within the maximum time (settable for the system and for the domestic hot water system separately), or below a certain external temperature (also settable) I can immediately activate the electric resistance; it is possible to set up simultaneous operation of the HP and supplementary resistances.

The 'SILENT MODE' function ensures extreme quietness of the outdoor unit by reducing the sound power to 35 dB (comparable to a quiet living environment at night) by schedule.

The "Domestic hot water BOOST" function is also available, by activating this function via the parameter menu, the DHW (Domestic hot water) operation takes place with the contribution of both the heat pump and the electrical resistance, with a logic that minimises storage tank charging time.

MAGIS HERCULES PRO MINI works at a shifting temperature, exploiting the external probe on the outdoor unit (located outside); it is designed to manage 2 booster zones either for heating and cooling operation (2-zone kit with 1 dir. + 1 mix., optional outside of the casing) or for heating-only operation (2 direct zones kit or 2-zone kit with 1 dir. + 1 mix., optional outside of the casing), with the possibility of setting 2 climatic curves in central heating and 2 climatic curves in cooling (for the 2 zones) without the need for additional electronic supervision boards. In this case MAGIS HERCULES PRO MINI can be connected to remote zone panels (code 3.030863) via Bus connections (up to 2 can be provided), or it can be connected with simple on/off contacts (e.g. CHRONO 7) to control the room temperature of the 2 zones.

For humidity control, 2 humidistats (code 3.023302) or 2 Modbus temperature and humidity sensors (code 3.030992) can be connected, as an alternative to the Zone Remote Panel described above, for the complete management of the relative dehumidifiers by providing the 2 relay board kit (optional).

For each zone, from the MAGIS HERCULES PRO MINI electronics it is possible to set if the zone is only heating, heating/cooling, only cooling (dehumidification included, with dew point calculation), as well as setting the programming of different time slots for both zones.

The device can only be remote controlled if the DOMINUS interface board kit (optional) is installed. It consists of a simple and intuitive App for controlling the system and viewing operation with a Tablet, Smartphone and PC.

MAGIS HERCULES PRO MINI can also be controlled using home automation systems supplied by third parties by installing the home automation manager kit (optional)

There is an input for system activation in correspondence of electricity production by the photovoltaic system (if installed). This input (when active) forces the central heating of the storage tank for the production of DHW at maximum storage temperature. The electronics of MAGIS HERCULES PRO MINI, in combination with the two relay kit (code 3.031943 optional), allow you to control summer/winter diverter valves, where switching takes place by changing the mode from the control panel, from the remote panel (optional) or from a dedicated external selector (optional). Otherwise, each relay allows you to activate any dehumidifiers in neutral or cooled air mode.

By integrating the electronics in MAGIS HERCULES PRO MINI with the expansion kit (code 3.031944 optional) it is possible to: view any system dehumidifier faults; enable a multifunction relay to control summer/winter diverter valves, or else activate any dehumidifiers in neutral or cooled air mode; it is also possible to control a 3rd system zone (dedicated hydraulic kits not supplied).

The electronics of MAGIS HERCULES PRO MINI also manage the anti-legionella function through the use of the DHW electric resistance (standard, but to be programmed).

The electronics of MAGIS HERCULES PRO MINI also manage the activation of the recirculation pump (optional) by means of the 2 relay board kit (optional).

Whereas to manage a solar system, if supplied, a solar control unit must be purchased separately and integrated in the optional kit (partly outside the casing).

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

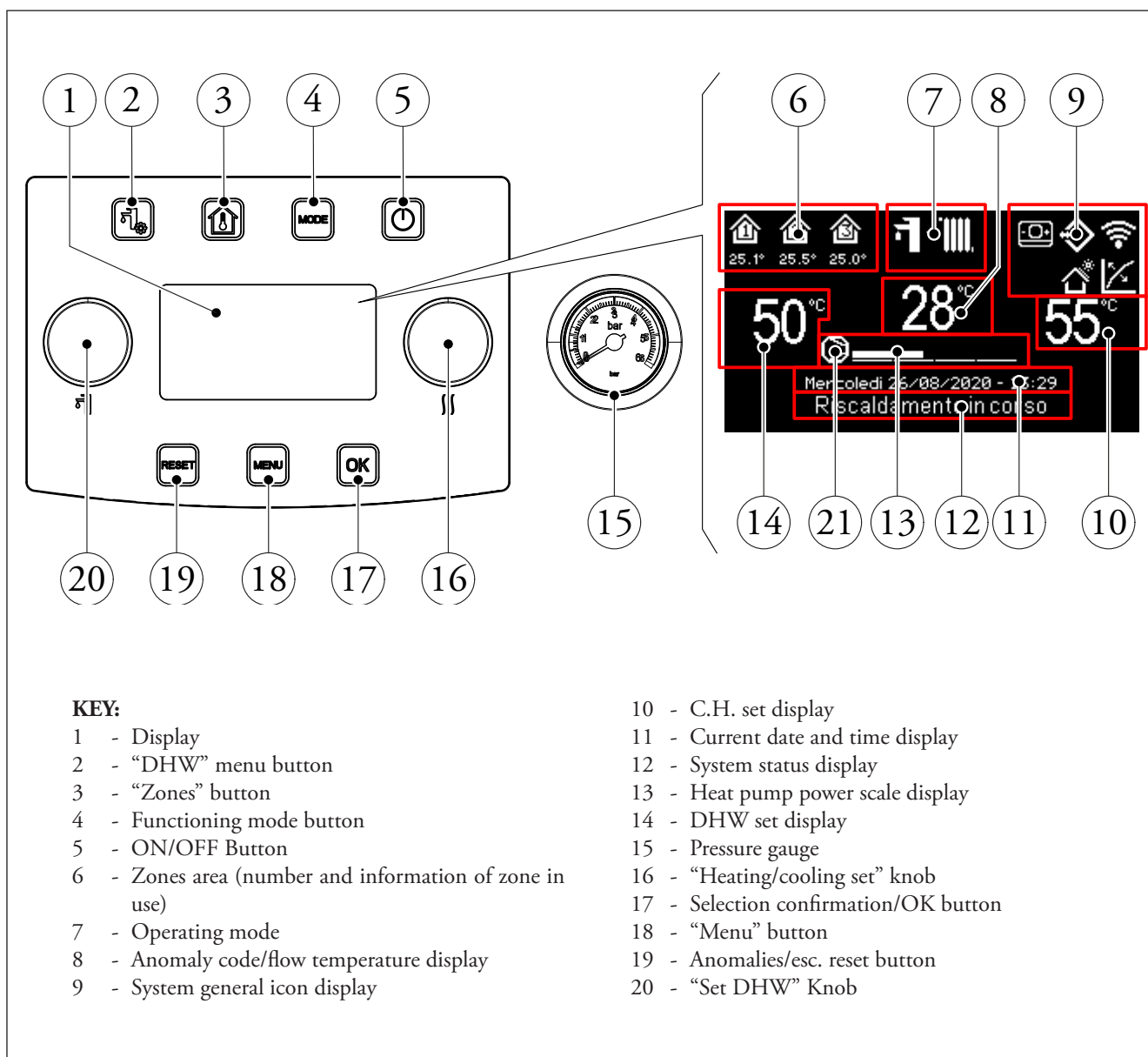


MAGIS HERCULES PRO MINI

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12.1

DISPLAY AND PROGRAMMING MENU



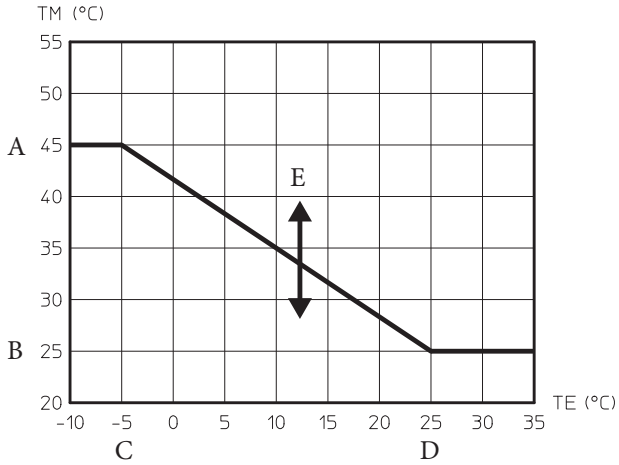
MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

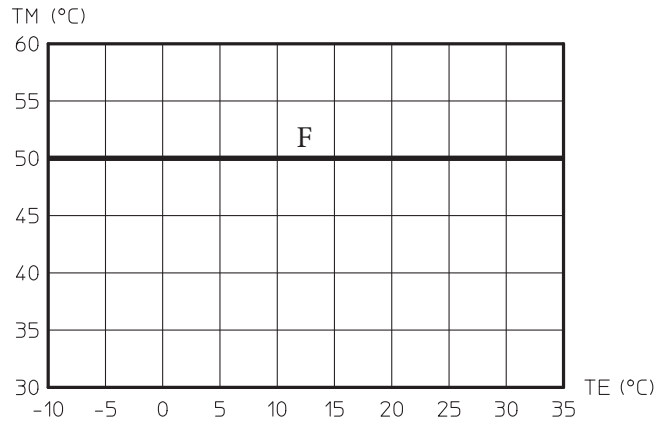
By setting the parameters in the “Temperature control” menu, you can adjust how the system operates.

The following graphs show the default settings in the various operating modes available both with external probe and without.

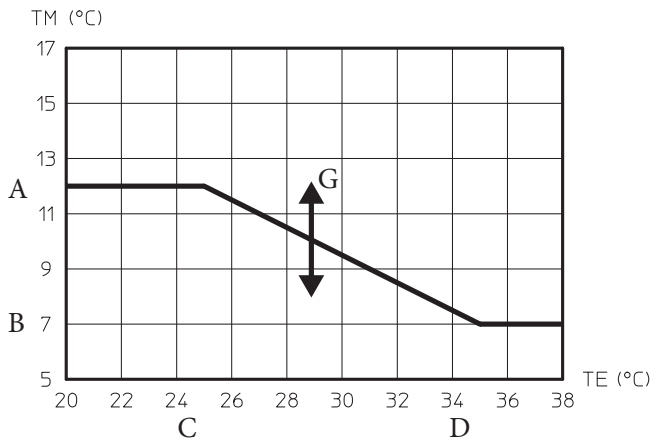
Zone flow temperature in central heating mode and enabled external probe modulation



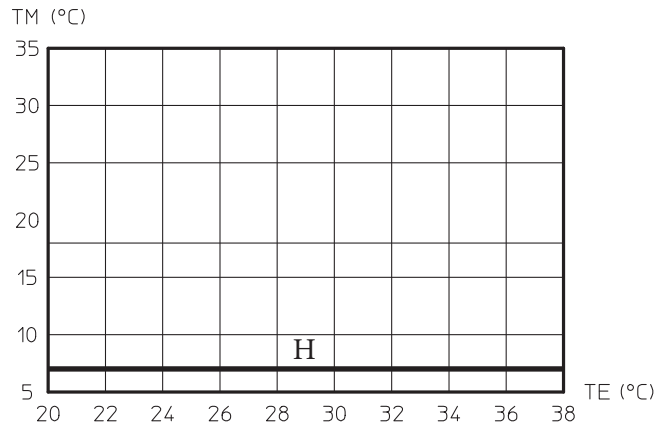
Zone flow temperature in central heating mode and absent external probe modulation



Zone flow temperature in cooling mode and enabled external probe modulation



Zone flow temperature in cooling mode and absent external probe modulation



KEY:

- A - Maximum flow set
- B - Minimum flow set
- C - External minimum temperature
- D - External maximum temperature

- E - C.H. flow temperature offset
- F - C.H. flow setting
- G - Cooling flow temperature offset
- H - Cooling flow set

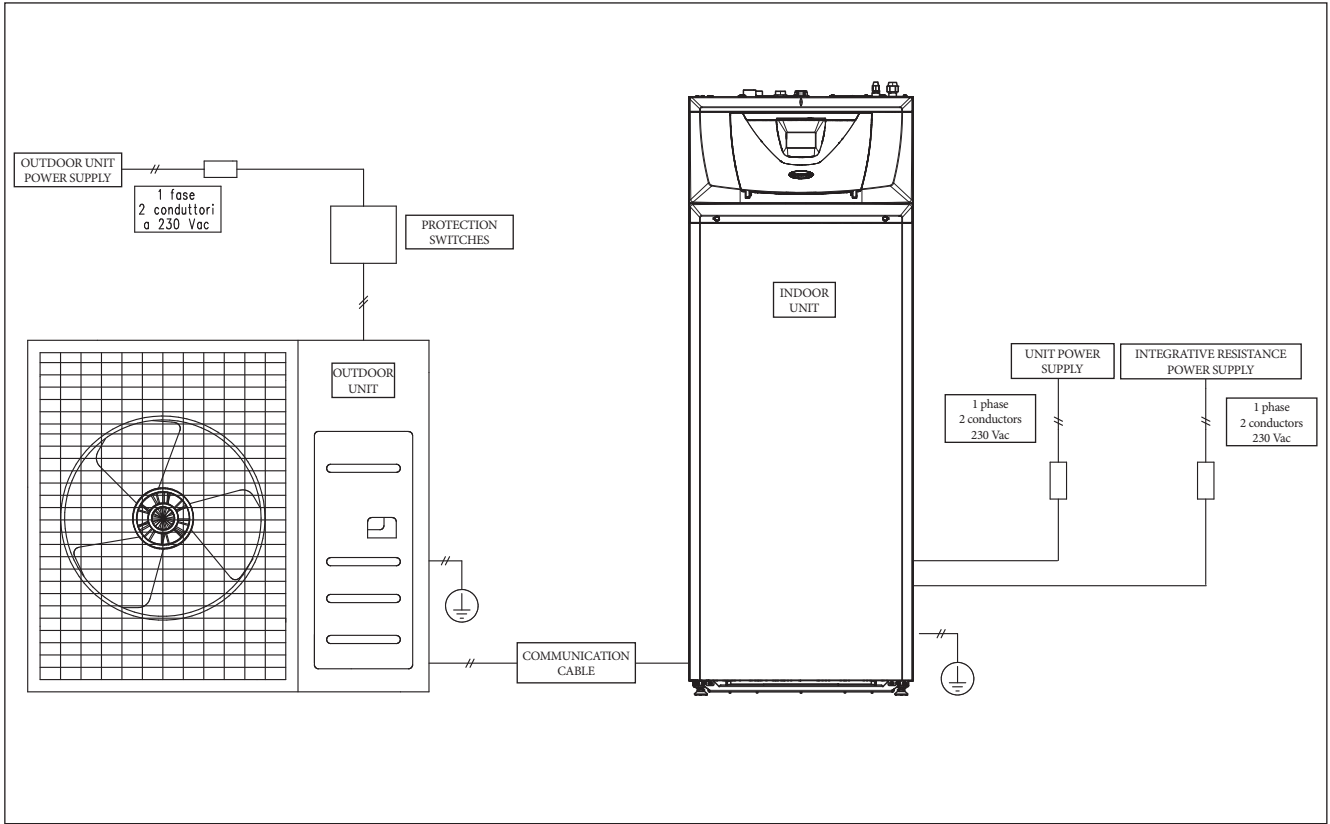


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13

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 suitable cable cross-section can be 2.5 - 4 mm² for AUDAX PRO 6 V2 and 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	Carrying capacity of the protective device required for the device
	Hz	V	V	V			
AUDAX PRO 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/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).

N.B: It is always necessary to install a type "A" residual current device, which must have 30mA high speed contacts (less than 0.1 seconds). Circuit breaker with tripping curve "C" with magnetic release setting 5-10 In (rated current).

MAGIS HERCULES PRO MINI Power supply (indoor unit)					BUS communication cable between outdoor units and indoor units
Power supply	Max./Min. (V)	Main Power supply Cable	Power supply Cable System resistance (optional for MHPM)	Power supply Cable DHW resistance	
Mono-phase, 220-240V, 50Hz	±10%	2.5 mm ² , 3 wires 4 mm ² for MHPM EH	2.5 mm ² , 3 wires	2.5 mm ² , 3 wires	0.75 - 1.5 mm ² , 2 wires

AUDAX PRO V2

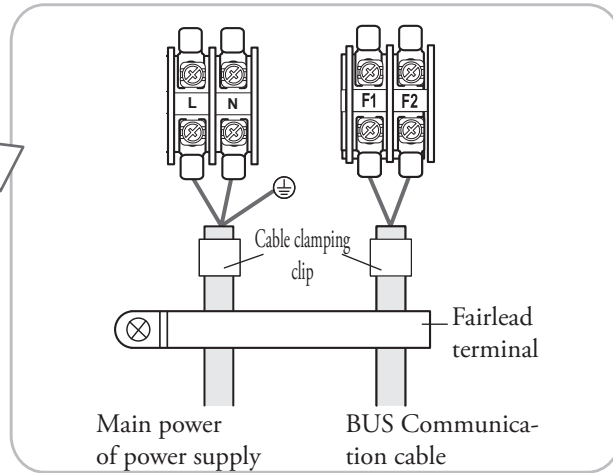
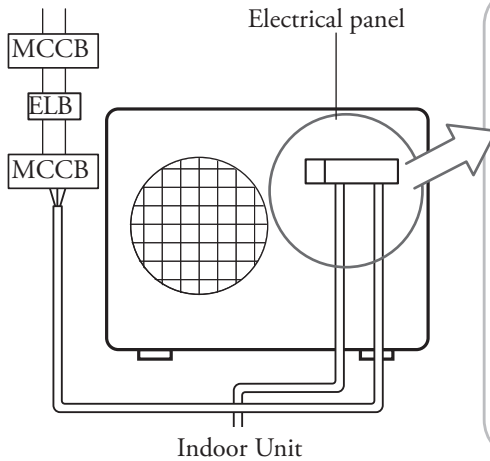
13.1 OUTDOOR UNIT TERMINAL BLOCK ELECTRICAL CONNECTIONS

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.

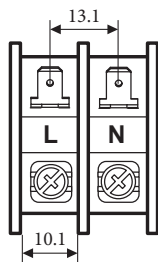
KEY:

- ELB - Safety Switch
- MCCB - Circuit breaker switch

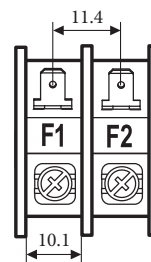


AUDAX PRO 6 V2 - Power supply in mono-phase AC.

M4 screw power supply

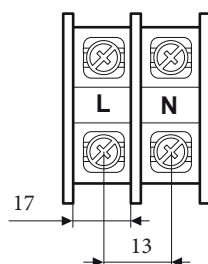


M4 screw communication BUS

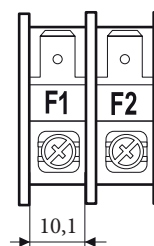


AUDAX PRO 9 V2 - Single-phase AC power supply.

Electric power supply
M5 screw



M4 screw communication
BUS

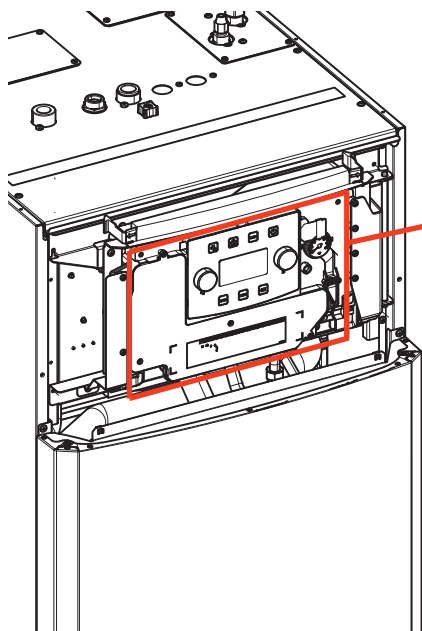


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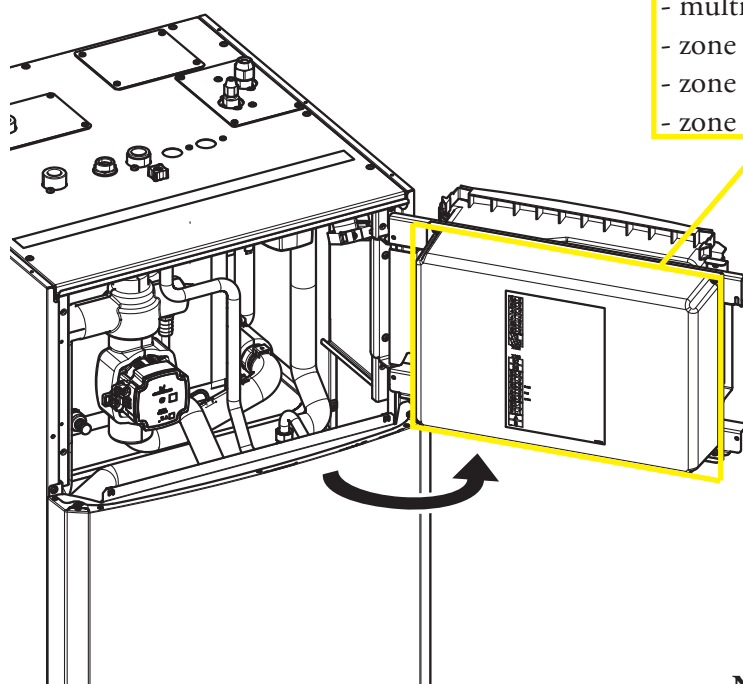
LOCATION OF ELECTRICAL PANELS AND TERMINAL BLOCKS



Control panel (front)

Connectable:

- outdoor unit communication
- remote panels zone 1 and 2
- temperature/humidity probes zone 1 and 2
- expansion kit communication
- DOMINUS interface kit
- additional external probe*
- recirculation probe*
- photovoltaic contact
- zone 1 flow probe
- zone 1 humidistat and thermostat
- central heating/cooling selector



Main panel (rear)

Connectable:

- zone 2 flow probe
- zone 2 humidistat and thermostat
- expansion kit power supply
- system integration resistance
- multifunction relay kit
- zone 1 booster pump
- zone 2 booster pump
- zone 2 mixing valve

N.B.: Only one component marked with * may be installed.

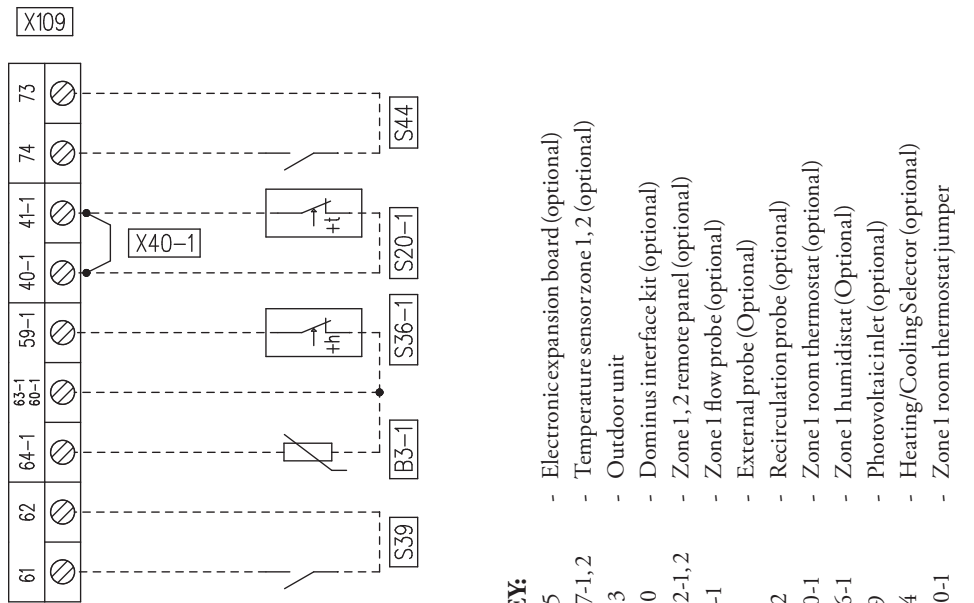


MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

15

ELECTRICAL CONNECTIONS - CONTROL PANEL (FRONT)

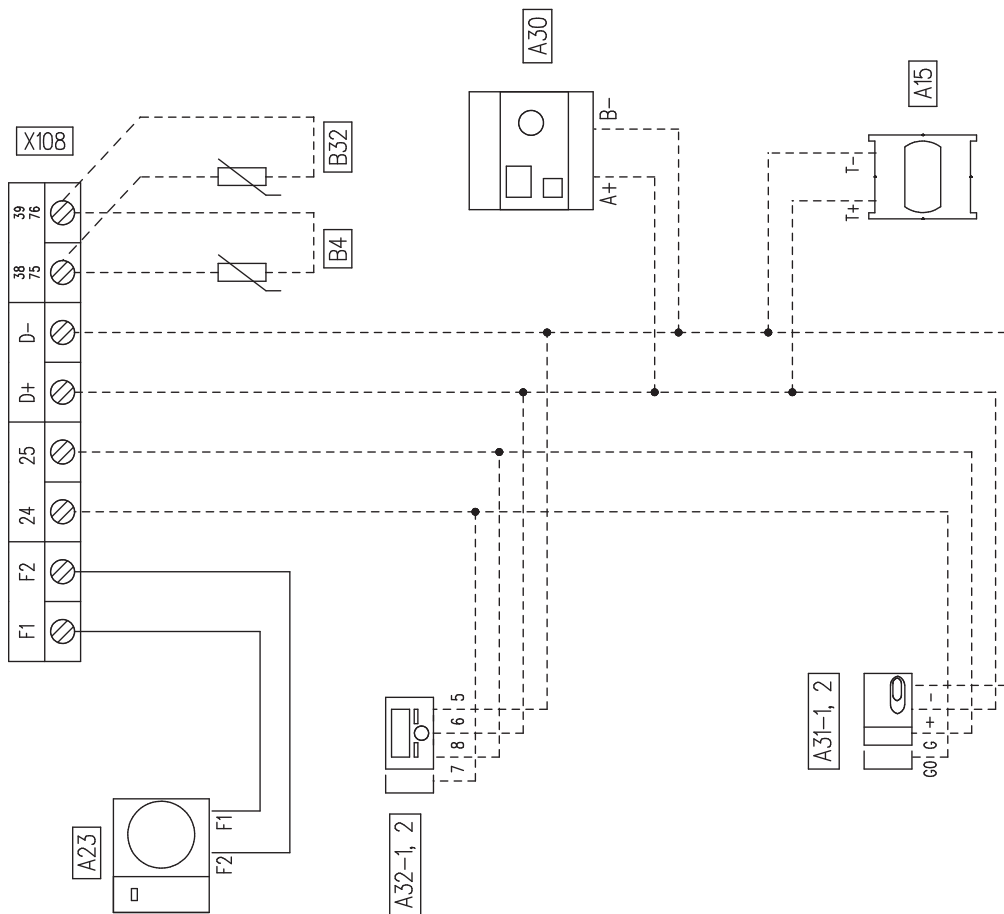


KEY:

- A15 - Electronic expansion board (optional)
- A17-1,2 - Temperature sensor zone 1, 2 (optional)
- A23 - Outdoor unit
- A30 - Dominus interface kit (optional)
- A32-1,2 - Zone 1, 2 remote panel (optional)
- B3-1 - Zone 1 flow probe (optional)
- B4 - External probe (Optional)
- B32 - Recirculation probe (optional)
- S20-1 - Zone 1 room thermostat (optional)
- S36-1 - Zone 1 humidistat (Optional)
- S39 - Photovoltaic inlet (optional)
- S44 - Heating/Cooling Selector (optional)
- X40-1 - Zone 1 room thermostat jumper

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 Remote Panel is also connected, ensure that there is a jumper between terminals 41-2 and 40-2 on terminal block X102 of the **main panel**.



N.B.: The installation of the additional (optional) B4 external probe precludes the use of the (optional) B32 recirculation probe and vice versa.

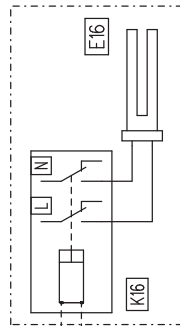
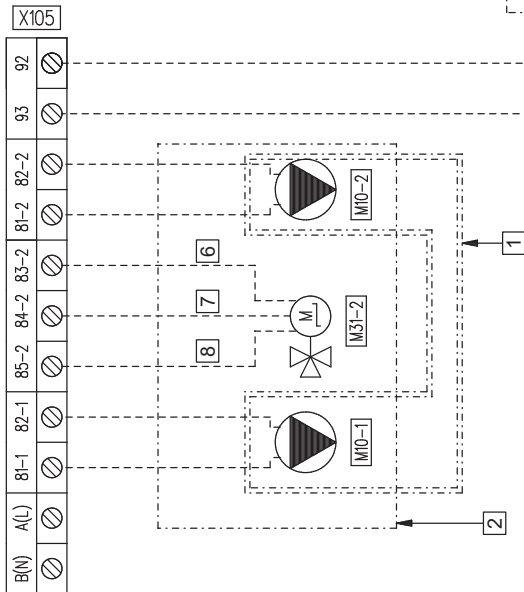
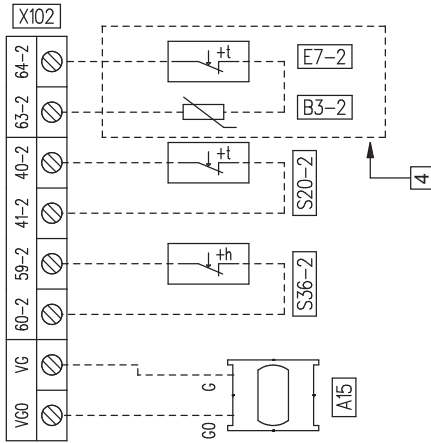
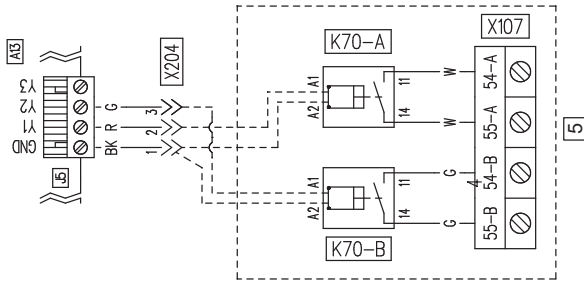


MAGIS HERCULES PRO MINI

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15.1

ELECTRICAL CONNECTIONS - MAIN PANEL (REAR)



KEY:

- A13 - Supervision board
 - A15 - Electronic expansion board (optional)
 - B3-2 - Zone 2 flow probe (optional)
 - E7-2 - Zone 2 low temperature safety thermostat (optional)
 - E16 - External system integrative resistance (optional)
 - E16-A1 - Internal system integrative resistance (optional for MAGIS HERCULES PRO MINI)
 - K16 - External system integrative resistance relay (optional)
 - K16-A1 - Internal system integrative resistance relay (optional for MAGIS HERCULES PRO MINI)
 - K70-A, B - Multifunction relay (optional)
 - M10-1 - Zone 1 pump (Optional)
 - M10-2 - Zone 2 pump (Optional)
 - M31-2 - Zone 2 mixingvalve (Optional)
 - S20-2 - Zone 2 room thermostat (optional)
 - S36-2 - Zone 2 humidistat (Optional)
- 1 - 2 direct zones kit
 - 2 - 2 zones kit (1 mixed and 1 direct)
 - 3 - System integrative resistance kit 3 kW
 - 4 - 2 zones kit (1 mixed and 1 direct)
 - 5 - Dual-relay kit
 - 6 - 220 Vac - 50 Hz - 3 kW - 2.5 mm²
 - 7 - Closed
 - 8 - Common
 - 9 - Open



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16

TEMPERATURE CONTROL (OPTIONAL)

16.1

REMOTE ZONE PANEL



It is an electronic device equipped with a back-lit display to control and adjust the room's temperature and humidity. Connection to the terminal block is made via two BUS cables and two power supply cables.

It programs the relative room temperature control.

It can be applied to the wall using the supplied screws and plugs. The kit is powered at 24 V (directly from the terminal block).

• OPTIONAL

code 3.030863

16.2

MODBUS TEMPERATURE/HUMIDITY PROBE



It is a room probe that detects the temperature and humidity in the room.

Connection to the terminal block is made via two BUS cables and two power supply cables.

It can be applied to the wall using the supplied screws and plugs. The kit is powered at 24 V (directly from the terminal block).

• OPTIONAL

code 3.030992

16.3

CRONO 7



It is an On/Off type backlit digital chrono-thermostat with microprocessor for setting two room temperature levels, one for the day (comfort temperature) and one for the night (reduced temperature), it allows setting separate on and off weekly programs; Displays any error codes.

It is connected to the appliance with only 2 wires, by means of which it requests air conditioning. Power supply is by means of 2 "AA" type 1.5 V batteries.

• OPTIONAL

code 3.021622

16.4

CRONO 7 WIRELESS



It is an On/Off type backlit digital chrono-thermostat with microprocessor consisting of two receiver and transmitter elements, it allows to make the same settings as for the CHRONO 7

The receiver is connected to the appliance with only 2 wires, by means of which it requests air conditioning.

The Chrono-thermostat (transmitter) is powered by 2 "AA" type 1.5 V batteries.

The maximum distance between the transmitter and the receiver is about 50 metres (depends on the room).

• OPTIONAL

code 3.021624

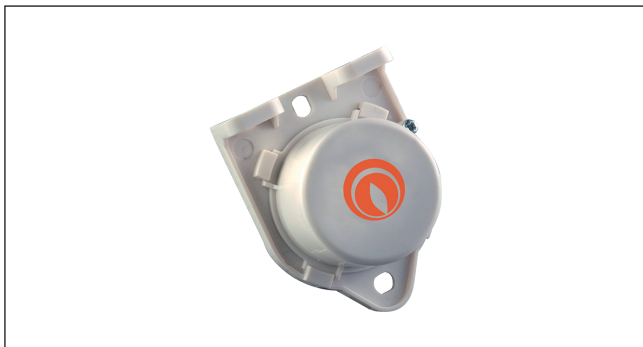


MAGIS HERCULES PRO MINI

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16.5

EXTERNAL PROBE



It is a device for adjusting the heat provided by the system according to the outdoor temperature change.

The external probe always acts when it is connected, independently from the presence and type of temperature control. It can be applied to the wall using the supplied screws and plugs, possibly on the North or North-West wall.

It is connected with only 2 wires, with a maximum length of 50 metres.

• OPTIONAL

code 3.015266

16.6

HUMIDISTAT KIT



It is a device used for controlling the room humidity. It can be adjusted using the knob to select the relative humidity percentage to be controlled between 30 and 90%, it acts with an On/Off contact for dehumidification equipment.

The humidistat is designed for wall installation or on junction boxes normally found on the market.

It is connected to the appliance with only 2 wires.

• OPTIONAL

code 3.023302

16.7

DOMINUS INTERFACE BOARD KIT



It is a simple and intuitive application for controlling the system and viewing operation with a tablet, smartphone and/or laptop. The DOMINUS interface board kit must be installed interposed with a wireless modem/router (not supplied).

The app can be downloaded for free from all stores of your operating system (APP store, Google Play Windows Store).

It can be applied to the wall using the supplied screws and plugs. The kit must be connected to the system's M-Bus network.

The kit is powered at 24 V (directly from the terminal block or from its socket including transformer).

• OPTIONAL

code 3.026273



MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

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

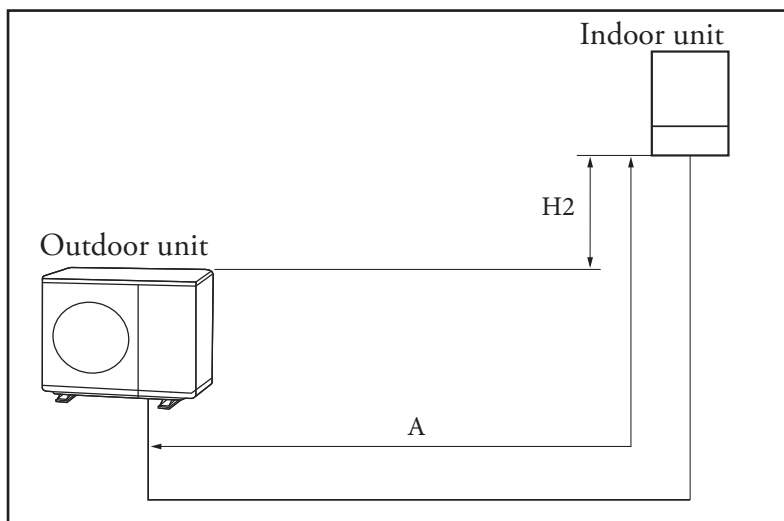
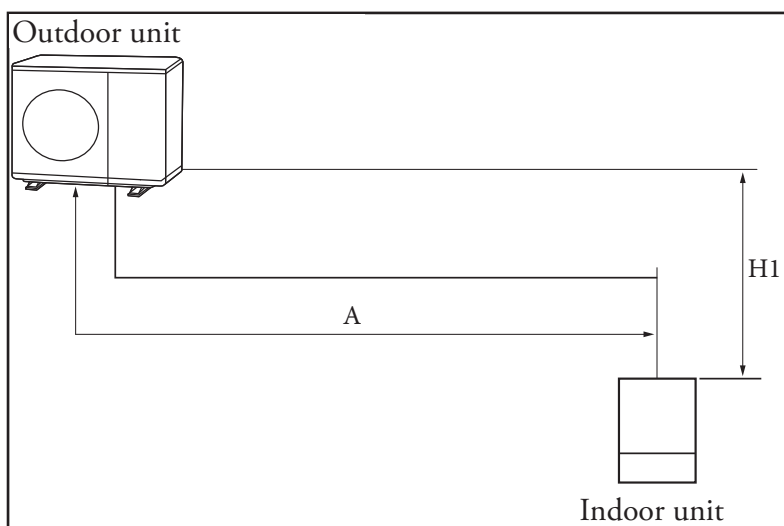
- The R32 is a high pressure refrigerant, the pipes and other parts subject to pressure must be compliant and suitable for the refrigerant itself. Therefore, the pipes must be certified for cooling and it is necessary to observe the methods of installation stated on the instruction manual supplied with 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 outdoor unit model and the type of installation:

	AUDAX PRO 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 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 unit and indoor unit.



MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

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 (Over 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 refrigerant load.

Below is the default factory base load:

AUDAX PRO 6/9 V2 models with R32 refrigerant gas:

- 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 (20 g/linear m).

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 refrigerant 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 refrigerant (take into account the amount already preloaded in the machine).

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

Model AUDAX PRO 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 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 HERCULES PRO MINI

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18

“POWER” AND “ABSORPTION” IN CENTRAL HEATING MODE MAGIS HERCULES PRO MINI 6

MAGIS HERCULES PRO MINI 6		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 HERCULES PRO MINI 6		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 HERCULES PRO MINI 6		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 HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

18.1 “POWER” AND “ABSORPTION” IN COOLING MODE MAGIS HERCULES PRO MINI 6

MAGIS HERCULES PRO MINI 6	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 HERCULES PRO MINI 6	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 HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

19

“POWER” AND “ABSORPTION” IN CENTRAL HEATING MODE MAGIS HERCULES PRO MINI 9

MAGIS HERCULES PRO MINI 9		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 HERCULES PRO MINI 9		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 HERCULES PRO MINI 9		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 HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

19.1

“POWER” AND “ABSORPTION” IN COOLING MODE MAGIS HERCULES PRO MINI 9

MAGIS HERCULES PRO MINI 9	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 HERCULES PRO MINI 9	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 HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

20	MAGIS HERCULES PRO MINI TECHNICAL DATA		
	UI MHPM	6	9
Rated Heating Performance			
Energy class in set water heating 55/35 °C	-	A++/A+++	A++/A+++
Power in CH mode with water set at 35 °C ⁽¹⁾	kW	6,00	9,00
Power in CH mode with water set at 45 °C ⁽²⁾	kW	5,40	8,60
Power in CH mode with water set at 55 °C ⁽³⁾	kW	4,80	8,00
Power in CH mode with water set at 35 °C ⁽⁴⁾	kW	5,50	5,50
CH mode COP with water set at 35 °C ⁽¹⁾		4,92	4,81
CH mode COP with water set at 45 °C ⁽²⁾		3,58	3,69
CH mode COP with water set at 55 °C ⁽³⁾		2,65	2,93
CH mode COP with water set at 35 °C ⁽⁴⁾		2,75	2,74
Flow temperature range	°C	20 - 65	20 - 65
Outdoor temp. limits for Heating mode operation	°C	- 25 / 35	- 25 / 35
Rated Cooling Performance			
Power in cooling mode with water set at 18 °C ⁽¹⁾	kW	6,50	8,70
Power in cooling mode with water set at 7 °C ⁽²⁾	kW	4,70	6,50
Cooling mode EER with water set at 18 °C ⁽¹⁾		4,42	4,12
Cooling mode EER with water set at 7 °C ⁽²⁾		3,26	3,33
Flow temperature range	°C	5 - 25	5 - 25
Outdoor temp. limits for Cooling mode operation	°C	10 / 46	10 / 46
DHW circuit			
Energy class in DHW	-	A+	A
Storage tank load profile	-	L	XL
Domestic hot water adjustable temperature	°C	10 - 55	10 - 55
Domestic hot water adjustable temperature with DHW integration resistance	°C	10 - 65	10 - 65
DHW integrative resistance absorption (standard)	kW	2,25	2,25
General data			
Max. operating pressure for Heating Circuit (Precharge)	bar	3 (1)	3 (1)
Rated expansion vessel capacity - Heating (usefull*)	litri	10 (4,7)	10 (4,7)
Max. operating pressure for DHW Circuit (Precharge)	bar	8 (3,5)	8 (3,5)
Rated expansion vessel capacity - DHW (usefull*)	litri	12 (5,3)	12 (5,3)
Heating/cooling sound power level	dB(A)	60/62	64/63
Electric protection rating (indoor/outdoor unit)	IP	X5D/X4	X5D/X4
Power supply (indoor unit)	V - Hz	230-50	230-50
System integrative resistance absorption (optional)	kW	2,8	2,8
Rated absorbed nominal power/current (only indoor unit)	W/A	110/1,0	110/1,0
Rated absorbed nominal power/current (indoor unit + DHW integrative resistance)	kW/A	2,36/10,5	2,36/10,5
Maximum absorbed power/current (outdoor unit)	kW/A	2,89/16	4,28 /16
Refrigerant fluid load (R32)	g	1200	1400
Water content (in the storage tank)	litri	26,2 (171)	26,2 (171)
Outdoor unit empty weight	kg	46,5	73,0
Indoor unit empty weight (gross weight)	kg	150 (355,5)	150 (355,5)

* Referring to Precharge Pressure.

THE REPORTED DATA REFERS TO THE FOLLOWING CONDITIONS (in compliance with EN 14511)		
ROOM	HEATING (°C)	COOLING (°C)
WATER temperature ⁽¹⁾ - AIR (bs/bu)	35/30 - 7/6	18/23 - 35 (db)
WATER temperature ⁽²⁾ - AIR (bs/bu)	45/40 - 7/6	7/12 - 35 (db)
WATER temperature ⁽³⁾ - AIR (bs/bu)	55/47 - 7/6	-
WATER temperature ⁽⁴⁾ - AIR (bs/bu)	35/30 - -7/-8	-



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21 OPTIONAL FOR MAGIS HERCULES PRO MINI/MAGIS HERCULES PRO MINI EH

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*)	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 outdoor unit is installed under unfavourable conditions (device class II* or VI or VII)	3.015266
Humidistat kit - room humidity control	3.023302
2-relay kit - for dehumidifier management, summer/winter 3-way valve or DHW recirculation	3.031943
Expansion kit - for management of dehumidifiers with associated alarms, 3-way E/I valves and 3 rd system zone	3.031944
Telephone control kit - fixed telephone network required	3.013305
GSM telephone control kit - for remote control of the DHW tank via SMS	3.017182
DOMINUS Interface board kit - for remote control via App	3.026273
CONNECTION UNITS OPTIONALS	Code
1" shut-off valve kit - facilitates maintenance	3.030860
Hydraulic connection kit - for easy connection of the hydraulic circuit	3.033215
Hydraulic connection kit with adjustable by-pass - to facilitate the connection of the hydraulic circuit and always guarantee the minimum flow rate thanks to the by-pass	3.034333
R32 refrigerant line connection kit - for easy connection of the refrigerant circuit	3.033211
Cover kit - for concealing connection pipes	3.034183
OPTIONALS WITH DEDICATED CASING	Code
2 heating/cooling zones kit - 1 direct zone and 1 mixed zone for heating and cooling	3.026301
2 heating only zones kit - 1 direct zone and 1 mixed zone for heating only	3.032265
2 direct heating-only zones kit - 2 direct heating-only zones	3.032264
Shut-off knobs for 2 zones kit	3.014948
Solar thermal system coupling kit	3.033210

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



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OTHER OPTIONALS	Code
Three-way diverter valve kit - used as heating/cooling system diverter	3.020632
3 kW thermal system integrative electric resistance kit code - to be inserted inside the appliance, 230 Vac power supply; <u>already equipped for MAGIS HERCULES PRO MINI EH</u>	3.030899
Flow temperature probe kit to be used for zone temperature control	3.030913
Safety marker thermostat kit - can cut power to MAGIS HERCULES PRO MINI	3.019229
Low-temperature safety thermostat kit - can cut power to the booster pump	3.013794
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
Double electronic anode kit - protects the storage tank from eddy currents	3.025003
Recirculation kit with pump - the kit is positioned completely in the casing of the indoor unit, to be provided together with 2 relay kit code 3.031943	3.033217
Wall installation brackets kit for outdoor condensing unit for all sizes	3.034758
HYDRO V2 Range - Wall-mounted hydronic split	Codes various
HYDRO FS range - floor standing hydronic fan coil	Codes various
HYDRO IN range - recessed hydronic fan coil	Codes various
ZENIT AIR MONO range - bidirectional punctual mechanical ventilation system	Codes various



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22

HYDRAULIC CONNECTION KIT AND COVER



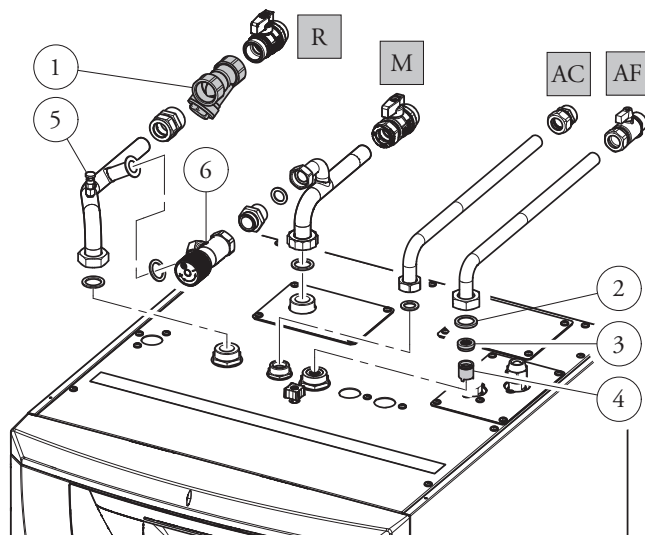
- Hydraulic connection kit code 3.033215 + R32 refrigerant line connection kit code 3.033211



- Hydraulic connection cover kit code 3.034183

MAGIS HERCULES PRO MINI has been designed to be an extremely compact unit and to make installation as simple and easy as possible. This makes MAGIS HERCULES PRO MINI a unit with full frontal accessibility with all hydraulic and/or refrigerant connections located at the top. The connection fittings that allow the wall connections to be brought perfectly in line with the pre-connections of the template are optional and there are different types:

- Hydraulic connection unit kit with adjustable by-pass *code 3.034333*;
- Hydraulic connection unit kit *code 3.033215*, without by-pass it is assumed that there is an always open loop on the system in order to guarantee the minimum flow rate to the heat pump of **500 l/h**;
- Cover kit *code 3.034183*, through which it is possible to cover the pipes just described, improving the aesthetics of the product (Kit Cover height 15 cm).



KEY:

- AC - 3/4" DHW outlet
- AF - 3/4" Domestic cold water inlet
- R - 1" system return
- M - 1" System flow
- 1 - Y filter
- 2 - Sealed filter
- 3 - Flow limiter
- 4 - Non return valve
- 5 - Manual air vent valve
- 6 - By-pass valve (not present with 3.033215)

N.B.: the Y filter is supplied as standard with MAGIS HERCULES PRO MINI



MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

23

2 DIRECT HEATING ONLY ZONES KIT (CODE 3.032264)



The 2 direct zones kit code 3.032264 is composed of a frame, open hydraulic manifold, low electric consumption solenoid valves, hydraulic fitting and pipes and thermometers for temperature reading. This kit is suitable for space heating only.

The pumps included in the kit are distinguished for being very elastic, also thanks to the operating modes that can be pre-set, but are not suitable for cooling.

All components are already assembled and ready to operate. All electrical connections are to be taken to the MAGIS HERCULES PRO MINI P.C.B.

This kit is to be used for the management of systems divided into two distinct zones.

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

23.1

2-ZONE KIT (1 DIRECT AND 1 MIXED HEATING ONLY (CODE 3.032265)



The 2 zone kit code 3.032265 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. This kit is suitable for space heating only.

The pumps included in the kit are distinguished for being very elastic, also thanks to the operating modes that can be pre-set, but are not suitable for cooling.

All components are already assembled and ready to operate. All electrical connections are to be taken to the MAGIS HERCULES PRO MINI 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 HERCULES PRO MINI electronics enable you to select independent flow temperature curves for each of the 2 zones of the system.

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

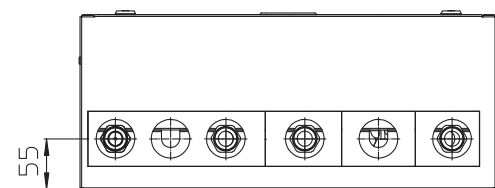


MAGIS HERCULES PRO MINI

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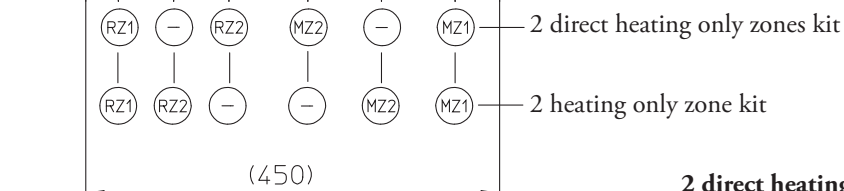
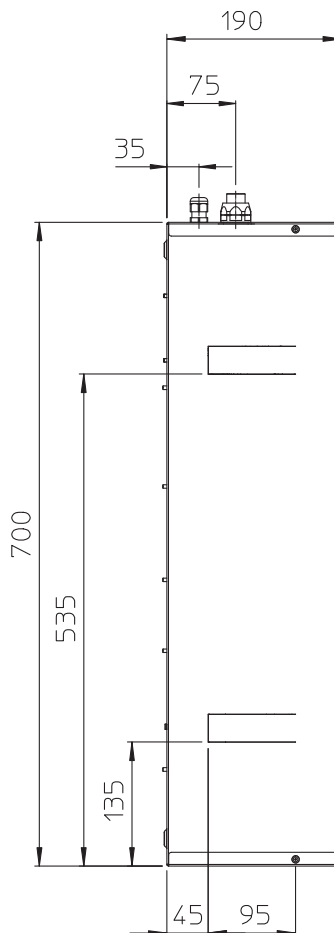
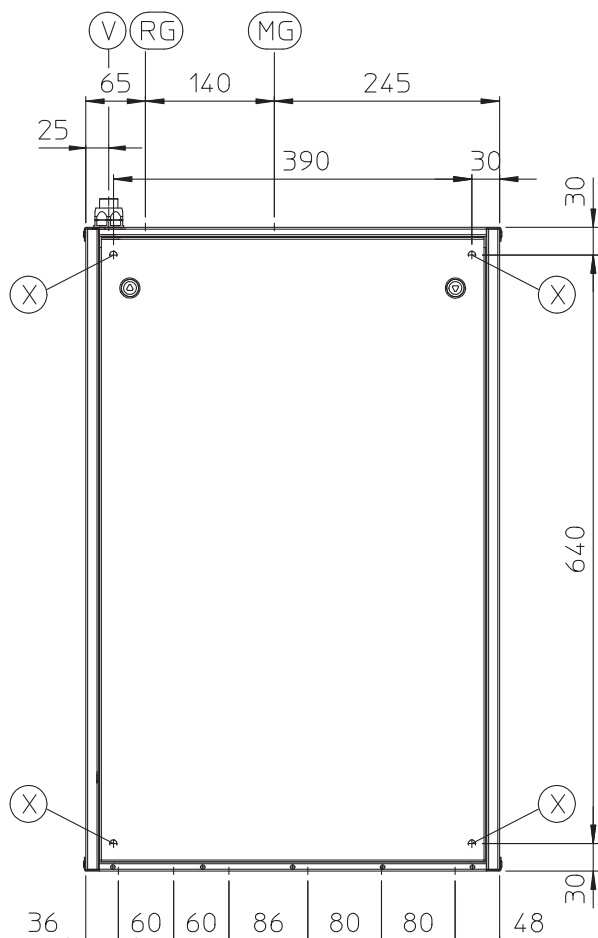
23.2

DIMENSIONS AND CONNECTIONS



KEY:

- RG - DHW tank return (G 3/4")
- MG- DHW tank flow (G 3/4")
- V - Electrical connection
- X - Holes for wall-mounting Kit (off-wall)

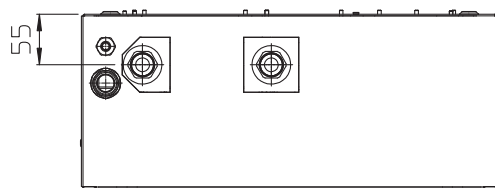


2 direct heating only zones kit code 3.032264

- RZ1 - Direct zone 1 return (G 3/4")
- RZ2 - Direct zone 2 return (G 3/4")
- MZ2 - Direct zone 2 flow (G 3/4")
- MZ1 - Direct zone 1 flow (G 3/4")

2 heating only zone kit code 3.032265

- RZ1 - Direct zone 1 return (G 3/4")
- RZ2 - Mixed zone 2 return (G 1")
- MZ2 - Mixed zone 2 flow (G 1")
- MZ1 - Direct zone 1 flow (G 3/4")



MAGIS HERCULES PRO MINI

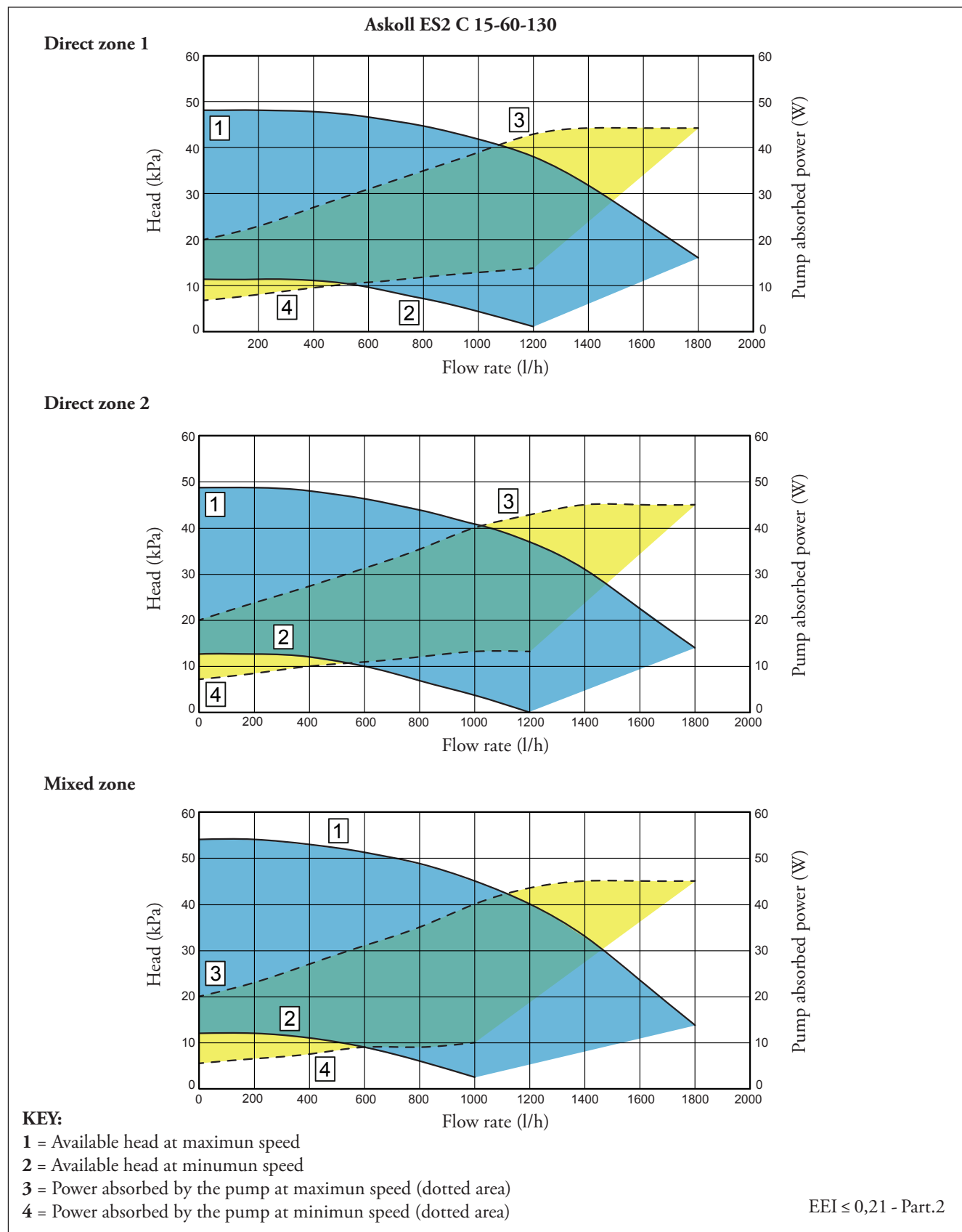
MAGIS HERCULES PRO MINI EH

23.3

PUMP CHARTS WITH FIXED SPEED PROGRAMME

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 only with hot carrying fluid.



MAGIS HERCULES PRO MINI

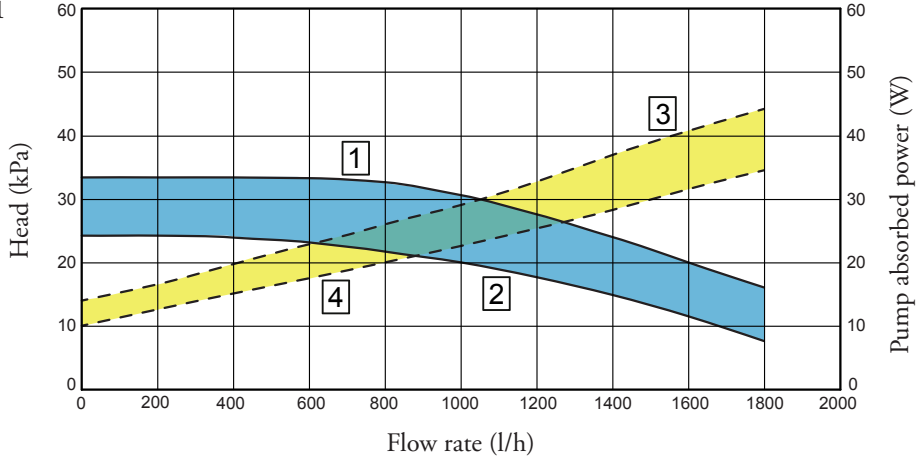
MAGIS HERCULES PRO MINI EH

23.4

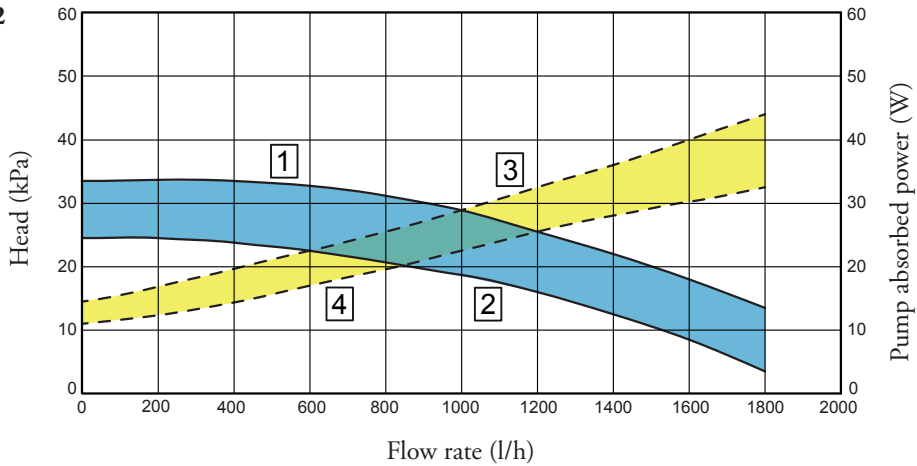
PUMP CHARTS WITH SPEED PROGRAMME CONSTANT

Askoll ES2 C 15-60-130

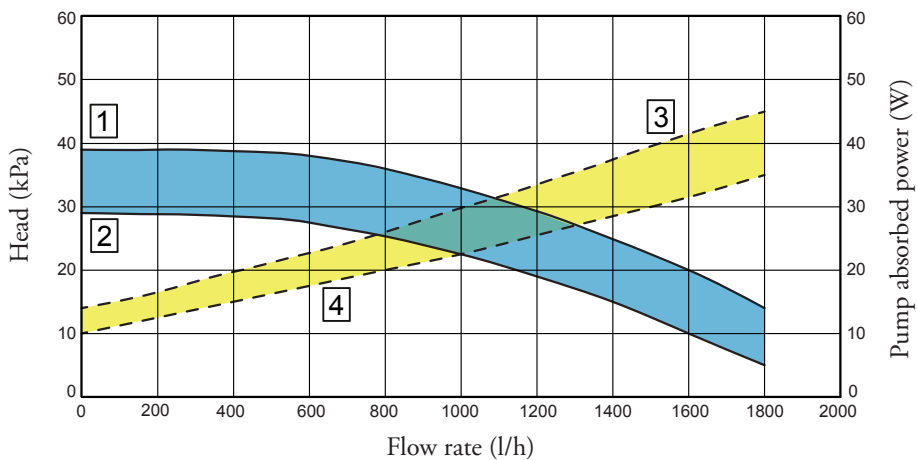
Direct zone 1



Direct zone 2



Mixed zone



KEY:

- 1 = Available head with selector on C4 (standard)
- 2 = Available head with selector on C3
- 3 = Power absorbed by the pump with selector on C4 (standard)
- 4 = Power absorbed by the pump with selector on C3

EEI ≤ 0,21 - Part.2

MAGIS HERCULES PRO MINI

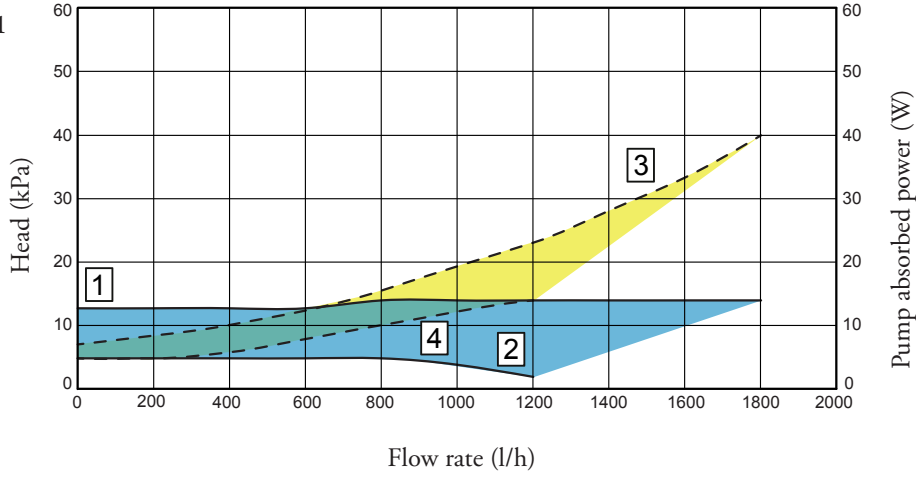
MAGIS HERCULES PRO MINI EH

23.5

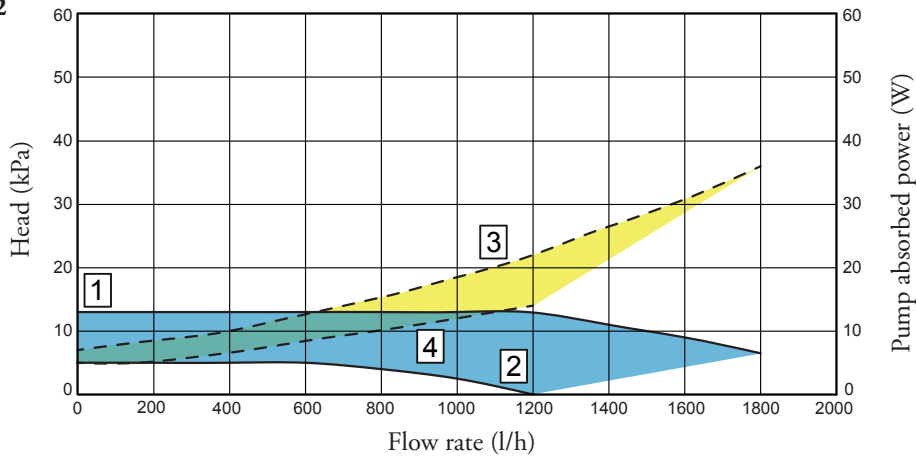
PUMP CHARTS WITH SPEED PROGRAMME PROPORTIONAL

Askoll ES2 C 15-60-130

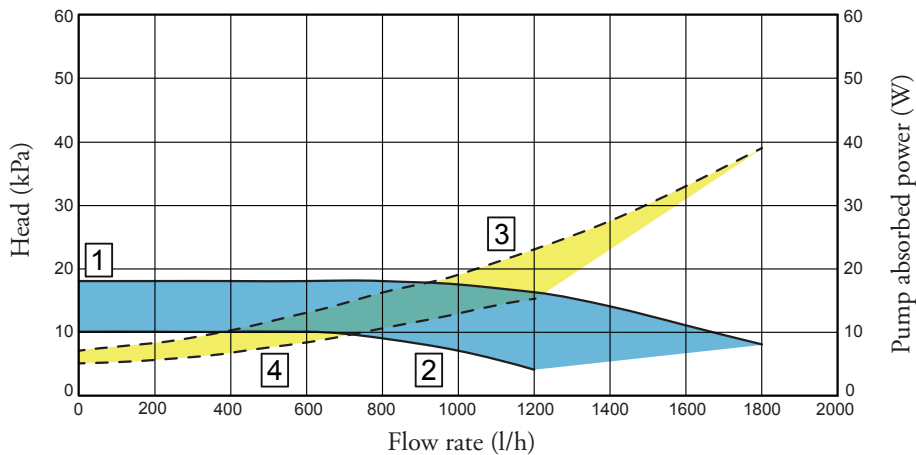
Direct zone 1



Direct zone 2



Mixed zone



KEY:

- 1 = Available head with selector on P2 (standard)
- 2 = Available head with selector on P1
- 3 = Power absorbed by the pump with selector on P2 (standard)
- 4 = Power absorbed by the pump with selector on P1

EEI ≤ 0,21 - Part.2



MAGIS HERCULES PRO MINI

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23.6

PUMP SETTINGS AND TECHNICAL DATA

The pump is ideal for the requirements of each central heating system in a domestic and residential environment. In fact, the pump is equipped with electronic control that allows to set advanced functions.

Adjustment. Turn the selector and set it on the desired curve to adjust the pump.

Program	LED
P 1 lower ($\Delta P-V$) P 2 upper ($\Delta P-V$)	green
C 3 lower ($\Delta P-C$) - H=3 m C 4 upper ($\Delta P-C$) - H=4 m	orange
Min - Max	blue

- **Program P (1 lower 2 upper) ($\Delta P-V$) - Proportional curve (green LED).** 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 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, thereby being

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.

- **Programs C (3 lower 4 upper) ($\Delta P-C$) - Constant curve (orange LED).** The pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.

- **MIN. - MAX. program (blue LED).** The pump is distinguished by adjustable operating curves by positioning the selector in any point between the Min and Max positions, thereby satisfying any installation requirement (from a simple single-pipe to more modern and sophisticated systems) and always guarantee optimum performance. The precise working point can be selected in the entire field of use by gradually adjusting the speed.

		2 direct zones	1 direct zone and 1 mixed zone
Maximum nominal pressure	bar	3	3
Maximum operating pressure	°C	90	90
Low-temperature safety thermostat intervention	°C	--	55
Water content in device	l	1,3	1,5
Empty device weight	kg	17,3	19,7
Full device weight	kg	18,6	21,2
Electrical connection	V/Hz	230/50	230/50
Maximum input	A	0,62	0,70
Installed electric power	W	90	90
Power in stand-by	W	-	-
Electric system protection	-	IPX5D	IPX5D

NOTE:

Treating the feed water allows you to prevent problems and maintain the function and efficiency of the DHW tank 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 HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

24

2 HEATING/COOLING ZONES KIT (CODE 3.026301)



The 2 zone kit code 3.026301 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. This kit is suitable for space heating and cooling.

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 HERCULES PRO MINI P.C.B.

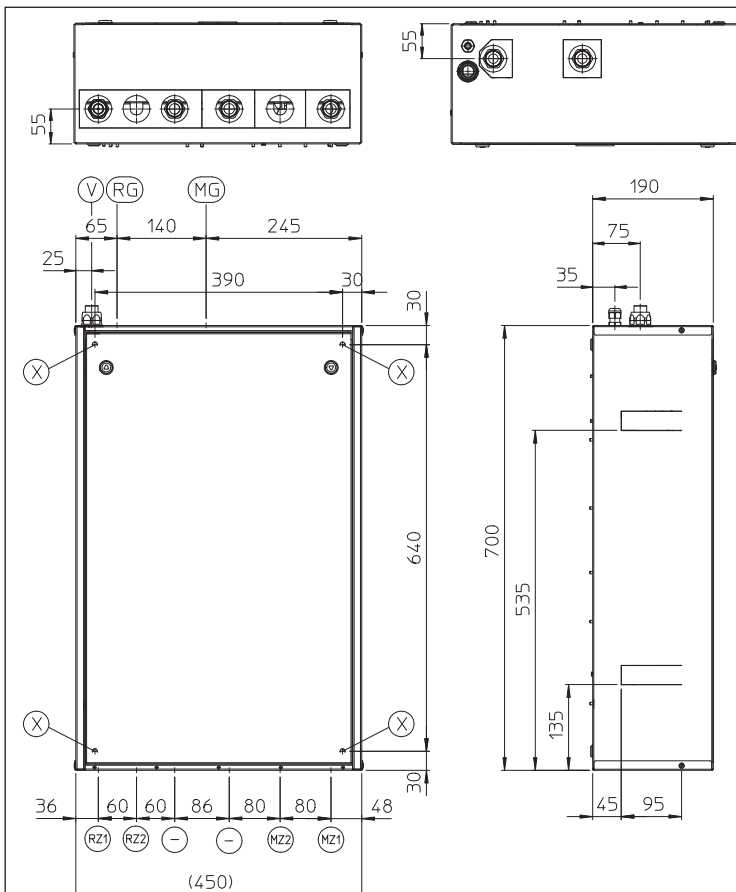
This kit is to be used to control differential temperature systems and/or divided into two distinct zones.

With the acquisition of the outdoor temperature, the MAGIS HERCULES PRO MINI electronics enable 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.

24.1

DIMENSIONS AND CONNECTIONS



Height (mm)	Width (mm)	Depth (mm)
700	450	190

KEY:

- RG - DHW tank return (G 3/4")
- MG - DHW tank flow (G 3/4")
- V - Electrical connection
- X - Holes for wall-hung installation of the kit

- RZ1 - Direct zone return (G 3/4")
- RZ2 - Mixed zone return (G 1")
- MZ2 - Mixed zone flow (G 1")
- MZ1 - Direct zone flow (G 3/4")



MAGIS HERCULES PRO MINI

MAGIS HERCULES PRO MINI EH

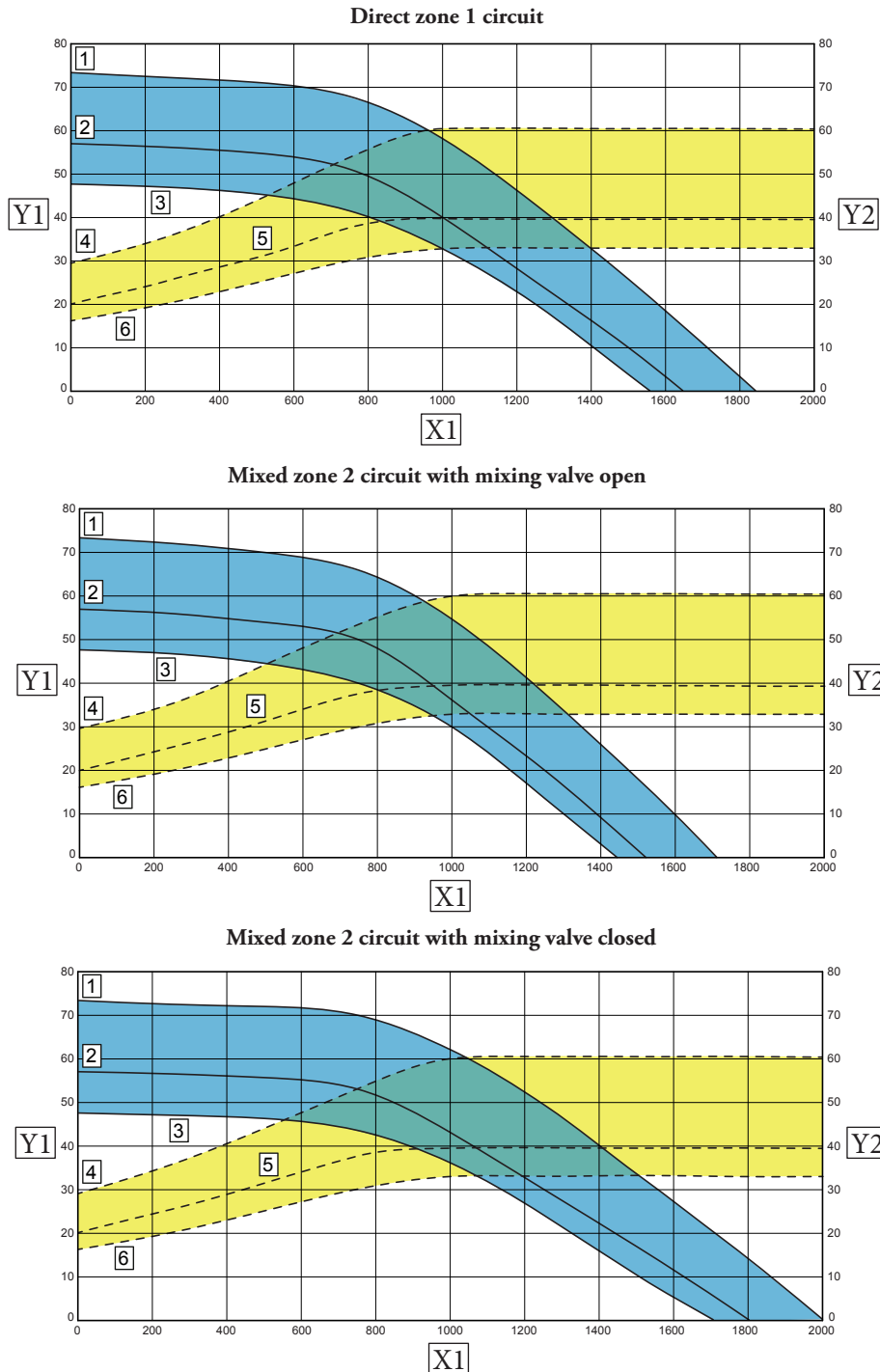
24.2

PUMP CHARTS WITH CONSTANT SPEED PROGRAMME

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 heating and cooling carrying fluid.

UPM3 K AUTO 15-75 CM 130 H9



LEGENDA:

- 1 = Head available to the system at Speed 3
- 2 = Head available to the system at Speed 2
- 3 = Head available to the system at Speed 1
- 4 = Circulator power input at Speed 3
- 5 = Circulator power input at Speed 2
- 6 = Circulator power input at Speed 1

- Area between curves 1 and 3 = Available system head
- Area between curves 4 and 6 = Pump absorbed power
- X1 = Flow rate [l/h]
- Y1 = Head [kPa]
- Y2 = Circulator pump absorbed power [W]

EEl ≤ 0.20



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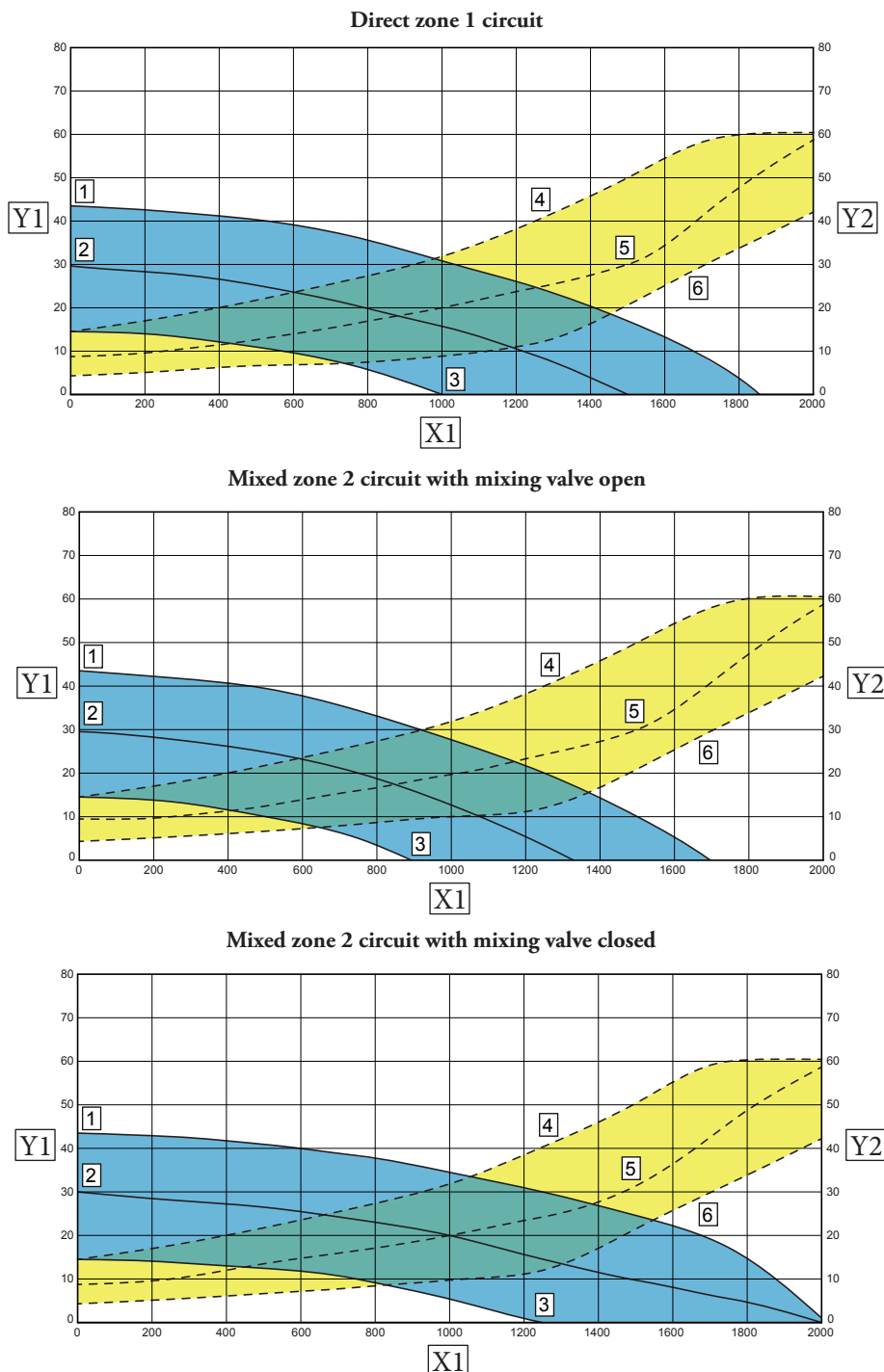
24.3

PUMP CHARTS WITH CONSTANT HEAD PROGRAMME

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 heating and cooling carrying fluid.

UPM3 K AUTO 15-75 CM 130 H9



LEGENDA:

- 1 = Head available to the system at Speed 3
- 2 = Head available to the system at Speed 2
- 3 = Head available to the system at Speed 1
- 4 = Circulator power input at Speed 3
- 5 = Circulator power input at Speed 2
- 6 = Circulator power input at Speed 1

- Area between curves 1 and 3 = Available system head
- Area between curves 4 and 6 = Pump absorbed power
- X1 = Flow rate [l/h]
- Y1 = Head [kPa]
- Y2 = Circulator pump absorbed power [W]

EEl ≤ 0.20



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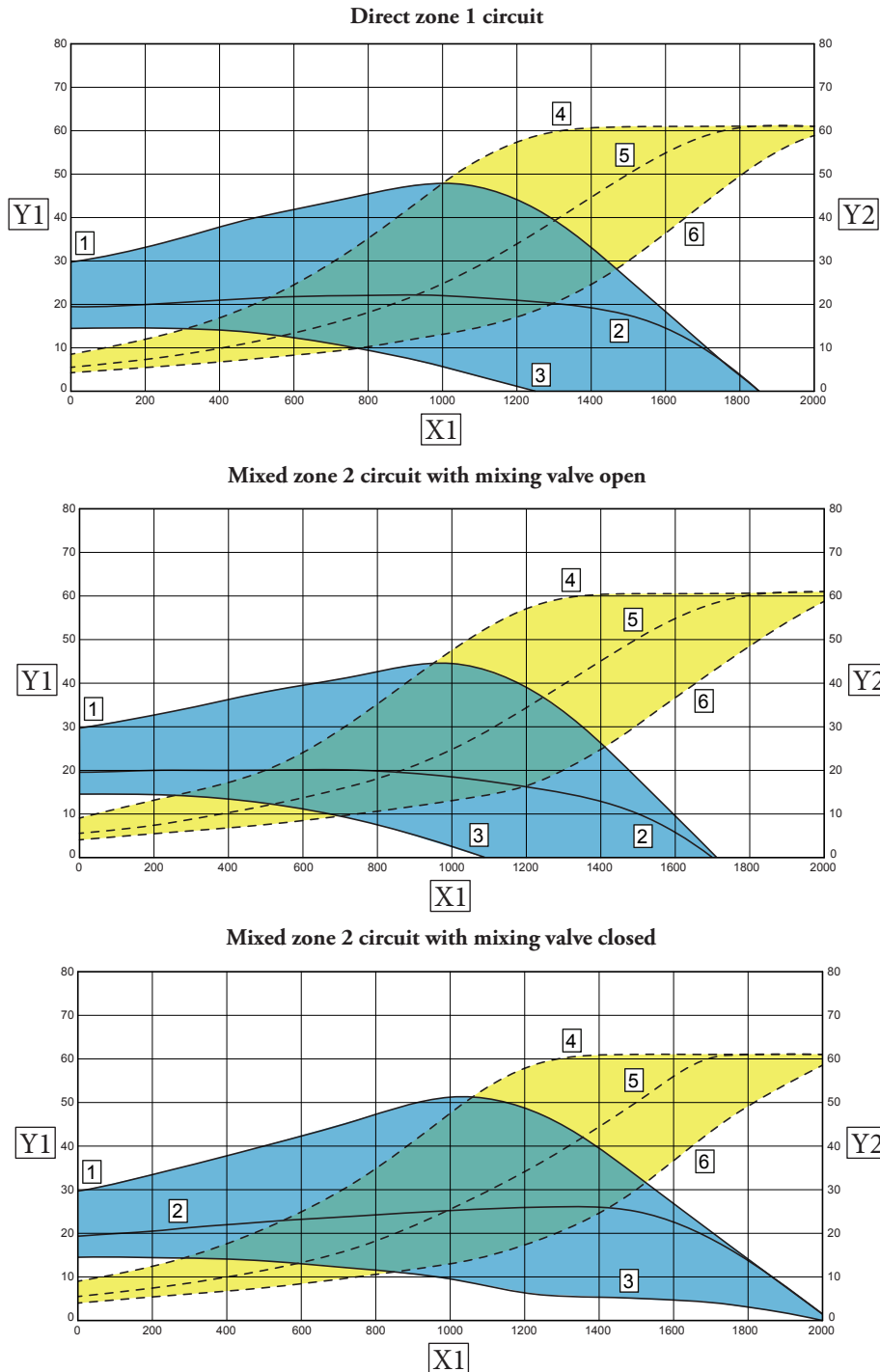
24.4

PUMP CHARTS WITH PROPORTIONAL HEAD PROGRAMME

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 heating and cooling carrying fluid.

UPM3 K AUTO 15-75 CM 130 H9



LEGENDA:

- 1 = Head available to the system at Speed 3
- 2 = Head available to the system at Speed 2
- 3 = Head available to the system at Speed 1
- 4 = Circulator power input at Speed 3
- 5 = Circulator power input at Speed 2
- 6 = Circulator power input at Speed 1

- Area between curves 1 and 3 = Available system head
- Area between curves 4 and 6 = Pump absorbed power
- X1 = Flow rate [l/h]
- Y1 = Head [kPa]
- Y2 = Circulator pump absorbed power [W]

EEI ≤ 0.20

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24.5

TECHNICAL DATA

		2 zones kit
Maximum nominal pressure	bar	3
Maximum functioning pressure	°C	90
Water content in device	litres	1.5
Total head available in non-mixed zone with 1000 l/h flow rate (max.) (Constant curve 3)	kPa (m H ₂ O)	58 (5,8)
Total head available in mixed zone (mixing valve open) with 1000 l/h flow rate (max.) (Constant curve 3)	kPa (m H ₂ O)	55 (5,5)
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
EEl value	-	≤ 0.20 - Part. 3
Electric system protection	-	IPX4D
Hydraulic side DHW tank - kit maximum distance	m	15

24.4

CIRCULATION PUMP SETTINGS AND CONFIGURATIONS

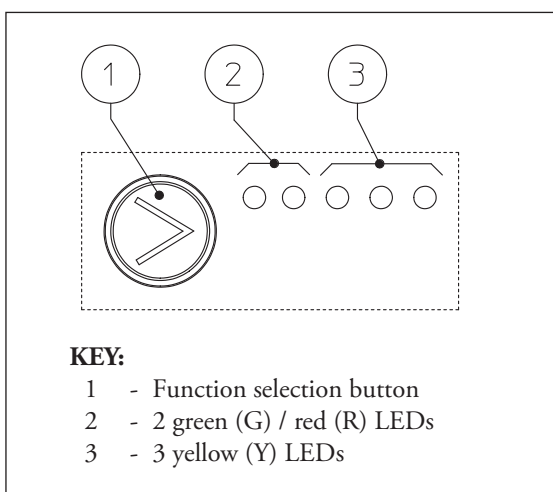
The kit is supplied with circulator fitted with speed regulator.

These settings are suitable for most systems.

In fact, the pump is equipped with electronic control to set advanced functions. For proper operation one must select the most suitable type of operation for the system and select a speed in the available range, with a focus on energy savings.

Selection of operating mode.

When running, the pump indicates the set configuration by means of the codified lighting of the LEDs. The setting is changed by a short pressing of the button.



The pump is set at “Constant curve speed 2” by default.

Real time diagnostics: in the event of malfunction the LEDs provide information on the circulator operation status.

Circulating pump LED	Description
G G Y Y Y ● ○ ● ○ ○	Proportional head speed 1
G G Y Y Y ● ○ ● ● ○	Proportional head speed 2
G G Y Y Y ● ○ ● ● ●	Proportional head speed 3
G G Y Y Y ○ ● ● ○ ○	Constant head speed 1
G G Y Y Y ○ ● ● ● ○	Constant head speed 2
G G Y Y Y ○ ● ● ● ●	Constant head speed 3
G G Y Y Y ○ ○ ● ○ ○	Constant curve speed 1
G G Y Y Y ○ ○ ● ● ○	Constant curve speed 2
G G Y Y Y ○ ○ ● ● ●	Constant curve speed 3

NOTE:

Treating the feed water allows you to prevent problems and maintain the function and efficiency of the DHW tank 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.

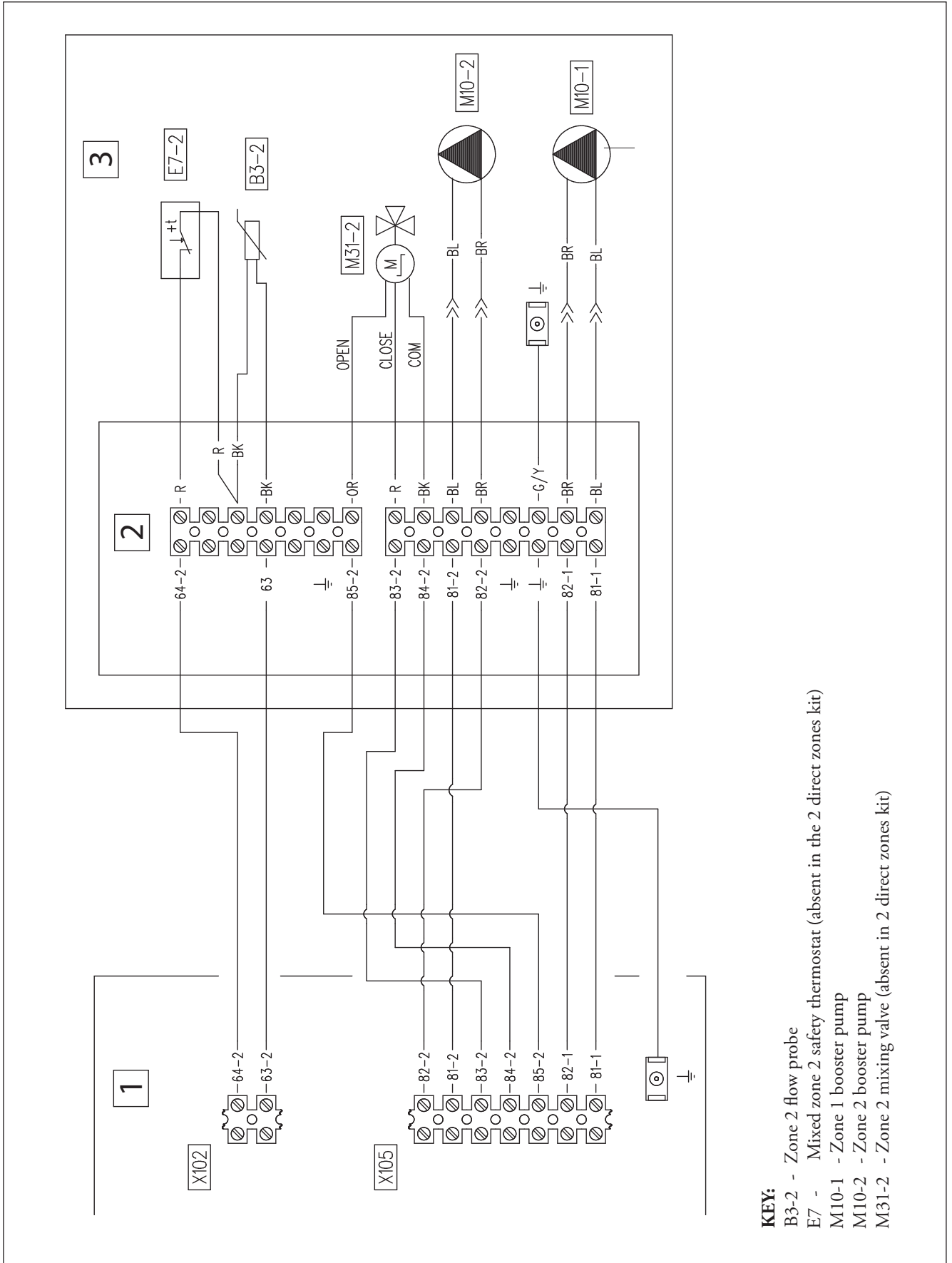


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25

ELECTRICAL CONNECTIONS 2-ZONE KIT



KEY:

- B3-2 - Zone 2 flow probe
- E7 - Mixed zone 2 safety thermostat (absent in the 2 direct zones kit)
- M10-1 - Zone 1 booster pump
- M10-2 - Zone 2 booster pump
- M31-2 - Zone 2 mixing valve (absent in 2 direct zones kit)



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26

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.

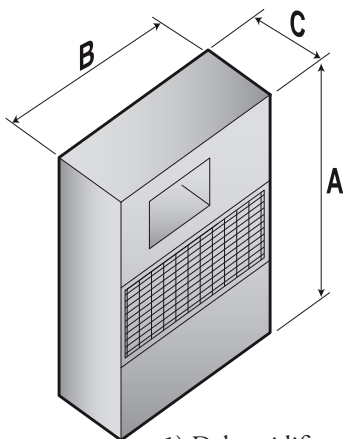
In compliance with European Directives, it has EC declaration of conformity.

Dehumidification can take place:

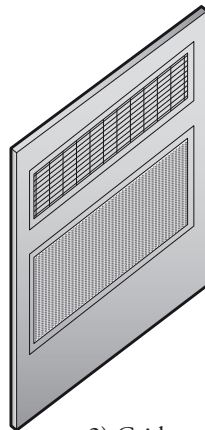
- with **neutral air**: without variation of the air temperature, dehumidifies internal rooms;
- with **cooled air**: contributes to cooling the rooms, as well as reducing the internal relative humidity.

26.1

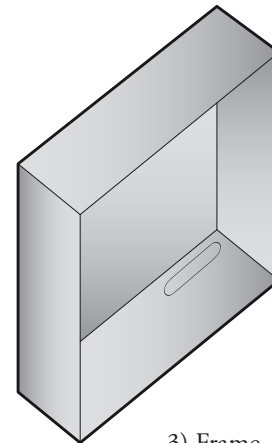
DIMENSIONS AND CONNECTIONS



1) Dehumidifier

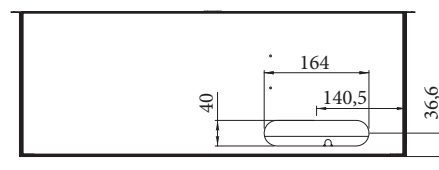


2) Grid



3) Frame

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



3.1) Frame bottom

- **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

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26.2

TECHNICAL DATA

Refrigerant		R134a
Humidity removed in neutral air condition ⁽¹⁾	litres/24h	20.1
Cooling capacity ⁽¹⁾	W	1250
Nominal water flow rate	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:

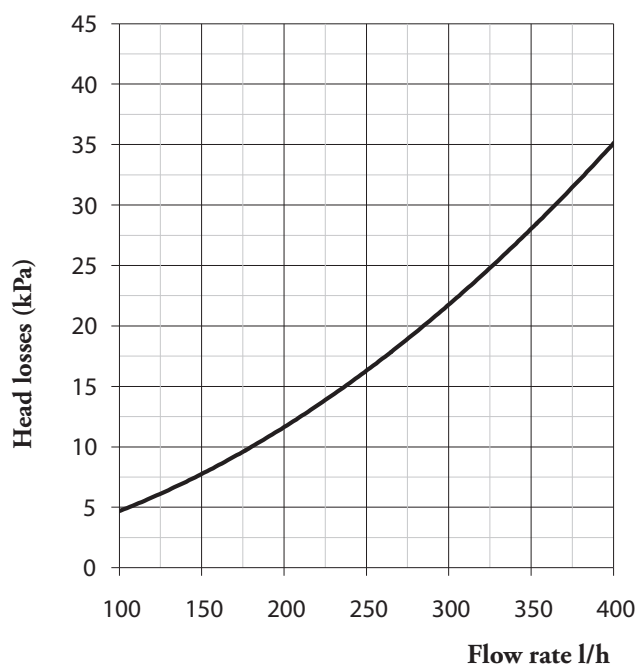
¹⁾ Room temperature 26 °C; relative humidity 65% with coil inlet water temperature of 15 °C.

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

26.3

HEAD LOSS OF THE HYDRAULIC CIRCUIT



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A) HYDRONIC SPLITS AND FAN COILS APPENDIX

27

HYDRONIC SPLITS AND FAN COILS

Range of "HYDRO V2" wall-mounted water splits and "HYDRO FS" or "HYDRO IN" hydronic fan coils complete the IMMERGAS offer.

Our goal is to offer you a complete system in all its parts, from production to distribution of energy for air conditioning in residential (and tertiary) environments.

These terminals are particularly suitable for systems in which a heat pump is present.

They fully meet the requirements of efficiency, quietness and aesthetics laid down by the market, with a design that easily matches the various applications, providing an integrated and complete solution to ensure room climate control and maximum comfort. The models identified correspond to different power ratings in heating and cooling.

HYDRO V2



HYDRO FS



HYDRO V2 - HYDRONIC SPLITS wall mounting

Code

HYDRO 3 V2 Wall-mounted hydronic split; effective heating capacity* 2.94 kW - effective cooling capacity 2.70 kW 3.033625

HYDRO 4 V2 Wall-mounted hydronic split; effective heating capacity* 4.30 kW - effective cooling capacity 3.81 kW 3.033626

HYDRO FS - FAN COILS installation near the floor

Code

HYDRO FS 200 Hydronic fan coil; effective heating capacity* 0.97 kW - effective cooling capacity 0.76 kW 3.028500

HYDRO FS 400 Hydronic fan coil; effective heating capacity* 2.17 kW - effective cooling capacity 1.77 kW 3.028501

HYDRO FS 600 Hydronic fan coil; effective heating capacity* 3.11 kW - effective cooling capacity 2.89 kW 3.028502

HYDRO FS 800 Hydronic fan coil; effective heating capacity* 3.88 kW - effective cooling capacity 3.20 kW 3.028503

HYDRO FS 1000 Hydronic fan coil; effective heating capacity* 4.37 kW - effective cooling capacity 3.73 kW 3.028505

HYDRO IN - FAN COILS recessed installation

Code

HYDRO IN 200 Hydronic fan coil; effective heating capacity* 0.97 kW - effective cooling capacity 0.76 kW 3.029841

HYDRO IN 400 Hydronic fan coil; effective heating capacity* 2.17 kW - effective cooling capacity 1.77 kW 3.029842

HYDRO IN 600 Hydronic fan coil; effective heating capacity* 3.11 kW - effective cooling capacity 2.89 kW 3.029843

HYDRO IN 800 Hydronic fan coil; effective heating capacity* 3.88 kW - effective cooling capacity 3.20 kW 3.029844

HYDRO IN 1000 Hydronic fan coil; effective heating capacity* 4.37 kW - effective cooling capacity 3.73 kW 3.029845

* Power outputs referred to with system water at 45/40 °C.

AS REGARDS THE VARIOUS CONFIGURATIONS AND ANY INSTALLABLE ACCESSORIES, PLEASE REFER TO THE RELEVANT PRODUCT CATALOGUE OR CURRENT PRICE LIST

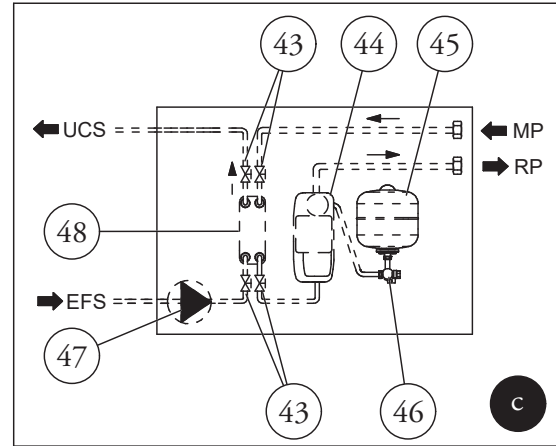


MAGIS HERCULES PRO MINI MAGIS HERCULES PRO MINI EH

B) THERMAL SOLAR APPENDIX

28

SOLAR THERMAL SYSTEM COUPLING KIT (CODE 3.033210)



KEY:

- 43 - Solar shut-off valves
- 44 - Single solar circulation unit
- 45 - Solar expansion vessel
- 46 - Shut-off valve with solar system thermometer
- 47 - DHW pump
- 48 - Solar system plate heat exchanger

- MP - Flow from solar panels (Optional)
- RP - Return to solar panels (Optional)
- UCS - Solar heat exchanger heating outlet
- EFS - Solar heat exchanger cooling inlet
- C - Solar kit (outside of indoor unit casing)

SOLAR CIRCUIT - Components present in the kit:

- Electronic control unit including 1 storage tank probe (NTC) and 1 solar collector probe (PT1000);
- Single type solar circulation unit, with 1 -6 l/min flow rate regulator with low power consumption pump and relative support bracket;
- DHW pump;
- 6 bar solar safety valve and relative recovery can;
- 18 litre solar expansion vessel with relative support;
- Complete insulated piping for kit installation;
- 16 plate heat exchanger - fully insulated - sized to exchange the power of max. 2 flat solar collectors (e.g. CP4 XL);
- Solar unit support and containment frame;
- Thermostatic mixing valve (to be installed inside the casing of the indoor unit);
- Hydraulic fittings to complete the installation (to be installed inside the casing of the indoor unit).

NOTE: To complete the solar thermal circuit it is necessary to provide one or two exclusively flat solar collectors

(e.s. CP4 XL/M), solar collector connection kit (including hydraulic fittings and air vent), mount frame and relative mounting system, glycol and connection pipes to the manifold (see pages below “optional for solar circuit completion”).

OPERATING PRINCIPLE:

The kit integrates a plate heat exchanger that allows heat exchange between the solar collector connected by forced circulation on the primary side and the domestic hot water on the secondary side, which is also heated by forced circulation thanks to the presence of the pump (47).

This technical solution has the advantage of quick heating the water at relatively high temperatures and directing the heating water directly to the upper part of the storage tank, thus generating a readily available volume of water.

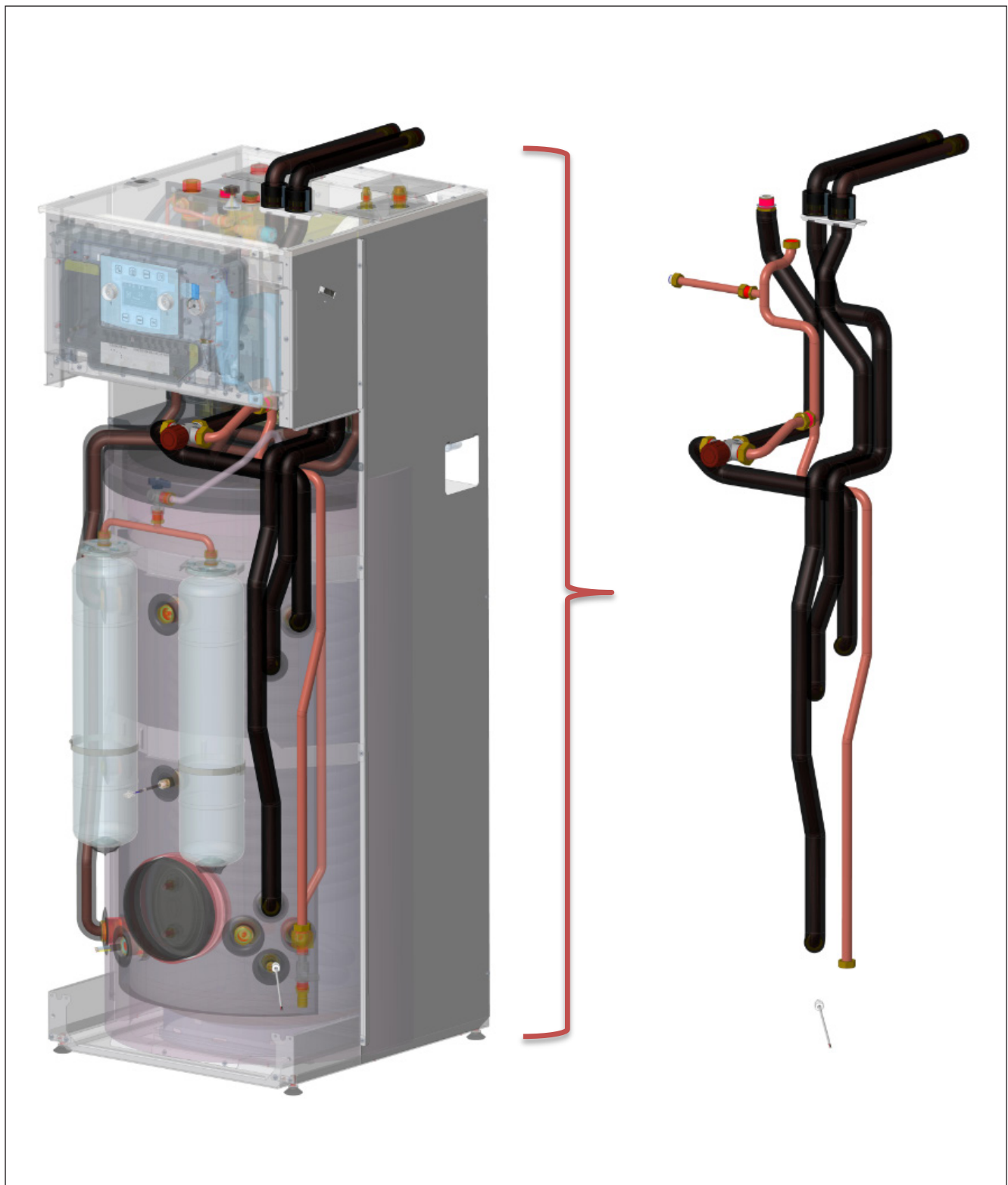
The kit is shipped partly assembled and wired, ready to be combined externally with MAGIS HERCULES PRO MINI. The kit also contains the drain fitting, the pipe and can for glycol collection (conveying the drain of the solar safety valve).



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28.1

ASSEMBLY OF SOLAR THERMAL SYSTEM COUPLING KIT



N.B: The mixing valve, storage tank probe and piping shown in the figure are included in the Solar coupling kit code 3.033210 and are installed inside MAGIS HERCULES PRO MINI. One or two exclusively flat-plate solar collectors (e.g. CP4 XL /M),

solar collector connection kit (incl. hydraulic fittings and air vent), support frame and associated bracket system, glycol and piping for connection to the collector are not included.



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28.2

OPTIONAL FOR COMPLETING THE SOLAR SYSTEMS

Solar panels	Code
CP4 XL flat-plate collector characterised by 4 connections with a useful surface of 2.31 m ²	3.022664
CP4 M flat-plate collector characterised by 4 connections with a useful surface of 1.84 m ²	3.022876
Mount frames	Code
Support frame kit 1 CP4 XL/M flat-plate collector on vertical tiles	3.022670
Support frame kit 2 CP4 XL/M flat-plate collector on vertical tiles	3.022671
Support frame kit 1 CP4 XL/M flat-plate collector on horizontal tiles	3.022749
Additional CP4 XL/M flat-plate collector frame connection kit	3.022681
Hydraulic connections	Code
Solar thermal system coupling kit for MAGIS HERCULES PRO MINI	3.033210
1 CP4 XL/M flat-plate collector connection kit	3.022797
Additional CP4 XL/M flat-plate collectors connection kit	3.019085
Extensible connection kit with additional horizontal short side CP4 XL/M flat-plate collector elbows	3.025693
Connection kit with additional horizontal long side CP4 XL/M flat-plate collectors	3.026073
Venting kit and pipe fitting Ø 22 mm for 1 CP4 XL/M horizontal flat-plate collector	3.022849
2 caps kit for Flat Plate Collector CP4 XL/M short side horizontal	3.020364
2 Lowered plugs kit for 1 CP4 XL/M Flat-Plate Collector to be used for multiple installations of recessed horizontal collectors, connected to separate systems	3.026082
Fixing systems	Code
4 Bracket kit for Slates/Tiles	3.022678
2 Bracket kit for Slates/Tiles	3.022680
4 Bracket kit for Slates/Tiles to be drilled	3.019105
"L"-shaped brackets kit for smooth roofs	3.022776
Fixing elements kit CP4 XL/M Flat-Plate Collector	3.022922
45° free installation kit for 1 CP4 XL/M flat-plate collector in vertical * it allows installation on the ground or on flat roofs - N.B.: The mount frame kit is necessary for the installation of these kits	3.022674
Free 45° installation extension kit for 1 vertical CP4 XL/M flat-plate collector	3.022677
45° free installation kit for 1 CP4 XL/M flat-plate collector in horizontal * it allows installation on the ground or on flat roofs - N.B.: The mount frame kit is necessary for the installation of these kits	3.022750
Recessed systems with outflow below the collector (N.B.: NO support frame required)	Code
Recessed kit for 1 vertical CP4 XL/M flat-plate collector	3.022213
Recessed frame extension kit for CP4 XL/M flat-plate collector in vertical	3.023028
Recessed kit for 1 vertical CP4 XL/M flat-plate collector in horizontal/vertical	3.025469
Recessed frame extension kit for CP4 XL/M flat-plate collector in horizontal/vertical	3.025477
Recessed systems with outflow above the collector (N.B.: NO support frame required)	Code
Recessed kit for 1 vertical CP4 XL flat-plate collector	3.027735
Recessed kit for 1 vertical CP4 M flat-plate collector	3.027768
Recessed frame extension kit for CP4 XL/M flat-plate collector in vertical	3.027736
Recessed kit for 1 vertical CP4 XL/M flat-plate collector in horizontal	3.027769
Recessed frame extension kit for CP4 XL/M flat-plate collector in horizontal	3.027849
Filling and installation accessories	Code
Glycol can for CP4 XL/M flat-plate collector already premixed and ready to use	3.028517
Canvas cover for CP4 M Flat-Plane Collector	1.028522
Canvas cover for CP4 XL Flat-Plane Collector	1.033271
System filling pump station	3.018742

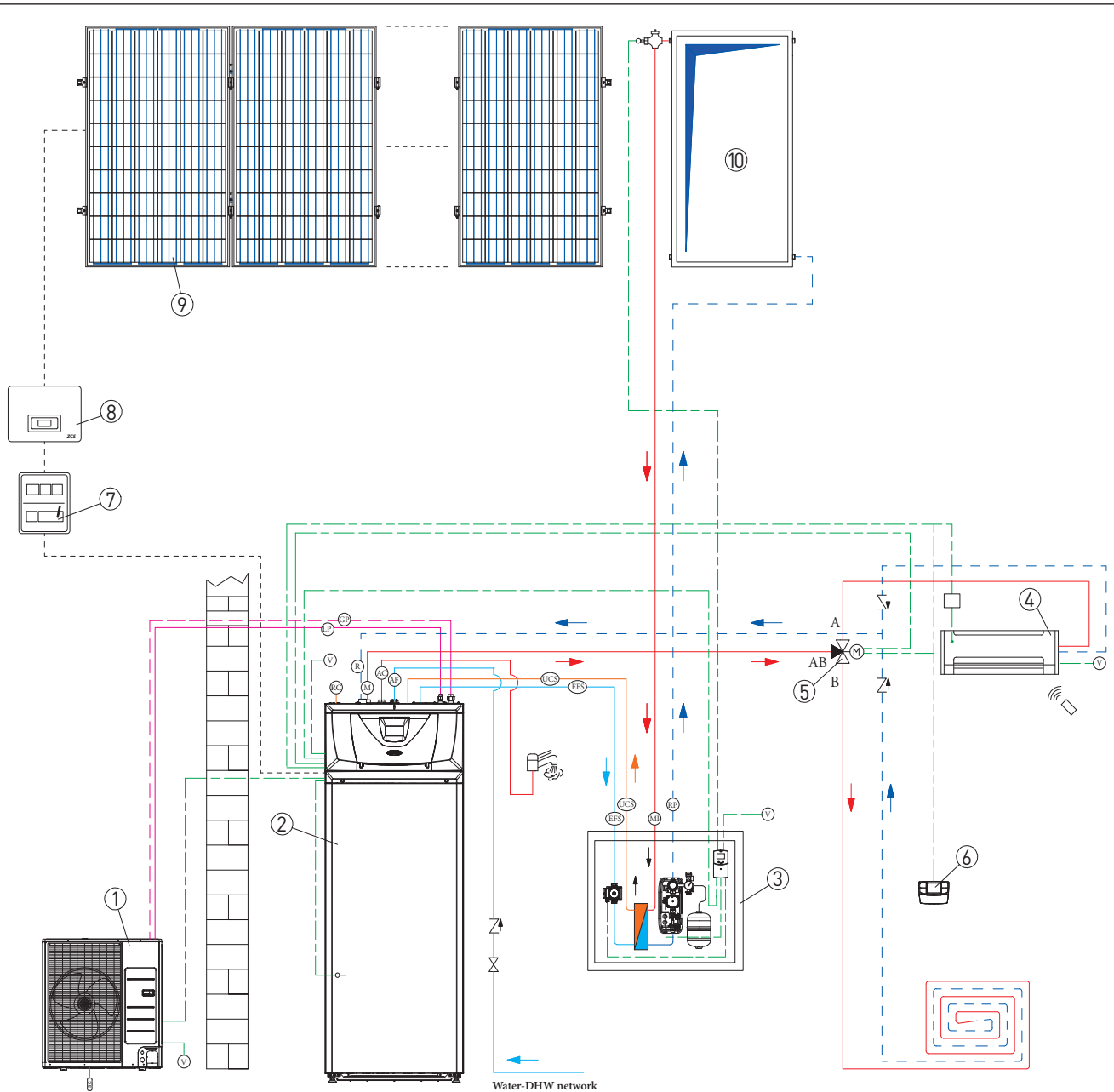
* the installation envisions a structural calculation that considers the place and static sealing of the system



MAGIS HERCULES PRO MINI MAGIS HERCULES PRO MINI EH

C) FUNCTIONAL DIAGRAMS APPENDIX

29 HYDRAULIC DIAGRAM: MAGIS HERCULES PRO MINI WITH 1 DIRECT ZONE (3-WAY HEATING/COOLING) + PHOTOVOLTAIC + SOLAR THERMAL



KEY:

- | | |
|--|-------------------------------|
| 1 - Outdoor unit (inclusive of external probe) | 6 - ON-OFF chronothermostat |
| 2 - Indoor unit | 7 - Production outlet contact |
| 3 - Solar Thermal Kit with dedicated casing | 8 - Photovoltaic inverter |
| 4 - Wall-mounted Fan Coil Type | 9 - Photovoltaic Panels |
| 5 - Summer/winter diverter valve | 10 - Solar thermal panel |

NOTE: this diagram is an example. It is also required to convey the heat pump's condensate drain.

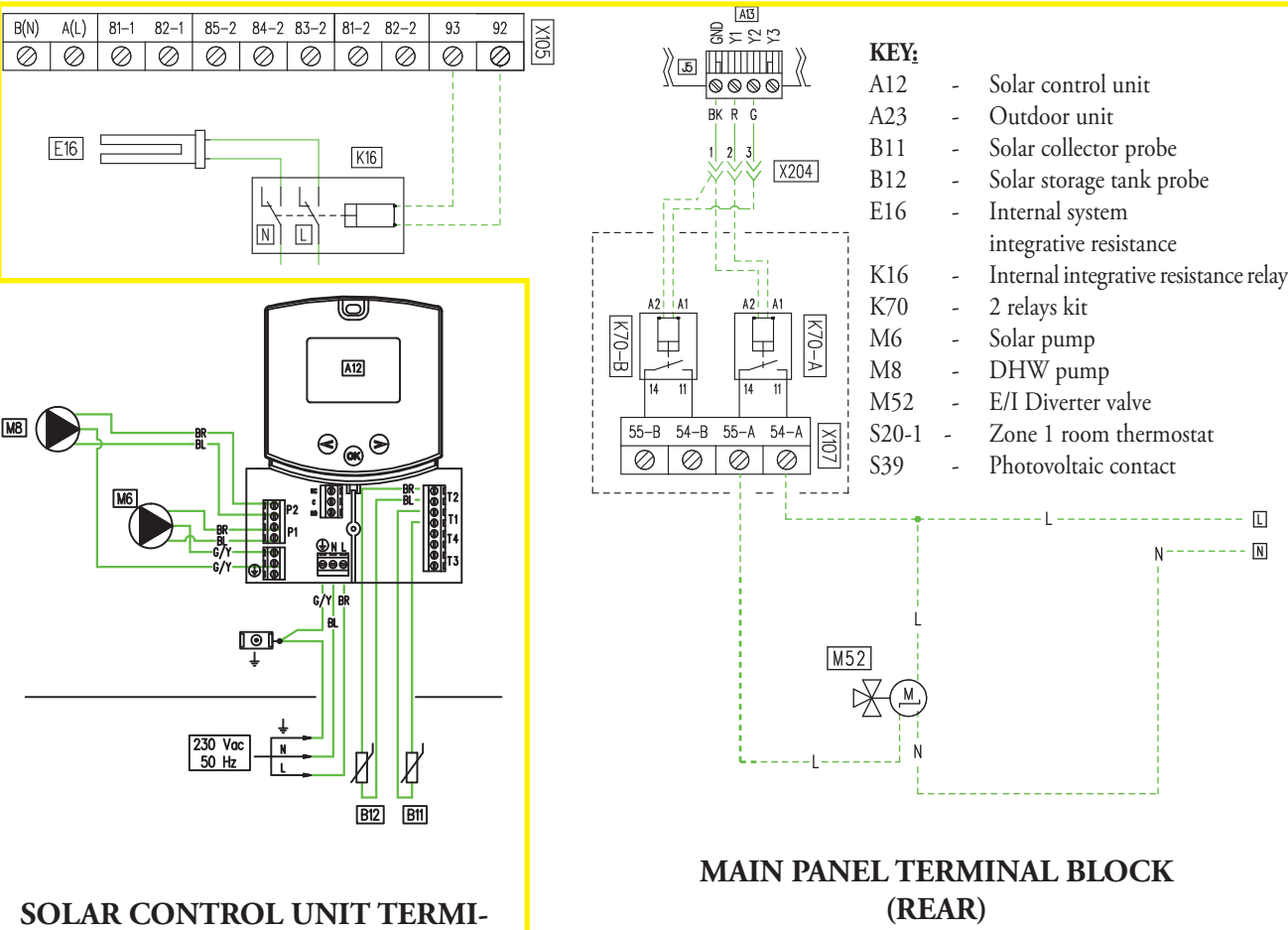
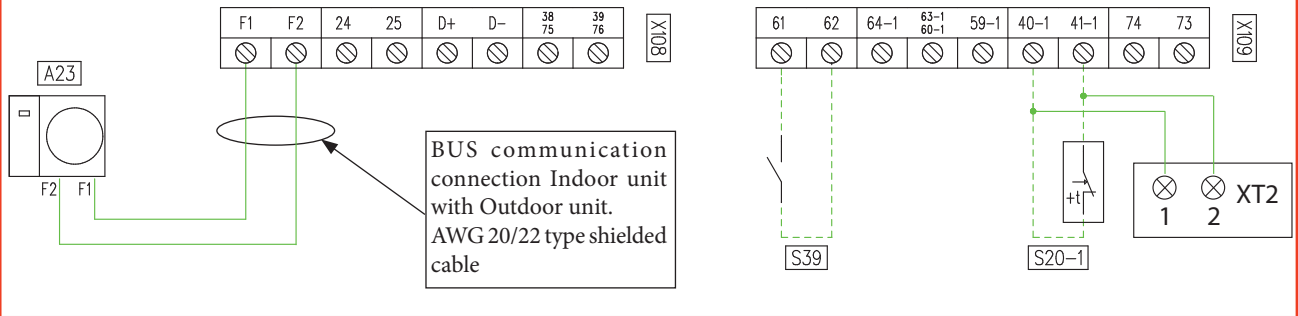


MAGIS HERCULES PRO MINI

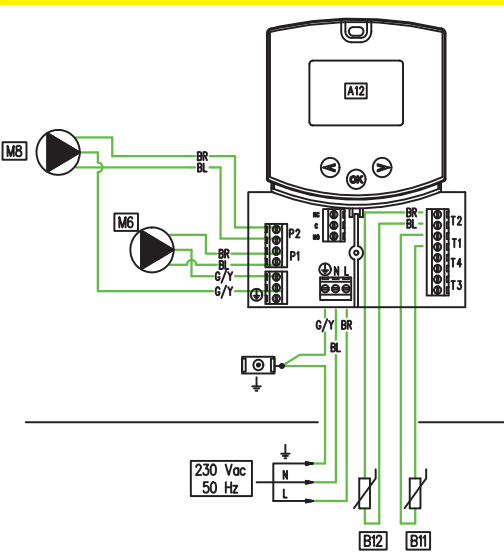
MAGIS HERCULES PRO MINI EH

29.1 WIRING DIAGRAM: MAGIS HERCULES PRO MINI WITH 1 DIRECT ZONE (3-WAY HEATING/COOLING) + PHOTOVOLTAIC + SOLAR THERMAL

CONTROL PANEL TERMINAL BLOCK (FRONT)



SOLAR CONTROL UNIT TERMINAL BLOCK



NOTE: Please note that, in a configuration with Zone Remote Panels, in order to be able to meet demands from the environment, the jumper [X40-1] must be maintained on terminals 40-1 and 41-1, in this case removed.

2 relays kit - terminals 54-A and 55-A		
0 V	Open	Winter
230 V	Close	Summer with cooling



MAGIS HERCULES PRO MINI

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29.2

DESCRIPTION OF THE DIAGRAM: MAIN APPLICATIONS

WINTER MODE

- **CH phase active:** The ON-OFF chronothermostat placed in the room activates the consent in the winter phase; in this diagram MAGIS HERCULES PRO MINI is integrated by means of the 3 kW electric resistance (optional, already equipped only for MAGIS HERCULES PRO MINI EH), to be inserted in the inertial storage tank.

The logic plans to activate the integrative resistance if I do not reach the temperature set within the maximum time (settable via parameters), or below a certain outdoor temperature (again settable via parameters) I can immediately activate the electrical resistance. By setting specific parameters, the Heat pump and the system integrative resistance can activate simultaneously or alternately with each other. It is also possible to set “concurrent” operation (only in the presence of integrative electrical resistance) between a system and DHW demand.

From the control panel, it will also be possible to set a MANUAL or AUTOMATIC operating system, where in the former the room set is kept constant throughout the day, while in the latter it is possible to set a comfort value and an economy value to optimise product logic.

- **Domestic hot water phase:** the MAGIS HERCULES PRO MINI electronics constantly monitor the DHW temperature set (probe located in the storage tank), activating MAGIS HERCULES PRO MINI.

The logic plans to activate the integrative resistance (as per standard) if I do not reach the setting set within the maximum time (settable via parameters), or below a certain outdoor temperature (again settable via parameters) I can immediately activate the DHW electrical resistance.

By setting specific parameters, the Heat pump and the system integrative resistance can activate simultaneously or alternately with each other. It is also possible to set “concurrent” operation between a system and DHW demand (e.g. with cooling demand the heat pump activates and with “concurrent” DHW demand the DHW resistance activates).

From the control panel it will also be possible to set a MANUAL or AUTOMATIC operating system, where in the former the storage tank setting is kept constant during the day, while in the latter it is possible to set a comfort value and an economy value to optimise the product logic.

The “DHW (Domestic hot water) BOOST” function is also available, by activating this function via the parameter menu, the DHW (Domestic hot water) operation takes place with the contribution of both the heat pump and the electrical resistance, with a logic that minimises storage tank charging time.

SUMMER MODE

- **Cooling phase active:** The cooling demand is made through the fan coil located in the room, controlled by infrared remote control. In this diagram, transition to cooling service involves the use of a 3-way diverter valve (optional), which is controlled via the 2 relay kit (optional).

- **Domestic hot water phase:** the same considerations as for winter mode apply.

N.B.: In case of production from photovoltaic (contact closure “S 39”), the DHW storage tank is heated to a maximum storage temperature of 55°C exclusively by the heat pump. In case of simultaneous DHW and system demand, the system will decide which service to satisfy, in order to ensure the best comfort.



During the useful life of the products, performance is affected by external factors, e.g. the hardness of the DHW, atmospheric agents, scaling 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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immergas.com



Design, manufacture and after-sales assistance of gas boilers, gas water heaters and relative accessories

To request further specific details, sector Professionals can also use the following e-mail address:

consulenza@immergas.com

During the product's life, performance is influenced by external factors, such as the hardness of domestic water, weather conditions, scaling in the system, and so on.

The stated data refers to new products that have been properly installed and used in compliance with current regulations.

Note: It is recommended to perform regular maintenance.



The instruction manual is made of eco-friendly paper.

