



MAGIS PRO ErP

Split single-phase inverter
reversible air-water heat
pumps with outdoor
condensing unit and hydronic
module



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MAGIS PRO ErP



Range of "split" inverter reversible air/water heat pumps, composed of an outdoor condensing unit and an indoor hydronic module; a single "pack" code identifies the complete system (hydronic module + condensing unit). There are 3 versions (MAGIS PRO 5 ErP, MAGIS PRO 8 ErP, MAGIS PRO 10 ErP), all with single-phase supply voltage. The water circuit is fully protected against freezing because installed inside the home (in this case there is no need to add antifreeze); it is, therefore, particularly suitable for cold climate areas.

The MAGIS PRO ErP versions are ideal for conditioning rooms in central heating mode (maximum flow temperature 55°C) in cooling mode, and can produce DHW coupled with a separate storage tank unit. Make the refrigerant connections between the hydronic module and the outdoor condensing unit.

At plant application level, the system can be combined to electric resistances/boiler; for the production of DHW, MAGIS PRO ErP is equipped with standard integrated motorised 3-way valve (connection to a separate storage tank). The System manager is available as optional, to be used mainly when having to combine an integrative boiler: it is capable of identifying the most economical energy source at a given time and therefore choose the right appliance to activate.

The hydronic module of MAGIS PRO ErP is approved for outdoor use in a partially protected area and can also be installed inside the SOLAR CONTAINER or the DOMUS CONTAINER, in TRIP type applications (SYSTEM PRO, in three configurations with 5, 8 or 10 kW).

MAGIS PRO ErP 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.

MAGIS PRO ErP

1 MAGIS PRO 5 - 8 - 10 ErP FEATURES (MONO-PHASE)

"Split" inverter reversible air/water heat pumps, composed of an outdoor condensing unit and an indoor hydronic module; a single code identifies the complete system.

Main components:

- Outdoor condensing unit (called AUDAX PRO) which mainly includes rotary compressor, inverter electronics, throttle valve, 4-way valve for cycle inversion, finned exchange coil with outdoor air (with single fan). The cooling circuit is already preloaded in the condensing unit (refrigerant R410A); it is equipped with shut-off valves for the R410A circuit;
- Wall-mounted hydronic module, shape and appearance similar to a boiler, which includes the hydraulic circuit components for connection to the system, as well as the management electronics and of communication with the condensing unit; in particular, it is composed of a 48 plate R410A/water heat exchanger, 12 litre system expansion vessel, water manifold, flow meter, hydraulic unit with low power 7 m c.a. pump, 3-way motorised diverter valve (for coupling with separate storage tank), transformer for managing internal communication board with outdoor condensing unit, management electronics;
- Hydraulically the module is set-up for connection to a heating/cooling zone and for connection to the DHW storage tank; there are also the R410A connections for the condensing unit;
- Within the hydronic module you can place the integrative electric resistance kit for 3 kW system (optional, directly controlled by the electronics of the hydraulic module), to supplement the operation in cases where a gas boiler is not combined;
- 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);
- Max. flow water temperature 55 °C (for central heating systems with low and medium temperatures);
- The electronic of MAGIS PRO ErP is arranged to directly manage 2 zones, one direct and one mixed (hot and cold); in this case, MAGIS PRO ErP can work with one or two CAR^{V2} (or CRONO 7) to control the room temperature of the 2 zones. Two humidistats or two temperature and humidity sensors can be connected to control humidity;
- Possibility of setting 2 climatic curves for hot and 2 climatic curves for cold (for the 2 zones), on the electronics of the hydronic module;
- The activation consent of the DHW and system electric resistances (optional) comes from the MAGIS PRO ErP electronics (power supply to be taken separately); to control the dehumidifiers, insert a 2 relay board kit (optional) inside the hydronic module, for the respective dehumidifiers of the 2 zones;
- Through the CAR^{V2}, the MAGIS PRO ErP electronics manage the anti-legionella function, which can only be activated if the system is provided with an auxiliary generator (resistance);
- Input to force activation with photovoltaic system that produces electricity;
- Possibility of connection to the System manager (optional), to be used mainly when wanting to combine an integrative boiler;

- System minimum water content for all 7 litre/kW models, for any type of system (minimum water content is mainly important to provide proper execution of defrosting cycles).

is available in the model:

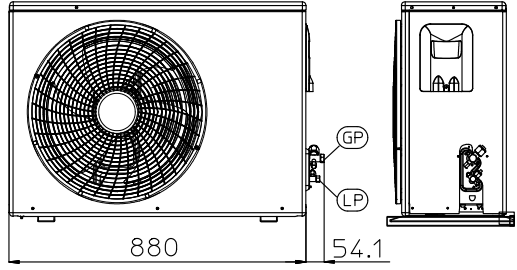
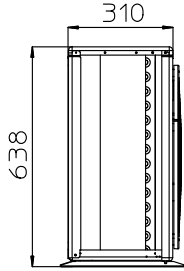
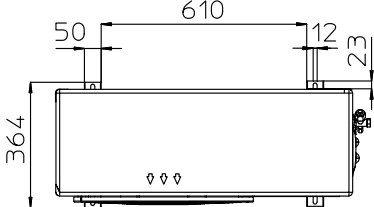
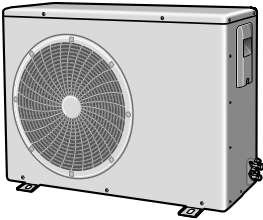
- **MAGIS PRO 5 ErP**
- **MAGIS PRO 8 ErP**
- **MAGIS PRO 10 ErP**

code 3.025694
code 3.025695
code 3.025696

EC Declaration Of Conformity.

2 AUDAX PRO DIMENSIONS AND CONNECTIONS (CONDENSING UNIT)

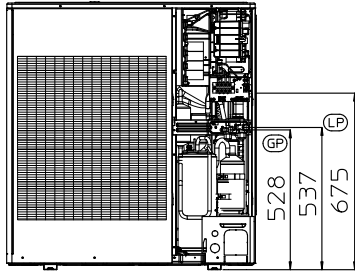
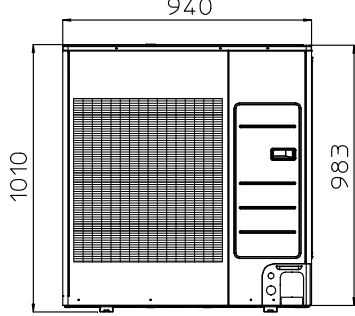
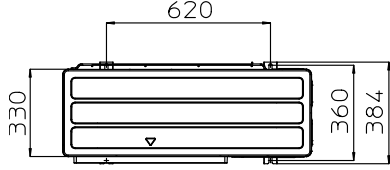
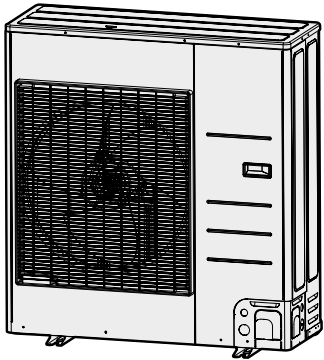
AUDAX PRO 5



Height = 638 mm	Width = 880 mm	Depth = 364 mm	Condensate drain = Ø 20 mm
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	R410A	
Model	LP (Liquid refrigerant)	GP (Gaseous refrigerant)
AUDAX PRO 5	1/4" (6.35 mm)	5/8" (15.88 mm)

AUDAX PRO 8 / 10



Height = 1010 mm	Width = 940 mm	Depth = 384 mm	Condensate drain = Ø 20 mm
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	R410A	
Model	LP (Liquid refrigerant)	GP (Gaseous refrigerant)
AUDAX PRO 8/10	3/8" (9.52 mm)	5/8" (15.88 mm)

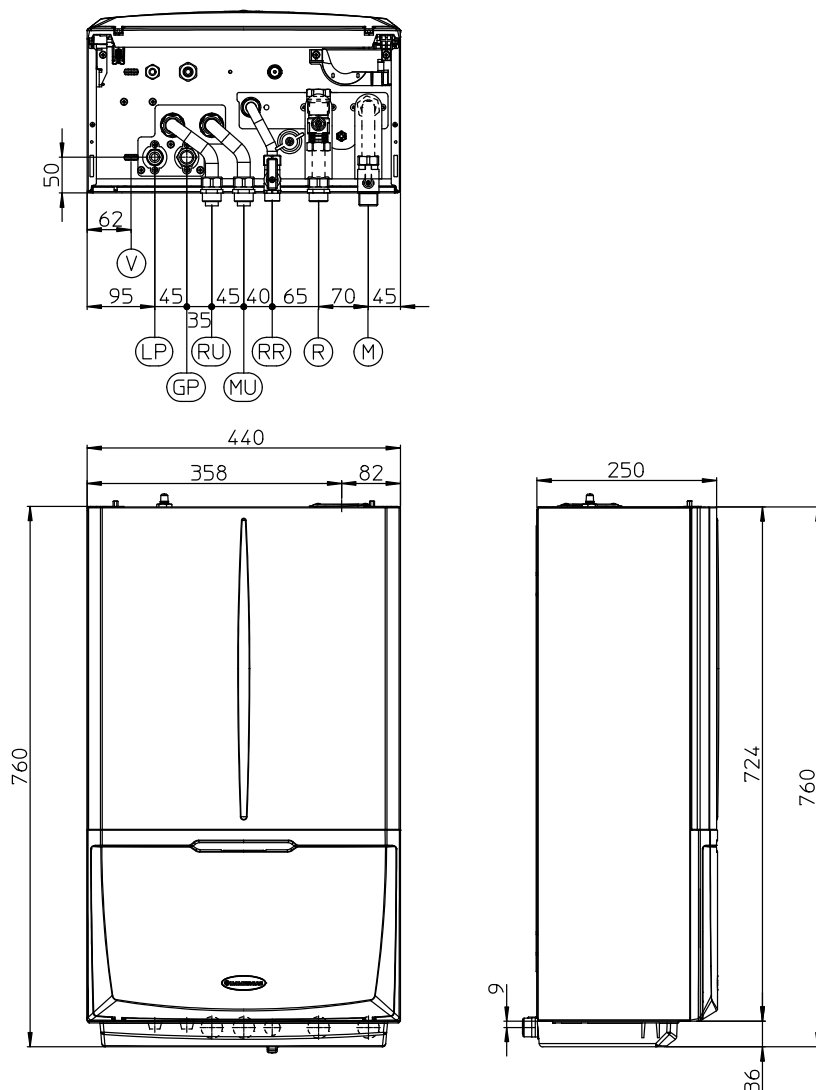
MAGIS PRO ErP

3 MAGIS PRO ErP DIMENSIONS AND CONNECTIONS (HYDRONIC MODULE)

Height = 760 mm

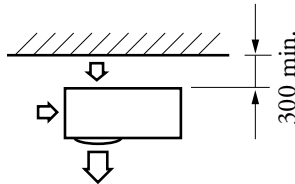
Width = 440 mm

Depth = 250 mm

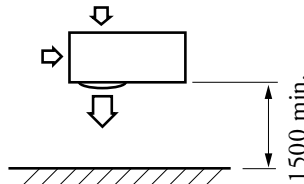


MAGIS PRO ErP							
Flow System M 3/4"	Return system R 3/4"	Flow Storage tank unit MU 3/4"	Return Storage tank unit RU 3/4"	Filling system RR 1/2"	R410A LP 3/8" (9.52 mm)	R410A GP 5/8" (15.88 mm)	Expansion vessel Litres 12 (real 11.7)

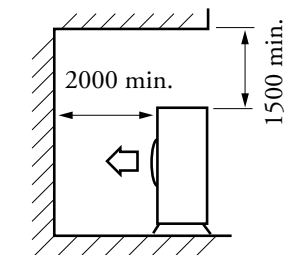
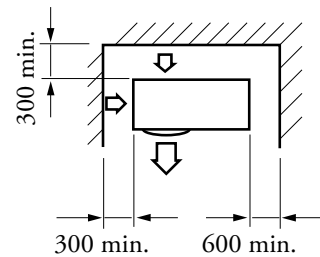
With the back side of the unit facing a wall



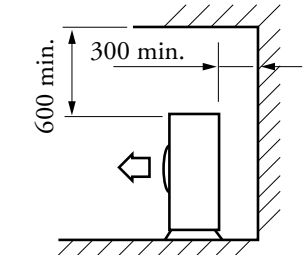
With the front side of the unit facing a wall



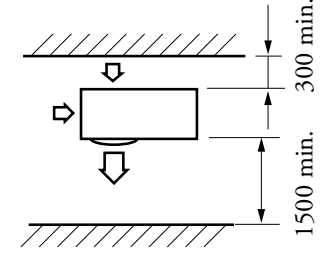
With three sides of the unit facing a wall



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.

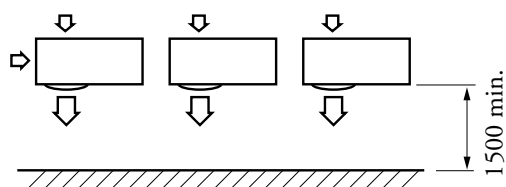
- The condensing unit must be installed outside the building only; the indoor unit (hydronic module) must be installed inside the building and/or in the frames prepared by Immergas, or outdoors in a partially protected place;
- It is recommended to avoid:
 - positioning in basement windows;
 - obstacles 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;
 - use 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 (not supplied).
- the unit must be installed in a position protected from snow falling from above. If this is not possible, you must at least prevent the snow from clogging the air/refrigerant exchanger (even by constructing a small protective roof for the unit, if necessary).

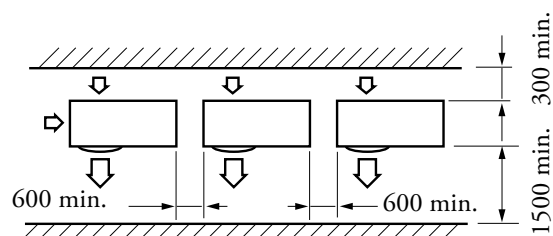
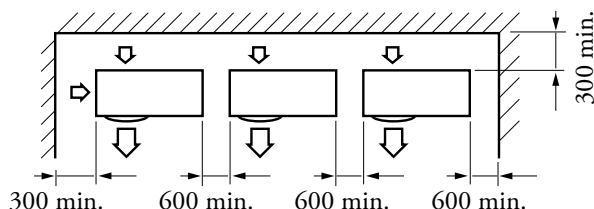
MAGIS PRO ErP

5 AUDAX PRO MINIMUM INSTALLATION DISTANCES (SEVERAL APPLIANCES)

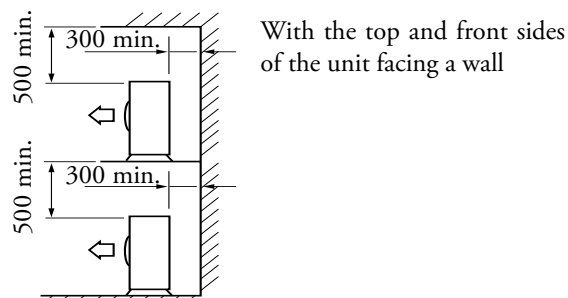
The front side of the unit facing a wall



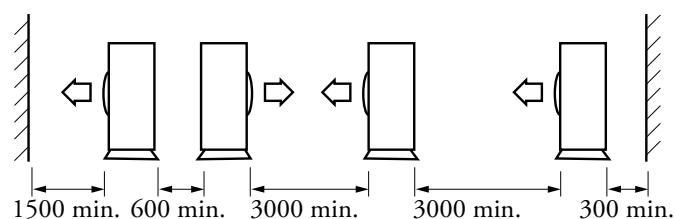
With three sides of the unit facing a wall



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



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



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

- 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).

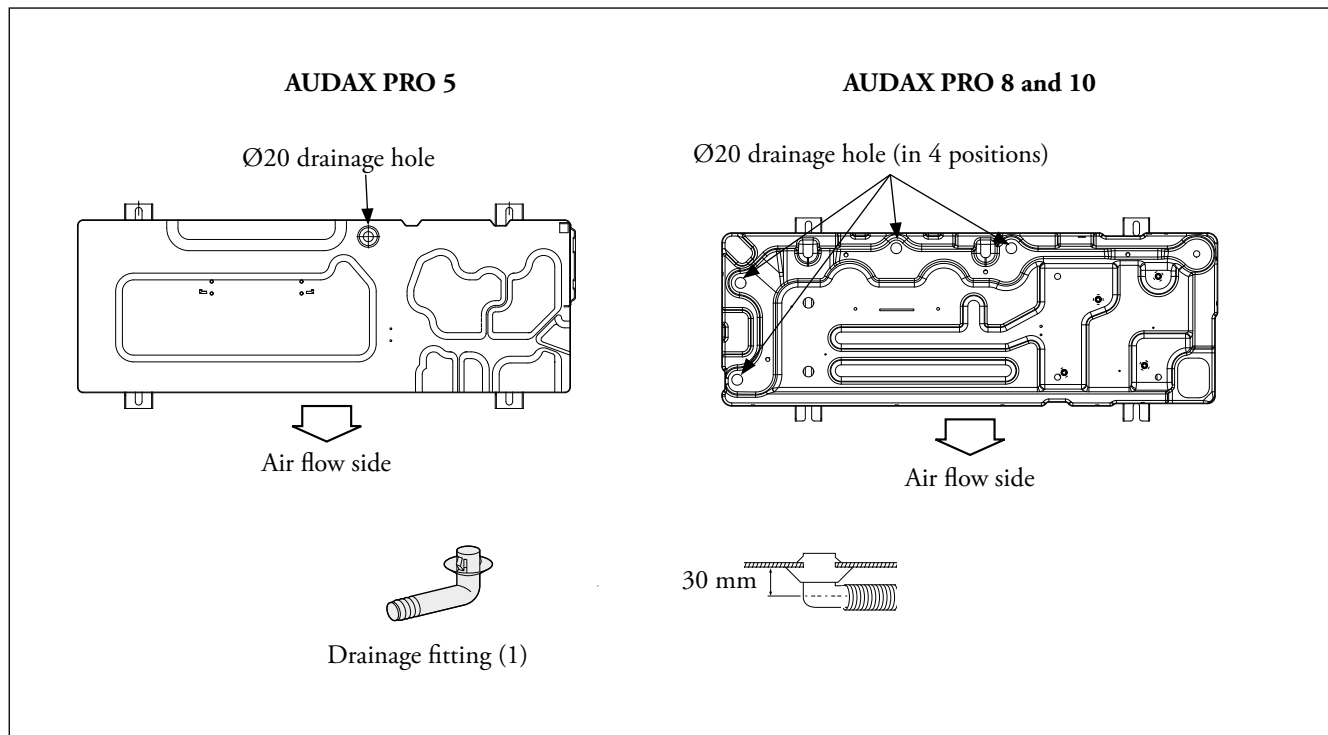
N.B.: The spaces shown must be left free to allow air to circulate and to ensure accessibility for repairs or maintenance on every side of the units. In fact, it must be possible to disassemble all the unit components under the utmost safety conditions (both for objects and for people).

6

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 (this refers to AUDAX PRO 8 and 10) and use the drain pipe (16 mm internal diameter) commercially available so that it conveys the water to the desired location. In the event of installation in very cold zones or zones subject to heavy snow where the condensate drain pipe can freeze, take the necessary precautions to keep the drainage holes or the condensate drain pipe free.

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

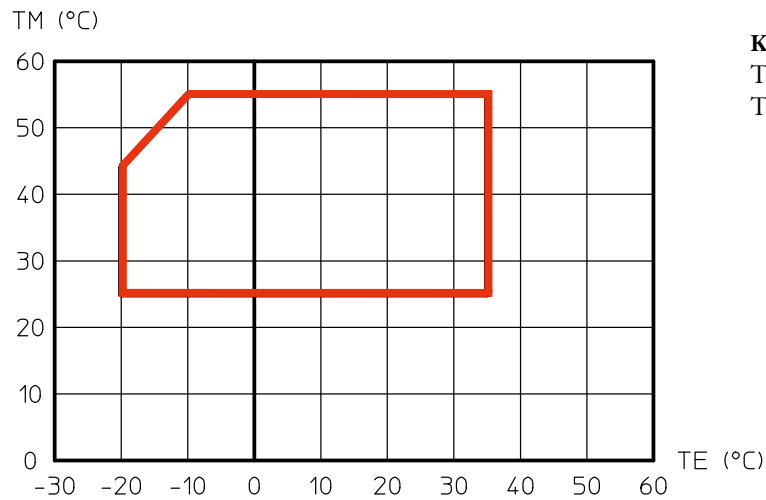


MAGIS PRO ErP

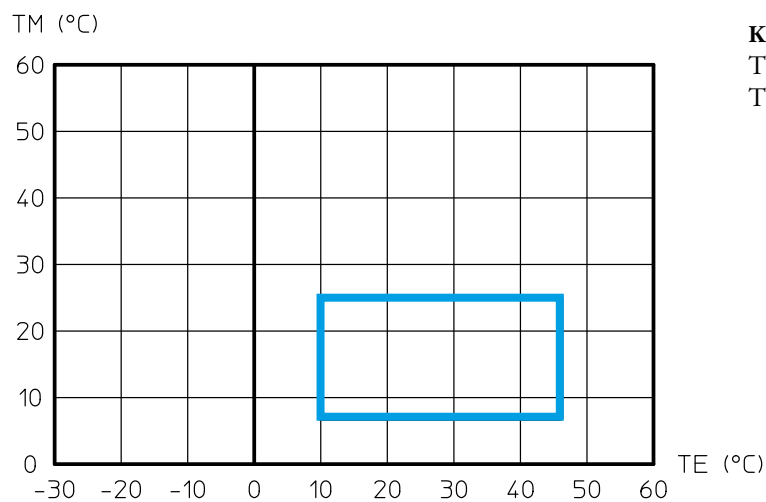
7

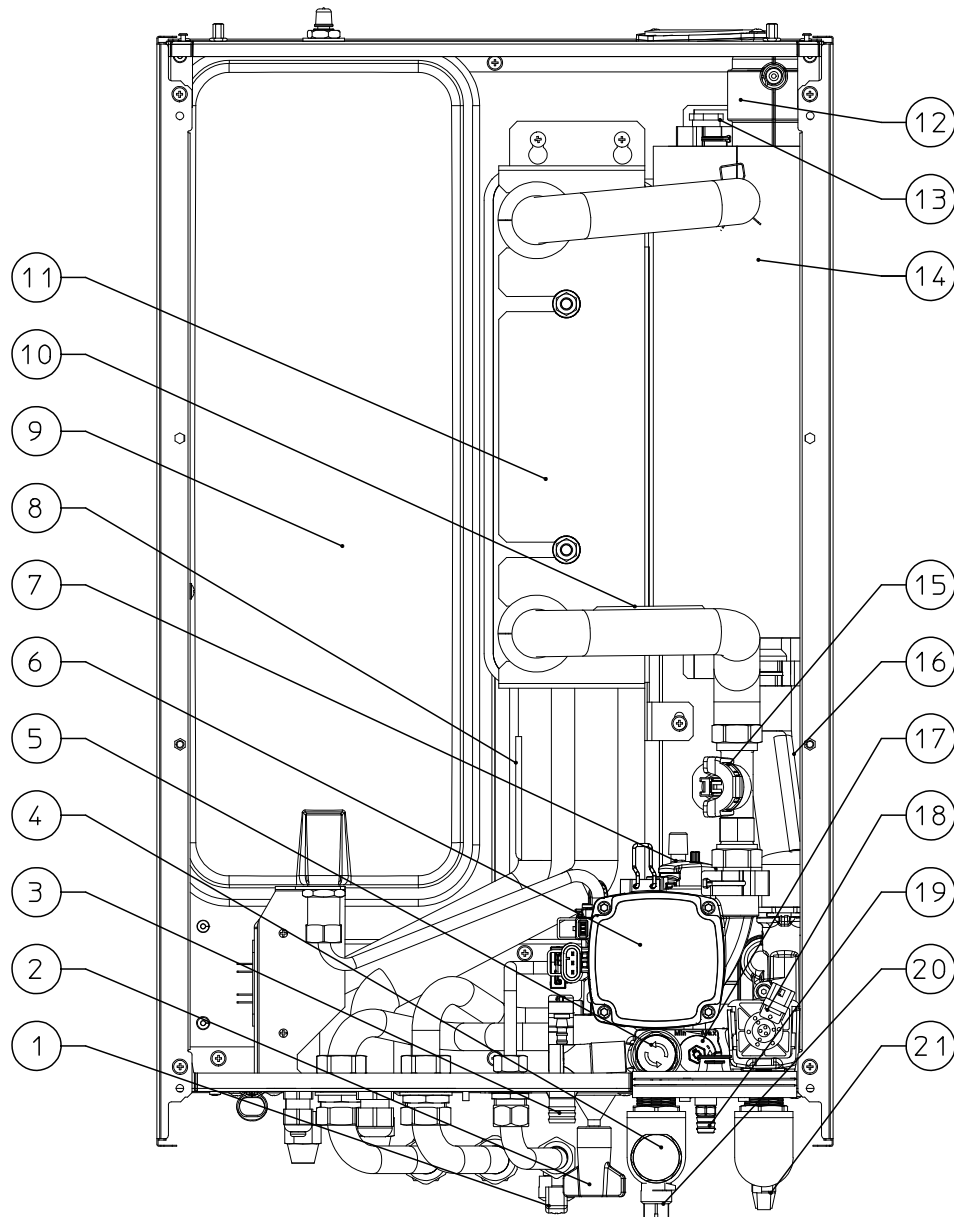
COOLING CIRCUIT FUNCTIONING LIMITS

Central heating



Cooling




KEY:

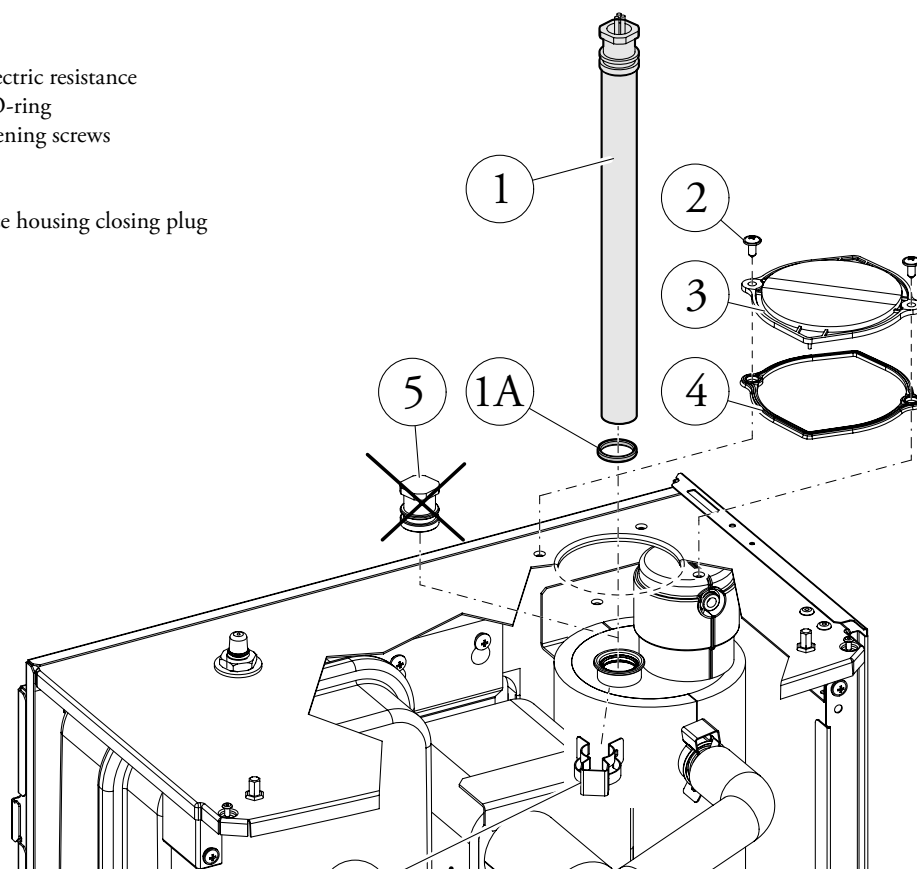
- | | |
|--------------------------------------|---|
| 1 - Domestic hot water inlet valve | 13 - Heating system integrated electrical resistance cap (optional) |
| 2 - System filling valve | 14 - Central heating manifold |
| 3 - 3-bar safety valve drain fitting | 15 - System flow meter |
| 4 - Inspectable filter | 16 - Return probe |
| 5 - 3 bar safety valve | 17 - By-pass |
| 6 - Hydronic unit circulator | 18 - Three-way valve (motorised) |
| 7 - Vent valve | 19 - System draining valve |
| 8 - Liquid phase detection probe | 20 - System cut-off tap |
| 9 - System expansion vessel | 21 - System cut-off tap |
| 10 - Flow probe | |
| 11 - Plate heat exchanger | |
| 12 - Vent valve | |

MAGIS PRO ErP

9 INTEGRATED RESISTANCE KIT FOR SYSTEMS FROM 3 kW MAGIS PRO (CODE 3.026300)

KEY:

- 1 - 3 kW Electric resistance
- 1A - Sealing O-ring
- 2 - Plug fastening screws
- 3 - Cap
- 4 - Gasket
- 5 - Resistance housing closing plug

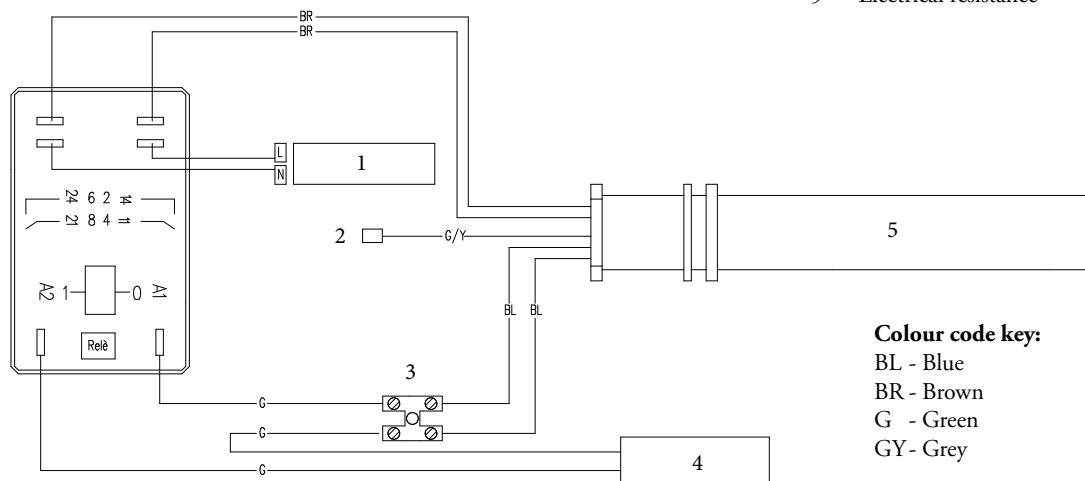


TECHNICAL DATA

Electric power supply	230V-50Hz single phase+earthing
Absorption	3 kW
Working temperature	55 °C
Maximum temperature	75°C

KEY:

- 1 - External power supply 230 Vac
- 2 - Earthing
- 3 - XA Terminal board inside the appliance
- 4 - Y3 connector on the appliance electronic board
- 5 - Electrical resistance

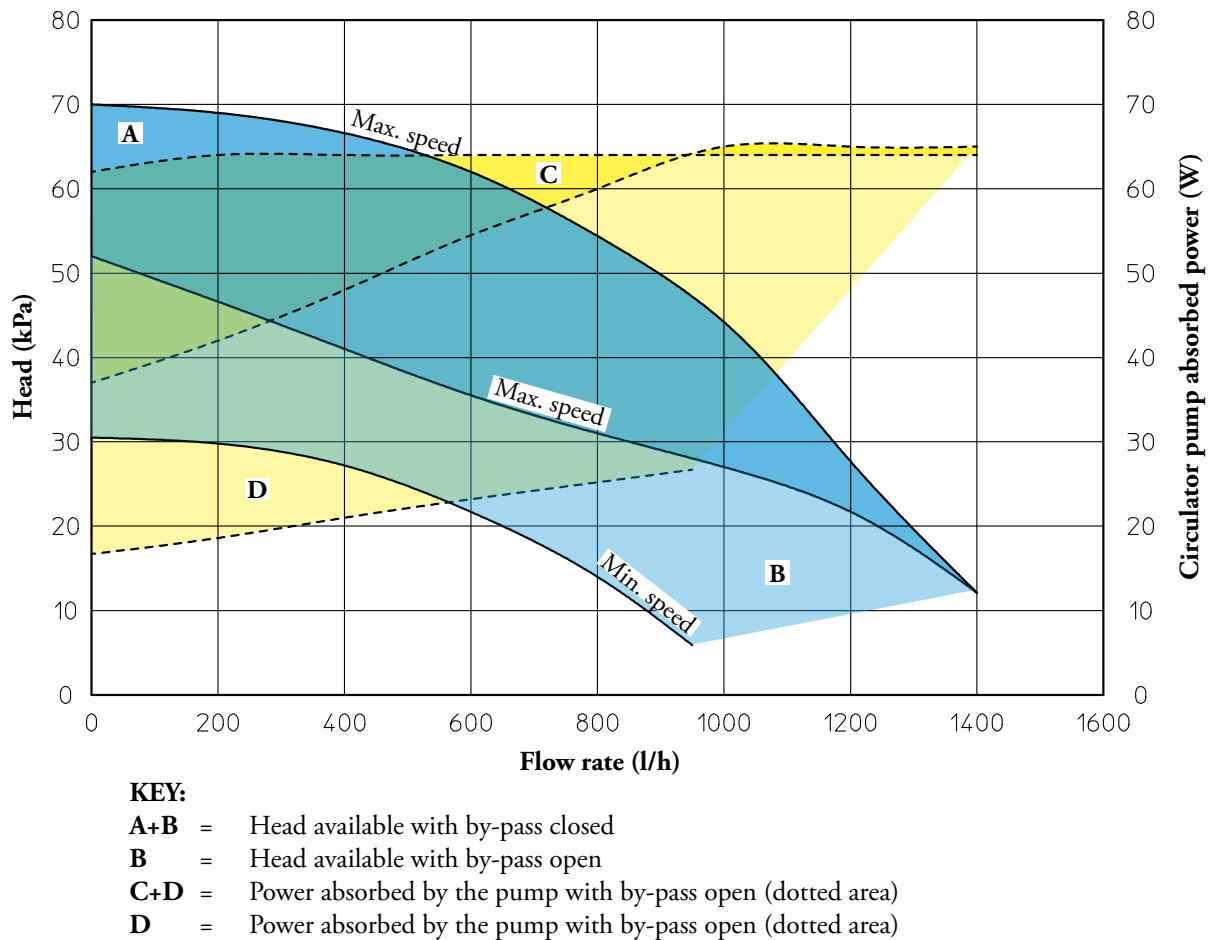


Colour code key:

- BL - Blue
- BR - Brown
- G - Green
- GY - Grey

10

GRAPH OF INDOOR UNIT PUMP FLOW RATE/HEAD



10.1

INDOOR UNIT PUMP SETTINGS AND CONFIGURATIONS

The hydronic modules are supplied with a low power consumption pump with variable speed control.

The pump speed is set via parameter "A04" (which can be set between 55% and 100%).

The minimum speed set via the "A03" parameter is used for special functions (e.g. pump anti-locking function).

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

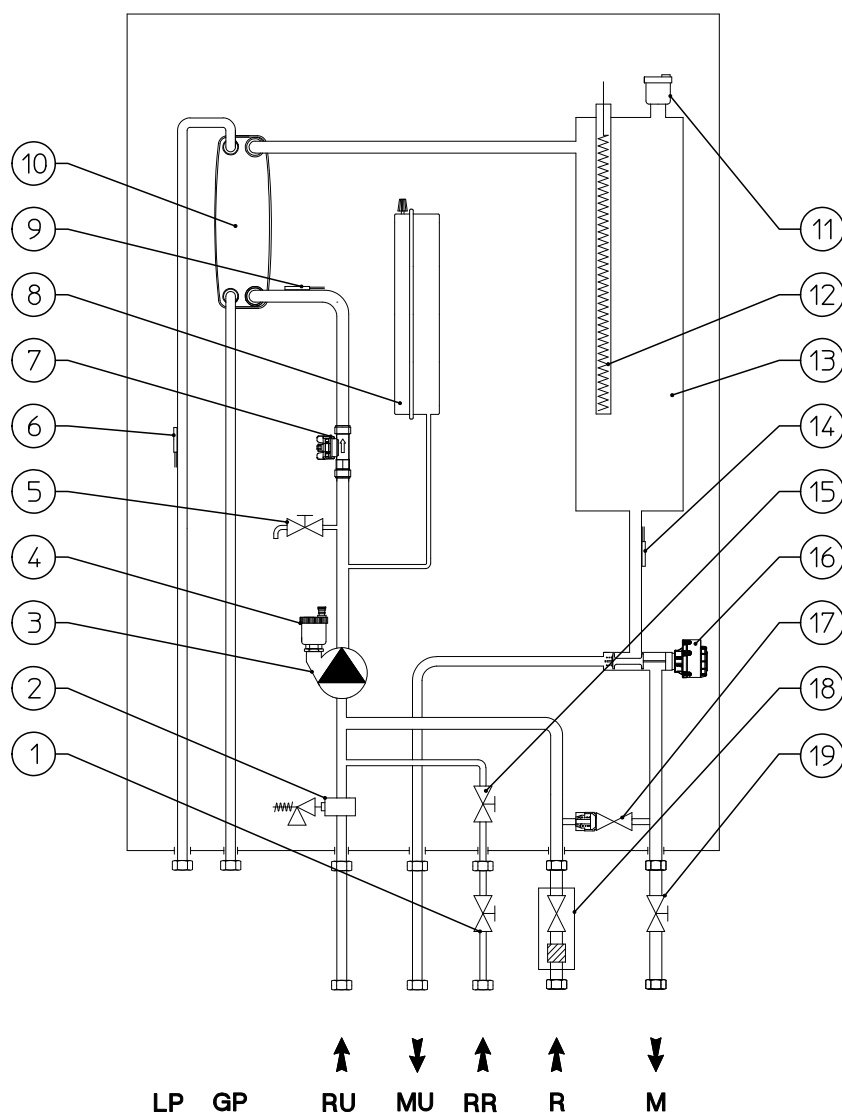
TECHNICAL NOTE: System minimum water content:

To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be: **7 l/kW** of the machine's power for any type of system. So attention must be paid to the systems divided over several zones, where the water content available to the machine changes continuously. This is why it may be necessary to provide a heating flywheel that guarantees normal operation with systems divided into zones (with variable water content in circulation). This minimum content also guarantees proper operation with fan coils used for cooling (a condition in which the flow temperature is very low and has significant heat load variations that vary the number of active fan coils). It is also important to check that the dehumidifier line has a minimum of **3 l/kW** of the machine (dehumidifier hydraulic circuit connection).

MAGIS PRO ErP

11

HYDRAULIC DIAGRAM MAGIS PRO ErP (INDOOR UNIT)



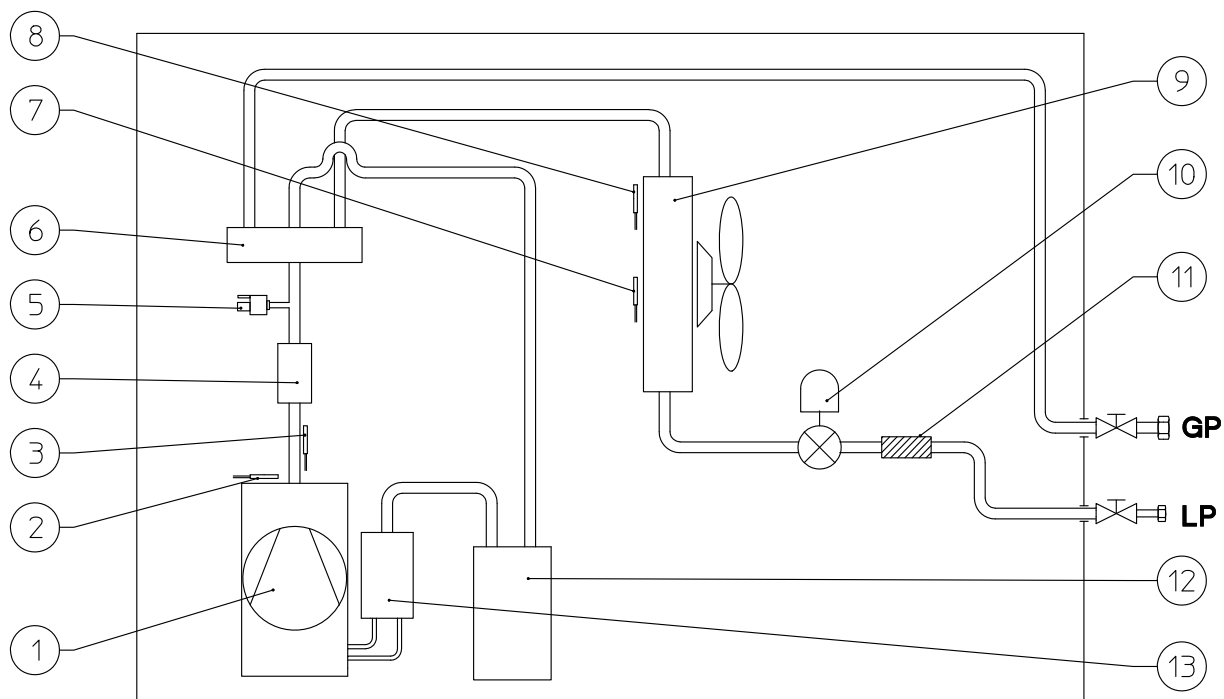
KEY:

- 1 - System cut-off tap
- 2 - 3 bar safety valve
- 3 - Hydronic unit circulator
- 4 - Vent valve
- 5 - System draining valve
- 6 - Liquid phase detection probe
- 7 - System flow meter
- 8 - System expansion vessel
- 9 - Return probe
- 10 - Plate heat exchanger
- 11 - Vent valve
- 12 - Central heating integrated electric resistance (optional)
- 13 - Central heating manifold

- 14 - Flow probe
- 15 - System filling cock
- 16 - Three-way valve (motorised)
- 17 - By-pass
- 18 - System with inspectable filter cut-off fitting
- 19 - System cut-off tap

- LP - Chiller line - liquid phase
- GP - Chiller line - gaseous phase
- RU - Storage tank unit return
- MU - Storage tank unit flow
- RR - System filling
- R - System return
- M - System flow

12 HYDRAULIC DIAGRAM AUDAX PRO (EXTERNAL CONDENSING UNIT)



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 - Filter
- 12 - Water receiver
- 13 - Water separator

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

MAGIS PRO ErP

13

ELECTRONIC MANAGEMENT FUNCTIONS MAGIS PRO ErP



The electronic of MAGIS PRO ErP is arranged to directly manage 2 zones (one direct and one mixed) for operation in both heating and cooling, without the need to provide the System manager (Stand alone). In this case, MAGIS PRO ErP can work with one or two CAR^{V2} (or CRONO 7) to control the room temperature of the 2 zones; 2 humidistats (code 3.023302) or 2 temperature and humidity sensors (code 3.021524) can be connected to control humidity.

With regard to the temperature and humidity sensor, only connect the humidity sensor part since the temperature is detected via the CAR^{V2}.

The relative humidity set is set on CAR^{V2} (parameter S RH %, adjustable from 20 to 90%, default 60%), or on the hydronic module display.

The temperature detected via CAR^{V2} is also used to calculate the dew point (if I do not use the CAR^{V2} I cannot calculate the dew point temperature).

N.B.: This type of application can be realised in a system without boiler; if there is a boiler, provide the System manager.

Without System manager you are still working with variable temperature, using the external probe on the condensing unit. Possibility of setting 2 hot curves and 2 cold curves (for the 2 zones), on the electronics of the hydronic module.

The MAGIS PRO ErP electronics allow activating the electric resistances for both the heating system and for the DHW (both optional - 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 (settable) I can immediately activate the resistance.

To control the dehumidifiers, fit the hydronic module with a 2 relay board kit (optional), for the respective dehumidifiers of the 2 zones; the kit allows activating the dehumidifiers via a potential free contact.

There is an input for system activation in correspondence of electricity production by the photovoltaic system (if installed). This input (when active) forces the heating of a storage tank for the production of DHW at maximum temperature (if the storage tank is present), to then meet any system demands.

It includes a 230 V output to control summer/winter diverter valves in heating systems with fan coil cold/radiant panels; switching occurs with the change of mode (summer/winter) from the control panel or from CAR^{V2}.

Through the CAR^{V2} the MAGIS PRO ErP electronics also manages the anti-legionella function, which can only be activated if the system is provided with an auxiliary generator (electric resistance).

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

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

13.1

USER PROGRAMMING MENU

DATA MENU		
Id Parameter	Description	Range
D 03	Storage tank unit temperature	- 10 ÷ 130 °C
D 04	Value calculated for system setting	5 ÷ 55 °C
D 05	Value set for DHW setting	10 ÷ 65 °C
D 06	Outdoor temperature (if the condensing unit external probe is connected or if the optional external probe is available)	- 10 ÷ 130 °C
D 08	System return water temperature	0 ÷ 99 °C
D 09	List of the last five anomalies (to scroll the list press "OK")	-
D 10	Anomaly list reset. Once "D 10" is displayed, press "OK"	-
D 14	Circulator flow rate	0 ÷ 9999 (x 100 l/h)
D 20	System flow temperature	- 10 ÷ 130 °C
D 22	DHW 3-way (DHW = domestic hot water, CH = central heating)	DHW - CH
D 24	Chiller circuit liquid temperature	- 10 ÷ 130 °C
D 25	Zone 2 flow temperature (if configured)	- 10 ÷ 130 °C
D 26	Probe for primary solar storage (puffer)	- 10 ÷ 130 °C
D 28	System circulator instantaneous speed	0 ÷ 100 %
D 31	DHW integration function	OFF - ON
D 32	System integration function	OFF - ON
D 35	Solar system inlet	OFF - ON
D 41	Zone 1 relative humidity	0 ÷ 99 %
D 42	Zone 2 relative humidity	0 ÷ 99 %
D 43	Zone 1 humidistat	OFF - ON
D 44	Zone 2 humidistat	OFF - ON
D 45	Dehumidifier zone 1	OFF - ON
D 46	Dehumidifier zone 2	OFF - ON
D 47	Zone 1 circulator pump	OFF - ON
D 48	Zone 2 circulator pump	OFF - ON
D 49	Central heating / cooling system separation 3-way (CL = cooling, HT = heating)	CL - HT
D 51	Zone 1 remote control	OFF - ON
D 52	Zone 2 remote control	OFF - ON
D 53	System setting with remote connection in zone 1	5 ÷ 55 °C
D 54	System setting with remote connection in zone 2	5 ÷ 55 °C
D 55	Zone 1 thermostat	OFF - ON
D 56	Zone 2 thermostat	OFF - ON
D 61	Appliance model definition	MP
D 62	Communication with outdoor condensing unit	OFF - ON
D 63	Communication with other Immergas devices	OFF - ON
D 71	Condensing unit operating frequency	0 ÷ 150 Hz
D 72	Condensing unit compressor temperature	- 20 ÷ 200 °C
D 73	Compressor outlet instantaneous temperature	- 20 ÷ 100 °C
D 74	Evaporator coil temperature	- 20 ÷ 100 °C
D 75	Condensing unit compressor absorption	0 ÷ 10 A
D 76	Condensing unit fan speed	0 ÷ 100 rpm
D 77	Electronic expansion valve position	0 ÷ 500
D 78	4-way side (CL = cooling, HT = heating)	HT / CL
D 91	Software version	

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USER MENU				
Id Parameter		Description	Range	Default
U 01		Zone 2 heating setting	25 ÷ 55 °C	25
U 02		Zone 2 cooling setting	7 ÷ 25 °C	20
U 03		Zone 1 central heating offset	- 15 ÷ + 15 °C	0
U 04		Zone 2 central heating offset		
U 05		Zone 1 central heating offset	- 15 ÷ + 15 °C	0
U 06		Zone 2 central heating offset		
U 07		Zone 1 humidity setting	30 ÷ 70 °C	50
U 08		Zone 2 humidity setting	30 ÷ 70 °C	50
U 11		Night function	OFF - ON	OFF
U 12		Night function enabling time		
U 13		Night function disabling time		

N.B.: The parameters referring to zone 2 can only be displayed if there is a zone 2 on the system and it is configured correctly.

13.2 MAINTENANCE TECHNICIAN PROGRAMMING MENU

Id Parameter	Parameter	Description	Range	Default
A 03	Minimum speed	Defines the minimum operating speed of the system circulator.	55 ÷ 100 %	100
A 04	Maximum fixed speed	Defines the maximum operating speed of the system circulator.	55 ÷ 100 %	100
A 11	Condensing unit model	Establishes the condensing unit model paired with the hydronic module. If set to OFF, only the integrated generators are activated.	OFF - 5 - 8 - 10	8
A 12	System vent	Enables the automatic vent function. This function activates as soon as the unit is powered.	OFF - ON	ON
A 13	Number of zones	Defines the number of zones in the heating system.	1 - 2	1
A 16	Zone 1 humidity sensor	Humidity temperature sensor / Humidistat. Defines the type of control on zone 1 humidity.	SE = Humidity temp. sensor ST = Humidistat	ST
A 17	Zone 2 humidity sensor	Humidity temperature sensor / Humidistat. Defines the type of control on zone 2 humidity.	SE = Humidity temp. sensor ST = Humidistat	ST
A 21	BMS communication address	Defines the communication protocol between the hydronic module and the condensing unit.	1 ÷ 247	11
A 22	BMS communication setting	OFF = BMS communication protocol on 485; use if connected to optional Immergas devices. 485 = Do not use UC = Do not use	OFF - 485 - UC	OFF

Id Parameter	Parameter	Description	Range	Default
P 03	Relay 1 (optional)	The hydronic module is set up to operate with a configurable relay board (optional). 0 = Off 1 = DHW recirculation 2 = General alarm 3 = Central heating / cooling mode active 4 = Puffer mode active	0 ÷ 4	0
P 04	Relay 2 (optional)	The hydronic module is set up to operate with a configurable relay board (optional). 0 = Off 1 = DHW recirculation 2 = General alarm 3 = Central heating / cooling mode active 4 = Puffer mode active	0 ÷ 4	0
P 05	Relay 3 (optional)	The hydronic module is set up to operate with a configurable relay board (optional). 0 = Off 1 = DHW recirculation 2 = General alarm 3 = Central heating / cooling mode active 4 = Puffer mode active	0 ÷ 4	0
P 06	Pump functioning	The pump can function in two ways. IN (intermittent): in "winter" mode, the circulator is managed by the room thermostat or by the remote control. CO (continuous): in "winter" and "cooling" mode, the circulator is always powered and is, therefore, always in operation.	IN - CO	IN

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Id Parameter	Parameter	Description	Range	Default
P07	External probe correction	If the reading of the external probe is not correct it is possible to correct it in order to compensate any environmental factors. (Over the value of +9 the display shows "CE", which enables an external control function of the boiler for coupling of the same with a system supervisor).	-9 ÷ 9 K	0

Id Parameter	Parameter	Description	Range	Default
T 02	DHW thermostat	Establishes the unit ignition and switch-off mode in DHW mode. It is enabled when the water in the storage tank goes below the DHW set value and is disabled when the temperature exceeds the DHW set value.	0 ÷ 20 °C	4
T 05	Central heating ignitions timer	The hydronic module has an electronic timer, which prevents the generator from igniting too often in central heating mode.	0 - 10 minutes	3
T 07	Delay request from TA	The system is set to switch on immediately after a request for room heating/air conditioning. For special systems (e.g. zone systems with motorised valves, etc.), it may be necessary to delay ignition.	0 - 240 seconds (step 10 sec)	0
T 08	Display lighting	Establishes the display lighting mode. AU: the display lights up during use and lowers after 15 seconds of inactivity. In the event of an anomaly, the display flashes. OFF: the display lighting is always off. ON: the display lighting is always on.	AU - OFF - ON	AU
T 09	Display	Establishes what the indicator displays. "Summer" mode: ON: pump active displays the flow temperature, pump off the indicator is off OFF: the indicator is always off "Winter" and "cooling" mode: ON: pump active displays the flow temperature, pump off displays the value set on the central heating selector. OFF: always displays the value set on the central heating selector.	ON - OFF	ON

HEAT REGULATION MENU				
Id Parameter	Parameter	Description	Range	Default
R 01	External probe	Defines if and which external probe is used to manage the system. OFF = no external probe used OU = external probe on the condensing unit IU = optional external probe connected to the hydronic module	OFF - OU - IU	OU
R 02	Outdoor temperature for max. CH flow	Establishes the outdoor temperature at which to have the maximum flow temperature.	-15 ÷ 25 °C	-5
R 03	Outdoor temperature for min. CH flow	Establishes the outdoor temperature at which to have the minimum flow temperature.	-15 ÷ 25 °C	25
R 04	Maximum central heating	Defines the maximum flow temperature in room central heating mode.	35 ÷ 55	45
R 05	Minimum central heating	Defines the minimum flow temperature in room central heating mode.	25 ÷ 55	25
R 06	Outdoor temperature for low temperature zone max. CH flow	Establishes the outdoor temperature at which to have the maximum flow temperature in the low temperature zone.	-15 ÷ 25 °C	-5
R 07	Outdoor temperature for low temperature zone min. CH flow	Establishes the outdoor temperature at which to have the minimum flow temperature in the low temperature zone.	-15 ÷ 25 °C	25
R 08	Low temperature zone maximum central heating	Defines the maximum flow temperature in room central heating mode in the low temperature zone.	35 ÷ 55	40
R 09	Low temperature zone minimum central heating	Defines the minimum flow temperature in room central heating mode in the low temperature zone.	25 ÷ 35	25
R 10	Outdoor temperature for minimum cooling flow	Establishes the maximum outdoor temperature at which to have the minimum flow temperature in cooling mode.	20 ÷ 40	35
R 11	Outdoor temperature for maximum cooling flow	Establishes the minimum outdoor temperature at which to have the maximum flow temperature in cooling mode.	20 ÷ 40	25
R 12	Minimum cooling	Defines the minimum flow temperature in room cooling mode.	07 ÷ 20	7
R 13	Maximum cooling	Defines the maximum flow temperature in room cooling mode.	10 ÷ 25	12
R 14	Outdoor temperature for low temperature zone minimum cooling flow	Establishes the outdoor temperature at which to have the minimum flow temperature in the low temperature zone.	20 ÷ 40	35
R 15	Outdoor temperature for low temperature zone max. cooling flow	Establishes the outdoor temperature at which to have the maximum flow temperature in the low temperature zone.	20 ÷ 40	25
R 16	Low temperature zone minimum cooling	Defines the minimum flow temperature in room cooling mode in the low temperature zone.	07 ÷ 20	18
R 17	Low temperature zone maximum cooling	Defines the maximum flow temperature in room cooling mode in the low temperature zone.	10 ÷ 25	20

N.B.: see also the graphs on the next pages.

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INTEGRATION MENU				
Id Parameter	Parameter	Description	Range	Default
I 01	DHW integration enabling	Allows you to enable an alternative power source (AL) to integrate domestic hot water heating.	OFF - AL	OFF
I 02	System integration enabling	Using this function, you can enable an alternative (AL) or simultaneous (CO) power source to integrate heating system central heating.	OFF - AL - CO	OFF
I 03	DHW max. wait time	Establishes the maximum amount of time before activating DHW integration.	0 - 900 minutes (10 minute intervals)	30
I 04	Central heating max. wait time	Establishes the maximum amount of time before activating central heating integration.	0 - 900 minutes (10 minute intervals)	45
I 06	Activation temperature	Establishes the outdoor temperature under which central heating integration is enabled.	-15 ÷ 20 °C	-5
I 11	Condensing unit oper. hours	Displays the hours of operation performed by the Condensing unit.	-	-
I 12	Central heating integration resistance oper. hours	Displays the hours of operation of the central heating integration resistance (optional).	-	-
I 13	DHW integration resistance oper. hours	Displays the hours of operation of the DHW integration resistance (optional).	-	-

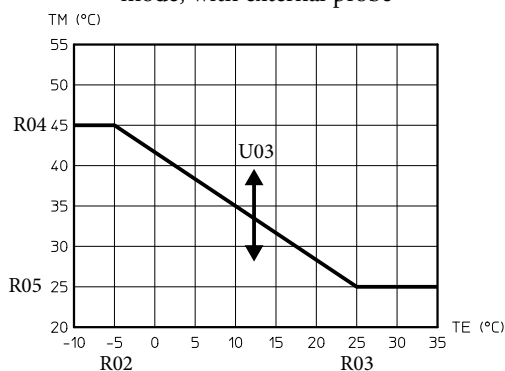
MAINTENANCE MENU				
Id Parameter	Parameter	Description	Range	Default
M 01	Venting	In the case of new central heating systems and in particular mode for floor systems, it is very important that deaeration is performed correctly. The function consists of the cyclic activation of the pump (100 s ON, 20 s OFF) and the 3-way valve (120 s D.H.W., 120 s heating system). The function lasts for 18 hours and can be interrupted by pressing the "ESC" button and setting the function to "OFF".	OFF - ON	OFF
M 02	System circulator speed	Establishes the system circulator speed.	0 - 100%	0
M 03	DHW 3-way	Moves the 3-way motor from system to DHW.	OFF - ON	OFF
M 04	Cooling 3-way	Moves the cooling circuit 3-way motor.	OFF - ON	OFF
M 08	Zone 1 outdoor circulator	Enables the zone 1 outdoor circulator.	OFF - ON	OFF
M 09	Zone 2 outdoor circulator	Enables the zone 2 outdoor circulator.	OFF - ON	OFF
M 10	Mixer zone 2	Establishes zone 2 mixing valve positioning.	OFF - OPEN - CLOSE	OFF
M 11	DHW electrical resistance	Enables the DHW integrated electrical resistance.	OFF - ON	OFF
M 12	Central heating electrical resistance	Enables the room central heating integrated electrical resistance.	OFF - ON	OFF
M 13	Dehumidifier zone 1	Enables the dehumidifier in zone 1.	OFF - ON	OFF
M 14	Dehumidifier zone 2	Enables the dehumidifier in zone 2.	OFF - ON	OFF
M 15	Relay 1	Enables relay 1 on the 3-relay board.	OFF - ON	OFF
M 16	Relay 2	Enables relay 2 on the 3-relay board.	OFF - ON	OFF
M 17	Relay 3	Enables relay 3 on the 3-relay board.	OFF - ON	OFF

By setting the parameters in the "Heat regulation" menu, you can adjust how the system operates.

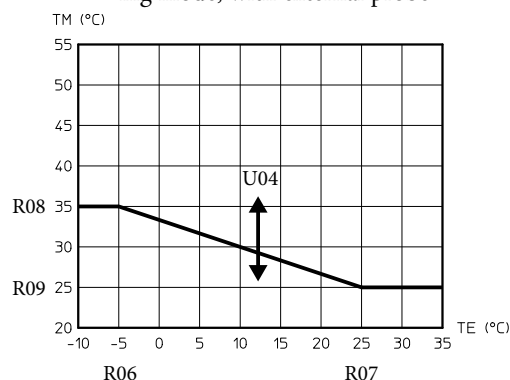
The following graphs show the default settings in the various operating modes available both with external probe and without.

N.B.: In case of use of the CAR^{V2}, the heat adjustment curves, in the central heating phase only, are determined by the device itself.

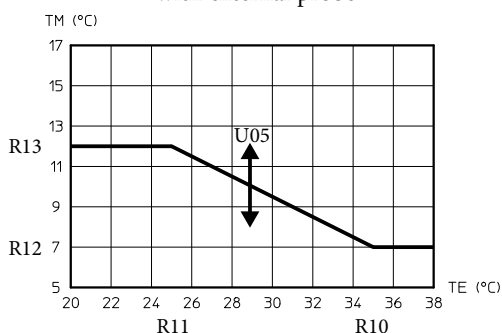
Zone 1 flow temperature in central heating mode, with external probe



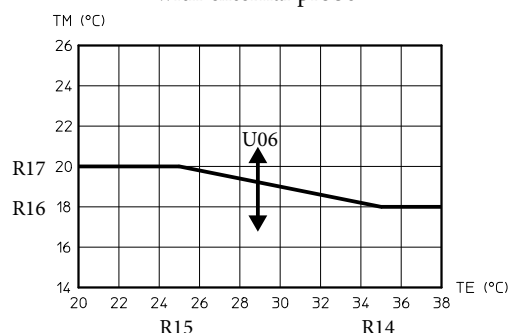
Zone 2 mixed flow temperature in central heating mode, with external probe



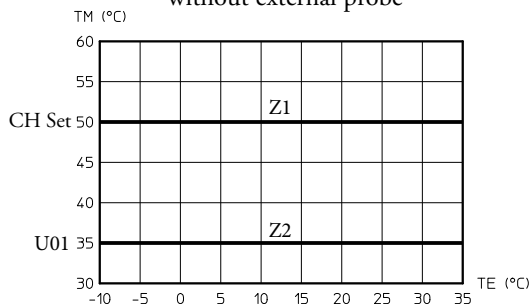
Zone 1 flow temperature in cooling mode, with external probe



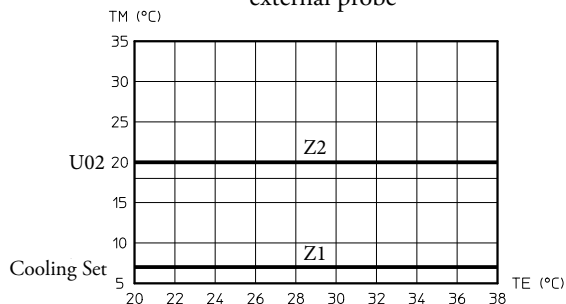
Zone 2 mixed flow temperature in cooling mode, with external probe



Flow temperature in central heating mode without external probe



Flow temperature in cooling mode without external probe



KEY:

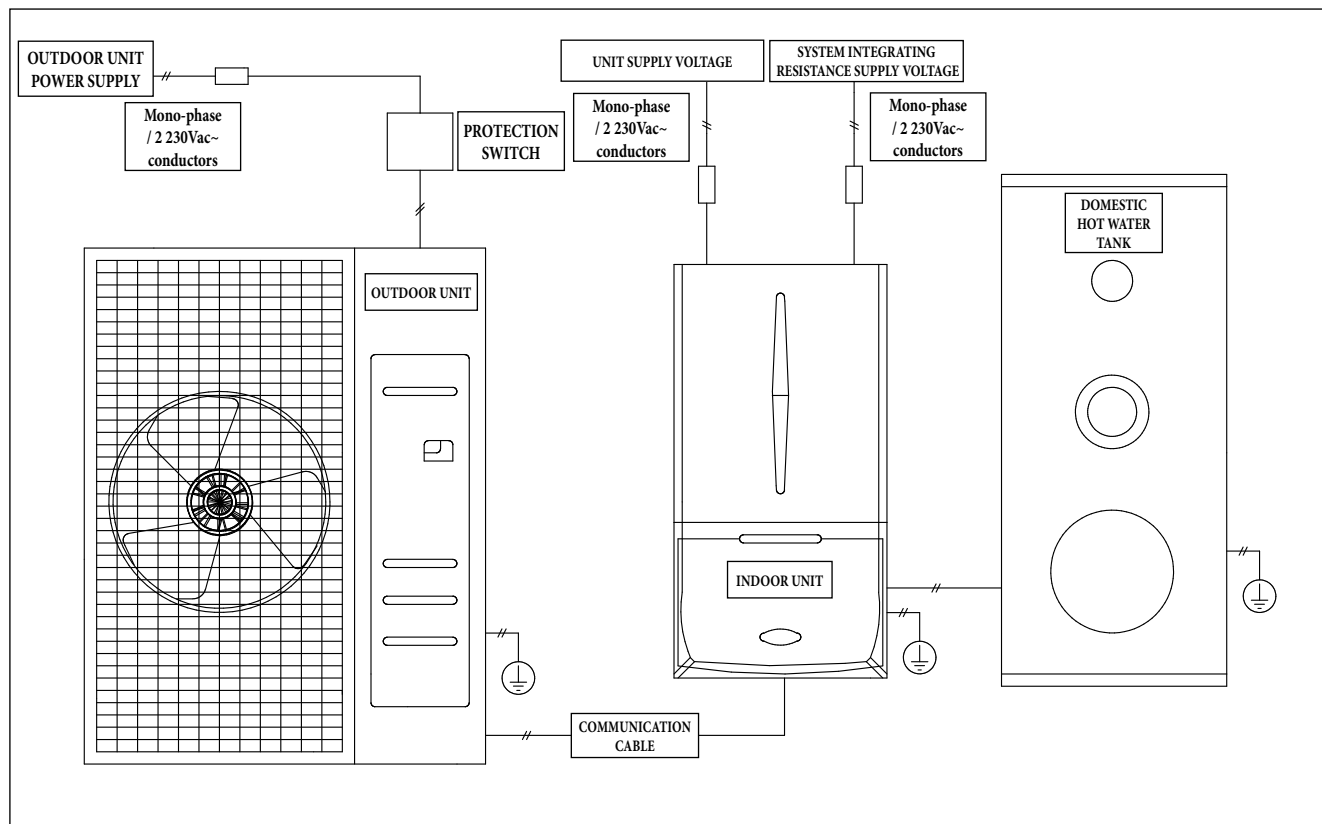
- Rxx - "Heat regulation" menu parameter
- TE - Outdoor temperature
- TM - Flow temperature
- U01 - Zone 2 flow temperature in "User" menu central heating mode

- U02 - Zone 2 flow temperature in "User" menu cooling mode
- U03÷06 - Offset value compared to the curve set by the external probe
- Zx - Heating system zone

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ELECTRIC CONNECTION CABLES FEATURES



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).

Outdoor Unit	Nominal Values		Field of Tolerable Voltage		Maximum absorbed current (MAC) in normal operation	MAC*1.25 + Additional Load	Fuse capacity necessary for the unit
	Hz	V	V	V	A	A	A
AUDAX PRO 5	50	220 - 240	198	264	20	25.0	30
AUDAX PRO 8 - 10	50	220 - 240	198	264	22	27.5	40

Features of the connection between outdoor and indoor units.

Use H07RN-F or H07RN-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).

Indoor Hydronic unit power supply			BUS Communication cable between outdoor unit and indoor unit
Power Supply	Max./Min.(V)	Connection cable	
Mono-phase, 220-240V, 50Hz	±10%	0.75 ~ 1.5mm ² , 3 wires	0.75 ~ 1.5mm ² , 2 wires

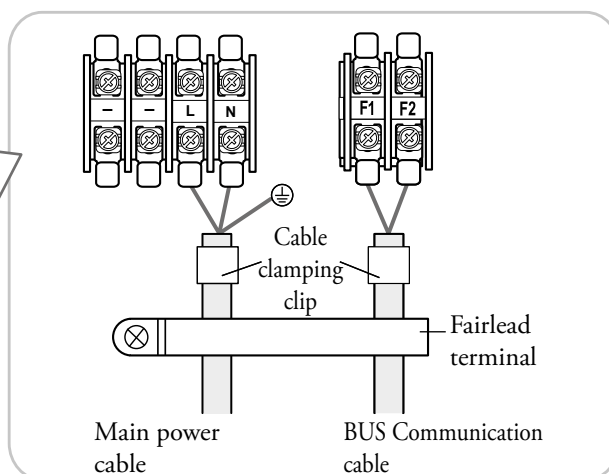
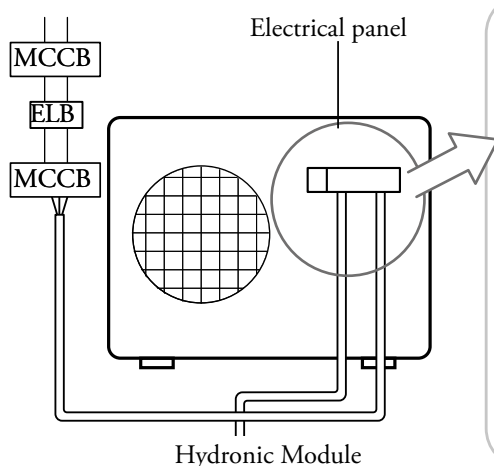
With use of the mono-phase safety switch (ELB).

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

KEY:

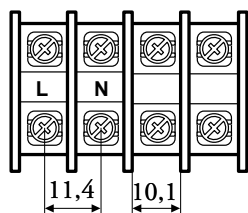
ELB - Safety Switch

MCCB - Circuit breaker switch

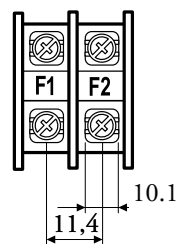


AUDAX PRO 5 - Supply voltage in mono-phase AC.

M4 screw supply voltage

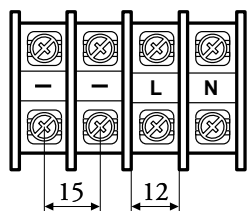


M4 screw communication BUS

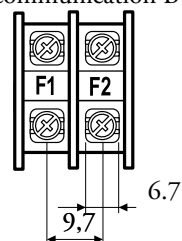


AUDAX PRO 8 and 10 - Supply voltage in mono-phase AC.

Electric power supply
M5 screw



M3 screw communication BUS



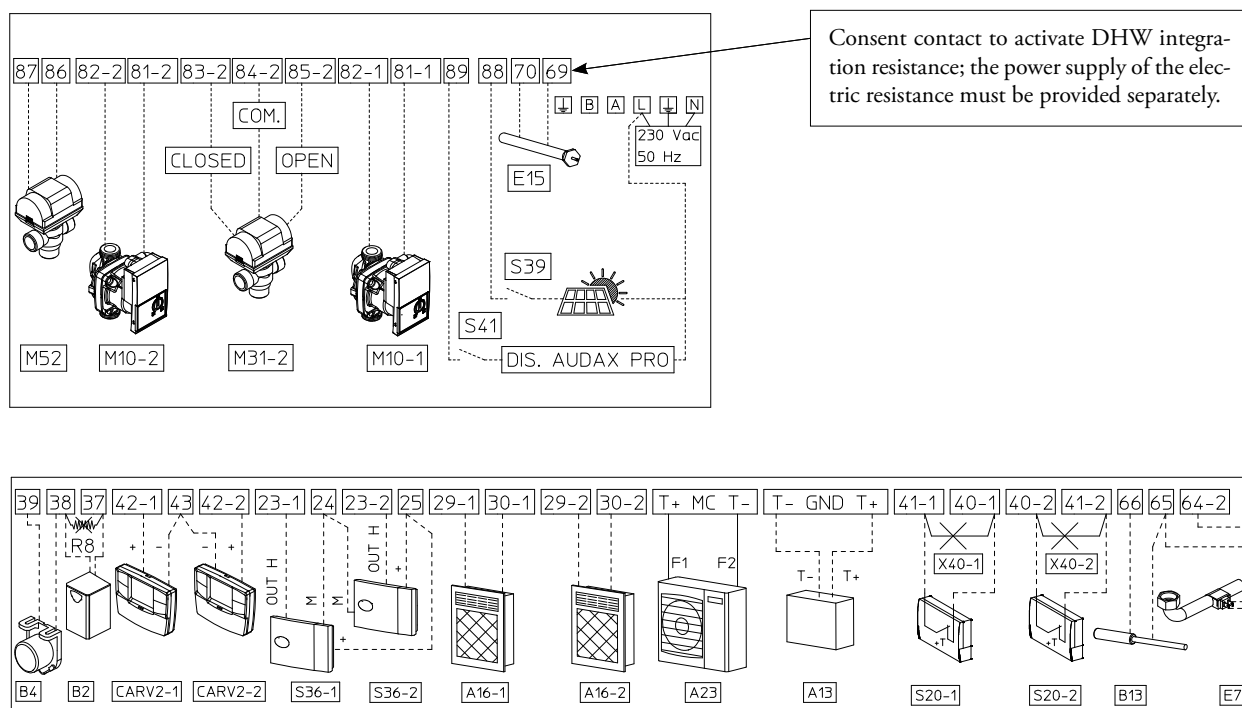
MAGIS PRO ErP

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INDOOR UNIT TERMINAL BLOCK ELECTRICAL CONNECTIONS

KEY:

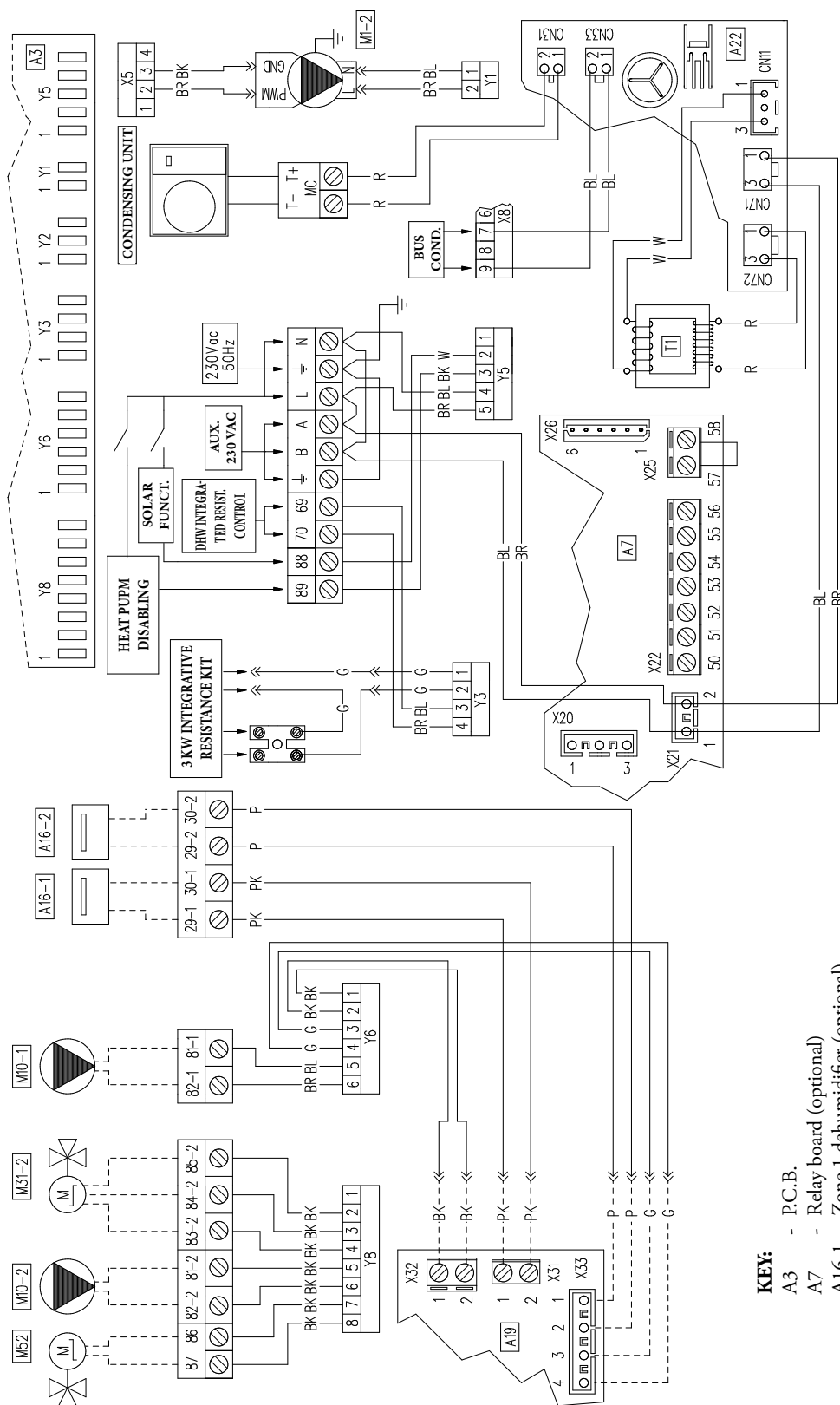
86 / 87	- Summer winter switch 3-way valve	23-2 / 24	- Zone 2 humidistat or humidity probe
81-2 / 82-2	- Zone 2 circulator	25	- Humidity sensor supply voltage
83-2 / 84-2 / 85-2	- Zone 2 mixing valve	29-1 / 30-1	- Zone 1 dehumidifier
82-1 / 81-1	- Zone 1 circulator	29-2 / 30-2	- Zone 2 dehumidifier
89 / L	- AUDAX PRO disabling contact	T+ / T- (MC)	- AUDAX PRO communication BUS
88 / L	- Solar inlet	T+ / T- (RS485)	- Other Immergas appliances communication BUS
69 / 70	- Domestic hot water integrated resistance control	41-1 / 40-1	- Zone 1 room thermostat
38 / 39	- External Probe	41-2 / 40-2	- Zone 2 room thermostat
37 / 38	- Domestic hot water probe (eliminate R8)	66 / 65	- Puffer central heating probe
42-1 / 43	- Zone 1 CAR ^{V2}	65 / 64-2	- Zone 2 flow probe
42-2 / 43	- Zone 2 CAR ^{V2}		
23-1 / 24	- Zone 1 humidistat or humidity probe		



N.B.: To control the dehumidifiers, insert a 2 relay board kit (optional) inside the MAGIS PRO ErP hydronic module, for the respective dehumidifiers of the 2 zones.

The relay board kit has only one contact for each zone and, therefore, allows the dehumidifier to work either in neutral air or in cooled air.

For further information see the chapter on dehumidifiers.



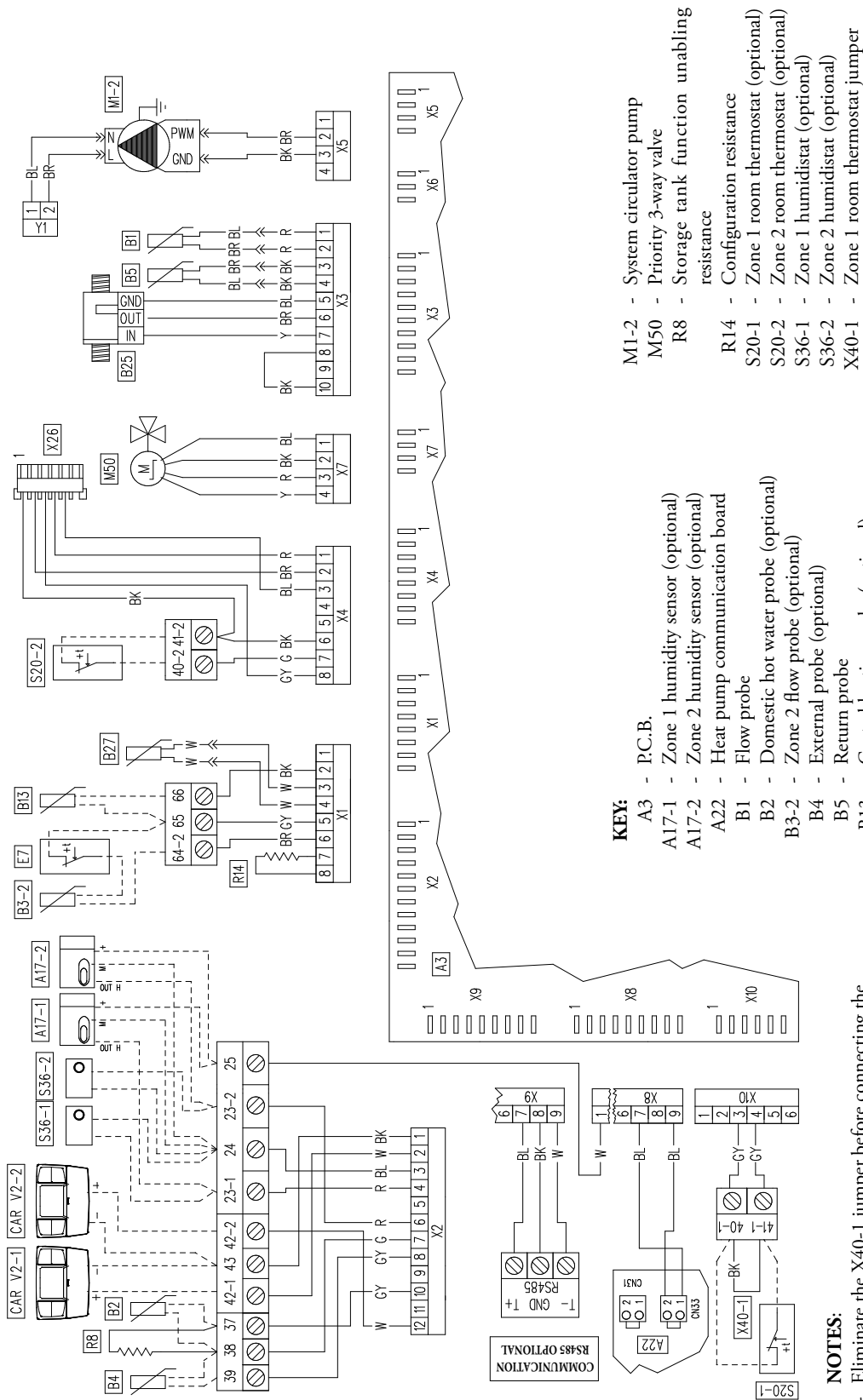
KEY:

- | | |
|-------|----------------------------------|
| A3 | - P.C.B. |
| A7 | - Relay board (optional) |
| A16-1 | - Zone 1 dehumidifier (optional) |
| A16-2 | - Zone 2 dehumidifier (optional) |
| A19 | - Two-relay board (optional) |
| A22 | - Heat pump communication board |
| M1-2 | - System circulator pump |
| M10-1 | - Zone 1 circulator (optional) |
| M10-2 | - Zone 2 circulator (optional) |
| M31-2 | - Zone 2 mixing valve (optional) |
| M52 | - Hot cold three-way (optional) |
| T1 | - Transformer |

Colour code key:

- | Year | Gender | Race | Rank |
|------|----------|------|----------|
| BK | - Black | R | - Red |
| BL | - Blue | W | - White |
| BR | - Brown | Y | - Yellow |
| G | - Green | | |
| GY | - Grey | | |
| OR | - Orange | | |
| P | - Purple | | |

MAGIS PRO ErP



NOTES:

- Eliminate the X40-1 jumper before connecting the S20-1 room thermostat.
- When the CAR^{v2} is disconnected, the X40-1 jumper must be kept available
- Should CAR^{v2} also be connected, put in a jumper between terminals 40-2 and 41-2
- The Y3 and Y5 connectors can be used to connect the relay board.
- The Y6 connector is used to connect the 2 relay board.

KEY:

- | | | | | |
|----------------------|---|---------------------------------------|-------|--|
| KEY: | A3 | - P.C.B. | M1-2 | - System circulator pump |
| | A17-1 | - Zone 1 humidity sensor (optional) | M50 | - Priority 3-way valve |
| | A17-2 | - Zone 2 humidity sensor (optional) | R8 | - Storage tank function unablning resistance |
| | A22 | - Heat pump communication board | R14 | - Configuration resistance |
| | B1 | - Flow probe | S20-1 | - Zone 1 room thermostat (optional) |
| | B2 | - Domestic hot water probe (optional) | S20-2 | - Zone 2 room thermostat (optional) |
| | B3-2 | - Zone 2 flow probe (optional) | S36-1 | - Zone 1 humidistat (optional) |
| | B4 | - External probe (optional) | S36-2 | - Zone 2 humidistat (optional) |
| | B5 | - Return probe | X40-1 | - Zone 1 room thermostat jumper |
| | B13 | - Central heating probe (optional) | | |
| | B25 | - System flow meter | | |
| | B27 | - Liquid phase probe | | |
| CAR ^{v2} -1 | - Zone 1 Comando Amico Remoto ^{v2} remote control (optional) | | | |
| CAR ^{v2} -2 | - Zone 2 Comando Amico Remoto ^{v2} remote control (optional) | | | |
| E7 | - Low temperature safety thermostat (optional) | | | |

The MAGIS PRO ErP cooling circuit uses the refrigerant R410A, therefore, it is necessary to take some measures for the proper operation of the machine:

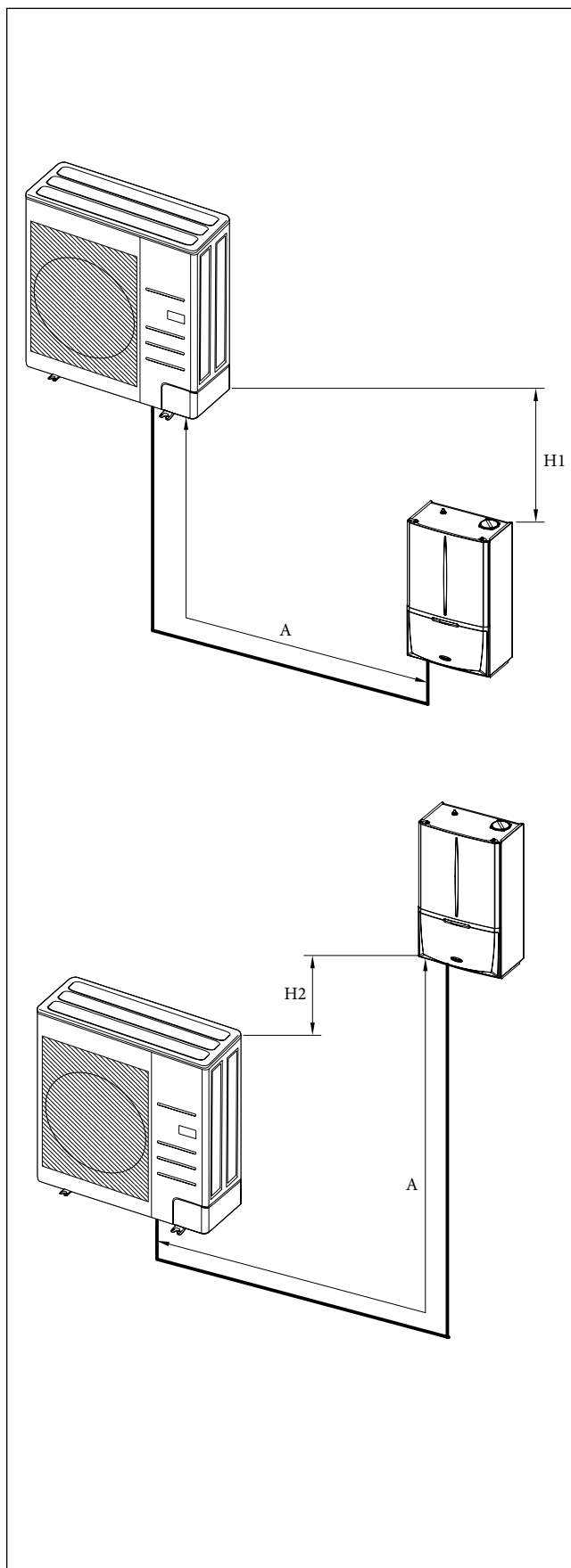
- The R410A is a high pressure refrigerant, the pipes and other parts subject to pressure must be compliant and suitable for the refrigerant itself. Therefore, the pipes must be certified for cooling and it is necessary to observe the methods of installation stated on the instruction manual supplied 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 $\leq 30\text{mg}/10\text{ m}$.
- 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:

	AUDAX PRO 5	AUDAX PRO 8 and 10
A	$\leq 30\text{ m}$	$\leq 50\text{ m}$
H1	$\leq 20\text{ m}$	$\leq 30\text{ m}$
H2	$\leq 20\text{ m}$	$\leq 15\text{ m}$

NOTE: it is recommendable to provide for a siphon in the immediate vicinity of the condensing unit.

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 condensing unit and the hydronic unit.



MAGIS PRO ErP

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 thermohygrometric conditions of the air be harsher, you must use insulations that can be selected from the table below.

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

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

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

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

Topping up the refrigerant load.

Below is the default factory base load:

- AUDAX PRO 5 = 1,2 kg
- AUDAX PRO 8 and 10 = 2,0 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:

- AUDAX PRO 5 = ≤ 5m

- AUDAX PRO 8 and 10 = ≤ 15m

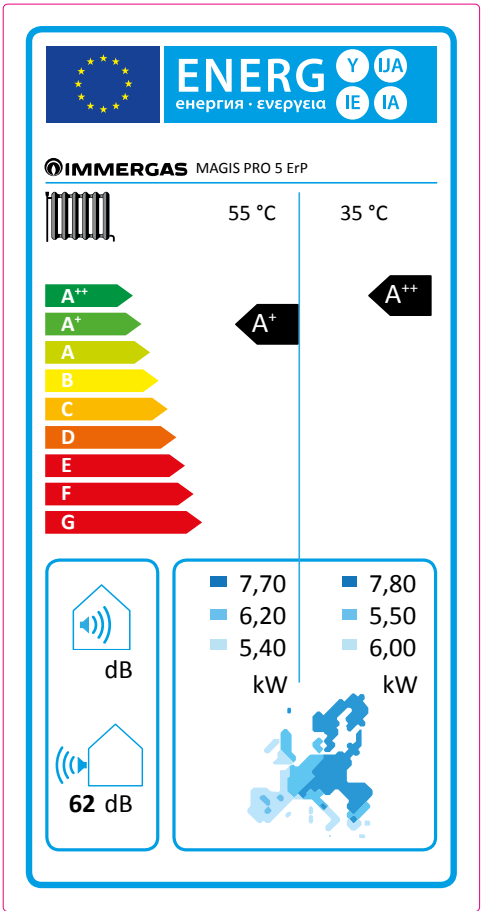
If the used pipes are longer than stated above, the load must be topped-up in the manner and quantities described in the instruction manual supplied with the product.

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

Model	Liquid line pipe external diameter (mm - inch)	Maximum length without base load top-up	Top-up quantity for every additional metre of the liquid line pipe
AUDAX PRO 5	Ø 6,35 - 1/4"	≤ 5 m	20 g/m
AUDAX PRO 8 - 10	Ø 9,52 - 3/8"	≤ 15 m	50 g/m

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PRODUCT FICHE (REGULATION 811/2013)



MAGIS PRO 5 ErP

Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the heating function (Q_{HE})	kWh/year	5870	2891	1559
Room central heating seasonal efficiency (η_s)	η_s %	162	154	201
Nominal heat output	kW	7.80	5.50	6.00

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the heating function (Q_{HE})	kWh/year	8100	4435	2119
Room central heating seasonal efficiency (η_s)	η_s %	91	112	132
Nominal heat output	kW	7.70	6.20	5.40

MAGIS PRO 5 ErP

Low temperature table (30/35) colder zones

Model: MAGIS PRO 5 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for colder climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	7.80	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	5.2	kW	
Tj = + 2 °C	Pdh	4.8	kW	
Tj = + 7 °C	Pdh	6.3	kW	
Tj = + 12 °C	Pdh	6.6	kW	
Tj = bivalent temperature	Pdh	4.8	kW	
Tj = operating limit temperature	Pdh	4.2	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-8	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	5870	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	162	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	2.83	—	
Tj = + 2 °C	COPd	4.13	—	
Tj = + 7 °C	COPd	6.07	—	
Tj = + 12 °C	COPd	5.86	—	
Tj = bivalent temperature	COPd	2.76	—	
Tj = operating limit temperature	COPd	2.03	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	-20	°C	
Cycle intervals efficiency	COP _{cyc} or PER _{cyc}		—	
Water heating temperature operating limit	WTOL	40	°C	
Additional heating appliance				
Nominal heat output	Psup	7.80	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

Low temperature table (30/35) average zones

Model: MAGIS PRO 5 ErP			
Air/water heat pump: yes			
Water/water heat pump: no			
Brine/water heat pump: no			
Low temperature heat pump: yes			
With additional central heating device: no			
Mixed central heating device with heat pump: no			
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application			
The parameters are declared for average climatic conditions.			
Element	Symbol	Value	Unit
Nominal heat output	Nominal output	5.50	kW
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	5.1	kW
Tj = + 2 °C	Pdh	4.7	kW
Tj = + 7 °C	Pdh	6.2	kW
Tj = + 12 °C	Pdh	6.6	kW
Tj = bivalent temperature	Pdh	4.9	kW
Tj = operating limit temperature	Pdh	5.5	kW
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW
Bivalent temperature	Tbiv	-7	°C
Central heating capacity cycle intervals	Pcych		kW
Degradation coefficient	Cdh	1.0	—
Different mode of energy consumption from the active mode			
OFF mode	P _{OFF}	0.000	kW
Thermostat mode off	P _{TO}	0.015	kW
Standby Mode	P _{SB}	0.015	kW
Guard heating mode	P _{CK}	0.015	kW
Other items			
Capacity control	Variable		
Indoor/outdoor sound level	L _{WA}	62	dB
Annual energy consumption	Q _{HE}	2891	kWh or GJ
For mixed central heating appliances with a heat pump			
Stated load profile			
Daily electrical power consumption	Q _{elec}		kWh
annual energy consumption	AEC		kWh
Contact information	Immergas S.p.A. via Cisa Ligure n. 95		

Element	Symbol	Value	Unit
Room central heating seasonal energy efficiency	η _s	154	%
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COPd	2.55	—
Tj = + 2 °C	COPd	3.77	—
Tj = + 7 °C	COPd	5.64	—
Tj = + 12 °C	COPd	5.86	—
Tj = bivalent temperature	COPd	2.54	—
Tj = operating limit temperature	COPd	2.36	—
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—
for air/water heat pumps: temperature operating limit	TOL	-10	°C
Cycle intervals efficiency	COPcyc or PERcyc		—
Water heating temperature operating limit	WTOL	40	°C
Additional heating appliance			
Nominal heat output	P _{sup}	0.62	kW
Type of energy supply voltage	electrical		
For air/water heat pumps: nominal air output to outside	—		m³/h
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h
Water central heating energy efficiency	η _{wh}		%
Daily fuel consumption	Q _{fuel}		kWh
Annual fuel consumption	AFC		GJ

MAGIS PRO 5 ErP

Low temperature table (30/35) hotter zones

Model: MAGIS PRO 5 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for hotter climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	6.00	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	-	kW	
Tj = + 2 °C	Pdh	4.6	kW	
Tj = + 7 °C	Pdh	6.0	kW	
Tj = + 12 °C	Pdh	6.6	kW	
Tj = bivalent temperature	Pdh	5.7	kW	
Tj = operating limit temperature	Pdh	4.6	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	4	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.015	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	1559	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			

Element	Symbol	Value	Unit
Room central heating seasonal energy efficiency	η _s	201	%
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COPd	-	—
Tj = + 2 °C	COPd	3.31	—
Tj = + 7 °C	COPd	5.06	—
Tj = + 12 °C	COPd	5.89	—
Tj = bivalent temperature	COPd	3.67	—
Tj = operating limit temperature	COPd	3.31	—
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—
for air/water heat pumps: temperature operating limit	TOL	2	°C
Cycle intervals efficiency	COPcyc or PERcyc		—
Water heating temperature operating limit	WTOL	55	°C
Additional heating appliance			
Nominal heat output	Psup	1.40	kW
Type of energy supply voltage	electrical		
For air/water heat pumps: nominal air output to outside	—		m³/h
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h
Water central heating energy efficiency	η _{wh}		%
Daily fuel consumption	Q _{fuel}		kWh
Annual fuel consumption	AFC		GJ

Average temperature table (47/55) colder zones

Model: MAGIS PRO 5 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: no				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for colder climatic conditions				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	7.70	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	4.9	kW	
Tj = + 2 °C	Pdh	4.6	kW	
Tj = + 7 °C	Pdh	6.0	kW	
Tj = + 12 °C	Pdh	6.5	kW	
Tj = bivalent temperature	Pdh	4.7	kW	
Tj = operating limit temperature	Pdh	4.6	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-7	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	8100	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	91	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	2.03	—	
Tj = + 2 °C	COPd	3.13	—	
Tj = + 7 °C	COPd	4.62	—	
Tj = + 12 °C	COPd	5.33	—	
Tj = bivalent temperature	COPd	2.03	—	
Tj = operating limit temperature	COPd	1.73	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	-10	°C	
Cycle intervals efficiency	COPcyc or PERcyc		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	7.70	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

MAGIS PRO 5 ErP

Average temperature table (47/55) average zones

Model: MAGIS PRO 5 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: no				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for average climatic conditions				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	6.20	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	4.8	kW	
Tj = + 2 °C	Pdh	4.5	kW	
Tj = + 7 °C	Pdh	5.8	kW	
Tj = + 12 °C	Pdh	6.4	kW	
Tj = bivalent temperature	Pdh	4.6	kW	
Tj = operating limit temperature	Pdh	4.3	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-6	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	4435	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	112	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	1.73	—	
Tj = + 2 °C	COPd	2.76	—	
Tj = + 7 °C	COPd	4.30	—	
Tj = + 12 °C	COPd	5.04	—	
Tj = bivalent temperature	COPd	1.84	—	
Tj = operating limit temperature	COPd	1.49	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	-10	°C	
Cycle intervals efficiency	COPcyc or PERcyc		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	1.87	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

Average temperature table (47/55) hotter zones

Model: MAGIS PRO 5 ErP			
Air/water heat pump: yes			
Water/water heat pump: no			
Brine/water heat pump: no			
Low temperature heat pump: no			
With additional central heating device: no			
Mixed central heating device with heat pump: no			
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application			
The parameters are declared for hotter climatic conditions			
Element	Symbol	Value	Unit
Nominal heat output	Nominal output	5.40	kW
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	-	kW
Tj = + 2 °C	Pdh	4.2	kW
Tj = + 7 °C	Pdh	5.3	kW
Tj = + 12 °C	Pdh	6.2	kW
Tj = bivalent temperature	Pdh	4.6	kW
Tj = operating limit temperature	Pdh	4.2	kW
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW
Bivalent temperature	Tbiv	7	°C
Central heating capacity cycle intervals	Pcych		kW
Degradation coefficient	Cdh	1.0	—
Different mode of energy consumption from the active mode			
OFF mode	P _{OFF}	0.000	kW
Thermostat mode off	P _{TO}	0.015	kW
Standby Mode	P _{SB}	0.015	kW
Guard heating mode	P _{CK}	0.015	kW
Other items			
Capacity control	Variable		
Indoor/outdoor sound level	L _{WA}	N/A	dB
Annual energy consumption	Q _{HE}	2119	kWh or GJ
For mixed central heating appliances with a heat pump			
Stated load profile			
Daily electrical power consumption	Q _{elec}		kWh
annual energy consumption	AEC		kWh
Contact information	Immergas S.p.A. via Cisa Ligure n. 95		

Element	Symbol	Value	Unit
Room central heating seasonal energy efficiency	η _s	132	%
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COPd	-	—
Tj = + 2 °C	COPd	2.09	—
Tj = + 7 °C	COPd	2.74	—
Tj = + 12 °C	COPd	4.68	—
Tj = bivalent temperature	COPd	2.49	—
Tj = operating limit temperature	COPd	2.09	—
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—
for air/water heat pumps: temperature operating limit	TOL	2	°C
Cycle intervals efficiency	COPcyc or PERcyc		—
Water heating temperature operating limit	WTOL	55	°C
Additional heating appliance			
Nominal heat output	P _{sup}	1.20	kW
Type of energy supply voltage	electrical		
For air/water heat pumps: nominal air output to outside	—		m³/h
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h
Water central heating energy efficiency	η _{wh}		%
Daily fuel consumption	Q _{fuel}		kWh
Annual fuel consumption	AFC		GJ

MAGIS PRO 5 ErP

20 MAGIS PRO 5 ErP "POWER" AND "COP" CENTRAL HEATING

- Correction factor stated DC = 0.99

- TOL = -20 °C

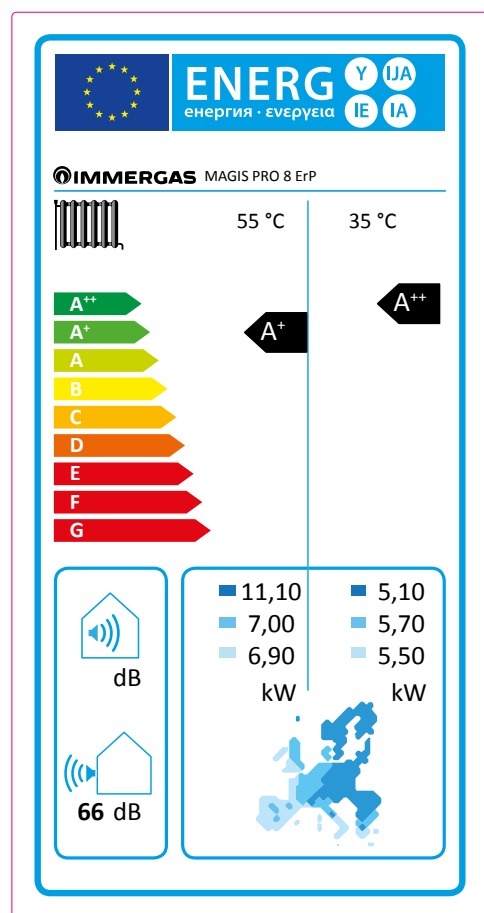
Temperature air °C		Output (kW) Nom. / Max.	COP (EN 14511) Nom. / Max.
d.b.	(w.b.)	Water flow temperature 35 °C	
12	(11)	6.14	4.67
7	(6)	5.80	4.53
2	(1)	4.60	3.31
-7	(-8)	5.10	2.49
-15	(-16)	4.50	2.14
-20	(-21)	4.13	1.97

d.b.	(w.b.)	Water flow temperature 45 °C	
12	(11)	5.69	3.58
7	(6)	5.30	3.42
2	(1)	4.40	2.59
-7	(-8)	4.90	1.99
-15	(-16)	4.10	1.62
-20	(-21)	--	--

d.b.	(w.b.)	Water flow temperature 55 °C	
12	(11)	5.22	2.81
7	(6)	4.80	2.64
2	(1)	4.20	2.09
-7	(-8)	4.70	1.63
-15	(-16)	--	--
-20	(-21)	--	--

20.1 MAGIS PRO 5 ErP "POWER" AND "EER" IN COOLING

Temperature air °C	Output (kW) Nom.	Output (kW) Max.	EER (EN 14511) Nom.	EER (EN 14511) Max.
d.b.	Water flow temperature 18 °C			
35	6.03	6.67	3.61	3.39
d.b.	Water flow temperature 7 °C			
35	4.90	4.90	2.62	2.62



MAGIS PRO 8 ErP

Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the heating function (Q_{HE})	kWh/year	3901	3059	1427
Room central heating seasonal efficiency (η_s)	η_s %	125	151	201
Nominal heat output	kW	5.10	5.70	5.50

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the heating function (Q_{HE})	kWh/year	11475	5469	2882
Room central heating seasonal efficiency (η_s)	η_s %	92	103	114
Nominal heat output	kW	11.10	7.00	6.90

MAGIS PRO 8 ErP

Low temperature table (30/35) colder zones

Model: MAGIS PRO 8 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for colder climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	5.10	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	3.2	kW	
Tj = + 2 °C	Pdh	2.1	kW	
Tj = + 7 °C	Pdh	3.0	kW	
Tj = + 12 °C	Pdh	3.4	kW	
Tj = bivalent temperature	Pdh	5.5	kW	
Tj = operating limit temperature	Pdh	5.5	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-20	°C	
Central heating capacity cycle intervals	Pcyh		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	POFF	0.000	kW	
Thermostat mode off	Pto	0.015	kW	
Standby Mode	PSB	0.015	kW	
Guard heating mode	PCK	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	LWA	N/A	dB	
Annual energy consumption	QHE	3901	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Qelec		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	ηs	125	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	2.67	—	
Tj = + 2 °C	COPd	3.68	—	
Tj = + 7 °C	COPd	5.55	—	
Tj = + 12 °C	COPd	6.07	—	
Tj = bivalent temperature	COPd	1.93	—	
Tj = operating limit temperature	COPd	1.93	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	-20	°C	
Cycle intervals efficiency	COPcyh or PERcyh		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	5.10	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	ηwh		%	
Daily fuel consumption	Qfuel		kWh	
Annual fuel consumption	AFC		GJ	

Low temperature table (30/35) average zones

Model: MAGIS PRO 8 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for average climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	5.70	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	5.2	kW	
Tj = + 2 °C	Pdh	3.1	kW	
Tj = + 7 °C	Pdh	3.0	kW	
Tj = + 12 °C	Pdh	3.4	kW	
Tj = bivalent temperature	Pdh	6.0	kW	
Tj = operating limit temperature	Pdh	5.9	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-12	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	66	dB	
Annual energy consumption	Q _{HE}	3059	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			

Element	Symbol	Value	Unit
Room central heating seasonal energy efficiency	η _s	151	%
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COPd	2.34	—
Tj = + 2 °C	COPd	3.54	—
Tj = + 7 °C	COPd	5.77	—
Tj = + 12 °C	COPd	6.66	—
Tj = bivalent temperature	COPd	2.46	—
Tj = operating limit temperature	COPd	1.97	—
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—
for air/water heat pumps: temperature operating limit	TOL	-10	°C
Cycle intervals efficiency	COP _{cyc} or PER _{cyc}		—
Water heating temperature operating limit	WTOL	55	°C
Additional heating appliance			
Nominal heat output	Psup	0.00	kW
Type of energy supply voltage	electrical		
For air/water heat pumps: nominal air output to outside	—		m³/h
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h

Water central heating energy efficiency	η _{wh}		%
Daily fuel consumption	Q _{fuel}		kWh
Annual fuel consumption	AFC		GJ

MAGIS PRO 8 ErP

Low temperature table (30/35) hotter zones

Model: MAGIS PRO 8 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for hotter climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	5.50	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	-	kW	
Tj = + 2 °C	Pdh	6.5	kW	
Tj = + 7 °C	Pdh	3.6	kW	
Tj = + 12 °C	Pdh	3.3	kW	
Tj = bivalent temperature	Pdh	3.6	kW	
Tj = operating limit temperature	Pdh	6.5	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	1	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	0.9	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.150	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	1427	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	201	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	-	—	
Tj = + 2 °C	COPd	3.19	—	
Tj = + 7 °C	COPd	4.51	—	
Tj = + 12 °C	COPd	6.30	—	
Tj = bivalent temperature	COPd	4.51	—	
Tj = operating limit temperature	COPd	3.20	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	2	°C	
Cycle intervals efficiency	COP _{cyc} or PER _{cyc}		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	0.00	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

Average temperature table (47/55) colder zones

Model: MAGIS PRO 8 ErP							
Air/water heat pump: yes							
Water/water heat pump: no							
Brine/water heat pump: no							
Low temperature heat pump: no							
With additional central heating device: no							
Mixed central heating device with heat pump: no							
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application							
The parameters are declared for colder climatic conditions							
Element	Symbol	Value	Unit				
Nominal heat output	Nominal output	11.10	kW				
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj							
Tj = - 7 °C	Pdh	8.0	kW				
Tj = + 2 °C	Pdh	6.4	kW				
Tj = + 7 °C	Pdh	7.8	kW				
Tj = + 12 °C	Pdh	9.5	kW				
Tj = bivalent temperature	Pdh	6.7	kW				
Tj = operating limit temperature	Pdh	6.0	kW				
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW				
Bivalent temperature	Tbiv	-7	°C				
Central heating capacity cycle intervals	Pcyc		kW				
Degradation coefficient	Cdh	1.0	—				
Different mode of energy consumption from the active mode							
OFF mode	POFF	0.000	kW				
Thermostat mode off	PTO	0.015	kW				
Standby Mode	PSB	0.015	kW				
Guard heating mode	PCK	0.015	kW				
Other items							
Capacity control	Variable						
Indoor/outdoor sound level	LWA	N/A	dB				
Annual energy consumption	QHE	11475	kWh or GJ				
For mixed central heating appliances with a heat pump							
Stated load profile				Water central heating energy efficiency	ηwh		%
Daily electrical power consumption	Qelec		kWh	Daily fuel consumption	Qfuel		kWh
annual energy consumption	AEC		kWh	Annual fuel consumption	AFC		GJ
Contact information	Immergas S.p.A. via Cisa Ligure n. 95						

MAGIS PRO 8 ErP

Average temperature table (47/55) average zones

Model: MAGIS PRO 8 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: no				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for average climatic conditions				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	7.00	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	4.7	kW	
Tj = + 2 °C	Pdh	6.2	kW	
Tj = + 7 °C	Pdh	7.7	kW	
Tj = + 12 °C	Pdh	8.9	kW	
Tj = bivalent temperature	Pdh	5.3	kW	
Tj = operating limit temperature	Pdh	4.0	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-4	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	5469	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	103	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	1.41	—	
Tj = + 2 °C	COPd	2.67	—	
Tj = + 7 °C	COPd	3.86	—	
Tj = + 12 °C	COPd	4.90	—	
Tj = bivalent temperature	COPd	1.91	—	
Tj = operating limit temperature	COPd	0.98	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	-10	°C	
Cycle intervals efficiency	COPcyc or PERcyc		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	3.00	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

Average temperature table (47/55) hotter zones

Model: MAGIS PRO 8 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: no				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for hotter climatic conditions				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	6.90	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	-	kW	
Tj = + 2 °C	Pdh	4.9	kW	
Tj = + 7 °C	Pdh	7.2	kW	
Tj = + 12 °C	Pdh	8.7	kW	
Tj = bivalent temperature	Pdh	5.8	kW	
Tj = operating limit temperature	Pdh	4.9	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	4	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	POFF	0.000	kW	
Thermostat mode off	PTO	0.015	kW	
Standby Mode	PSB	0.015	kW	
Guard heating mode	PCK	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	LWA	N/A	dB	
Annual energy consumption	QHE	2882	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Qelec		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			

Element	Symbol	Value	Unit
Room central heating seasonal energy efficiency	ηs	114	%
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COPd	-	—
Tj = + 2 °C	COPd	1.54	—
Tj = + 7 °C	COPd	2.57	—
Tj = + 12 °C	COPd	4.66	—
Tj = bivalent temperature	COPd	2.40	—
Tj = operating limit temperature	COPd	1.54	—
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—
for air/water heat pumps: temperature operating limit	TOL	2	°C
Cycle intervals efficiency	COPcyc or PERcyc		—
Water heating temperature operating limit	WTOL	55	°C
Additional heating appliance			
Nominal heat output	Psup	2.00	kW
Type of energy supply voltage	electrical		
For air/water heat pumps: nominal air output to outside	—		m³/h
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h

Water central heating energy efficiency	ηwh		%
Daily fuel consumption	Qfuel		kWh
Annual fuel consumption	AFC		GJ

MAGIS PRO 8 ErP

22 MAGIS PRO 8 ErP "POWER" AND "COP" CENTRAL HEATING

- Correction factor stated DC = 1.00
- TOL = -20 °C

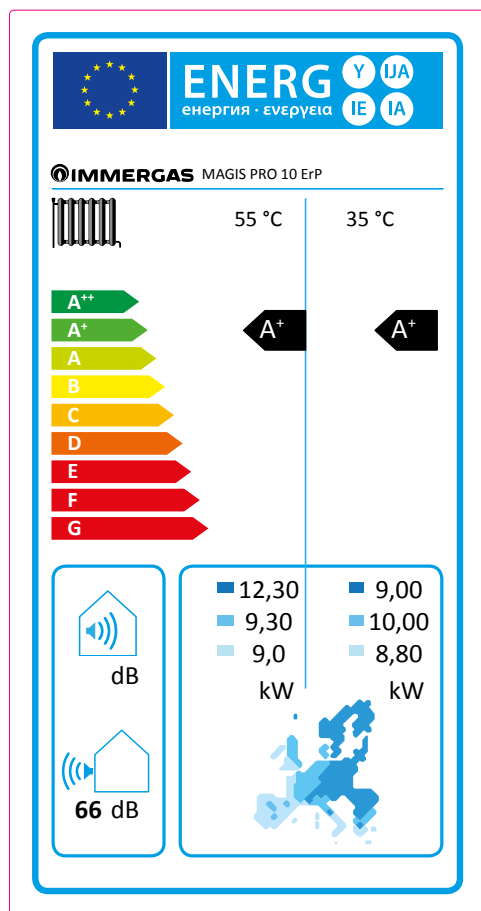
Temperature air °C		Output (kW) Nom. / Max.	COP (EN 14511) Nom. / Max.
d.b.	(w.b.)	Water flow temperature 35 °C	
12	(11)	8.63	4.61
7	(6)	7.71	4.08
2	(1)	6.46	3.20
-7	(-8)	8.53	2.71
-15	(-16)	5.20	1.81
-20	(-21)	--	--

d.b.	(w.b.)	Water flow temperature 45 °C	
12	(11)	8.01	3.51
7	(6)	7.26	3.13
2	(1)	6.07	2.52
-7	(-8)	8.00	2.18
-15	(-16)	3.21	0.96
-20	(-21)	--	--

d.b.	(w.b.)	Water flow temperature 55 °C	
12	(11)	7.34	2.66
7	(6)	6.17	2.34
2	(1)	4.90	1.54
-7	(-8)	4.66	1.13
-15	(-16)	--	--
-20	(-21)	--	--

22.1 MAGIS PRO 8 ErP "POWER" AND "EER" IN COOLING

Temperature air °C	Output (kW) Nom.	Output (kW) Max.	EER (EN 14511) Nom.	EER (EN 14511) Max.
d.b.	Water flow temperature 18 °C			
35	7.58	8.41	3.77	3.59
d.b.	Water flow temperature 7 °C			
35	5.33	5.33	2.41	2.41



MAGIS PRO 10 ErP

Low temperature (30/35)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the heating function (Q_{HE})	kWh/year	6980	5569	2376
Room central heating seasonal efficiency (η_s)	η_s %	124	145	194
Nominal heat output	kW	9.00	10.00	8.80

Average temperature (47/55)

Parameter	Value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the heating function (Q_{HE})	kWh/year	13274	7214	3765
Room central heating seasonal efficiency (η_s)	η_s %	88	104	124
Nominal heat output	kW	12.30	9.30	9.0

MAGIS PRO 10 ErP

Low temperature table (30/35) colder zones

Model: MAGIS PRO 10 ErP			
Air/water heat pump: yes			
Water/water heat pump: no			
Brine/water heat pump: no			
Low temperature heat pump: yes			
With additional central heating device: no			
Mixed central heating device with heat pump: no			
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application			
The parameters are declared for colder climatic conditions.			
Element	Symbol	Value	Unit
Nominal heat output	Nominal output	9.00	kW
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	8.9	kW
Tj = + 2 °C	Pdh	8.3	kW
Tj = + 7 °C	Pdh	10.3	kW
Tj = + 12 °C	Pdh	12.4	kW
Tj = bivalent temperature	Pdh	6.9	kW
Tj = operating limit temperature	Pdh	6.6	kW
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW
Bivalent temperature	Tbiv	-15	°C
Central heating capacity cycle intervals	Pcyc		kW
Degradation coefficient	Cdh	1.0	—
Different mode of energy consumption from the active mode			
OFF mode	P _{OFF}	0.000	kW
Thermostat mode off	P _{TO}	0.015	kW
Standby Mode	P _{SB}	0.015	kW
Guard heating mode	P _{CK}	0.015	kW
Other items			
Capacity control	Variable		
Indoor/outdoor sound level	L _{WA}	N/A	dB
Annual energy consumption	Q _{HE}	6980	kWh or GJ
For mixed central heating appliances with a heat pump			
Stated load profile			
Daily electrical power consumption	Q _{elec}		kWh
annual energy consumption	AEC		kWh
Contact information	Immergas S.p.A. via Cisa Ligure n. 95		

Element	Symbol	Value	Unit
Room central heating seasonal energy efficiency	η _s	124	%
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COPd	2.67	—
Tj = + 2 °C	COPd	3.72	—
Tj = + 7 °C	COPd	5.68	—
Tj = + 12 °C	COPd	6.07	—
Tj = bivalent temperature	COPd	2.25	—
Tj = operating limit temperature	COPd	1.93	—
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—
for air/water heat pumps: temperature operating limit	TOL	-20	°C
Cycle intervals efficiency	COPcyc or PERcyc		—
Water heating temperature operating limit	WTOL	55	°C
Additional heating appliance			
Nominal heat output	Psup	13.10	kW
Type of energy supply voltage	electrical		
For air/water heat pumps: nominal air output to outside	—		m³/h
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h
Water central heating energy efficiency	η _{wh}		%
Daily fuel consumption	Q _{fuel}		kWh
Annual fuel consumption	AFC		GJ

Low temperature table (30/35) average zones

Model: MAGIS PRO 10 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for average climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	10.00	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	8.7	kW	
Tj = + 2 °C	Pdh	8.3	kW	
Tj = + 7 °C	Pdh	10.2	kW	
Tj = + 12 °C	Pdh	12.4	kW	
Tj = bivalent temperature	Pdh	8.4	kW	
Tj = operating limit temperature	Pdh	8.1	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	-6	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	66	dB	
Annual energy consumption	Q _{HE}	5569	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	145	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	2.53	—	
Tj = + 2 °C	COPd	3.53	—	
Tj = + 7 °C	COPd	5.27	—	
Tj = + 12 °C	COPd	5.85	—	
Tj = bivalent temperature	COPd	2.53	—	
Tj = operating limit temperature	COPd	2.59	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	-10	°C	
Cycle intervals efficiency	COPcyc or PERcyc		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	P _{sup}	1.90	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

MAGIS PRO 10 ErP

Low temperature table (30/35) hotter zones

Model: MAGIS PRO 10 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: yes				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for hotter climatic conditions.				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	8.80	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	-	kW	
Tj = + 2 °C	Pdh	8.4	kW	
Tj = + 7 °C	Pdh	10.0	kW	
Tj = + 12 °C	Pdh	12.3	kW	
Tj = bivalent temperature	Pdh	10.6	kW	
Tj = operating limit temperature	Pdh	8.4	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	7	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	2376	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	194	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	-	—	
Tj = + 2 °C	COPd	3.01	—	
Tj = + 7 °C	COPd	4.73	—	
Tj = + 12 °C	COPd	5.85	—	
Tj = bivalent temperature	COPd	4.08	—	
Tj = operating limit temperature	COPd	3.01	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	2	°C	
Cycle intervals efficiency	COPcyc or PERcyc		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	0.42	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

Average temperature table (47/55) colder zones

Model: MAGIS PRO 10 ErP					
Air/water heat pump: yes					
Water/water heat pump: no					
Brine/water heat pump: no					
Low temperature heat pump: no					
With additional central heating device: no					
Mixed central heating device with heat pump: no					
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application					
The parameters are declared for colder climatic conditions					
Element	Symbol	Value	Unit		
Nominal heat output	Nominal output	12.30	kW		
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj					
Tj = - 7 °C	Pdh	8.1	kW		
Tj = + 2 °C	Pdh	8.4	kW		
Tj = + 7 °C	Pdh	10.0	kW		
Tj = + 12 °C	Pdh	12.0	kW		
Tj = bivalent temperature	Pdh	8.1	kW		
Tj = operating limit temperature	Pdh	6.9	kW		
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW		
Bivalent temperature	Tbiv	-7	°C		
Central heating capacity cycle intervals	Pcyc		kW		
Degradation coefficient	Cdh	1.0	—		
Different mode of energy consumption from the active mode					
OFF mode	P _{OFF}	0.000	kW		
Thermostat mode off	P _{TO}	0.015	kW		
Standby Mode	P _{SB}	0.015	kW		
Guard heating mode	P _{CK}	0.015	kW		
Other items					
Capacity control	Variable				
Indoor/outdoor sound level	L _{WA}	N/A	dB		
Annual energy consumption	Q _{HE}	13274	kWh or GJ		
For mixed central heating appliances with a heat pump					
Stated load profile					
Daily electrical power consumption	Q _{elec}		kWh		
annual energy consumption	AEC		kWh		
Contact information	Immergas S.p.A. via Cisa Ligure n. 95				
Element	Symbol	Value	Unit		
Room central heating seasonal energy efficiency	η _s	88	%		
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj					
Tj = - 7 °C	COPd	2.05	—		
Tj = + 2 °C	COPd	2.97	—		
Tj = + 7 °C	COPd	4.36	—		
Tj = + 12 °C	COPd	5.54	—		
Tj = bivalent temperature	COPd	2.05	—		
Tj = operating limit temperature	COPd	1.75	—		
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—		
for air/water heat pumps: temperature operating limit	TOL	-10	°C		
Cycle intervals efficiency	COPcyc or PERcyc		—		
Water heating temperature operating limit	WTOL	55	°C		
Additional heating appliance					
Nominal heat output	Psup	12.30	kW		
Type of energy supply voltage	electrical				
For air/water heat pumps: nominal air output to outside	—		m³/h		
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h		
Water central heating energy efficiency	η _{wh}		%		
Daily fuel consumption	Q _{fuel}		kWh		
Annual fuel consumption	AFC		GJ		

MAGIS PRO 10 ErP

Average temperature table (47/55) average zones

Model: MAGIS PRO 10 ErP								
Air/water heat pump: yes								
Water/water heat pump: no								
Brine/water heat pump: no								
Low temperature heat pump: no								
With additional central heating device: no								
Mixed central heating device with heat pump: no								
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application								
The parameters are declared for average climatic conditions								
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Nominal heat output	Nominal output	9.30	kW		Room central heating seasonal energy efficiency	η_s	104	%
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj					Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	5.9	kW		Tj = - 7 °C	COPd	1.51	–
Tj = + 2 °C	Pdh	8.4	kW		Tj = + 2 °C	COPd	2.61	–
Tj = + 7 °C	Pdh	9.8	kW		Tj = + 7 °C	COPd	3.88	–
Tj = + 12 °C	Pdh	11.8	kW		Tj = + 12 °C	COPd	5.03	–
Tj = bivalent temperature	Pdh	6.8	kW		Tj = bivalent temperature	COPd	2.37	–
Tj = operating limit temperature	Pdh	4.5	kW		Tj = operating limit temperature	COPd	0.98	–
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW		for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		–
Bivalent temperature	Tbiv	-3	°C		for air/water heat pumps: temperature operating limit	TOL	-10	°C
Central heating capacity cycle intervals	Pcyc		kW		Cycle intervals efficiency	COPcyc or PERcyc		–
Degradation coefficient	Cdh	1.0	—		Water heating temperature operating limit	WTOL	55	°C
Different mode of energy consumption from the active mode					Additional heating appliance			
OFF mode	P _{OFF}	0.000	kW		Nominal heat output	Psup	4.80	kW
Thermostat mode off	P _{TO}	0.015	kW		Type of energy supply voltage	electrical		
Standby Mode	P _{SB}	0.015	kW					
Guard heating mode	P _{CK}	0.015	kW					
Other items								
Capacity control	Variable				For air/water heat pumps: nominal air output to outside	—		m³/h
Indoor/outdoor sound level	L _{WA}	N/A	dB		For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h
Annual energy consumption	Q _{HE}	7214	kWh or GJ					
For mixed central heating appliances with a heat pump								
Stated load profile					Water central heating energy efficiency	η_{wh}		%
Daily electrical power consumption	Q _{elec}		kWh		Daily fuel consumption	Q _{fuel}		kWh
annual energy consumption	AEC		kWh		Annual fuel consumption	AFC		GJ
Contact information	Immergas S.p.A. via Cisa Ligure n. 95							

Average temperature table (47/55) hotter zones

Model: MAGIS PRO 10 ErP				
Air/water heat pump: yes				
Water/water heat pump: no				
Brine/water heat pump: no				
Low temperature heat pump: no				
With additional central heating device: no				
Mixed central heating device with heat pump: no				
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application				
The parameters are declared for hotter climatic conditions				
Element	Symbol	Value	Unit	
Nominal heat output	Nominal output	9.0	kW	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	Pdh	-	kW	
Tj = + 2 °C	Pdh	6.6	kW	
Tj = + 7 °C	Pdh	9.2	kW	
Tj = + 12 °C	Pdh	11.3	kW	
Tj = bivalent temperature	Pdh	7.6	kW	
Tj = operating limit temperature	Pdh	6.6	kW	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh		kW	
Bivalent temperature	Tbiv	4	°C	
Central heating capacity cycle intervals	Pcyc		kW	
Degradation coefficient	Cdh	1.0	—	
Different mode of energy consumption from the active mode				
OFF mode	P _{OFF}	0.000	kW	
Thermostat mode off	P _{TO}	0.015	kW	
Standby Mode	P _{SB}	0.015	kW	
Guard heating mode	P _{CK}	0.015	kW	
Other items				
Capacity control	Variable			
Indoor/outdoor sound level	L _{WA}	N/A	dB	
Annual energy consumption	Q _{HE}	3765	kWh or GJ	
For mixed central heating appliances with a heat pump				
Stated load profile				
Daily electrical power consumption	Q _{elec}		kWh	
annual energy consumption	AEC		kWh	
Contact information	Immergas S.p.A. via Cisa Ligure n. 95			
Element	Symbol	Value	Unit	
Room central heating seasonal energy efficiency	η _s	124	%	
Performance coefficient declared with indoor temperature equivalent to 20 °C and outdoor temperature Tj				
Tj = - 7 °C	COPd	-	—	
Tj = + 2 °C	COPd	1.54	—	
Tj = + 7 °C	COPd	2.79	—	
Tj = + 12 °C	COPd	4.26	—	
Tj = bivalent temperature	COPd	2.55	—	
Tj = operating limit temperature	COPd	1.54	—	
for air/water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd		—	
for air/water heat pumps: temperature operating limit	TOL	2	°C	
Cycle intervals efficiency	COPcyc or PERcyc		—	
Water heating temperature operating limit	WTOL	55	°C	
Additional heating appliance				
Nominal heat output	Psup	2.44	kW	
Type of energy supply voltage	electrical			
For air/water heat pumps: nominal air output to outside	—		m³/h	
For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—		m³/h	
Water central heating energy efficiency	η _{wh}		%	
Daily fuel consumption	Q _{fuel}		kWh	
Annual fuel consumption	AFC		GJ	

MAGIS PRO 10 ErP

24 MAGIS PRO 10 ErP "POWER" AND "COP" CENTRAL HEATING

- Correction factor stated DC = 1.00
- TOL = -20 °C

Temperature air °C		Output (kW) Nom	Output (kW) Max.	COP (EN 14511) Nom	COP (EN 14511) Max.
d.b.	(w.b.)	Water flow temperature 35 °C			
12	(11)	11.22	11.22	4.05	4.05
7	(6)	9.70	9.80	4.09	4.10
2	(1)	8.38	8.38	3.01	3.01
-7	(-8)	8.53	8.61	2.71	2.50
-15	(-16)	7.26	7.26	2.18	2.18
-20	(-21)	6.42	6.42	1.88	1.88

d.b.	(w.b.)	Water flow temperature 45 °C			
12	(11)	10.07	10.07	4.05	4.05
7	(6)	9.27	9.27	3.11	3.11
2	(1)	8.47	8.47	2.39	2.39
-7	(-8)	8.04	8.04	2.02	2.02
-15	(-16)	5.77	5.77	1.83	1.83
-20	(-21)	--	--	--	--

d.b.	(w.b.)	Water flow temperature 55 °C			
12	(11)	9.82	9.82	2.14	2.14
7	(6)	8.45	8.45	2.35	2.35
2	(1)	6.56	6.56	1.54	1.54
-7	(-8)	5.05	5.05	1.11	1.11
-15	(-16)	--	--	--	--
-20	(-21)	--	--	--	--

24.1 MAGIS PRO 10 ErP "POWER" AND "EER" IN COOLING

Air temperature °C	Output (kW) Nom.	Output (kW) Max.	EER (EN 14511) Nom.	EER (EN 14511) Max.
d.b.	Water flow temperature 18 °C			
35	7.58	10.22	3.77	3.24
d.b.	Water flow temperature 7 °C			
35	7.31	7.31	2.38	2.38

		MAGIS PRO 5	MAGIS PRO 8	MAGIS PRO 10
Central heating circuit				
Nominal power in CH mode with water set at 35 °C ⁽¹⁾	kW	5.80	7.71	9.70
Nominal power in CH mode with water set at 45 °C ⁽²⁾	kW	5.30	7.26	9.27
Nominal power in CH mode with water set at 55 °C ⁽³⁾	kW	4.80	6.17	8.45
CH mode nominal COP with water set at 35 °C ⁽¹⁾		4.53	4.08	4.09
CH mode nominal COP with water set at 45 °C ⁽²⁾		3.42	3.13	3.11
CH mode nominal COP with water set at 55 °C ⁽³⁾		2.64	2.34	2.35
Flow temperature range	°C	25 / 55	25 / 55	25 / 55
Outdoor temp. limits for Heating mode operation	°C	- 20 / 35	- 20 / 35	- 20 / 35
Cooling circuit				
Nominal power in cooling mode with water set at 18 °C ⁽¹⁾	kW	6.03	7.58	7.58
Nominal power in cooling mode with water set at 7 °C ⁽²⁾	kW	4.90	5.33	7.31
Cooling mode nominal EER with water set at 18 °C ⁽¹⁾		3.61	3.77	3.77
Cooling mode nominal EER with water set at 7 °C ⁽²⁾		2.62	2.41	2.38
Flow temperature range	°C	7 / 25	7 / 25	7 / 25
Outdoor temp. limits for Cooling mode operation	°C	10 / 46	10 / 46	10 / 46
Maximum absorbed power (condensing unit + hydronic module)	W	3200	4130	5200
AUDAX PRO condensing unit general data				
C.H. sound power level	dB(A)	62	66	66
Electric power supply	V - Hz	230 - 50	230 - 50	230 - 50
Permitted voltage range	V	198 - 264	198 - 264	198 - 264
Maximum absorbed current in normal operation	A	20	22	22
Fuse required	A	30	40	40
Refrigerant fluid load (R410A)	g	1200	2000	2000
Weight (net/gross)	kg	47,5 / 52,5	74,0 / 82,0	74,0 / 82,0

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

ROOM	C.H. MODE (°C)	COOLING MODE (°C)
Room Antifreeze WATER (F/R) ⁽¹⁾ - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (db)
Room Antifreeze WATER (F/R) ⁽²⁾ - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (db)
Room Antifreeze WATER (MF/R) ⁽³⁾ - AIR (db/wb)	55/47 - 7/6	

MAGIS PRO ErP

25.1

TECHNICAL DATA

System circuit (hydronic module)		
Central heating adjustable temperature (max. operating field)	°C	25 - 55
Max. system operating temperature	°C	70
Cooling adjustable temperature (max. operating field)	°C	7 - 25
Max. system operating pressure	bar	3
Rated system expansion vessel / (real)	litres	12 / (11,7)
System expansion vessel factory-set pressure	bar	1.0
Head available with 1000 l/h flow rate	kPa (m H ₂ O)	44.2 (4.5)
DHW circuit (hydronic module)		
DHW adjustable temperature	°C	10 - 50
Domestic hot water adjustable temperature with DHW integration resistance (optional)	°C	10 - 65
General data (hydronic module)		
Electric power supply	V/Hz	230 - 50
Absorbed power without additional loads	W	65
Maximum absorbed power with additional loads	W	170
Power absorbed by pump (max. speed)	W	65
EEI value		≤ 0,20 - Part. 3
System integrative resistance absorption (optional)	kW	3
Electrical insulation rating	IP	X4D
Water content	litres	4.0
Empty hydronic module weight	kg	33.5
Full hydronic module weight	kg	37.5

26

KIT 2 ZONES FOR COUPLING MAGIS PRO ErP (CODE 3.026301)



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

The pumps included in the kit are distinguished for being very elastic, also thanks to the 7 operating curves that can be pre-set. All components are already assembled and ready to operate. All electrical connections are to be taken to the MAGIS PRO ErP P.C.B.

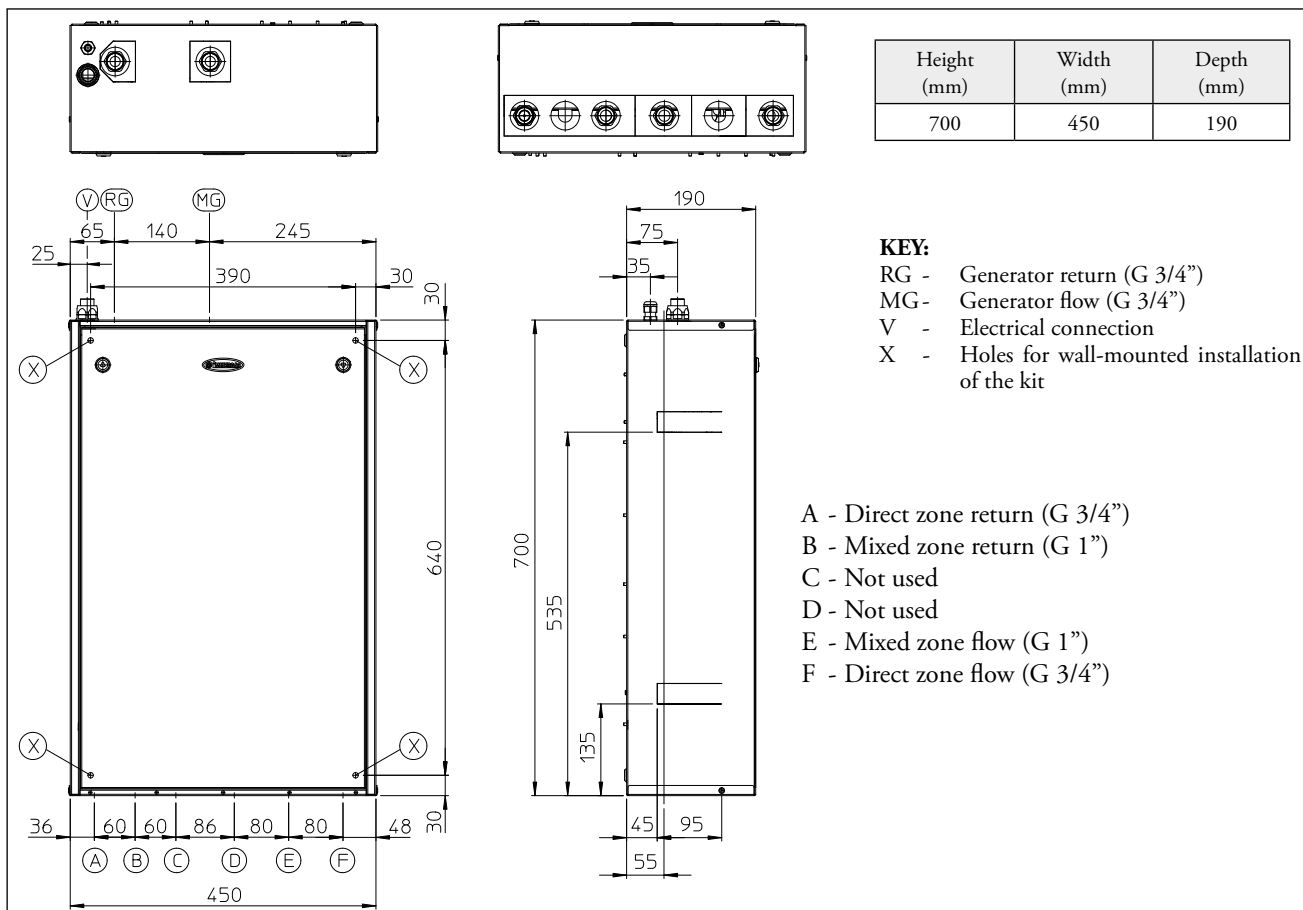
This kit is to be used to control differential temperature systems and/or divided into two distinct zones.

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

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

26.1

DIMENSIONS AND CONNECTIONS



MAGIS PRO ErP

26.2

TECHNICAL DATA

		2 Zone kit for MAGIS PRO
Maximum nominal pressure	bar	3
Water content in device	litres	1.5
Total head available in non-mixed zone with 1000 l/h flow rate (max.)	kPa (m H ₂ O)	33.7 (3.44)
Total head available in mixed zone (mixing valve open) with 1000 l/h flow rate (max.)	kPa (m H ₂ O)	27,0 (2,75)
Empty device weight	kg	21.1
Full device weight	kg	22.6
Electrical connection	V/Hz	230/50
Maximum input	A	0.7
Installed electric power	W	135
EEl value	-	≤ 0.20 - Part. 3
Electric plant protection	-	IP20
Maximum distance kit - heat pump	m	500

26.3

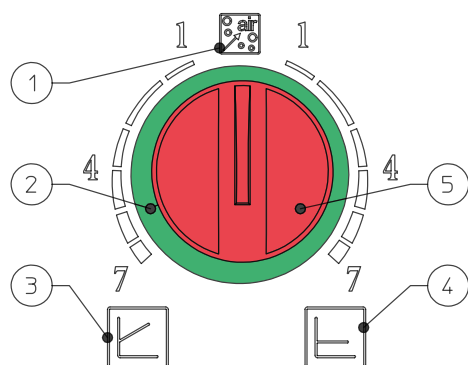
CIRCULATION PUMP SETTINGS AND CONFIGURATIONS

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

For proper operation one must select the most suitable type of operation for the system and select a speed between 1 and 7.

- **Program 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. One can select the operating level from minimum to maximum by turning the selector switch clockwise in the relative power scale (refer to the drawing below).

- **Program 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 of the water flow in the pipes, valves and radiators is eliminated by reducing the head. One can select the operating level from minimum to maximum by turning the selector switch anticlockwise on the relative power scale (refer to the drawing below).



KEY:

- 1 - Automatic vent mode operation
- 2 - Light ring to indicate the operating status
- 3 - Proportional head operation
- 4 - Constant head operation
- 5 - Operating mode selector switch

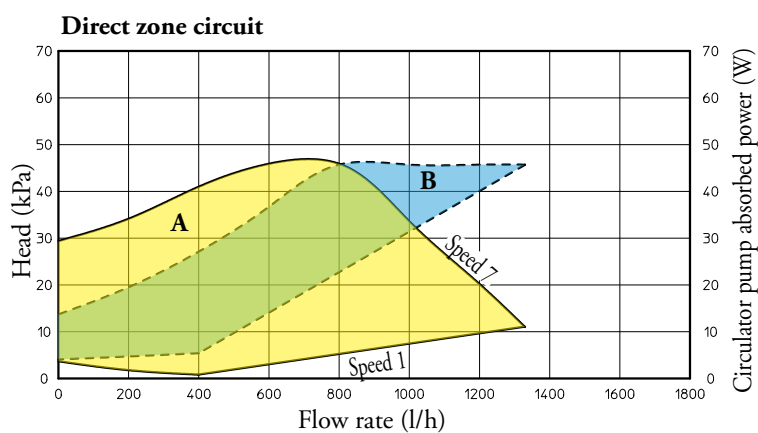
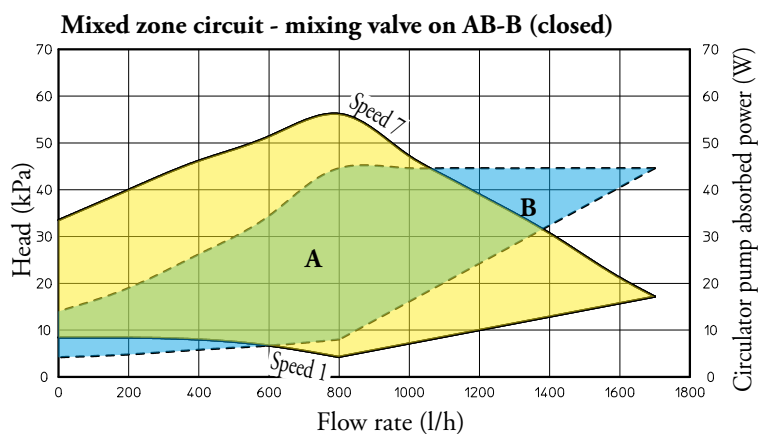
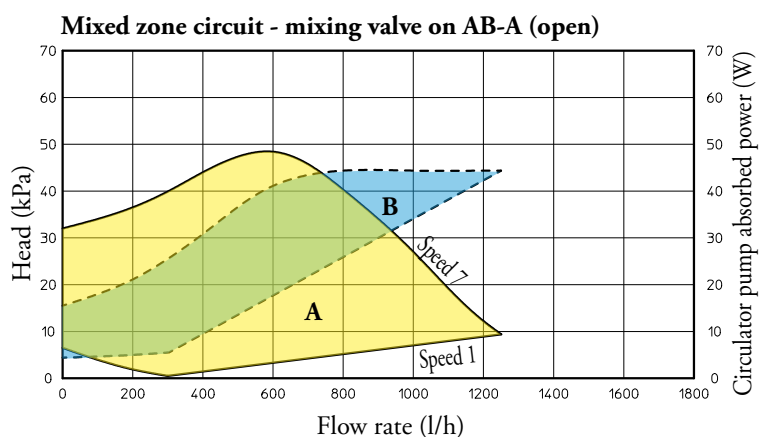
26.4

GRAPHICS PUMPS WITH CONSTANT HEAD PROGRAM

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

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

WILO YONOS PARA RS 15-7 RKA CM 130



KEY:

A = Head available at speed 1 ÷ 7

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

EEI ≤ 0.20

MAGIS PRO ErP

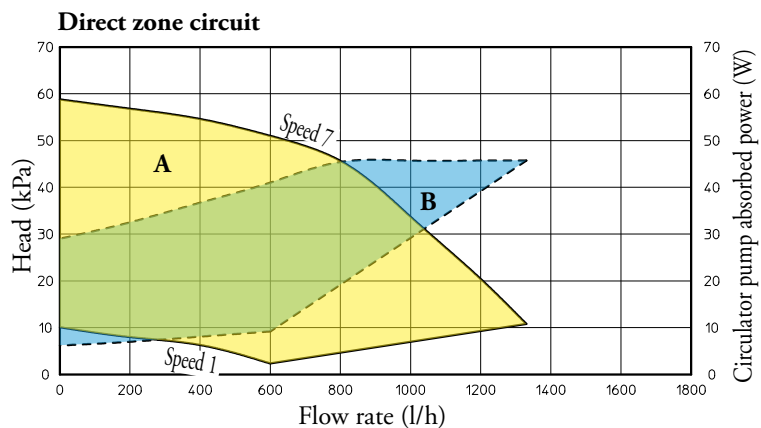
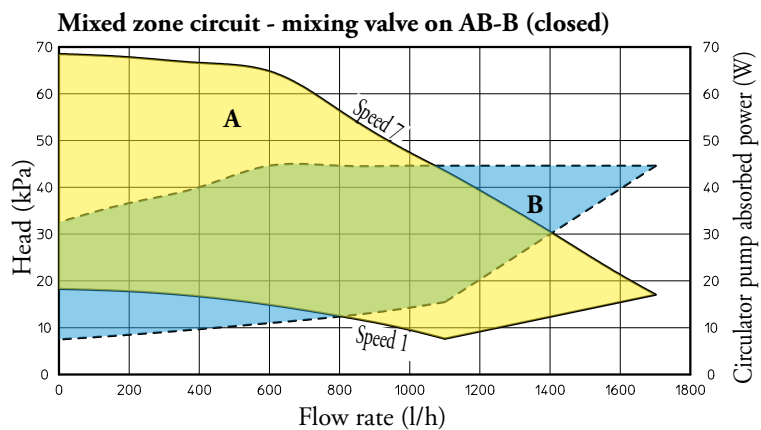
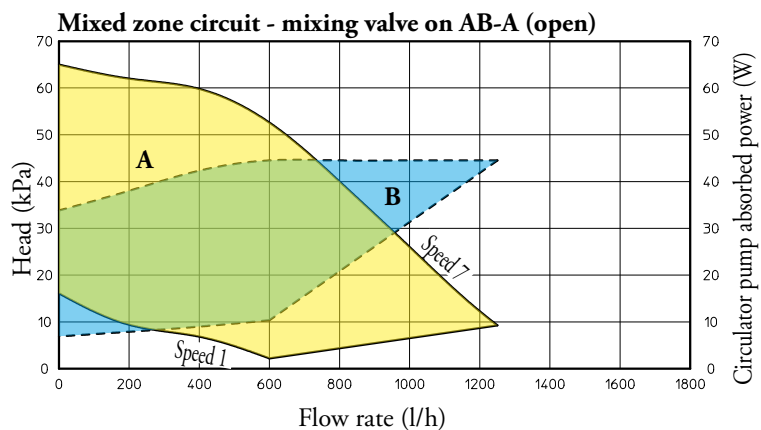
26.5

GRAPHICS PUMPS WITH PROPORTIONAL HEAD PROGRAM

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

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

WILO YONOS PARA RS 15-7 RKA CM 130



KEY:

A = Head available at speed 1 ÷ 7

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

EEI ≤ 0.20



The System manager (optional) is to be used mainly when wanting to couple an integrative boiler to MAGIS PRO ErP. It is an electronic controller with microprocessor, realised with the objective of being a "unique manager" for integrated systems. Thanks to this innovative supervisor, it is possible to establish and activate the most convenient heat source depending on functional, environmental and "economic" parameters.

In fact, to control everything, the System manager must acquire the data relative to the external temperature and the system flow temperature (relative to the pre-set climatic curve), after having configured the fuel cost parameter (e.g. methane gas) and that of the electric energy.

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

27.1

TECHNICAL FEATURES

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

- MAGIS PRO ErP;
- Immergas boiler;
- storage tank for D.H.W. production (the D.H.W. temperature is managed by the NTC probe);
- up to 2 solar circulation units for systems with manifolds arranged on different slopes;
- temperature probes (NTC - PT1000);
- on-off request dry contact;
- integrative electric resistance for DHW;
- the integrative electric resistance for the heating system is inserted in the MAGIS PRO ErP (hydronic module) and is directly controlled from the MAGIS PRO ErP electronics;
- variable flow temperature of the heat pump and the boiler (using the required models), depending on the external temperature (a climatic curve is pre-selected);
- 4 expansion boards to manage the air conditioning system (3 of which for any mixed/not mixed zones and one used exclusively in the high temp. zone that operates independently, connected to the boiler circuit);
- 1 expansion board for the additional functions, namely:
 - hot/cold switch-over on distinct systems (for example systems with radiant panel heating and fan-coil cooling);
 - recirculation pump management for DHW;
 - acquisition of a signal from a system that generates electrical energy (e.g. photovoltaic system);

- up to 3 humidity-temp. sensors or 4 Zone remote controls;
- up to 3 dehumidifiers.

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

- external temperature;
- system flow temperature;
- storage tank temperature (even through 2-3 probes, 1 of which refers to the solar-heated part of the boiler);
- by means of self-diagnosis, detection and display of error codes in the event of anomalies;
- date and time;
- differentiated selection and programming for each individual zone;
- programming the time periods for DHW production;
- anti-legionella program (in a system where there is a boiler or integrative resistance on the storage tank, in addition to the Heat pump);
- cost of combustion (Methane or LPG);
- cost of the electric energy;
- management of the heat/cooling sources.

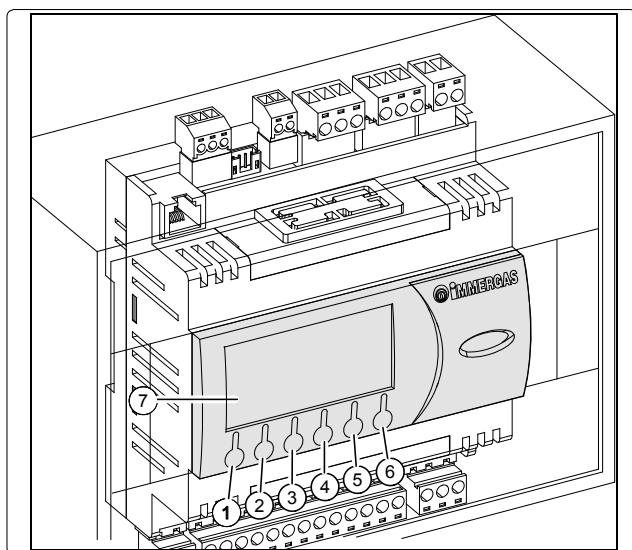
• **SYSTEM MANAGER**

code 3.021522

MAGIS PRO ErP

27.2

DESCRIPTION AND CONTROLS OF SPECIAL FUNCTIONS



This **button (1)** allows you to change the operating mode of the system, specifically: Summer (only DHW and solar heating), Summer with cooling, Winter, Party (all zones are set in comfort mode), Standby (all requests are disabled: room antifreeze protection < 5°C only remains active, if Immergas room probe is installed).

This **button (2)** allows you to access the submenus: Selection, Programming, Info, Alarms log, Assistance.

This **button (3)** allows you to move back from a current menu to the previous one.

These **buttons (4 and 5)** allow you to scroll through the menus on the screen cyclically or to increase or decrease the value of the various parameters.

The **button (6)** enables you to change the displayed data.

DISPLAY (7) description:

- winter - room central heating and DHW production functions are enabled;
- summer - DHW production only is enabled;
- comfort temperature is active;
- operating with automatic program;
- operating with manual program;
- operating with holiday timer program;
- operation with energy savings programme;
- symbol indicating anomaly;
- request for central heating in room in progress;
- request for DHW in progress;
- DHW heating and cooling program;
- operating in "Party" mode;
- request to heat or cool room;
- solar panel operation in progress;
- system in Stand-by;
- request for cooling in room in progress;
- dehumidifier with cooled air;
- dehumidifier with neutral air;

The system Manager is equipped with several important functions and application options:

- Set climatic curves for each zone, both for hot and cold; maximum temperature of 85 °C, which can be selected for all zones;
- Identify each zone independently: only hot, hot/cold, hot/cold with dehumidifier and dew point calculation, cold only, cold only with dehumidifier and dew point calculation. The said dew point calculation function can also be enabled/disabled if dehumidifier management is disabled (e.g. with another dehumidifier system managed independently);
- Set the Tminimum integration (cut off) or COP calculation to use the heat pump;

- Optimise the flow temperature to the system by means of probes situated on the secondary booster circuit (e.g. with a hydraulic manifold);

- In the event of boiler integration, it is also possible to keep MAGIS PRO ErP permanently active if COP is advantageous.

The Manager must be connected to the boiler via the external probe clamps (range models VICTRIX TT ErP, VICTRIX kW TT, VICTRIX MAIOR TT, VICTRIX EXA, VICTRIX SUPERIOR ErP and all models with SUPERIOR electronics);

- DHW production boiler management via the heat pump as opposed to the solar system (MAGIS PRO ErP connected to the lower coil, boiler connected to the upper coil), in order to obtain renewable source coverage on DHW;

- Option to have remote-domotic management on the Manager. 3 digital inputs are used on expansion address "5", which, according to their status (open/closed), determine the operation mode. Contact "domotic" management is executed using the following options:

- Standby (inputs ID1=0 ID2=0 ID3=0);
- Winter (inputs ID1=1 ID2=0 ID3=0);
- Summer (inputs ID1=1 ID2=1 ID3=0);
- Cooling (inputs ID1=0 ID2=0 ID3=1);
- Party (inputs ID1=1 ID2=0 ID3=1);
- Digital output 4 regarding expansion address "5" is enabled in the event of a system anomaly (for an error message to be sent to the domotic system);

- Input on expansion address "5" to force activation of MAGIS PRO ErP with the FV system which generates electricity. By using an inverter/electronic device that supplies a signal when FV production exceeds a set value, a contact closes on expansion address "5", which:

- Immediately brings the DHW storage tank to 50 °C, disabling any programmed DHW time bands;

- The minimum COP functional convenience is reset and Tminimum integration brought to -15 °C, thus removing integration from the boiler; the only thing that remains active is the maximum time for the system to be fully operational, beyond which the boiler is activated in order to guarantee climatic comfort;

- If a puffer system is configured in the menu, it is heated up to 55 °C, even without request from the system; also in this case, the only thing to remain active is the maximum time for the system to be fully operational.

- Input on expansion address "4" to disable the generators when a thermal chimney operates.

28 REMOTE CONTROL OF ZONE (WITH SYSTEM MANAGER)



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

• OPTIONAL

code 3.023364

29 TEMPERATURE/HUMIDITY SENSOR (WITH SYSTEM MANAGER)



It is a room temperature and humidity probe, to be applied to the wall.

Differently to the zone remote control kit, in this case, the settings of all room parameters take place on the System Manager. The kit must be connected directly to the expansion board for zone management.

The kit must be powered at 24 Vac.

• OPTIONAL

code 3.021524

30 EXPANSION BOARD FOR ZONE MANAGEMENT (WITH SYSTEM MANAGER)



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

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

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

• OPTIONAL

code 3.021547

MAGIS PRO ErP

31

DISTRIBUTION KIT TO THE SYSTEM (WITH SYSTEM MANAGER)



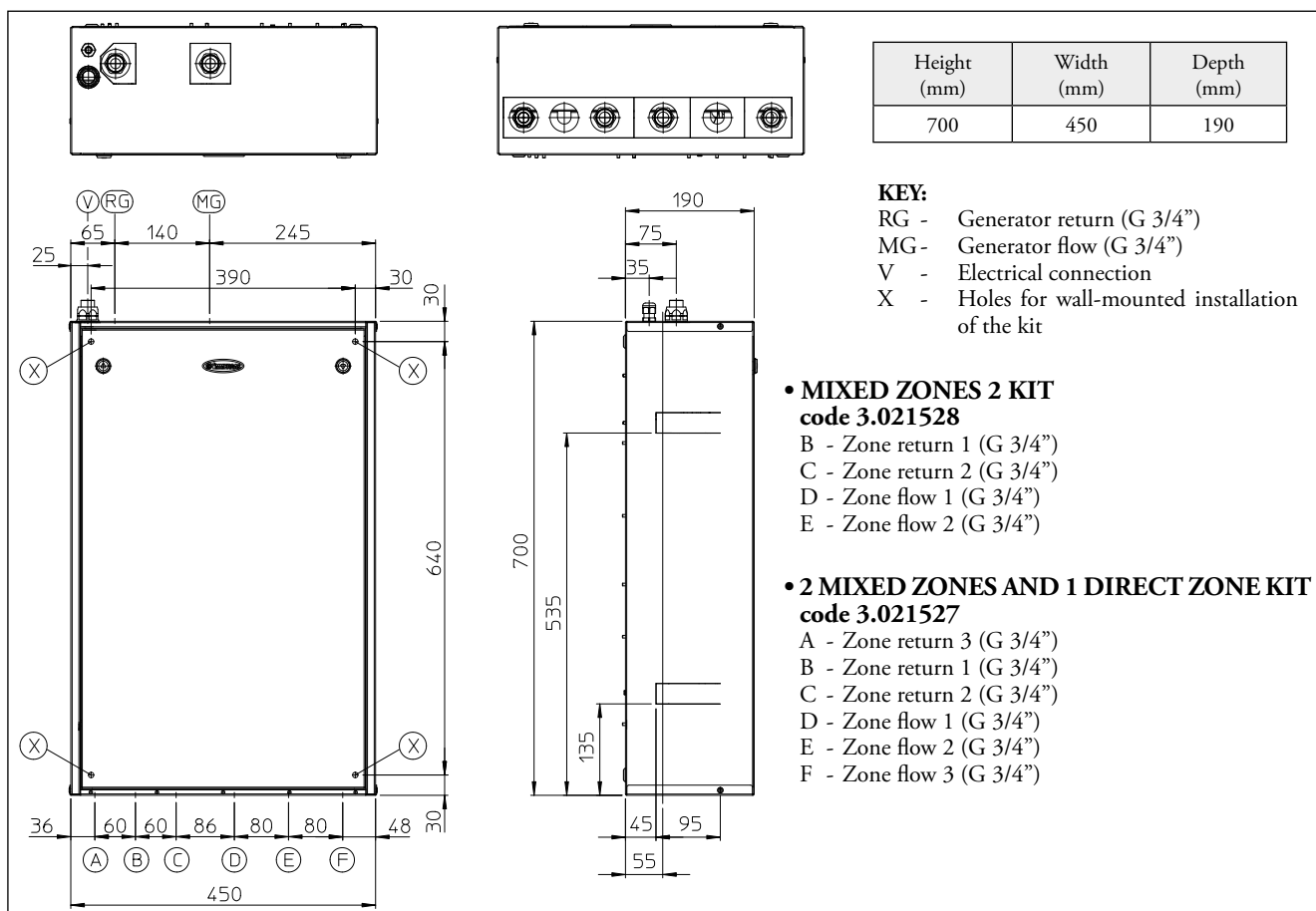
Two pre-packaged systems called: "**2 mixed zones kit**" and "**2 mixed zones and 1 direct zone kit**". They are comprised of 2 separate hydraulic manifolds (flow/return) + by-pass, thermometers to read the temperatures, motorised mixing valves, low energy consumption electro pumps and expansion boards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

The pumps included in the kit are distinguished for being very elastic, also thanks to the 7 operating curves that can be pre-set. All parts are already assembled and ready for operation exclusively in combination with the System Manager. With the aid of the expansions the 2 kits are governed by the System Manager during the central heating and cooling phases.

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

31.1

DIMENSIONS AND CONNECTIONS



31.2

TECHNICAL DATA

		Mixed zones 2 kit	2 mixed zones and 1 direct zone kit
Maximum nominal pressure	bar	3	3
Maximum operating pressure	°C	90*	90*
Low temperature circuit minimum set point regulation temperature	°C	25	25
Low temperature circuit maximum set point regulation temperature	°C	50/85*	50/85*
Water content in device	litres	1.5	1.9
Total head available in non-mixed zone with 1000 l/h flow rate (max.)	kPa (m H ₂ O)	--	43 (4.30)
Total head available in mixed zone (mixing valve closed) with 1000 l/h flow rate (max.)	kPa (m H ₂ O)	54.50 (5.50)	54.50 (5.50)
Empty device weight	kg	21.1	23.1
Full device weight	kg	22.6	25.0
Electrical connection	V/Hz	230/50	230/50
Maximum input	A	0.9	1.2
Installed electric power	W	105	150
Power in Stand-by	W	9.5	9.5
Electric plant protection	-	IP20	IP20
Maximum distance between kit - heat pump or boiler	m	500	500

* = temperature can only be reached in combination with a boiler.

31.3

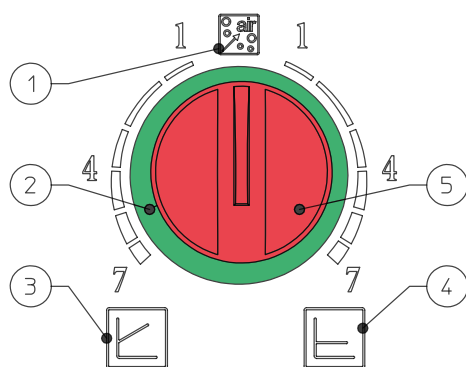
CIRCULATION PUMP SETTINGS AND CONFIGURATIONS

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

For proper operation one must select the most suitable type of operation for the system and select a speed between 2 and 7.

- **Program 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. One can select the operating level from minimum to maximum by turning the selector switch clockwise in the relative power scale (refer to the drawing below).

- **Program 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 of the water flow in the pipes, valves and radiators is eliminated by reducing the head. One can select the operating level from minimum to maximum by turning the selector switch anticlockwise on the relative power scale (refer to the drawing below).



KEY:

- 1 - Automatic vent mode operation
- 2 - Light ring to indicate the operating status
- 3 - Proportional head operation
- 4 - Constant head operation
- 5 - Operating mode selector switch

MAGIS PRO ErP

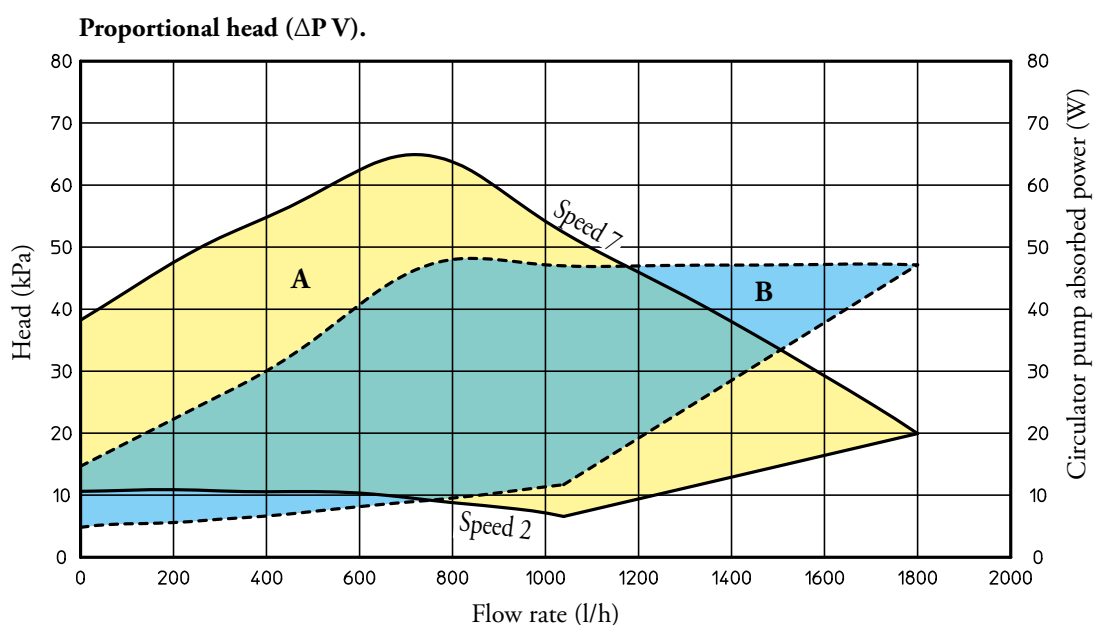
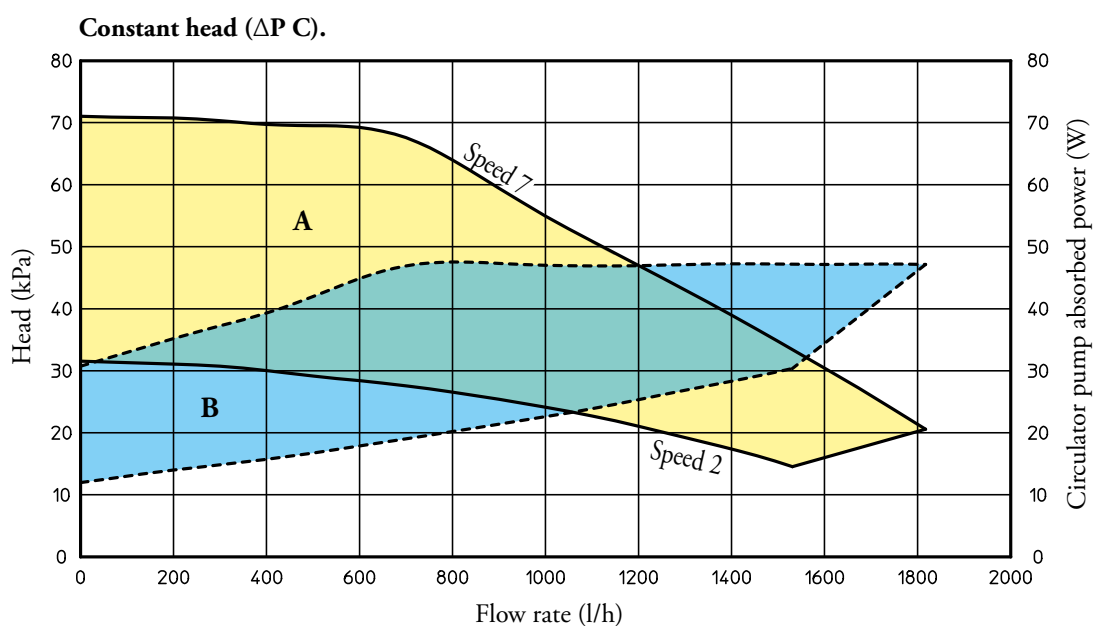
31.4 GRAPHS OF CIRCULATION PUMP FLOW RATE-ABSORPTION-HEAD

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

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

ZONE MIXED WITH A CLOSED MIXING VALVE

WILO YONOS PARA RS 15-7 RKA CM 130



KEY:

A = Head available at speed 2 ÷ 7

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

EEI ≤ 0.20

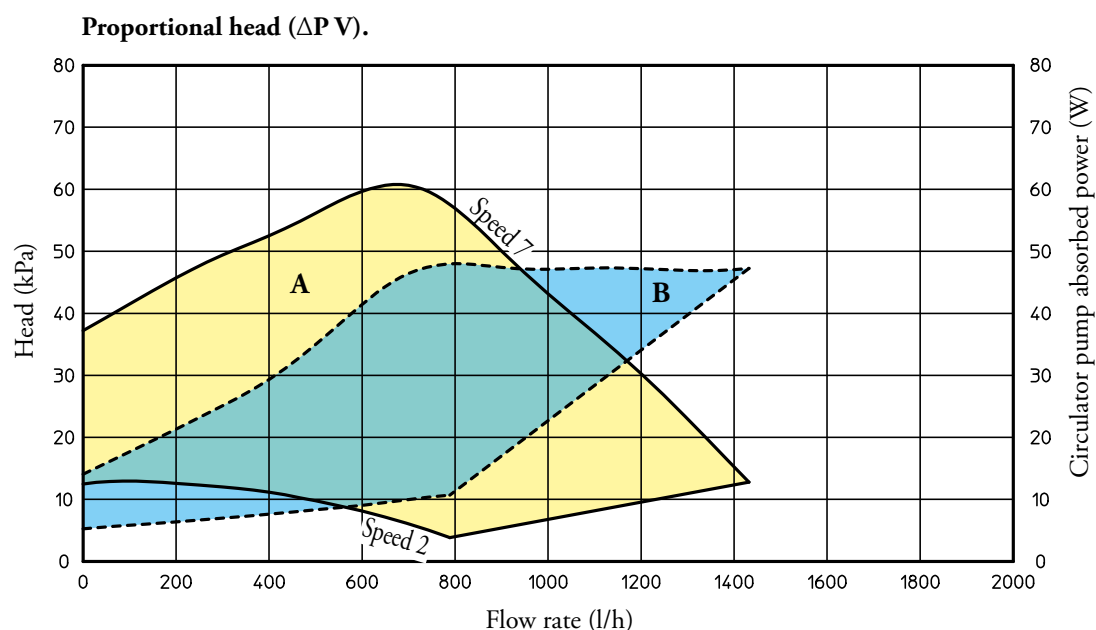
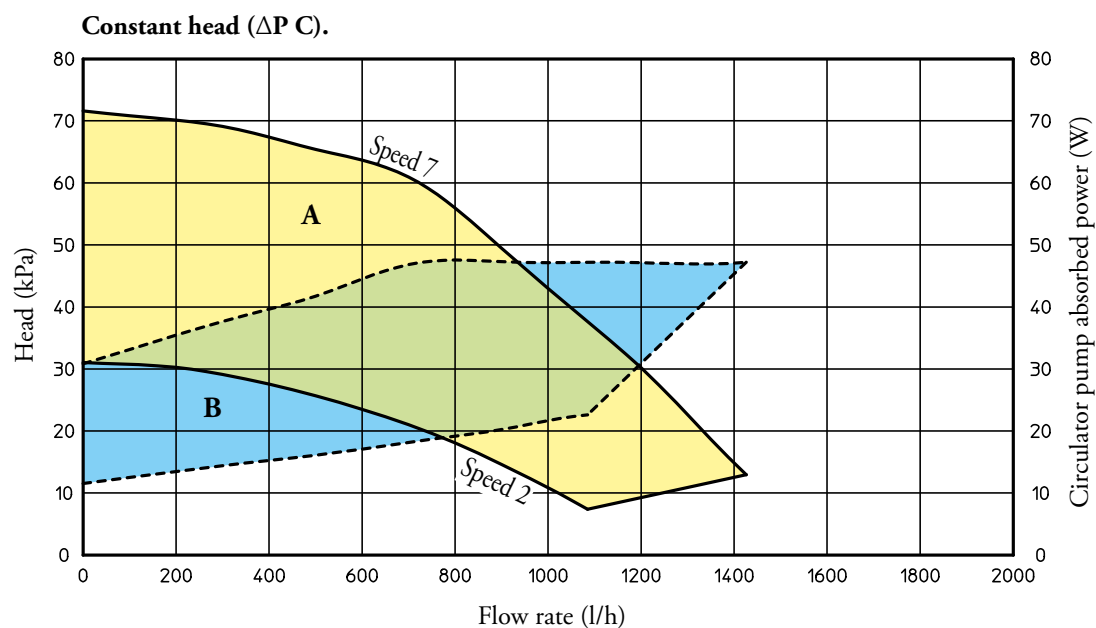
31.5 GRAPHS OF CIRCULATION PUMP FLOW RATE-ABSORPTION-HEAD

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

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

ZONE MIXED WITH AN OPEN MIXING VALVE AND DIRECT ZONE

WILO YONOS PARA RS 15-7 RKA CM 130



KEY:

A = Head available at speed 2 ÷ 7

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

EEI ≤ 0.20

MAGIS PRO ErP

32

DEHUMIDIFIER



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

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

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

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

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

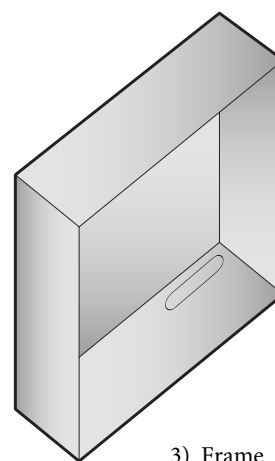
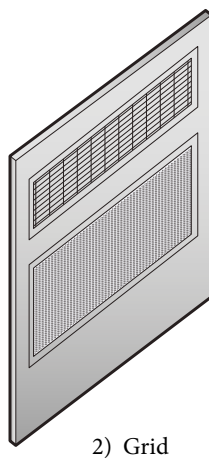
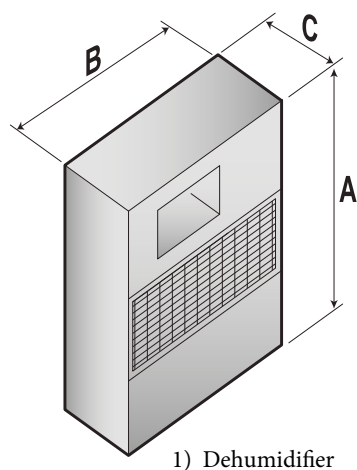
Dehumidification can take place:

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

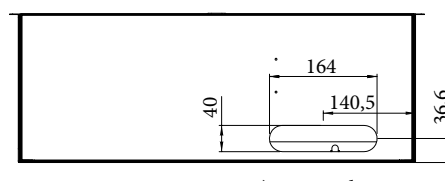
This operation can only be obtained with the System manager and its expansions, to couple the dehumidifier directly to MAGIS PRO ErP, see the paragraph "MAGIS PRO ErP management electronic functions".

32.1

DIMENSIONS AND CONNECTIONS



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



• DEHUMIDIFIER

(frame and grid to be purchased separately)

code 3.021529

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

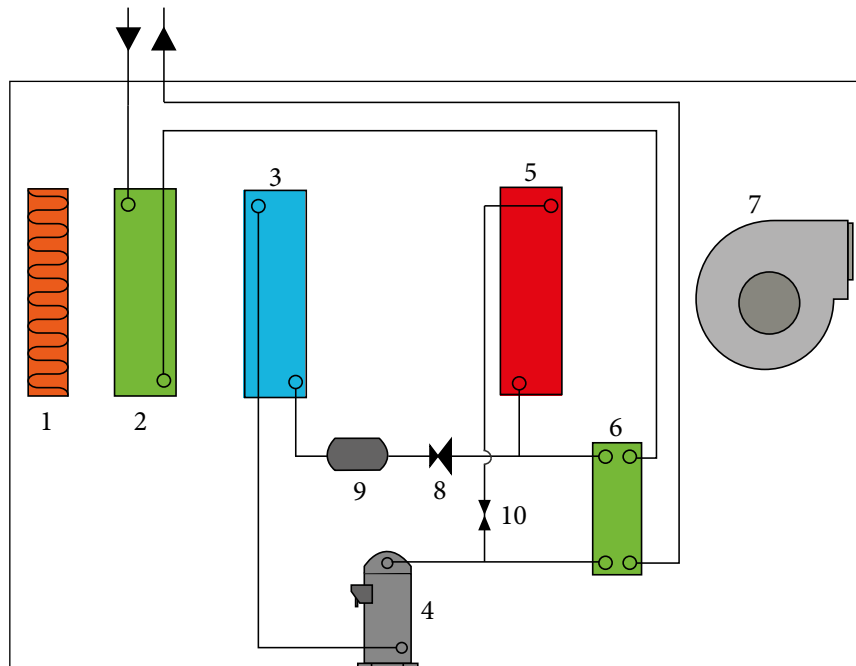
32.2

OPERATING PRINCIPLE

The **humid air** is taken from the room through the fan (7) and made to pass through the filter (1) and the pre-cooling water coil (2), where the air itself is cooled and taken to a condition near to the saturation curve. It then passes through the evaporating coil (3) where air is further cooled and dehumidified

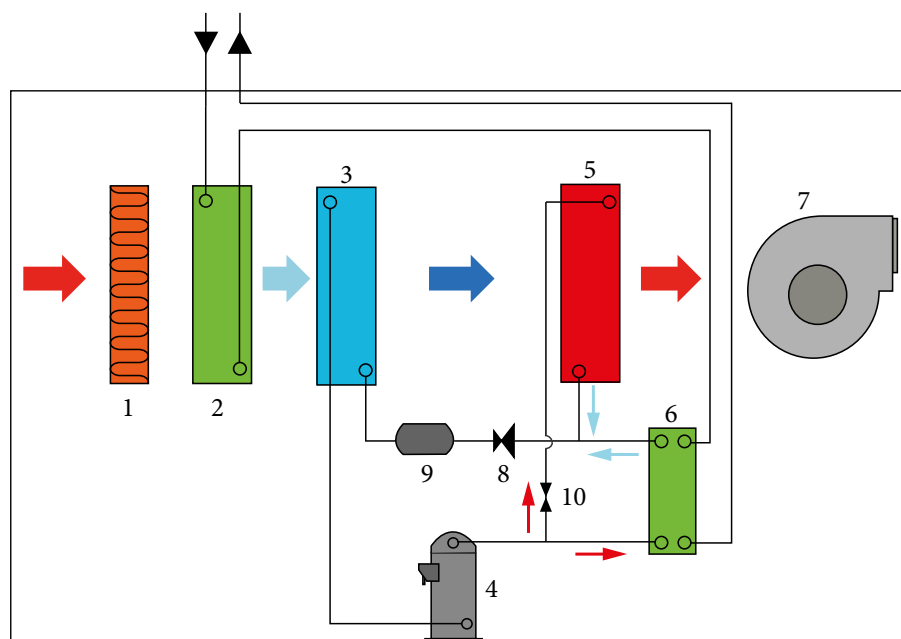
LEGENDA:

- 1 - Air filter
- 2 - Pre-cooling coil
- 3 - Evaporator
- 4 - Compressor
- 5 - Condenser
- 6 - Post-cooling coil
- 7 - Fan
- 8 - Throttle valve
- 9 - Dryer filter
- 10 - Shut-off valve



Dehumidification mode with neutral air

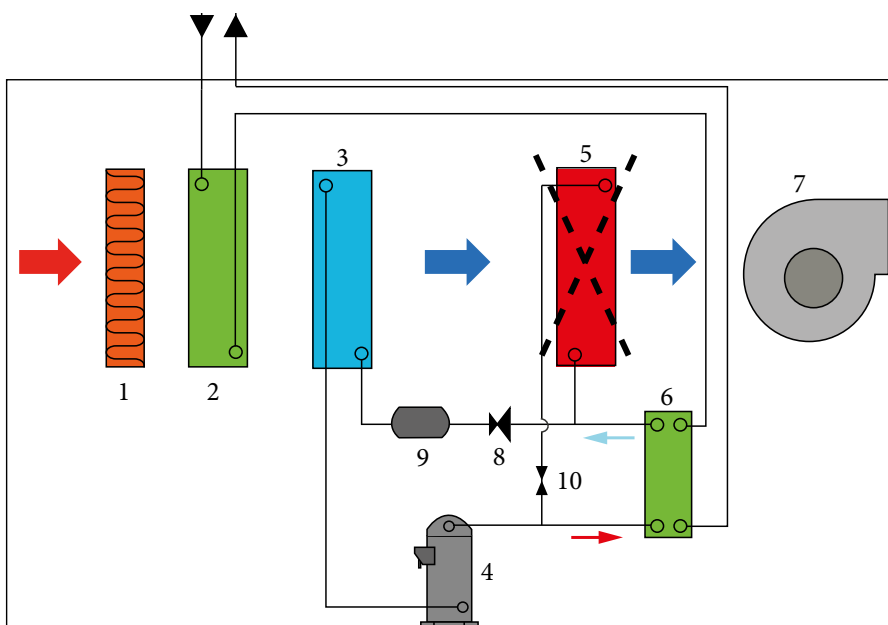
The cooling circuit works by partially condensing in water through the heat exchanger (6) and partially in air through the heat exchanger (5); accordingly air post-heating is performed and this air is sent into the room in thermally neutral conditions



MAGIS PRO ErP

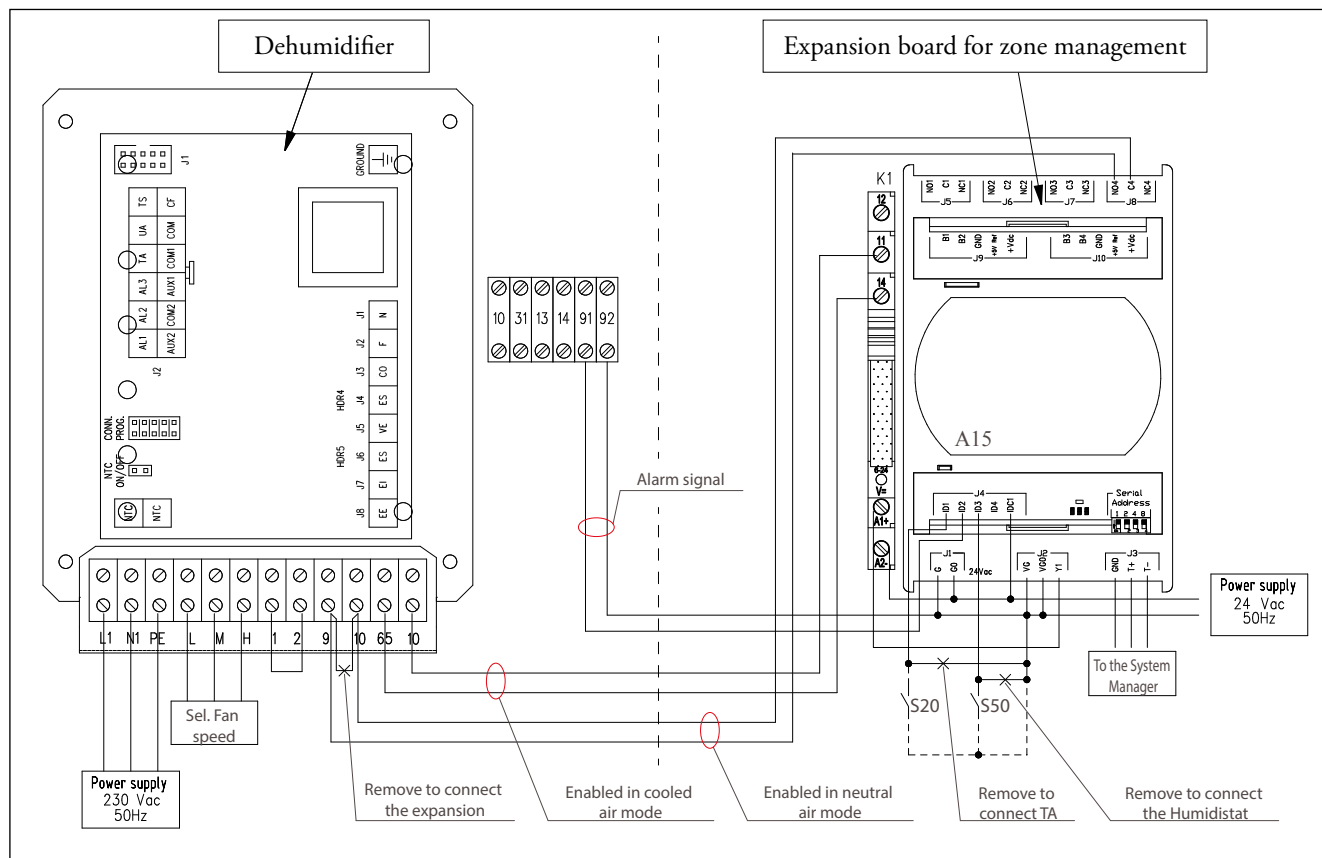
Dehumidification mode with cooled air

In this case, the cooling circuit performs 100% of condensation in water via exchanger (6). The condenser (5) is cut-off via the valve (10) and the air sent into the room is the same - cooled and dehumidified - at evaporator outlet (3)



32.3

DEHUMIDIFIER LAYOUT AND WIRING DIAGRAMS (WITH SYSTEM MANAGER AND EXPANSION)



32.4

TECHNICAL DATA

Refrigerant		R134a
Humidity removed in neutral air condition ⁽¹⁾	litres/24h	20.1
Cooling capacity ⁽¹⁾	W	1250
Nominal water flow rate	l/h	150
Load losses	kPa	7.8
Water supply temperature operating field	°C	15 - 45
Humidity operating 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
Absorbed power ⁽¹⁾	W	340
Supply voltage	V/Ph/Hz	230/1~/50
Maximum absorbed power ⁽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:

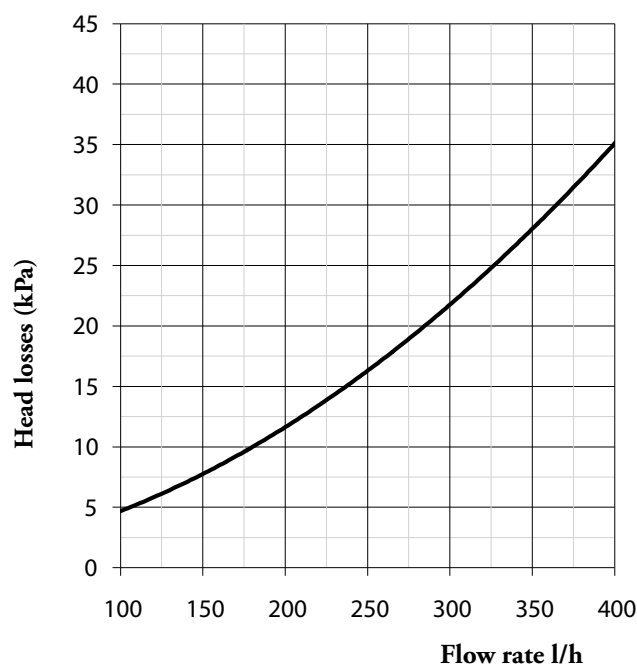
¹⁾ Room temperature 26 °C; relative humidity 65% with coil inlet water temperature of 15 °C.

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

32.5

LOAD LOSS OF THE HYDRAULIC CIRCUIT



MAGIS PRO ErP

33 INTRODUCTION WITH COMMENTARY TO THE DIAGRAMS: MAIN APPLICATIONS

34-34.1 Diagram with MAGIS PRO ErP and kit 2 zones for coupling to MAGIS PRO ErP + Integrative resistance for the heating system

Description of winter functioning:

- **CH phase active:** 1 or more room sensors activate consent in the winter phase: in this diagram MAGIS PRO ErP is integrated through the 3 kW electric resistance (optional), to be inserted in the hydronic module. The logic plans to activate the resistance if I do not reach the temperature set within the maximum time, or below a certain outdoor temperature (settable) I can immediately activate the resistance.

- **DHW phase:** The MAGIS PRO ErP electronics constantly monitor the DHW temperature set (probe located in the storage tank), activating MAGIS PRO ErP.

N.B.: Any solar system must be managed by a solar control unit, to be purchased separately.

35-35.1 Diagram with MAGIS PRO ErP (air conditioning only) + boiler PLUS + kit system distribution + solar heating for DHW + System manager

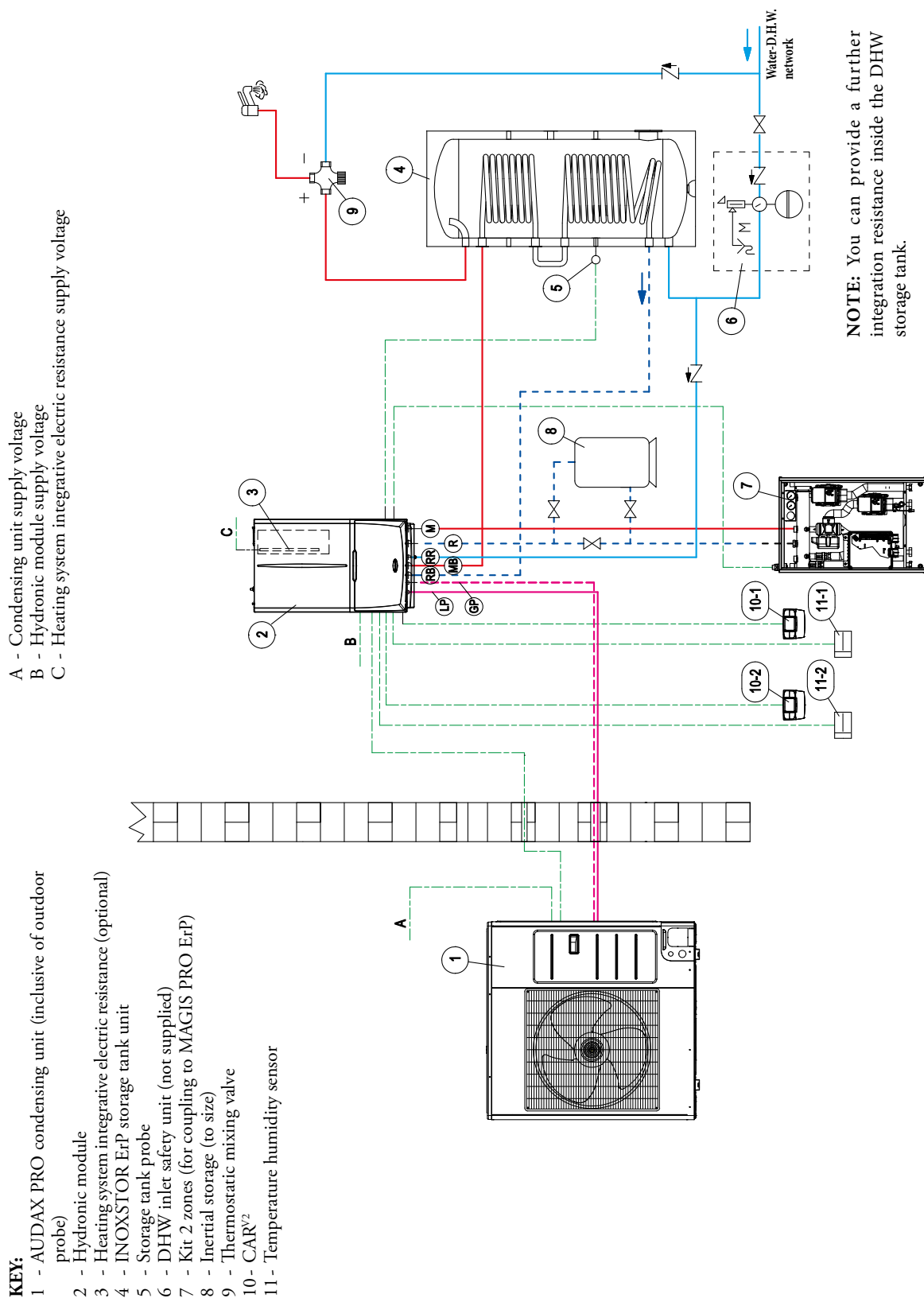
Description of winter functioning:

- **CH phase active:** 1 or more zone Controls activate winter mode consent, the system Manager, according to the outdoor temperature detected and the room temperature set above the pre-set climatic curve, activates MAGIS PRO ErP or the boiler according to the COP calculated (if > the minimum economical convenience value - use of MAGIS PRO ErP is approved), or according to Tminimum integration (cut off) set in the System Manager.

Remember that also times for making the system operational can vary the boiler insertion mode.

- **Domestic hot water mode:** this system was designed to privilege DHW operation of the boiler only, obviously in addition to the solar heating system (governed by the System Manager). During the summer cooling phase, the inversion of the MAGIS PRO ErP functioning cycle is also prevented (from chiller to heat pump).

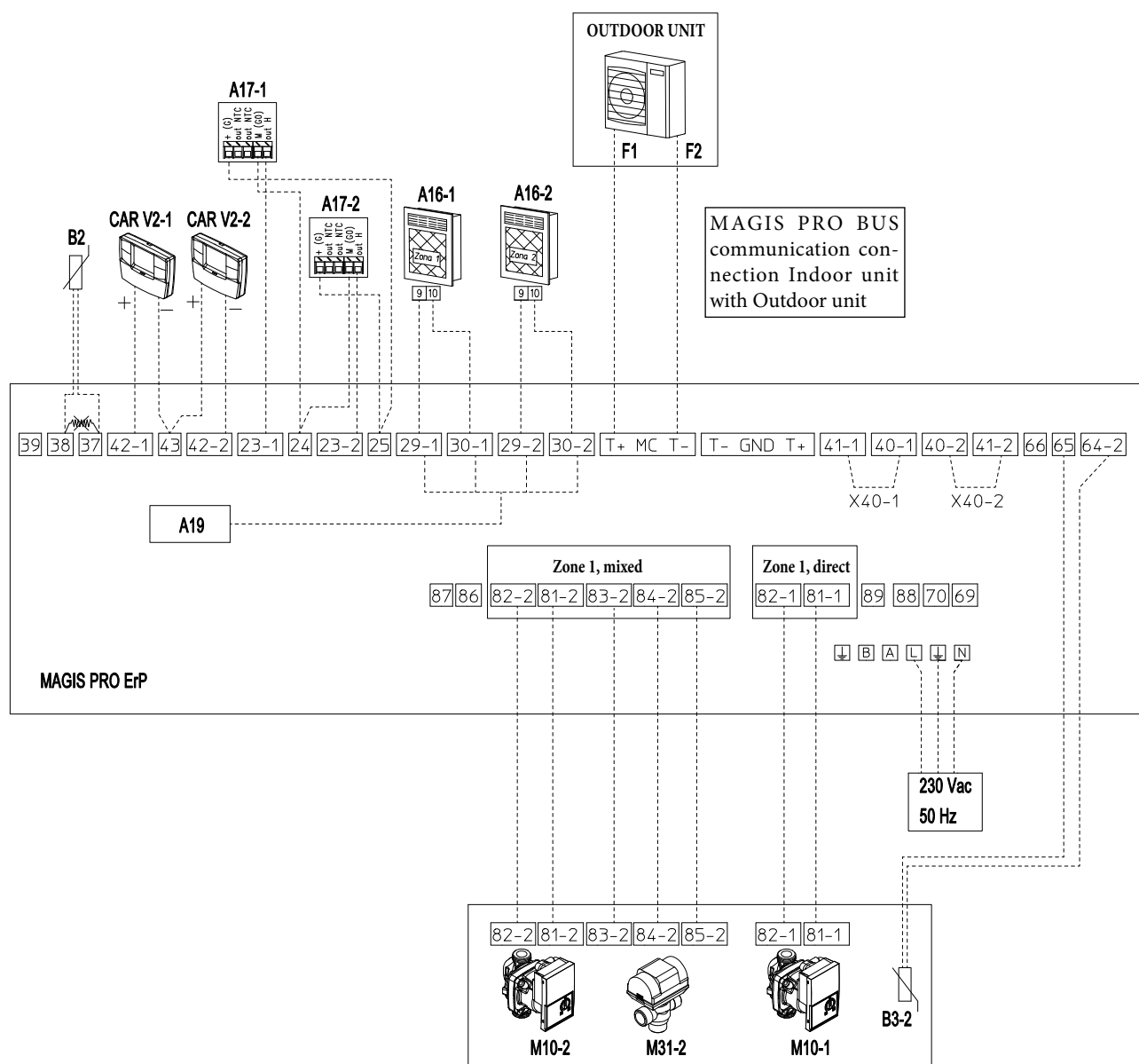
34 HYDRAULIC DIAGRAM: MAGIS PRO + KIT 2 ZONES (1 DIRECT AND 1 MIXED) + INTEGRATIVE RESISTANCE FOR HEAT SYSTEM



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

MAGIS PRO ErP

34.1 WIRING DIAGRAM: MAGIS PRO + KIT 2 ZONES (1 DIRECT AND 1 MIXED) + INTEGRATIVE RESISTANCE FOR HEAT SYSTEM



KEY:

- A16-1 - Zone 1 dehumidifier
- A16-2 - Zone 2 dehumidifier
- A17-1 - Zone 1 humidity sensor
- A17-2 - Zone 2 humidity sensor
- A19 - 2-relay board (optional)
- B2 - Storage tank temperature probe
- B3-2 - Mixed zone 2 flow probe
- CAR^{V2}-1 - Comando Amico Remoto remote control^{V2} zone 1
- CAR^{V2}-2 - Comando Amico Remoto remote control^{V2} zone 2
- M10-1 - Zone 1 pump
- M10-2 - Zone 2 pump
- M31-2 - Mixing valve zone 2
- T+ / T- (MC) - AUDAX PRO communication BUS

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

To electrically connect the CH electric resistance, see the corresponding instruction sheet.

You can provide a further integration resistance inside the DHW storage tank.

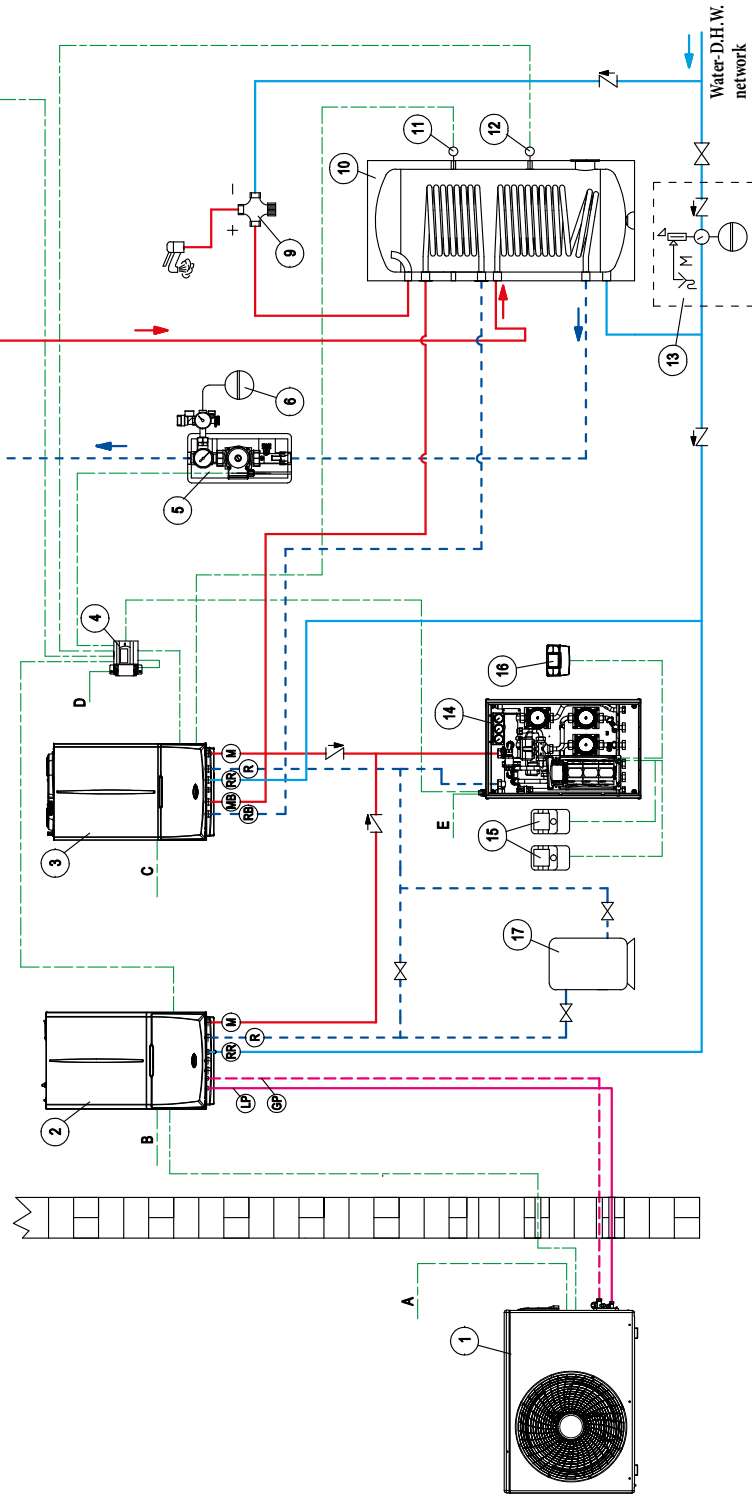
35 HYDRAULIC DIAGRAM: MAGIS PRO (AIR CONDITIONING ONLY) + BOILER PLUS + SYSTEM DISTRIBUTION KIT + SOLAR HEATING FOR DHW + SYSTEM MANAGER

KEY:

- 1 - AUDAX PRO condensing unit (inclusive of outdoor probe)
- 2 - Hydronic module
- 3 - VICTRIX kW TT PLUS Boiler
- 4 - System Manager
- 5 - Solar ErP circulation unit with safety valve
- 6 - Solar expansion vessel
- 7 - Flat solar collectors
- 8 - Solar manifold probe PT1000 code 3.019374
- 9 - Thermostatic mixing valve
- 10 - INOXSTOR ErP storage tank unit
- 11 - NTC probe for storage tank unit upper part
- 12 - NTC probe for storage tank unit bottom part
- 13 - DHW inlet safety unit (not supplied)

- 14 - Kit 2 mixed zones and 1 direct zone (for coupling to System manager)
- 15 - Remote zone control
- 16 - Room CRONO-thermostat
- 17 - Inertial storage (to size)

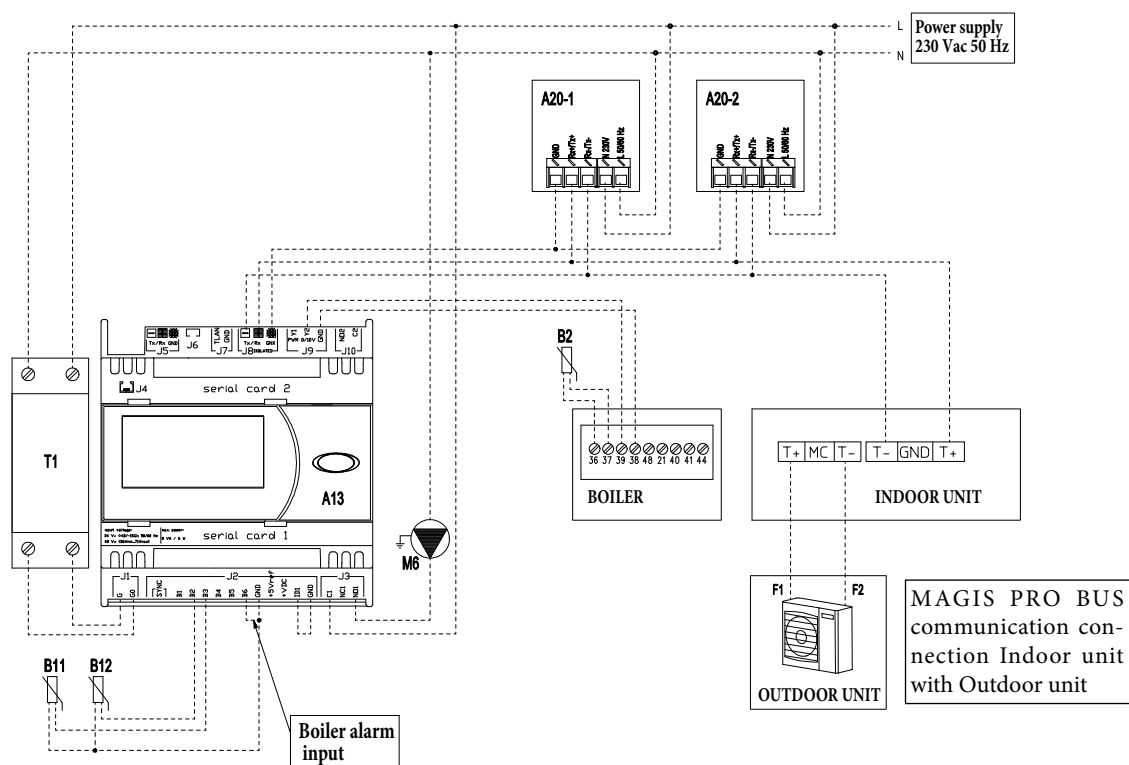
- A - Condensing unit supply voltage
- B - Hydronic module supply voltage
- C - Boiler supply voltage
- D - System manager supply voltage
- E - 2 Mixed zones and 1 direct zone kit supply voltage



NOTE: this diagram is an example. It is also required to convey the condensate drain of the heat pump and boiler. In order to guarantee proper Heat Pump operation, each system must consider inserting a bypass to guarantee a minimum flow rate of 500 l/h. In this diagram, the bypass is already installed in the zones kit (14).

MAGIS PRO ErP

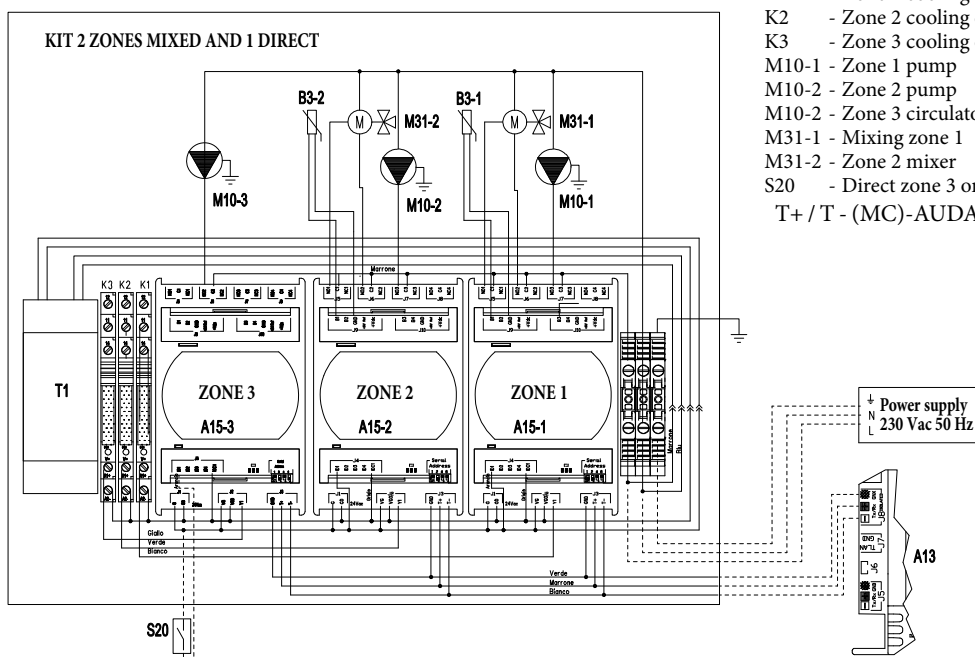
35.1 WIRING DIAGRAM: MAGIS PRO (AIR CONDITIONING ONLY) + BOILER PLUS + SYSTEM DISTRIBUTION KIT + SOLAR HEATING FOR DHW + SYSTEM MANAGER



KEY:

- A13 - System Manager
- A15-1 - Mixed zone 1 expansion
- A15-2 - Mixed zone 2 expansion
- A15-3 - Direct zone 3 expansion
- A20-1 - Mixed zone 1 remote control
- A20-2 - Mixed zone 1 remote control

- B2 - Storage tank upper part temp. probe (NTC)
- B11 - Solar manifold probe (PT1000)
- B12 - Storage tank lower part temp. probe (NTC)
- M6 - Solar ErP circulation group
- T1 - 24 Vac transformer (not supplied with the system Manager - standard with the distribution kit)
- B3-1 - Zone 1 flow temperature probe
- B3-2 - Zone 2 flow temperature probe
- K1 - Zone 1 cooling enabling
- K2 - Zone 2 cooling enabling
- K3 - Zone 3 cooling enabling
- M10-1 - Zone 1 pump
- M10-2 - Zone 2 pump
- M10-2 - Zone 3 circulator
- M31-1 - Mixing zone 1
- M31-2 - Zone 2 mixer
- S20 - Direct zone 3 on-off thermostat
- T+ / T- (MC)-AUDAX PRO communication BUS



36 OPTIONAL FOR DIRECT COUPLING TO MAGIS PRO (STAND ALONE)

HEAT REGULATION OPTIONS	
CAR^{V2} (Comando Amico Remoto modulating remote control) device class V* or VI code 3.021395	Temperature and humidity sensor kit device class V or VI* code 3.021524
CRONO 7 (Weekly digital chronothermostat) device class IV* or VII code 3.021622	CRONO 7 WIRELESS device class IV* or VII code 3.021624
External Probe device class II* or VI or VII code 3.015266	Humidistat kit (operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device) code 3.023302
OTHER OPTIONS	
Kit 2 zones for coupling MAGIS PRO ErP (wall-hung or recessed for mixed systems) code 3.026301	3-way valve kit (used as hot/cold system diverter) code 3.020632
Integrative resistance kit for 3 kW heating system (230 vac power supply) code 3.026300	2 kW integrative resistance kit for INOXSTOR 200-300-500 and UB 550/750 code 3.020861
5 kW integrative resistance kit for 1000-1500 litre boilers and UB 750 code 3.020862	Dehumidifier kit code 3.021529
Dehumidifier grid kit code 3.022147	Dehumidifier frame kit code 3.022146
2-Relay board kit for coupling MAGIS PRO ErP (for dehumidifier control) code 3.026302	Contact NTC probe kit for storage tank (also used to read the temperature of a possible Puffer) code 3.019375
Configurable relay interface kit (to control the DHW recirculation via CAR ^{V2}) code 3.015350	Safety marker thermostat kit code 3.019229
Antifreeze kit up to -15 °C (to protect the hydronic module) code 3.017324	R410A circuit connection kit (To allow easy connection of the cooling circuit also in case of pipes that arrive at the rear) code 3.026089

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

MAGIS PRO ErP

37

OPTIONAL IN THE PRESENCE OF SYSTEM MANAGER

HEAT REGULATION OPTIONALS	
System manager kit device class VI* or VIII code 3.021522	Zone remote control kit device class V or VI* code 3.023364
Temperature and humidity sensor kit device class V or VI* code 3.021524	Humidistat kit (operates on the Dehumidifier according to the humidity detected in the room and according to what is set on the device) code 3.023302
CRONO 7 (Weekly digital chronothermostat) device class IV* or VII code 3.021622	CRONO 7 WIRELESS device class IV* or VII code 3.021624
OTHER OPTIONALS	
Mixed zones 2 kit (wall-hung or recessed) code 3.021528	2 mixed zones and 1 direct zone kit (wall-hung or recessed for mixed systems) code 3.021527
Expansion kit to manage zone or for auxiliaries code 3.021547	3-way valve kit (used for DHW priority or system diverter) code 3.020632
R410A circuit connection kit (To allow easy connection of the cooling circuit also in case of pipes that arrive at the rear) code 3.026089	Relay kit to enable the DHW integrative resistance kit for boilers managed with an on-off contact or for dehumidifier cooling request (EMR 12 Vdc) code 3.023945
5 kW integrative resistance kit for 1000-1500 litre boilers and UB 750 code 3.020862	2 kW integrative resistance kit for INOXSTOR 200-300-500 and UB 550/750 code 3.020861
Antifreeze kit up to -15 °C (to protect the hydronic module) code 3.017324	Dehumidifier kit code 3.021529
Dehumidifier grid kit code 3.022147	Dehumidifier frame kit code 3.022146
Contact NTC probe kit for storage tank (also used to read the temperature flow temperature in the zones of the system) code 3.019375	Probe kit for solar manifold temperature (coupled with the system manager) code 3.019374
Low temperature safety kit for low temperature systems and system distribution kit code 3.013794	

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



DICHIARAZIONE DI CONFORMITÀ DECLARATION OF CONFORMITY

DIC. 091215 (secondo/in accordance ISO/IEC 17050-1)

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

dichiara che (declares that):

il **Gruppo Idronico** realizzato a marchio IMMERGAS e identificato con la seguente denominazione commerciale:
(the Hydronic Group made on brand IMMERGAS and identified with the following commercial description)

GRUPPO IDRONICO MAGIS PRO

è prodotto in accordo con i requisiti essenziali delle seguenti **Direttive Europee**
(are made in accordance with the essential requirements of the relevant EU Directives being)

LVD 2006/95/EC
EMC 2004/108/EC

I gruppi devono essere installati in conformità alle istruzioni riportate nei manuali di uso e manutenzione integrati nei prodotti e nel rispetto delle normative locali ed internazionali in vigore. L'installazione deve essere effettuata da personale qualificato. Immergas declina ogni responsabilità in caso d'installazione difforme a quanto specificato nel manuale di uso e manutenzione integrato.

(Groups must be installed according to instructions in the manuals of use and maintenance integrated in products and in compliance with local and international standards. The installation should be performed by qualified personnel. Immergas disclaims any liability in case of an installation does not comply with the specifications in the operating and maintenance integrated)

La marcatura CE è inserita sui prodotti in conformità alle Direttive CE
(The CE marking is affixed on the products according to the EC Directive)

Brescello, 01/12/2015

Guareschi Mauro
Direzione R&S

Immergas S.p.A.




DICHIARAZIONE DI CONFORMITÀ DECLARATION OF CONFORMITY

DIC. 070715 (secondo/in accordance ISO/IEC 17050-1)

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

dichiara che i seguenti prodotti (declares that the building products):

AUDAX PRO 5
AUDAX PRO 8
AUDAX PRO 10

classificati come (classified as):

POMPE DI CALORE ARIA/ACQUA (Air/Water Heat Pump)

sede di produzione (production place):

Blackbushe Business Park Saxony Way, Yateley, Hampshire GU46 6GG, UK

sono fabbricate in conformità alle seguenti Direttive Europee (are in compliance with the provisions of the EEC directives mentioned hereunder and with the National legislation transporting them):

Electromagnetic Compatibility Directive 2004/108/EC
Low voltage Directive 2006/95/EC

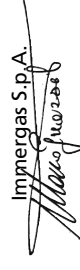
e con l'applicazione dei seguenti paragrafi delle norme armonizzate (and with the following paragraphs of the harmonized standard have been applied):

EN 55014-1:2006, +A1:2009, +A2:2011
EN 55014-2:1997 A1:2001 +A2:2088
EN 61000-3-2:2006, +A1:2009 +A2:2099
EN 61000-3-3 (2008)
EN 60335-1:2002 +A11:2004 +A12:2006 +A2:2006 +A13:2008
EN 60335-2-40:2003 +A11:2004 +A12:2005 +A1:2006
EN 62233/2008

La marcatura CE è inserita sui prodotti in conformità alle Direttive CE
(The CE marking is affixed on the products according to the EC Directive)

Brescello, 22/06/2015

Guareschi Mauro
Direzione R&S

Immergas S.p.A.


MAGIS PRO ErP

TRIO SYSTEM PRO

38

SYSTEM PRO (TRIO ErP + MAGIS PRO ErP + ANY RESISTANCES)



38.1

DESCRIPTION SYSTEM PRO WITH TRIO ErP

The System Pro represents a split "no gas" solution obtained by installing the MAGIS PRO ErP hydronic module inside the SOLAR CONTAINER or the DOMUS CONTAINER, with a cooling connection to the outdoor condensing unit. MAGIS PRO ErP caters for all services, with the possible integration of electric resistances: in particular, the Integrative electric resistance kit for 3 kW system (code 3.026300) is inserted in the hydronic module, while the 1.5 kW Integrative electric resistance kit can be installed on the 160 litre DHW storage tank of the TRIO ErP for DHW storage tank (code 3.024897).

The system can be assembled by coupling the following required components:

- Installation casing (recessed or inside rooms):
SOLAR CONTAINER code 3.020166;
DOMUS CONTAINER code 3.022167.
- TRIO ErP code 3.025616.
- Split heat pump:
MAGIS PRO 5 ErP code 3.025694;
MAGIS PRO 8 ErP code 3.025695;
MAGIS PRO 10 ErP code 3.025696.

- Kit for coupling to MAGIS PRO ErP - code 3.026303 (inclusive of hydraulic fittings for R410A gas, hydronic module support bracket).

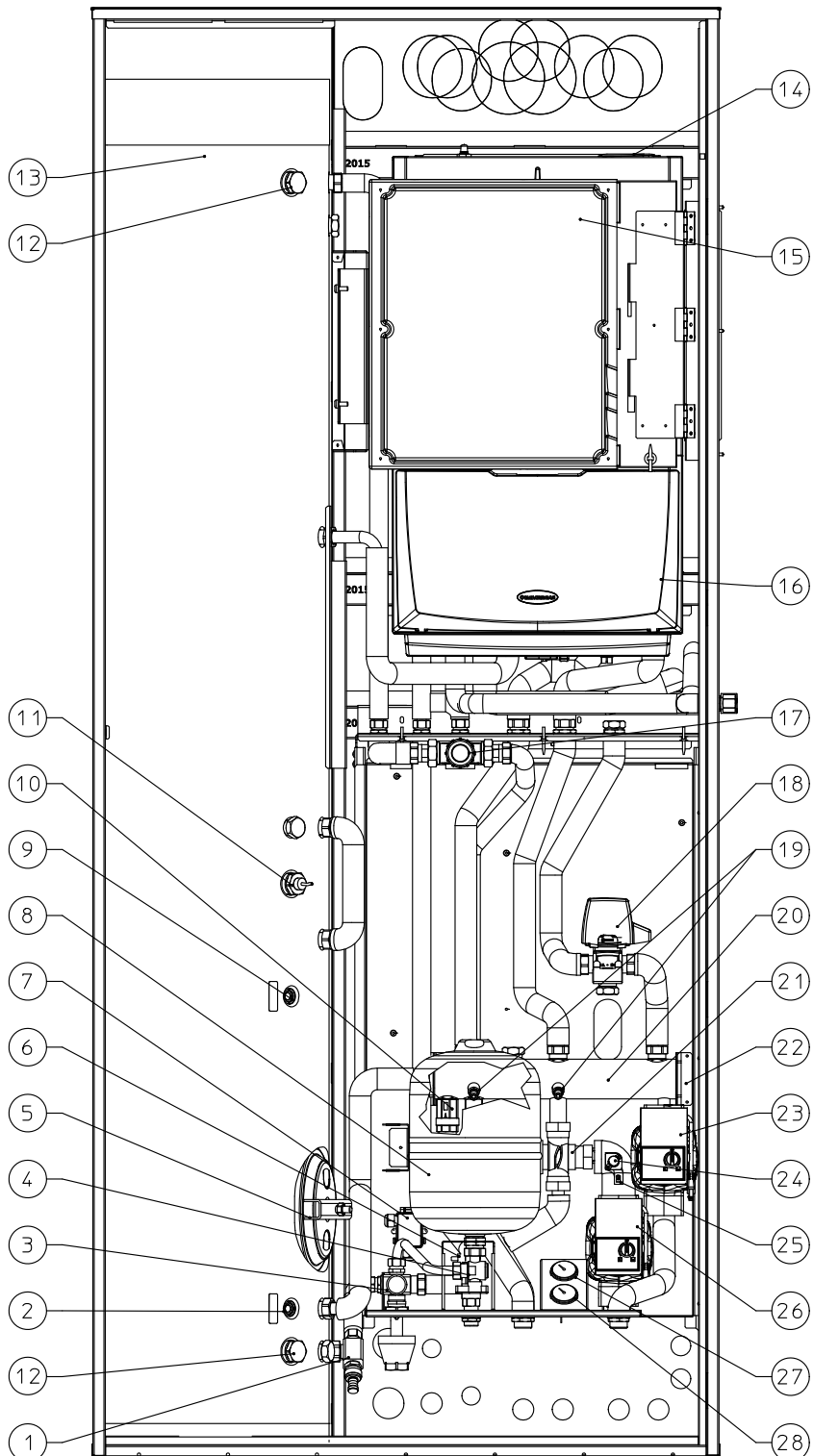
Also, it is possible to couple the following optional additional components:

- 3 kW system integrative electric resistance kit code 3.026300, to be inserted in the MAGIS PRO ErP hydronic module;
- 1.5 kW system integrative electric resistance kit for DHW storage tank code 3.024897;
- 15-Litre inertial storage kit code 3.026304;
- DHW recirculation kit (does not include pump) code 3.026169, any clock/timer to activate the pump is to be provided separately;
- Antifreeze kit up to -15 °C code 3.017324 to protect the hydronic module).

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

KEY:

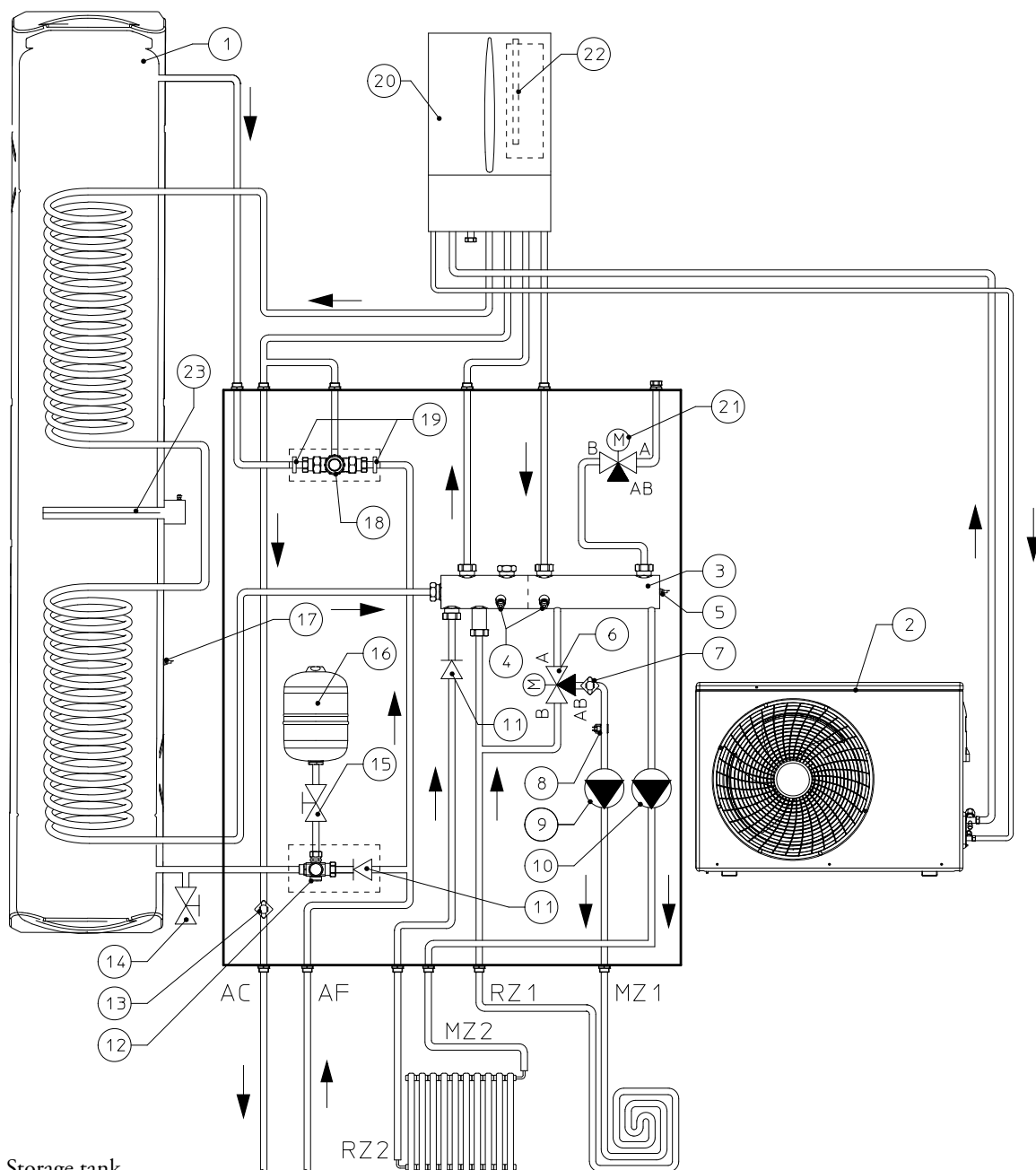
- 1 - Storage tank draining valve
- 2 - Solar probe (optional)
- 3 - Antifreeze thermostat
- 4 - 8 bar safety valve
- 5 - Storage tank flange
- 6 - Domestic hot water vessel shut-off cock
- 7 - Antifreeze kit connection box
- 8 - 8 l domestic hot water expansion vessel
- 9 - Heat pump probe
- 10 - One way valve
- 11 - 1.5 kW DHW integrative electric resistance (optional)
- 12 - Sacrificial anode
- 13 - Storage tank
- 14 - 3 kW system integrative electric resistance (optional)
- 15 - Management electronics
- 16 - Hydronic module
- 17 - Domestic hot water circuit mixing valve
- 18 - Three-way valve of precedence
- 19 - Manifold draining valves
- 20 - Hydraulic manifold
- 21 - Mixing valve zone 1
- 22 - System flow probe
- 23 - Direct zone pump
- 24 - Zone 1 safety thermostat (mixed)
- 25 - Zone 1 flow probe (mixed)
- 26 - Mixed zone pump
- 27 - Zone 1 flow temperature thermometer (mixed)
- 28 - Zone 2 flow temperature thermometer (direct)



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HYDRAULIC DIAGRAM SYSTEM PRO WITH ELECTRIC RESISTANCES



KEY:

- | | |
|--------------------------------------|--|
| 1 - Storage tank | 14 - Storage tank draining valve |
| 2 - Split heat pump | 15 - Domestic hot water vessel shut-off cock |
| 3 - Hydraulic manifold | 16 - 8 l domestic hot water expansion vessel |
| 4 - Manifold draining valves | 17 - Heat pump probe |
| 5 - System flow probe | 18 - Domestic hot water circuit mixing valve |
| 6 - Mixing valve zone 1 | 19 - Mixing valve filter |
| 7 - Zone 1 safety thermostat (mixed) | 20 - Hydronic module |
| 8 - Zone 1 flow probe (mixed) | 21 - Three-way valve (to be left plugged) |
| 9 - Mixed zone pump | 22 - 3 kW system integrative electric resistance |
| 10 - Direct zone pump | 23 - 1.5 kW DHW integrative electric resistance |
| 11 - One way valve | |
| 12 - 8 bar safety valve | |
| 13 - Antifreeze thermostat | |

System diagram TRIO system PRO: system with one radiant panel central heating zone + one central heating and cooling zone with fan coils

- **Central heating phase active:** with request active by the zones, MAGIS PRO ErP directly powers the distribution manifold towards the system.

Based on the outdoor temperature detected and the system climatic curve, the TRIO System manager board activates MAGIS PRO ErP. If the system integrative electric resistance (4) is present and if the MAGIS PRO ErP heat pump does not reach the temperature within the set time, the system integrative electric resistance (4) activates that can work simultaneously or alternatively to MAGIS PRO ErP.

- **Cooling phase active:** during the summer season, with request active by the zones, MAGIS PRO ErP directly powers the distribution manifold.

Based on the outdoor temperature detected and the system climatic curve, the TRIO System manager board only activates (clearly) MAGIS PRO ErP.

- **DHW phase:** the TRIO System manager board constantly monitors the DHW temperature set via the probe (7) located at the bottom of the storage tank, by activating MAGIS PRO ErP, in case of need the 1.5 kW integrative electric resistance (8) of the storage tank and diverting the three-way valve of precedence inside the hydronic module of MAGIS PRO ErP (2), towards the DHW storage tank.

The System manager board TRIO will activate the 1.5 kW integrative electric resistance of the storage tank (optional) only on request of the anti-legionella function and on reaching temperatures over 50 °C or if time required for making operational that is too long is considered.

Clearly the DHW set is set on the standard supplied Remote Panel (3).

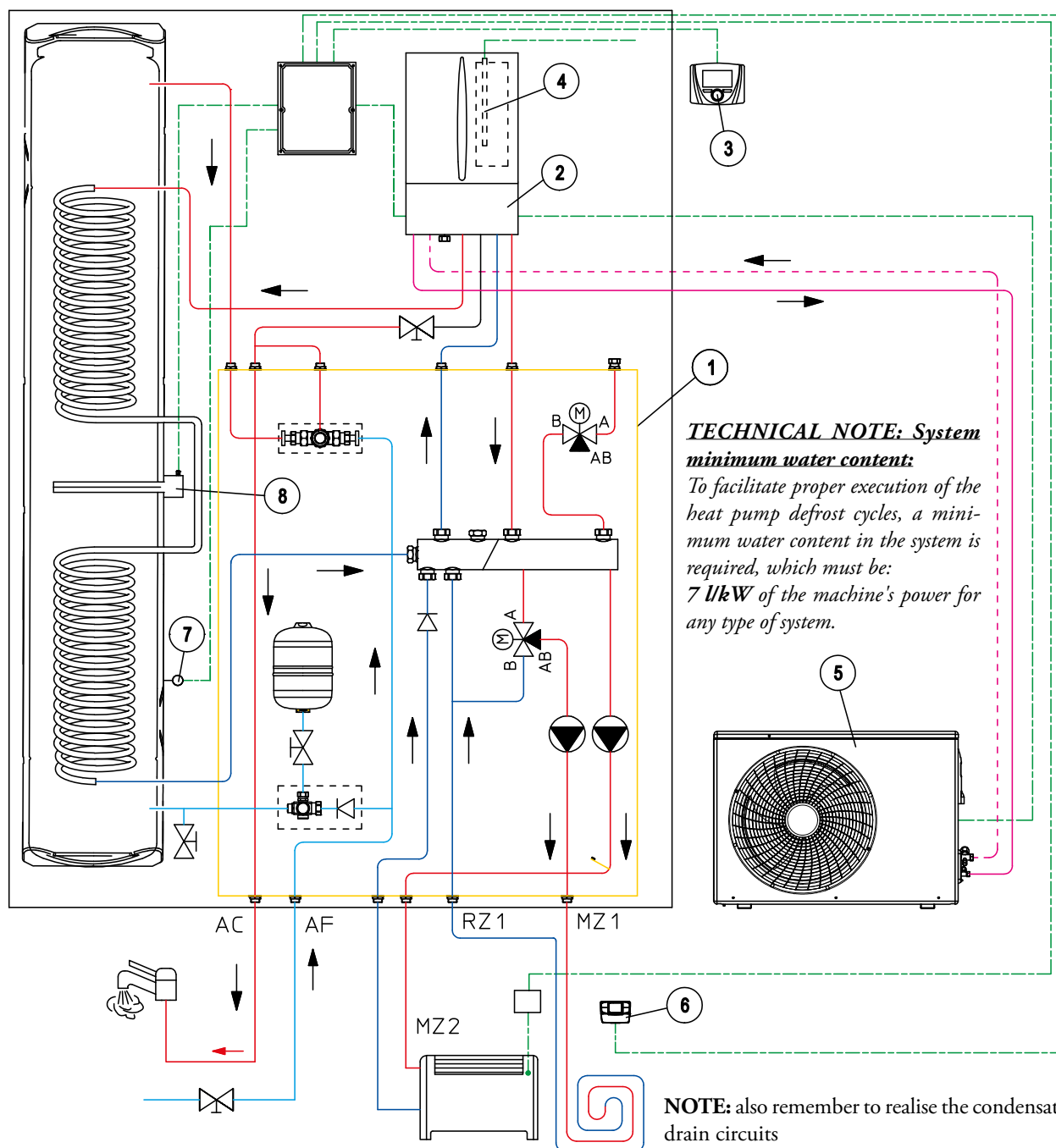
TECHNICAL NOTE: System minimum water content:

To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be: 7 l/kW of the machine's power for any type of system. So attention must be paid to the systems divided over several zones, where the water content available to the machine changes continuously. This is why it may be necessary to provide a heating flywheel that guarantees normal operation with systems divided into zones (with variable water content in circulation). This minimum content also guarantees proper operation with fan coils used for cooling (a condition in which the flow temperature is very low and has significant heat load variations that vary the number of active fan coils). It is also important to check that the dehumidifier line has a minimum of 3 l/kW of the machine (dehumidifier hydraulic circuit connection).

For this purpose there is a 15 litre inertial storage kit code 3.026304 (however, it is necessary to verify, according to the system, whether this content is sufficient or not.)

MAGIS PRO ErP

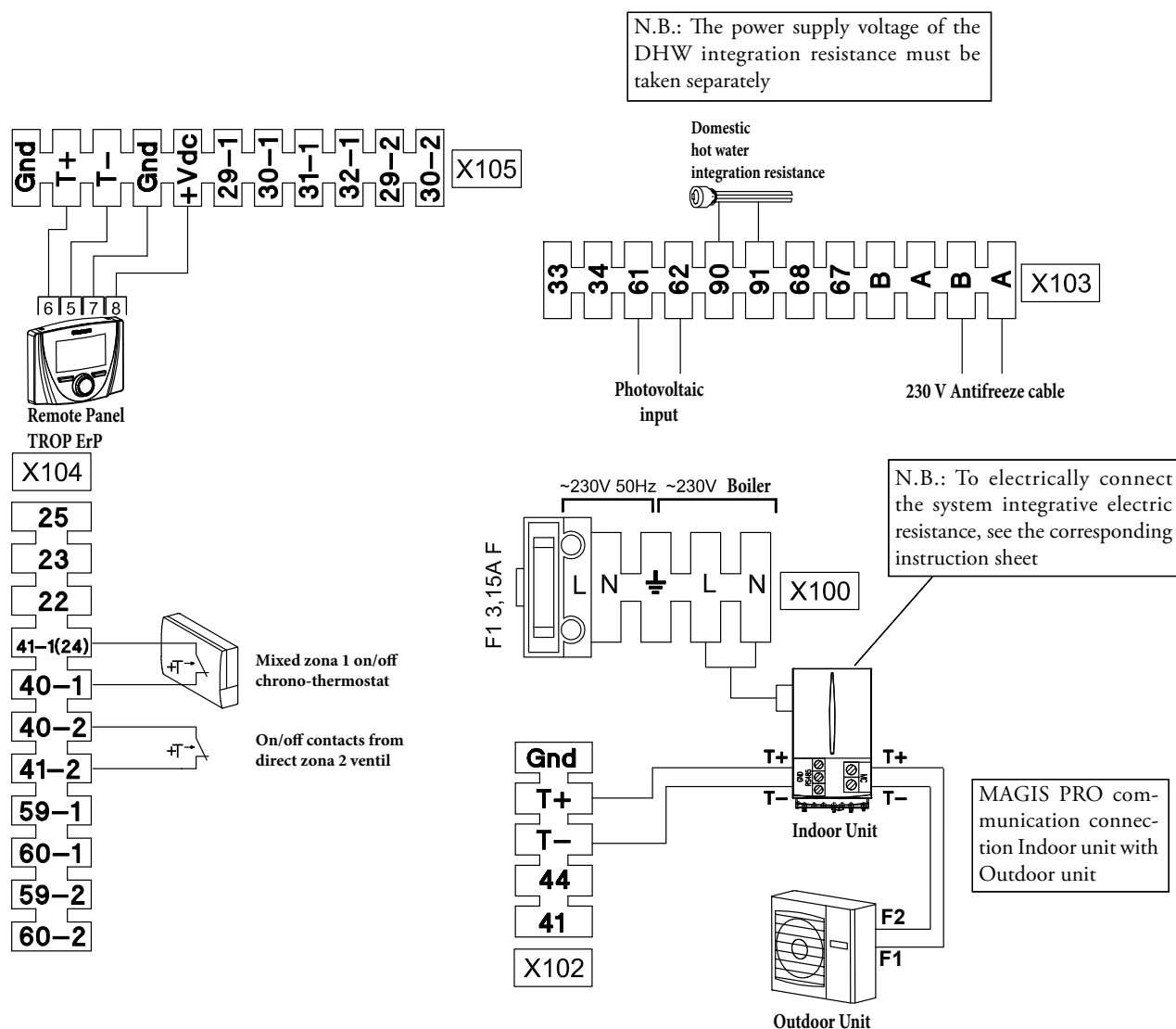
42 DIAGRAM SYSTEM TRIO SYSTEM PRO: SYSTEM WITH ONE CENTRAL HEATING ZONE WITH RADIANT PANELS + ONE COOLING AND CENTRAL HEATING ZONE WITH FAN COILS



KEY:

- | | |
|--------------------------------------|--|
| 1 - System TRIO ErP composed of: | 3 - Remote Panel (standard with TRIO ErP) |
| • Double coil 160 litre storage tank | 4 - Integrative electric resistance for heating system |
| • Hydronic group | 5 - AUDAX PRO Condensing unit |
| • P.C.B. | 6 - CHROME 7 |
| • Remote Panel | 7 - DHW probe (standard with TRIO ErP) |
| 2 - Hydronic module MAGIS PRO ErP | 8 - Integrative electric resistance for DHW storage tank |

42.1 WIRING DIAGRAM TRIO SYSTEM PRO: SYSTEM WITH ONE CENTRAL HEATING ZONE WITH RADIANT PANELS + ONE COOLING AND CENTRAL HEATING ZONE WITH FAN COILS



KEY:

- Terminal board X100:
L-N - Main supply voltage and boiler supply voltage
F1 - Main phase fuse (3.15 AF)
- Terminal board X102:
T- T+ - MAGIS PRO communication connection (Indoor unit) T+/T- (GND-RS485)
- Terminal board X103:
61 62 - On-off contact input from photovoltaic system
90 91 - DHW integration electric resistance activation contact
A-B - Antifreeze resistance supply voltage

- Terminal board X104:
40-1 41-1 - Mixed zone 1 activation CRONO 7 chrono-thermostat
40-2 41-2 - On-off contacts from direct zone 2 activation fan coils
- Terminal board X105:
T- T+ - Remote Panel communication connection
Gnd+Vdc - Remote Panel supply voltage

N.B.: The Remote Panel is only used as parameter setting panel. It does not manage any system zone

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TECHNICAL DATA SYSTEM PRO

		System PRO
Maximum central heating circuit pressure	bar	3
Maximum domestic hot water circuit pressure	bar	8
Max. central heating circuit temperature	°C	90
Max. domestic hot water circuit operating temperature	°C	95
DHW adjustable temperature (see parameter programming)	°C	--
Central heating adjustable temperature (see parameter programming)	°C	--
Cooling adjustable temperature (see parameter programming)	°C	--
DHW expansion vessel capacity	litres	8.0
Domestic hot water expansion vessel pre-charge	bar	3
Water content in the storage tank	litres	156.22
Water content of the hydraulic unit	litres	8.7
Maximum amount of mixed water at 40 °C (with storage at 50°C and inlet water temperature 10°C)	litres	213
P _{sol}	W/K	3.57
Full hydronic unit weight	kg	33.2
Empty hydronic unit weight	kg	24.5
Full storage tank unit weight	kg	188.9
Empty storage tank unit weight	kg	32.7
Electrical connection	V/Hz	230/50
Nominal absorption	A	1.0
Installed electric power	W	110
Power absorbed by the direct zone pump	W	47
Power absorbed by the mixed zone pump	W	47
Electrical insulation degree TRIO ErP PRO system	--	IPX5D
Solar circuit OPTIONAL		
Solar circuit maximum pressure	bar	6
Solar expansion vessel capacity	litres	12.0
Solar expansion vessel pre-charge	bar	2.5
Power absorbed by the solar pump (ref. Speed 3)	W	39
Solar pump head (ref. Speed 3)	m H ₂ O	6
Flow rate regulator control range	litres/min	1÷6
Solar circuit maximum peak temperature	°C	150
Solar circuit maximum continuous working temperature	°C	120
Content of glycol in the solar circuit	litres	8.8

44	OPTIONAL SYSTEM PRO (AS WELL AS TRIO ErP COD. 3.025616)
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OPTIONAL components but NECESSARY to complete the system PRO	
SOLAR CONTAINER code 3.020166	DOMUS CONTAINER code 3.022167
MAGIS PRO 5 ErP code 3.025694	MAGIS PRO 8 ErP code 3.025695
MAGIS PRO 10 ErP code 3.025696	Kit for coupling to MAGIS PRO ErP (inclusive of hydraulic fittings for R410A gas, hydronic module support bracket) code 3.026303
Exclusive OPTIONAL components for system PRO	
3 kW system integrative electric resistance kit code (to be inserted in the MAGIS PRO ErP hydronic module) code 3.026300	1.5 kW system integrative electric resistance kit for DHW storage tank code 3.024897
DHW recirculation kit (not inclusive of pump) code 3.026169	15-Litre inertial storage kit code 3.026304
Antifreeze kit up to -15 °C (to protect the hydronic module) code 3.017324	
OPTIONAL components available for all systems TRIO ErP	
Solar heating system coupling kit* code 3.024719	Vertical 2 zone connection unit kit code 3.020575
Rear 2 zone connection unit kit code 3.020630	Horizontal 2 zone connection unit kit code 3.020574
Polyphosphate dispenser kit code 3.020628	Temperature and humidity sensor kit device class V or VI** code 3.021524
CRONO 7 Wireless device class IV** or VII code 3.021624	CRONO 7 (Weekly digital CRONOthermostat) device class IV** or VII code 3.021622
Dehumidifier kit code 3.021529	Humidistat kit code 3.023302
Dehumidifier grid kit code 3.022147	Dehumidifier frame kit code 3.022146

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

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

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 refers to new products that are correctly installed and used in accordance with applicable regulations.

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 that envisioned by the Standards and technical regulations in force and applicable (as an example, Collection R - edition 2009 is stated). It is the professional's responsibility to identify the provisions applicable, to evaluate the compatibility with these case by case and the necessity of any changes to drawings and elaborations.



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