HEAT PUMPS

TECHNICAL sheet

IMMERGAS

MAGIS HERCULES PRO

Floor-standing split Heat Pump, with 235 litre integrated DHW (Domestic hot water) storage tank

MAIN CONTENTS

MAGIS HERCULES PRO

MAGIS HERCULES PRO is the range of split inverter air-water heat pumps with outdoor condensing unit and indoor floor-standing unit, including a 235 litre domestic hot water storage tank (single product, with single code for indoor unit + condensing unit).
This is a heat pump-only solution line particularly suitable for new residential homes (characterised by high thermal insulation and integrated with a photovoltaic system), which combines the advantages of having a domestic hot water storage tank unit inside the same casing and the possibility of managing air cooling/central heating systems up to 3 zones (1 standard zone, zone 2 and zone 3 optional that can be inserted in the casing); a 45 litre inertial storage tank is also integrated into the indoor unit (which also acts as a hydraulic manifold, which represents a further important advantage by simplifying installation and optimising costs).
The range includes 9 versions, with powers of 4, 6, 9 kW (single-phase) and 12, 14, 16 kW (both single-phase and three-phase); the coolant used is R32 for machines up to 9 kW, R410A for machines from 12 kW and up.
The P.C.B. includes a system manager (standard), which allows programming the generator functions directly from the control panel; several temperature control devices are available to control the temperature / humidity of the system zones (optional for all zones).
In terms of electrical integration, the MAGIS HERCULES PRO models are standard equipped with 2.3 kW DHW (Domestic hot water) integrative resistance (possible combination of 1 or 2 additional 2.3 kW DHW (Domestic hot water) resistances – optional); it is also possible to combine the 3 kW system integrative resistance (optional – only one or 2 can be installed). Among the accessories, it is also possible to combine a specific kit for connection to a solar thermal system.
At installation level, the floor standing indoor unit has an IPX5D degree of protection (indoor installation only); on the other hand, the condensing 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 refrigerant connections between the outdoor condensing unit and the floor standing indoor unit, the F-GAS license is required for the connection.

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

35 °C A+++ MAGIS HERCULES PRO 4 - 6 -9 - 12 - 14

35 °C A++ MAGIS HERCULES PRO 16

55 °C A++ MAGIS HERCULES PRO 4 - 6 - 9

55 °C A+ MAGIS HERCULES PRO 12 - 14 - 16

MAGIS HERCULES PRO 4-6-9

1 MAGIS HERCULES PRO 4 - 6 - 9 FEATURES (SINGLE-PHASE)

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

Main components:

- **Outdoor condensing unit** (AUDAX PRO V2) which mainly includes rotary compressor, inverter electronics, throttle valve, 4-way valve for cycle inversion, finned exchange coil with outdoor air. The cooling circuit is already preloaded (R32 refrigerant) in the condensing unit, equipped with the relative shut-off valves;
- **Floor standing indoor unit** (UI MHP BP), which includes the hydraulic circuit components for connection to the system, as well as the related management and communication electronics with the condensing unit. The indoor unit can be divided into 2 parts (with dedicated frame for each individual unit), to facilitate transportation to the installation rooms; in particular, it consists of:

• 72-plate water / R32 Heat exchanger unit;
• Stainless steel 235 litre domestic hot water storage tank unit, standard equipped with 2.3 kW DHW (Domestic hot water) integrative resistance (possible combination of 1 or 2 additional 2.3 kW DHW (Domestic hot water) resistances - optional);
• Stainless steel 45 litre inertial storage tank, which also acts as a hydraulic manifold;
• 3 kW System integrative resistance (optional) - only one or 2 can be installed;
• Hydraulic unit on the Grundfos CHBL UPM3L K 20-75 primary circuit and 3-way DHW (Domestic hot water) priority valve, while for the system flow circuits, the zone pumps are WILO PARA 15-130 7 m (1 standard zone, mixed zone 2 kit and mixed zone 3 kit, both optional with relative circulators; the circuits can operate in heating and cooling mode); shut-off valves with standard filter on zone 1;
• 24 litre system expansion vessel, 16 litre DHW (Domestic hot water) expansion vessel;
• Electronics including system manager unit (for programming all generator functions directly from the control panel and programming the time slots for all circuits and relative climatic curves, in heating and cooling mode) + power electronics unit (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 3, one for each system zone;
• ModBus temperature and humidity sensor kit;
• On-off room chrono-thermostat and on-off humidistat;
• Variable temperature operation, using the external probe on the condensing unit. Possibility to set 3 heating curves and 3 cooling curves (from control panel); if the condensing unit is installed in "unfavourable" conditions for detecting the outdoor temperature, another external probe can be combined (optional);
• BOOST function for DHW (Domestic hot water) - makes it possible to use all the power available (HP + electrical resistances);
• Inlet to force activation with photovoltaic system that produces electricity (the DHW storage tank is heated to a maximum storage temperature exclusively by the heat pump. In case of simultaneous DHW and system request, the system will decide which service to satisfy, in order to ensure the best comfort);
• Electrical outputs for dehumidifier control;
• 230 V output to control summer/winter diverter valves in heating systems with fan coil cold / radiant panels; switching occurs with the change of mode (summer/winter);
• Control of Recirculation kit with pump (optional) - programming of the activation time slots from control panel + temperature probe (on the recirculation network return) to switch off the circulator when the loop is hot;
• 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 demand of 30 litres for machines up to 9 kW. Therefore, the standard supplied thermal flywheel (45 litres) is always sufficient.

It is available in the model:

• MAGIS HERCULES PRO 4	**code 3.030428**
• MAGIS HERCULES PRO 6	**code 3.030429**
• MAGIS HERCULES PRO 9	**code 3.030430**

EC Declaration Of Conformity.

2 MAGIS HERCULES PRO 12- 14 - 16 FEATURES (SINGLE-PHASE OR THREE-PHASE)

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

Main components:

- **Outdoor condensing unit** (UE AUDAX PRO V2 / UE AUDAX PRO V2 T) 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 (R410A refrigerant) in the condensing unit, equipped with the relative shut-off valves;
- **Floor standing indoor unit** (UI MHP AP), which includes the hydraulic circuit components for connection to the system, as well as the related management and communication electronics with the condensing unit. The indoor unit can be divided into 2 parts (with dedicated frame for each individual unit), to facilitate transportation to the installation rooms; in particular, it consists of:

• 72-plate water / R410A Heat exchanger unit;
• Stainless steel 235 litre domestic hot water storage tank unit, standard equipped with 2.3 kW DHW (Domestic hot water) integrative resistance (possible combination of 1 or 2 additional 2.3 kW DHW (Domestic hot water) resistances - optional);
• Stainless steel 45 litre inertial storage tank, which also acts as a hydraulic manifold;
• 3 kW System integrative resistance (optional) - only one or 2 can be installed;
• Hydraulic unit on the Grundfos CHBL UPML 20-105 primary circuit and 3-way DHW (Domestic hot water) priority valve, while for the system flow circuits, the zone pumps are WILO PARA 15-130 8 m (1 standard zone) and WILO PARA 15-130 9 m (mixed zone 2 kit and mixed zone 3 kit, both optional; the circuits can operate in heating and cooling mode); shut-off valves with standard filter on zone 1;
• 24 litre system expansion vessel, 16 litre DHW (Domestic hot water) expansion vessel;
• Electronics including system manager unit (for programming all generator functions directly from the control panel and programming the time slots for all circuits and relative climatic curves, in heating and cooling mode) + power electronics unit (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 3, one for each system zone;
• ModBus temperature and humidity sensor kit;
• On-off room chrono-thermostat and on-off humidistat;
• Variable temperature operation, using the external probe on the condensing unit. Possibility to set 3 heating curves and 3 cooling curves (from control panel); if the condensing unit is installed in “unfavourable” conditions for detecting the outdoor temperature, another external probe can be combined (optional);
• BOOST function for DHW (Domestic hot water) - makes it possible to use all the power available (HP + electrical resistances);
• Inlet to force activation with photovoltaic system that produces electricity (the DHW storage tank is heated to a maximum storage temperature exclusively by the heat pump. In case of simultaneous DHW and system request, the system will decide which service to satisfy, in order to ensure the best comfort);• Electrical outputs for dehumidifier control;
• 230 V output to control summer/winter diverter valves in heating systems with fan coil cold / radiant panels; switching occurs with the change of mode (summer/winter);
• Control of Recirculation kit with pump (optional) - programming of the activation time slots from control panel + temperature probe (on the recirculation network return) to switch off the circulator when the loop is hot;
• 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 demand of 50 litres for machines 12-14-16 kW. Therefore, the standard supplied thermal flywheel (45 litres) is practically always sufficient.

It is available in the model:

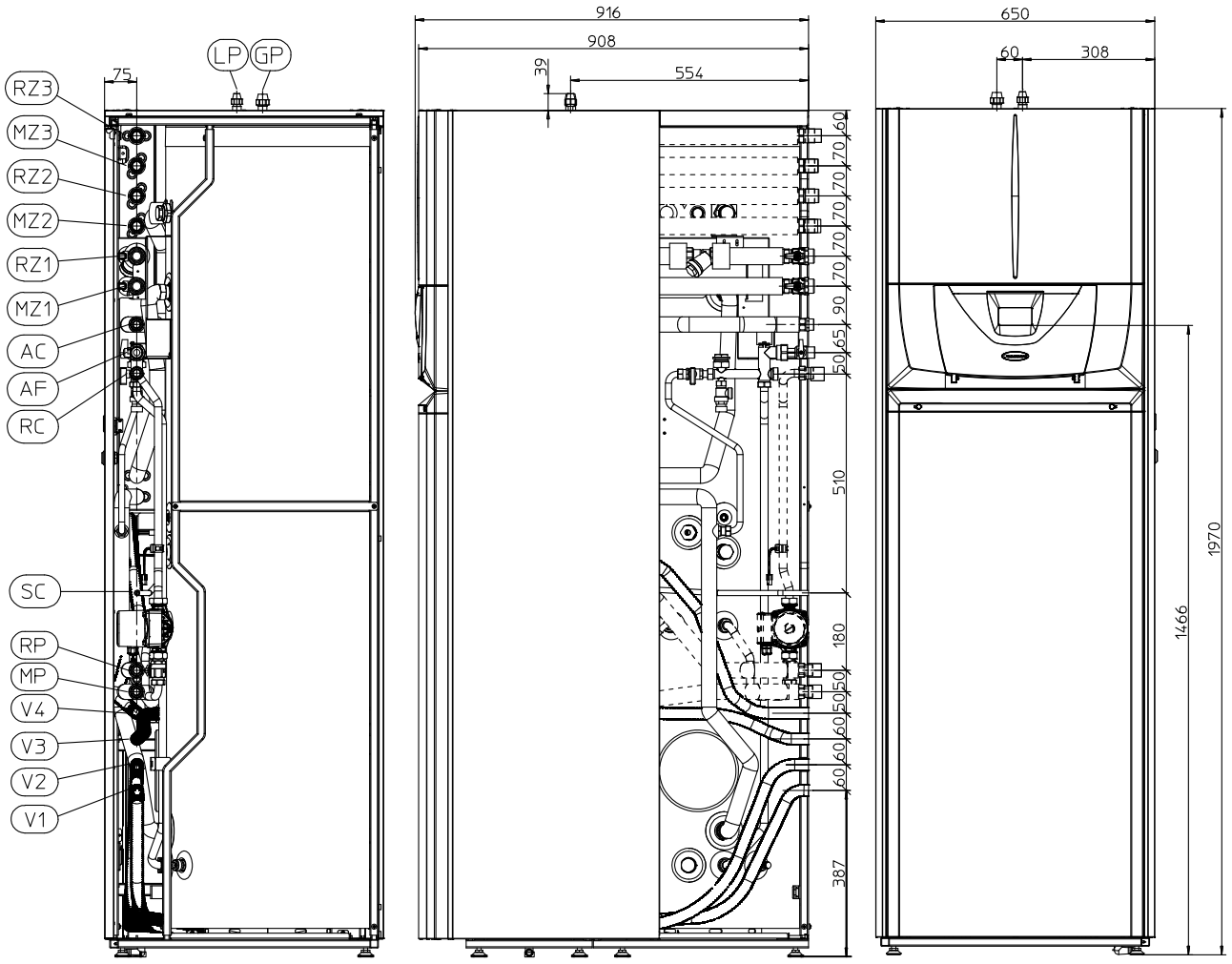
• **MAGIS HERCULES PRO 12**	**code 3.030431**
• **MAGIS HERCULES PRO 14**	**code 3.030432**
• **MAGIS HERCULES PRO 16**	**code 3.030433**
• **MAGIS HERCULES PRO 12 T**	**code 3.030434**
• **MAGIS HERCULES PRO 14 T**	**code 3.030435**
• **MAGIS HERCULES PRO 16 T**	**code 3.030436**

EC Declaration Of Conformity.

MAGIS HERCULES PRO

3 MAGIS HERCULES PRO DIMENSIONS AND CONNECTIONS (INDOOR UNIT)

Model	Height mm	Width mm	Depth mm
MAGIS HERCULES PRO	1970	650	916



Key:
V1 - 3rd zone electrical connections
V2 - Additional resistance power supply electrical connections
V3 - Power supply cable electrical connections
V4 - Main electrical connections

MAGIS HERCULES PRO (INDOOR UNIT)										
LP 4-6-9 kW SAE 1/4"	**LP** 12-14-16 kW SAE 3/8"	**GP** All SAE 5/8"	**MZ1** **RZ1** G 1"	**MZ2** **RZ2** G 1"	**MZ3** **RZ3** G 1"	**AC** G 3/4"	**AF** G 3/4"	**RC** G 3/4"	**MP** G 3/4"	**RP** G 3/4"

4 SEPARATION INTO TWO PARTS (WITH DEDICATED FRAME)

To simplify the work of the installers, this heat pump only system was designed with particular attention to the how the product is handled and transported to the installation site. MAGIS HERCULES PRO is sold with a single code and subsequently, to facilitate its handling and installation on site, can be separated into two parts that can be disassembled from each other with appropriate mechanical and electrical set-ups.

NOTE: It is necessary to check the structural strength of the floors/ceilings in view of the final weight of the appliance full of water.

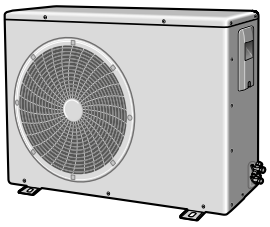
as per the photo: approx. 100 kg

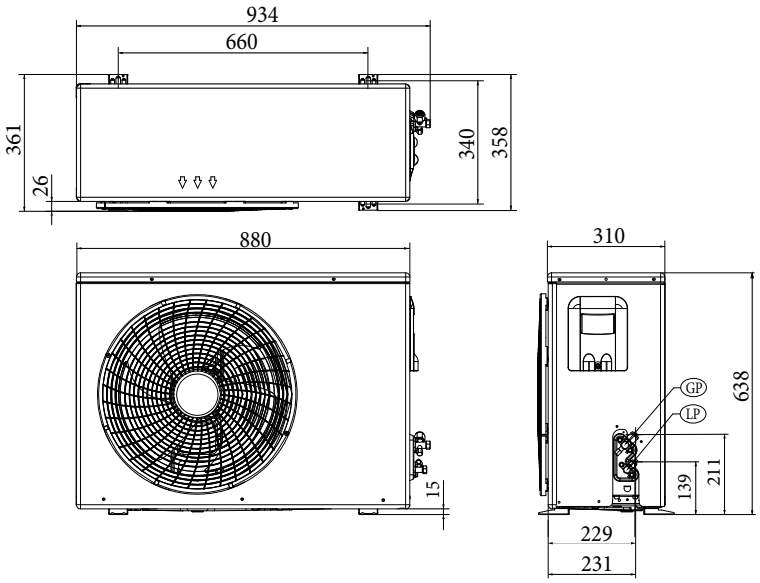
as per the photo: approx. 100 kg

MAGIS HERCULES PRO 4-6-9

5 AUDAX PRO V2 DIMENSIONS AND CONNECTIONS (CONDENSING UNIT)

AUDAX PRO 4 / 6 V2

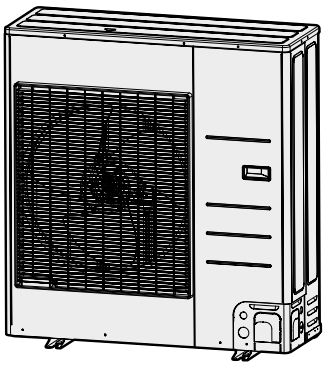


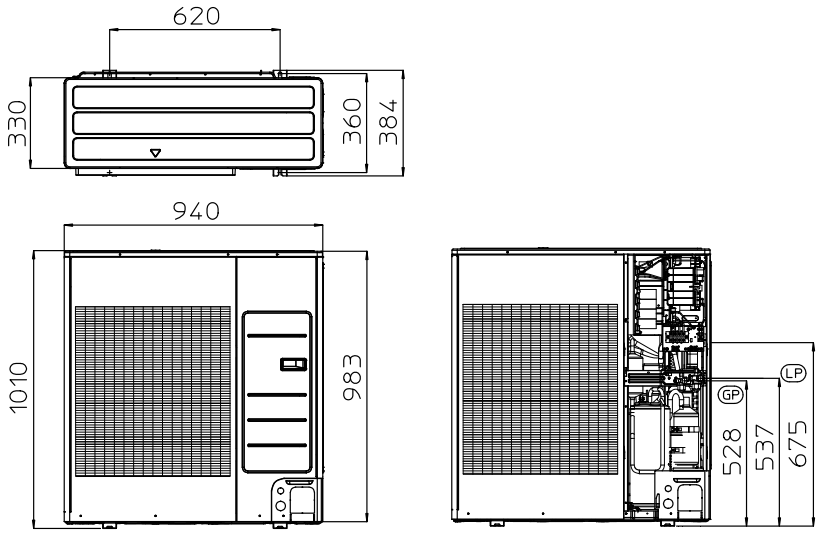


Height = 638 mm	**Width** = 880 mm	**Depth** = 361 mm	**Condensate drain** = Ø 20 mm

	R32	
Model	**LP (Cooling liquid)**	**GP (Gaseous liquid)**
AUDAX PRO 4/6 V2	1/4" (6.35 mm)	5/8" (15.88 mm)

AUDAX PRO 9 V2

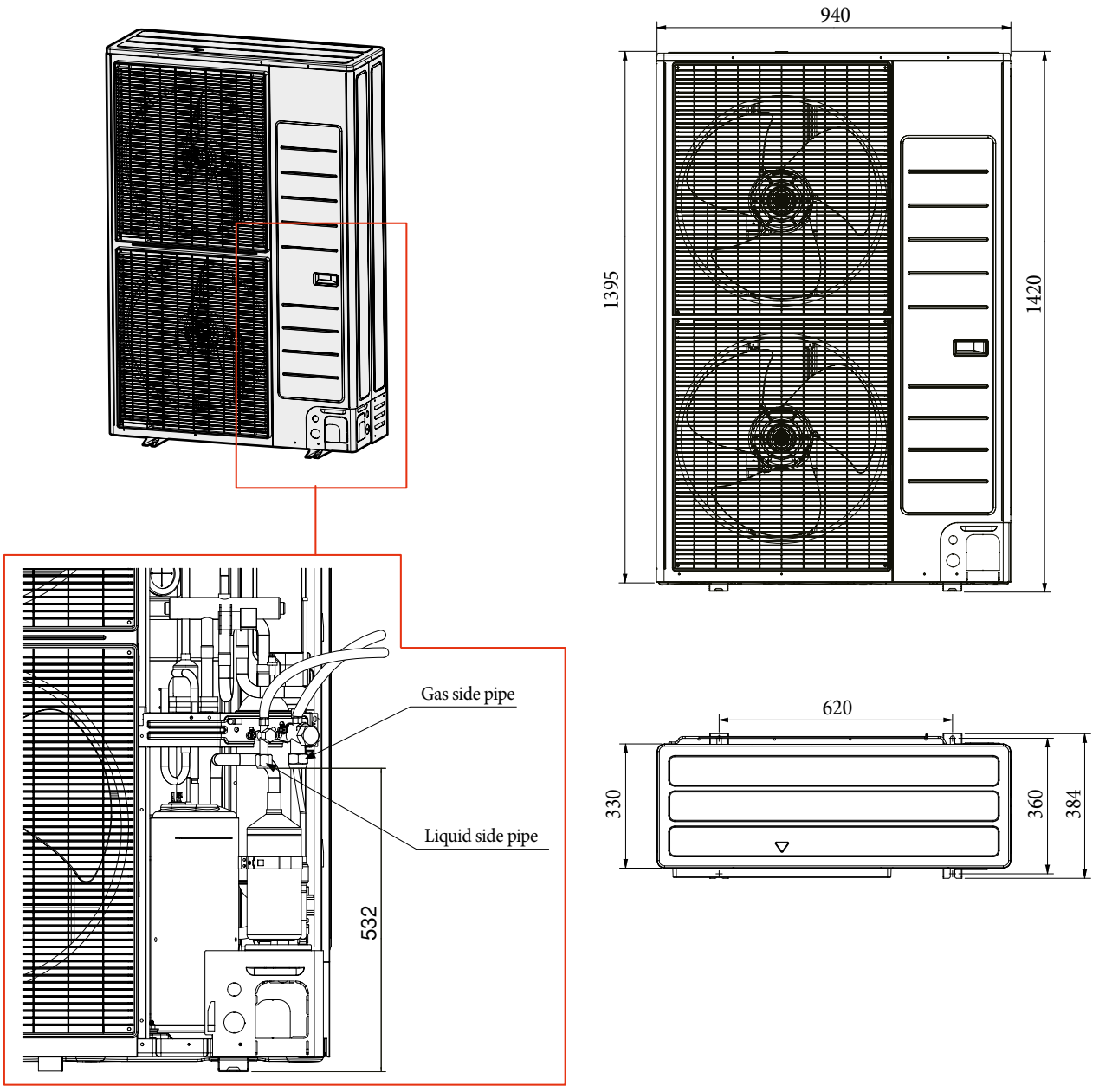




Height = 1010 mm	**Width** = 940 mm	**Depth** = 384 mm	**Condensate drain** = Ø 20 mm

	R32	
Model	**LP (Cooling liquid)**	**GP (Gaseous liquid)**
AUDAX PRO 9 V2	1/4" (6.35 mm)	5/8" (15.88 mm)

6 UE AUDAX PRO V2 DIMENSIONS AND CONNECTIONS (CONDENSING UNIT)

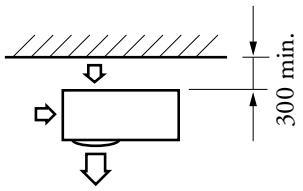


Height = 1420 mm	**Width** = 940 mm	**Depth** = 384 mm	**Condensate drain** = Ø 20 mm

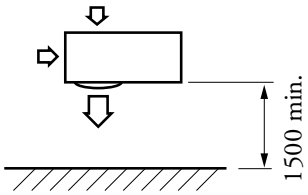
	R410A	
Model	**LP (Cooling liquid)**	**GP (Gaseous liquid)**
UE AUDAX PRO 12-14-16 V2	3/8" (9.52 mm)	5/8" (15.88 mm)
UE AUDAX PRO 12-14-16 V2 T	3/8" (9.52 mm)	5/8" (15.88 mm)

7 SINGLE AUDAX PRO V2 MINIMUM INSTALLATION DISTANCES

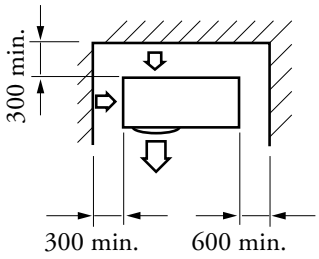
With the back side of the unit facing a wall

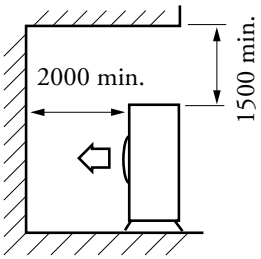


With the front side of the unit facing a wall

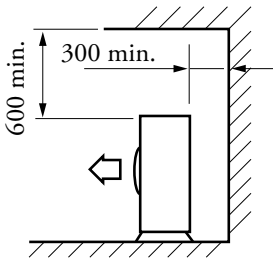


With three sides of the unit facing a wall

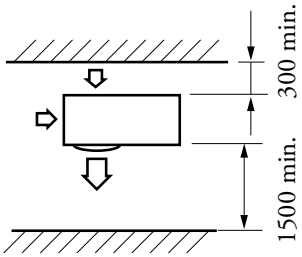




With the top and front sides of the unit facing a wall



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



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

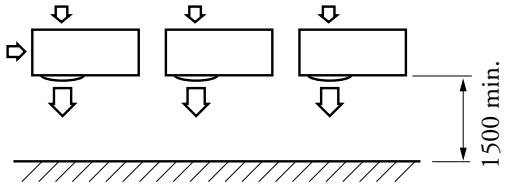
Place of installation:

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

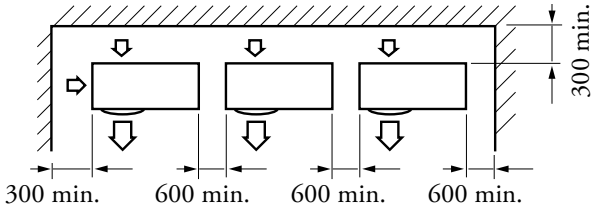
- The condensing unit must be installed outside the building only; the indoor unit must be installed inside the building or outdoors in a partially protected place;
- It is recommended to avoid:
- positioning in basement windows;
- obstacles or barriers that cause recirculation of exhaust air;
- places with aggressive atmospheres;
- limited spaces or anyhow in places where sound levels from the appliance can be enhanced through reverberations or resonance;
- positioning in corners where there is an accumulation of dust, leaves and anything else that can reduce the appliance's efficiency due to blocked passageways;
- prevent exhaust air from the device from coming into the rooms through doors or windows, thus disturbing people;
- The appliances must:
- be placed on a level surface that is able to withstand its weight;
- be placed on a slab that is hard enough and which does not transfer any vibrations to the underlying or adjacent rooms;
- installed by means of the vibration-dampening supports supplied with the machine.
- If the unit is installed in zones subject to heavy snow, it will be necessary to raise the machine by at least the height of the strongest expected snowfall or, alternatively, use wall-support brackets (optional).

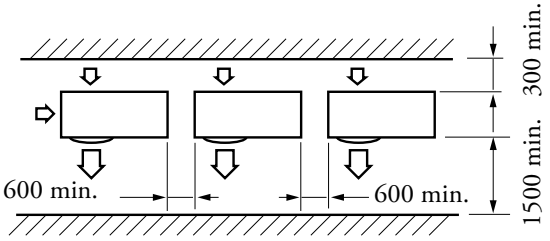
8 AUDAX PRO V2 MINIMUM INSTALLATION DISTANCES (SEVERAL APPLIANCES)

The front side of the unit facing a wall

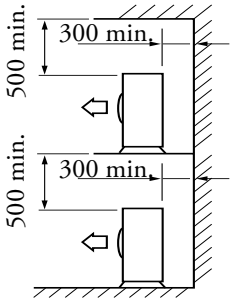


With three sides of the units facing a wall

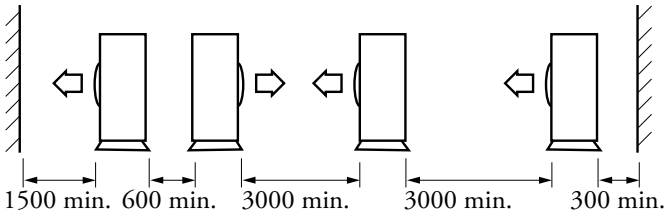




With the front and back sides of the units facing a wall



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

In addition:

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

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

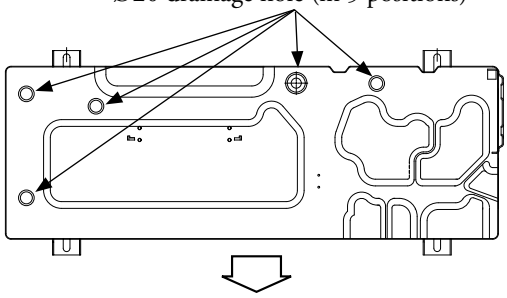
9 DRAIN HOLES AND CONDENSATE DRAIN

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

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

AUDAX PRO 4 V2
AUDAX PRO 6 V2

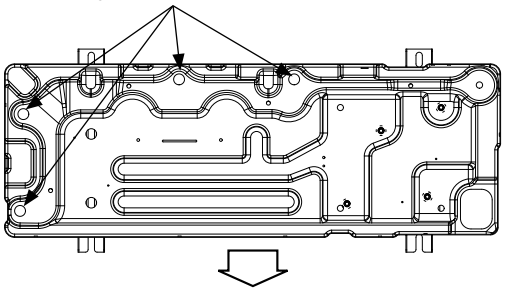
Ø20 drainage hole (in 5 positions)



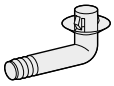
Air flow side

AUDAX PRO 9 V2
UE AUDAX PRO 12-14-16 V2
UE AUDAX PRO 12-14-16 V2 T

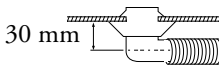
Ø20 drainage hole (in 4 positions)



Air flow side



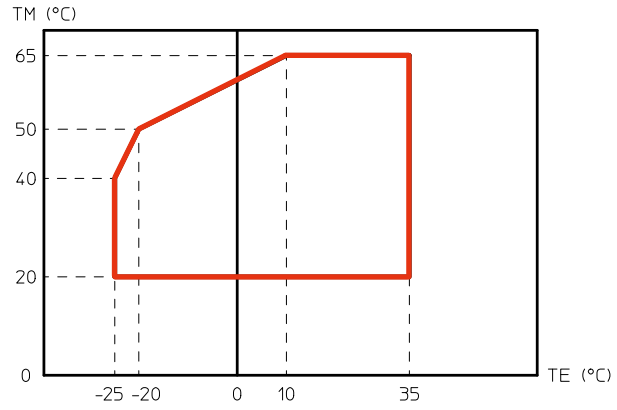
Drainage fitting (1)



10 COOLING CIRCUIT WITH R32 FUNCTIONING LIMITS

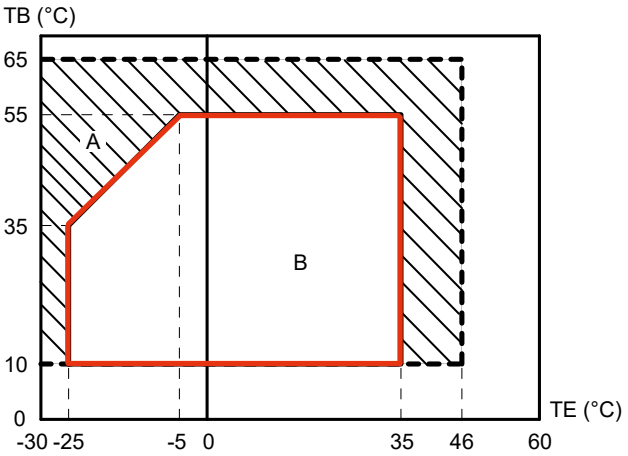
Central heating

System



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

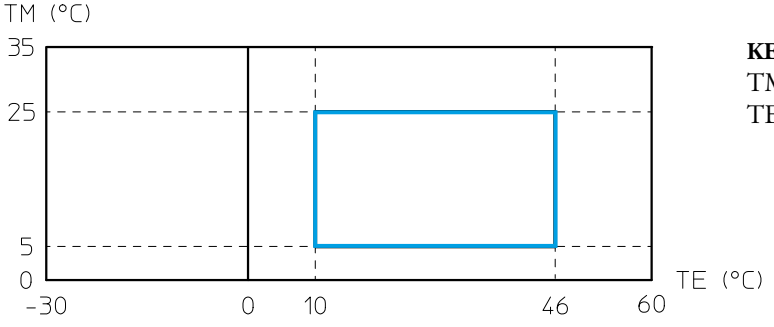
Domestic hot water



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

A = Work area covered by
D.H.W. integrative electric resistance
B = Work area covered by Heat pump

Cooling



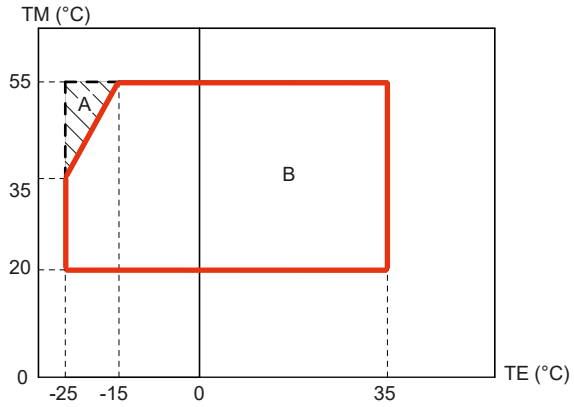
KEY:
TM - Flow water temperature (°C)
TE - Outdoor air temperature (°C)

MAGIS HERCULES PRO 12-14-16

11 COOLING CIRCUIT WITH R410A FUNCTIONING LIMITS

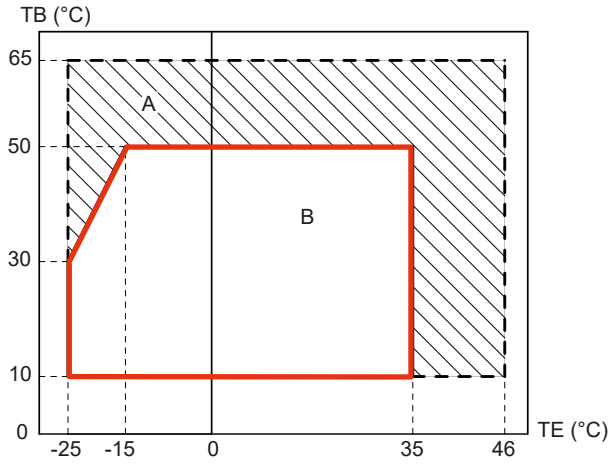
Central heating

System



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

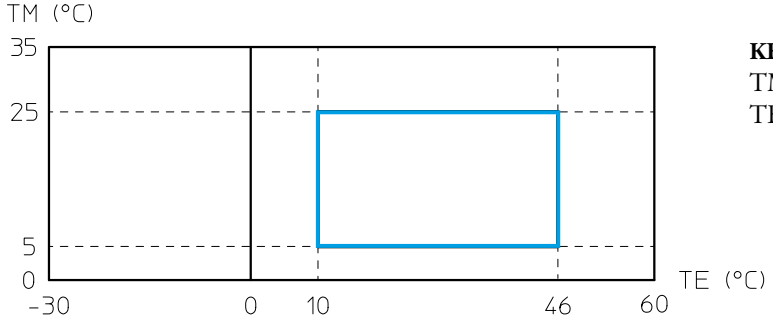
Domestic hot water



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

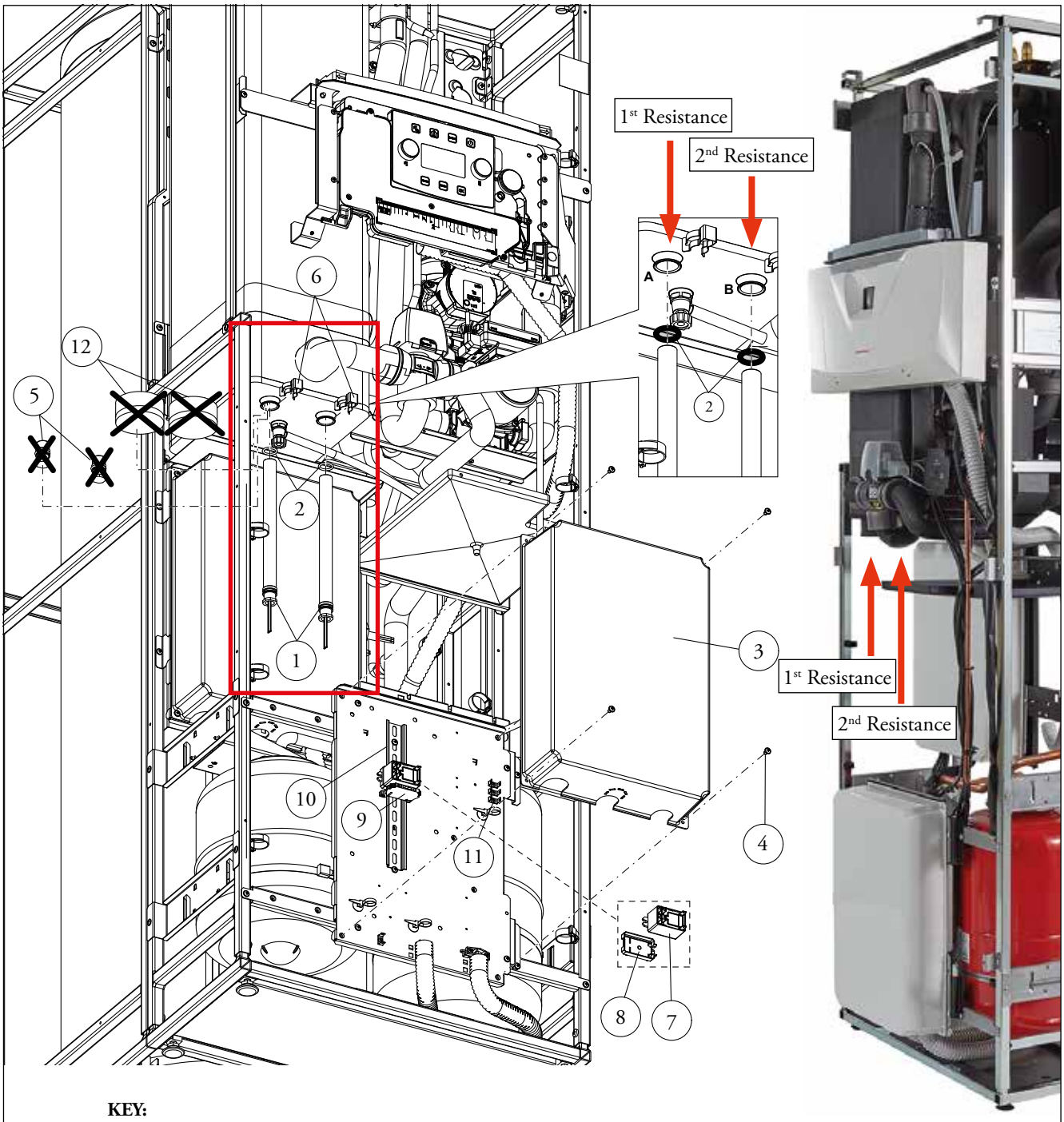
A = Work area covered by
D.H.W. integrative electric resistance
B = Work area covered by Heat pump

Cooling



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

12 3 kW SYSTEM INTEGRATIVE RESISTANCE KIT (CODE 3.030889) IT IS POSSIBLE TO INSTALL 2 KITS



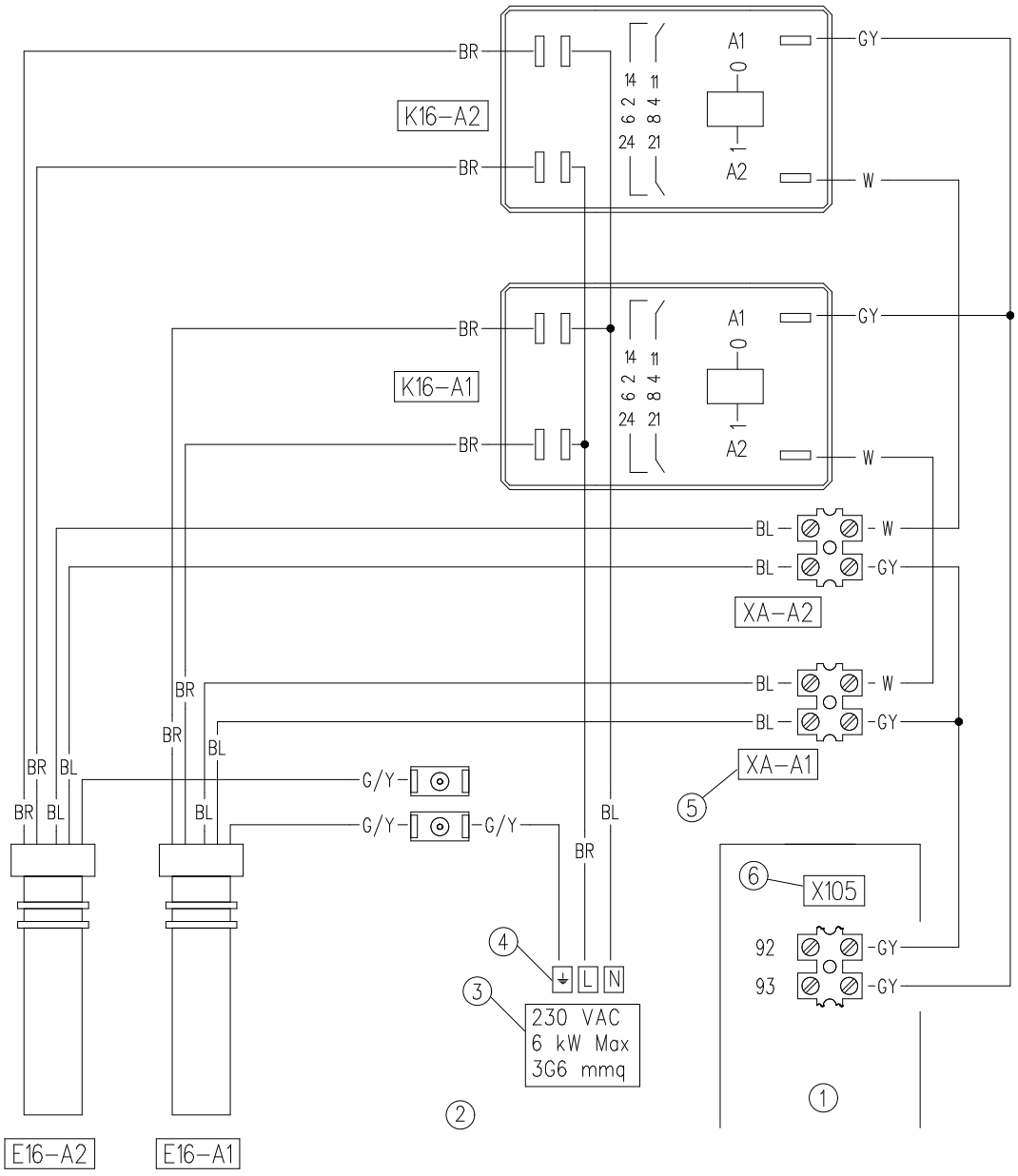
KEY:

1 - 3 kW Electric resistance
2 - O.R. seal
3 - Cover
4 - Screws
5 - Plugs
6 - Resistance fixing fork
7 - Relay
8 - Relay mount
9 - Relay fixing terminal
10 - Relay fixing slide

TECHNICAL DATA (for each resistance)*

Electric power supply	230V-50Hx single phase+earthing
Max. Input	3 kW *
Absorption	13 A *
Working temperature	65 °C
Maximum temperature	70 °C

12.1 ELECTRICAL CONNECTION WITH DOUBLE 3 kW SYSTEM INTEGRATIVE RESISTANCE KIT (CODE 3.030889)



KEY:

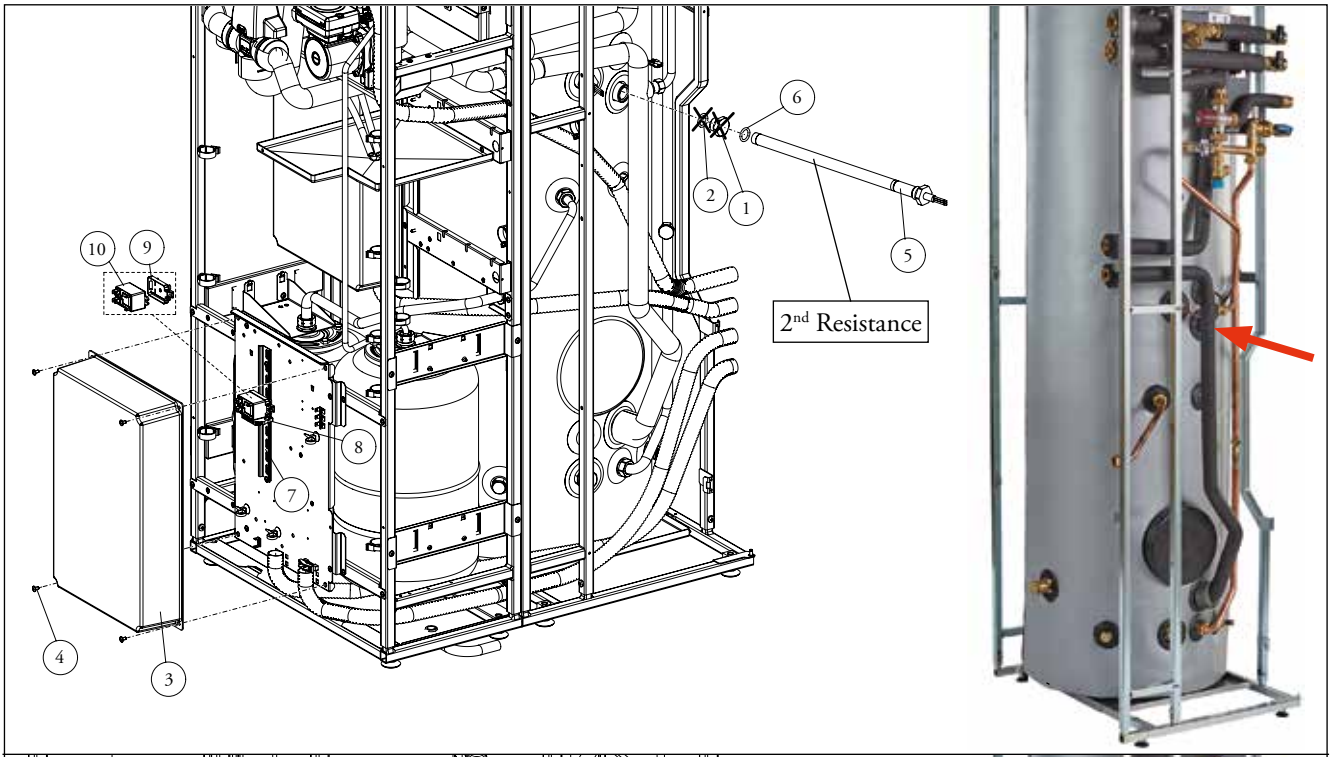
1 - Main panel
2 - Optional kit panel
3 - External power supply 230 Vac
4 - Earthing
5 - "XA" Terminal block present on the wiring connected to the main panel of the appliance
6 - "X105" terminal block on the main panel of the appliance

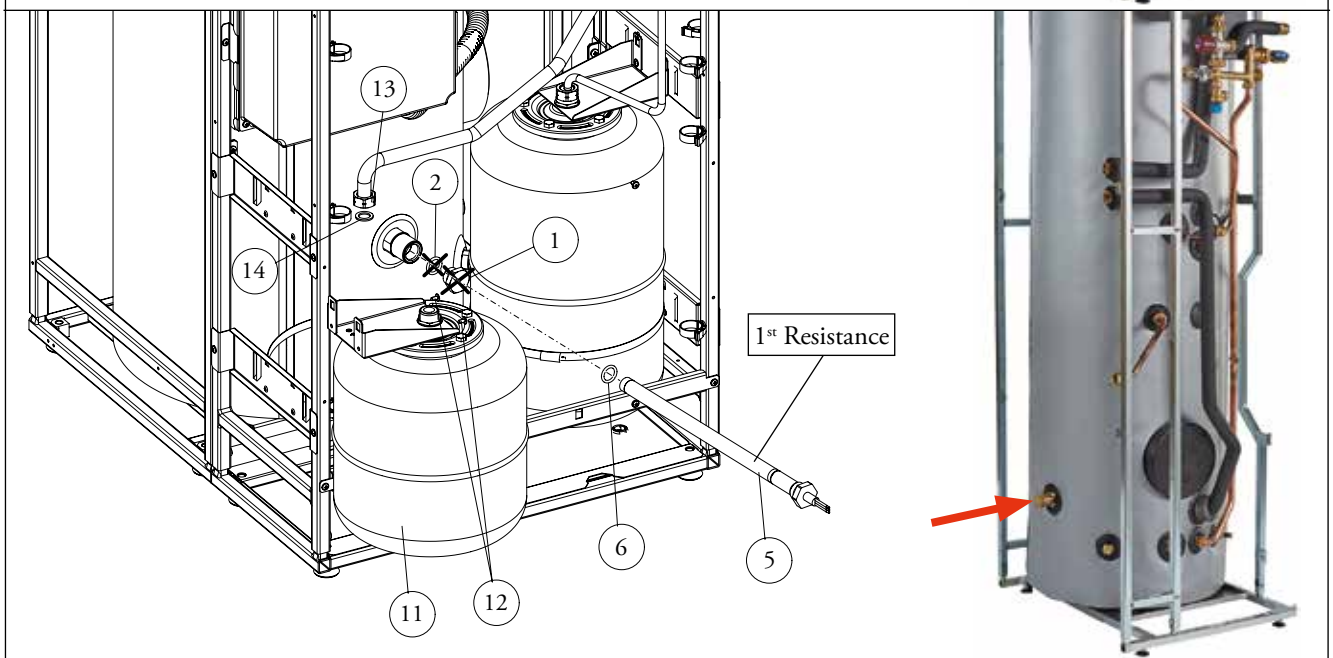
E16 - System integration resistance
K16 - System integrative resistance relay

Colour code key:

BL - Blue
BR - Brown
G/Y - Green/Yellow
GY - Grey
W - White

13 2.3 kW DHW (DOMESTIC HOT WATER) INTEGRATIVE RESISTANCE KIT (CODE 3.030862) IT IS POSSIBLE TO INSTALL 2 KITS (IN ADDITION TO THE STANDARD ONE)





KEY (kit composition):

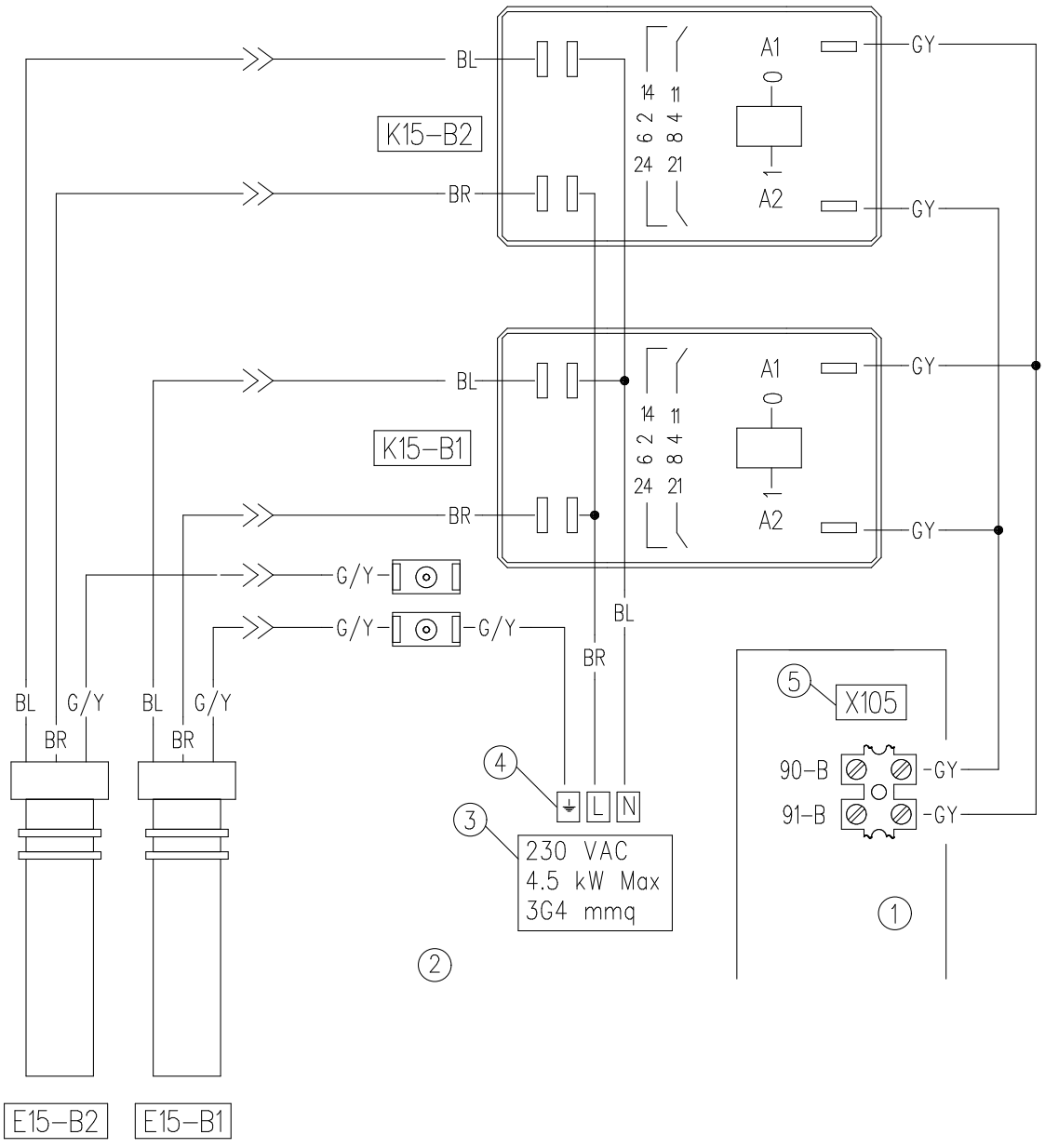
5 - Integrative 2,3 kW resistance
6 - O.R. seal
8 - Relay fixing terminal
9 - Relay mount
10 - Relay

NOTE: if you plan to install a single additional DHW resistance (in addition to the standard one), it is recommended to install it in the position with the reference in the lowest part of the storage tank.

TECHNICAL DATA (for each resistance)*

Electric power supply	230V-50Hx single phase+earthing
Max. Input	2.3 kW *
Absorption	10 A *
Working temperature	65 °C
Maximum temperature	70 °C

13.1 ELECTRICAL CONNECTION WITH DOUBLE 2,3 kW DHW (DOMESTIC HOT WATER) INTEGRATIVE RESISTANCE KIT (CODE 3.030862)



KEY:

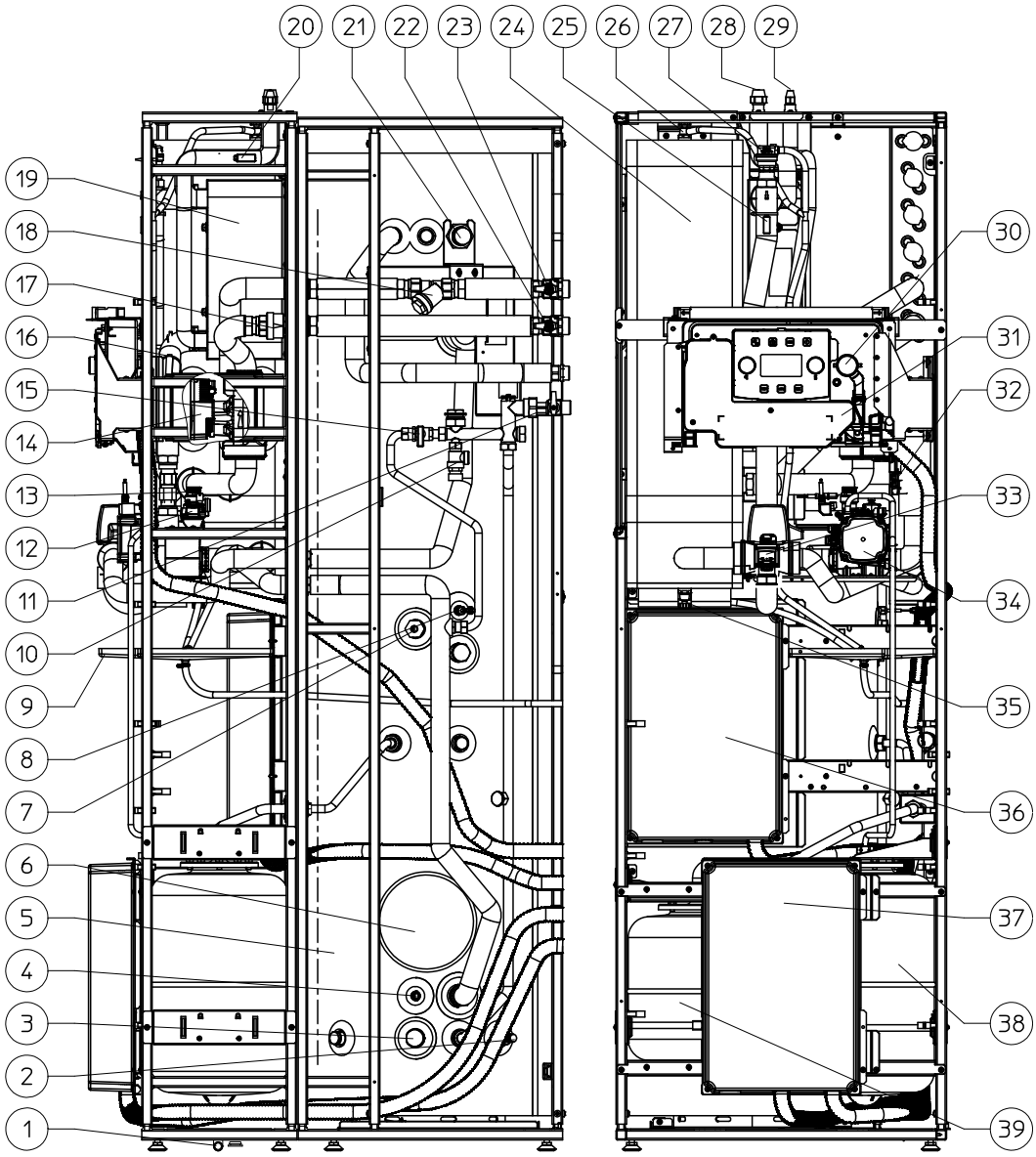
1 - Main panel
2 - Optional kit panel
3 - External power supply 230 Vac
4 - Earthing
5 - "X105" terminal block on the main panel of the appliance

E15 B1 -B2 -DHW (Domestic hot water) integration resistance
K15 B1 - B2 - DHW integrative resistance relay

Colour code key:

BL - Blue
BR - Brown
G/Y - Green/Yellow
GY - Grey
W - White

14 INDOOR UNIT MAIN COMPONENTS

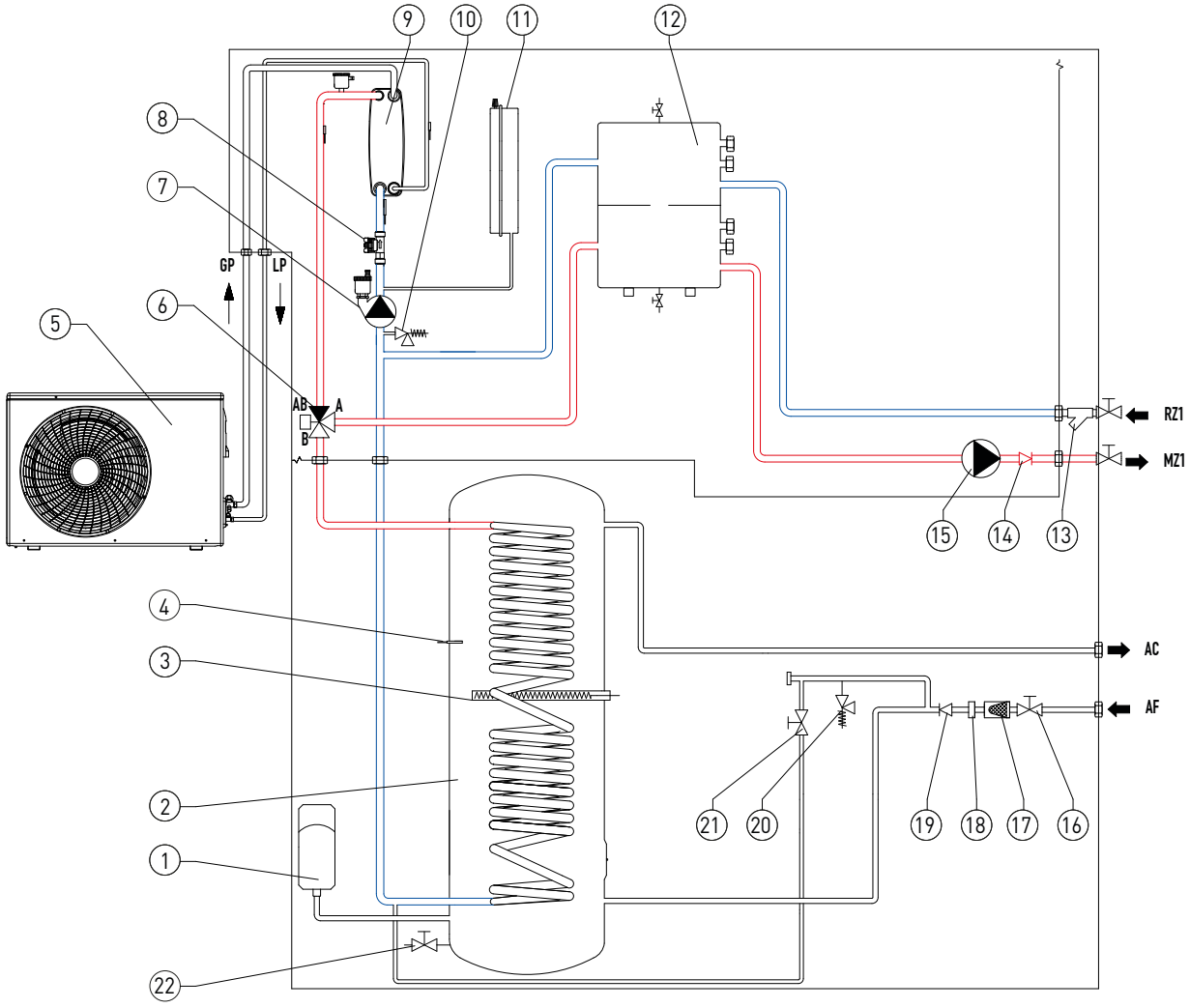


KEY:

1 - Elbow fitting
2 - Storage tank draining valve
3 - Sacrificial anode
4 - Solar panels probe (optional)
5 - Stainless steel storage tank
6 - Storage tank flange
7 - DHW electrical resistance
8 - DHW probe
9 - Condensate collection tray
10 - 8 bar safety valve
11 - Cold water inlet cock
12 - Air vent valve
13 - 3 bar safety valve
14 - Direct zone 1 pump / circulator
15 - System filling valve
16 - Heat pump return probe
17 - One-way valve
18 - Filter that can be inspected
19 - Plate heat exchanger
20 - Liquid phase detection probe
21 - Sacrificial anode
22 - System shut-off cock
23 - System shut-off cock
24 - Hydraulic manifold
25 - Heat pump flow probe
26 - Hydraulic manifold manual air vent valve
27 - Air vent valve
28 - Chiller line connection gaseous status
29 - Chiller line connection liquid status
30 - System manometer
31 - Electrical connection compartment
32 - System flow-meter
33 - 3-way valve (motorised)
34 - Primary circuit pump
35 - System draining valve
36 - Main panel
37 - Optional kit panel
38 - System expansion vessel
39 - DHW (Domestic hot water) expansion vessel

MAGIS HERCULES PRO

15 MAGIS HERCULES PRO HYDRAULIC DIAGRAM

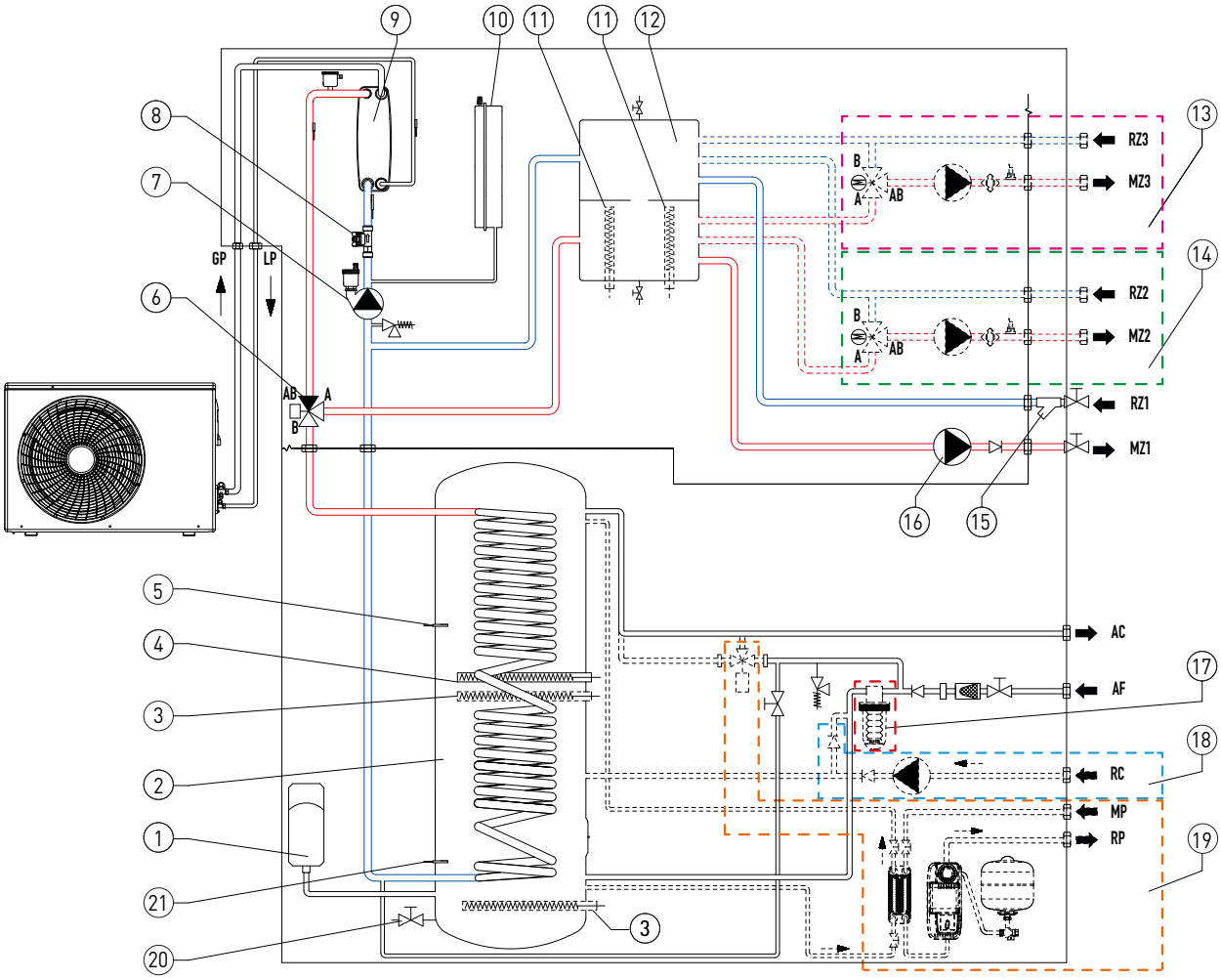


KEY:

1 - 16 litre DHW (Domestic hot water) expansion vessel
2 - 235 litre Stainless steel DHW (Domestic hot water) storage tank
3 - 2.3 kW DHW (Domestic hot water) integrative resistance
4 - DHW probe
5 - Outdoor condensing unit
6 - System/DHW (Domestic hot water) 3-way diverter valve
7 - Primary circuit pump
8 - System flow rate meter
9 - Water/gas plate heat exchanger
10 - 3 bar safety valve
11 - 24 litre system expansion vessel
12 - 45 litre inertial storage tank / hydraulic separator
13 - Y-Filter that can be inspected
14 - One-way valve direct zone 1
15 - Direct zone 1 pump / circulator
16 - Cold water inlet cock
17 - Cold water inlet filter
18 - Flow limiter
19 - Cold water inlet non-return valve
20 - 8 bar safety valve
21 - System filling valve
22 - Storage tank draining valve

LP - Chiller line - liquid phase
GP - Chiller line - gaseous phase
AC - Domestic hot water outlet
AF - Domestic cold water inlet
RZ1 - Direct zone 1 system return
MZ1 - Direct zone 1 system flow

15.1 MAGIS HERCULES PRO HYDRAULIC DIAGRAM WITH OPTIONAL KIT

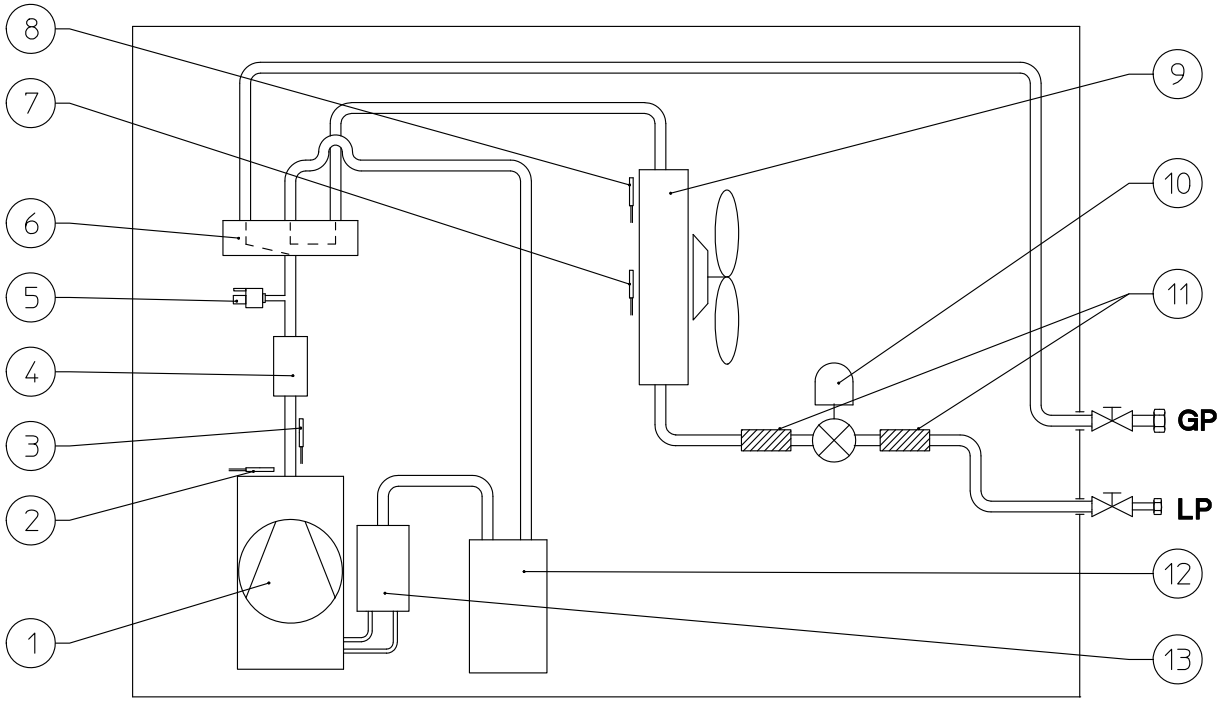


KEY:

1 - 16 litre DHW (Domestic hot water) expansion vessel
2 - 235 litre Stainless steel DHW (Domestic hot water) storage tank
3 - 2.3 kW DHW (Domestic hot water) integrative resistance (optional)
4 - 2.3 kW DHW (Domestic hot water) integrative resistance (standard)
5 - DHW probe
6 - System/DHW (Domestic hot water) 3-way diverter valve
7 - Primary circuit pump
8 - System flow rate meter
9 - Water/gas plate heat exchanger
10 - 24 litre system expansion vessel
11 - 3 kW system electric resistance (optional)
12 - 45 litre inertial storage tank / hydraulic separator
13 - Additional mixed zone 3 kit (optional)
14 - Additional mixed zone kit (optional)
15 - Y-Filter that can be inspected
16 - Direct zone 1 pump / circulator
17 - Polyphosphate dispenser kit (optional)
18 - Recirculation kit with circulator (optional)
19 - Solar thermal heating system coupling kit (optional)
20 - Storage tank draining valve
21 - Solar system probe

LP - Chiller line - liquid phase
GP - Chiller line - gaseous phase
RZ3- Mixed zone 3 system return (optional)
MZ3- Mixed zone 3 system flow (optional)
RZ2- Mixed zone 2 system return (optional)
MZ2- Mixed zone 2 system flow (optional)
RZ1- Direct zone 1 system return
MZ1- Direct zone 1 system flow
AC - Domestic hot water outlet
AF - Domestic cold water inlet
MP - Solar panel flow (optional)
RP - Solar panel return (optional)

15.2 AUDAX PRO V2 (EXTERNAL CONDENSING UNIT) HYDRAULIC DIAGRAM



KEY:

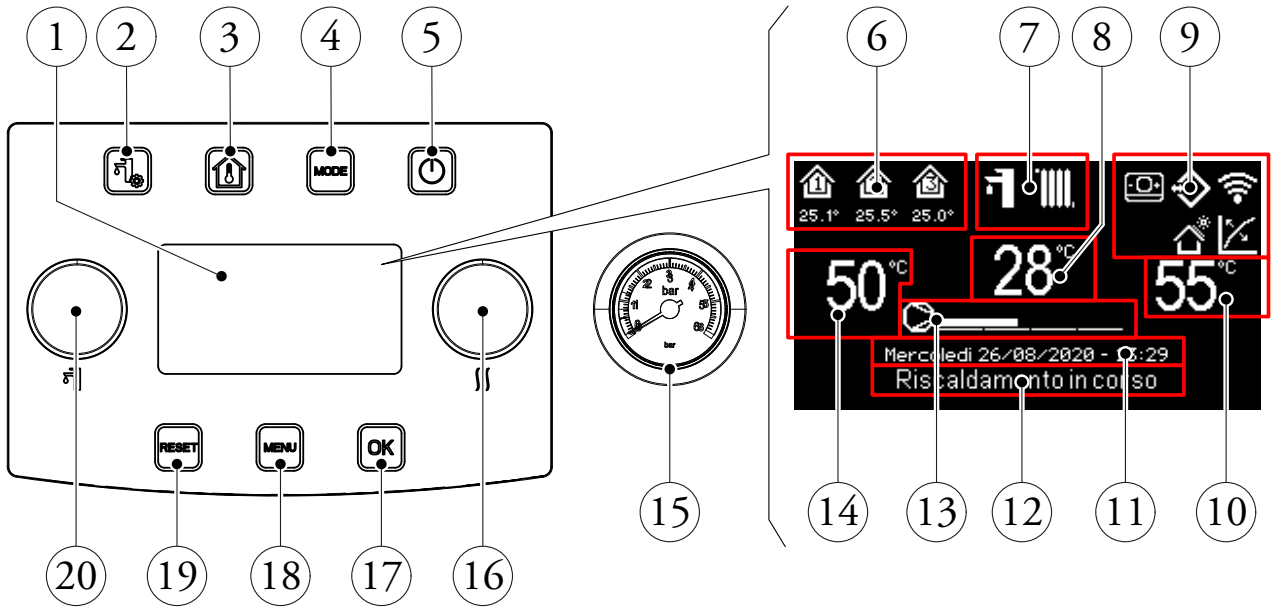
1 - Compressor
2 - Compressor temperature
3 - Compressor outlet temperature
4 - Silencer
5 - High pressure switch
6 - 4-way valve
7 - Temperature of fluid in finned coil
8 - External probe/installation room temperature
9 - Finned coil + fan
10 - Electronic expansion valve
11 - Dryer filter
12 - Liquid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

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

16 ELECTRONIC MANAGEMENT FUNCTIONS MAGIS HERCULES PRO

The electronics of MAGIS HERCULES PRO is 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 allows activating the electric resistances for both the heating system (optional) and for the DHW (power supply to be taken separately); the logic plans to activate the resistances if I do not reach the temperature set within the max. time (set a max. time for the system and a separate for the DHW), or below a certain outdoor temperature (also settable) I can immediately activate the electric resistance.
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.
MAGIS HERCULES PRO works at a variable temperature, using the external probe present on the condensing unit (located outside); it is set up to directly manage 3 zones (one direct and two mixed) for operation in both central heating and cooling mode, with the possibility of setting 3 climatic curves in central heating and 3 climatic curves in cooling (for the 3 zones) without having to provide for additional electronic supervision boards.
In this case MAGIS HERCULES PRO can be connected to remote zone panels (code 3.030863) via Bus connections (up to 3 can be provided), or it can be connected with simple on/off contacts (e.g. CHRONO 7) to control the room temperature of the 3 zones.
3 humidistats (code 3.023302) can be connected to control humidity or 3 Modbus temperature and humidity sensors (code 3.030992) to fully manage the related dehumidifiers.
For each zone, from the MAGIS HERCULES PRO electronics it is possible to set if the zone is only hot, hot/cold, only cold (dehumidification included, with dew point calculation), as well as setting the programming of different time slots for all three zones.
The appliance can be managed remotely only by installing the DOMINUS interface board kit (optional), which consists of a simple and intuitive application (App) that makes it possible to control the system and view its operation via Tablet, Smartphone and PC.
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.
There is a 230 V output to control summer/winter diverter valves in heating systems with fan coil cold/radiant panels; switching occurs with the change of mode (summer/winter) from the control panel or from the zone remote panel.
The MAGIS HERCULES PRO electronics also manages the anti-legionella function, which can only be activated if the system is provided with an auxiliary generator (electric resistance present as a standard, but needs to be activated).
The electronics of MAGIS HERCULES PRO also controls the activation of the recirculation circulator (optional).
Whereas, to control a possible solar system, a solar control unit is required (to be purchased separately with special optional Kit).
The integrated electronics also manage the screed heating function in order to perform the initial central heating cycle on new radiant panel systems.

16.1 DISPLAY AND PROGRAMMING MENU



KEY:

1 - Display
2 - "DHW (Domestic hot water)" menu button
3 - "Zones" button
4 - Functioning mode button
5 - ON/OFF Button
6 - Zones area (number and information of zone in use)
7 - Operating mode
8 - Anomaly code/flow temperature display
9 - System general icon display
10 - Central heating / C.H. set display
11 - Current date and time display
12 - System state button
13 - Heat pump power scale button
14 - DHW (Domestic hot water) set display
15 - Pressure gauge
16 - "Heating/cooling set" knob
17 - Selection confirmation/OK button
18 - "Menu" button
19 - Anomalies/esc. reset button
20 - "Set DHW (Domestic hot water)" knob

16.2 USER PROGRAMMING MENU

"DHW (Domestic hot water)" Menu.
Press the "DHW (Domestic hot water)" button to access a list of variables that enable you to customise use of the DHW (Domestic hot water).
Hereunder is a list of available menus:

DHW (Domestic hot water)			
Menu item	Description	Range	Default
Boost Function	Enabling of DHW (Domestic hot water) BOOST function	Off/On/Auto	Off
Set Management	Enabling of the DHW (Domestic hot water) setpoint management in Automatic mode	Manual/Auto	Auto
Comfort set	Domestic hot water accumulation setpoint in Comfort phase (Automatic mode)	20 - 65 °C*	20
Economy set	Domestic hot water accumulation setpoint in Economy phase (Automatic mode)	10 - 35 °C	10
Manual set	Domestic hot water accumulation setpoint in Manual phase	10 - 65 °C*	10
Temperature	Display of the DHW (Domestic hot water) temperature	-	-

* with DHW (Domestic hot water) integration electric resistance "activated".

"Zones" menu.
Press the "Zones" BUTTON to access a list of variables that enable you to customise use of the zones.
Hereunder is a list of available menus.

ZONES	
Menu item	Description
Zone 1	Defines the operating parameters to manage zone 1.
Zone 2 (if present)	Defines the operating parameters to manage the zone 2 (if present).
Zone 3 (if present)	Defines the operating parameters to manage the zone 3 (if present).
General information	This display system operating data.

ZONES/**ZONE 1 (Similar settings for zone 2 and 3 if present)**	
Menu item	Description
Information	This displays the system operating data.
Settings	Defines the operating parameters to manage zone 1.

ZONES/ZONE 1/**INFORMATION (Similar settings for zone 2 and 3 if present)**	
Menu item	Description
Room temperature	Room temperature on zone 1.
Room humidity	Room humidity on zone 1.
Dew temperature	Zone 1 dew temperature.
Room temper. set	Room setpoint set on zone 1.
Room humidity	Room humidity setpoint set on zone 1.
Flow set	Flow setpoint on zone 1.
Flow temperature	Flow temperature set on zone 1.

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ZONES/ZONE 1/**INFORMATION (Similar settings for zone 2 and 3 if present)**	
Menu item	Description
Operation status	Description of the zone 1 operating mode. OFF = zone in OFF mode. ECO = Zone in economy mode. COMFORT = zone in comfort mode. MANUAL = zone in manual mode.

ZONES/ZONE 1/**SETTINGS**			
Menu item	Description	Range	Default
Functioning mode	Setting of the zone 1 operating mode. OFF= zone in OFF mode. AUTO= Zone in Automatic mode. MAN= zone in manual mode.	OFF/MAN/ AUTO	Auto
Central heating			
Cooling			
Dehumidification			

ZONES/ZONE 1/SETTINGS/**CENTRAL HEATING (Similar settings for zone 2 and 3 if present)**			
Menu item	Description	Range	Default
Comfort Set	Room setpoint in central heating zone 1 Comfort mode (Auto mode).	10 - 35 °C	20
Economy Set	Room setpoint in central heating zone 1 Economy mode (Auto mode).	5 - 30 °C	16
Manual set	Room setpoint in central heating zone 1 manual mode.	5 - 35 °C	20
Flow set	Flow setpoint set for zone 1 in central heating mode.	10 - 65 °C *	40
Flow offset	Offset temperature for zone 1 in central heating mode.	- 9 - + 9°C	0

ZONES/ZONE 1/SETTINGS/**COOLING (Similar settings for zone 2 and 3 if present)**			
Menu item	Description	Range	Default
Comfort Set	Room temperature in cooling zone 1 in Comfort mode (Auto mode).	10 - 35 °C	25
Economy Set	Room temperature in cooling zone 1 in Economy mode (Auto mode).	5 - 30 °C	28
Manual set	Room setpoint in cooling zone 1 manual mode.	5 - 35 °C	25
Flow set	Flow setpoint set for zone 1 in cooling.	5 - 25 C	20
Flow offset	Offset temperature for cooling zone 1.	- 9 - + 9°C	0

ZONES/ZONE 1/SETTINGS/**DEHUMIDIFICATION (Similar settings for zone 2 and 3 if present)**			
Menu item	Description	Range	Default
Set humidity	Humidity setpoint for zone 1.	30 - 70 %	50
Hourly disabling	Disabling of request to the dehumidifier, according to the daily time slot.	NO/Yes	No
Hourly disabling start	Time of dehumidification request disabling phase start.	0-23	0h
Hourly disabling end	Time of dehumidification request disabling phase end.	0-23	0h

* 55 °C refers to MAGIS HERCULES PRO 12-14-16, MAGIS HERCULES PRO 12 T-14 T-16 T

ZONES/**GENERAL INFORMATION**			
Menu item	Description	Range	Default
Outside temperature	External temper. detected by the external probe (optional).	-	-
System flow set	Flow temperature set on the system.	-	-
Zone 1 flow set	Flow temperature set on zone 1.	-	-
Zone 1 request	Request present on zone 1 No = no request Heat = Central heating / C.H. request Cool = cooling demand Dehum = Dehumidification request in neutral air C. Air = Dehumidification request in cooled air R + D = Cooling and dehumidification requests in neutral air R + A = Cooling and dehumidification requests in cool air	No-CH Cool Dehum Cool. Air R + D R + A	-
Zone 2 flow set (if present)	Flow temperature set on zone 2 (if present).	-	-
Zone 2 request (if present)	Request present on zone 2 No = no request Heat = Central heating / C.H. request Cool = cooling demand Dehum = Dehumidification request in neutral air C. Air = Dehumidification request in cooled air R + D = Cooling and dehumidification requests in neutral air R + A = Cooling and dehumidification requests in cool air	No-CH Cool Dehum Cool. Air R + D R + A	-
Zone 3 flow set (if present)	Flow temperature set on zone 3 (if present).	-	-
Zone 3 request (if present)	Request present on zone 3 No = no request Heat = Central heating / C.H. request Cool = cooling demand Dehum = Dehumidification request in neutral air C. Air = Dehumidification request in cooled air R + D = Cooling and dehumidification requests in neutral air R + A = Cooling and dehumidification requests in cool air	No-CH Cool Dehum Cool. Air R + D R + A	-

Main Menu.
Press the "MENU" button to access a list of variables that enable you to customise use of the system.
Hereunder is a list of available menus:

MENU	
Menu item	Description
Clock and Programs	Defines the date/time and time operating slots.
User	Defines the system parameters that can be modified by the user.
Information	This display system operating data.
Anomalies log	Displays the list of the last 10 anomalies.
General settings	Allows selecting the panel operating language, the display operating mode and to access the password-protected menus dedicated to a qualified technician.

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MENU/**CLOCK AND PROGRAMS**			
Menu item	Description	Range	Default
Zone 1 Program	Zone 1 time scheduling.	-	-
	Zone 1: Monday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 1: Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 1: Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 1: Thursday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 1: Friday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 1: Saturday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 1: Sunday	CAL1, CAL2, CAL3,CAL4	CAL1
Zone 2 Program	Zone 2 time scheduling (if present).	-	-
	Zone 2: Monday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 2: Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 2: Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 2: Thursday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 2: Friday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 2: Saturday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 2: Sunday	CAL1, CAL2, CAL3,CAL4	CAL1
Zone 3 Program	Zone 3 time scheduling (if present).	-	-
	Zone 3: Monday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 3: Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 3: Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 3: Thursday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 3: Friday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 3: Saturday	CAL1, CAL2, CAL3,CAL4	CAL1
	Zone 3: Sunday	CAL1, CAL2, CAL3,CAL4	CAL1
DHW (Domestic hot water) Program	DHW (Domestic hot water) operation time programming.	-	-
	DHW (Domestic hot water) - Monday	CAL1, CAL2, CAL3,CAL4	CAL1
	DHW (Domestic hot water) - Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1
	DHW (Domestic hot water)- Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1
	DHW (Domestic hot water) - Thursday	CAL1, CAL2, CAL3,CAL4	CAL1
	DHW - Friday	CAL1, CAL2, CAL3,CAL4	CAL1
	DHW (Domestic hot water) - Saturday	CAL1, CAL2, CAL3,CAL4	CAL1
	DHW (Domestic hot water) - Sunday	CAL1, CAL2, CAL3,CAL4	CAL1

MENU/**CLOCK AND PROGRAMS**			
Menu item	Description	Range	Default
Recirculation Program	Recirculation operation time programming.	-	-
	Recirculation - Monday	CAL1, CAL2, CAL3,CAL4	CAL1
	Recirculation - Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Recirculation- Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1
	Recirculation - Thursday	CAL1, CAL2, CAL3,CAL4	CAL1
	Recirculation - Friday	CAL1, CAL2, CAL3,CAL4	CAL1
	Recirculation - Saturday	CAL1, CAL2, CAL3,CAL4	CAL1
	Recirculation - Sunday	CAL1, CAL2, CAL3,CAL4	CAL1
Holiday Program	Defines the period during which the system disables both hot water heating and room central heating and/or cooling functions. At the end of the set days, the previously active functions will be reset.	-	Deactive

MENU/**USER**			
Menu item	Description	Range	Default
Heat pump disabling	It allows to disable the heat pump according to the set time slot.	Yes/No	No
Heat pump hourly disabling start	Allows to set when disabling starts.	0 - 23	0
Heat pump hourly disabling end	Allows to set when disabling ends.	0 - 23	0
Integration disabling	Allows to permanently disable the integration generator.	Yes/No	No
Enabling of De-aeration operation	Enables the de-aeration function.	Yes/No	No
Screed heater		-	-

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MENU/USER/**SCREED HEATER**			
Menu item	Description	Range	Default
Stay time at minimum set	Defines the time spent at minimum operating temperature during the active function.	1 - 7 days	3
Rise gradient	Defines the ascent gradient of the temperature.	3 - 30 °C/g	30
Stay time at maximum set	Defines the time spent at maximum operating temperature during the active function.	1 - 14 days	4
Fall gradient	Defines the descent gradient of the temperature.	3 - 30 °C/g	30
Minimum flow set	Defines the minimum delivery temperature of the screed heater function.	20 - 45 °C	25
Maximum flow set	Defines the maximum delivery temperature of the screed heater function.	25 - 55 °C	45
Screed heater activation	Activation of the screed heater function.	Yes/No	No

MENU/**INFORMATION**	
Menu item	Description
Heat Pump	Defines the heat pump operating parameters.
Board revisions	This displays the system board revisions.
Meters	This displays the operating data.

MENU/**ANOMALIES LOG**	
Menu item	Description
Reset anomalies	Resets the list of anomalies.
Anomalies log	

MENU/ANOMALIES LOG/**ANOMALIES LOG**	
Menu item	Description
History index	
Anomaly code	This displays the selected anomaly code.
Technical anomaly	

MENU/**GENERAL SETTINGS**			
Menu item	Description	Range	Default
Language	Defines the Remote panel operation language.	ITA /ENG	EN
Display	It allows for various display adjustments.		
Access level	Allows the entry of an access code to access the parameter customisation menus according to ones needs (dedicated to a qualified technician).		

MENU/GENERAL SETTINGS/**DISPLAY**			
Menu item	Description	Range	Default
Contrast	Allows to adjust the display contrast.	0 - 10	5
Display lighting	Allows to set the display operation mode.	OFF/MIN/ AUTO/MAX	AUTO

N.B.: The parameters for the additional zones (2 and 3) can only be viewed if the additional zones (2 and 3) are present and correctly configured on the system.

16.3 MAINTENANCE TECHNICIAN PROGRAMMING MENU

DHW (DOMESTIC HOT WATER)	
Menu item	Description
Anti-legionella	Manages the anti-legionella function.
Configuration	DHW (Domestic hot water) configuration parameters.

DHW (DOMESTIC HOT WATER)/**ANTI-LEGIONELLA**			
Menu item	Description	Range	Default
Anti-legionella cycle time	Establishes the time of activation of the anti-legionella function.	00:00 – 23:59	02:00
Anti-legionella cycle day	Establishes the day of activation of the anti-legionella function.	None/Mon - Sun / all	None
Max time anti-Legionella	Time after which an alarm is signalled for incomplete anti-legionella cycle.	1 - 48 (hours)	3

DHW (DOMESTIC HOT WATER)/**CONFIGURATION**			
Menu item	Description	Range	Default
DHW hysteresis	The system activation temperature in DHW (Domestic hot water) is given by the set DHW (Domestic hot water) – DHW (Domestic hot water) hysteresis.	3 - 10 °C	5
DHW (Domestic hot water) flow offset	The DHW (Domestic hot water) flow temperature is given by the DHW (Domestic hot water) set + DHW (Domestic hot water) flow offset.	0 - 55 °C	10
Precedence	In case of simultaneous system request (central heating or cooling) and DHW (Domestic hot water), the heat pump works based on precedence or on the DHW (Domestic hot water) or the system.	Dhw / System	DHW.
Max time for DHW (Domestic hot water)	Time after which an alarm is signalled for incomplete DHW (Domestic hot water).	1 - 48 (hours)	5

MAGIS HERCULES PRO

To display the operating parameters in the "Zone" menu, it is necessary to enter the submenu "General Settings" and select the "Access level".
Enter the appropriate access code, exit the menu and press the "Zones" button.
To save the change of the parameters described below, press the "OK" button.
Exit the "Zones" menu waiting 4 minutes or enter the appropriate access code for the "user menu".You can exit the "Zones" menu by entering the appropriate access code under the "Access level" item and selecting the item:

Type of access/User.

At the end, press "OK" to confirm.
After 4 minutes without making any changes in the "Zones" menu, the system automatically goes back to the "User" menu.

ZONES/ZONE 1/**CONFIGURATION**	
Menu item	Description
Enablings	
Thermoreg. CH	Central heating temperature control setting sub-menu.
Thermoreg. Cool.	Cooling temperature control setting sub-menu.

ZONES/ZONE 1/CONFIGURATION/**ENABLINGS (Similar settings for zone 2 and 3 if present)**			
Menu item	Description	Range	Default
Mode	Establishes the zone 1 operating mode.	- CH - Cool - Heat + Cool	-Heat + Cool.
Remote control enabling	Enables the operation of a remote device. - NO = No remote control installed. - Panel = Zone remote panel. - Probe = Temperature and humidity probe.	No / Panel / Probe	No
Room probe modulation	Enable modulation with room probe.	Yes / No	No
Room thermostat enabling	Enables operation of a room thermostat to check the zone.	Yes / No	Yes
Dew point enabling	In the presence of a remote device, calculation of the dew point. The calculation is particularly needed in case of radiant panel systems.	Yes / No	Yes
Enabling humidistat	Enables the operation of a humidistat.	No / Yes	No
Dehumidifier enabling	Enables the operation of a dehumidifier.	Yes / No	No
Max temp. Dehumidifier	Maximum flow temperature acceptable for the dehumidifier, beyond which it is kept switched off.	15 - 50	25
Dehum. alarm set	Maximum flow set calculated, acceptable by the dehumidifier.	15 - 50	25
Ext. probe modul.	Temperature control with external probe.	No / Yes	No

ZONES/ZONE 1/CONFIGURATION/**THERMOREG. CH (Similar settings for zone 2 and 3 if present)**			
Menu item	Description	Range	Default
Maximum flow set	Without the external probe it defines the maximum flow temperature that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature.	20 - 65 °C*	45
Minimum flow set	Without the external probe it defines the minimum flow temperature that can be set by the user. With the external probe present it defines the minimum flow temperature corresponding to operation with maximum external temperature.	20 - 65 °C*	25
External minimum temperature	With the external probe present it defines at what minimum external temperature the system must operate at the maximum flow temperature.	-25 - +15 °C	-5
External maximum temperature	With the external probe present it defines at what maximum external temperature the system must operate at the minimum flow temperature.	-5 - +45 °C	25

* 55 °C refers to MAGIS HERCULES PRO 12-14-16, MAGIS HERCULES PRO 12 T-14 T-16 T

ZONES/ZONE 1/CONFIGURATION/**COOL. THERMOREG. (Similar settings for zone 2 and 3 if present)**			
Menu item	Description	Range	Default
Maximum flow set	Without the external probe it defines the maximum flow that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature.	5 ÷ 25 °C	20
Minimum flow set	Without the external probe it defines the minimum flow that can be set by the user. With the external probe present it defines the minimum flow temperature corresponding to operation with maximum external temperature.	5 ÷ 25 °C	18
External minimum temperature	With the external probe present, it defines at what maximum external temperature the system must operate at the minimum flow temperature.	20 - 45 °C	25
External maximum temperature	With the external probe present, it defines at what minimum external temperature the system must operate at the maximum flow temperature.	20 - 45 °C	35

MAGIS HERCULES PRO

To access the "assistance menu", press the "MENU" button.
Access the submenu "General settings" and select "Access level".
Insert the relative access code and customise the parameters described below according to your requirements.
To save the change of the parameters described below, press the "OK" button.
Exit the "assistance menu" waiting 4 minutes or enter the appropriate access code for the "user menu".

You can exit the assistance menu by entering the appropriate access code under the "Access level" item and selecting the item:

Type of access/User.

At the end, press "OK" to confirm.
After 4 minutes without making any changes in the "Assistance" menu, the system automatically goes back to the "User" menu.

MENU/**GENERAL SETTINGS**		
Menu item	Description	Range
Factory setting	Allows to reset all parameters with factory values.	Yes/No

MENU/**ASSISTANCE**	
Menu item	Description
System definition	Sub-menu to define the devices connected to the system.
Heat pump	Heat pump operating parameters sub-menu.
Integration	System integration setting sub-menu.
Manual drives	Submenu for load operation check.
Special parameters	Parameters for various uses.

MENU/ASSISTANCE/**SYSTEM DEFINITION**			
Menu item	Description	Range	Default
Number of zones	Defines the number of zones present.	1-3	1
Main zone	Defines the main zone of the system in which the remote panel will be used.	1 - 2	1
External probe	This defines the type of external probe enabled. IU=indoor unit, OU = outdoor condensing unit.	OU/IU	OU
Correc. External probe	Correction of the external probe value.	-9 +9	0
Photovoltaic function	Enables the operation combined with a photovoltaic system.	Yes / No	No
System supervision	Enabling connection to Dominus or System supervisor.	NO/Domin/ BMS	No
Activation time	Waiting time before activation of the system setpoint correction.	1 - 120	20
Increase time	Time interval for the increase or decrease of 1 °C of correction of the system setpoint.	1 - 20	5
Central heating max correction	Max correction during central heating mode.	0 - 10	0
Cooling max correction	Max correction during cooling mode.	-10 - 0	0

MENU/ASSISTANCE/**HEAT PUMP**	
Menu item	Description
Powers	See description below.
Timers	See description below.
Pump	See description below.

MENU/ASSISTANCE/HEAT PUMP/**POWERS**			
Menu item	Description	Range	Default
PdC Model	Setting of the connected outdoor condensing unit. Do not use the item No.	9	No / 4 / 6 / 9 / 12 / 14 / 16
Disabl. PdC Power	Enable the Disabling function of the heat pump. By selecting "reduc" it is possible to reduce the heat pump performance to the power set in the parameter "power in reduced".	No / Yes / Reduc.	No
Power in reduced	Power percentage in reduction mode (Only active with AUDAX heat pump models).	50 - 100 %	100 %

MENU/ASSISTANCE/HEAT PUMP/**TIMERS**			
Menu item	Description	Range	Default
Anti-cycle time	Not used.	0-840 s	180
Ramp time	Not used.	0-840 s	0
Req.delay time TA	The generator request is made after the set delay.	0-600 s	0
Prec.end wait time	Not used.	0-100 s	0

MENU/ASSISTANCE/HEAT PUMP/**PUMP**			
Menu item	Description	Range	Default
Pump mode	Not used.	Max Sp / Modul	Max Speed
Min pump speed	Not used.	20 – 100 %	100
Max pump speed	Heat pump circulator speed.	20 – 100 %	100
Pump T Delta	Not used.	2 – 10	5
Automatic vent	Not used.	No/Yes	No

MENU/ASSISTANCE/**INTEGRATION**			
Menu item	Description	Range	Default
Minimum integration temperature	Temperature threshold below which integration is activated at the heat pump.	-25 - +35 °C	-15
DHW integration mode.	Mode of intervention of the DHW (Domestic hot water) integration and resistance.	Simultaneous / Alternative	Alternative
CH integration mode	Mode of intervention of the central heating / C.H. integration and resistance.	Simultaneous / Alternative	Alternative
Concomitant mode	Enabling of conjunction function.	No/yes	YES
Enable DHW (Domestic hot water) integration	Enabling of generators for the DHW Mode.	0 = HP 1 = HP - I 2 = Integ.	HP
Enable central heating / C.H. integration	Enabling of generators for the Central heating / C.H. DHW Mode.	0 = HP 1 = HP - I 2 = Integ.	HP
Central heating wait time	Waiting time to reach the setting set before activation of the integration in room central heating / C.H.	0 - 540'	45'
DHW wait time	Waiting time to reach the setting set before activation of the integration in the production of domestic hot water.	0 - 540'	30'

MENU/ASSISTANCE/**INTEGRATION**			
Menu item	Description	Range	Default
Domestic hot water priority time	It is the maximum time of operation in DHW in case of simultaneous request.	0 - 540'	60'
Central heating priority time	It is the maximum time of operation in central heating in case of simultaneous request.	0 - 540'	120'
Integration band	Setting of the activation band equal to the activation delay time will activate the additional heater.	0 - 20 °C	3
Reset HP counter	Reset the number of operating hours of the heat pump.	Yes / No	No
Reset system integration meter	Reset hours of operation of the central heating / C.H. integration.	Yes / No	No
Reset DHW (Domestic hot water) integration meter	Reset hours of operation of the DHW (Domestic hot water) integration.	Yes / No	No

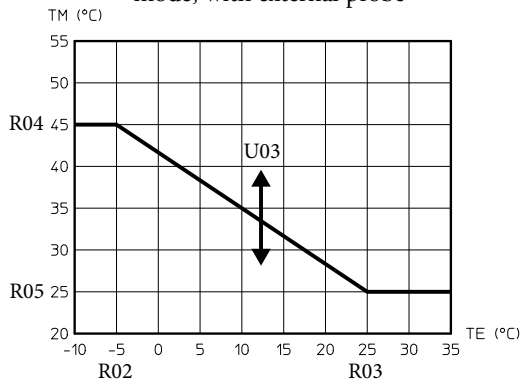
MENU/ASSISTANCE/**MANUAL DRIVES** (*)			
Menu item	Description	Range	Default
Dev. Three-way Sys./ DHW	Manual activation of the DHW (Domestic hot water) 3-way.	Yes / No	No
System resistance enabling	Manual activation of the system resistance.	Yes / No	No
DHW (Domestic hot water) resistance enabling 1	Manual activation of the DHW (Domestic hot water) resistance 1.	Yes / No	No
Zone 1 circulator pump	Manual activation of zone 1 pump.	Yes / No	No
Dehumidifier zone 1	Manual activation of the dehumidifier on zone 1.	Yes / No	No
Zone 1 air conditioning	Manual activation of air conditioner on zone 1.	Yes / No	No
Zone 2 circulator pump	Manual activation of zone 2 pump.	Yes / No	No
Dehumidifier zone 2	Manual activation of the dehumidifier on zone 2.	Yes / No	No
PdC Flow meter	Shows the flow rate read on the flowmeter.	0-4000 l/h	
Circulator speed		0-100%	0%
Mixer zone 2	Manual activation of the mixing valve on zone 2.	- Off - Close - Open	Off
Zone 2 air conditioning	Manual activation of air conditioner on zone 2.	Yes / No	No
Zone 3 mixing valve	Manual activation of the mixing valve on zone 3.	- Off - Close - Open	Off
Zone 3 circulator pump	Manual activation of zone 3 pump.	Yes / No	No
Dehumidifier zone 3	Manual activation of the dehumidifier on zone 3.	Yes / No	No
Zone 3 air conditioning	Manual ignition of air conditioner on zone 3.	Yes / No	No
Hot/Cold three-way	Manual activation of the summer/winter three-way valve (M52).	Yes / No	No
DHW (Domestic hot water) resistance enabling 2	Manual activation of the DHW (Domestic hot water) resistance 2.	Yes / No	No

(*) If inside the "Manual drives" menu, the 4 minute timeout is not considered to exit the "Assistance" menu.

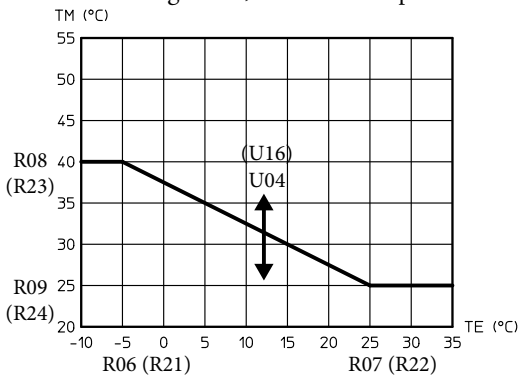
MENU/ASSISTANCE/**SPECIAL PARAMETERS**			
Menu item	Description	Range	Default
Parameter 1	Dehumidifier control (0 = zone 2, 1 = zone 1).	0-1	0
Parameter 2	Zone 2 safety thermostat.	20-80	45
Parameter 3	Zone 3 safety thermostat.	20-80	45
Parameter 4	DHW recirculation enabling (0= off; 1= on).	0-1	0
Parameter 5	Integration multiplier.	1-100	30

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 in relation to the different zones (direct or mixed).

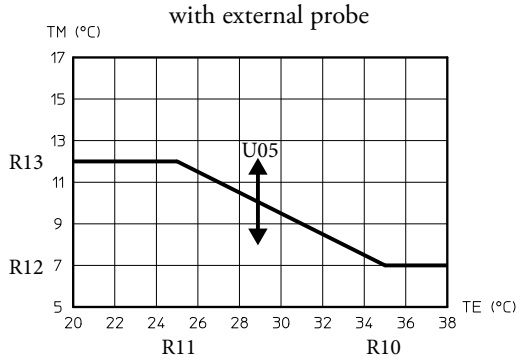
Zone 1 flow temperature in central heating mode, with external probe



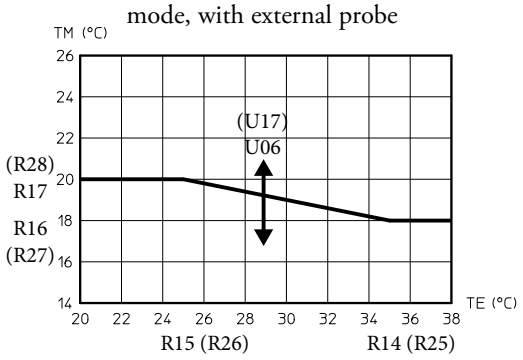
Zone 2 and 3 mixed flow temperature in central heating mode, with external probe



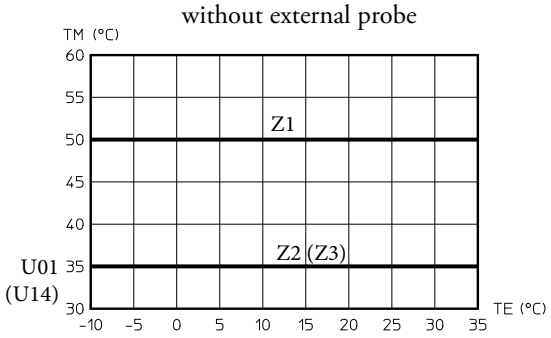
Zone 1 flow temperature in cooling mode, with external probe



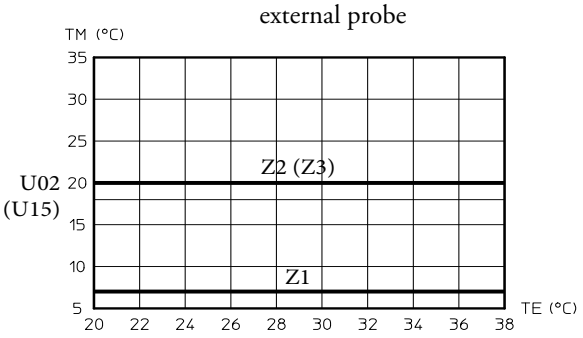
Zone 2 and 3 mixed flow temperature in cooling mode, with external probe



Flow temperature in central heating mode without external probe



Flow temperature in cooling mode without external probe

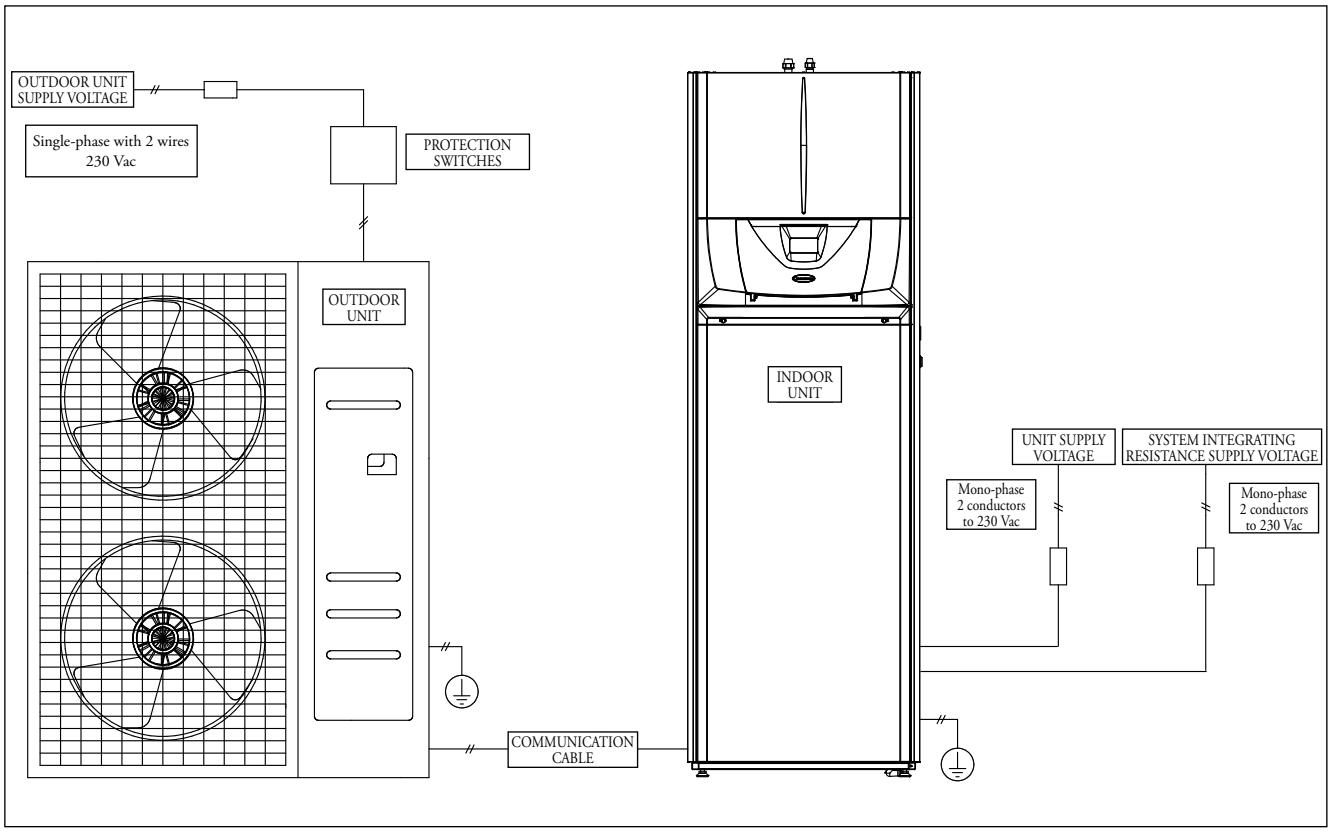


KEY:

Rxx - "Temperature control" menu parameter.
TE - Outside temperature.
TM - Flow temperature.
U01 - Zone 2 flow temperature in "User" menu central heating mode.
U02 - Zone 2 flow temperature in "User" menu cooling mode.
U03 - Offset value compared to the curve set by the external probe on central heating zone 1.
U04 - Offset value compared to the curve set by the external probe on central heating zone 2.
U05 - Offset value compared to the curve set by the external probe on cooling zone 1.
U06 - Offset value compared to the curve set by the external probe on cooling zone 2.
U14 - Zone 3 flow temperature in "User" menu central heating mode.
U15 - Zone 3 flow temperature in "User" menu cooling mode.
U16 - Offset value compared to the curve set by the external probe on central heating zone 3.
U17 - Offset value compared to the curve set by the external probe on cooling zone 3.
Zx - Heating system zone

MAGIS HERCULES PRO 4-6-9

17 ELECTRIC CONNECTION CABLES FEATURES



Features of the indoor unit connection. The outdoor unit power cable (not standard supplied) must be suitable for outdoor installation and must have at least a flexible polychloroprene sheath (code IEC:60245 IEC 57 / CENELEC:H05RN-F or FG 16). Indicatively, the appropriate cable section can be 2.5 ~ 4 mm² for AUDAX PROX 4 and 6 V2 and of 4 ~ 6 mm² for AUDAX PRO 9 V2 to be checked depending on the specific installation conditions.

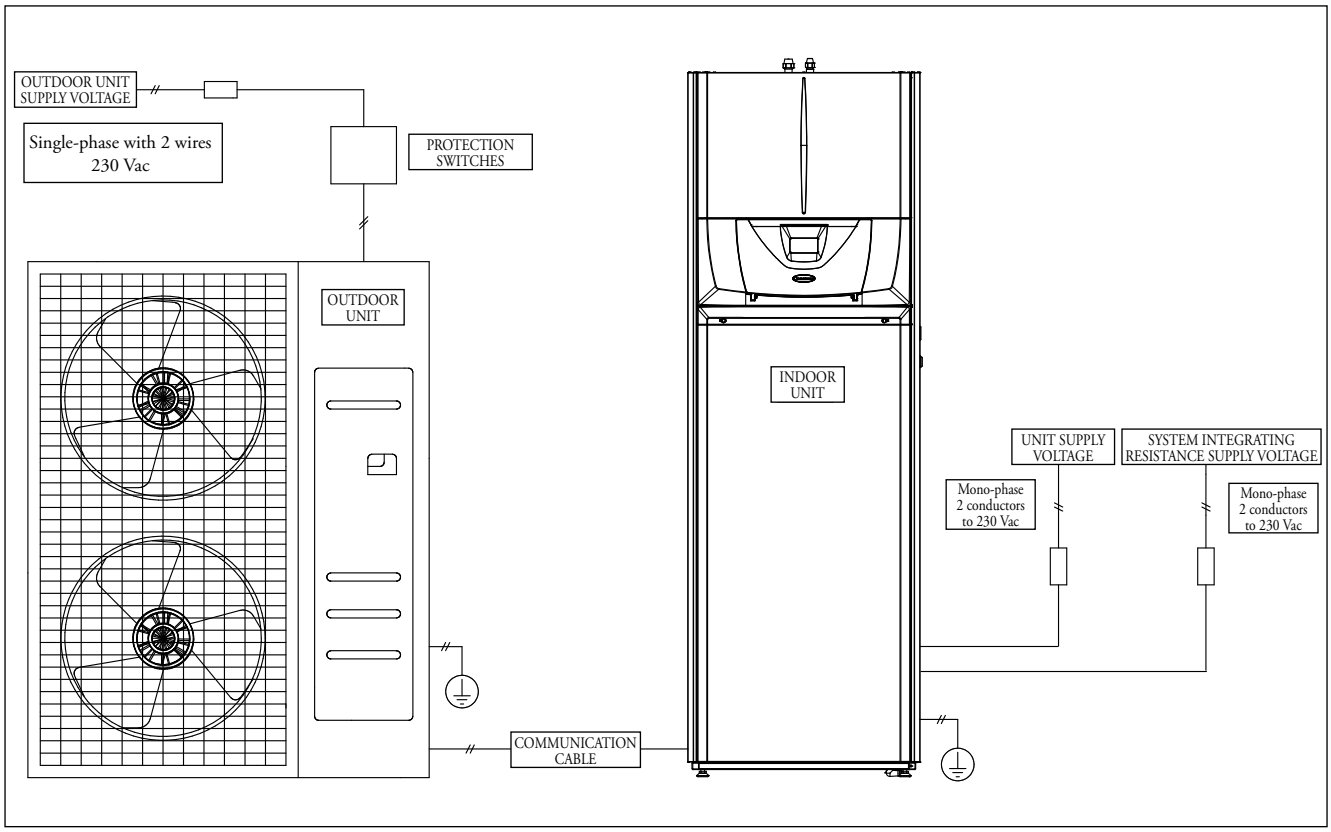
Outdoor Unit	Nominal Values		Field of Tolerable Voltage		Maximum absorbed current (MAC) in normal operation	MAC∗1.25 + Additional Load	Flow rate of the protective device required for the device
	Hz	V	V	V	A	A	A
AUDAX PRO 4 and 6 V2	50	220 - 240	198	264	16	20.0	20
AUDAX PRO 9 V2	50	220 - 240	198	264	22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

Features of the connection between outdoor and indoor units. Use H07RN-F or H05RN-F class cables to power the indoor unit.

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

MAGIS HERCULES PRO 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 resistances	Power supply Cable DHW (Domestic hot water) resistances	
Mono-phase, 220-240V, 50Hz	±10%	2.5 mm², 3 wires	6 mm², 3 wires	4 mm², 3 wires	0,75 ~ 1.5 mm², 2 wires

17.1 ELECTRIC CONNECTION CABLES FEATURES



Features of the indoor unit connection. The outdoor unit power cable (not standard supplied) must be suitable for outdoor installation and must have at least a flexible polychloroprene sheath (code IEC:60245 IEC 57 / CENELEC:H05RN-F or FG 16). Indicatively, the appropriate cable section can be 6 ~ 10 mm² for UE AUDAX PRO 12-14-16 V2, to be checked depending on the specific installation conditions.

Outdoor Unit	Nominal Values		Field of Tolerable Voltage		Maximum absorbed current (MAC) in normal operation	MAC∗1.25 + Additional Load	Flow rate of the protective device required for the device
	Hz	V	V	V	A	A	A
UE AUDAX PRO 12 V2	50	220 - 240	198	264	28	35	35
UE AUDAX PRO 14 V2	50	220 - 240	198	264	30	37.5	40
UE AUDAX PRO 16 V2	50	220 - 240	198	264	32	40	40

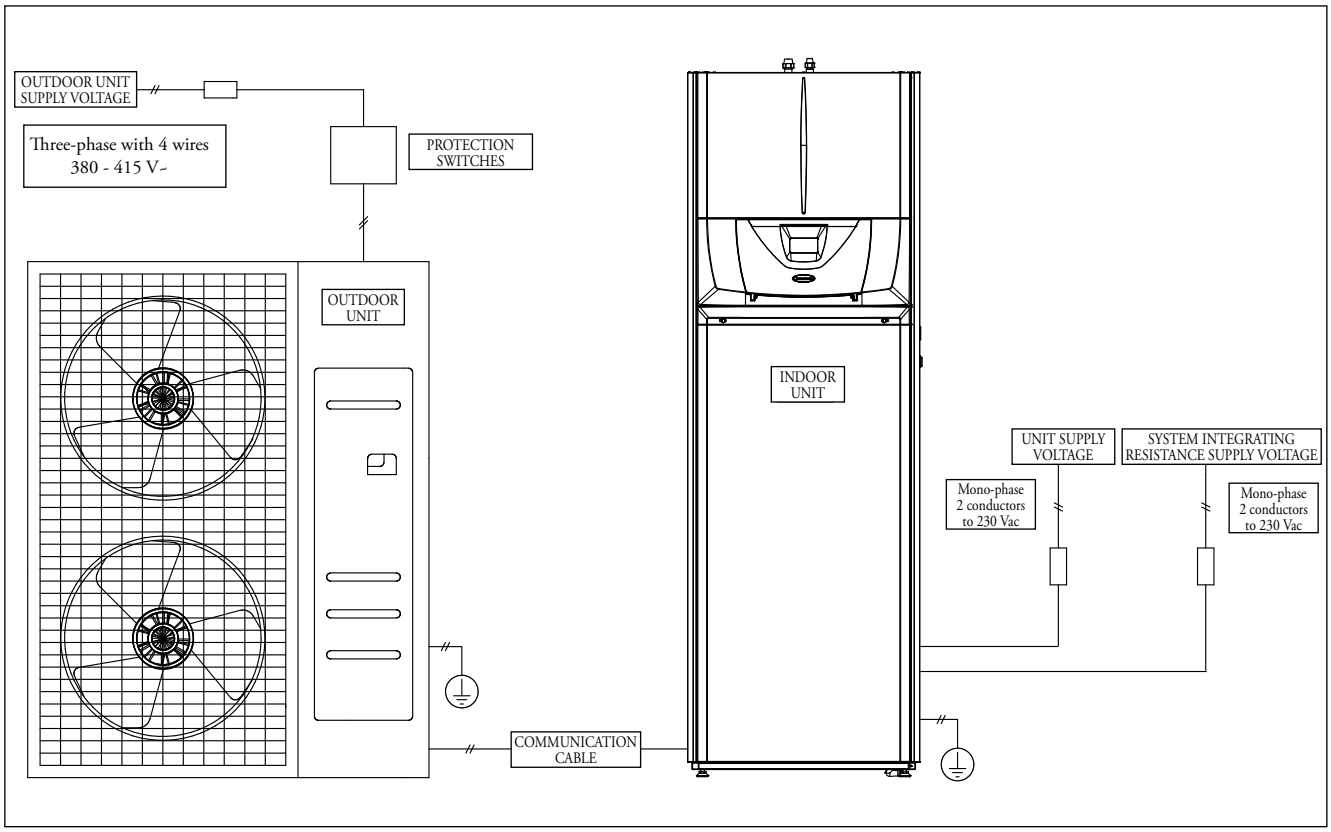
Features of the connection between outdoor and indoor units. Use H07RN-F or H05RN-F class cables to power the indoor unit.

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

MAGIS HERCULES PRO 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 resistances	Power supply Cable DHW (Domestic hot water) resistances	
Mono-phase, 220-240V, 50Hz	±10%	2.5 mm², 3 wires	6 mm², 3 wires	4 mm², 3 wires	0,75 ~ 1.5 mm², 2 wires

MAGIS HERCULES PRO 12 T-14 T-16 T

17.2 ELECTRIC CONNECTION CABLES FEATURES



Features of the indoor unit connection. The outdoor unit power cable (not standard supplied) must be suitable for outdoor installation and must have at least a flexible polychloroprene sheath (code IEC:60245 IEC 57 / CENELEC:H05RN-F or FG 16).

Indicatively, the appropriate cable section can be 2.5 ~ 4 mm² for UE AUDAX PRO 12-14-16 V2 T, to be checked depending on the specific installation conditions.

Outdoor Unit	Nominal Values		Field of Tolerable Voltage		Maximum absorbed current (MAC) in normal operation	MAC∗1.25 + Additional Load	Flow rate of the protective device required for the device
	Hz	V	V	V	A	A	A
UE AUDAX PRO 12 V2 T	50	380 - 415	342	457	10	16.1	20
UE AUDAX PRO 14 V2 T	50	380 - 415	342	457	11	16.1	20
UE AUDAX PRO 16 V2 T	50	380 - 415	342	457	12	16.1	20

Features of the connection between outdoor and indoor units. Use H07RN-F or H05RN-F class cables to power the indoor unit.

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

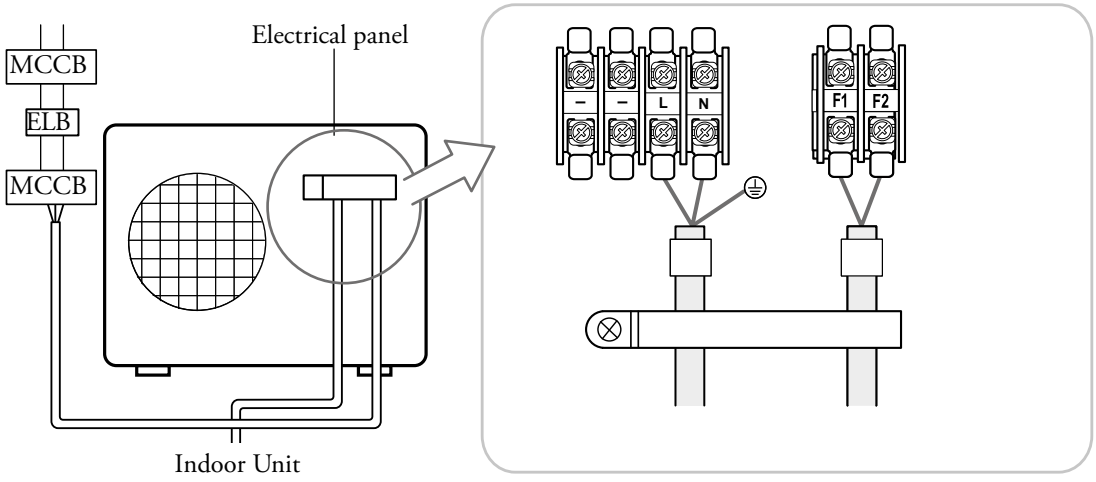
MAGIS HERCULES PRO Power supply (indoor unit)					BUS communication cable between outdoor units and indoor units
Power supply	Max./Min.(V)	Main Power supply Cable	Power supply Cable System resistances	Power supply Cable DHW (Domestic hot water) resistances	
Mono-phase, 220-240V, 50Hz	±10%	2.5 mm², 3 wires	6 mm², 3 wires	4 mm², 3 wires	0,75 ~ 1.5 mm², 2 wires

18 OUTDOOR UNIT TERMINAL BLOCK ELECTRICAL CONNECTIONS

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

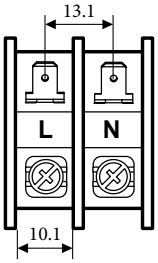
Depending on the model, the actual appearance of the unit may differ from the one shown in the figure.

KEY:
ELB - Safety Switch
MCCB - Circuit breaker switch

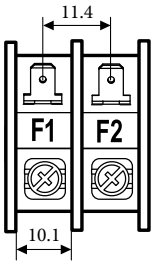


AUDAX PRO 4 and 6 V2 - Supply voltage in mono-phase AC.

M4 screw supply voltage

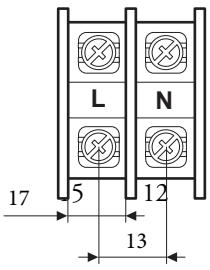


M4 screw
communication BUS

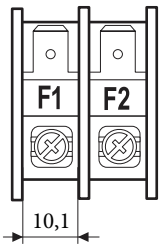


AUDAX PRO 9 V2 - Supply voltage in mono-phase AC.

Electric power supply
M5 screw



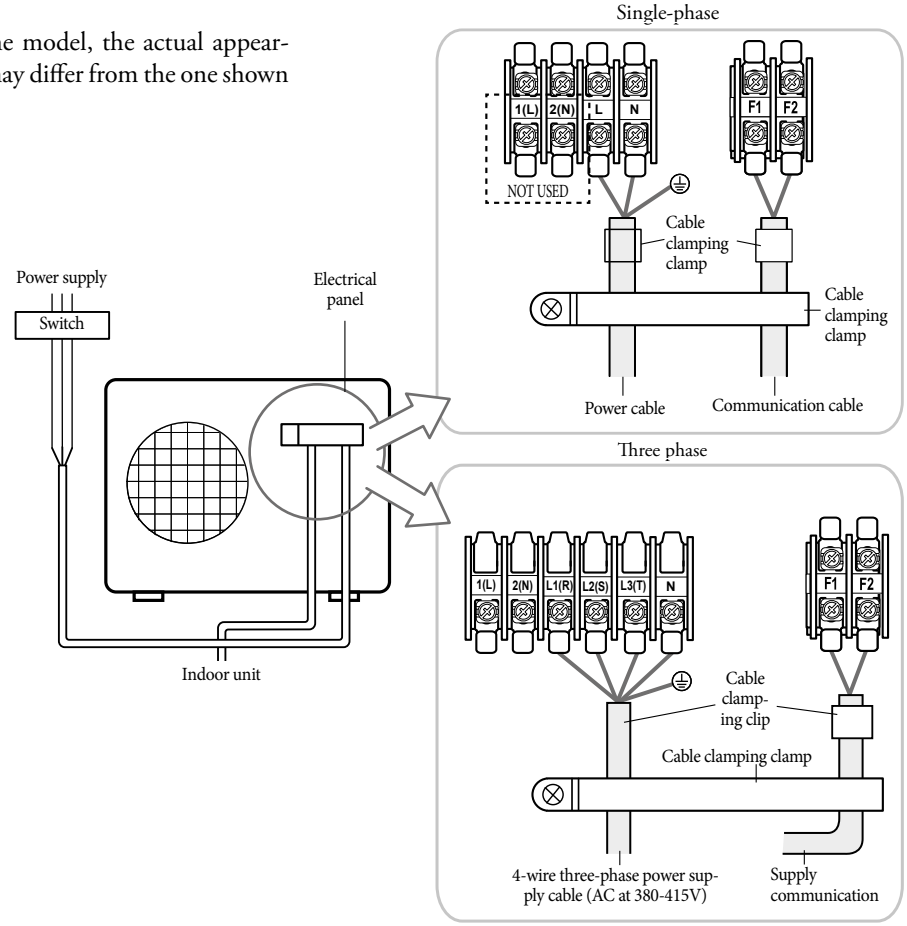
M4 screw
communication BUS



MAGIS HERCULES PRO 12-14-16

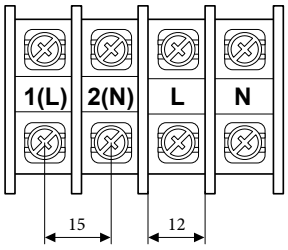
18.1 OUTDOOR UNIT TERMINAL BLOCK ELECTRICAL CONNECTIONS

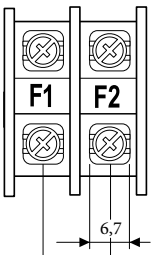
Depending on the model, the actual appearance of the unit may differ from the one shown in the figure.



UE AUDAX PRO 12-14-16 V2 - Power supply in Single-phase AC.

Electric power supply
M5 screw

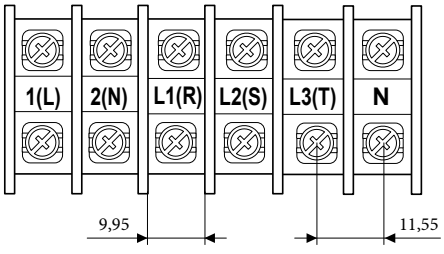


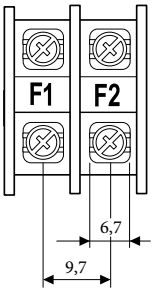


M4 screw
communication BUS

UE AUDAX PRO 12-14-16 V2 T - Power supply in Three-phase AC.

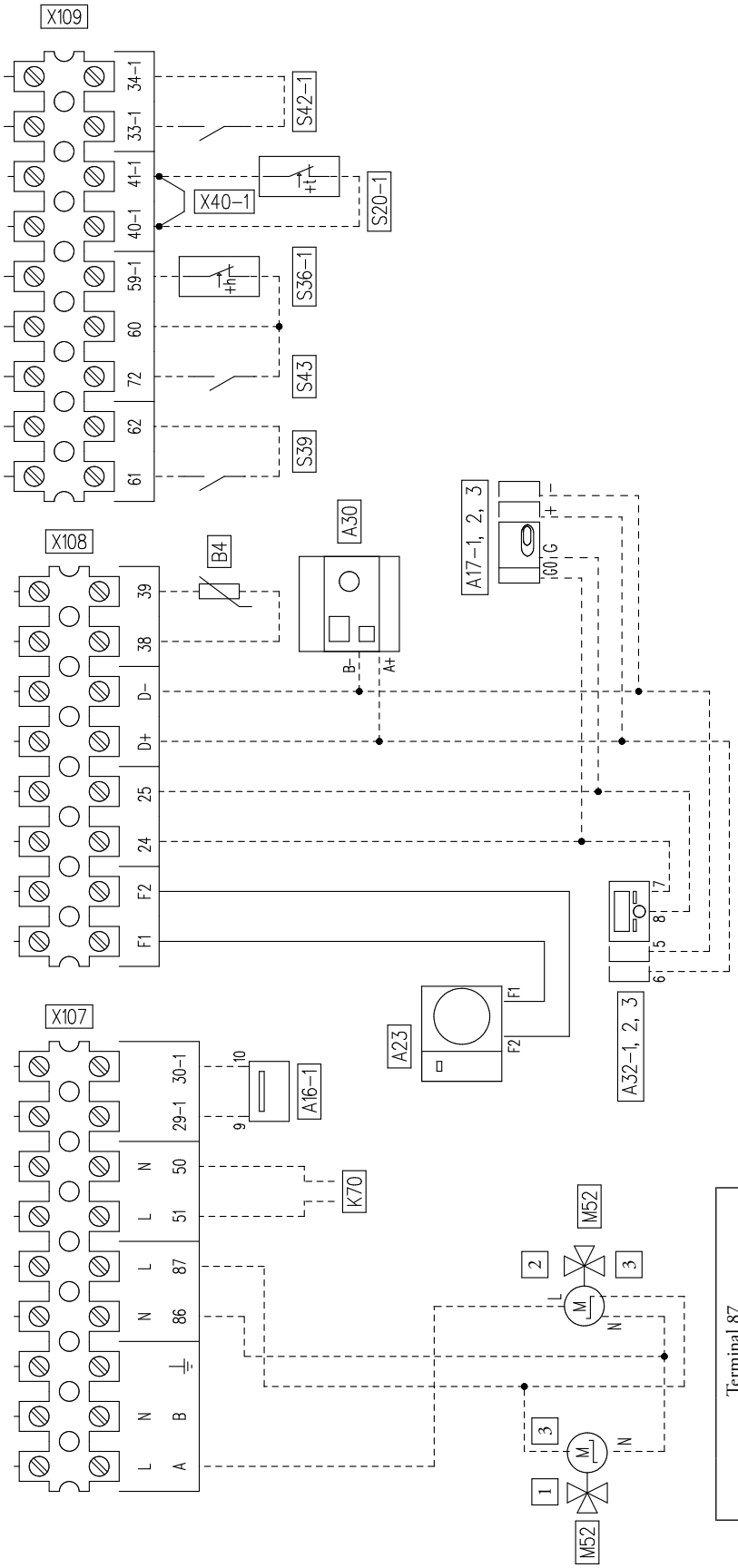
Electric power supply
M4 Screw





M4 screw
communication BUS

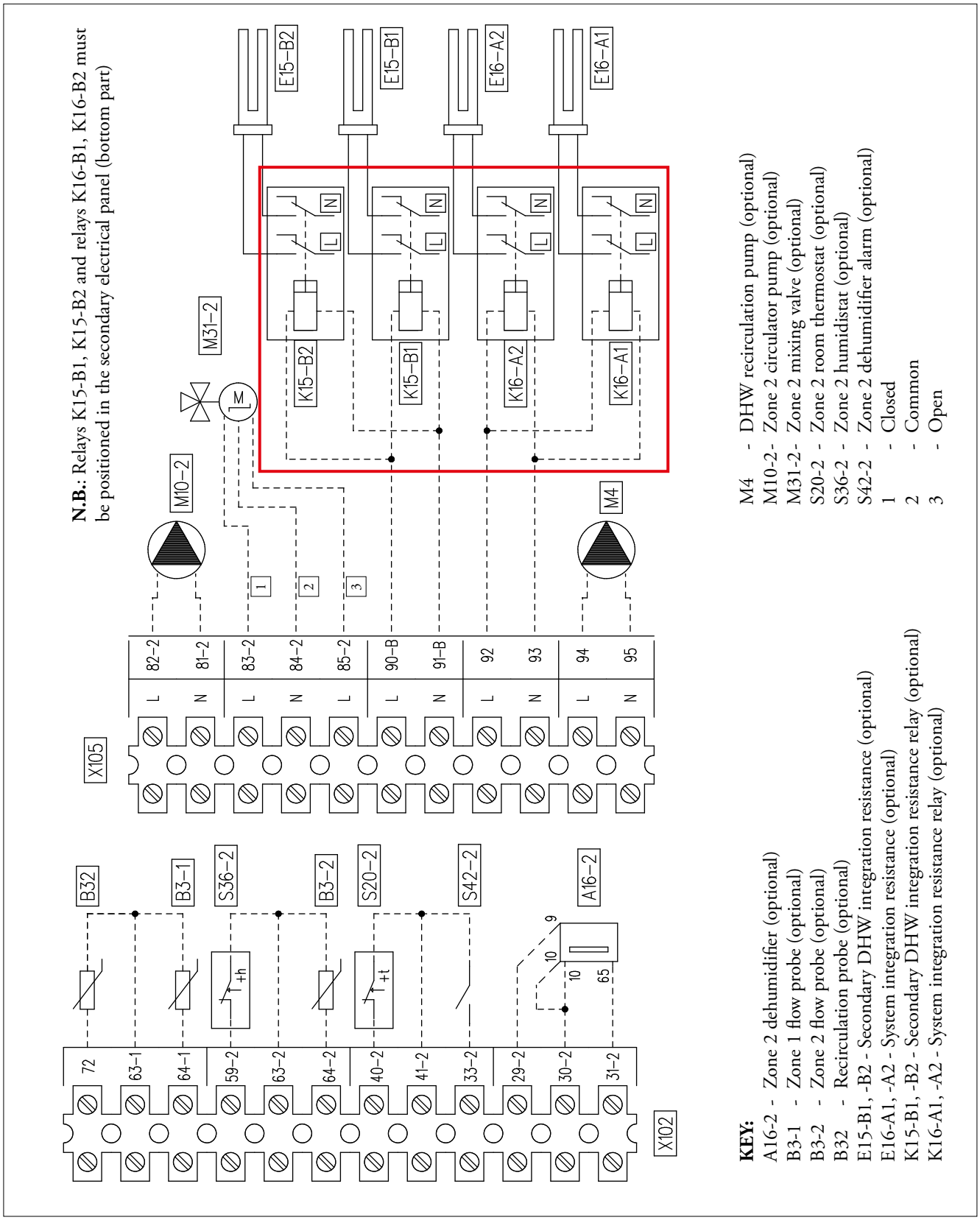
19 ELECTRICAL CONNECTIONS TO THE CONTROL PANEL (TOP PART)



M52 - Summer/Winter Diverter (optional)
S20-1 - Zone 1 room thermostat (optional)
S36-1 - Zone 1 humidistat (optional)
S39 - Photovoltaic inlet (optional)
S42-1 - Dehumidifier alarm zone 1 (optional)
S43 - PdC disabling selector (optional)
X40-1 - Zone 1 room thermostat jumper
1 - Valve with spring return
2 - 2-point valve
3 - Open / closed

KEY:
A16-1 - Zone 1 dehumidifier (optional)
A17-1, 2,3 - Temperature and humidity sensor (optional)
A32-1, 2,3 - Zone 1,2,3 remote panel (optional)
A23 - Indoor unit
A30 - Dominus (optional)
B4 - External probe (optional)
K70 - Multifunction relay (not used for this appliance)

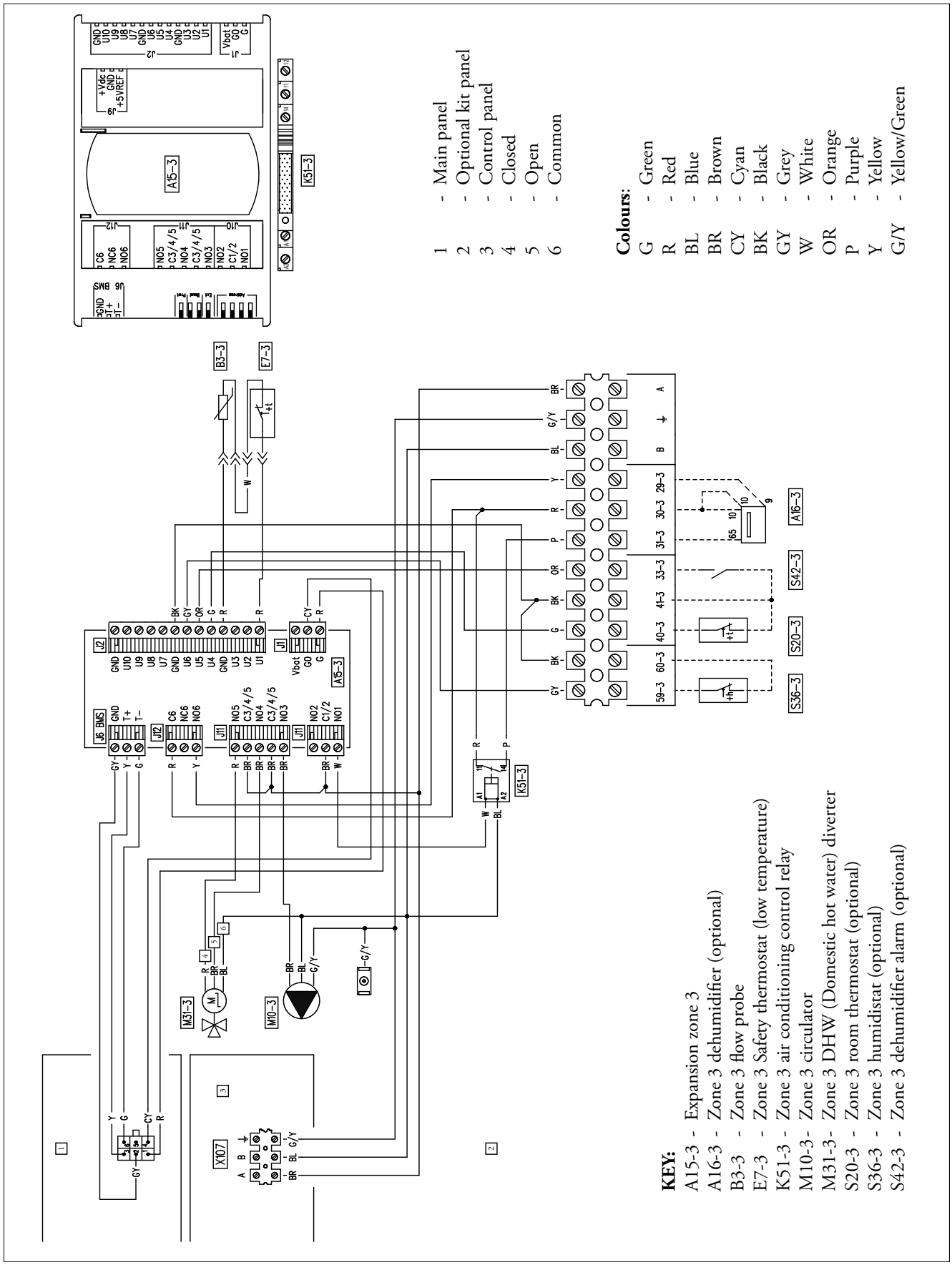
19.1 ELECTRICAL CONNECTIONS IN THE MAIN PANEL (MIDDLE PART)



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

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

19.3 ELECTRICAL CONNECTIONS IN SECONDARY PANEL (BOTTOM PART)



20 TEMPERATURE CONTROL (OPTIONAL)

20.1 ZONE REMOTE 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**

20.2 MODBUS TEMPERATURE AND HUMIDITY SENSOR

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**

20.3 CHRONO 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**

20.4 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**

20.5 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 to the appliance with only 2 wires, with a maximum length of 50 metres.

• OPTIONAL **code 3.015266**

20.6 ROOM HYGROSTAT KIT

It is a device used for controlling the room humidity.
It can 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**

20.7 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 4-6-9

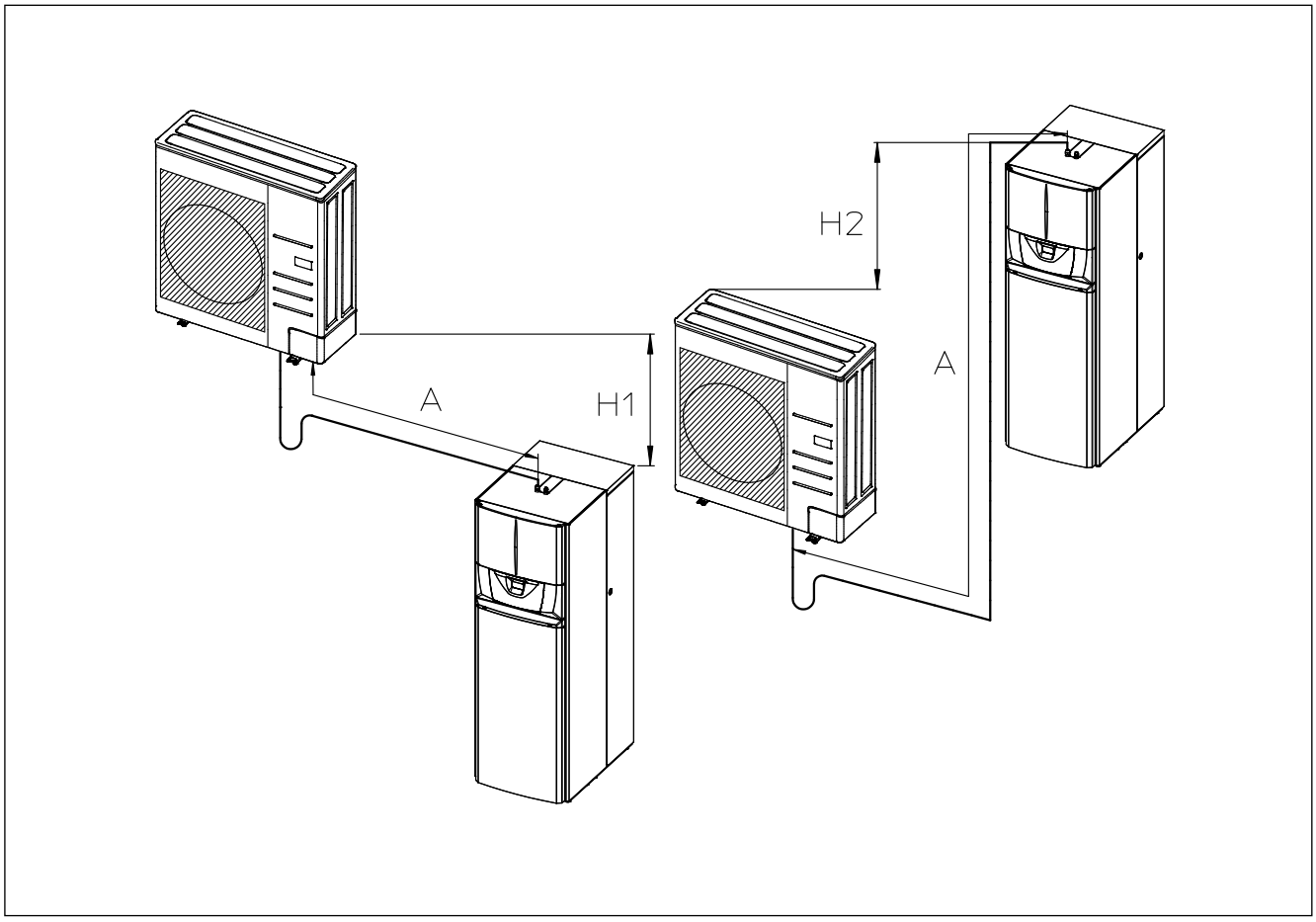
21 INSTALLING THE CHILLER LINES WITH R32 COOLANT GAS

The MAGIS HERCULES PRO 4-6-9 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 ≤ 30mg/10 m.
- Only use equipment and fittings for R32.
- The length of the pipes between the outdoor and indoor units and the difference must not exceed the specified limits. The maximum lengths of the chiller lines are listed below, based on the condensing unit model and the type of installation:

	AUDAX PRO 4 and 6 V2	AUDAX PRO 9 V2
A	≤ 30 m	≤ 35 m
H1	≤ 20 m	≤ 20 m
H2	≤ 15 m	≤ 15 m

NOTE: it is recommendable to provide for a siphon in the immediate vicinity of the outdoor condensing unit on the gas line pipe (pipe with larger diameter).
If the length of the chiller line is greater than the one given in the machine pre-load, it is recommendable to provide for a siphon halfway.
A siphon is also recommendable in the event of installation with drops between the outdoor condensing unit and indoor unit.



Selecting chiller line insulation.

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

NOTE: The insulation cannot be interrupted and for this reason, its junctions must be sealed with adhesive to prevent moisture from getting in.
Should the insulation be exposed to sunlight, it must be protected by wrapping it with electrical tape or material suitable for this type of application.
The insulation must be laid without its thickness being reduced in the bends and supports of the pipes.

Line	Pipe diameter (mm)	Insulation thickness		Notes
		Standard conditions (Less than 30 °C, RH 85%)	High humidity conditions (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 coolant load.

Below is the default factory base load:
AUDAX PRO 46/9 V2 models with R32 coolant gas:
- AUDAX PRO 4 V2 = 1.2 kg
- AUDAX PRO 6 V2 = 1.2 kg
- AUDAX PRO 9 V2 = 1.4 kg

The top-up depends on the total length and diameter of the pipes. All the default factory loads are determined as follows, depending on the standard length of the pipes (see table below).
If the used pipes are longer than stated below, the load must be topped-up in the manner and quantities described in the instruction manual supplied with the product (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 coolant gas, if you exceed this length, you must add 50 g/m linear, but never exceed the total charge of 1.84 kg of R32 coolant (take into account the amount already preloaded in the machine).
N.B.: To avoid breaking the compressor, do not top-up the coolant beyond the specified amount.

Model 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 4 V2	Ø 6.35 - 1/4"	**≤ 15 m**	20 g/m
AUDAX PRO 6 V2	Ø 6.35 - 1/4"	**≤ 15 m**	20 g/m
AUDAX PRO 9 V2	Ø 6.35 - 1/4"	**≤ 15 m**	20 g/m

MAGIS HERCULES PRO 12-14-16

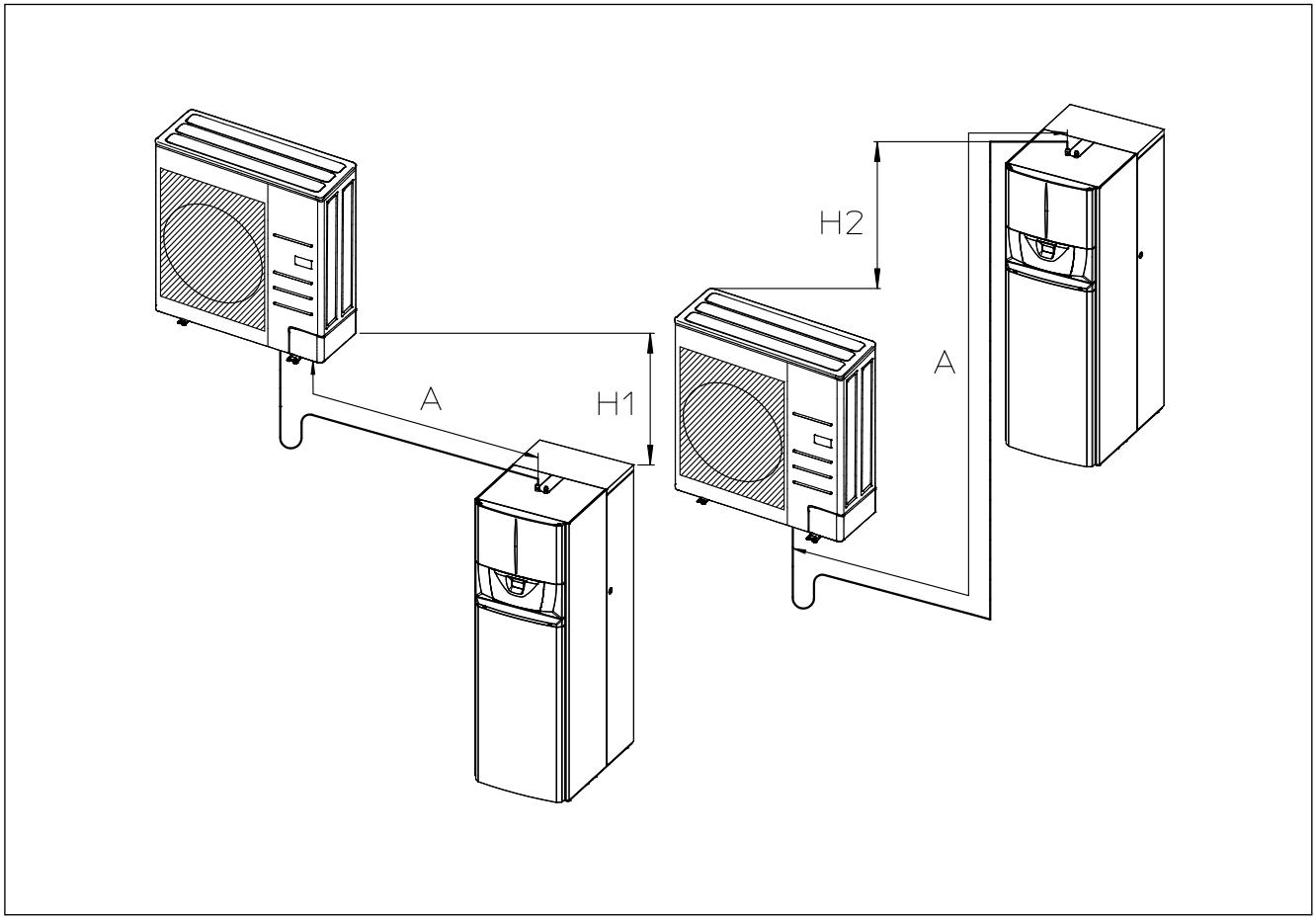
22 INSTALLING THE CHILLER LINES WITH R410A COOLANT GAS

The Single-phase and Three-phase MAGIS HERCULES PRO 12-14-16 cooling circuit uses the refrigerant R410A, therefore, it is necessary to take some measures for the proper operation of the machine:

- The R410A 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 ≤ 30mg/10 m.
- Only use equipment and fittings for R410A.
- The length of the pipes between the outdoor and indoor units and the difference must not exceed the specified limits. The maximum lengths of the chiller lines are listed below, based on the condensing unit model and the type of installation:

	UE AUDAX PRO 12/14/16 V2 - 12/14/16 V2 T
A	≤ 50 m
H1	≤ 30 m
H2	≤ 15 m

NOTE: it is recommendable to provide for a siphon in the immediate vicinity of the outdoor condensing unit on the gas line pipe (pipe with larger diameter).
If the length of the chiller line is greater than the one given in the machine pre-load, it is recommendable to provide for a siphon halfway.
A siphon is also recommendable in the event of installation with drops between the outdoor condensing unit and indoor unit.



Selecting chiller line insulation.

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

NOTE: The insulation cannot be interrupted and for this reason, its junctions must be sealed with adhesive to prevent moisture from getting in.
Should the insulation be exposed to sunlight, it must be protected by wrapping it with electrical tape or material suitable for this type of application.
The insulation must be laid without its thickness being reduced in the bends and supports of the pipes.

Line	Pipe diameter (mm)	Insulation thickness		Notes
		Standard conditions (Less than 30 °C, RH 85%)	High humidity conditions (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 coolant load.

Below is the default factory base load:
UE AUDAX PRO 12/14/16 V2 - UE AUDAX PRO 12/14/16 V2 T models with coolant gas R410A:

- UE AUDAX PRO 12 V2 / V2 T = 2.98 kg
- UE AUDAX PRO 14 V2 / V2 T = 2.98 kg
- UE AUDAX PRO 16 V2 / V2 T = 2.98 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 (50 g/linear m).

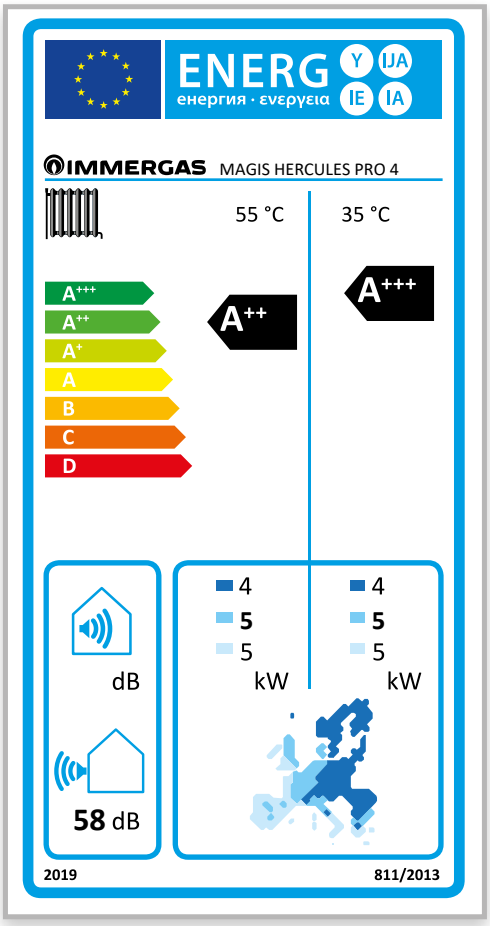
N.B.: To avoid breaking the compressor, do not top-up the coolant beyond the specified amount.

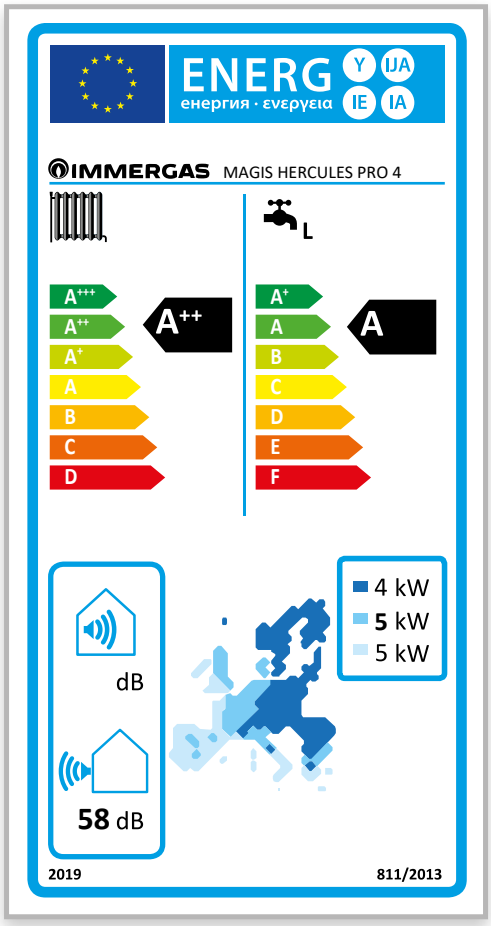
Model UE AUDAX PRO V2	Liquid line pipe external diameter (mm - inch)	Maximum length without base load top-up (liquid line pipe)	Top-up quantity for every additional metre of the liquid line pipe
UE AUDAX PRO 12 V2 UE AUDAX PRO 12 V2 T	Ø 9.52 - 3/8"	**≤ 15 m**	50 g/m
UE AUDAX PRO 14 V2 UE AUDAX PRO 14 V2 T	Ø 9.52 - 3/8	**≤ 15 m**	50 g/m
UE AUDAX PRO 16 V2 UE AUDAX PRO 16 V2 T	Ø 9.52 - 3/8	**≤ 15 m**	50 g/m

MAGIS HERCULES PRO 4-6-9

23	PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 4





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	2835	2305	1146
Room central heating seasonal efficiency (η_s)	η_s %	136	176	230
Nominal heat output	kW	4.00	5.00	5.00

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	4099	3231	1785
Room central heating seasonal efficiency (η_s)	ηs %	93	125	147
Nominal heat output	kW	4.00	5.00	5.00

Water heating energy efficiency η_{MW}	η_{MV} %	112.0

24 "POWER" AND "ABSORPTION" IN CENTRAL HEATING MODE MAGIS HERCULES PRO 4

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

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

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

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

MAGIS HERCULES PRO 4-6-9

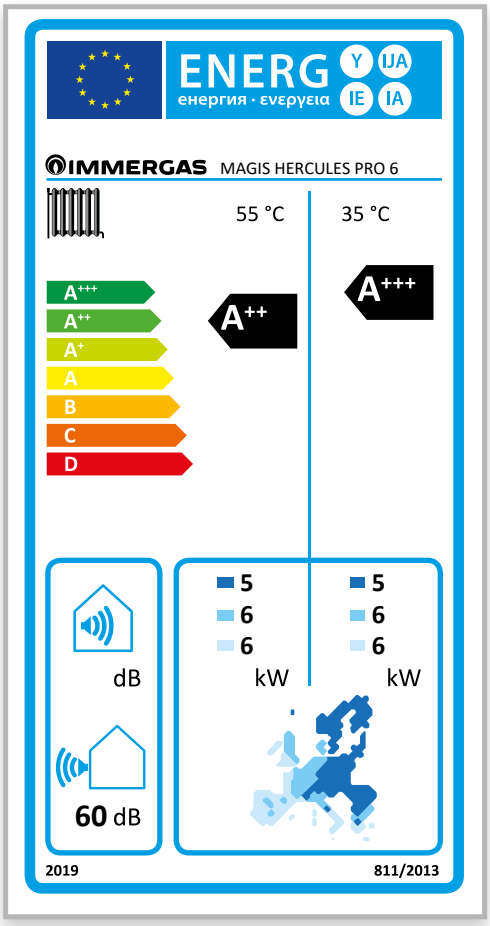
24.1 "POWER" AND "ABSORPTION" IN COOLING MODE MAGIS HERCULES PRO 4

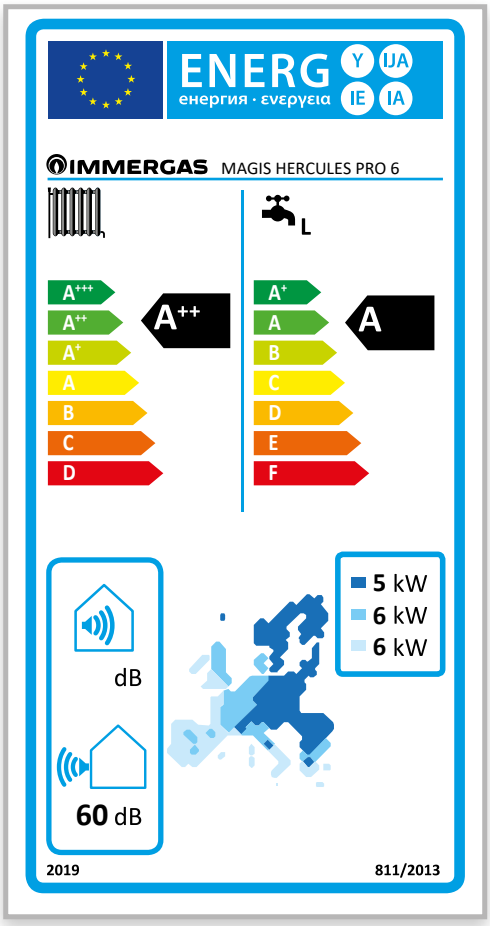
MAGIS HERCULES PRO 4	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	3.99	0.83	4.37	0.82	4.76	0.82
20	3.83	0.94	4.21	0.93	4.58	0.93
30	3.68	1.05	4.04	1.04	4.39	1.04
35	3.60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

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

25	PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 6





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	3381	2769	1271
Room central heating seasonal efficiency (η_s)	η_s %	137	176	232
Nominal heat output	kW	4.80	6.00	5.60

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	5118	3879	1989
Room central heating seasonal efficiency (η_s)	ηs %	89	125	147
Nominal heat output	kW	4.80	6.00	5.60

Water heating energy efficiency η_{MW}	η_{MV}%	111.0

MAGIS HERCULES PRO 4-6-9

26 "POWER" AND "ABSORPTION" IN CENTRAL HEATING MODE MAGIS HERCULES PRO 6

MAGIS HERCULES PRO 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 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 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

26.1 "POWER" AND "ABSORPTION" IN COOLING MODE MAGIS HERCULES PRO 6

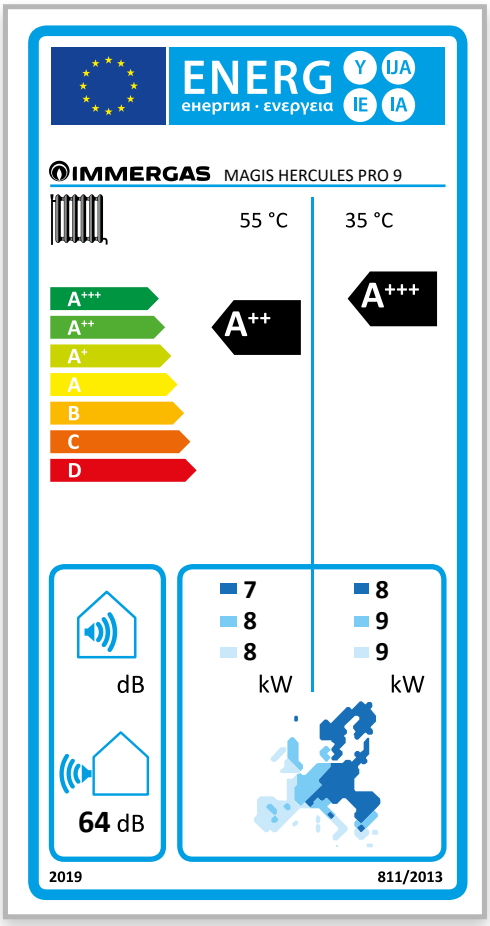
MAGIS HERCULES PRO 6	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	5.20	1.07	5.70	1.08	6.20	1.08
20	5.01	1.22	5.48	1.22	5.96	1.23
30	4.80	1.36	5.26	1.37	5.72	1.37
35	4.70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

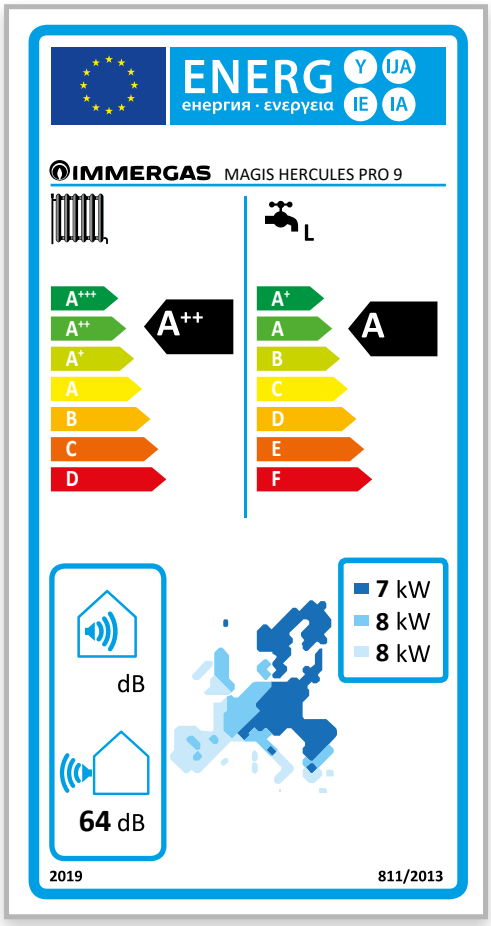
MAGIS HERCULES PRO 6	Water flow temperature °C					
	15		18		25	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	6.70	1.09	7.20	1.10	7.92	1.12
20	6.44	1.24	6.92	1.24	7.61	1.27
30	6.18	1.38	6.64	1.39	7.31	1.42
35	6.05	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 4-6-9

27	PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 9





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	5308	3954	1895
Room central heating seasonal efficiency (η_s)	η_s %	136	175	237
Nominal heat output	kW	7.50	8.50	8.50

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7402	5174	2761
Room central heating seasonal efficiency (η_s)	ηs %	90	125	152
Nominal heat output	kW	7.00	8.00	8.00

Water heating energy efficiency η_{MW}	η_{MV} %	103.0

28 "POWER" AND "ABSORPTION" IN CENTRAL HEATING MODE MAGIS HERCULES PRO 9

MAGIS HERCULES PRO 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 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 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 4-6-9

28.1 "POWER" AND "ABSORPTION" IN COOLING MODE MAGIS HERCULES PRO 9

MAGIS HERCULES PRO 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 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

29 TECHNICAL DATA MAGIS HERCULES PRO 4 - 6 - 9

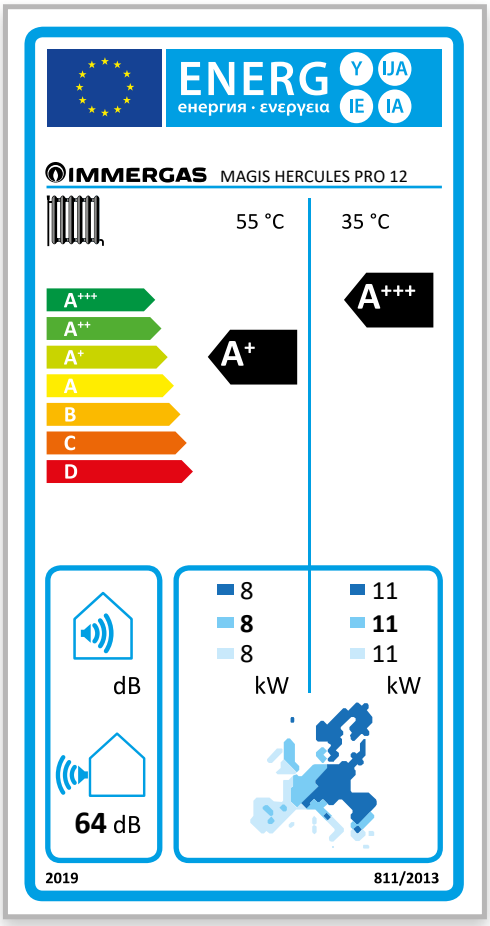
	MHP	4	6	9
Central heating circuit				
Power in CH mode with water set at 35 °C (1)	kW	4.40	6.00	9.00
Power in CH mode with water set at 45 °C (2)	kW	4.20	5.40	8.60
Power in CH mode with water set at 55 °C (3)	kW	3.90	4.80	8.00
CH mode COP with water set at 35 °C (1)		5.20	4.92	4.81
CH mode COP with water set at 45 °C (2)		3.85	3.58	3.69
CH mode COP with water set at 55 °C (3)		2.95	2.65	2.93
Flow temperature range	°C	20 - 65	20 - 65	20 - 65
Outdoor temp. limits for Heating mode operation	°C	- 25 / 35	- 25 / 35	- 25 / 35
System integrative resistance absorption (optional)	kW	3 (each kit)	3 (each kit)	3 (each kit)
Cooling circuit				
Power in cooling mode with water set at 18 °C (1)	kW	5.00	6.50	8.70
Power in cooling mode with water set at 7 °C (2)	kW	3.60	4.70	6.50
Cooling mode EER with water set at 18 °C (1)		4.59	4.42	4.12
Cooling mode EER with water set at 7 °C (2)		3.24	3.26	3.33
Flow temperature range	°C	5 - 25	5 - 25	5 - 25
Outdoor temp. limits for Cooling mode operation	°C	10 / 46	10 / 46	10 / 46
DHW circuit				
V40 - Water mixed at 40°C	l	245	244	304
Domestic hot water adjustable temperature	°C	10 - 55	10 - 55	10 - 55
Domestic hot water adjustable temperature with DHW (Domestic hot water) integration resistance	°C	10 - 65	10 - 65	10 - 65
DHW (Domestic hot water) integrative resistance absorption (standard)	kW	2.3	2.3	2.3
DHW (Domestic hot water) integrative resistance absorption (optional)	kW	2.3 (each kit)	2.3 (each kit)	2.3 (each kit)
General data				
Max hydraulic system operating	bar	3	3	3
System expansion vessel nominal / (real) capacity	litres	24 / (19.70)	24 / (19.70)	24 / (19.70)
Max operating pressure on the DHW (Domestic hot water) system	bar	8	8	8
Rated DHW expansion vessel capacity	litres	16	16	16
C.H. sound power level	dB(A)	58	60	64
Electric protection rating	IP	X5D	X5D	X5D
Power supply (indoor unit)	V - Hz	230-50	230-50	230-50
Permitted voltage range	V	198-264	198-264	198-264
Maximum absorbed power (indoor unit)	W	135	135	135
Absorbed power by the zone 2 or 3 pump (optional)	W	50 (each kit)	50 (each kit)	50 (each kit)
Maximum absorbed power (outdoor condensing unit)	W	2100	2900	4300
Refrigerant fluid load (R32)	g	1200	1200	1400
Water content (in the storage tank)	litres	56 (235)	56 (235)	56 (235)
Condensing outdoor unit empty weight	kg	46.5	46.5	73.0
Indoor unit empty weight	kg	211	211	211

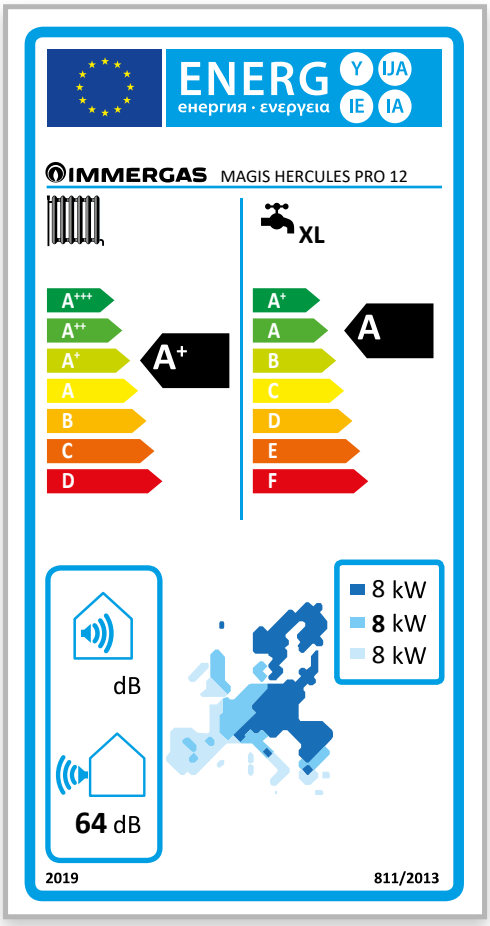
THE REPORTED DATA REFERS TO THE FOLLOWING CONDITIONS (in compliance with EN 14511):		
ROOM	HEATING PHASE (°C)	COOLING PHASE (°C)
Water TEMP. (F/R) (1) - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (bs)
Water TEMP. (F/R) (2) - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (bs)
Water TEMP. (F/R) (3) - AIR (db/wb)	55/47 - 7/6	

MAGIS HERCULES PRO 12-14-16

30	PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 12





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	6256	4910	2318
Room central heating seasonal efficiency (η_s)	η_s %	164	175	260
Nominal heat output	kW	11.00	11.00	11.00

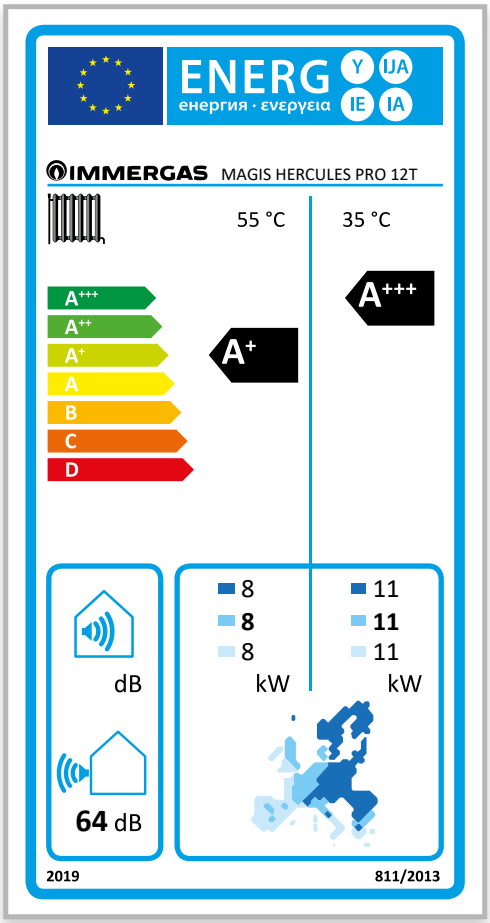
Average temperature (47/55)

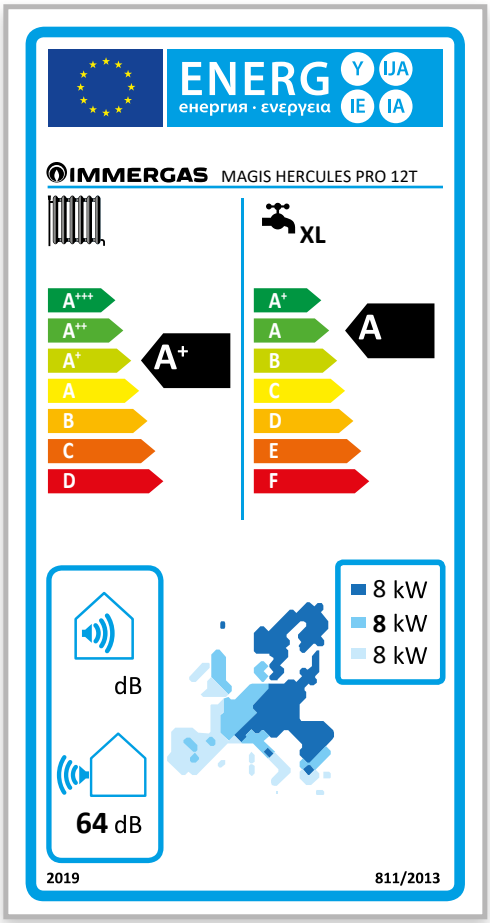
Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7217	5578	2783
Room central heating seasonal efficiency (η_s)	ηs %	106	116	158
Nominal heat output	kW	8.00	8.00	8.00

Water heating energy efficiency η_{MW}	η_{MV} %	94.4

30.1 PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 12 T





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	6256	4910	2318
Room central heating seasonal efficiency (η_s)	η_s %	164	175	260
Nominal heat output	kW	11.00	11.00	11.00

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7217	5578	2783
Room central heating seasonal efficiency (η_s)	ηs %	106	116	158
Nominal heat output	kW	8.00	8.00	8.00

Water heating energy efficiency η_{MW}	η_{MV}%	94.4

MAGIS HERCULES PRO 12-14-16

31 "POWER" AND "ABSORPTION" IN CENTRAL HEATING MODE MAGIS HERCULES PRO 12

MAGIS HERCULES PRO 12		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)	9.67	3.19	9.40	3.42	8.95	3.84
-15	(-16)	11.01	3.37	10.71	3.61	10.20	4.06
-10	(-11)	12.70	3.55	12.35	3.81	11.76	4.28
-7	(-8)	12.20	3.40	11.87	3.65	11.30	4.10
-2	(-3)	12.04	3.01	11.71	3.23	11.15	3.63
2	(1)	11.88	2.62	11.55	2.81	11.00	3.16
7	(6)	12.96	2.15	12.60	2.31	12.00	2.59
10	(9)	14.16	2.17	13.76	2.33	13.11	2.61
15	(14)	16.15	2.20	15.70	2.36	14.95	2.65
20	(19)	18.14	2.23	17.64	2.39	16.80	2.69

MAGIS HERCULES PRO 12		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)	8.61	4.10	8.26	4.52		
-15	(-16)	9.91	4.31	9.62	4.57	9.33	4.79
-10	(-11)	11.41	4.51	11.05	4.75	10.72	4.98
-7	(-8)	11.06	4.63	10.82	5.15	10.38	5.22
-2	(-3)	10.72	3.98	10.30	4.34	9.78	4.88
2	(1)	10.39	3.34	9.78	3.52	9.29	3.97
7	(6)	11.75	2.91	11.50	3.23	11.26	3.53
10	(9)	12.86	2.94	12.61	3.27	11.98	3.68
15	(14)	14.71	2.95	14.47	3.35	13.74	3.77
20	(19)	16.56	3.02	16.32	3.42	15.50	3.85

MAGIS HERCULES PRO 12		Water flow temperature °C	
		55	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)		
-15	(-16)		
-10	(-11)	9.95	5.46
-7	(-8)	9.95	5.30
-2	(-3)	9.27	5.42
2	(1)	8.80	4.41
7	(6)	11.01	3.83
10	(9)	11.35	4.09
15	(14)	13.02	4.18
20	(19)	14.69	4.28

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

31.1 "POWER" AND "ABSORPTION" IN COOLING MODE MAGIS HERCULES PRO 12

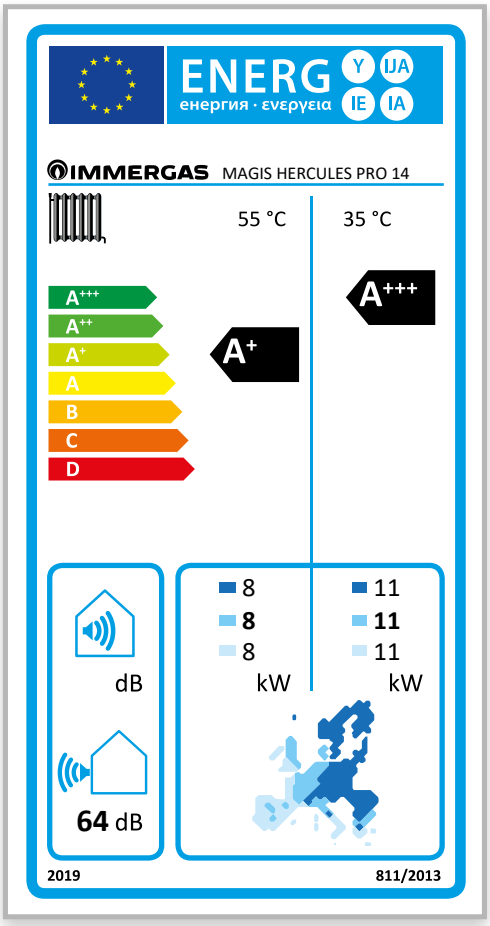
MAGIS HERCULES PRO 12	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	11.95	1.85	12.77	1.86	13.58	1.87
20	10.77	2.33	11.59	2.35	12.40	2.36
30	9.59	2.81	10.41	2.82	11.23	2.84
35	9.00	3.05	9.82	3.06	10.64	3.08
46	7.70	3.58	8.52	3.59	9.34	3.61

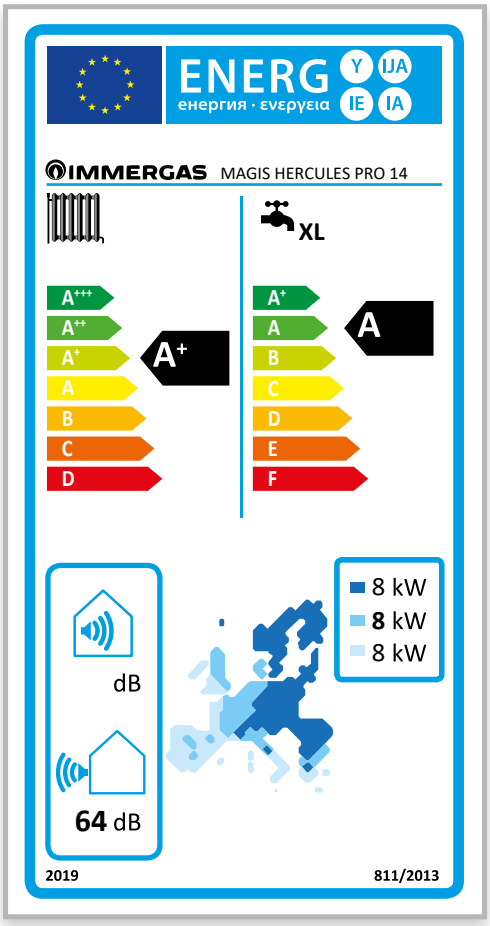
MAGIS HERCULES PRO 12	Water flow temperature °C					
	15		18		25	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	14.13	1.88	14.95	1.90	16.86	1.93
20	12.95	2.37	13.77	2.38	15.68	2.42
30	11.77	2.85	12.59	2.86	14.50	2.89
35	11.18	3.09	12.00	3.10	13.91	3.13
46	9.89	3.62	10.70	3.63	12.61	3.66

MAGIS HERCULES PRO 12-14-16

32	PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 14





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	6256	4910	2318
Room central heating seasonal efficiency (η_s)	η_s %	164	175	260
Nominal heat output	kW	11.00	11.00	11.00

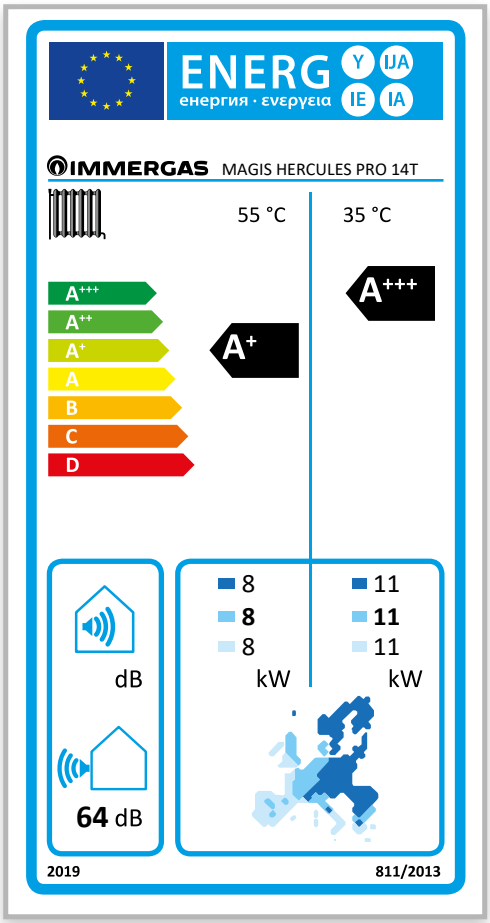
Average temperature (47/55)

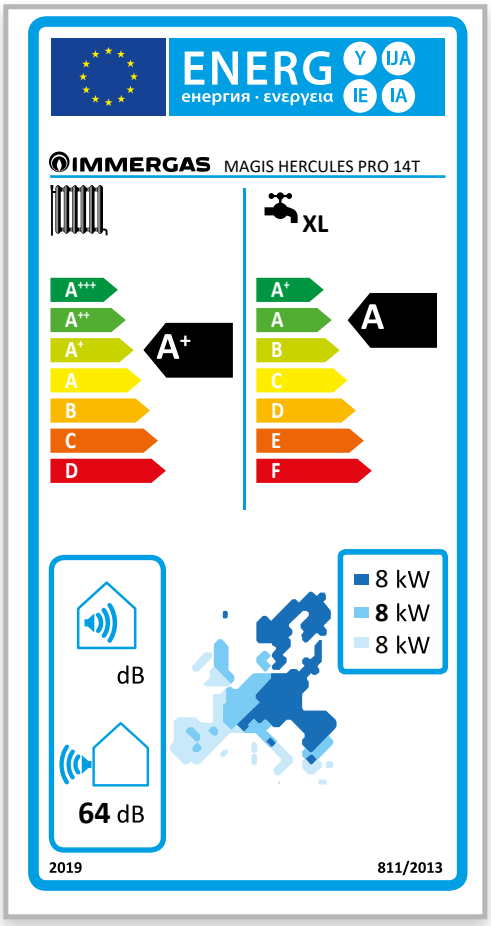
Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7217	5578	2783
Room central heating seasonal efficiency (η_s)	ηs %	106	116	158
Nominal heat output	kW	8.00	8.00	8.00

Water heating energy efficiency η_{MW}	η_{MV} %	91.4

32.1 PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 14 T





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	6256	4910	2318
Room central heating seasonal efficiency (η_s)	η_s %	164	175	260
Nominal heat output	kW	11.00	11.00	11.00

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7217	5578	2783
Room central heating seasonal efficiency (η_s)	ηs %	106	116	158
Nominal heat output	kW	8.00	8.00	8.00

Water heating energy efficiency η_{MW}	η_{MV}%	91.4

MAGIS HERCULES PRO 12-14-16

33 "POWER" AND "ABSORPTION" IN CENTRAL HEATING MODE MAGIS HERCULES PRO 14

MAGIS HERCULES PRO 14		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)	10.93	3.69	10.62	3.96	10.12	4.45
-15	(-16)	12.45	3.90	12.10	4.19	11.52	4.70
-10	(-11)	14.29	4.11	13.89	4.40	13.23	4.95
-7	(-8)	13.50	3.82	13.13	4.09	12.50	4.60
-2	(-3)	13.28	3.39	12.92	3.63	12.30	4.08
2	(1)	13.07	2.95	12.71	3.17	12.10	3.56
7	(6)	15.12	2.61	14.70	2.80	14.00	3.15
10	(9)	16.52	2.64	16.06	2.83	15.29	3.18
15	(14)	18.84	2.68	18.32	2.87	17.45	3.22
20	(19)	21.17	2.71	20.58	2.91	19.60	3.27

MAGIS HERCULES PRO 14		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)	9.73	4.75	9.34	5.24		
-15	(-16)	11.20	5.00	10.87	5.29	10.55	5.55
-10	(-11)	12.83	5.22	12.44	5.50	12.06	5.77
-7	(-8)	12.23	5.19	11.97	5.78	11.49	5.86
-2	(-3)	11.83	4.48	11.36	4.88	10.79	5.49
2	(1)	11.43	3.77	10.76	3.97	10.22	4.47
7	(6)	13.50	3.45	13.00	3.75	12.72	4.10
10	(9)	14.84	3.51	14.39	3.84	13.67	4.33
15	(14)	17.08	3.56	16.72	4.00	15.88	4.50
20	(19)	19.32	3.68	19.04	4.16	18.09	4.68

MAGIS HERCULES PRO 14		Water flow temperature °C	
		55	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)		
-15	(-16)		
-10	(-11)	11.19	6.32
-7	(-8)	11.01	5.94
-2	(-3)	10.23	6.10
2	(1)	9.68	4.96
7	(6)	12.45	4.44
10	(9)	12.95	4.81
15	(14)	15.05	5.00
20	(19)	17.14	5.20

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

33.1 "POWER" AND "ABSORPTION" IN COOLING MODE MAGIS HERCULES PRO 14

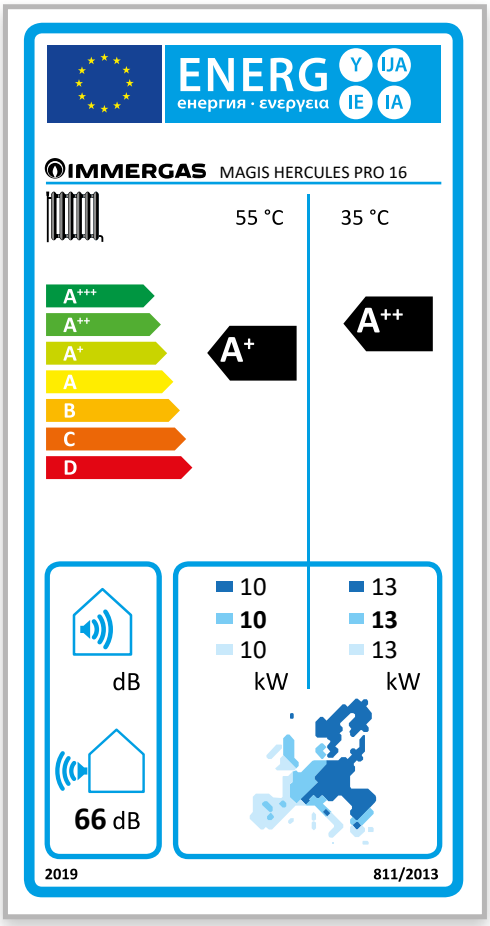
MAGIS HERCULES PRO 14	Water flow temperature °C					
	7		10		13	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	14.09	2.39	15.04	2.40	15.99	2.42
20	12.65	2.93	13.61	2.95	14.56	2.96
30	11.22	3.48	12.17	3.49	13.13	3.51
35	10.50	3.75	11.45	3.76	12.41	3.78
46	8.92	4.35	9.88	4.36	10.83	4.38

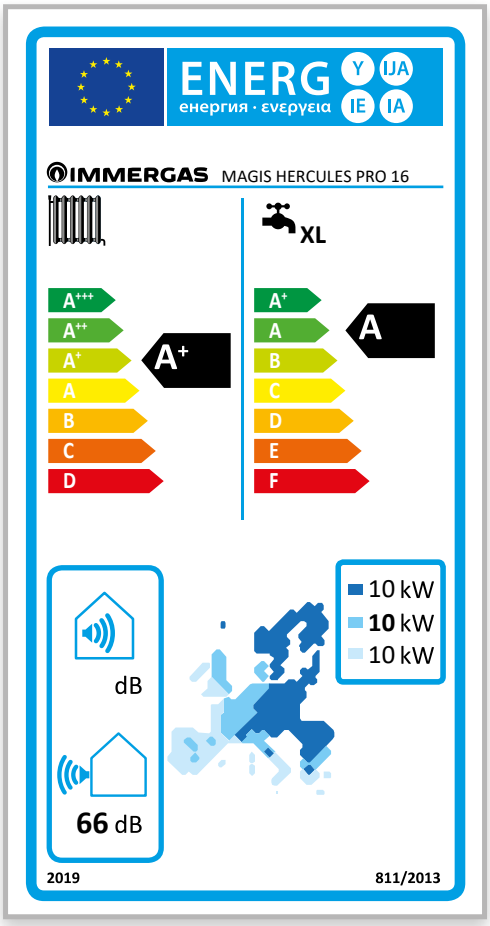
MAGIS HERCULES PRO 14	Water flow temperature °C					
	15		18		25	
Air temperature °C d.b.	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)	Max. output (kW)	Max. absorbed (kW)
10	16.63	2.43	17.59	2.44	19.81	2.47
20	15.20	2.97	16.15	2.98	18.38	3.02
30	13.76	3.51	14.72	3.53	16.94	3.56
35	13.05	3.79	14.00	3.80	16.23	3.83
46	11.47	4.38	12.42	4.40	14.65	4.43

MAGIS HERCULES PRO 12-14-16

34	PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 16





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7360	6004	2690
Room central heating seasonal efficiency (η_s)	η_s %	164	169	263
Nominal heat output	kW	13.00	13.00	13.00

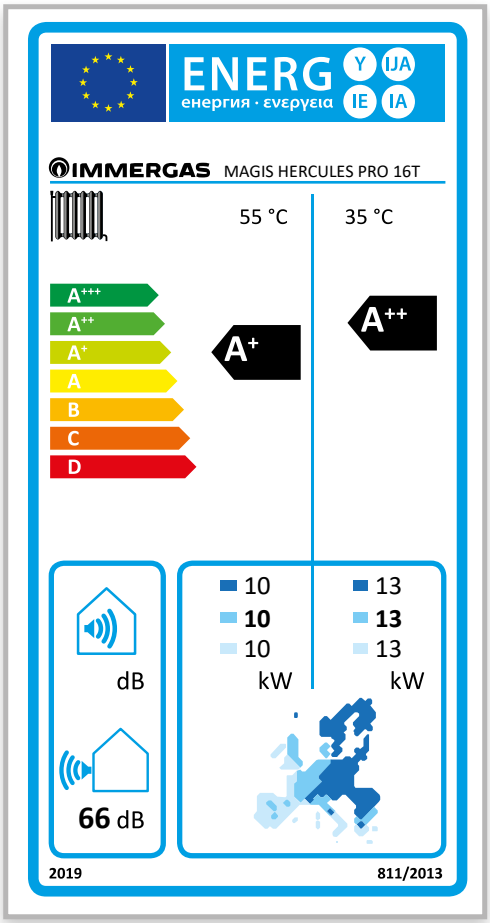
Average temperature (47/55)

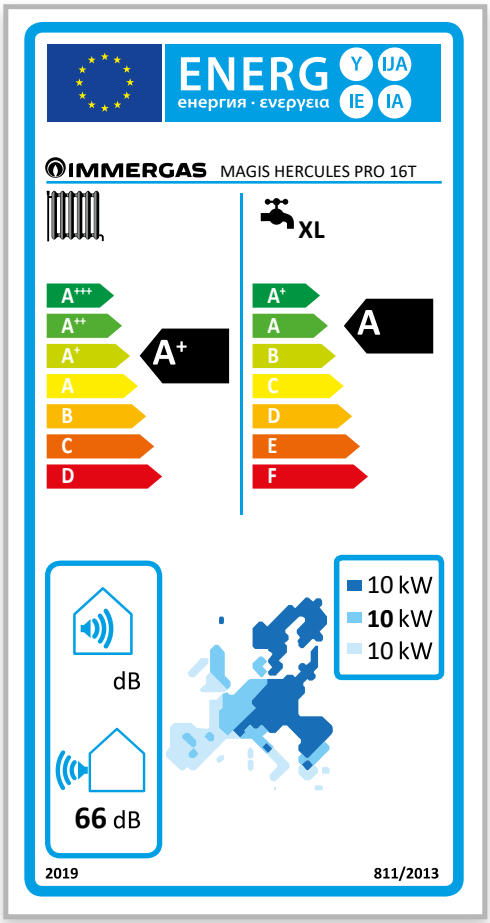
Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	8984	6970	3383
Room central heating seasonal efficiency (η_s)	ηs %	107	110	161
Nominal heat output	kW	10.00	10.00	10.00

Water heating energy efficiency η_{MW}	η_{MV} %	88.9

34.1 PRODUCT FICHE (REGULATION 811/2013)

MAGIS HERCULES PRO 16 T





Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	7360	6004	2690
Room central heating seasonal efficiency (η_s)	η_s %	164	169	263
Nominal heat output	kW	13.00	13.00	13.00

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	8984	6970	3383
Room central heating seasonal efficiency (η_s)	ηs %	107	110	161
Nominal heat output	kW	10.00	10.00	10.00

Water heating energy efficiency η_{MW}	η_{MV}%	88.9

MAGIS HERCULES PRO 12-14-16

35 "POWER" AND "ABSORPTION" IN CENTRAL HEATING MODE MAGIS HERCULES PRO 16

MAGIS HERCULES PRO 16		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)	12.58	4.43	12.33	4.75	11.65	5.34
-15	(-16)	14.33	4.68	13.93	5.02	13.27	5.64
-10	(-11)	16.51	4.96	16.05	5.32	15.29	5.98
-7	(-8)	14.90	4.52	14.49	4.85	13.80 *	5.45 *
-2	(-3)	14.85	4.00	14.44	4.29	13.75	4.83
2	(1)	14.80	3.49	14.39	3.74	13.70	4.20
7	(6)	17.28	3.12	16.80	3.35	16.00	3.76
10	(9)	18.88	3.15	18.35	3.38	17.48	3.79
15	(14)	21.53	3.19	20.94	3.42	19.94	3.85
20	(19)	24.19	3.24	23.52	3.47	22.40	3.90

MAGIS HERCULES PRO 16		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)	11.20	5.69	10.75	6.28		
-15	(-16)	12.89	6.00	12.52	6.35	12.14	6.67
-10	(-11)	14.83	6.29	14.37	6.60	13.94	6.93
-7	(-8)	13.51	6.15	13.21	6.85	12.68	6.95
-2	(-3)	13.22	5.30	12.70	5.77	12.06	6.49
2	(1)	12.94	4.44	12.18	4.68	11.57	5.27
7	(6)	15.65	4.15	15.30	4.54	14.95	4.93
10	(9)	17.13	4.22	16.79	4.64	15.95	5.22
15	(14)	19.61	4.26	19.28	4.80	18.31	5.40
20	(19)	22.08	4.39	21.76	4.97	20.67	5.59

MAGIS HERCULES PRO 16		Water flow temperature °C	
		55	
Air temperature °C d.b.	(w.b.)	Max. output (kW)	Max. absorbed (kW)
-20	(-21)		
-15	(-16)		
-10	(-11)	12.93	7.59
-7	(-8)	12.15	7.04
-2	(-3)	11.43	7.21
2	(1)	10.96	5.86
7	(6)	14.60	5.32
10	(9)	15.11	5.80
15	(14)	17.35	6.00
20	(19)	19.58	6.21

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

(*) The working points shown in the table refer to peak values.
The nominal working point in the condition:
Temp. Water (M/R) - air (db/wb) = 35/30 - 7/6
Temp. Room = -7°C is:
- **Max. output = 12.50**
- **Max. absorbed = 4.60**
- **COP = 2.72**

35.1 "POWER" AND "ABSORPTION" IN COOLING MODE MAGIS HERCULES PRO 16

MAGIS HERCULES PRO 16	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	14.74	2.73	15.77	2.77	16.81	2.81
20	13.20	3.24	14.36	3.28	15.39	3.32
30	11.91	3.75	12.94	3.79	13.98	3.82
35	11.20	4.00	12.24	4.04	13.27	4.08
46	9.64	4.56	10.68	4.59	11.72	4.36

MAGIS HERCULES PRO 16	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	17.50	2.84	18.54	2.87	20.96	2.96
20	16.09	3.34	17.12	3.38	19.54	3.47
30	14.67	3.85	15.71	3.89	18.13	3.98
35	13.96	4.10	15.00	4.14	17.42	4.23
46	12.41	4.66	13.44	4.70	15.86	4.79

MAGIS HERCULES PRO 12-14-16

36 TECHNICAL DATA MAGIS HERCULES PRO 12 - 14 - 16 (SINGLE-PHASE)

	MHP	12	14	16
Central heating circuit				
Power in CH mode with water set at 35 °C (1)	kW	12.00	14.00	16.00
Power in CH mode with water set at 45 °C (2)	kW	11.50	13.00	15.30
Power in CH mode with water set at 55 °C (3)	kW	11.01	12.45	14.60
CH mode COP with water set at 35 °C (1)		4.63	4.44	4.26
CH mode COP with water set at 45 °C (2)		3.56	3.47	3.37
CH mode COP with water set at 55 °C (3)		2.87	2.80	2.74
Flow temperature range	°C	20 - 55	20 - 55	20 - 55
Outdoor temp. limits for Heating mode operation	°C	- 25 / 35	- 25 / 35	- 25 / 35
System integrative resistance absorption (optional)	kW	3 (each kit)	3 (each kit)	3 (each kit)
Cooling circuit				
Power in cooling mode with water set at 18 °C (1)	kW	12.00	14.00	15.00
Power in cooling mode with water set at 7 °C (2)	kW	9.00	10.50	11.20
Cooling mode EER with water set at 18 °C (1)		3.87	3.68	3.62
Cooling mode EER with water set at 7 °C (2)		2.90	2.80	2.80
Flow temperature range	°C	5 - 25	5 - 25	5 - 25
Outdoor temp. limits for Cooling mode operation	°C	10 / 46	10 / 46	10 / 46
DHW circuit				
V40 - Water mixed at 40°C	l	246	246	246
Domestic hot water adjustable temperature	°C	10 - 50	10 - 50	10 - 50
Domestic hot water adjustable temperature with DHW (Domestic hot water) integration resistance	°C	10 - 65	10 - 65	10 - 65
DHW (Domestic hot water) integrative resistance absorption (standard)	kW	2.3	2.3	2.3
DHW (Domestic hot water) integrative resistance absorption (optional)	kW	2.3 (each kit)	2.3 (each kit)	2.3 (each kit)
General data				
Max hydraulic system operating	bar	3	3	3
System expansion vessel nominal capacity (real)	litres	24 (19.70)	24 (19.70)	24 (19.70)
Max operating pressure on the DHW (Domestic hot water) system	bar	8	8	8
Rated DHW expansion vessel capacity	litres	16	16	16
C.H. sound power level	dB(A)	64	64	66
Electric protection rating	IP	X5D	X5D	X5D
Power supply (indoor unit)	V - Hz	230-50	230-50	230-50
Permitted voltage range	V	198-264	198-264	198-264
Maximum absorbed power (indoor unit)	W	205	205	205
Absorbed power by the zone 2 and 3 pump (optional)	W	90 (each kit)	90 (each kit)	90 (each kit)
Maximum absorbed power (outdoor condensing unit)	W	6160	6930	8190
Refrigerant fluid load (R410A)	g	2980	2980	2980
Water content (in the storage tank)	litres	56 (235)	56 (235)	56 (235)
Condensing outdoor unit empty weight	kg	100	100	100
Indoor unit empty weight	kg	212	212	212

THE REPORTED DATA REFERS TO THE FOLLOWING CONDITIONS (in compliance with EN 14511):		
ROOM	HEATING PHASE (°C)	COOLING PHASE (°C)
Water TEMP. (F/R) (1) - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (bs)
Water TEMP. (F/R) (2) - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (bs)
Water TEMP. (F/R) (3) - AIR (db/wb)	55/47 - 7/6	

36.1 TECHNICAL DATA MAGIS HERCULES PRO 12 - 14 - 16 T (THREE-PHASE)

	MHP	12 T	14 T	16 T
Central heating circuit				
Power in CH mode with water set at 35 °C (1)	kW	12.00	14.00	16.00
Power in CH mode with water set at 45 °C (2)	kW	11.50	13.00	15.30
Power in CH mode with water set at 55 °C (3)	kW	11.01	12.45	14.60
CH mode COP with water set at 35 °C (1)		4.63	4.44	4.26
CH mode COP with water set at 45 °C (2)		3.56	3.47	3.37
CH mode COP with water set at 55 °C (3)		2.87	2.80	2.74
Flow temperature range	°C	20 - 55	20 - 55	20 - 55
Outdoor temp. limits for Heating mode operation	°C	- 25 / 35	- 25 / 35	- 25 / 35
System integrative resistance absorption (optional)	kW	3 (each kit)	3 (each kit)	3 (each kit)
Cooling circuit				
Power in cooling mode with water set at 18 °C (1)	kW	12.00	14.00	15.00
Power in cooling mode with water set at 7 °C (2)	kW	9.00	10.50	11.20
Cooling mode EER with water set at 18 °C (1)		3.87	3.68	3.62
Cooling mode EER with water set at 7 °C (2)		2.90	2.80	2.80
Flow temperature range	°C	5 - 25	5 - 25	5 - 25
Outdoor temp. limits for Cooling mode operation	°C	10 / 46	10 / 46	10 / 46
DHW circuit				
V40 - Water mixed at 40°C	l	246	246	246
Domestic hot water adjustable temperature	°C	10 - 50	10 - 50	10 - 50
Domestic hot water adjustable temperature with DHW (Domestic hot water) integration resistance	°C	10 - 65	10 - 65	10 - 65
DHW (Domestic hot water) integrative resistance absorption (standard)	kW	2.3	2.3	2.3
DHW (Domestic hot water) integrative resistance absorption (optional)	kW	2.3 (each kit)	2.3 (each kit)	2.3 (each kit)
General data				
Max hydraulic system operating	bar	3	3	3
System expansion vessel nominal capacity (real)	litres	24 (19.70)	24 (19.70)	24 (19.70)
Max operating pressure on the DHW (Domestic hot water) system	bar	8	8	8
Rated DHW expansion vessel capacity	litres	16	16	16
C.H. sound power level	dB(A)	64	64	66
Electric protection rating	IP	X5D	X5D	X5D
Power supply (indoor unit)	V - Hz	230-50	230-50	230-50
Power supply (outdoor unit)	V - Hz	380-50	380-50	380-50
Maximum absorbed power (indoor unit)	W	205	205	205
Absorbed power by the zone 2 and 3 pump (optional)	W	90 (each kit)	90 (each kit)	90 (each kit)
Maximum absorbed power (outdoor condensing unit)	W	6160	6930	8190
Refrigerant fluid load (R410A)	g	2980	2980	2980
Water content (in the storage tank)	litres	56 (235)	56 (235)	56 (235)
Condensing outdoor unit empty weight	kg	100	100	100
Indoor unit empty weight	kg	212	212	212

THE REPORTED DATA REFERS TO THE FOLLOWING CONDITIONS (in compliance with EN 14511):		
ROOM	HEATING PHASE (°C)	COOLING PHASE (°C)
Water TEMP. (F/R) (1) - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (bs)
Water TEMP. (F/R) (2) - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (bs)
Water TEMP. (F/R) (3) - AIR (db/wb)	55/47 - 7/6	

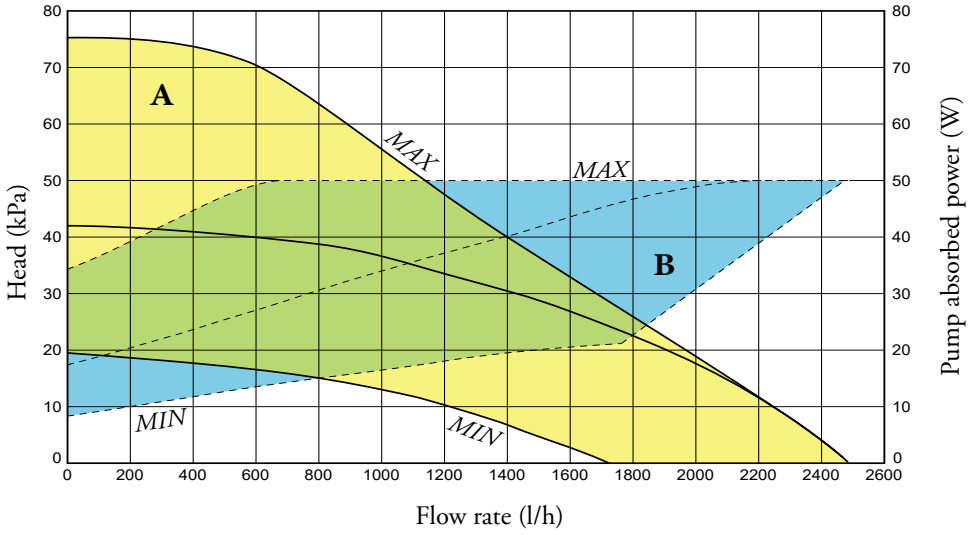
MAGIS HERCULES PRO 4-6-9

37 CHART OF THE HEAD FLOW RATE AVAILABLE TO THE DIRECT ZONE (STANDARD)

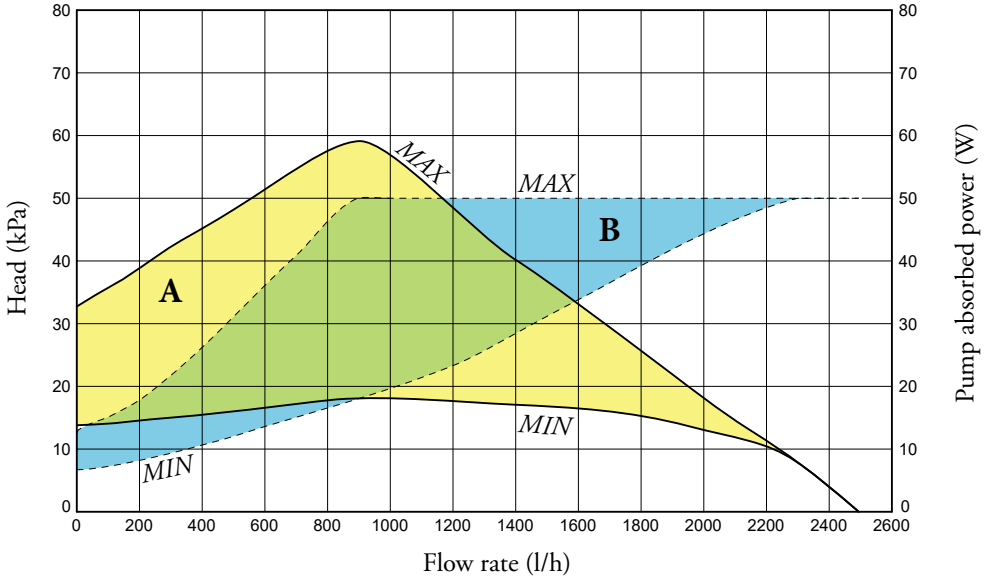
MAGIS HERCULES PRO 4-6-9 is supplied as standard with a primary circulator, modulating with low electrical consumption, (the factory settings are suitable to guarantee the best possible performance), placed upstream of the hydraulic manifold. Downstream from the hydraulic manifold, MAGIS HERCULES PRO is standard supplied with an electronic low consumption relaunch pump to the system for the direct zone, whose flow rate/head features are shown in the graph below.
The flow circulator to the direct zone is suitable for both central heating and cooling operation.

WILO PARA 15-7 CM 130

Fixed speed head.



Proportional head (ΔP V).



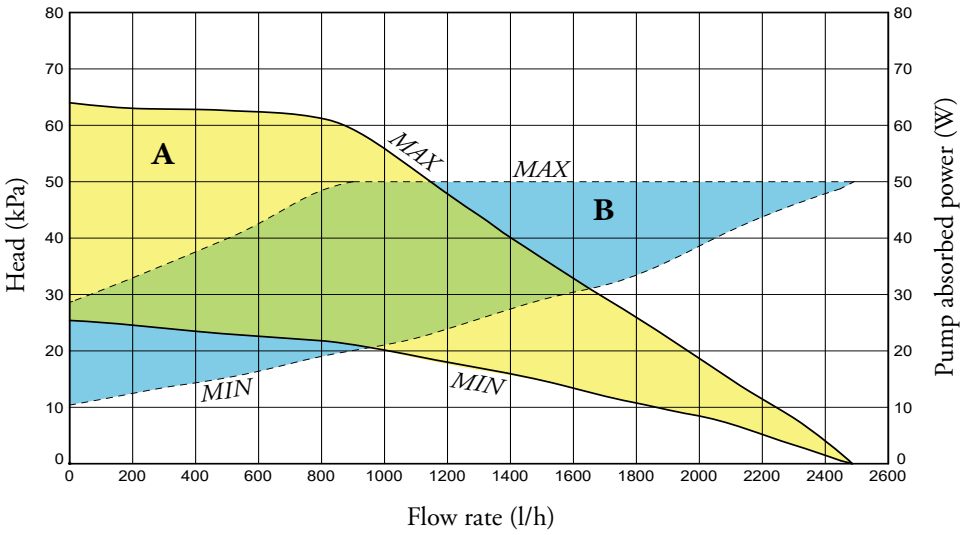
KEY:

A = Head available at speed Min ÷ Max
B = Power absorbed by the system pump (dotted area)

EEI ≤ 0.20-Part.3

WILO PARA 15-7 CM 130

Constant head (ΔP C).



KEY: EEI ≤ 0.20-Part.3

A = Head available at speed Min ÷ Max

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

37.1 ZONE 1 (DIRECT) FLOW CIRCULATOR PUMP SETTINGS AND CONFIGURATIONS

MAGIS HERCULES PRO 4-6-9 is equipped with 2 circulator pumps with speed regulator.
As for the circulator pump located on the primary circuit, the factory settings are generally suitable for the various plant applications.
On the other hand, the system circulator pump controls the room heating or cooling requests downstream of the hydraulic manifold.
In fact, the pump is equipped with electronic control that allows to set advanced functions.
For proper use one must select the most suitable type of operation for the system.
By rotation, it is possible to select the following pump control mode:
Fixed speed I, II, III.
Proportional head I, II, III.
Constant head I, II, III.

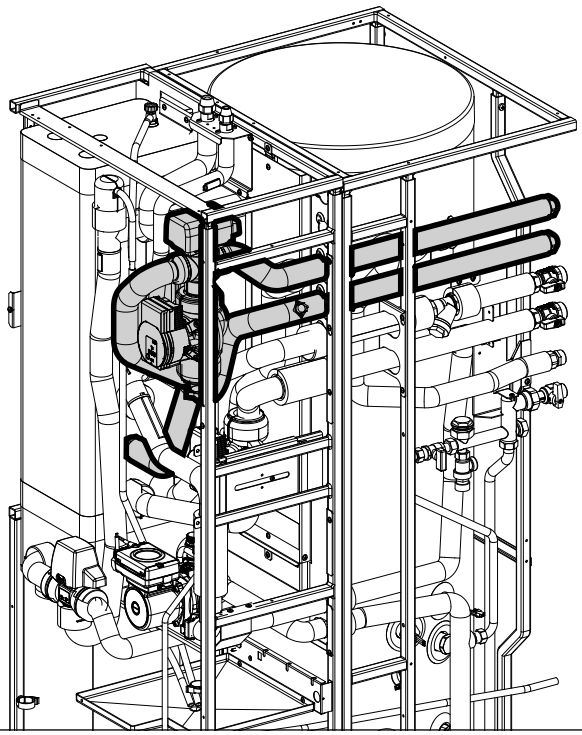
- Fixed speed
Adjusts the pump speed in fixed mode.
It is possible to set 3 different speeds:
I: Minimum Speed.
II: Intermediate speed.
III: Maximum speed (factory set speed).

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

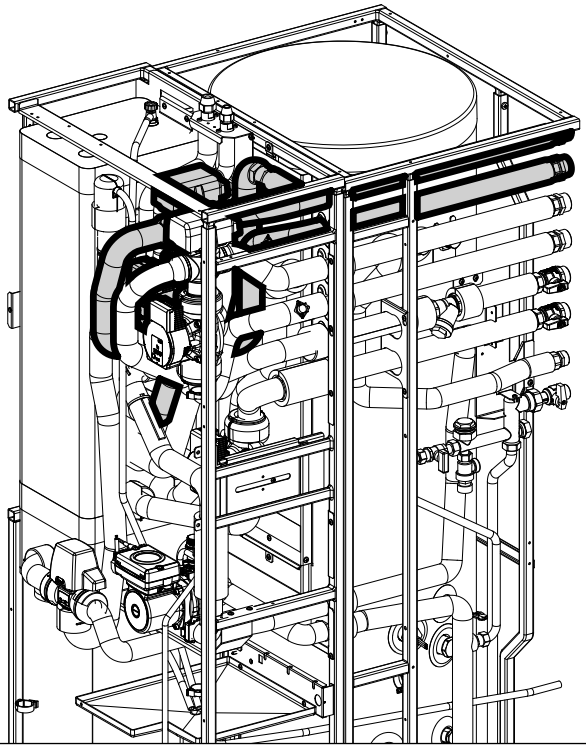
- Constant head (ΔP-C)
The circulator pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the circulator pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.

38 ADDITIONAL MIXED ZONES FOR MAGIS HERCULES PRO 4 - 6 - 9

38.1 SECOND ADDITIONAL MIXED ZONE KIT CODE 3.030855



38.2 THIRD ADDITIONAL MIXED ZONE CODE 3.030856



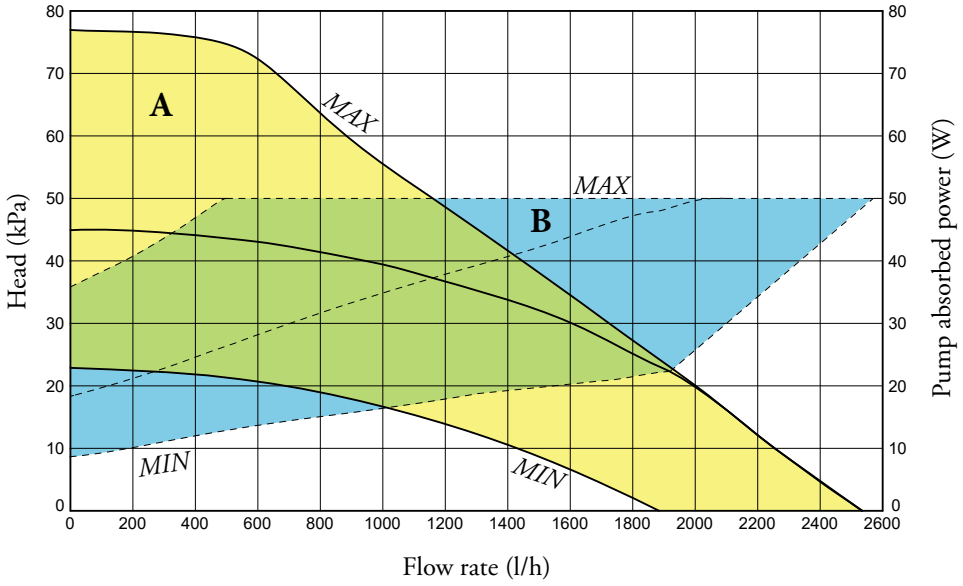
38.3 CHART OF THE HEAD FLOW RATE AVAILABLE TO THE MIXED ZONE (OPTIONAL)

MAGIS HERCULES PRO 4-6-9 is designed for the construction of mixed systems with differentiated temperature (e.g.; a zone with fan coils plus one or two low temperature zones with radiant floor panels) by inserting the mixed zone 2/mixed zone 3 kit (optional) inside the casing.

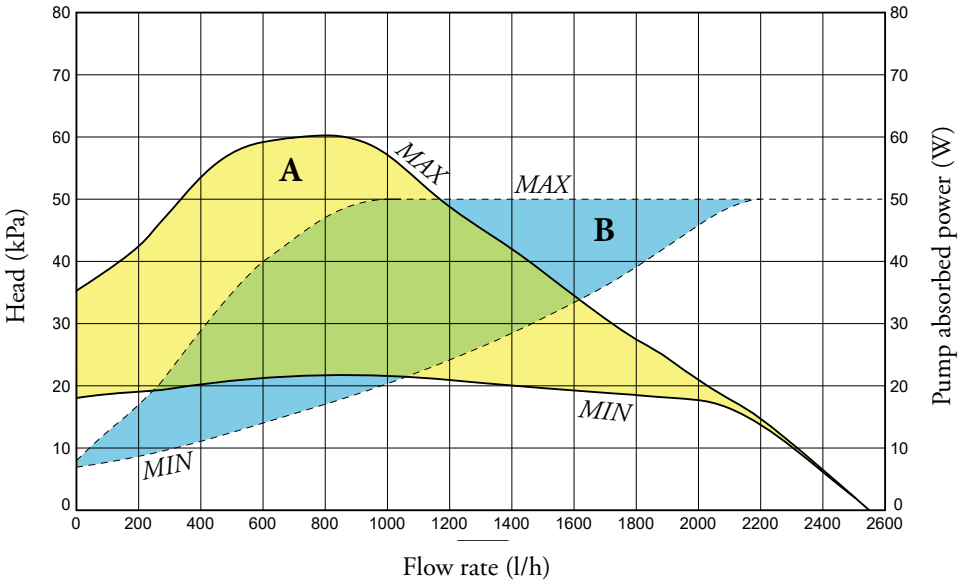
The graph below is for determining the available head for the individual zones.
The shown graphs refer to the use of the optional electronic low consumption circulators supplied by IMMERGAS in the appropriate kits (WILO PARA 15-7 CM 130 type circulators).

WILO PARA 15-7 CM 130

Fixed speed head.



Proportional head (ΔP V).



KEY:

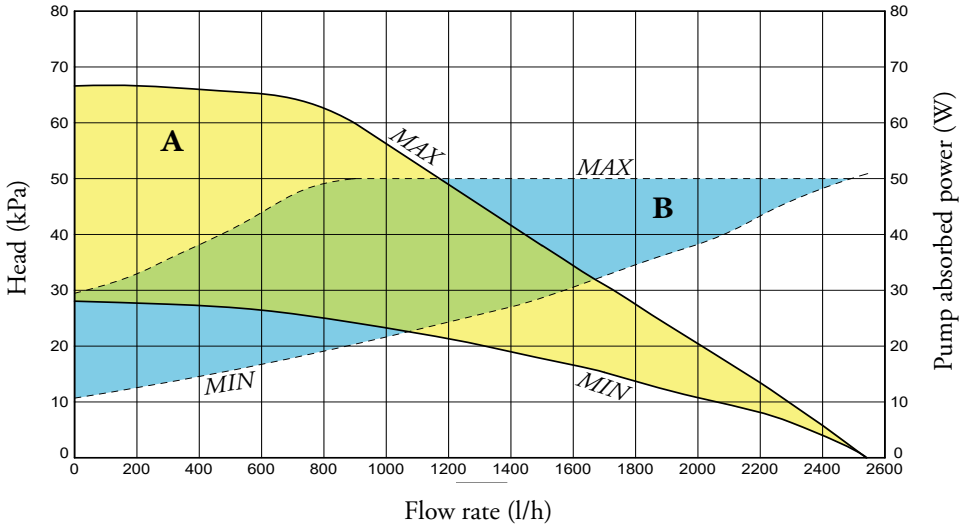
EEI ≤ 0.20-Part.3

A = Head available at speed Min ÷ Max
B = Power absorbed by the system pump (dotted area)

MAGIS HERCULES PRO 4-6-9

WILO PARA 15-7 CM 130

Constant head (ΔP C).



KEY:

A = Head available at speed Min ÷ Max

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

EEI ≤ 0.20-Part.3

38.4 MIXED ZONE (OPTIONAL) CIRCULATOR PUMP SETTINGS AND CONFIGURATIONS

MAGIS HERCULES PRO 4-6-9 is standard equipped with 1 direct circulator pump for zone 1. It is possible to provide another two circulator pumps for mixed zones (zone 2 and zone 3 both optional, can be inserted in the casing) in order to control a total of three zones (1 direct and 2 mixed).
The system circulator pumps control the room heating or cooling requests downstream of the hydraulic manifold.
In fact, the circulator pumps are equipped with electronic control that allows to set advanced functions.
For proper use one must select the most suitable type of operation for the system.
By rotation, it is possible to select the following pump control mode:
Fixed speed I, II, III.
Proportional head I, II, III.
Constant head I, II, III.

- Fixed speed
Adjusts the pump speed in fixed mode.
It is possible to set 3 different speeds:
I: Minimum Speed.
II: Intermediate speed.
III: Maximum speed (factory set speed).

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

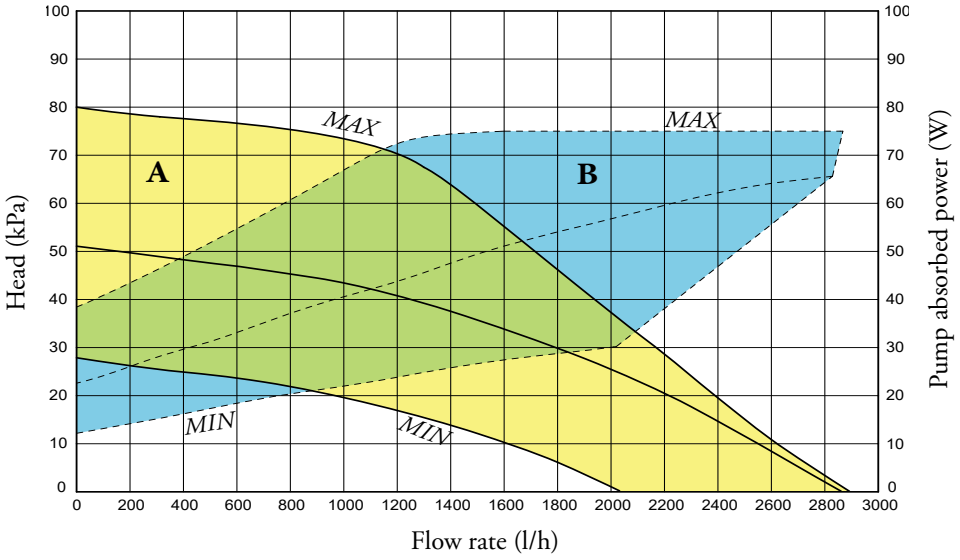
- Constant head (ΔP-C)
The circulator pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the circulator pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.

39 CHART OF THE HEAD FLOW RATE AVAILABLE TO THE DIRECT ZONE (STANDARD)

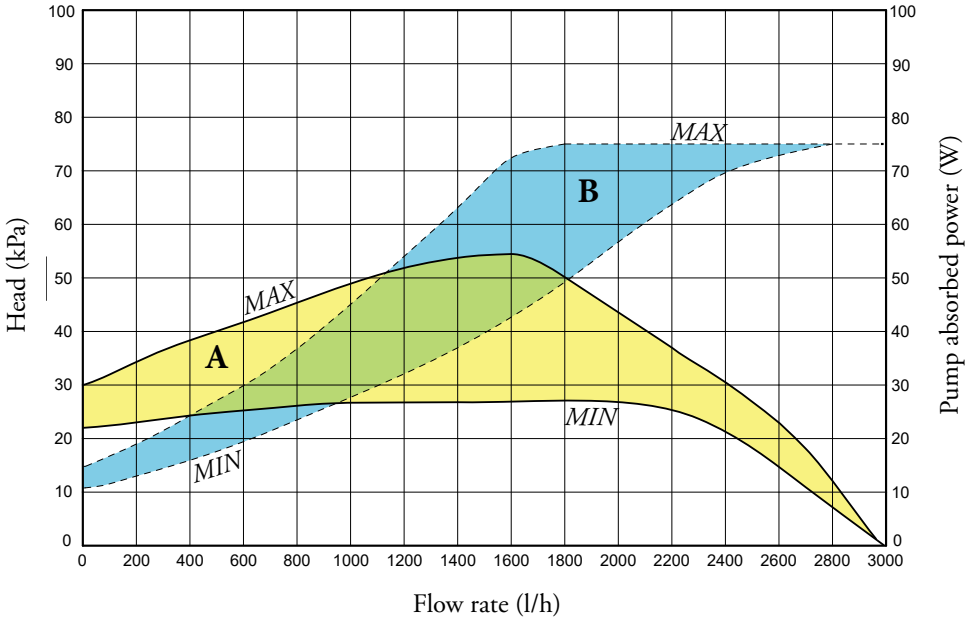
MAGIS HERCULES PRO 12-14-16 is supplied as standard with a primary circulator, modulating with low electrical consumption, (the factory settings are suitable to guarantee the best possible performance), placed upstream of the hydraulic manifold. Downstream from the hydraulic manifold, MAGIS HERCULES PRO is standard supplied with an electronic low consumption relaunch pump to the system for the direct zone, whose flow rate/head features are shown in the graph below.
The flow circulator to the direct zone is suitable for both central heating and cooling operation.

WILO PARA 15-8 CM 130

Fixed speed head.



Proportional head (ΔP V).



KEY:

A = Head available at speed Min ÷ Max

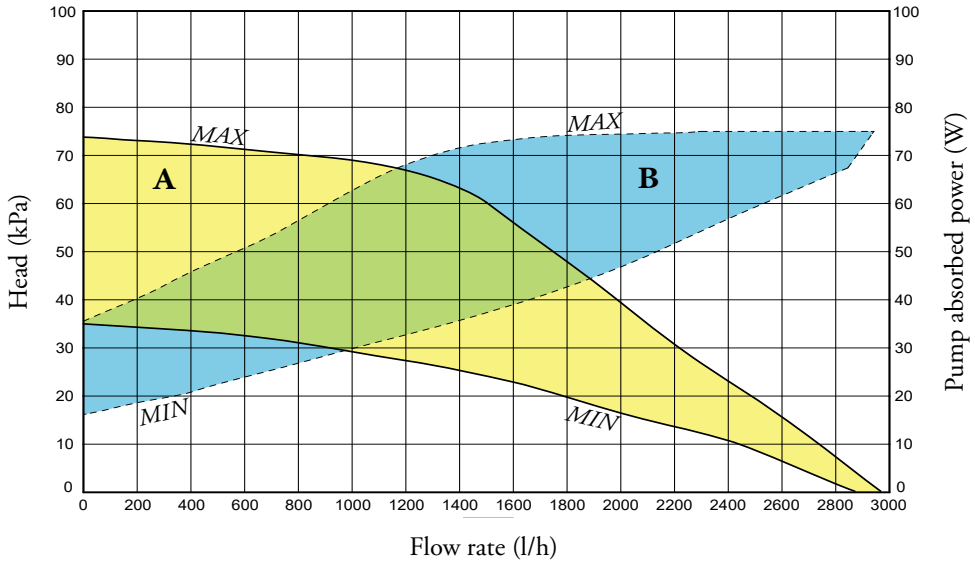
B = Power absorbed by the system pump (dotted area)

EEI ≤ 0.20-Part.3

MAGIS HERCULES PRO 12-14-16

WILO PARA 15-8 CM 130

Constant head (ΔP C).



KEY:

EEI ≤ 0.20-Part.3

A = Head available at speed Min ÷ Max

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

39.1 ZONE 1 FLOW CIRCULATOR PUMP SETTINGS AND CONFIGURATIONS

MAGIS HERCULES PRO 12-14-16 is equipped with 2 circulator pumps with speed regulator.
As for the circulator pump located on the primary circuit, the factory settings are generally suitable for the various plant applications.
On the other hand, the system circulator pump controls the room heating or cooling requests downstream of the hydraulic manifold.
In fact, the pump is equipped with electronic control that allows to set advanced functions.
For proper use one must select the most suitable type of operation for the system. By rotation, it is possible to select the following pump control mode:
Fixed speed I, II, III.
Proportional head I, II, III.
Constant head I, II, III.

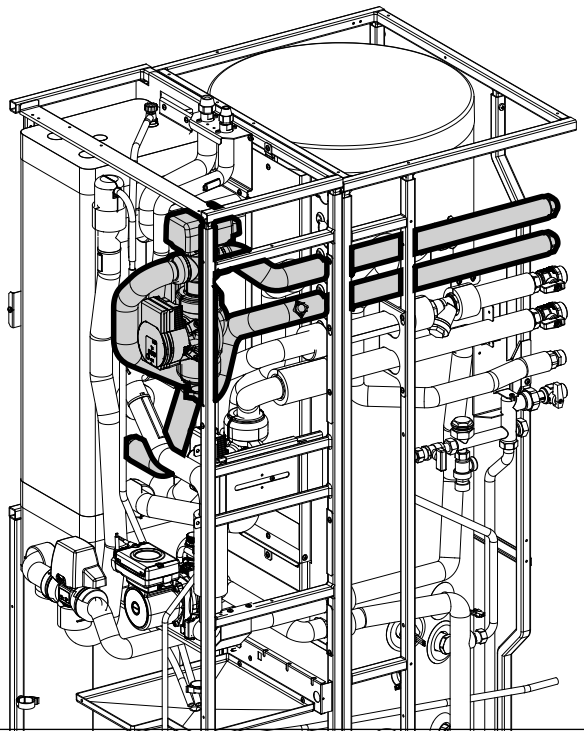
- Fixed speed
Adjusts the pump speed in fixed mode.
It is possible to set 3 different speeds:
I: Minimum Speed.
II: Intermediate speed.
III: Maximum speed (factory set speed).

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

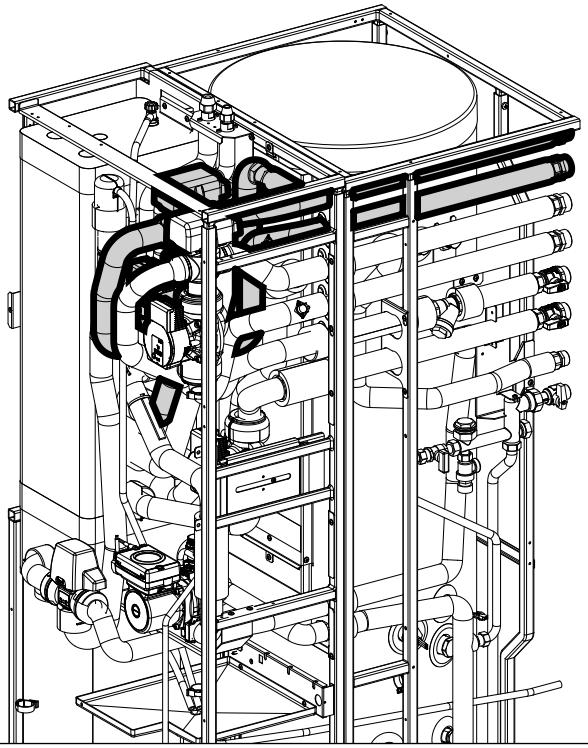
- Constant head (ΔP-C)
The circulator pump maintains the pressure level (head) constant as the system heat demand decreases (flow rate reduction). With these settings, the circulator pump is suitable for all floor systems where all the circuits must be balanced for the same drop in head.

40 ADDITIONAL MIXED ZONES FOR MAGIS HERCULES PRO 12-14-16

40.1 SECOND ADDITIONAL MIXED ZONE KIT CODE 3.030943



40.2 THIRD ADDITIONAL MIXED ZONE CODE 3.030944



MAGIS HERCULES PRO 12-14-16

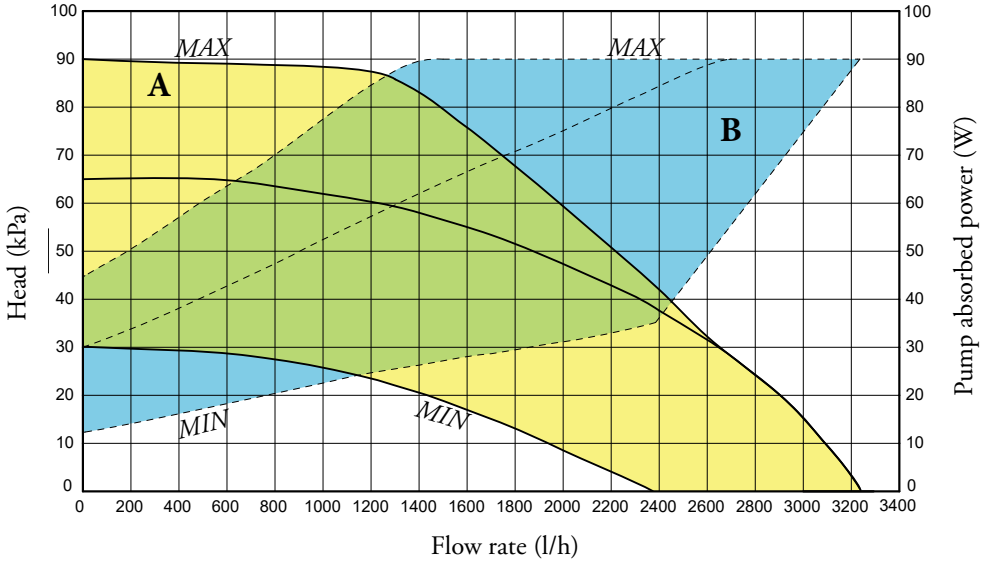
40.3 CHART OF THE HEAD FLOW RATE AVAILABLE TO THE MIXED ZONE (OPTIONAL)

MAGIS HERCULES PRO 12-14-16 is designed for the construction of mixed systems with differentiated temperature (e.g.; a zone with fan coils plus one or two low temperature zones with radiant floor panels) by inserting the mixed zone 2/mixed zone 3 kit (optional) inside the casing.

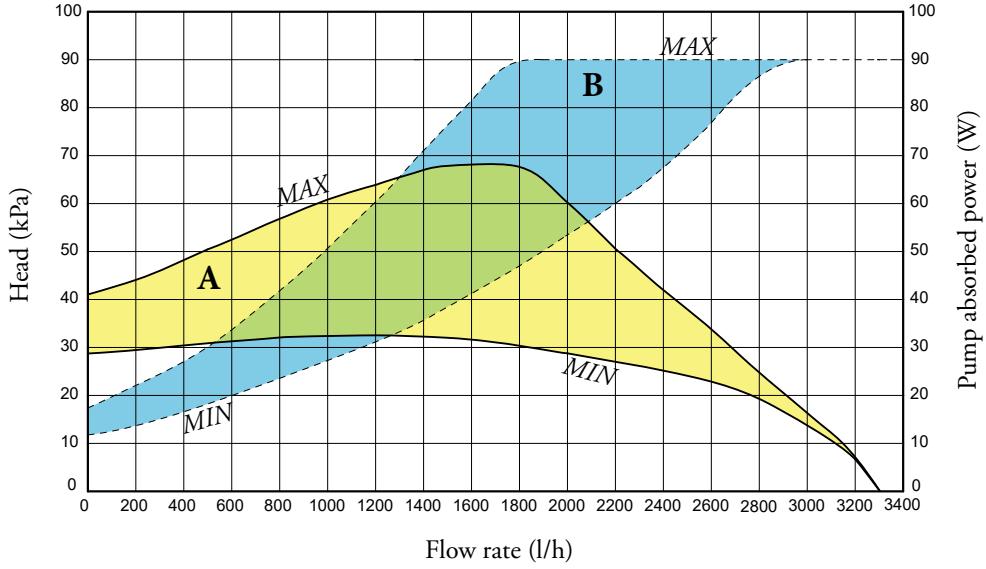
The graph below is for determining the available head for the individual zones.
The shown graphs refer to the use of the optional electronic low consumption circulators supplied by IMMERGAS in the appropriate kits (WILO PARA 15-9 CM 130 type circulators).

WILO PARA 15-9 CM 130

Fixed speed head.



Proportional head (ΔP V).



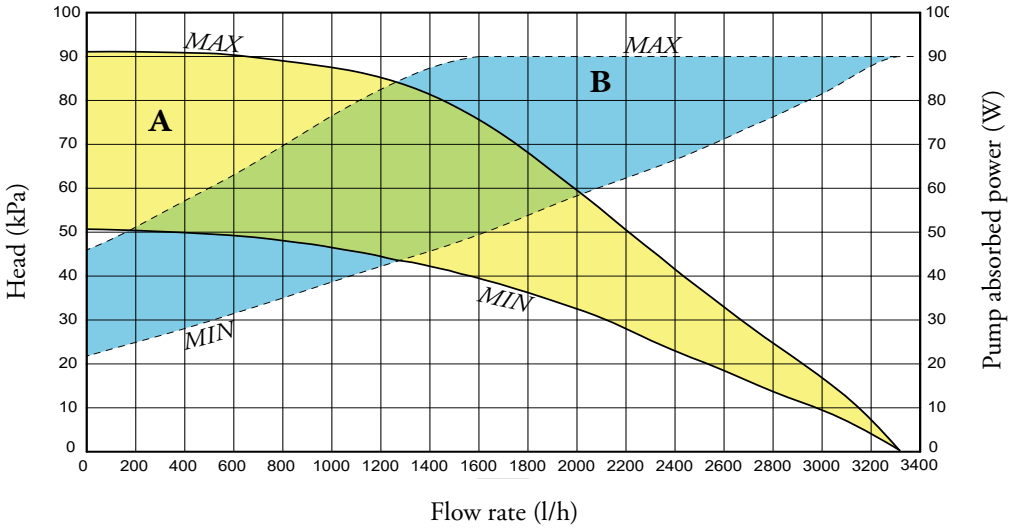
KEY:

EEI ≤ 0.20-Part.3

A = Head available at speed Min ÷ Max
B = Power absorbed by the system pump (dotted area)

WILO PARA 15-9 CM 130

Constant head (ΔP C).



KEY:

A = Head available at speed Min ÷ Max

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

EEI ≤ 0.20-Part.3

40.4 MIXED ZONE (OPTIONAL) CIRCULATOR PUMP SETTINGS AND CONFIGURATIONS

MAGIS HERCULES PRO 12-14-16 is standard equipped with 1 direct circulator pump for zone 1. It is possible to provide another two circulator pumps for mixed zones (zone 2 and zone 3 both optional, can be inserted in the casing) in order to control a total of three zones (1 direct and 2 mixed).
The system circulator pumps control the room heating or cooling requests downstream of the hydraulic manifold.
In fact, the circulator pumps are equipped with electronic control that allows to set advanced functions.
For proper use one must select the most suitable type of operation for the system.
By rotation, it is possible to select the following pump control mode:
Fixed speed I, II, III.
Proportional head I, II, III.
Constant head I, II, III.

- Fixed speed
Adjusts the pump speed in fixed mode.
It is possible to set 3 different speeds:
I: Minimum Speed.
II: Intermediate speed.
III: Maximum speed (factory set speed).

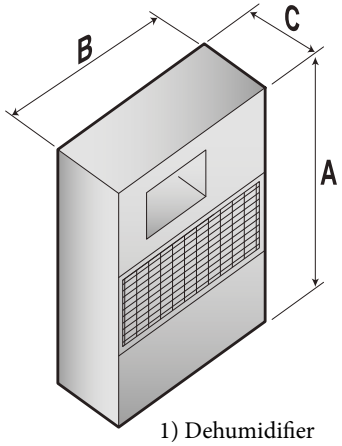
- Proportional head (ΔP-V)
This allows the pressure level (head) to be proportionally reduced as the system heat demand decreases (flow rate reduction). Thanks to this function, the electric power consumption of the circulator pump is reduced further: the energy (power) used by the pump decreases according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

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

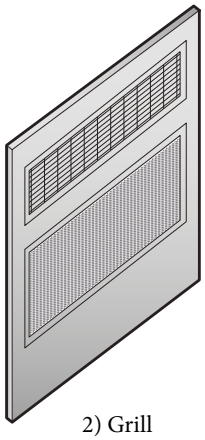
41 DEHUMIDIFIER

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.

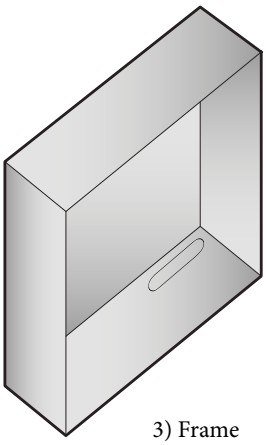
41.1 DIMENSIONS AND CONNECTIONS



1) Dehumidifier

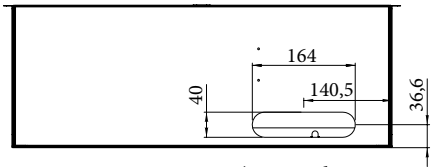


2) Grill



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

41.2 TECHNICAL DATA

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

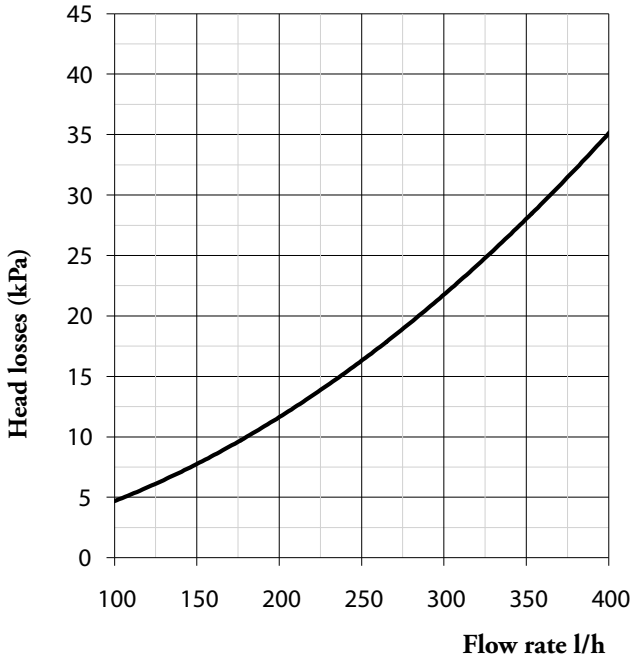
The data given refer to the following conditions:

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

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

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

41.3 HEAD LOSS OF THE HYDRAULIC CIRCUIT



42 INTRODUCTION WITH COMMENTARY TO THE DIAGRAMS: MAIN APPLICATIONS

43-43.1 Diagram with MAGIS HERCULES PRO with 1 direct zone (hot / cold with dehumidification) + photovoltaic

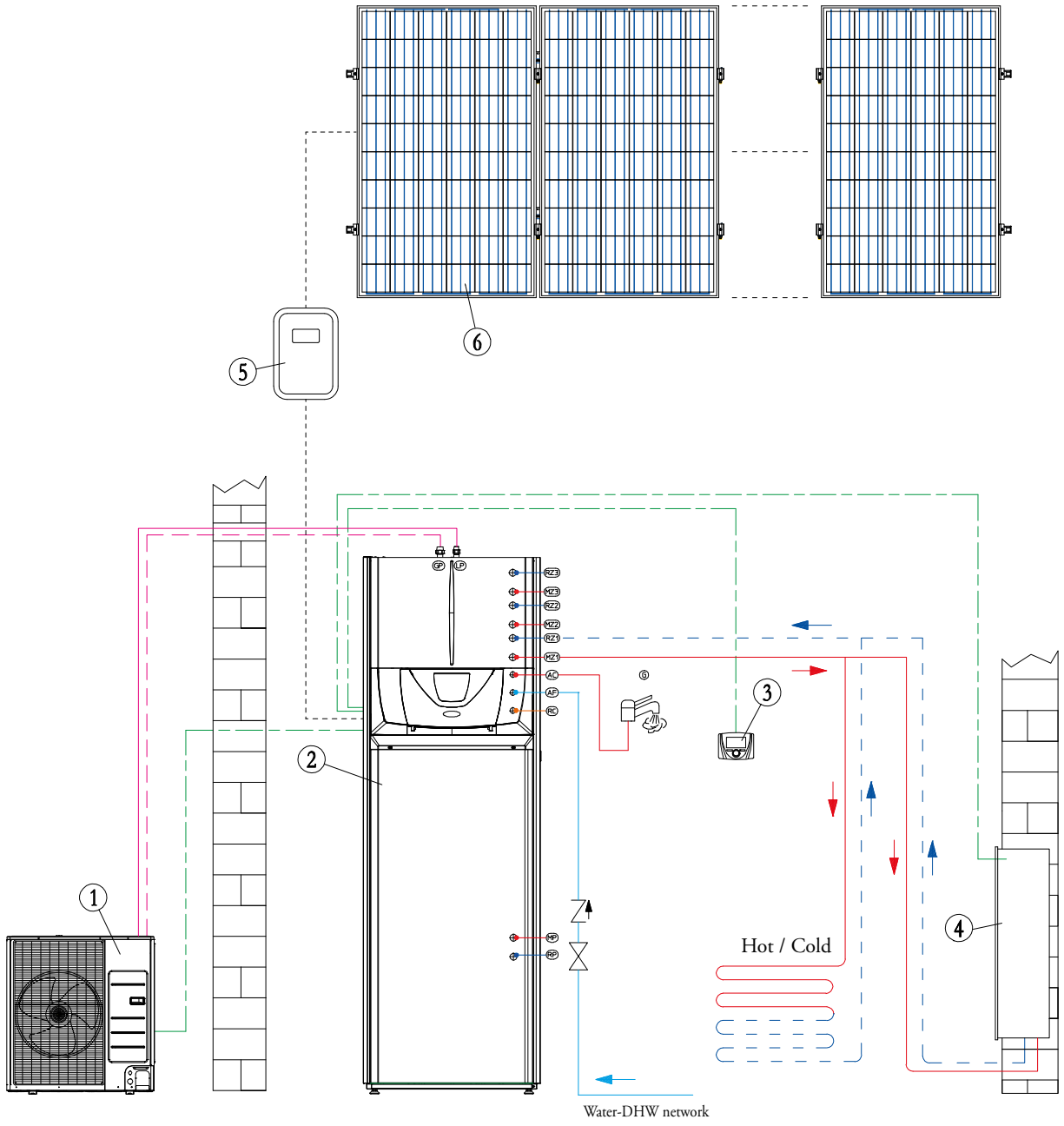
Description of winter functioning:
- **CH phase active**: The Remote zone panel placed in the room activates consent in the winter phase; in this diagram MAGIS HERCULES PRO is integrated through the 3 kW electric resistance(s) (optional), to be inserted in the hydronic module/ inertial storage tank.
The logic plans to activate the integrative resistance(s) 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(s) 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 (Domestic hot water) request.
- **Domestic hot water phase**: the MAGIS HERCULES PRO electronics constantly monitor the DHW temperature set (probe located in the storage tank), activating MAGIS HERCULES PRO.
The logic plans to activate the integrative resistance(s) 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(s) 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 (Domestic hot water) request (e.g. with cooling request the heat pump activates and with "concurrent" DHW request the DHW resistance activates).
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.
N.B.: In case of production from photovoltaic (contact closure "S 39"), the DHW (Domestic hot water) storage tank is heated to a maximum storage temperature exclusively by the heat pump. In case of simultaneous DHW (Domestic hot water) and system request, the system will decide which service to satisfy, in order to ensure the best comfort.

44-44.1 Diagram with MAGIS HERCULES PRO with 3 zones (1 direct and two mixed, Hot/Cold) + DWH solar thermal system

Description of winter functioning:
- **Central heating mode active**: 1 or more request contacts activates consent in the winter phase; in this diagram MAGIS HERCULES PRO is integrated through the 3 kW electric resistance(s) (optional), to be inserted in the hydronic module/ inertial storage tank.
The logic plans to activate the integrative resistance(s) 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(s) 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 (Domestic hot water) request (e.g. with cooling request the heat pump activates and with "concurrent" DHW request the DHW resistance activates).
- **Domestic hot water phase**: the MAGIS HERCULES PRO electronics constantly monitor the DHW temperature set (probe located in the storage tank), activating MAGIS HERCULES PRO.
The logic plans to activate the integrative resistance(s) 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(s) 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 (Domestic hot water) request.
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.

N.B.: Any solar system must be managed by a solar control unit found in the solar thermal coupling kit (optional).

43 HYDRAULIC DIAGRAM: MAGIS HERCULES PRO WITH 1 DIRECT ZONE (HOT / COLD WITH DEHUMIDIFICATION) + PHOTOVOLTAIC

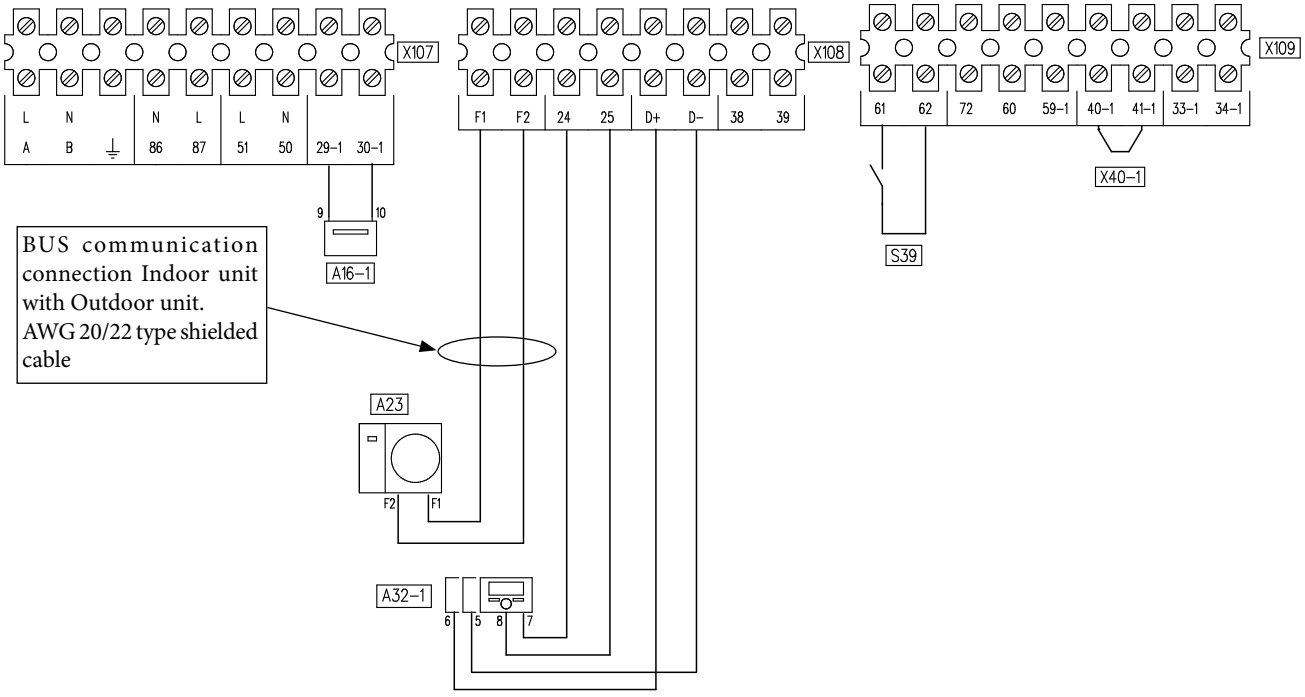


KEY:
1 - Outdoor unit (inclusive of external probe)
2 - Indoor unit
3 - Zone remote panel
4 - Recessed dehumidifiers
5 - Photovoltaic inverter (with production outlet contact)
6 - Photovoltaic Panels

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

43.1 WIRING DIAGRAM: MAGIS HERCULES PRO WITH 1 DIRECT ZONE (HOT / COLD WITH DEHUMIDIFICATION) + PHOTOVOLTAIC

DISPLAY CONTROL PANEL TERMINAL BLOCK



KEY:

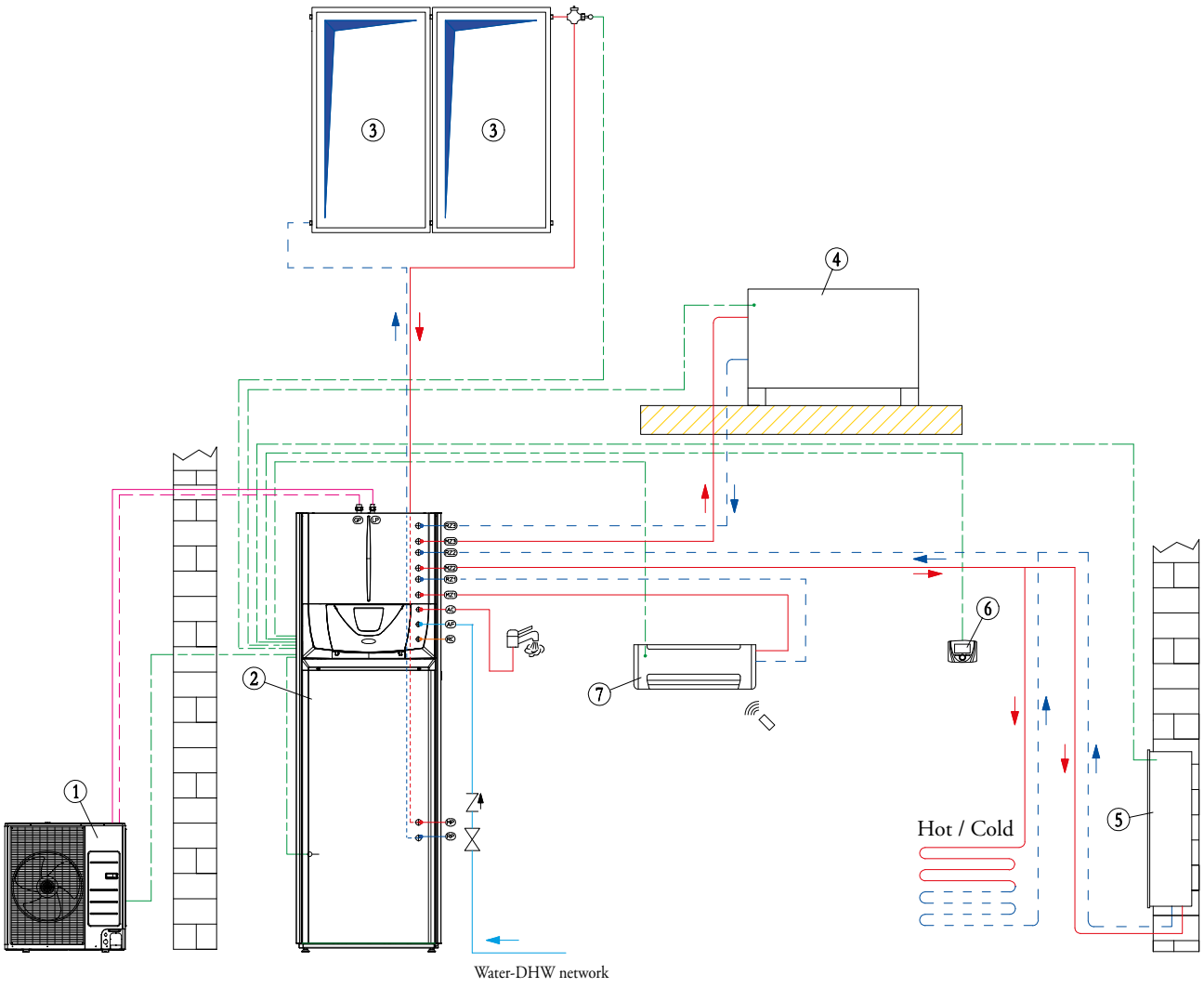
A23	- Outdoor unit
A32-1	- Zone 1 remote panel
A16-1	- Dehumidifier zone 1
F1/F2	- AUDAX PRO V2 communication bus
S39	- Photovoltaic inlet

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

It is possible to provide (up to two) electrical central heating integration resistances.
For the electrical connection, see page 17 or the relative instruction sheet.

It is possible to provide two additional integration resistances inside the DHW (Domestic hot water) storage tank in addition to the standard one.
For the electrical connection, see page 19 or the relative instruction sheet.

44 HYDRAULIC DIAGRAM: MAGIS HERCULES PRO WITH 3 ZONES (1 DIRECT AND 2 MIXED) + SOLAR THERMAL SYSTEMS



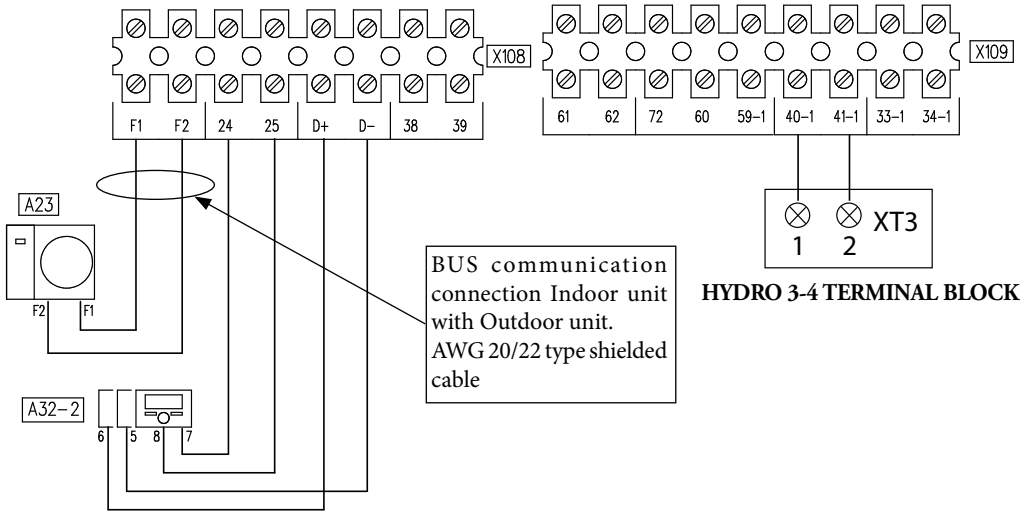
KEY:

1 - Outdoor unit (inclusive of external probe)
2 - Indoor unit
3 - Flat solar collectors
4 - HYDRO FS fan coils
5 - Recessed dehumidifiers
6 - Zone remote panel
7 - HYDRO 3-4 fan coils

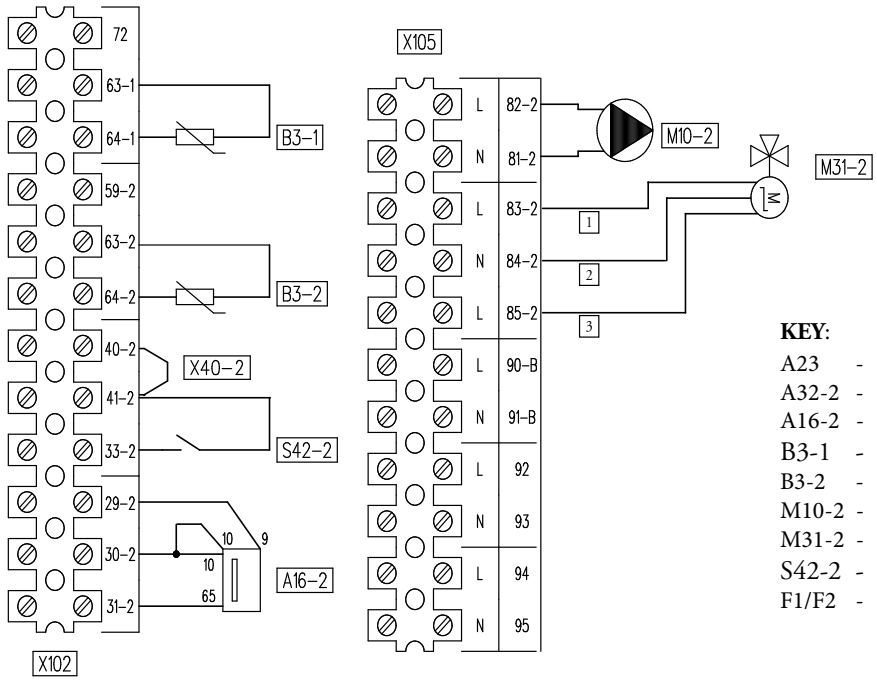
NOTE: this diagram is an example. It is also required to convey the heat pump's condensate drain.

44.1 WIRING DIAGRAM: MAGIS HERCULES PRO WITH 3 ZONES (1 DIRECT AND 2 MIXED) + SOLAR THERMAL SYSTEMS

DISPLAY CONTROL PANEL TERMINAL BLOCK



MAIN PANEL TERMINAL BLOCK (INTERMEDIATE PART)



KEY:

A23	-	Outdoor unit
A32-2	-	Zone 2 remote panel
A16-2	-	Dehumidifier zone 2
B3-1	-	Zone 1 flow probe
B3-2	-	Zone 2 mixed flow probe
M10-2	-	Zone 2 circulator pump
M31-2	-	Zone 2 mixing valve
S42-2	-	Zone 2 dehumidifier alarm
F1/F2	-	AUDAX PRO V2 communication bus

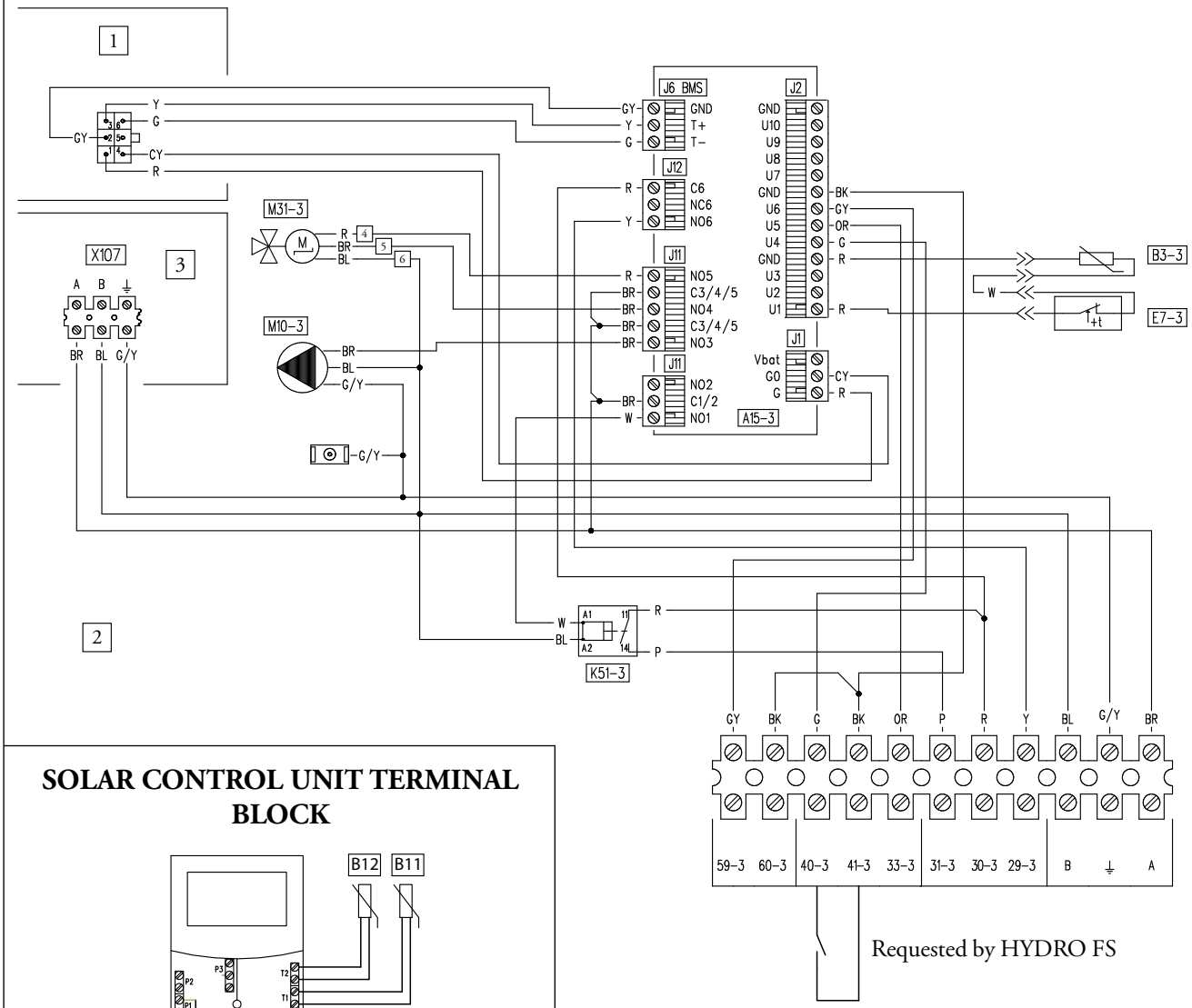
NOTE: please note that, in a setting without room thermostats, in order to meet the requirements coming from Zone 2 remote panel, it is necessary to keep the jumper [X40-2] on clamps 40-2 and 41-2.

It is possible to provide (up to two) electrical central heating integration resistances.
For the electrical connection, see page 17 or the relative instruction sheet.

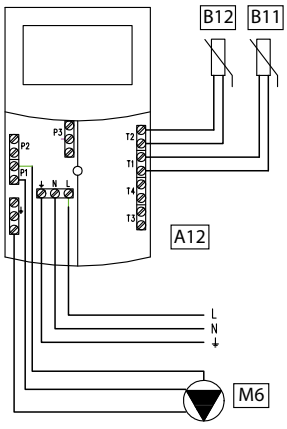
It is possible to provide two additional integration resistances inside the DHW (Domestic hot water) storage tank in addition to the standard one.
For the electrical connection, see page 19 or the relative instruction sheet.

44.2 WIRING DIAGRAM: MAGIS HERCULES PRO WITH 3 ZONES (1 DIRECT AND 2 MIXED) + SOLAR THERMAL SYSTEMS

SECONDARY PANEL TERMINAL BLOCK (LOWER PART)



SOLAR CONTROL UNIT TERMINAL BLOCK



KEY:
A12 - Solar control unit
B11 - Solar collector probe (PT1000)
B12 - Storage tank probe (NTC)
M6 - Solar pump

KEY:
B3-3 - Zone 3 flow probe
E7-3 - Zone 3 Safety thermostat (low temperature)
K51-3 - Zone 3 air conditioning control relay
M10-3 - Zone 3 circulator pump
M31-3 - Zone 3 mixing valve

1 - Main panel
2 - Optional kit panel
3 - Display control panel

MAGIS HERCULES PRO

45 OPTIONAL FOR MAGIS HERCULES PRO

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 condensing unit is installed under unfavourable conditions (device class II* or VI or VII)	3.015266
Room hygrostat kit - operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device	3.023302
DOMINUS Interface board kit - for remote control via App	3.026273
SPECIFIC OPTIONALS FOR MAGIS HERCULES PRO MODELS 4-6-9	Code
Additional mixed zone 2 kit - including the low consumption circulator pump and mixing valve. It can be installed inside the indoor unit casing	3.030855
Additional mixed zone 3 kit - including the low consumption circulator pump and mixing valve, expansion.It can be installed inside the indoor unit casing	3.030856
Gas connection kit for circuit R32 - to allow easy connection of the cooling circuit	3.031505
SPECIFIC OPTIONALS FOR MAGIS HERCULES PRO MODELS 12-14-16	Code
Additional mixed zone 2 kit - including the low consumption circulator pump and mixing valve. It can be installed inside the indoor unit casing	3.030943
Additional mixed zone 3 kit - including the low consumption circulator pump and mixing valve, expansion.It can be installed inside the indoor unit casing	3.030944
Gas connection kit for circuit R410A - to allow easy connection of the cooling circuit	3.031506
OTHER OPTIONALS FOR ALL MODELS	Code
Three-way deviator valve kit - used as hot/cold system deviator	3.020632
3 kW thermal system integrative electric resistance kit - to be inserted inside the appliance, 230 Vac power supply, with the possibility of installing 2 kits	3.030899
2.3 kW DHW (Domestic hot water) integrative electric resistance kit - to be inserted inside the appliance, 230 Vac power supply, with the possibility of installing 2 kits	3.030862
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147

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

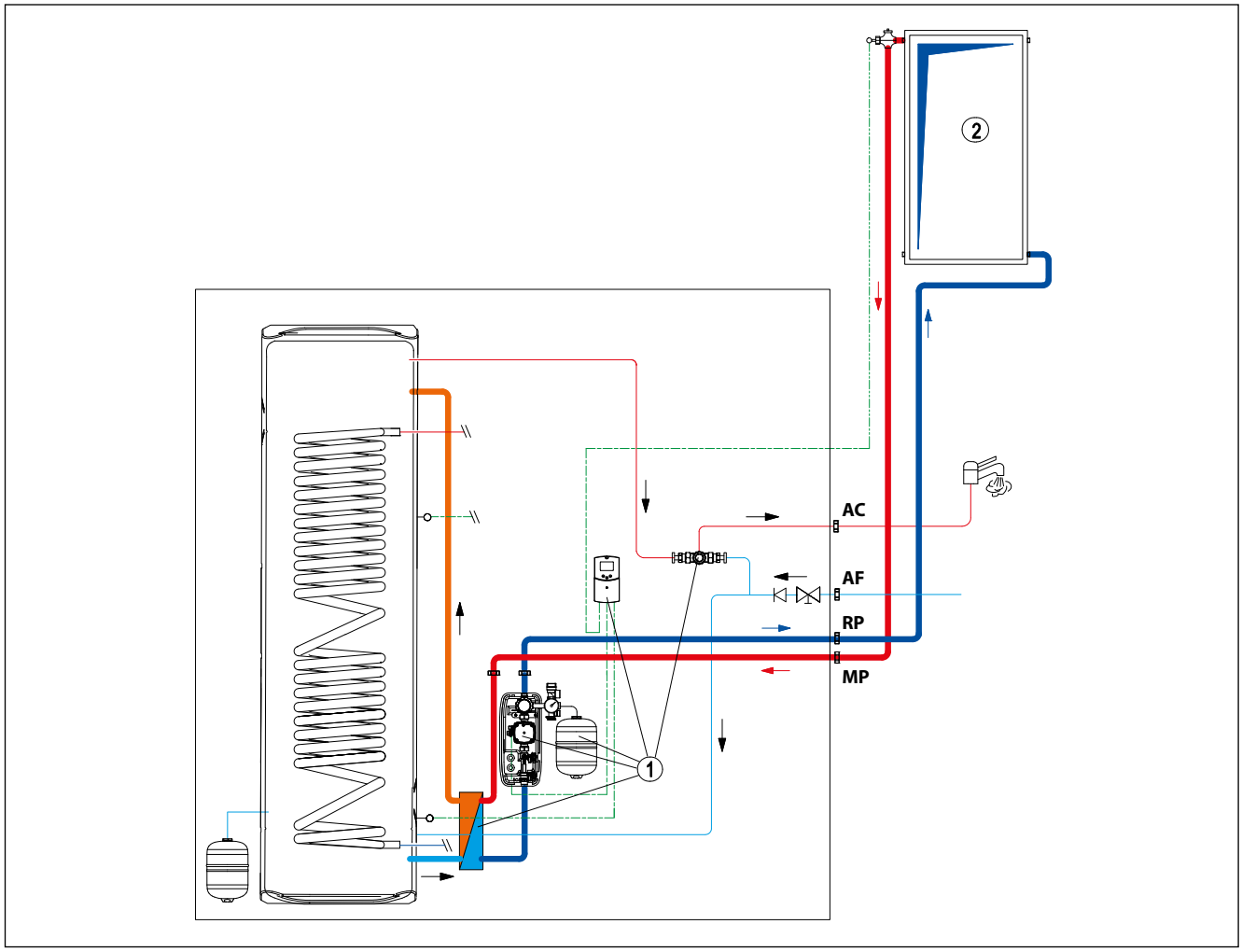
OTHER OPTIONALS FOR ALL MODELS	Code
Safety marker thermostat kit - for direct zone	3.019229
Condensate antifreeze heating cable kit - for outdoor condensing unit 4-6 kW	3.027385
Wall installation brackets kit for outdoor condensing unit	3.022154
Double electronic anode kit - protects the storage tank from eddy currents	3.025003
Solar thermal coupling kit - consisting of a plate heat exchanger, single low consumption solar circulation kit, solar control unit, connection pipes, shut-off valves, 18 litre solar expansion vessel, thermostating mixing valve, temperature probes (for storage tank and solar collector).	3.030857
Polyphosphate dispenser kit	3.030859
Recirculation kit with circulator - the kit is completely positioned in the casing of the indoor unit	3.030858
1" shut-off valve kit - facilitates maintenance	3.030860
Shut-off valve kit with 1" filter - facilitates maintenance	3.030861
HYDRO 3 range - Wall-hung 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

DECLARATION OF CONFORMITY OF THE PRODUCT

To download the updated declaration of conformity of the product, please refer to the IMMERGAS website:
www.immergas.com

A) SOLAR THERMAL APPENDIX

46 SOLAR THERMAL SYSTEM COUPLING KIT (CODE 3.030857)



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 circulator pump and relative support bracket;
- 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);
- Thermostatic mixing valve;
- Hydraulic fittings to complete the installation.

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:

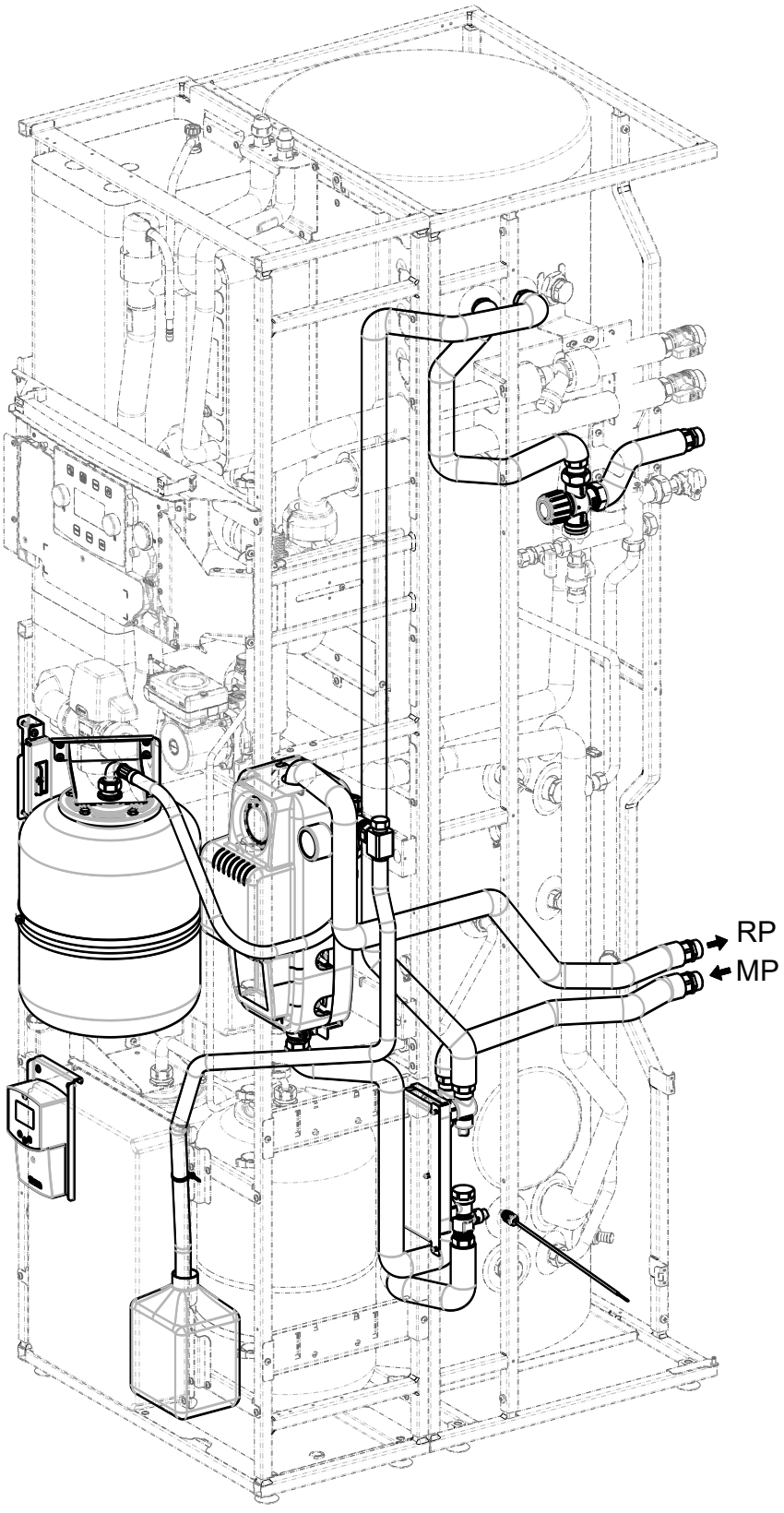
The kit integrates a plate heat exchanger for exchanging the heat between the solar collector connected by forced circulation on the primary side and the domestic hot water on the secondary side which will be heated by natural circulation.

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 sent partly already assembled and wired, ready to be fixed inside the MAGIS HERCULES PRO.

The kit also contains the drain fitting, the pipe and can for glycol collection (conveying the drain of the solar safety valve).

46.1 ASSEMBLY OF SOLAR THERMAL SYSTEM COUPLING KIT



46.2 OPTIONAL FOR COMPLETING THE SOLAR SYSTEMS

Solar panels	Code
CP4 XL flat-plane manifold characterised by 4 connections with a useful surface of 2.31 m^2	3.022664
CP4 M flat-plane manifold characterised by 4 connections with a useful surface of 1.84 m^2	3.022876
Mount frames	Code
Mount frame kit 1 CP4 XL/M Flat-plane Manifold on vertical tiles	3.022670
Mount frame kit 2 CP4 XL/M Flat-plane manifold on vertical tiles	3.022671
Mount frame kit 1 CP4 XL/M Flat-plane Manifold on horizontal tiles	3.022749
Frame connection kit for CP4 XL/M Flat-Plane Manifold	3.022681
Hydraulic connections	Code
Solar thermal system coupling kit for SUPER TRIO	3.030482
Connection kit 1 CP4 XL/M Flat-plane Manifold	3.022797
Connection kit Additional CP4 XL/M Flat-plane manifold	3.019085
Extensible connection kit with elbows for additional short side horizontal CP4 XL/M Flat-plane Manifold	3.025693
Connection kit for additional long side horizontal CP4 XL/M Flat-plane Manifold	3.026073
Vent and fitting kit for Ø 22 mm pipe for 1 CP4 XL/M horizontal Flat-plane Manifold to be used in applications with horizontal CP4 XL/M Flat-plane manifold	3.022849
2 Lowered plugs kit for CP4 XL/M Flat-plane Manifold 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-Plane Collector	3.022922
45° free installation kit for 1 CP4 XL/M Flat-plane Manifold 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-Plane Manifold	3.022677
45° free installation kit for 1 CP4 XL/M Flat-plane Manifold 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 under the frame (N.B.: the mount frame is NOT necessary)	Code
Recessed kit for 1 vertical CP4 XL/M Flat-Plane Manifold	3.022213
Recessed frame extension kit for CP4 XL/M Flat-Plane Manifold in vertical	3.023028
Recessed kit for 1 vertical CP4 XL/M Flat-Plane Manifold in horizontal/vertical	3.025469
Recessed frame extension kit for CP4 XL/M Flat-Plane Manifold in horizontal/vertical	3.025477
Recessed systems with outflow above the frame (N.B.: the mount frame is NOT necessary)	Code
Recessed kit for 1 vertical CP4 XL Flat-Plane Manifold	3.027735
Recessed kit for 1 vertical CP4 M Flat-Plane Manifold	3.027768
Recessed frame extension kit for CP4 XL/M Flat-Plane Manifold in vertical	3.027736
Recessed kit for 1 vertical CP4 XL/M Flat-Plane Manifold in horizontal	3.027769
Recessed frame extension kit for CP4 XL/M Flat-Plane Manifold in horizontal	3.027849
Filling and installation accessories	Code
Glycol can for CP4 XL/M Flat-plane manifold 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

During the useful life of the products, performance is affected by external factors, e.g. the hardness of the DHW, atmospheric agents, deposits in the system and so on.
The declared data refer to new products that are correctly installed and used in observance of the Standards in force.
N.B.: correct periodic maintenance is highly recommended.

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

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To request further specific details, sector Professionals can also use the following e-mail address:
consulenza@immergas.com

Immergas S.p.A.
42041 Brescello (RE) - Italy
Tel. 0522.689011
Fax 0522.680617

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QUALITY SYSTEM

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