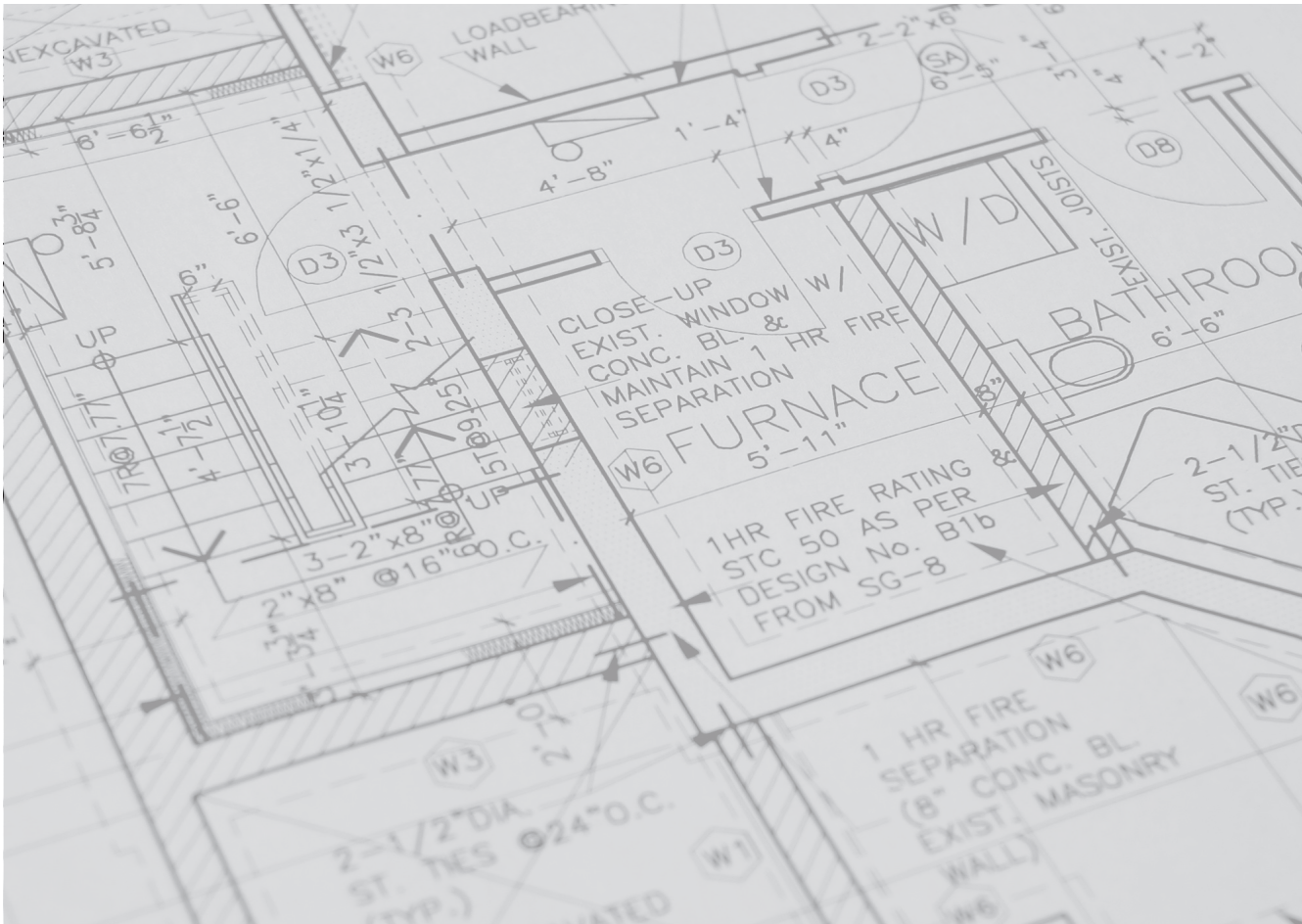
IMMERGAS

TECHNICAL SHEET

HEAT PUMPS

MAGIS M TOP

Reversible air-to-water R290 monoblock heat pumps with single-phase and three-phase inverter



MAGIS M TOP

1 DESCRIPTION OF THE MAGIS M TOP RANGE

MAGIS M5 TOP
MAGIS M8 TOP

MAGIS M12 TOP
MAGIS M16 TOP
MAGIS M12 T TOP
MAGIS M16 T TOP

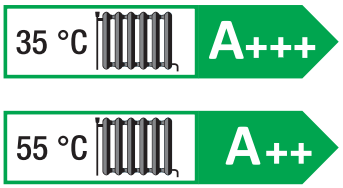
MAGIS M TOP is the IMMERGAS range of outdoor, reversible, *R290* monoblock hydronic heat pumps with inverter technology. The range includes 6 models, with power ratings of 5, 8 kW (single-phase) and 12, 16 kW (single-phase and three-phase); the entire range is single fan. **MAGIS M TOP** is characterised by high energy efficiency values, while at the same time guaranteeing a maximum flow set point of 75 °C in central heating mode, thus facilitating integration into high-temperature systems. Maximum comfort with minimum environmental impact, thanks to the use of the natural refrigerant gas R290 with low GWP (equal to 0,02), while maintaining extremely low noise levels. The entire range is distinguished by numerous technical advantages: first and foremost, easy installation, as it is hermetically sealed and does not require an F-GAS licence; in addition to this, there is a very high degree of plant flexibility.

The Heat Pump includes as per standard:
- Wired **NEXIS control panel**, from which generator and system parameters are set, which can be used as a modulating chrono-thermostat for controlling room temperature and humidity. Featuring an innovative design with a 4.3-inch TFT colour screen, the panel supplied as standard is black (RAL7030), but can optionally also be purchased separately in white (RAL9010);
- **E-BOX TOP Supervision Board**, is the brain of the system to which all main electronic components are connected in addition to **MAGIS M TOP** and the **NEXIS Control Panel**.

A family feeling is maintained between these components, but the **E-BOX TOP** board is only available in white (RAL9010). With the E-BOX TOP it is possible to manage up to 3 independent heating zones (direct or 3 mixed zones) and up to 2 dehumidifiers (in neutral or cooled air), 1 heater on the system side and 1 heater on the DHW tank side. **MAGIS M TOP** can currently only be installed individually, but in the near future it will also be possible to install it in single cascades of up to 6 devices of the same size, expanding the possibilities for use in larger systems.

All **MAGIS M TOP** models are equipped as standard with: flowmeter, heating cable and antifreeze heater for condensate drip tray, pressure sensor, Y-filter, deaerator with associated 2.5 bar safety valve, 10 litre expansion vessel and PWM circulation pump with low power consumption and high head.

MAGIS M TOP *complies with the requirements of the ErP (2009/125/EC) and ELD (2010/30/EC) Directives*; numerous optional kits are available to allow flexible use in all circumstances.



2 MAGIS M TOP FEATURES

Hermetically sealed, inverter reversible ***R290*** air-to-water monoblock heat pumps for winter and summer air conditioning and domestic hot water (with tank, optional). These generators have a pre-charged refrigerant gas with GWP of 0,02; they must be installed externally, respecting safety zones. With each MAGIS M TOP heat pump, 2 additional components are supplied as standard for installation inside the house:

- Wired *NEXIS control panel* , from which to set generator and system parameters, which can be used as a modulating chrono-thermostat for controlling room temperature and humidity;
- *E-BOX TOP Supervision Board*, to which all main electronic components are connected in addition to *MAGIS M TOP* and the *NEXIS Control Panel*. The terminal board of the *E-BOX TOP* has **5 digital inputs**, **7 analogue inputs** and **9 digital outputs** (7 live and 2 voltage-free contacts). All inputs and outputs are configurable from the *NEXIS Control Panel*.

MAGIS M TOP can be installed individually (also in single cascade, up to 6 devices of the same size).
Finally, numerous optional kits are available to complete the system, depending on installation requirements.

Main components

- refrigerant air/gas heat exchanger with external finned coil;
- two-way electronic lamination valve;
- rotary compressor (5 and 8 kW sizes) or Scroll compressor (12 and 16 kW sizes) with inverter drive for low energy consumption;
- 4-way inversion valve (reversible functioning with heat pump cycle or cooling cycle);
- system to detect the min and max pressure for correct compressor operation;
- single variable-speed DC Inverter axial fan with three-blade impellers;
- metal protection grid of the finned coil;
- flowmeter DN20 with quick coupling (sizes 5 and 8 kW) or DN25 with G1-1/4" male connections (sizes 12 and 16 kW) for checking a minimum flow rate of 500 l/h;
- 42-plate (5 and 8 kW sizes) or 72-plate (12 and 16 kW sizes) insulated stainless steel refrigerant gas/water heat exchanger;
- deaerator to expel air and any leaks of R290 gas inside the hydraulic system;
- 2.5 bar system safety valve with drain pipe;
- sensor for reading the pressure of the hydraulic system (from *wired NEXIS Control Panel,* standard);
- nominal 10 litre expansion vessel;
- 50 W antifreeze heating cable wound on expansion vessel and its connecting pipe, activated depending on outside temperature;
- UPM4L pump of approx. 7 m (sizes 5 and 8 kW) or UPM4XL approx. 9 metres (12 and 16 kW) with automatic modulating PWM control depending on the set temperature difference;
- 150 W antifreeze heater for condensate drip tray;
- Y-shaped metal mesh filter for hydraulic system and condensate drain connection supplied as standard;
- flow and return hydraulic connections G1";

Features & main features

- maximum system water flow temperature up to 75 °C central heating (65 °C for DHW);
- minimum system water flow temperature up to 5 °C cooling;
- operation up to an outdoor temperature of -25°C in winter and 43°C in summer(46°C with integrative DHW heater,optional);
- it is possible to manage up to 3 independent thermal zones in heating or cooling (3 mixed zones), managing pumps, mixers and dehumidifiers (possibly with *Supplementary Expansion Kit code. 3.035840* o *Dehumidifier Management Relay Board Kit cod. 3.036231*);
- set up to control DHW production by activating diverter valves;
- management of integrative system and DHW heating elements, defining whether to activate them alternately or simultaneously with MAGIS M TOP;
- possibility of configuring a digital output to control summer/winter diverter valves;
- screed heater function, with definition of maximum and minimum temperature flow sets and dwell time of these sets;
- Silent Mode function, hourly programming with 4 levels to reduce the sound pressure of the appliance by up to 35 dB (measurement taken at a distance of 3 metres from the front of the heat pump);
- concomitant function, to satisfy 2 different services at the same time, simultaneously managing integrative DHW electric resistance and heat pump on Central heating;
- DHW BOOST function, allows you to use all available power (HP and DHW heating element) to minimise the charging time of the storage tank;
- antifreeze function to provide protection against possible ice formation;
- air in new or existing installations can be removed via the deaeration function;
- possibility of controlling a DHW recirculation pump and its temperature probe
- programmable anti-legionella function (no electrical heating element required, optional) for DHW tank treatment and possible recirculation loop;
- management of a holiday programme to deactivate the heat pump in the event of prolonged absence from home;
- configurable input to force activation of the heat pump in the event of overproduction of electricity by a photovoltaic system
- remote management by smartphone application with V2 Gateway Kit (optional);
- possibility of combination with BMS home automation systems;

Models available:

- **MAGIS M5 TOP** **cod. 3.035574.**
- **MAGIS M8 TOP** **cod. 3.035575.**
- **MAGIS M12 TOP** **cod. 3.035576.**
- **MAGIS M16 TOP** **cod. 3.035577.**
- **MAGIS M12 T TOP** **cod. 3.035578.**
- **MAGIS M16 T TOP** **cod. 3.035579.**

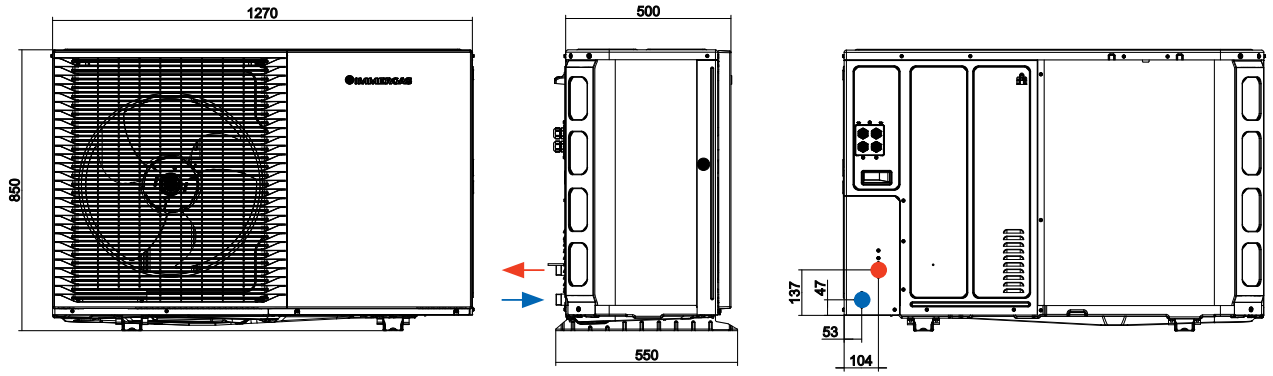
EC Declaration Of Conformity.

MAGIS M TOP

3 MAGIS M TOP DIMENSIONS AND CONNECTIONS

MAGIS M5 TOP
MAGIS M8 TOP

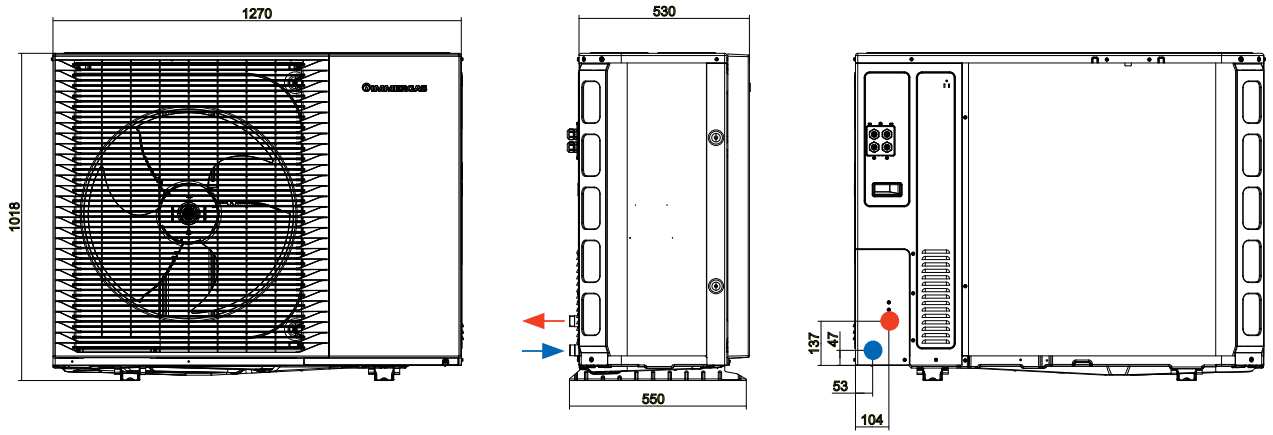
- System return = G 1"
- System flow = G 1"



Height = 850 mm	**Width** = 1270 mm	**Depth** = 550 mm	**Condensate drain** = Ø 20 mm

MAGIS M12 TOP
MAGIS M16 TOP
MAGIS M12 T TOP
MAGIS M16 T TOP

- System return = G 1"
- System flow = G 1"



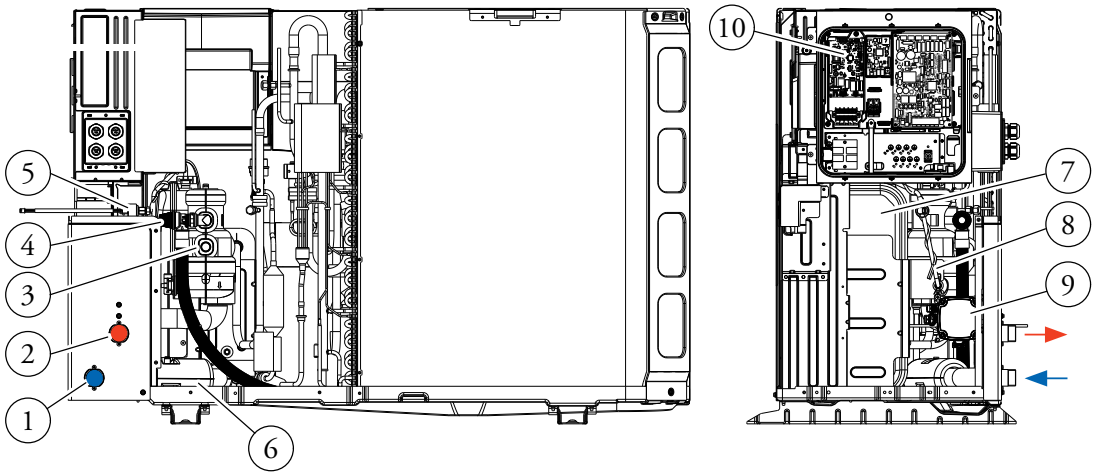
Height = 1018 mm	**Width** = 1270 mm	**Depth** = 550 mm	**Condensate drain** = Ø 20 mm

MAGIS M TOP

3.1 MAGIS M TOP MAIN COMPONENTS

MAGIS M5 TOP

MAGIS M8 TOP



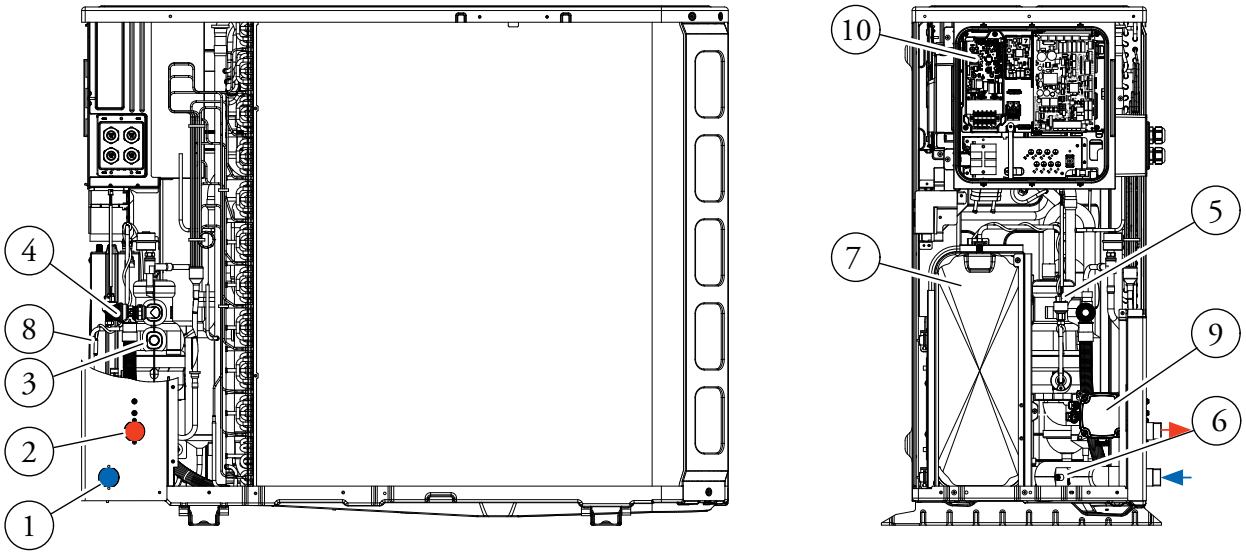
MAGIS M12 TOP

MAGIS M16 TOP

MAGIS M12 T TOP

MAGIS M16 T TOP

System return = G 1"
System flow = G 1"



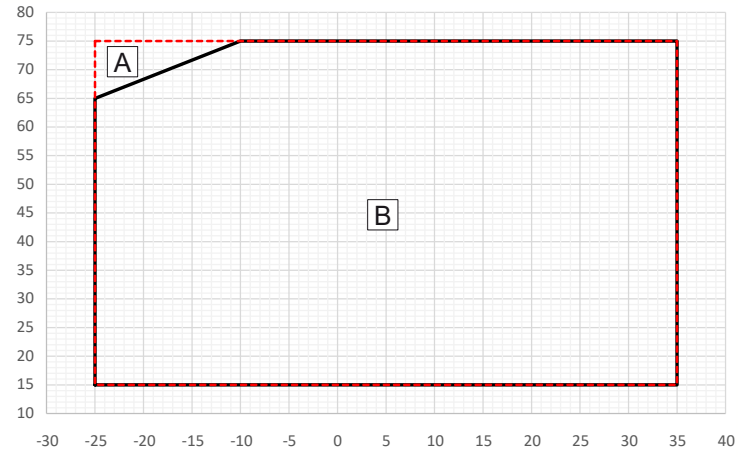
KEY

1 - Male connector G1" - System flow
2 - Male connector G1" - System return
3 - Deaerator I
4 - 2.5 bar safety valve
5 - Pressure sensor
6 - Flowmeter
7 - Expansion vessel
8 - Heating cable
9 - Pump
10 - Hydronic interface P.C.B.

4 OPERATING RANGES

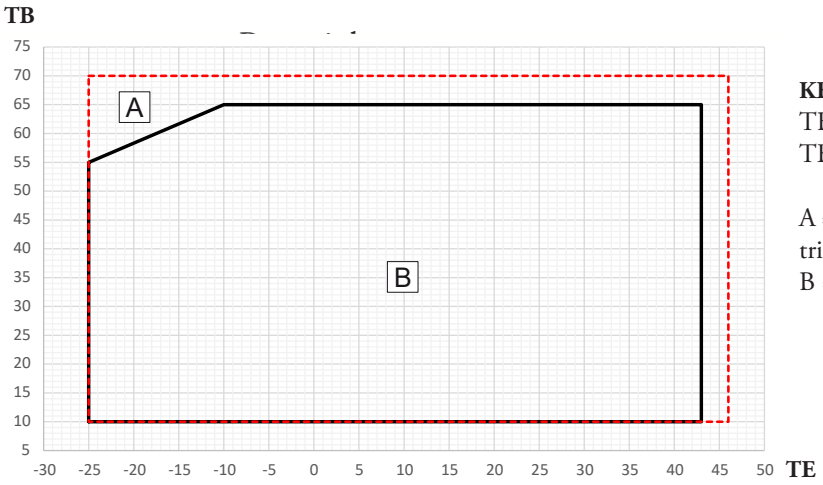
Central heating

System



KEY:
TM - Flow Temperature [°C]
TE - Outdoor air temperature (°C)

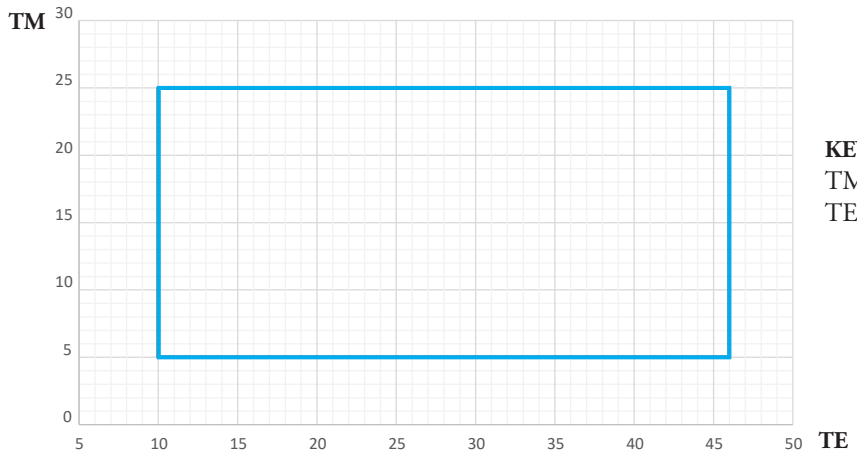
A = Work area covered by system integrative electric resistance (optional)
B = Work area covered by Heat pump only



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

A = Work area covered DHW integrative electric resistance (optional)
B = Work area covered by Heat pump only

Cooling

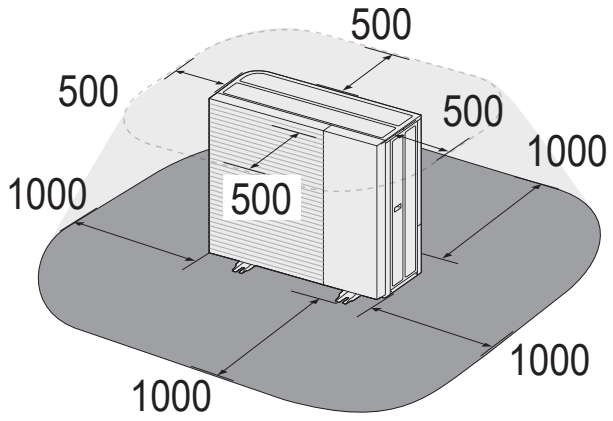


KEY:
TM - Flow Temperature [°C]
TE - Outdoor air temperature [°C]

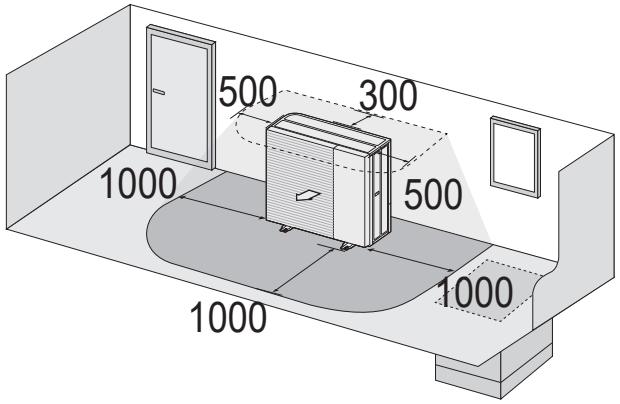
5 MAGIS M TOP SAFETY ZONES

The MAGIS M TOP Heat Pump with R290 can only be installed outdoors. In addition, a certain safety zone must be guaranteed, within which the following conditions must be met:

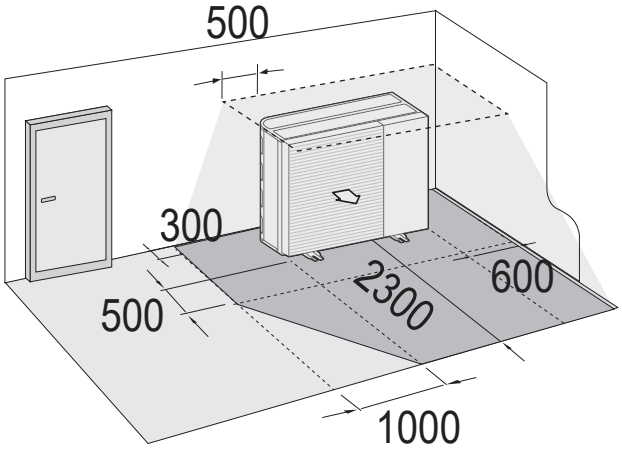
- Inthe event of leaks, the refrigerant must not be able to penetrate the interior of the house under any circumstances.
- within the safety zone, there must beno openings such as: windows, doors , dormers, skylights , air inlets/outlets of ventilation systems, etc.;
- there must be no hollows or gaps below ground level asthe refrigerant R290 is heavier than air and can accumulate on the ground;
- it must not extend to public spaces;
- it may not be subsequentlymodified causing it to breach the protectionrules.



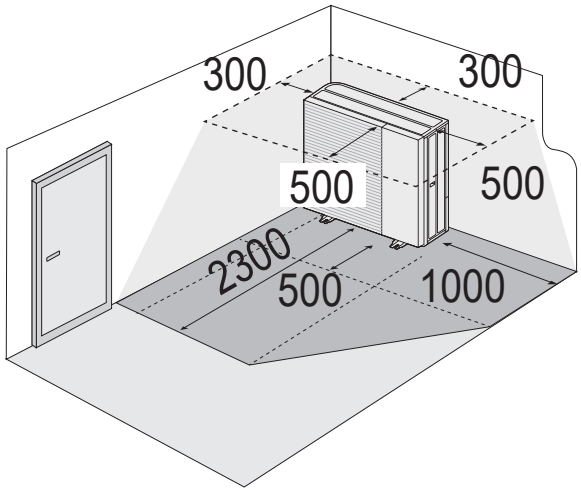
Ground or flat roof installation



Ground installation in front of an external wall



Ground installation with external wall to the right

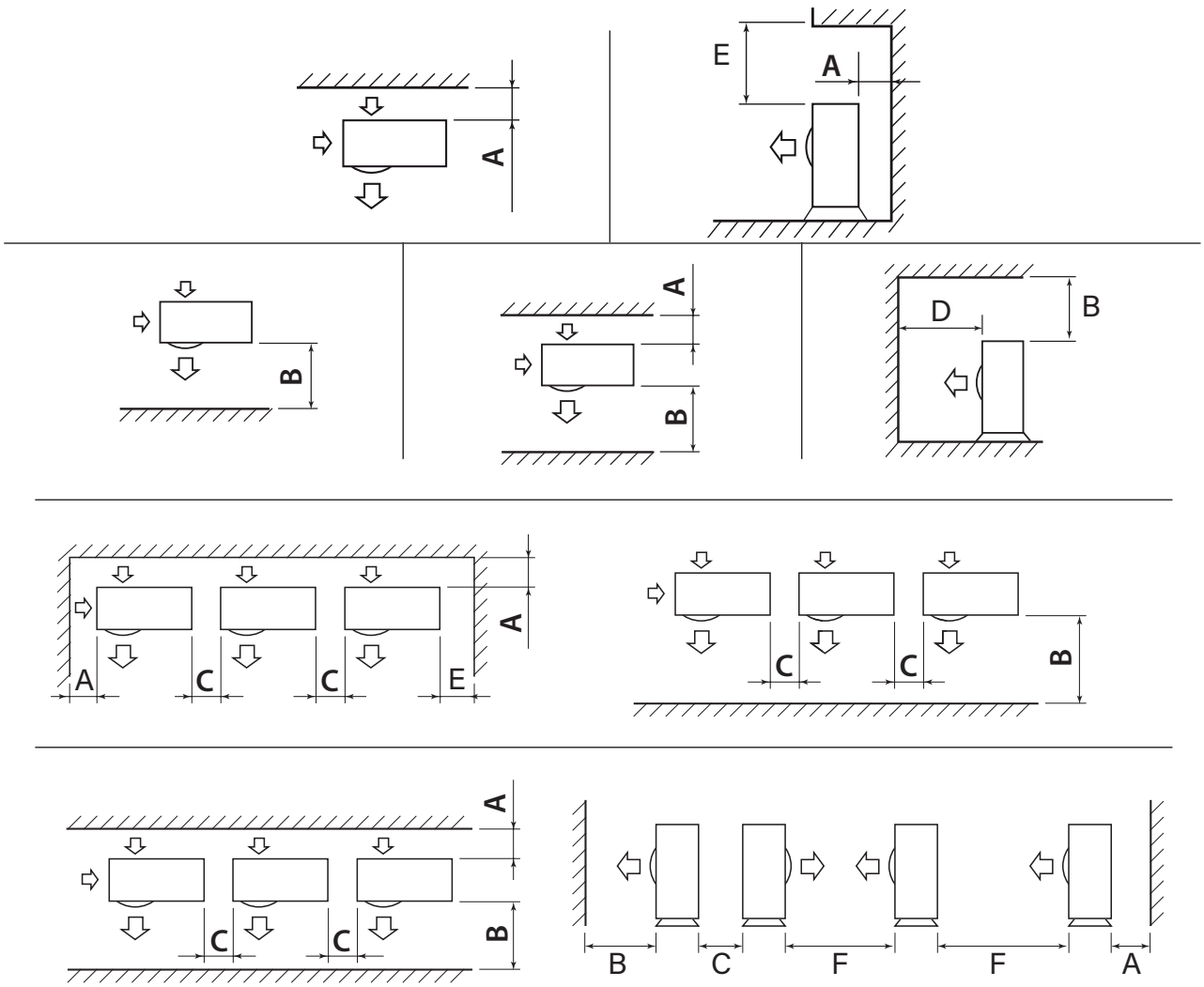


Ground installation with external wall to the left

MAGIS M TOP

5.1 MAGIS M TOP MINIMUM INSTALLATION DISTANCES

To ensure proper operation and to allow for maintenance and/or repair work on MAGIS M TOP, make sure that the following minimum installation distances are observed, and always check that the safety zones described above are complied with.



Model	A	B	C	D	E	F
MAGIS M TOP	300.	1500.	1000.	2300.	600.	3000.

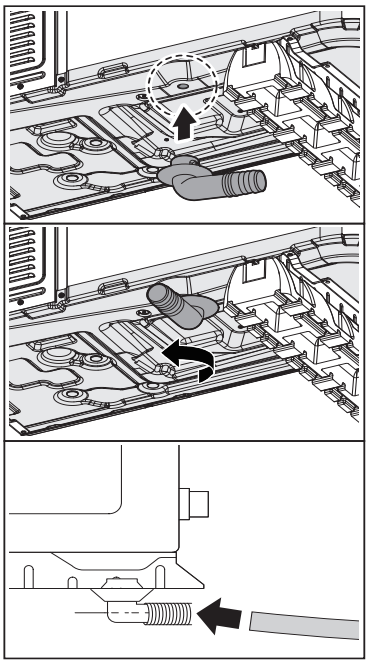
The following is a non-exhaustive list of descriptions for locating the correct installation place of MAGIS M TOP, please always refer to the Instruction Booklet:

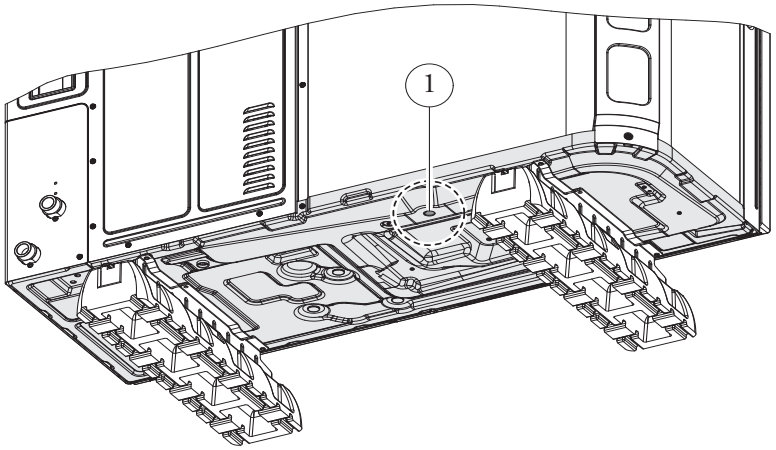
- when installing in places with strong winds, provide wind barriers perpendicular to the wind direction to protect the heat pump;
- prevent the unit from being even partially buried by snow by providing dedicated roofs and/or raising the heat pump at least 150 mm above the ground in areas subject to heavy snowfall;
- in cold areas provide countermeasures to prevent the formation of ice on the ground resulting from the condensate discharge from the appliance.
- do not install the product in locations directly exposed to sea water or sea breeze;
- in the case of sea breezes, create protective barriers at least 1.5 times the height of the heat pump;
- if the product is installed less than 500 metres from the sea, carry out a special anti-corrosion treatment.

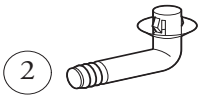
6 DRAIN HOLES AND CONDENSATE DRAIN

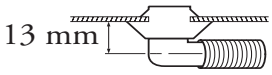
During operation in central heating mode, condensation forms on the finned coil of the heat pump. This condensate is collected at the base of the unit and drained through specific drainage holes. If water cannot flow away properly, stagnation could freeze and damage the generator.
To avoid this risk, the unit must be installed at least 100 mm above floor level and the drain sleeve supplied as standard must be used.

If a condensate drain pipe is used, connect the fitting [2] supplied to the drain hole [1] at the bottom of the unit. A common drain pipe with an internal Ø of 16 mm can be connected to this fitting to channel water in a controlled manner.









KEY
1 - Ø20 drain
2 - Drain fitting [1]

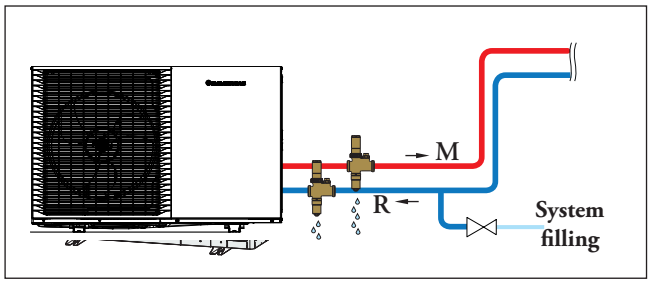
7 MAGIS M TOP ANTI-FREEZE PROTECTION

In order to prevent the hydraulic components from freezing, the machine is equipped with anti-freeze protection functions which, down to -15°C, switch on the pump, the generator and a heating cable (supplied as standard). The activation of the components is managed by logics that aim to provide protection with a focus on energy saving.
The anti-freeze protection of the unit is only ensured if:

- the units (MAGIS M TOP and E-BOX TOP) and the NEXIS control panel are correctly powered;
- the essential components of the unit are not faulty.

If these conditions are not met, these functions may not be guaranteed; it will therefore be essential to perform one of the following actions in order to protect the circuit.

Protection with antifreeze function and antifreeze valves
It is recommended to install antifreeze valves with air sensor and water sensor >75°C. These valves intervene, even in the absence of electricity, by discharging the system water before freezing.

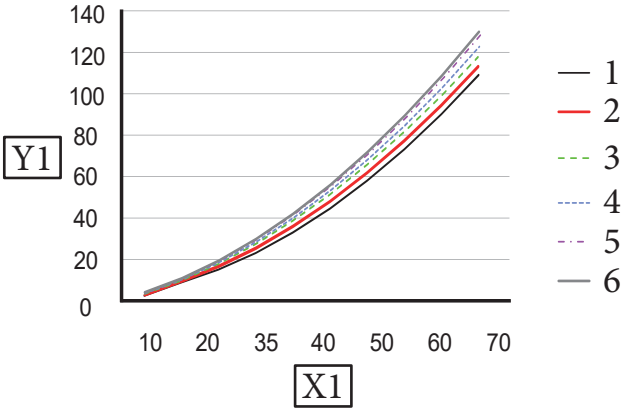


Protection with antifreeze liquid (glycol)
Alternatively, the use of an antifreeze liquid can be considered. In this case, the heat pump's hydraulic circuit will always be protected against frost, even if the power supply is interrupted; in this case it is necessary to disable the anti-freeze functions, which are enabled as standard.
A good-quality antifreeze liquid will be inserted in the hydraulic circuit, which is specially suited for central heating systems and which is manufacturer guaranteed not to cause damage to the heat exchanger or other components of the hydraulic circuit. IMMERGAS heat pumps withstand *antifreeze liquids based on propylene glycols* (if the mixtures are professionally prepared) with a toxicity level of class 1, as stated in 'Clinical Toxicology of Commercial Products'.
An aqueous solution must be made with potential pollution class of water 2 (EN 1717:2002).

The required concentration depends on the expected minimum outside temperature, referring to the table below.

Freezing point of propylene glycol-water mixture	
Percentage of propylene glycol [wt. %]	**Point of freezing [° C]**
0	0
10	-3
20	-7
30	-12
36	-18
40	-20
43	-23
45	-25
48	-29

The use of glycol implies an increase in circuit pressure drops. Therefore a correct design must foresee its effects. The following graphs show the effect of glycol on unit pressure drops according to concentration.



KEY:

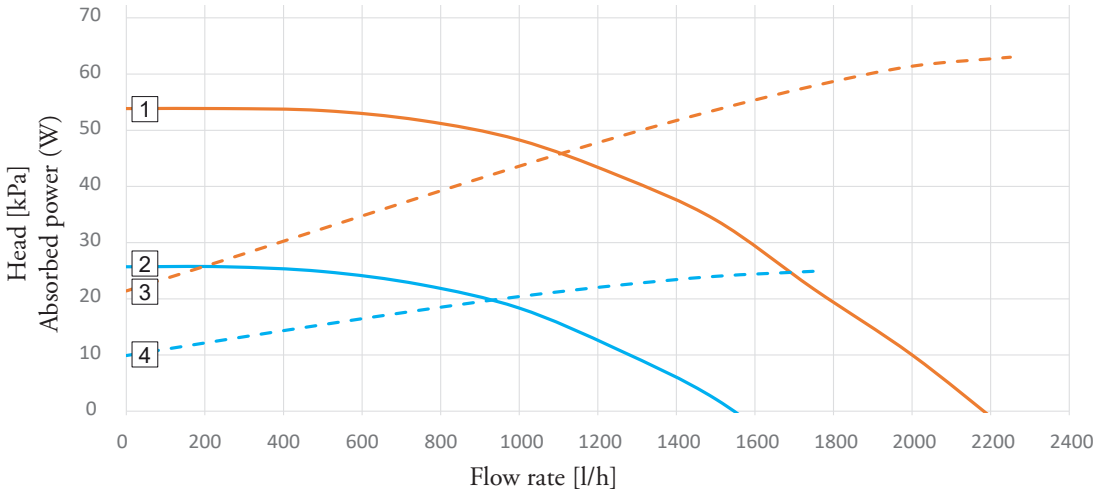
X1 - Flow rate (l/h)	3 - Glycol percentage 20%
Y1 - Head losses (kPa)	4 - Glycol percentage 30%
1 - Glycol percentage 0%	5 - Glycol percentage 40%
2 - Glycol percentage 10%	6 - Glycol percentage 45%

8 FLOW RATE-HEAD AVAILABLE TO THE SYSTEM GRAPHS

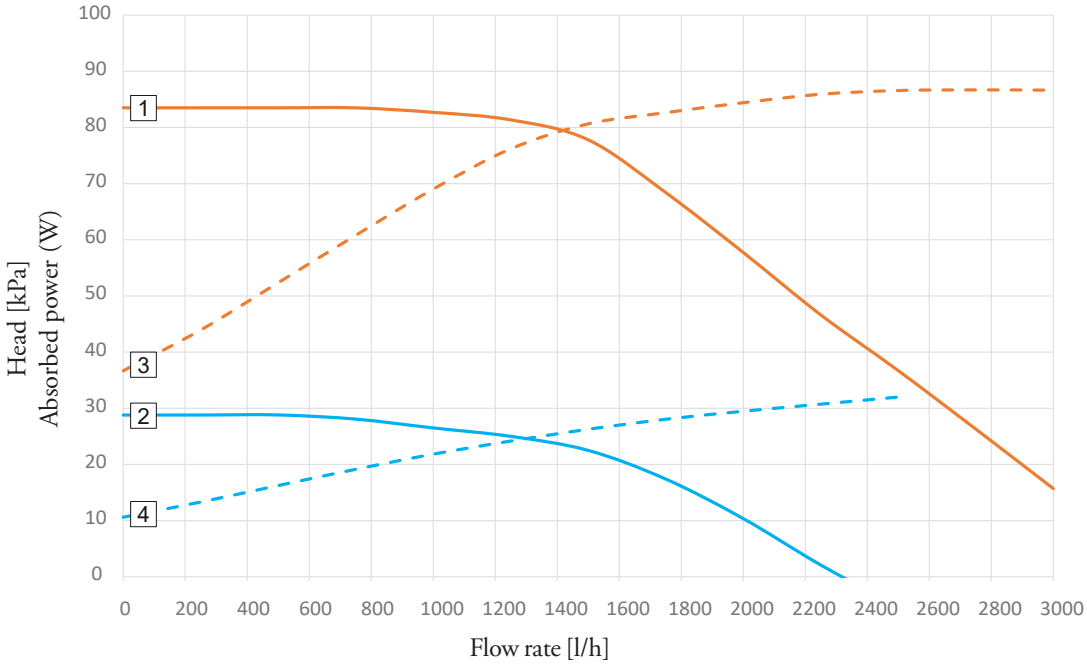
MAGIS M TOP is equipped as standard with a pump operating at variable speed with PWM control, automatically modulating with low power consumption, through which one can operate directly on the air-conditioning system.

Pump performance is shown in the graphs below, and the pump is suitable for both space heating and cooling. *The graphs are to be considered net of the pressure drops of the appliance and in the absence of glycol in the water pipes.*

MAGIS M5-8 TOP - Variable speed head - Grundfos UPM4L 15-70



MAGIS M12-16-12 T-16 T TOP - Variable speed head - Grundfos UPM4XL K E.S.



KEY:

1 - Available head with max fixed speed
2 - Available head with min. speed
3 - Absorbed power at max. fixed speed
4 - Power absorbed by the pump at min speed

Area between curves 1 and 2 - Available head
Area between curves 3 and 4 - Absorbed power

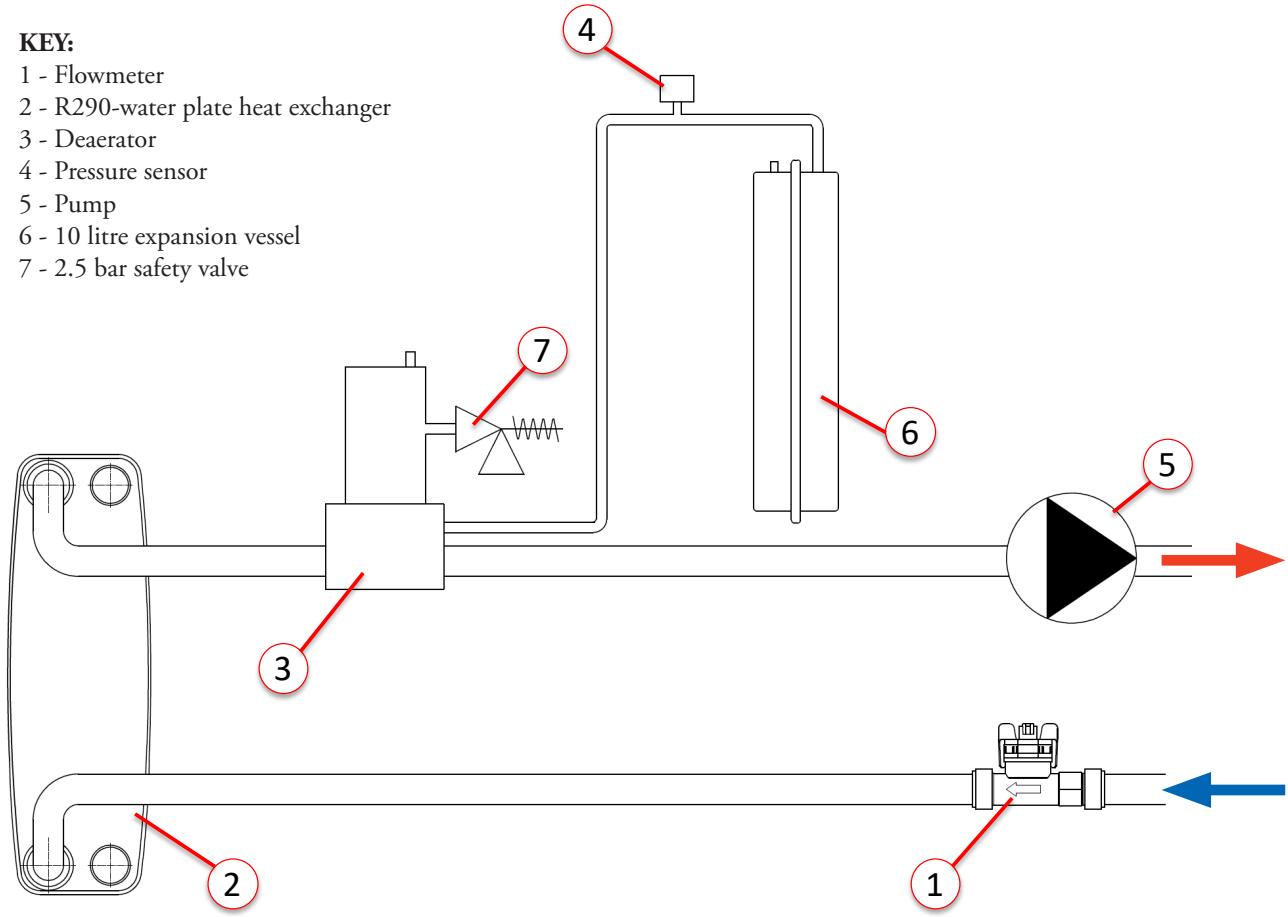
The pump speed is set via the following parameters:
Fixed *(B009=0)*: a maximum speed value is set via parameter *B008* , which is kept fixed.
ΔT constant (*B009=1-10*): pump speed varies automatically to keep the ΔT constant between system flow and return (default 5°C).

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

The treatment of feed water, according to the cases envisaged in UNI 8065, allows the heat generator to be preserved while maintaining functionality and efficiency over time.

9 MAGIS M TOP HYDRAULIC CIRCUIT DIAGRAM

KEY:
1 - Flowmeter
2 - R290-water plate heat exchanger
3 - Deaerator
4 - Pressure sensor
5 - Pump
6 - 10 litre expansion vessel
7 - 2.5 bar safety valve

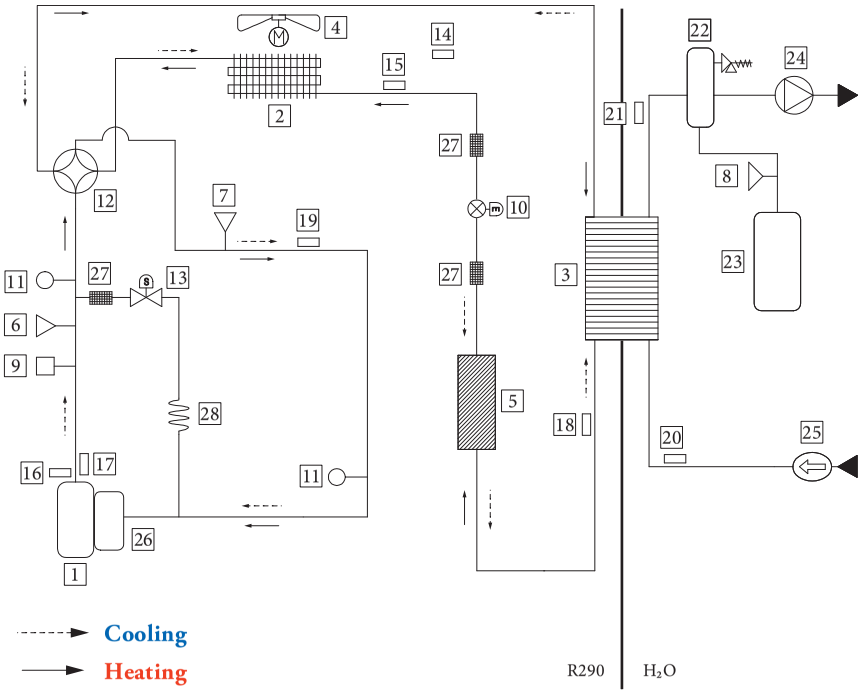


TECHNICAL NOTE: System minimum water content:

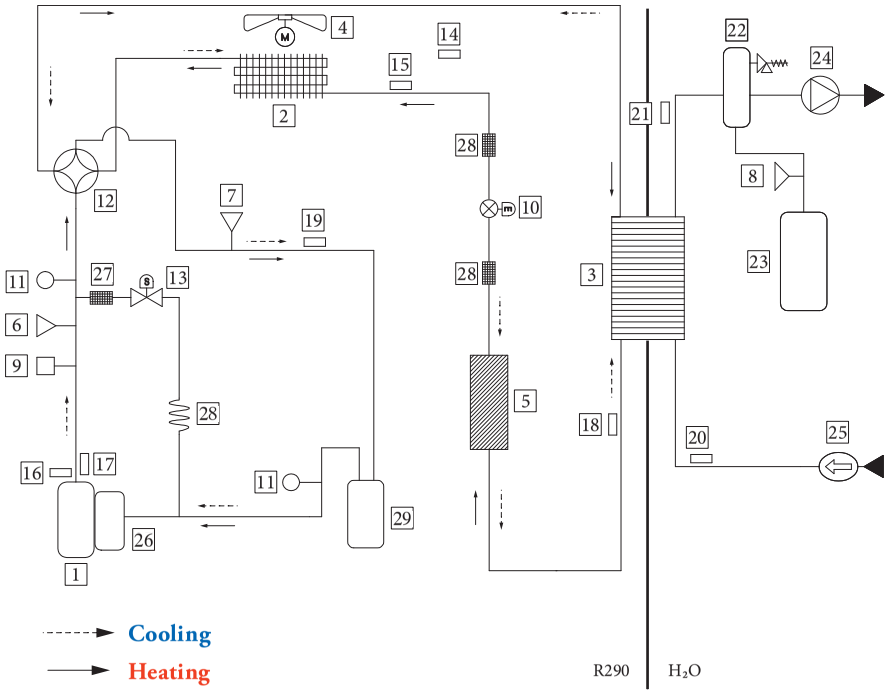
*To facilitate proper execution of the heat pump defrost cycles, a minimum water content in the system is required, which must be **30 litres for sizes 5-8 kW and 50 litres for sizes 12-16 kW.** Attention must therefore be paid to systems divided over several zones, where the water content available to the machine may vary; for this reason it may be necessary to provide an additional thermal flywheel to ensure normal operation of the generator. Furthermore, this minimum content also helps proper operation with fan coils used for cooling (a condition in which the flow temperature is low and has significant heat load variations that vary the number of active fan coils). Lastly, it is important to check that the dehumidifier line has a minimum of **3 l/kW** of the machine (dehumidifier hydraulic circuit connection).*

10 MAGIS M TOP COOLING CIRCUIT DIAGRAM

MAGIS M5-8 TOP



MAGIS M12-16-12 T-16 T TOP



KEY:

1 - Compressor
2 - Heat Exchanger - Finned Coil
3 - Plate heat exchanger
4 - Fan
5 - Water receiver
6 - Pressure Sensor - High
7 - Pressure sensor - Low
8 - Pressure sensor - Water
9 - Pressure switch - High
10 - Electronic expansion valve
11 - Maintenance Door - Loading
12 - Solenoid valve - 4-way
13 - Solenoid Valve - Hot Gas Bypass
14 - External temperature probe
15 - Evaporator inlet temperature probe in heating mode (condenser output in cooling mode)
16 - Compressor head temperature probe
17 - Compressor discharge temperature probe
18 - Condenser outlet temperature probe in heating mode (evaporator inlet in cooling mode)
19 - Extraction temperature probe
20 - Water return temperature probe
21 - Water flow temperature probe
22 - Deaerator with 2.5 bar safety valve
23 - 10 litre expansion vessel
24 - Pump
25 - Flowmeter
26 - Water separator
27 - Filter
28 - Capillary
29 - Liquid accumulator (*MAGIS M12-16-12 T-16 T TOP only*)

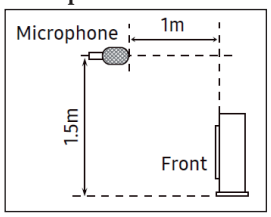
MAGIS M TOP

11 MAGIS M TOP SOUND POWER & PRESSURE

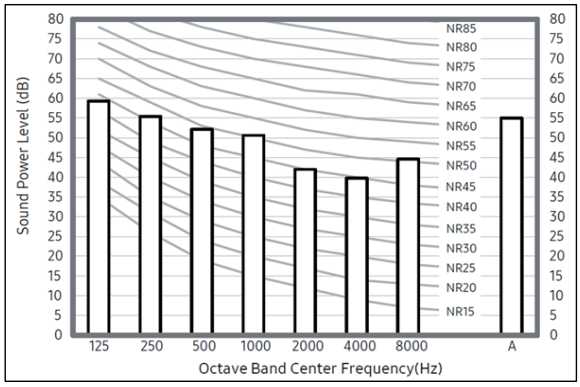
Sound pressure indicates the noise level perceived at a certain distance from the heat pump, while *sound power* represents the total noise emitted by the machine, regardless of the environment. Both are measured in dB(A), they are essential for assessing the acoustic impact of the heat pump. The following graphs show the power and sound pressure levels of MAGIS M TOP in the different power sizes.
The data are obtained under the following conditions:

- *Sound power*, nominal load in heating (A7/W35) and cooling (A35/W7), *measured according to ISO 3741*;
- *Sound pressure*, nominal load in heating (A7/W35) and cooling (A35/W7), *measured according to the picture on the right*

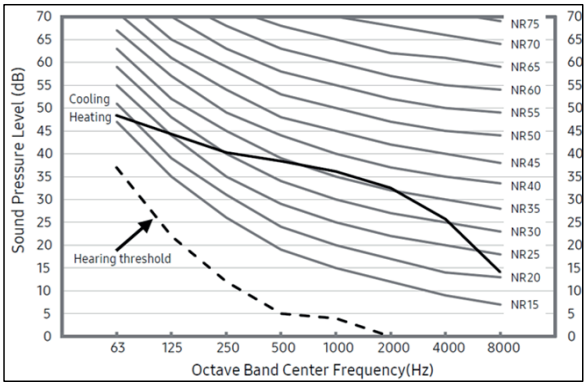
Sound pressure measurement



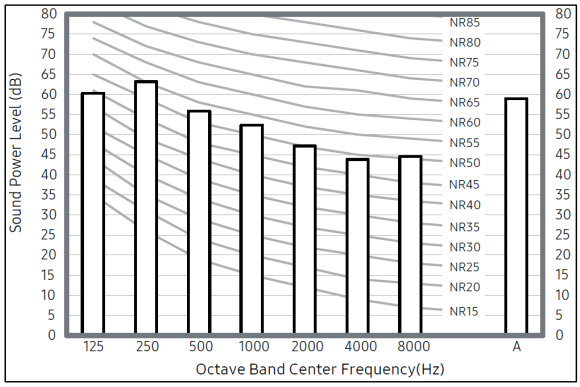
MAGIS M5 TOP *Sound Power*



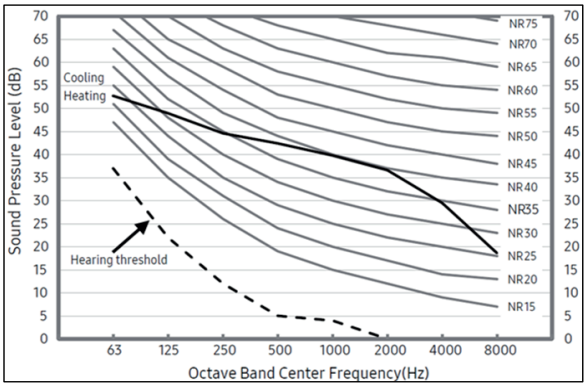
Sound Pressure



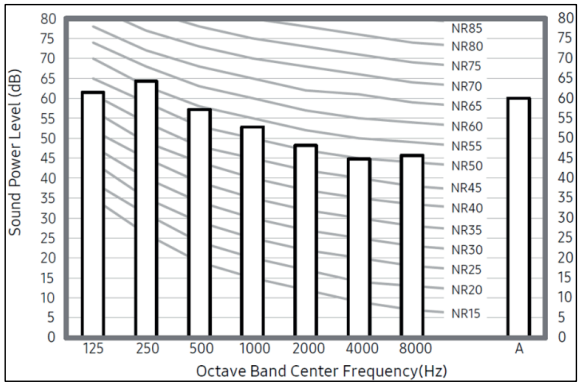
MAGIS M8 TOP *Sound Power*



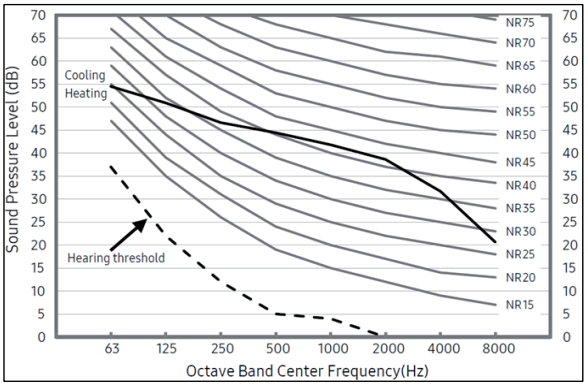
Sound Pressure



MAGIS M12 TOP *Sound Power*



Sound Pressure

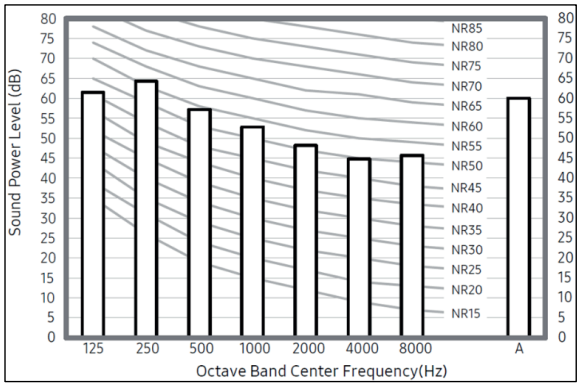


MAGIS M TOP

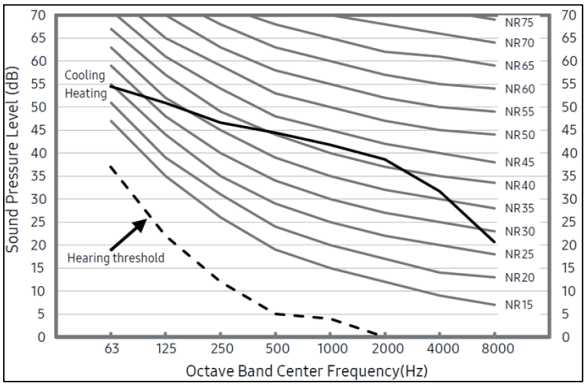
MAGIS M TOP SOUND POWER & PRESSURE (CONTINUED)

MAGIS M12T TOP

Sound Power

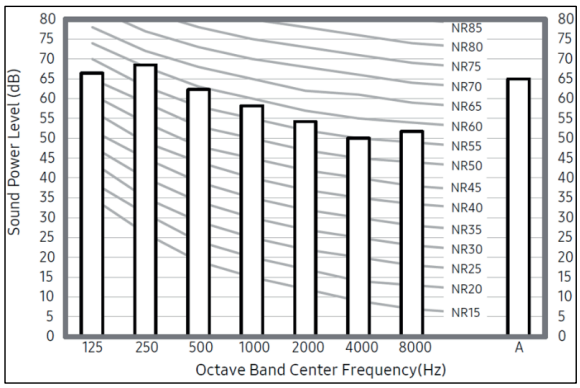


Sound Pressure

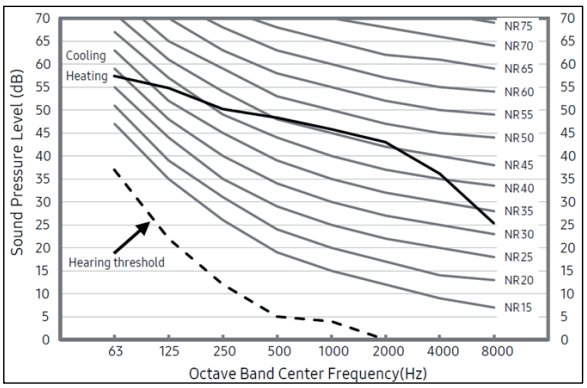


MAGIS M16 TOP

Sound Power

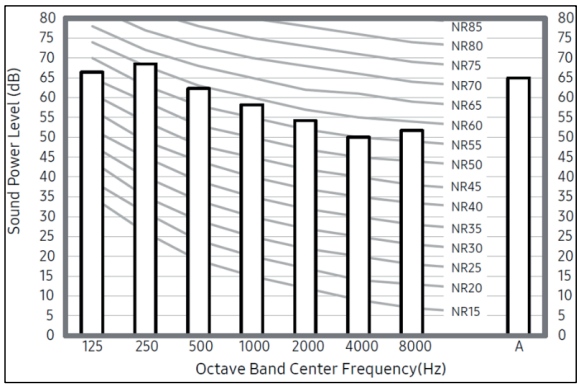


Sound Pressure

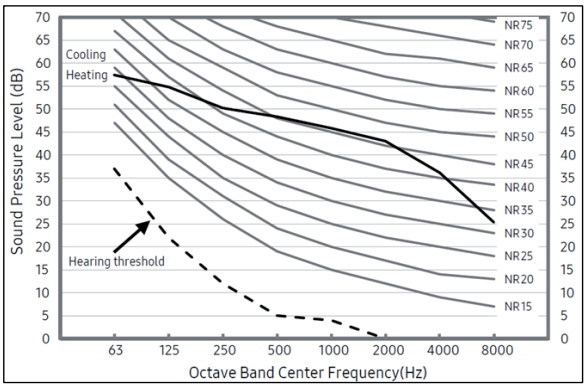


MAGIS M16T TOP

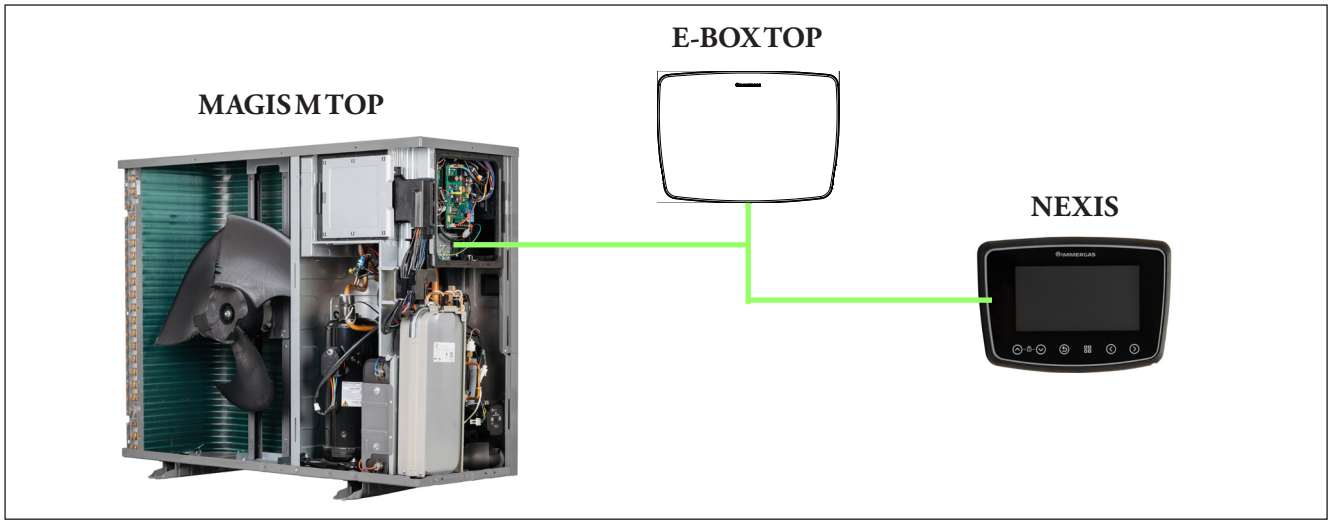
Sound Power



Sound Pressure



12 MAGIS M TOP ELECTRONICS



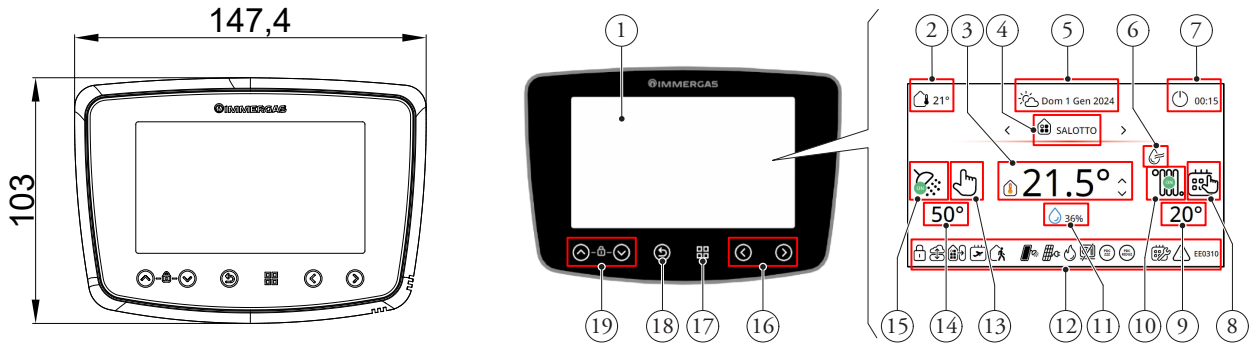
The electronics of MAGIS M TOP supplied as standard with the heat pump model number consists of:

- hydronic and cooling system interface boards, installed and wired in the compartment inside the **MAGIS M TOP** body;
- 1 **NEXIS** control panel, a wired device from which to set generator and system parameters; it can be used as a modulating chrono-thermostat for controlling room temperature and humidity, to be installed inside the house;
- **E-BOX TOP** management board, Master of the system, to which thermostats, probes, actuators and any temperature control options present can be connected; to be installed internally. The E-BOX TOP terminal blocks are configurable with parameters that can be set via the NEXIS panel. These include:

a) *5 potential-free contact digital inputs*;
b) *7 analogue inputs for NTC probes*;
c) *9 digital outputs for controlling actuators (if any)*, 7 of which are live and 2 potential-free contacts;

In the following chapters, the electronic components mentioned here and the functions that can be set are described in detail.

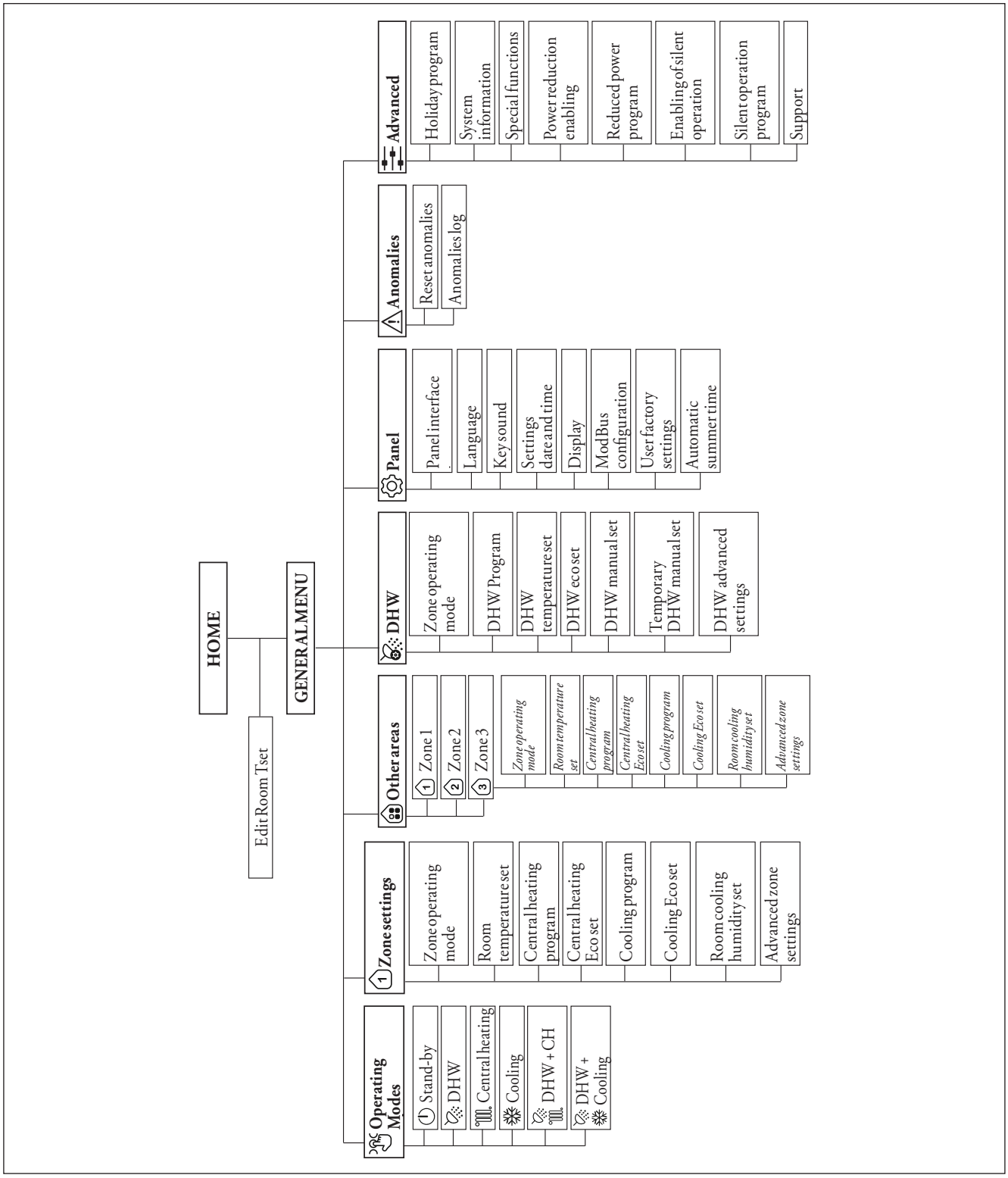
12.1 NEXIS CONTROL PANEL



KEY:
1 - Display
2 - External temperature
3 - Environment set of the displayed zone
4 - Name of displayed zone
5 - Current date
6 - Dehumidification request
7 - Operating mode and current time
8 - Zone operating mode
9 - Heating set of the displayed zone
10 - Generator status and zone request
11 - Zone humidity value
12 - Machine status icons
13 - DHW operating mode
14 - Set DHW
15 - DHW status
16 - Horizontal scroll and zone change buttons
17 - "Menu" button (confirm)
18 - "Undo" button (back)
19 - Vertical scroll, value change and keyboard lock buttons (by pressing them simultaneously)

NEXIS CONTROL PANEL (CONTINUED)

The **NEXIS** control panel**,** wired device, features a 4.3" colour TFT screen from which all generator and system parameters are set. It must be installed inside the house and can be used as a modulating chrono-thermostat for controlling room temperature and humidity.
The standard supply always includes 1 NEXIS black (RAL 7030) 24 Vdc power supply directly from **E-BOX TOP** and it is possible to install up to 2 additional NEXIS panels as an option, one for each thermal zone. These additional panels (supplied as standard with power supply) are always available in black or white (RAL 9010). Using the 'Menu' button, you may access the general menu and from there all the submenus dedicated to the various programming, moving within these with the various buttons described on this page.



NEXIS CONTROL PANEL (CONTINUED)

Operating Modes

Within the ***Operating Modes*** menu it is possible to change the operating mode of MAGIS M TOP according to the settings shown in the table below.

Operating mode	Description	DHW	Cooling	Central heating	Protection Antifreeze
	Stand-by	Disabled	Disabled	Disabled	Activated
	DHW	Enabled	Disabled	Disabled	Activated
	Central heating	Disabled	Disabled	Enabled	Activated
	Cooling	Disabled	Enabled	Disabled	Activated
	DHW + Central heating	Enabled	Disabled	Enabled	Activated
	DHW + Cooling	Enabled	Enabled	Disabled	Activated

Zone settings

In the ***Zone Settings*** menu, several submenus are available that allow the definition of the various parameters of the thermal zone in which the NEXIS control panel is installed.

Zone operating mode
YOU can select the desired operating mode from those available:
- *AUTO*, the set room temperature is maintained within the time slots and the **Central Heating Eco Set** or **Cooling Eco Set** value outside these;
- *MAN*, the room temperature set in the **Room Temperature Set** parameters is kept constant throughout the day;
- *OFF*, the zone is not air conditioned, only room anti-freeze protection is guaranteed according to the parameter set in item *R*25* of the ***Service*** menu.

These logics can only be used if the NEXIS control panel is used as a room chrono-thermostat.

Room Temperature Set
The room temperature to be maintained in the zone with *MAN* operation mode is defined.

Central Heating Eco Set & Cooling Eco Set
In the *AUTO* operating mode, when the time slots are not active, this set temperature is maintained within the zone.

Central Heating & Cooling calendar
In both heating and cooling mode, it is possible to program a dedicated operating calendar, in particular it is possible to set:
- for each day up to 8 different time slots;
- an independent Room Temperature Set can be defined for each time slot;
- outside these time slots the **Central Heating Eco Set** or **Cooling Eco Set** temperatures are maintained.

If you go to manually set a different Room Setpoint than the one provided in the calendar, this can be maintained for a certain time; once this Timed Manual Room Set is over, you will return to the settings made within the time slots. Finally, it is possible to copy the program set on different days.

This logic is available if the NEXIS panel is used as a room chrono-thermostat. If a room thermostat is used and an operating calendar is set, the zone will only be air conditioned if there is a request from the thermostat within one of the set time slots.

Room cooling humidity set
In cooling mode only, the desired humidity percentage in the zone can be set.

This value can onlyBE set if the NEXIS control panel is enabled for reading and controlling the room humidity.

Advanced zone settings
the following advanced settings canBE managed:

- Room and Climate Temperature Control
By deactivating both temperature controls, it will be possible to set a constant System flow set in heating or cooling.
By enabling *Room Temperature control*, the system flow set will be automatically modified according to the temperature read in the room; this temperature control is only possible if NEXIS is used as a room sensor.
By enabling *Climatic Temperature Control*, the system flow set is automatically managed by the electronics according to the outside temperature and the set climatic curve. In this case, if the system flow probe is fitted, a correction of the flow temperature can be made via the relevant parameter in item *P005* of the ***Service*** menu.

NEXIS CONTROL PANEL (CONTINUED)

- Dehumidifier disabling
ItIS possible to set a start and end time to disable the dehumidifier, thus treating or not treating the room humidity. IT IS possible to manage dehumidifiers in both neutral and cooled air.

- Climate zone name
The reference name of the area can be defined.

Other areas

Each NEXIS control panel can also manage the other thermal zones present, the same way as described for the ***Zone Settings*** menu. This allows maximum flexibility in system management, so that each NEXIS can be used as an interface for the entire system.

DHW

Using this menu, it is possible to manage and set the parameters for domestic hot water production, in the presence of a dedicated storage tank to be combined with MAGIS M TOP.

DHW operating mode
FORheating the storage tank, the desired operating mode can be selected from those available:
- *AUTO*, the set temperature is maintained within the time slots and the **DHW Eco Set** value outside these;
- *MAN*, the temperature set in the **DHW Temperature Set** parameter is kept constant throughout the day;

DHW Temperature Set
The temperature to be maintained in the storage tank in *MAN* operating mode is defined.

DHW Eco Set
In the *AUTO* operating mode, when the time slots are not active, this set temperature is maintained inside the storage tank.

Domestic Hot Water Calendar
IT IS possible to set an operating calendar for the DHW service the same way as described above for space heating or cooling.

DHW advanced settings
The following settings are available for the DHW service:
- BOOST function
This function is used to reduce the charging time of the DHW storage tank by having the MAGIS M TOP and the integrative resistance work at the same time, thus ensuring greater comfort; an operating calendar can be defined.
- Anti-Legionella function
A thermal shock is performed on the storage tank to eliminate the possible presence of legionella, with the possibility of defining the frequency of activation of this function (never - once a week - every day) and the time of activation.
This function brings the generator storage tank to the maximum allowed with DHW integrative resistance enabled. After reaching a temperature of 65°C, the holding function is automatically activated for a time set in item *C008* of the ***Service*** menu. Furthermore, in parameter list *C* of the ***Service*** menu, this treatment can also be extended to the DHW recirculation loop, if present.

- DHW Recirculation Enabling and Program
IT IS possible to enable a DHW recirculation by managing a pump and its temperature probe. Similarly to what has been described for air-conditioning and domestic hot water, it will be possible to set a timetable for the operation of this service.

Panel

From this menu it is possible to set all the more general parameters related to the NEXIS control panel, such as language, date/time and key sound.

Anomalies

Any errors that may occur during operation are displayed directly on the main screen of the panel; from this menu it is possible to reset them and view the error history.

Advanced

The following submenus are available in this section.

Holiday program
In the event of prolonged absence from home, this function can be activated by setting the start and end date and time. While the program is running, only system and room anti-freeze protection is guaranteed.

System information
A lot of system-related information is displayed, including system flow rate, temperatures near the relevant probes and system status. For the complete list of parameters that can be displayed, please refer to the MAGIS M TOP Instruction Booklet.

Special functions
From here, several advanced system management functions can be activated

- Disabling system and DHW integrative resistances
By means of several dedicated items, it is possible to individually deactivate the system and/or DHW integrative resistance.
- Deaeration function
In the case of new systems, in particular for floor systems, it is important that deaeration is performed correctly. This function consists of the cyclic activation of the pump and the 3-way diverter valve, if any.

- Screed heater function
MAGIS M TOP is equipped with a function to perform the thermal shock on new radiant panel systems, as required by the applicable standard. Working temperatures and dwell times at these values can be set in parameters *M003, M004, M005, M006* of the ***Service*** menu.

NEXIS CONTROL PANEL (CONTINUED)

Reduced power program
By enabling this function, a calendar can be programmed, similar to that described for DHW and air conditioning. Within the time slots, a percentage reduction of the maximum output power of the heat pump can be set.

Silent operation program
Through hourly programming, sound power can be reduced by adjusting the compressor frequency and fan speed. IT is possible to set 4 different levels of sound power reduction, by means of microswitches on the P.C.B's inside MAGIS M TOP (level 4 guarantees 35 dB sound pressure level, measured at a distance of 3 metres from the front of the heat pump).

Support
Finally, the password-protected service menu provides access to all functions and settings dedicated to our IMMERGAS service centres. The following is a non-exhaustive list of the main functions that can be found; please refer to the Instruction Booklet for the complete list of parameters.

Parameter List R - Zone Settings
There are several R-menus referring to the different thermal zones: R1 refers to zone 1, R2 to zone 2 and R3 to zone 3. To give an example, parameters R125, R225, R325 have the same function, but referring to different thermal zones.

*R*10 - Dew Point Enable:* Cooling and/or dehumidification can be carried out taking the dew point of the ambient air into account.

*R*25 - Room Anti-Freeze Set Point:* The room anti-freeze function serves to ensure the protection of system components. If the room temperature in the zone falls below a certain value (settable by this parameter, default 4°C), the heat pump is switched on until the set anti-freeze temperature increased by 1°C is reached.

A NEXIS panel or else a temperature-humidity probe is required to enable these functions.

Parameter List A1 - Input/Output Definition
The functions that can be set will be dealt with in the next chapter on **E-BOX TOP.**
A101-A107 - Analogue Inputs: parameters for configuring analogue inputs.
A108-A112 - Digital Inputs: parameters for configuring digital inputs.

A113-A119 - Digital Outputs: Parameters for configuring live digital outputs.

A120, A121 - Digital Outputs: Parameters for configuring potential-free digital outputs.

Parameter List P - System Settings

P005 - Maximum system flow correction: in the presence of a system flow probe, this parameter is used to define the maximum correction applicable to the System Flow Set according to the set temperature control.

P012 - DHW priority: In the case of simultaneous DHW and system demand, it is possible to define that:
- the first demand received is fulfilled until fully satisfied;
- demands are handled alternately for a Maximum Priority Time;
- the DHW demand always has priority over the system.

Parameter List C - DHW Settings

C008 - Anti-Legionella Holding: duration of holding the storage tank at the Anti-Legionella Set temperature.

C010 - Antilegionella time on recirculation: activation time of the recirculation pump after the antilegionella function.

Parameter List B - Heat Pump Settings

B001 - Glycol function: frost protection is provided by glycol in the water pipes, the anti-freeze functions of the system are inhibited.

B008 - Maximum fixed speed: the maximum operating speed of the system pump is set (default 100%).

B009 - Pump mode: this defines whether the pump supplied as standard with MAGIS M TOP works at fixed speed or modulating at constantΔT(default ΔTconstant at 5°C).

Parameter List I - Integration Settings

I001, I002 - Enabling of system and DHW integration: with these parameters it is defined whether the integrative resistances operate at the same time or alternatively to MAGIS M TOP on the same service.

I010 - Concurrent function: with this function, in the event of simultaneous demand for air conditioning and DHW, it is possible to fulfil both at the same time via the heat pump and the DHW integrative resistance.

I011, I012 - Priority Time: if an alternating priority of system and DHW is defined in parameter *P012* , maximum priority times are set via these parameters.

Parameter List M - Manual Drives

M003, M004 - Screed heater flow set: the max. and min. operating temperatures of the screed heater function are defined.

M005, M006 - Screed heater dwell times: define the dwell times at the max. and min. operating temperatures of the screed heater function.

NEXIS CONTROL PANEL (CONTINUED)

Parameter list M2 - E-BOX TOP manual drives

M2001-M2009 - Relay Forcing: it is possible to force the closure of the relays dedicated to the configurable digital outputs on E-BOX TOP.

M2010 - Apply Relays: after defining which relays to force via the previous parameters, this item must be activated in order to carry out the forcing.

12.2 E-BOX TOP SUPERVISION BOARD

An E-BOX TOP board is supplied with each MAGIS M TOP, which is to be installed inside the house and to which all major electronic components of the system are to be connected. There are three different configurable terminal blocks on which you can find:

- *9 digital outputs,* to manage:

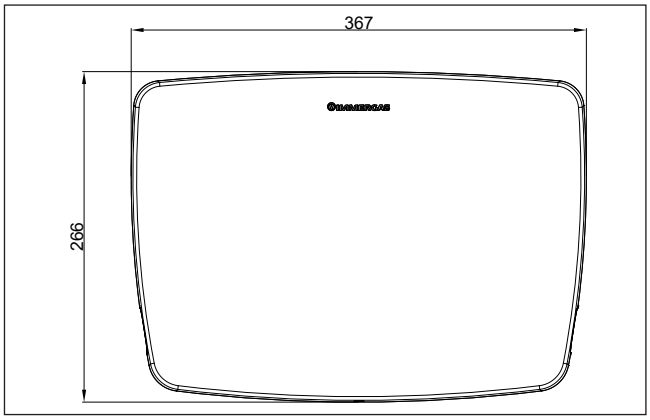
1. up to 3 booster pumps and their mixing valves, one for each zone, thus managing thermal zones with different flow temperatures;
2. up to 2 dehumidifiers, one for each zone, being able to choose to work in cooled air (decrease room temperature and humidity) or in neutral air (decrease only room humidity);
3. generic alarm, in case of errors detected during operation;
4. 3-way diverter valve for heating a dedicated DHW storage tank;
5. summer/winter diverter valves, which are switched with the mode change (Summer/Winter) by **NEXIS**;
6. activation of integrative electrical resistances, both in relation to the heating system and a domestic hot water storage tank;
7. DHW recirculation pump, so as to optimise DHW comfort;
8. external actuator powered when there is a system demand (heating/cooling phase active);
9. external actuator powered when there is a DHW demand (DHW phase active).

These *digital outputs* correspond to the terminals:
- **96-A1**, **96-A2**, **96-B1** energized and equipped with 10 A relays, to which the booster pumps, if any, are to be connected;
- **96-B2**, **96-C1, 96-C2**, **96-D1** energized and equipped with 5 A relays;
- **54/55-A**, **54/55-B** equipped with potential-free relays (max. current 5 A), to which the dehumidifiers, if fitted, are to be connected.

- *7 analogue inputs*, to which only NTC probes can be connected, configurable as:

1. DHW storage tank probe;
2. up to 3 zone flow probes, one for each thermal zone that may be present;
3. system flow probe
4. DHW recirculation probe
5. external probe, in case the one on board the machine is installed in a non-ideal position;

These *analogue inputs* correspond to terminals **AI-1**, **AI-2**, **AI-3**, **AI-4**, **AI-5**, **AI-6**, **AI-7**.



- *5* potential-free *digital inputs*, can connect:

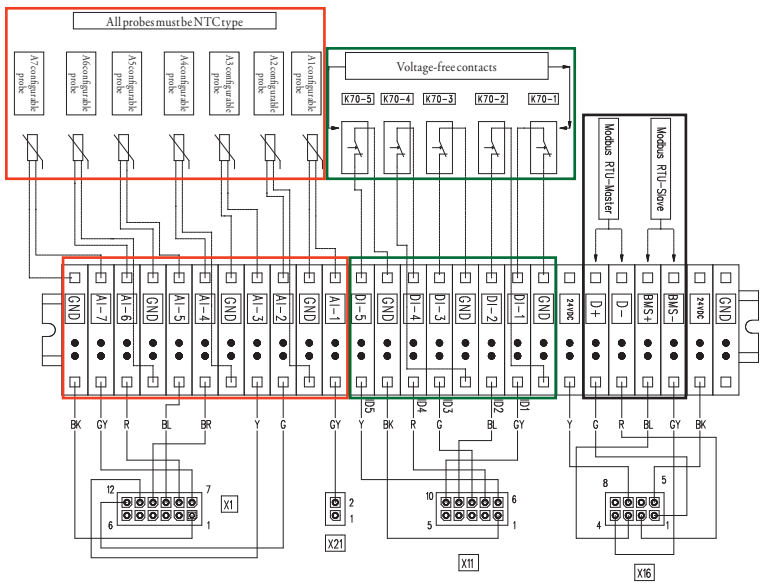
1. up to 3 room thermostats, one for each thermal zone that may be present;
2. up to 3 safety thermostats in the case of low-temperature zones (one per zone);
3. up to 3 humidistats for controlling room humidity (one per zone);
4. up to 3 alarms of the two dehumidifiers possibly present (one per zone);
5. disabling contact of the heat pump;
6. selector switch for changing the heating/cooling mode;
7. photovoltaic contact to force heating of the DHW storage tank to the maximum storage temperature.

These *digital inputs* correspond to terminals **DI-1**, **DI-2**, **DI-3**, **DI-4**, **DI-5**.
In the event that the configurable inputs/outputs are not sufficient to manage what is foreseen in the system, 2 dedicated optional kits are available:
- up to 3 *Supplementary Zone Expansion Kits cod. 3.035840*, capable of managing a mixed zone and its flow probe;
- up to 3 *Deu Relay Board Kits. cod. 3.036231*, from which it is possible to control a dehumidifier in cooled and neutral air, 1 valve at 230 Vac and dehumidifier alarm.

Finally, on the BMS+/BMS - terminals, it is possible to combine the E-BOX TOP, then MAGIS M TOP, to a BMS home automation control system.
a dedicated 230 Vac power supply mustBE provided for E-BOX TOP. A 24 Vdc power supply output is also available on the board, through which only 1 wired NEXIS control panel can be powered.

MAGIS M TOP

E-BOX TOP SUPERVISION BOARD (CONTINUED)



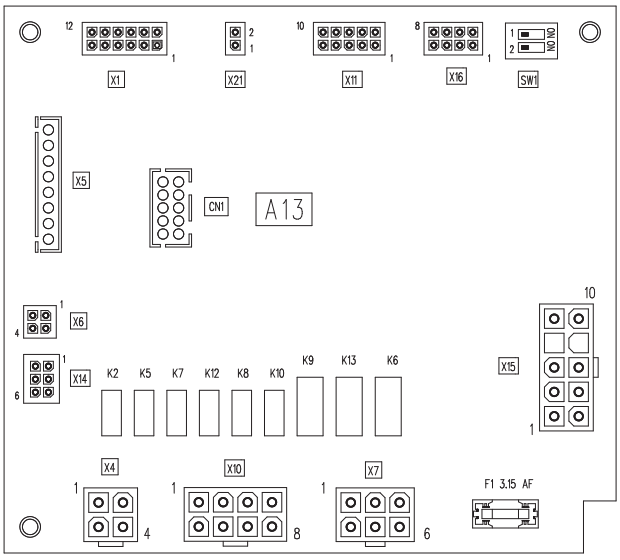
230 Vac power supply

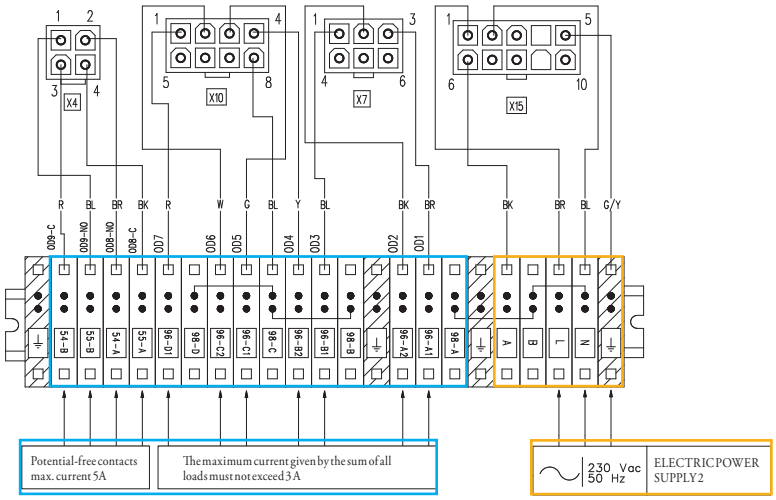
Modbus communication

DI: Digital inputs

AI: Analogue inputs

Digital outputs: on terminals **96-A1, 96-A2, 96-B1** the booster pumps are to be connected. On terminals **54/55-A, 54/55-B** dehumidifiers are to be connected, in neutral or cooled air.





KEY:

A13 - E-BOX TOP supervision board
K70-1 - Configurable multi-purpose relay 1
K70-2 - Configurable multi-purpose relay 2
K70-3 - Configurable multi-purpose relay 3
K70-4 - Configurable multi-purpose relay 4
K70-5 - Configurable multi-purpose relay 5

COLOUR CODE KEY:

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

NOTE: a dedicated 230 Vac power supply must be provided for the E-BOX TOP supervision board. A 24 Vdc power supply output is also available on the E-BOX TOP, through which only the wired NEXIS control panel supplied as standard can be powered.

E-BOX TOP SUPERVISION BOARD (CONTINUED)

All digital/analogue inputs and digital outputs are to be configured from the wired **NEXIS** control panel. The following tables show the items in the ***Service*** menu (with their corresponding terminals on the E-BOX TOP) and the functions that can be set depending on the value selected.

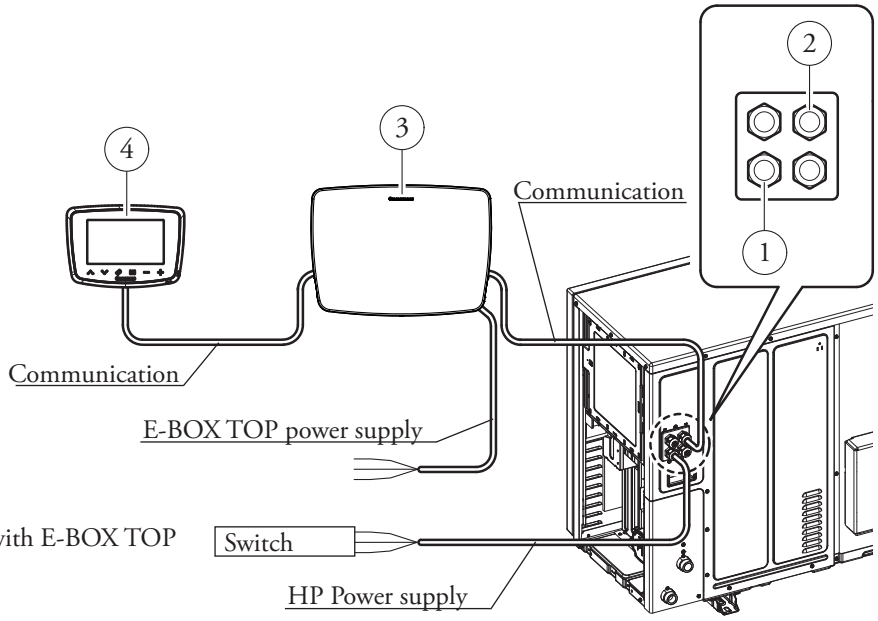
Analogue input items (terminals)	Value	Available functions
A101 (AI-1)	0	Off
A102 (AI-2)	1	DHW storage tank probe
A103 (AI-3)	5	Zone 1 flow probe
A104 (AI-4)	6	Zone 2 flow probe
A105 (AI-5)	7	Zone 3 flow probe
A106 (AI-6)	8	System flow probe
A107 (AI-7)	9	DHW recirculation probe
	10	External probe

Digital input items (terminals)	Value	Available functions
	0	Off
	3	Zone 1 room thermostat
	4	Zone 2 room thermostat
	5	Zone 3 room thermostat
	6	Zone 1 humidistat
A108 (DI-1)	7	Zone 2 humidistat
A109 (DI-2)	8	Zone 3 humidistat
A110 (DI-3)	9	Zone 1 dehumidifier alarm
A111 (DI-4)	10	Zone 2 dehumidifier alarm
A112 (DI-5)	11	Zone 3 dehumidifier alarm
	12	Heat pump disabling
	13	Photovoltaic - Smart Grid 1
	15	Heating/ cooling selector
	16	Zone 1 safety thermostat
	17	Zone 2 safety thermostat
	18	Zone 3 safety thermostat

Digital output items (terminals)	Value	Available functions
	0	Off
	1	Dehum. in cooled air zone 1
	2	Dehum. in cooled air zone 2
	3	Dehum. in cooled air zone 3
	4	Dehum. in neutral air zone 1
	5	Dehum. in neutral air zone 2
A113 (96-A1)	6	Dehum. in neutral air zone 3
A114 (96-A2)	11	DHW diverter valve
A115 (96-B1)	12	System integrative resistance
A116 (96-B2)	13	DHW integrative resistance
	15	Zone 1 mixing valve (opens)
A117 (96-C1)	16	Zone 1 mixing valve (closes)
A118 (96-C2)	17	Zone 2 mixing valve (opens)
A119 (96-D1)	18	Zone 2 mixing valve (closes)
A120 (54/ 55-A)	19	Zone 3 mixing valve (opens)
	20	Zone 3 mixing valve (closes)
A121 (54/ 55-B)	21	Summer/winter diverter valve
	22	Zone 1 booster pump
	23	Zone 2 booster pump
	24	Zone 3 booster pump
	25	CH mode active
	26	Domestic hot water recirculation pump
	28	DHW mode active

NOTE: the booster pumps are to be connected to terminals **96-A1, 96-A2, 96-B1**, equipped with 10 A energized relays . The dehumidifiers (cooled or neutral air) are to be connected to terminals **54/55-A, 54/55-B**, equipped with 5 A potential-free contact relays.

13 ELECTRICAL CABLE SPECIFICATIONS



KEY:
1 - Power Supply
2 - Communication with E-BOX TOP
3 - E-BOX TOP
4 - NEXIS

Power cable features

The MAGIS M TOP power cable (not standard supplied) must be suitable for outdoor installation and must have at least a flexible polychloroprene sheath (code IEC: 60245 IEC57 / CENELEC: H05RN-F). Suitable power cable cross-sections can be:

- 2,5 ~ 4 mm² for MAGIS M5-8 TOP;
- 6 ~ 10 mm² for MAGIS M12-16 TOP;
- 2,5 ~ 4 mm² for MAGIS M12-16 T TOP;

The ferrite ring supplied as standard should be attached to the power cable. The devices comply with IEC 61000-3-12. For three-phase power supply it must be verified that the short-circuit power (SSC) is ≥ 3.3 MVA at the point of interface between the user's network and the public network.

It is the responsibility of the installer or user to contact the electricity supplier to ensure this.

N.B: it is always necessary to have a residual current device type "A" installed, with 30 mA contacts at high speed (less than 0.1 seconds) and a circuit breaker with trip curve "C" with magnetic release setting
5-10 In (rated current).

Finally, a dedicated 230 Vac power supply must be provided for the E-BOX TOP supervision board. A 24 Vdc power supply output is also available on the E-BOX TOP, through which only the wired NEXIS control panel supplied as standard can be powered.

Outdoor Unit	Nominal Values		Voltage interval min. - max.		Maximum current absorbed (MCA)	Maximum fuse amperage (MFA)
	Hz	V	V	V	A	A
MAGIS M5 TOP	50	220 - 240	198	264	16.1	17.6
MAGIS M8 TOP	50	220 - 240	198	264	26	28.6
MAGIS M12 TOP	50	220 - 240	198	264	32	35.2
MAGIS M16 TOP	50	220 - 240	198	264	32	35.2
MAGIS M12 T TOP	50	380 - 415	342	457	16.1	17.7
MAGIS M16 T TOP	50	380 - 415	342	457	16.1	17.7

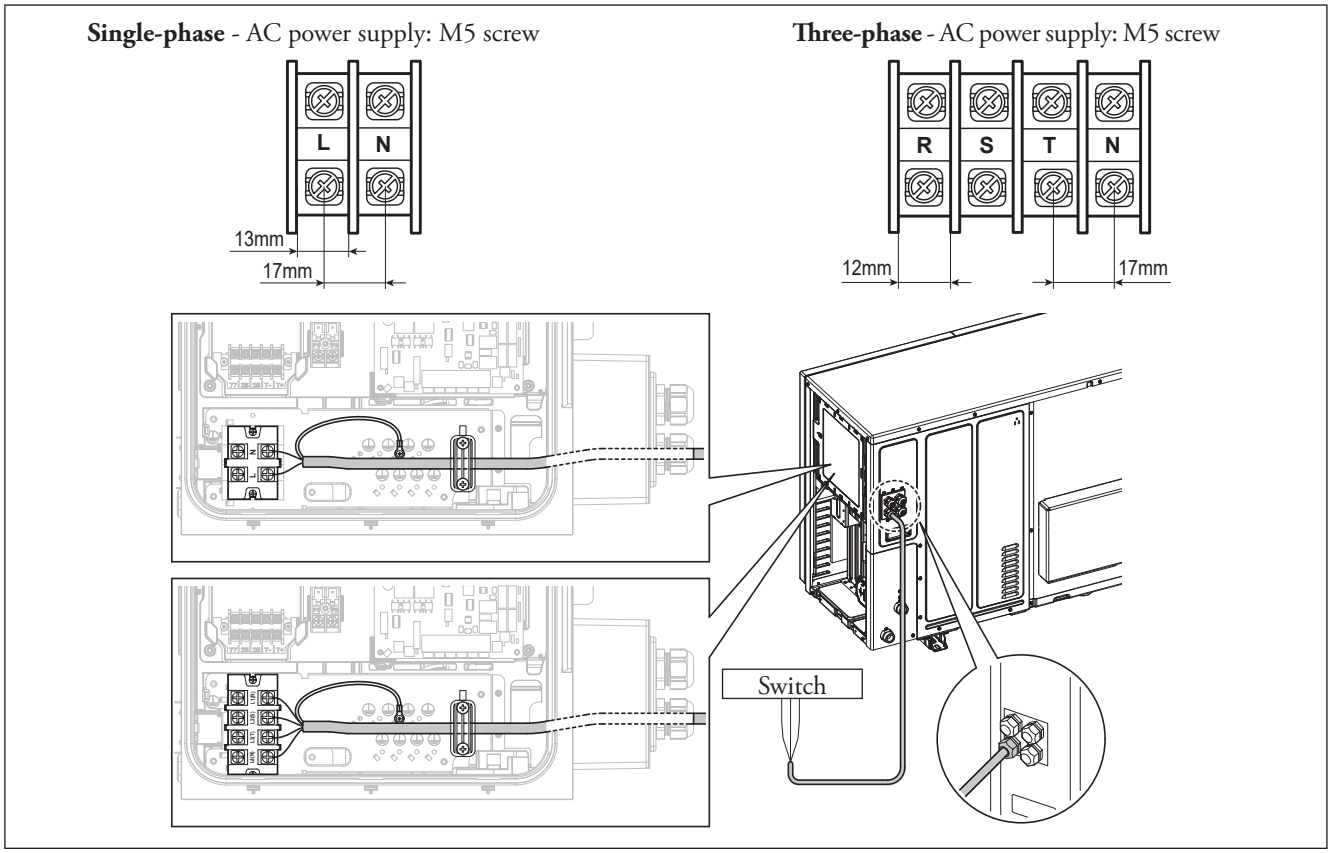
Communication cable features

All devices with Modbus dialogue are to be connected to the dedicated terminal block of the E-BOX TOP. A *shielded twisted 2-wire cable with a minimum cross-section of 0.75mm² and a maximum length of 50 metres of the LiYCY type* is required for connection.
Both ends of the shielding must be earthed.

13.1 ELECTRICAL CONNECTIONS ON MAGIS M TOP TERMINAL BLOCKS

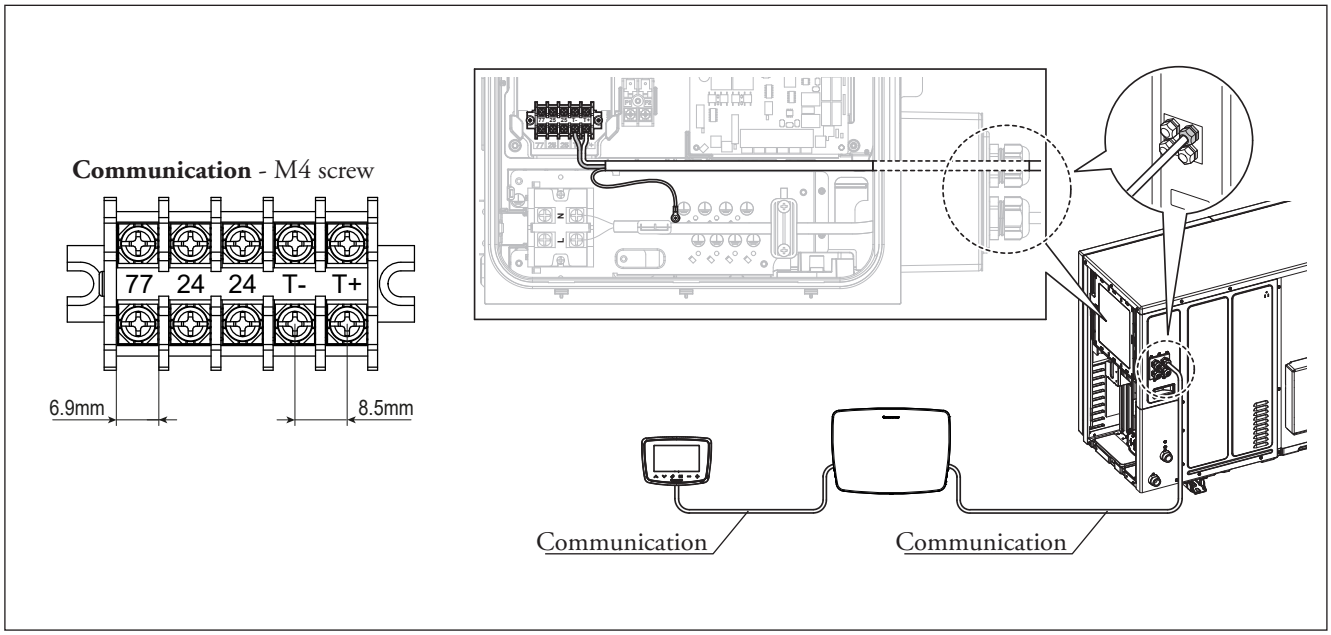
Electric power supply

Insert the power cable from the rear side of MAGIS M TOP, running it through the cable gland as shown in the following figure.
Connect the cable to the terminal block, locking it with the cable clamp, without stretching the cable.
The earthing wire for external cables must be attached to a suitable ring cable lug (not supplied).

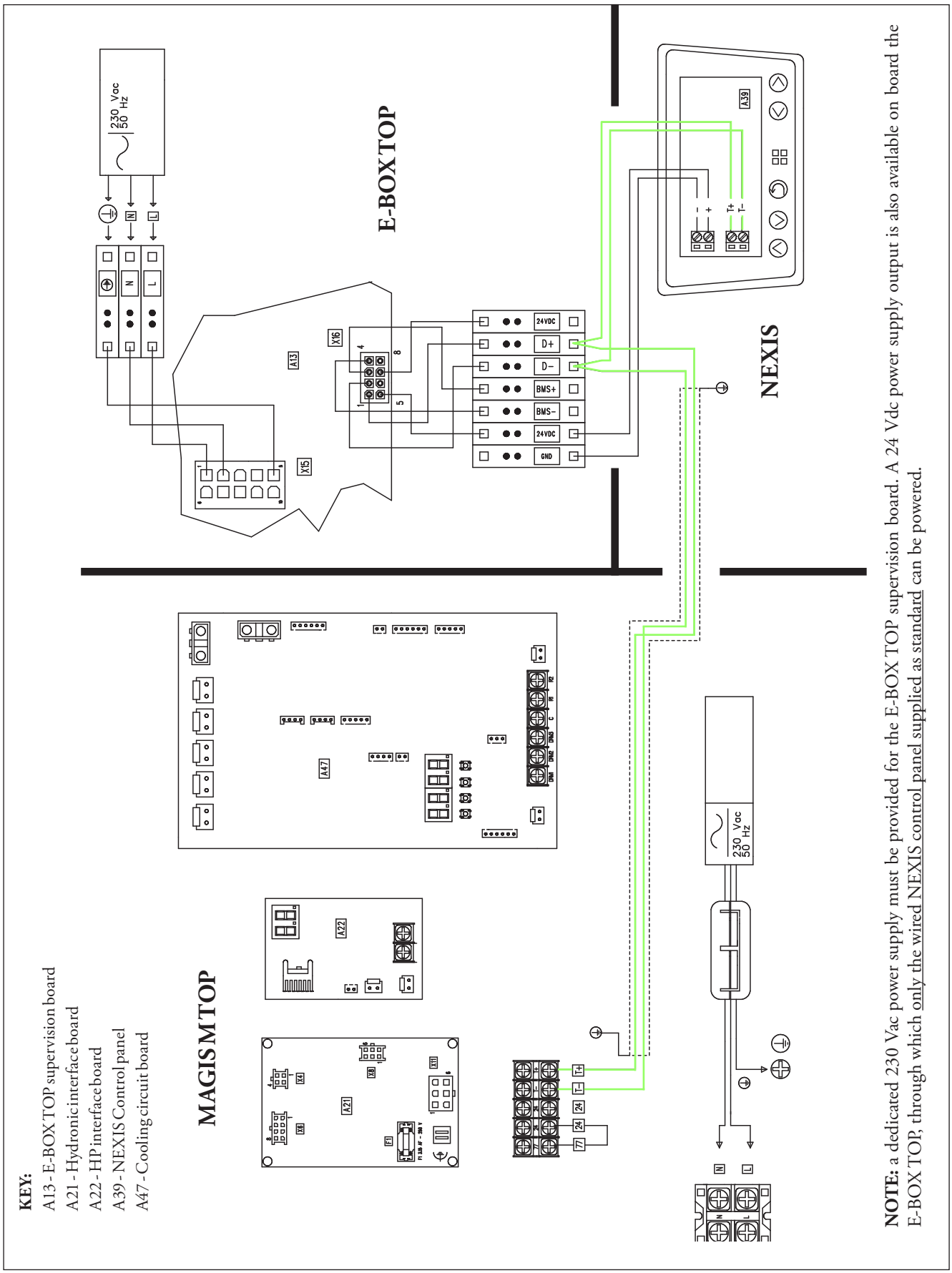


Communication

Insert the communication cable (not supplied) from the rear side of MAGIS M TOP, running it through the fairlead as shown in the following figure.



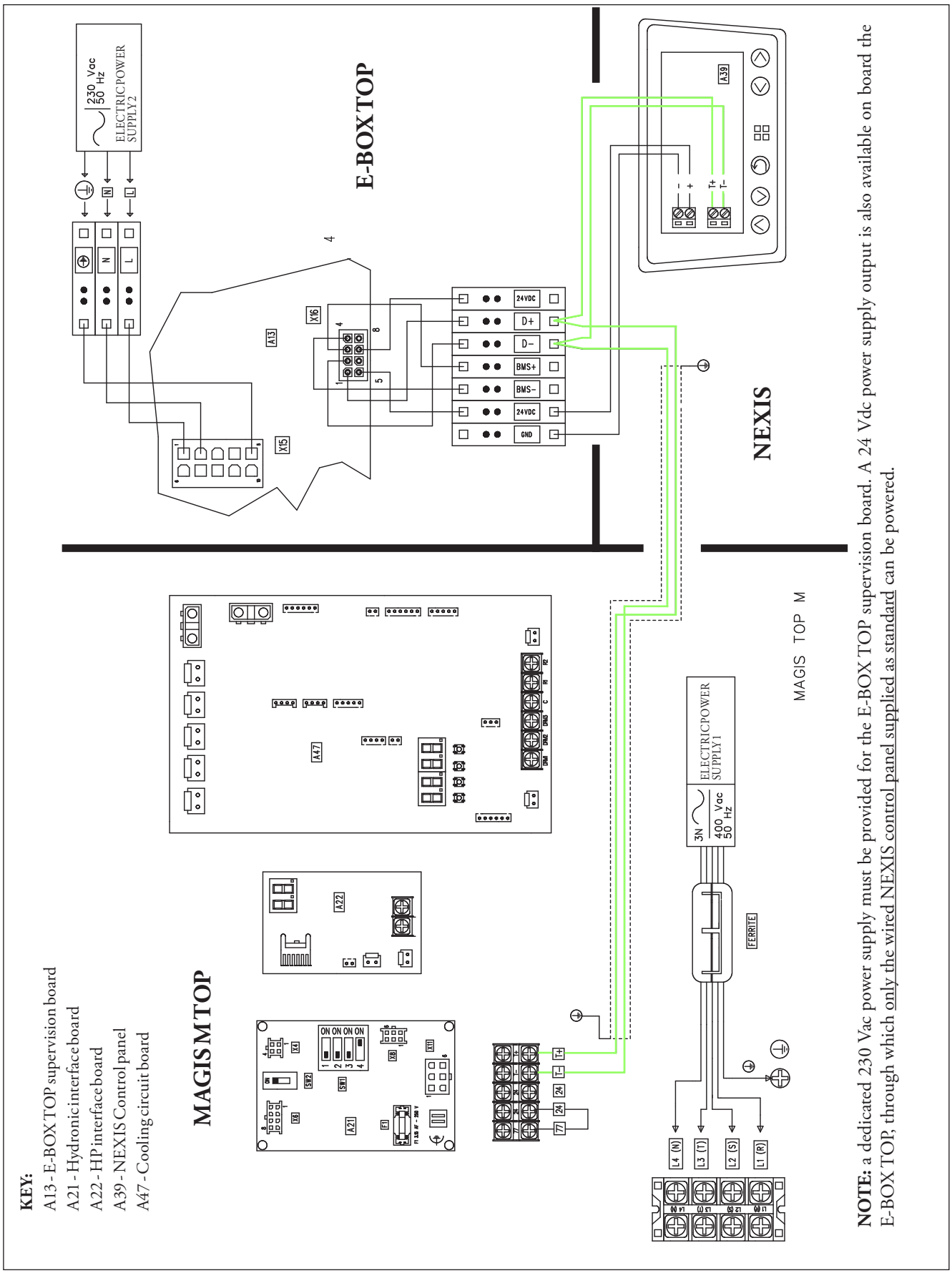
14 MAGIS M TOP SINGLE-PHASE ELECTRICAL CONNECTIONS



KEY:
A13 - E-BOX TOP supervision board
A21 - Hydronic interface board
A22 - HP interface board
A39 - NEXIS Control panel
A47 - Cooling circuit board

NOTE: a dedicated 230 Vac power supply must be provided for the E-BOX TOP supervision board. A 24 Vdc power supply output is also available on board the E-BOX TOP, through which only the wired NEXIS control panel supplied as standard can be powered.

14.1 MAGIS M TOP THREE-PHASE ELECTRICAL CONNECTIONS



15 MAGIS M5 TOP "POWER" AND "COP" CENTRAL HEATING

MAGIS M5 TOP		Water flow temperature [°C]								
		25			30			35		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	3.85	1.98	1.94	3.70	1.97	1.88	3.54	1.95	1.82
-20	(-21)	4.41	1.93	2.28	4.30	2.01	2.14	4.18	2.10	1.99
-15	(-16)	4.90	1.85	2.65	4.82	2.00	2.41	4.73	2.18	2.17
-10	(-11)	5.31	1.73	3.07	5.11	1.84	2.78	4.91	1.98	2.48
-7	(-8)	5.38	1.55	3.47	5.17	1.65	3.13	4.95	1.77	2.80
-2	(-3)	5.46	1.39	3.93	5.21	1.44	3.61	4.95	1.50	3.30
2	(1)	5.54	1.23	4.50	5.25	1.26	4.16	4.95	1.30	3.81
7	(6)	6.09	0.98	6.21	5.55	0.98	5.66	5.00	0.98	5.10
12	(11)	6.40	0.92	6.96	6.27	1.01	6.21	6.14	1.11	5.53
15	(14)	6.89	0.90	7.66	6.68	0.98	6.81	6.46	1.08	5.98
20	(19)	7.49	0.85	8.81	7.23	0.95	7.61	6.96	1.08	6.44

MAGIS M5 TOP		Water flow temperature [°C]								
		40			45			50		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	3.47	1.99	1.74	3.39	2.02	1.68	3.35	2.11	1.59
-20	(-21)	4.10	2.13	1.92	4.02	2.16	1.86	3.90	2.22	1.76
-15	(-16)	4.62	2.19	2.11	4.52	2.21	2.05	4.41	2.29	1.93
-10	(-11)	4.88	2.09	2.33	4.85	2.22	2.18	4.84	2.32	2.09
-7	(-8)	4.95	1.90	2.61	4.95	2.04	2.43	4.95	2.21	2.24
-2	(-3)	4.95	1.70	2.91	4.95	1.96	2.53	4.95	2.10	2.36
2	(1)	4.95	1.47	3.37	4.95	1.71	2.89	4.95	1.89	2.62
7	(6)	5.00	1.13	4.42	5.00	1.32	3.79	5.00	1.45	3.45
12	(11)	6.08	1.22	4.98	6.01	1.34	4.49	5.98	1.51	3.96
15	(14)	6.39	1.20	5.33	6.33	1.36	4.65	6.25	1.51	4.14
20	(19)	6.88	1.22	5.64	6.79	1.40	4.85	6.70	1.52	4.41

MAGIS M5 TOP		Water flow temperature [°C]								
		55			60			65		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	3.31	2.22	1.49	3.25	2.29	1.42	3.19	2.38	1.34
-20	(-21)	3.78	2.29	1.65	3.71	2.38	1.56	3.64	2.48	1.47
-15	(-16)	4.30	2.39	1.80	4.22	2.48	1.70	4.14	2.59	1.60
-10	(-11)	4.83	2.42	2.00	4.82	2.59	1.86	4.80	2.77	1.73
-7	(-8)	4.94	2.41	2.05	4.92	2.59	1.90	4.90	2.80	1.75
-2	(-3)	4.95	2.27	2.18	4.95	2.41	2.05	4.95	2.57	1.93
2	(1)	4.95	2.15	2.30	4.95	2.22	2.23	4.95	2.29	2.16
7	(6)	5.00	1.61	3.11	5.00	1.74	2.87	5.00	1.89	2.65
12	(11)	5.95	1.73	3.44	5.92	1.82	3.25	5.88	2.07	2.84
15	(14)	6.18	1.71	3.61	6.10	1.79	3.41	6.08	2.01	3.02
20	(19)	6.61	1.67	3.96	6.53	1.77	3.69	6.48	2.02	3.21

MAGIS M TOP

MAGIS M5 TOP "POWER" AND "COP" CENTRAL HEATING (CONTINUED)

MAGIS M5 TOP		Water flow temperature [°C]					
		70			75		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-15	(-16)	4.04	2.61	1.55	-	-	-
-10	(-11)	4.68	2.90	1.61	4.56	3.04	1.50
-7	(-8)	4.90	2.98	1.64	4.89	3.19	1.53
-2	(-3)	4.87	2.76	1.76	4.77	2.97	1.61
2	(1)	4.95	2.51	1.97	4.84	2.71	1.79
7	(6)	5.00	2.10	2.38	5.00	2.36	2.12
12	(11)	5.85	2.29	2.55	5.82	2.48	2.35
15	(14)	6.06	2.22	2.73	6.04	2.50	2.42
20	(19)	6.47	2.27	2.85	6.39	2.56	2.50

- TOL = -25 °C

15.1 MAGIS M5 TOP "POWER" AND "EER" COOLING

MAGIS M5 TOP	Water flow temperature °C					
	7			10		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	4.49	0.67	6.69	4.58	0.67	6.83
20	4.29	0.79	5.43	4.42	0.80	5.52
30	4.10	1.04	3.94	4.25	1.03	4.13
35	3.90	1.28	3.05	4.05	1.30	3.12
46	3.65	1.87	1.95	3.85	1.86	2.07

MAGIS M5 TOP	Water flow temperature °C					
	13			15		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	4.96	0.72	6.89	5.24	0.73	7.18
20	4.79	0.75	6.38	5.06	0.78	6.49
30	4.61	1.09	4.23	4.88	1.10	4.43
35	4.35	1.20	3.63	4.60	1.22	3.77
46	4.12	1.83	2.25	4.42	1.87	2.36

MAGIS M5 TOP	Water flow temperature °C					
	18			25		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	5.75	0.73	7.88	6.33	0.69	9.17
20	5.55	0.83	6.69	6.11	0.86	7.10
30	5.35	1.02	5.25	5.88	1.02	5.77
35	5.00	1.28	3.91	5.55	1.08	5.14
46	4.80	1.93	2.49	5.25	1.90	2.76

MAGIS M TOP

16 MAGIS M8 TOP "POWER" AND "COP" CENTRAL HEATING

MAGIS M8 TOP		Water flow temperature [°C]								
		25			30			35		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	5.70	3.02	1.89	5.48	3.00	1.83	5.25	2.98	1.76
-20	(-21)	6.60	2.97	2.22	6.43	3.09	2.08	6.25	3.23	1.93
-15	(-16)	7.40	2.88	2.57	7.27	3.11	2.34	7.14	3.38	2.11
-10	(-11)	8.02	2.69	2.98	7.72	2.86	2.70	7.41	3.07	2.41
-7	(-8)	8.12	2.41	3.37	7.81	2.57	3.04	7.50	2.78	2.70
-2	(-3)	8.24	2.17	3.80	8.02	2.29	3.50	7.80	2.43	3.21
2	(1)	8.36	1.91	4.38	8.16	2.02	4.04	7.95	2.15	3.70
7	(6)	9.19	1.52	6.05	8.60	1.57	5.47	8.00	1.63	4.91
12	(11)	9.85	1.47	6.70	9.65	1.60	6.03	9.45	1.77	5.34
15	(14)	10.40	1.39	7.48	10.08	1.52	6.63	9.75	1.68	5.80
20	(19)	11.30	1.32	8.56	10.91	1.48	7.37	10.51	1.68	6.26

MAGIS M8 TOP		Water flow temperature [°C]								
		40			45			50		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	5.14	3.03	1.69	5.02	3.08	1.63	4.96	3.22	1.54
-20	(-21)	6.13	3.27	1.87	6.01	3.32	1.81	5.83	3.42	1.70
-15	(-16)	6.98	3.40	2.05	6.82	3.43	1.99	6.66	3.56	1.87
-10	(-11)	7.37	3.25	2.27	7.32	3.46	2.12	7.31	3.60	2.03
-7	(-8)	7.49	2.97	2.52	7.48	3.18	2.35	7.47	3.44	2.17
-2	(-3)	7.83	2.76	2.84	7.85	3.20	2.45	7.78	3.40	2.29
2	(1)	7.95	2.43	3.27	7.95	2.79	2.85	7.95	3.12	2.55
7	(6)	8.00	1.86	4.30	8.00	2.16	3.70	8.00	2.39	3.35
12	(11)	9.35	1.93	4.84	9.25	2.13	4.34	9.20	2.39	3.85
15	(14)	9.65	1.87	5.16	9.55	2.11	4.53	9.44	2.35	4.02
20	(19)	10.38	1.90	5.46	10.25	2.18	4.70	10.12	2.37	4.27

MAGIS M8 TOP		Water flow temperature [°C]								
		55			60			65		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	4.90	3.38	1.45	4.81	3.50	1.37	4.72	3.63	1.30
-20	(-21)	5.65	3.53	1.60	5.55	3.67	1.51	5.45	3.82	1.43
-15	(-16)	6.49	3.71	1.75	6.37	3.86	1.65	6.25	4.03	1.55
-10	(-11)	7.30	3.76	1.94	7.28	4.02	1.81	7.25	4.32	1.68
-7	(-8)	7.45	3.74	1.99	7.43	4.02	1.85	7.40	4.35	1.70
-2	(-3)	7.70	3.63	2.12	7.60	3.81	1.99	7.50	4.01	1.87
2	(1)	7.95	3.55	2.24	7.80	3.60	2.17	7.65	3.65	2.10
7	(6)	8.00	2.67	3.00	8.00	2.87	2.79	8.00	3.11	2.57
12	(11)	9.15	2.73	3.35	9.10	2.89	3.15	9.05	3.28	2.76
15	(14)	9.33	2.67	3.49	9.21	2.78	3.31	9.18	3.12	2.94
20	(19)	9.98	2.60	3.84	9.86	2.76	3.57	9.78	3.14	3.11

MAGIS M8 TOP "POWER" AND "COP" CENTRAL HEATING (CONTINUED)

MAGIS M8 TOP		Water flow temperature [°C]					
		70			75		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-15	(-16)	6.10	4.07	1.50	-	-	-
-10	(-11)	7.07	4.51	1.57	6.89	4.74	1.45
-7	(-8)	7.39	4.63	1.60	7.38	4.95	1.49
-2	(-3)	7.35	4.29	1.71	7.20	4.62	1.56
2	(1)	7.48	3.90	1.92	7.30	4.21	1.73
7	(6)	8.00	3.46	2.31	8.00	3.88	2.06
12	(11)	9.00	3.63	2.48	8.95	3.93	2.28
15	(14)	9.15	3.45	2.65	9.11	3.88	2.35
20	(19)	9.76	3.53	2.76	9.65	3.99	2.42

- TOL = -25 °C

16.1 MAGIS M8 TOP "POWER" AND "EER" COOLING

MAGIS M8 TOP	Water flow temperature °C					
	7			10		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	6.56	0.99	4.51	7.01	1.03	5.20
20	6.27	1.15	3.82	6.76	1.22	4.41
30	5.99	1.52	3.28	6.51	1.58	3.78
35	5.70	1.90	3.03	6.20	1.99	3.49
46	5.25	2.69	2.61	5.82	2.81	3.03

MAGIS M8 TOP	Water flow temperature °C					
	13			15		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	7.87	1.14	5.98	8.44	1.17	6.84
20	7.59	1.22	5.06	8.14	1.25	5.80
30	7.31	1.73	4.34	7.84	1.78	4.97
35	6.90	1.90	4.02	7.40	1.97	4.59
46	6.39	2.84	3.47	6.90	2.92	3.98

MAGIS M8 TOP	Water flow temperature °C					
	18			25		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	9.20	1.16	7.81	10.26	1.12	8.44
20	8.88	1.32	6.62	9.90	1.39	7.17
30	8.56	1.64	5.68	9.54	1.65	6.12
35	8.00	2.05	5.27	9.00	1.75	5.68
46	7.75	3.11	4.54	8.32	3.02	4.90

17 MAGIS M12-12 T TOP "POWER" AND "COP" CENTRAL HEATING

MAGIS M12-12 T TOP		Water flow temperature [°C]								
		25			30			35		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	9.80	4.83	2.03	9.65	4.99	1.93	9.50	5.16	1.84
-20	(-21)	10.50	4.55	2.31	10.40	4.79	2.17	10.30	5.07	2.03
-15	(-16)	11.70	4.46	2.62	11.42	4.78	2.39	11.15	5.18	2.15
-10	(-11)	12.03	4.13	2.91	11.57	4.38	2.64	11.12	4.54	2.45
-7	(-8)	12.18	3.73	3.27	11.72	3.86	3.04	11.45	4.16	2.75
-2	(-3)	12.36	3.35	3.69	12.03	3.43	3.51	11.90	3.71	3.21
2	(1)	12.54	2.95	4.25	12.23	3.09	3.96	11.90	3.31	3.60
7	(6)	13.79	2.18	6.33	12.89	2.36	5.46	12.00	2.50	4.80
12	(11)	14.78	2.19	6.75	14.48	2.42	5.98	14.18	2.66	5.33
15	(14)	15.60	2.10	7.43	15.11	2.26	6.69	14.63	2.51	5.83
20	(19)	16.95	1.99	8.52	16.36	2.23	7.34	15.77	2.51	6.28

MAGIS M12-12 T TOP		Water flow temperature [°C]								
		40			45			50		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	9.40	5.45	1.72	9.30	5.78	1.61	9.15	5.95	1.54
-20	(-21)	10.25	5.36	1.91	10.15	5.66	1.79	10.10	5.94	1.70
-15	(-16)	11.13	5.40	2.06	11.08	5.62	1.97	11.05	5.90	1.87
-10	(-11)	11.05	5.03	2.20	10.98	5.29	2.08	10.97	5.46	2.01
-7	(-8)	11.24	4.59	2.45	11.22	4.82	2.33	11.20	4.98	2.25
-2	(-3)	11.82	4.31	2.74	11.78	4.90	2.40	11.66	5.00	2.33
2	(1)	11.90	3.75	3.17	11.90	4.41	2.70	11.90	4.59	2.59
7	(6)	12.00	2.79	4.30	12.00	3.24	3.70	12.00	3.55	3.38
12	(11)	14.03	2.90	4.84	13.88	3.26	4.26	13.80	3.57	3.87
15	(14)	14.48	2.78	5.21	14.33	3.25	4.41	14.16	3.54	4.00
20	(19)	15.57	2.84	5.48	15.38	3.30	4.66	15.17	3.59	4.23

MAGIS M12-12 T TOP		Water flow temperature [°C]								
		55			60			65		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	9.00	6.20	1.45	8.85	6.42	1.38	8.80	6.72	1.31
-20	(-21)	10.00	6.25	1.60	9.85	6.51	1.51	9.76	6.92	1.41
-15	(-16)	11.00	6.22	1.77	10.93	6.58	1.66	10.68	6.96	1.53
-10	(-11)	10.95	5.76	1.90	10.91	6.15	1.77	10.87	6.59	1.65
-7	(-8)	11.18	5.67	1.97	11.14	6.16	1.81	11.10	6.66	1.67
-2	(-3)	11.55	5.34	2.16	11.40	5.71	2.00	11.25	6.13	1.84
2	(1)	11.90	5.02	2.37	11.70	5.34	2.19	11.48	5.59	2.05
7	(6)	12.00	4.00	3.00	12.00	4.27	2.81	12.00	4.71	2.55
12	(11)	13.73	4.09	3.36	13.65	4.33	3.15	13.58	4.88	2.78
15	(14)	14.00	3.99	3.51	13.82	4.14	3.34	13.77	4.65	2.96
20	(19)	14.97	3.87	3.87	14.79	4.14	3.57	14.67	4.72	3.11

MAGIS M12-12 T TOP "POWER" AND "COP" CENTRAL HEATING (CONTINUED)

MAGIS M12-12 T TOP		Water flow temperature [°C]					
		70			75		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-15	(-16)	9.80	6.71	1.46	-	-	-
-10	(-11)	10.66	6.94	1.54	9.94	6.90	1.44
-7	(-8)	10.90	6.90	1.58	10.05	6.93	1.45
-2	(-3)	11.03	6.50	1.70	10.20	6.61	1.54
2	(1)	11.35	5.99	1.89	11.20	6.59	1.70
7	(6)	12.00	5.29	2.27	12.00	5.88	2.04
12	(11)	13.50	5.48	2.46	13.43	5.86	2.29
15	(14)	13.73	5.13	2.68	13.67	5.82	2.35
20	(19)	14.64	5.29	2.77	14.62	5.85	2.50

- TOL = -25 °C

17.1 "POWER" AND "EER" IN COOLING MAGIS M12-12 T TOP

MAGIS M12-12 T TOP	Water flow temperature °C					
	7			10		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	10.35	1.59	4.91	10.74	1.60	5.29
20	9.90	1.85	4.15	10.36	1.89	4.47
30	9.45	2.44	3.57	9.98	2.45	3.85
35	9.00	3.10	3.30	9.50	3.07	3.56
46	7.50	3.92	2.84	8.15	3.97	3.07

MAGIS M12-12 T TOP	Water flow temperature °C					
	13			15		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	11.63	1.65	5.67	12.43	1.69	6.04
20	11.22	1.78	4.82	11.99	1.80	5.14
30	10.81	2.49	4.13	11.55	2.55	4.41
35	10.20	2.70	3.82	10.90	2.83	4.08
46	9.05	3.92	3.29	9.65	3.97	3.51

MAGIS M12-12 T TOP	Water flow temperature °C					
	18			25		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	13.80	1.70	6.45	15.05	1.47	6.96
20	13.32	1.93	5.46	14.52	1.77	5.88
30	12.84	2.40	4.68	13.99	2.03	5.05
35	12.00	3.00	4.33	13.20	2.23	4.66
46	10.05	3.94	3.74	12.20	3.97	4.03

18 MAGIS M16-16 T TOP "POWER" AND "COP" CENTRAL HEATING

MAGIS M16-16 T TOP		Water flow temperature [°C]								
		25			30			35		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	9.80	4.83	2.03	10.65	5.63	1.89	11.50	6.57	1.75
-20	(-21)	13.30	6.24	2.13	13.14	6.57	2.00	12.97	6.94	1.87
-15	(-16)	14.98	6.35	2.36	14.37	6.62	2.17	13.76	6.95	1.98
-10	(-11)	15.00	5.88	2.55	14.38	6.03	2.38	13.75	6.19	2.22
-7	(-8)	14.80	5.15	2.87	14.40	5.36	2.69	14.00	5.60	2.50
-2	(-3)	14.50	4.46	3.25	14.63	4.74	3.09	14.76	5.05	2.92
2	(1)	14.20	3.79	3.75	14.85	4.21	3.53	15.50	4.70	3.30
7	(6)	17.50	3.11	5.63	16.75	3.31	5.06	16.00	3.55	4.51
12	(11)	18.52	3.05	6.07	18.15	3.29	5.52	17.77	3.58	4.96
15	(14)	19.97	2.99	6.68	19.29	3.19	6.05	18.60	3.43	5.42
20	(19)	20.40	2.66	7.67	19.77	2.93	6.75	19.14	3.28	5.84

MAGIS M16-16 T TOP		Water flow temperature [°C]								
		40			45			50		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	11.05	6.68	1.65	10.60	6.79	1.56	10.37	6.95	1.49
-20	(-21)	12.40	6.94	1.79	11.83	6.95	1.70	11.46	6.95	1.65
-15	(-16)	13.39	6.95	1.93	13.01	6.95	1.87	12.63	6.95	1.82
-10	(-11)	13.40	6.49	2.06	13.05	6.83	1.91	12.65	6.84	1.85
-7	(-8)	13.96	6.08	2.30	13.91	6.64	2.09	13.80	6.83	2.02
-2	(-3)	14.69	5.73	2.56	14.61	6.61	2.21	14.30	6.59	2.17
2	(1)	15.25	5.21	2.93	15.00	5.88	2.55	14.60	6.12	2.39
7	(6)	16.00	4.00	4.00	16.00	4.57	3.50	16.00	4.94	3.24
12	(11)	17.59	3.94	4.46	17.40	4.39	3.96	17.30	4.66	3.71
15	(14)	18.50	3.86	4.79	18.40	4.42	4.16	18.12	4.72	3.84
20	(19)	18.98	3.73	5.09	18.81	4.34	4.33	18.61	4.58	4.06

MAGIS M16-16 T TOP		Water flow temperature [°C]								
		55			60			65		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-25	(-26)	9.80	6.95	1.41	9.39	6.95	1.35	8.80	6.72	1.31
-20	(-21)	11.10	6.94	1.60	10.19	6.94	1.47	9.76	6.92	1.41
-15	(-16)	11.88	6.95	1.71	11.07	6.95	1.59	10.68	6.96	1.53
-10	(-11)	12.20	6.85	1.78	11.77	6.77	1.74	11.10	6.77	1.64
-7	(-8)	12.82	6.85	1.87	12.00	6.77	1.77	11.14	6.75	1.65
-2	(-3)	13.40	6.45	2.08	12.84	6.77	1.90	12.14	6.75	1.80
2	(1)	14.00	6.06	2.31	13.93	6.77	2.06	13.45	6.75	1.99
7	(6)	16.00	5.52	2.90	16.00	5.93	2.70	16.00	6.54	2.45
12	(11)	17.21	5.34	3.22	17.11	5.60	3.06	17.02	6.37	2.67
15	(14)	17.92	5.32	3.37	17.76	5.48	3.24	17.50	6.36	2.75
20	(19)	18.40	4.96	3.71	18.21	5.26	3.46	17.60	6.05	2.91

MAGIS M16-16 T TOP "POWER" AND "COP" CENTRAL HEATING (CONTINUED)

MAGIS M16-16 T TOP		Water flow temperature [°C]					
		70			75		
Air temperature [°C] d.b.	(w.b.)	Max. output [kW]	Max. absorbed [kW]	COP	Max. output [kW]	Max. absorbed [kW]	COP
-15	(-16)	9.80	6.71	1.46	-	-	-
-10	(-11)	10.66	6.94	1.54	9.94	6.90	1.44
-7	(-8)	10.90	6.90	1.58	10.05	6.93	1.45
-2	(-3)	11.30	6.77	1.67	10.30	6.78	1.52
2	(1)	12.30	6.76	1.82	11.50	6.76	1.70
7	(6)	14.89	6.91	2.15	13.40	6.91	1.94
12	(11)	15.90	6.68	2.38	15.40	6.70	2.30
15	(14)	15.90	6.36	2.50	15.40	6.36	2.42
20	(19)	15.90	6.05	2.63	15.10	6.04	2.50

- TOL = -25 °C

18.1 MAGIS M16-16 TOP "POWER" AND "EER" COOLING

MAGIS M16-16 T TOP	Water flow temperature °C					
	7			10		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	11.96	1.91	4.91	12.43	1.93	5.29
20	11.44	2.19	4.15	11.99	2.22	4.47
30	10.92	2.88	3.57	11.55	3.00	3.85
35	10.40	3.59	3.30	11.00	3.59	3.56
46	7.52	3.94	2.84	8.17	3.99	3.07

MAGIS M16-16 T TOP	Water flow temperature °C					
	13			15		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	13.51	2.06	5.67	14.48	1.99	6.04
20	13.04	2.21	4.82	13.97	2.20	5.14
30	12.56	3.11	4.13	13.46	2.96	4.41
35	11.85	3.35	3.82	12.70	3.48	4.08
46	9.08	3.94	3.29	9.68	3.97	3.51

MAGIS M16-16 T TOP	Water flow temperature °C					
	18			25		
Air temperature °C d.b.	Max. output [kW]	Max. absorbed [kW]	EER	Max. output [kW]	Max. absorbed [kW]	EER
10	16.10	2.09	6.45	17.67	1.82	6.96
20	15.54	2.37	5.46	17.05	2.19	5.88
30	14.98	2.94	4.68	16.43	2.51	5.05
35	14.00	3.68	4.33	15.50	2.75	4.66
46	10.10	3.96	3.74	12.27	3.98	4.03

MAGIS M TOP

19 MAGIS M TOP TECHNICAL DATA

		5	8
CH rated performance			
Energy class in water heating set 55/35 °C	-	A++/A+++	A++/A+++
Power in CH with water set at 35 °C (1)	kW	5.00	8.00
Power in CH with water set at 45 °C (2)	kW	5.00	8.00
Power in CH with water set at 55 °C (3)	kW	5.00	8.00
Power in CH with water set at 35 °C (4)	kW	4.95	7.50
CH mode COP with water set at 35 °C (1)		5.10	4.91
CH mode COP with water set at 45 °C (2)		3.79	3.70
CH mode COP with water set at 55 °C (3)		3.11	3.00
CH mode COP with water set at 35 °C (4)		2.80	2.70
Flow temperature range	°C	15 - 75	15 - 75
Outdoor temperature heating operation limits	°C	- 25 - 35	- 25 - 35
Rated cooling performance			
Power in cooling with water set at 18 °C (1)	kW	5.00	8.00
Power in cooling with water set at 7 °C (2)	kW	3.90	5.70
Cooling mode EER with water set at 18 °C (1)		3.91	3.90
Cooling mode EER with water set at 7 °C (2)		3.05	3.00
Flow temperature range	°C	5 - 25	5 - 25
Outdoor temperature Cooling operation limits	°C	10 - 46	10 - 46
DHW circuit			
DHW storage tank T. range (with integrative resistance)	°C	10 - 65 (70)	10 - 65 (70)
Outside T. range for DHW (with integrative resistance)	°C	-25 - 43 (46)	-25 - 43 (46)
General data			
Max. operating pressure hydraulic system (P. preload)	bar	2.5 (1)	2.5 (1)
Nominal hydraulic system expansion vessel capacity (useful*)	litres	10 (3.56)	10 (3.56)
Sound power level heating/cooling at rated load**	dB(A)	55/55	59/59
Sound pressure level heating/cooling at rated load**	dB(A)	41/41	45/45
Electrical insulation rating	IP	X4	X4
Power supply	V - Hz	230-50	230-50
Maximum absorbed current	A	16.1	26
Type of refrigerant	-	R290	R290
Refrigerant charge	g	630	870
Refrigerant GWP	-	0,02	0,02
Number of fans	-	1	1
Nominal fan air flow rate in heating/cooling	m^3/h	3120/3300	3900/4140
Compressor type	-	Rotary	Rotary
Water content in hydraulic circuit	litres	11.7	11.7
Minimum circulation flow rate	l/h	500	500
Empty weight (gross weight)	kg	107,7 (119,4)	119,7 (131,4)

* Referred to preload pressure.

** Measured at nominal load in heating (A7/W35) and cooling (A35/W7), *ISO 3741*.

THE DATA REFER TO THE FOLLOWING CONDITIONS (in compliance with EN14511)		
ROOM	CENTRAL HEATING MODE (°C)	COOLING MODE (°C)
Temp. WATER (1) - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (db)
Temp. WATER (2) - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (db)
Temp. WATER (3) - AIR (db/wb)	55/47 - 7/6	-
Temp. WATER (4) - AIR (db/wb)	35/30 - -7/-8	-

MAGIS M TOP

MAGIS M TOP TECHNICAL DATA (CONTINUED)

		12	16
CH rated performance			
Energy class in water heating set 55/35 °C	-	A++/A+++	A++/A+++
Power in CH with water set at 35 °C (1)	kW	12.00	16.00
Power in CH with water set at 45 °C (2)	kW	12.00	16.00
Power in CH with water set at 55 °C (3)	kW	12.00	16.00
Power in CH with water set at 35 °C (4)	kW	11.45	12.46
CH mode COP with water set at 35 °C (1)		4.80	4.51
CH mode COP with water set at 45 °C (2)		3.70	3.50
CH mode COP with water set at 55 °C (3)		3.00	2.90
CH mode COP with water set at 35 °C (4)		2.75	2.70
Flow temperature range	°C	15 - 75	15 - 75
Outdoor temperature heating operation limits	°C	- 25 - 35	- 25 - 35
Rated cooling performance			
Power in cooling with water set at 18 °C (1)	kW	12.00	14.00
Power in cooling with water set at 7 °C (2)	kW	9.00	10.40
Cooling mode EER with water set at 18 °C (1)		4.00	3.80
Cooling mode EER with water set at 7 °C (2)		2.90	2.90
Flow temperature range	°C	5 - 25	5 - 25
Outdoor temperature Cooling operation limits	°C	10 - 46	10 - 46
DHW circuit			
DHW storage tank T. range (with integrative resistance)	°C	10 - 65 (70)	10 - 65 (70)
Outside T. range for DHW (with integrative resistance)	°C	-25 - 43 (46)	-25 - 43 (46)
General data			
Max. operating pressure hydraulic system (P. preload)	bar	2.5 (1)	2.5 (1)
Nominal hydraulic system expansion vessel capacity (useful*)	litres	10 (3.45)	10 (3.45)
Sound power level heating/cooling at rated load**	dB(A)	60/60	65/65
Sound pressure level heating/cooling at rated load**	dB(A)	47/47	51/51
Electrical insulation rating	IP	X4	X4
Power supply	V - Hz	230-50	230-50
Maximum absorbed current	A	32	32
Type of refrigerant	-	R290	R290
Refrigerant charge	g	1250	1250
Refrigerant GWP	-	0,02	0,02
Number of fans	-	1	1
Nominal fan air flow rate in heating/cooling	m^3/h	5700/5400	5700/5640
Compressor type	-	Scroll	Scroll
Water content in hydraulic circuit	litres	12.1	12.1
Minimum circulation flow rate	l/h	500	500
Empty weight (gross weight)	kg	149,9 (162,0)	149,9 (162,0)

* Referred to preload pressure.

** Measured at nominal load in heating (A7/W35) and cooling (A35/W7), *ISO 3741*.

THE DATA REFER TO THE FOLLOWING CONDITIONS (in compliance with EN14511)		
ROOM	CENTRAL HEATING MODE (°C)	COOLING MODE (°C)
Temp. WATER (1) - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (db)
Temp. WATER (2) - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (db)
Temp. WATER (3) - AIR (db/wb)	55/47 - 7/6	-
Temp. WATER (4) - AIR (db/wb)	35/30 - -7/-8	-

MAGIS M TOP

MAGIS M TOP TECHNICAL DATA (CONTINUED)

		12 T	16 T
CH rated performance			
Energy class in water heating set 55/35 °C	-	A++/A+++	A++/A+++
Power in CH with water set at 35 °C (1)	kW	12.00	16.00
Power in CH with water set at 45 °C (2)	kW	12.00	16.00
Power in CH with water set at 55 °C (3)	kW	12.00	16.00
Power in CH with water set at 35 °C (4)	kW	11.45	12.46
CH mode COP with water set at 35 °C (1)		4.80	4.51
CH mode COP with water set at 45 °C (2)		3.70	3.50
CH mode COP with water set at 55 °C (3)		3.00	2.90
CH mode COP with water set at 35 °C (4)		2.75	2.70
Flow temperature range	°C	15 - 75	15 - 75
Outdoor temperature heating operation limits	°C	- 25 - 35	- 25 - 35
Rated cooling performance			
Power in cooling with water set at 18 °C (1)	kW	12.00	14.00
Power in cooling with water set at 7 °C (2)	kW	9.00	10.40
Cooling mode EER with water set at 18 °C (1)		4.00	3.80
Cooling mode EER with water set at 7 °C (2)		2.90	2.90
Flow temperature range	°C	5 - 25	5 - 25
Outdoor temperature Cooling operation limits	°C	10 - 46	10 - 46
DHW circuit			
DHW storage tank T. range (with integrative resistance)	°C	10 - 65 (70)	10 - 65 (70)
Outside T. range for DHW (with integrative resistance)	°C	-25 - 43 (46)	-25 - 43 (46)
General data			
Max. operating pressure hydraulic system (P. preload)	bar	2.5 (1)	2.5 (1)
Nominal hydraulic system expansion vessel capacity (useful*)	litres	10 (3.45)	10 (3.45)
Sound power level heating/cooling at rated load**	dB(A)	60/60	65/65
Sound pressure level heating/cooling at rated load**	dB(A)	47/47	51/51
Electrical insulation rating	IP	X4	X4
Power supply	V - Hz	400-50	400-50
Maximum absorbed current	A	16.1	16.1
Type of refrigerant	-	R290	R290
Refrigerant charge	g	1250	1250
Refrigerant GWP	-	0,02	0,02
Number of fans	-	1	1
Nominal fan air flow rate in heating/cooling	m^3/h	5700/5400	5700/5640
Compressor type	-	Scroll	Scroll
Water content in hydraulic circuit	litres	12.1	12.1
Minimum circulation flow rate	l/h	500	500
Empty weight (gross weight)	kg	149,9 (162,0)	149,9 (162,0)

* Referred to preload pressure.

** Measured at nominal load in heating (A7/W35) and cooling (A35/W7), *ISO 3741*.

THE DATA REFER TO THE FOLLOWING CONDITIONS (in compliance with EN14511)		
ROOM	CENTRAL HEATING MODE (°C)	COOLING MODE (°C)
Temp. WATER (1) - AIR (db/wb)	35/30 - 7/6	18/23 - 35 (db)
Temp. WATER (2) - AIR (db/wb)	45/40 - 7/6	7/12 - 35 (db)
Temp. WATER (3) - AIR (db/wb)	55/47 - 7/6	-
Temp. WATER (4) - AIR (db/wb)	35/30 - -7/-8	-

Optional MAGIS M TOP

20	OPTIONAL FOR MAGIS M TOP
TEMPERATURE CONTROL OPTIONALS	Code
NEXIS control panel black - additional wired panel (1 per zone) supplied with power supply, up to 2 can be provided (in addition to the one supplied as standard)	3.035812
NEXIS control panel white - additional wired panel (1 per zone) supplied with power supply, up to 2 can be provided (in addition to the one supplied as standard)	3.035829
CRONO 7 - wired digital weekly chrono-thermostat with potential-free contacts	3.021622
CRONO 7 WIRELESS - wireless digital weekly chrono-thermostat with potential-free contacts	3.021624
External probe - to be used if the probe on the heat pump is not properly exposed	3.015266
NTC Probe Kit - probe for configurable analogue inputs (also to be used in conjunction with UB PRO SOL)	3.019375
Humidistat kit - room humidity control with potential-free contacts	3.023302
Supplementary Zone Expansion Kit - can be used to manage 1 mixed zone, up to 3 mixed zones can be provided (mixed zones can also be managed directly by E-BOX TOP)	3.035840
Deu Management Relay Board Kit. - can be used to manage dehumidifiers in neutral and/or cooled air, up to 3 can be provided (dehumidifiers can also be managed directly by E-BOX TOP)	3.036231
Modbus Temperature/humidity sensor kit - room temperature/humidity reading, with dew point calculation, alternative to NEXIS up to 3 can be provided	3.030992
GATEWAY Wi-Fi V2 Kit - for system management via App, supplied with power supply	3.035537
OPTIONAL WITH DEDICATED CASING	Code
LP 2 heating/cooling zones kit - 1 direct zone and 1 mixed zone for heating and cooling for sizes 5-8 kW	3.026301
HP 2 heating/cooling zones kit - 1 direct zone and 1 mixed zone for heating and cooling for sizes 12-16 kW	3.031695
LP 2 heating only zones kit - 1 direct zone and 1 mixed zone for heating only for sizes 5-8 kW	3.032265
LP 2 heating only zones kit - 1 direct zone and 1 mixed zone for heating only for sizes 12-16 kW	3.035333
LP 2 direct heating only zones kit - 2 direct zones for heating only for sizes 5-8 kW	3.032264
LP 2 direct heating only zones kit - 2 direct zones for heating only for sizes 12-16 kW	3.035334
Shut-off valve kit for zone kit - including two 1" taps and 3/4" reductions	3.014948
COMBINABLE STORAGE TANKS AND THEIR OPTIONS	Code
OMNISTOR 300 - 300-litre increased single-coil domestic DHW storage tank	3.027910
OMNISTOR 500 - 500-litre increased single-coil domestic DHW storage tank	3.027911
UB PRO SOL 800 - 800-litre double coil (increased upper coil) DHW storage tank*	3.035550
UB PRO SOL 1000 - 1000-litre double coil (increased upper coil) DHW storage tank*	3.035551
2 kW integrative electric resistance kit - can be combined with all storage tanks**	3.020861
5 kW integrative electric resistance kit - can be combined with UB PRO SOL storage tanks**	3.020862
Solar thermal coupling kit for OMNISTOR - including cover, plate heat exchanger with shut-off valves, insulated pipes, solar control unit with probes and circulation unit 1-6 l/min	3.029723

* To couple with NTC probe cod. 3.019375

** For combination with UB PRO SOL, you must purchase the *Flange Kit cod.* 1.*046935*, managed at Spare Parts Warehouse.

Optional MAGIS M TOP

OPTIONAL FOR MAGIS M TOP (CONTINUED)

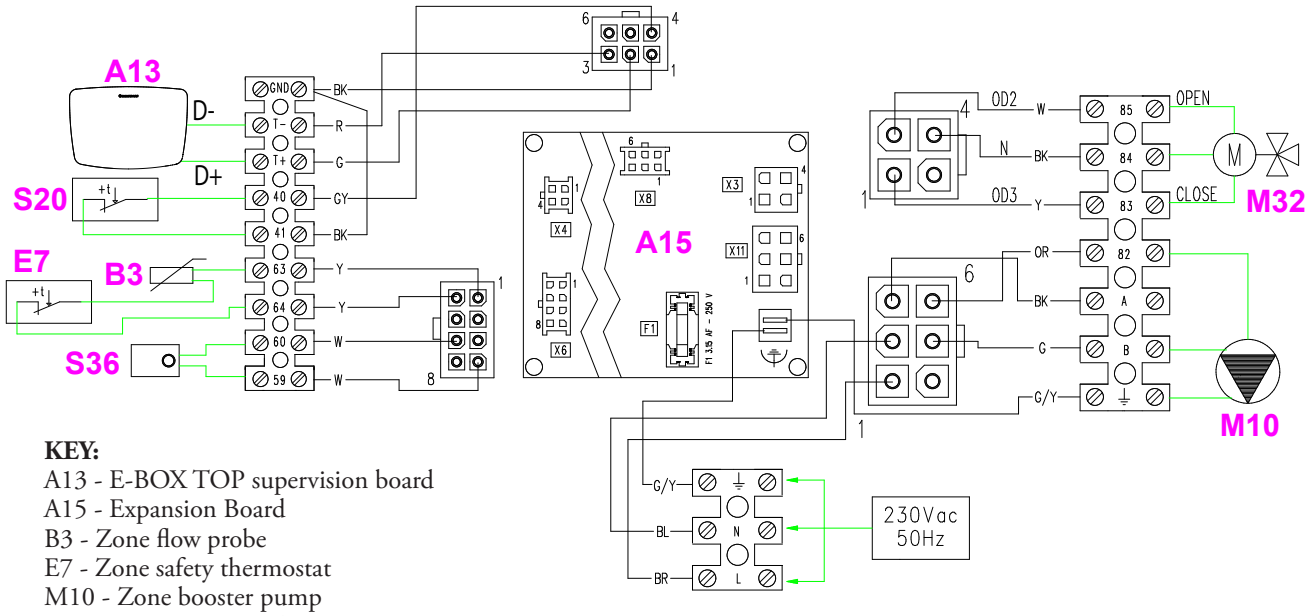
COMBINABLE INERTIAL STORAGE TANKS AND THEIR OPTIONS	Code
50 litre vertical inertial storage tank kit (colour RAL 7044) - 2 connections can be installed externally	3.027539
50 litre vertical inertial storage tank kit (colour RAL 7030) - 2 connections can be installed externally	3.036742
75-litre vertical inertial storage tank kit - 4 connections can be installed internally floor -standing or wall-hung	3.027288
Bracket kit for wall mounting vertical inertial storage tank 75 litres	3.027290
OTHER OPTIONALS	Code
Shut off valves kit with G1" steel flexible hoses - for easier installation & maintenance	3.025954
Vibration-damping kit MAGIS M TOP - consisting of 2 vibration dampers and clamping nuts	3.035580
Three-way diverter valve kit 1" - used as heating/cooling system diverter or DHW diverter	3.020632
12 litre additional expansion vessel kit - a 10 litre nominal expansion vessel is already supplied as standard	3.011679
Integrative electrical resistance kit for heating system - power adjustable to 2-4-6 kW, single-phase 230 Vac or three-phase 400 Vac power supply	3.021525
Dehumidifier kit - for recessed installation only	3.021529
Dehumidifier frame kit	3.022146
Dehumidifier grid kit	3.022147
HYDRO V2 range - Wall-hung hydronic split	Codes various
HYDRO FS range - floor standing hydronic fan coil	Codes various
HYDRO IN range - recessed hydronic fan coil	Codes various
ZENITAIR-MONO range - bidirectional punctual mechanical ventilation system	Codes various

Optional MAGIS M TOP

21 SUPPLEMENTARY ZONE EXPANSION KIT (cod. 3.035840)

By integrating this Expansion Kit, it is possible to manage a mixed zone complete in all its components. It is also possible to install up to 3 expansion kits, allowing to control 3 independent mixed zones. The use of the kit allows the outputs of the E-BOX TOP to be configured on other different actuators, with more terminals available. This results in greater flexibility and scalability of the system, making it easier to adapt to complex configurations and increasing the potential of the system.

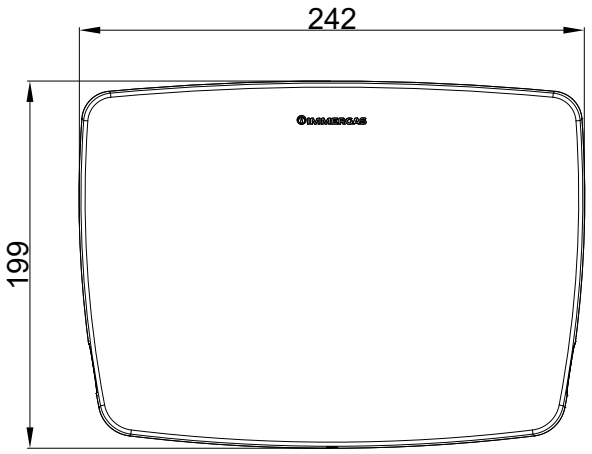
Each *Expansion Kit* is to be installed on the wall (up to 3, one for each zone), on which it is possible to connect:
- *Room thermostat;*
- *Flow probe;*
- *Safety thermostat;*
- *Humidistat;*
- *Zone pump;*
- *Mixing valve.*



KEY:
A13 - E-BOX TOP supervision board
A15 - Expansion Board
B3 - Zone flow probe
E7 - Zone safety thermostat
M10 - Zone booster pump
M32 - Zone mixing valve
S20 -Zone thermostat
S36 - Zone humidistat

NOTE: Depending on the managed zone, the following Switches will have to be set

Switch SW1				
SW=1	SW=2	SW=3	SW=4	BT zone Expansion Board
0	0	0	0	Zone 1
1	0	0	0	Zone 2
0	1	0	0	Zone 3



Supplementary Zone Expansion Kit Dimensions

NOTE: a dedicated 230 Vac power supply must be provided for each Expansion Kit. Via the T+/T- terminals, the expansion is connected to the E-BOX TOP board via the same communication cables used for the wired NEXIS control panel and the MAGIS M TOP heat pump.

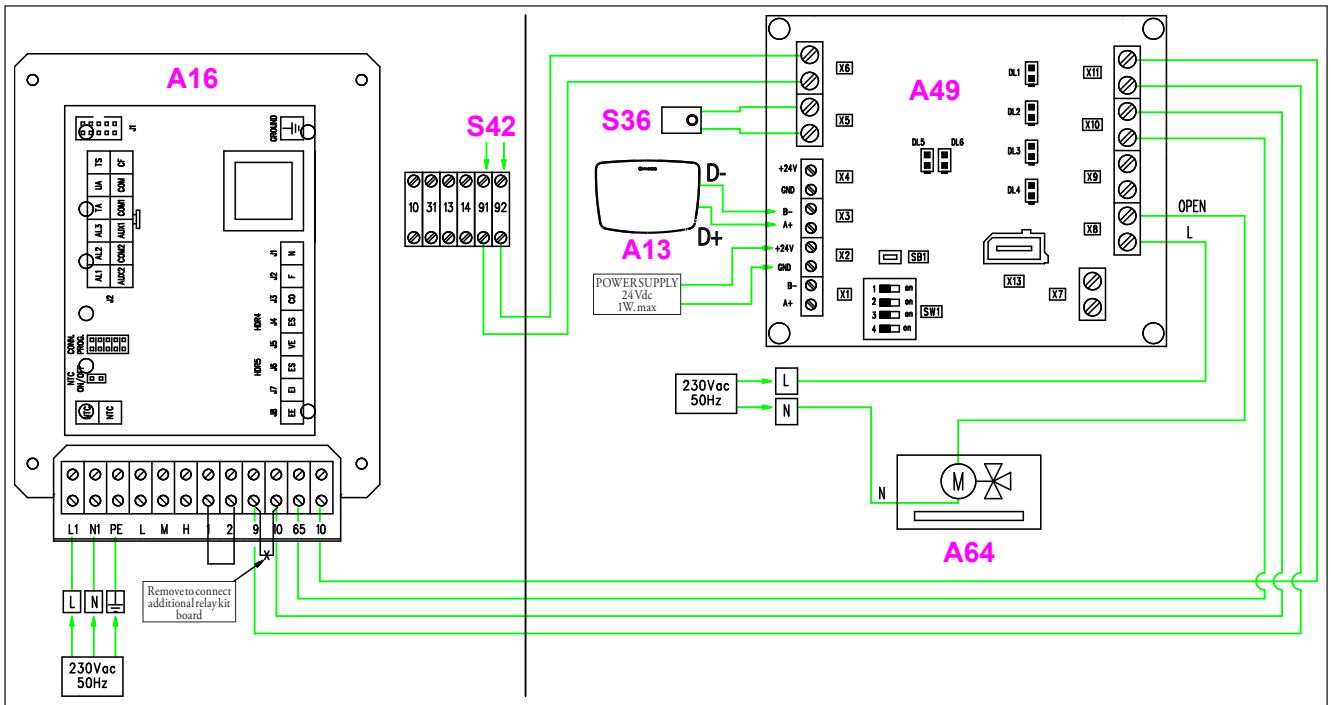
Optional MAGIS M TOP

22 DEHUMIDIFIER MANAGEMENT RELAY BOARD KIT (code 3.036231)

By connecting the Deu Management Relay Board Kit (DIN rail or wall-mounted), you can manage:
- *Humidistat;*
- *Dehumidifier alarm;*
- *230 Vac zone valve*
- *Dehumidifier in neutral air;*
- *Dehumidifier in cooled air.*

The deu. is operated according to the following logic:
- If there is a simultaneous request for cooling by a thermostat and dehumidification by the humidistat, the dehumidifier will operate in cooled air.
- In the case of a dehumidification request only, operation will be in neutral air.

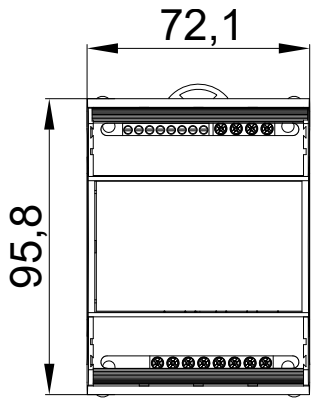
Up to 3 Relay Board Kits can be installed, allowing the independent management of 3 dehumidifiers, each paired with a different thermal zone. The use of the kit allows the outputs of the E-BOX TOP to be configured on other different actuators, with more terminals available. This results in greater flexibility and scalability of the system, making it easier to adapt to complex configurations and increasing the potential of the system.



KEY:
A13 - E-BOX TOP supervision board
A16 - Dehumidifier
A49 - Deu Management Relay Board Kit
A64 - Dehumidifier valve (not supplied)
S36 - Humidistat
S42 - Dehumidifier alarm

NOTE: Depending on the managed zone, the following Switches will have to be set

Switch SW1				
SW=1	SW=2	SW=3	SW=4	Relay Board
0	0	0	0	Zone 1 dehum.
1	0	0	0	Zone 2 dehum.
0	1	0	0	Zone 3 dehum.



Deu. Management Relay Board Kit Dimensions

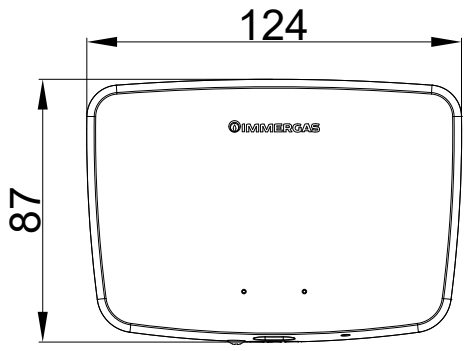
NOTE: A dedicated 24 Vdc power supply must be provided for each Dehumidifier Relay Board Kit. Using terminals A+/B-, this board is connected to the E-BOX TOP board via the same communication cables used for the wired NEXIS control panel and the MAGIS M TOP heat pump.

Optional MAGIS M TOP

23	GATEWAY WI-FI V2 (code 3.035537)

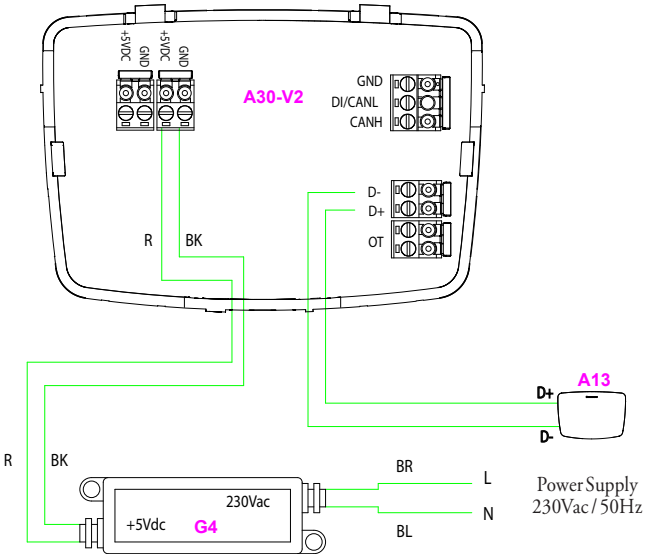
The GATEWAY Wi-Fi V2 Kit, via a simple and intuitive Smartphone App or Web App, remotely manages:
- *regulation of thermal zones*;
- *system errors and status*, allowing IMMERGAS Service to provide remote support;
- *room air-conditioning and DHW calendars*;
- *Away function*, a geo-localisation function that allows the system to lower or raise the room temperature independently depending on whether the user is outside or inside the house;
- *upgradable by OTA*, updates can be installed remotely.

The app can be downloaded free of charge from the various stores, and correct functioning is guaranteed in the presence of a Wi-Fi Internet network.



Gateway V2 Kit Dimensions

KEY:
A13 - E-BOX TOP supervision board
A30-V2 - GATEWAY Wi-Fi V2
G4 - 230 Vac-5 Vdc Transformer



NOTE: the GATEWAY V2 kit is supplied as standard with the corresponding power supply unit (which can be placed inside a min. 503 electrical box) in order to power the product at 5 Vdc. Via the D+/D- terminals, the GATEWAY Wi-Fi V2 is connected to the E-BOX TOP board via the same communication cables used for the wired NEXIS control panel and the MAGIS M TOP heat pump.

Optional MAGIS M TOP

24 2 DIRECT HEATING ONLY ZONES KIT

• **2 LP direct heating only zones kit code 3.032264**

The 2 direct zones kit is composed of a frame, open hydraulic manifold, low electric consumption electric pumps and pipes with hydraulic fittings. These kits are suitable for space heating only.
The pumps are distinguished for being very elastic also thanks to the operating modes that can be , pre-set, but are not suitable for cooling.
All components are already assembled and ready to operate. All electrical connections are to be made to the E-BOX TOP supervision board supplied as standard with MAGIS M TOP, or possibly to the E-BOX TOP Expansion Kit (optional), depending on the system configuration.

Two different kits are distinguished:
- 2 LP direct heating only zones kit, sizes 5-8 code 3.032264;
- 2 HP direct heating only zones kit, sizes 12-16 code 3.035334.

These kits are to be used for the management of systems divided into 2 distinct zones. Inserting these kits into the system enhances overall comfort and energy saving.

24.1 2 HEATING ONLY ZONES (1 DIRECT + 1 MIXED) KIT

• **2 LP heating only zones kit code 3.032265**

The 2 zones kit is composed of a frame, open hydraulic manifold, low electric consumption electric pumps, three-way mixing valve, pipes with hydraulic fittings and thermometers for temperature reading. These kits are suitable for space heating only.
The pumps are distinguished for being very elastic also thanks to the operating modes that can be , pre-set, but are not suitable for cooling.
All components are already assembled and ready to operate. All electrical connections are to be made to the E-BOX TOP supervision board supplied as standard with MAGIS M TOP, or possibly to the E-BOX TOP Expansion Kit (optional), depending on the system configuration.

Two different kits are distinguished:
- 2 LP heating only zones kit, sizes 5-8 code 3.032265;
- 2 HP heating only zones kit, sizes 12-16 code 3.035333.

These kits are to be used to control differentiated temperature systems and/or divided into two distinct zones. With the acquisition of the outdoor temperature, the MAGIS M TOP electronics enables you to select independent flow temperature curves for each of the 2 zones of the system. Inserting these kits into the system enhances overall comfort and energy saving.

Optional MAGIS M TOP

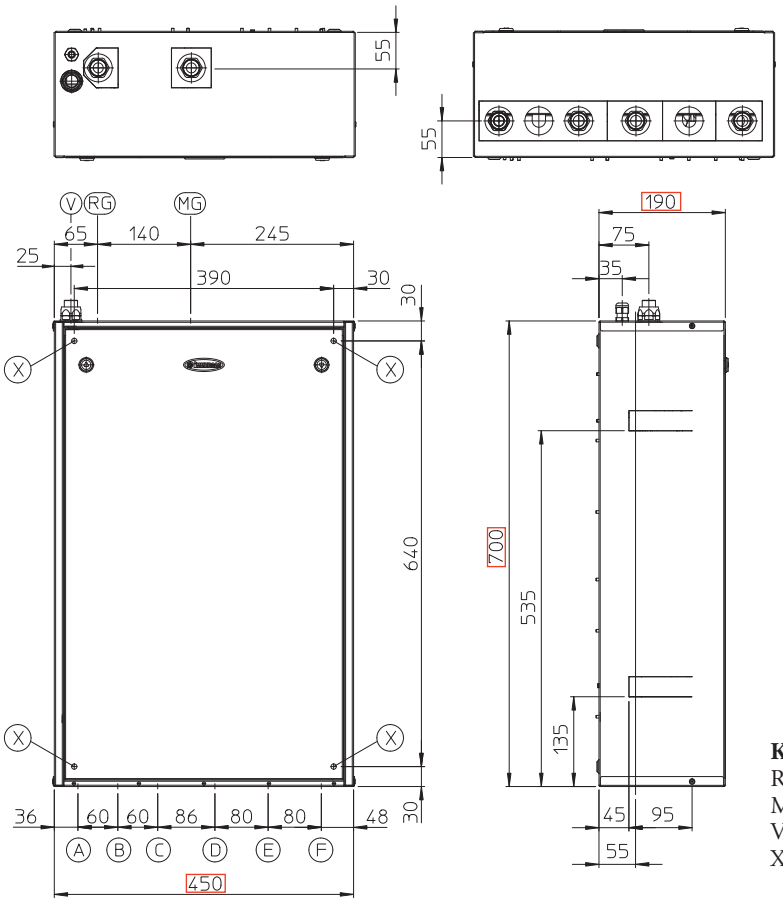
24.2 2 HEATING/COOLING ZONES (1 DIRECT + 1 MIXED) KIT

• **2 LP zones kit code 3.026301**

The 2 zones kit is composed of a frame, open hydraulic manifold, low electric consumption electric pumps, three-way mixing valve, pipes with hydraulic fittings and thermometers for temperature reading. This kit is suitable for space heating and cooling.
The pumps are distinguished for being very elastic, also thanks to the operating modes that can be pre-set. All components are already assembled and ready to operate. All electrical connections are to be made to the E-BOX TOP supervision board supplied as standard with MAGIS M TOP, or possibly to the E-BOX TOP Expansion Kit (optional), depending on the system configuration. Two different kits are distinguished:
- 2 LP zones kit, sizes 5-8 code 3.026301;
- 2 HP zones kit, sizes 12-16 code 3.031695.

These kits are to be used to control differentiated temperature systems and/or divided into two distinct zones.
With the acquisition of the outdoor temperature, the MAGIS M TOP electronics enables you to select independent flow temperature curves for each of the 2 zones of the system (both with C.H. and cooling). Inserting these kits into the system enhances overall comfort and energy saving.

24.3 2 ZONES KIT DIMENSIONS AND FITTINGS



<u>2 LP direct heating only zones kit code 3.032264</u>
A - Direct zone 1 return (G 3/4")
C - Direct zone 2 return (G 3/4")
D - Direct zone 2 flow (G 3/4")
F - Direct zone 1 flow (G 3/4")

<u>2 LP heating only zones kit code 3.032265 &</u>
<u>2 LP heating/cooling zones kit code 3.026301</u>
A - Direct zone 1 return (G 3/4")
B - Mixed zone 2 return (G 1")
E - Mixed zone 2 flow (G 1")
F - Direct zone 1 flow (G 3/4")

<u>2 HP direct heating only zones kit code 3.035334</u>
A - Direct zone 1 return (G 1")
C - Direct zone 2 return (G 1")
D - Direct zone 2 flow (G 1")
F - Direct zone 1 flow (G 1")

<u>2 HP heating only zones kit code 3.035333 &</u>
<u>2 HP heating/cooling zones kit code 3.031695</u>
A - Direct zone 1 return (G 1")
B - Mixed zone 2 return (G 1")
E - Mixed zone 2 flow (G 1")
F - Direct zone 1 flow (G 1")

KEY:
RG - Generator return (G 3/4")
MG - Generator flow (G 3/4")
V - Electrical connection
X - Holes for wall-mounted installation of the Kit (outside of wall)

Optional MAGIS M TOP

24.4 2 ZONE KIT TECHNICAL DATA

		2 LP direct heating only zones kit code 3.032264	2 HP direct heating only zones kit code 3.035334
Maximum nominal pressure	bar	3	3
Maximum operating temperature	°C	90	90
Water content of device	l	1.3	2.2
Empty device weight	kg	17.3	19.8
Full device weight	kg	18.6	22.0
Electrical connection	V/Hz	230/50	230/50
Maximum input	A	0.62	0.6
Installed electric power	W	90	60
Electric plant protection	-	IPX5D	IPX5D

		2 LP heating only zones kit code 3.032265	2 HP heating only zones kit code 3.035333
Maximum nominal pressure	bar	3	3
Maximum operating temperature	°C	90	90
Low temperature safety thermostat trip	°C	55	55
Water content of device	l	1.5	2.2
Empty device weight	kg	19.7	20.9
Full device weight	kg	21.2	23.1
Electrical connection	V/Hz	230/50	230/50
Maximum input	A	0.70	0.6
Installed electric power	W	90	60
Electric plant protection	-	IPX5D	IPX5D

		2 LP heating/cooling zones kit code 3.026301	2 HP heating/cooling zones kit code 3.031695
Maximum nominal pressure	bar	3	3
Maximum operating temperature	°C	90	90
Water content of device	l	1.5	2.2
Empty device weight	kg	21.1	20.3
Full device weight	kg	22.6	22.5
Electrical connection	V/Hz	230/50	230/50
Maximum input	A	0.7	1.0
Installed electric power	W	135	162
Electric plant protection	-	IPX4D	IPX4D

Please refer to the dedicated Instruction Booklets for the performance of the pumps and their flow rate-head graphs.

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

Optional MAGIS M TOP

25 HYDRONIC SPLITS AND FAN COILS

Range of "HYDRO V2" wall-mounted water splits and "HYDRO FS" or "HYDRO IN" hydronic fan coils complete the IMMERGAS offer.
The aim is to offer a complete system in all its parts, from production to distribution of energy for air conditioning in residential (and tertiary) environments.
These terminals are particularly suitable for systems in which a heat pump is present.

They fully meet the requirements of efficiency, quietness and aesthetics demanded by the Market, with a design that easily matches the various applications, providing an integrated and complete solution to ensure air-conditioning and maximum comfort in rooms.
The models identified correspond to different power sizes in heating and cooling.

HYDRO V2

HYDRO FS

HYDRO V2 - HYDRONIC SPLITS wall-mounted	Code
HYDRO 3 V2 Wall-mounted hydronic split; effective heating capacity* 2.94 kW - effective cooling capacity 2.15 kW	3.033625
HYDRO 4 V2 Wall-mounted hydronic split; effective heating capacity* 4.30 kW - effective cooling capacity 3.18 kW	3.033626
HYDRO FS - FAN COILS installation near the floor	Code
HYDRO FS 200 Hydronic fan coil unit; effective heating capacity* 1.02 kW - effective cooling capacity 0.91 kW	3.028500
HYDRO FS 400 Hydronic fan coil unit; effective heating capacity* 2.21 kW - effective cooling capacity 2.12 kW	3.028501
HYDRO FS 600 Hydronic fan coil unit; effective heating capacity* 3.02 kW - effective cooling capacity 2.81 kW	3.028502
HYDRO FS 800 Hydronic fan coil unit; effective heating capacity* 3.81 kW - effective cooling capacity 3.30 kW	3.028503
HYDRO FS 1000 Hydronic fan coil unit; effective heating capacity* 4.32 kW - effective cooling capacity 3.71 kW	3.028505
HYDRO IN - FAN COILS recessed installation	Code
HYDRO IN 200 Hydronic fan coil unit; effective heating capacity* 1.02 kW - effective cooling capacity 0.91 kW	3.029841
HYDRO IN 400 Hydronic fan coil unit; effective heating capacity* 2.21 kW - effective cooling capacity 2.12 kW	3.029842
HYDRO IN 600 Hydronic fan coil unit; effective heating capacity* 3.02 kW - effective cooling capacity 2.81 kW	3.029843
HYDRO IN 800 Hydronic fan coil unit; effective heating capacity* 3.81 kW - effective cooling capacity 3.30 kW	3.029844
HYDRO IN 1000 Hydronic fan coil unit; effective heating capacity* 4.32 kW - effective cooling capacity 3.71 kW	3.029845

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

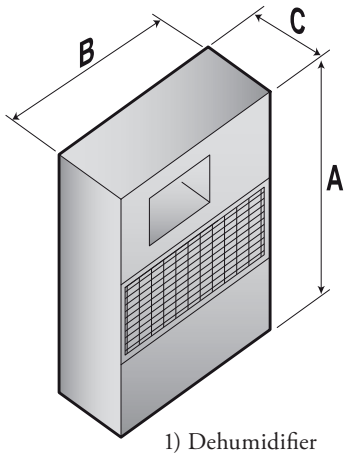
FOR THE VARIOUS CONFIGURATIONS AND ANY INSTALLABLE ACCESSORIES, PLEASE REFER TO THE PRODUCT CATALOGUE OR THE CURRENT PRICE LIST

Optional MAGIS M TOP

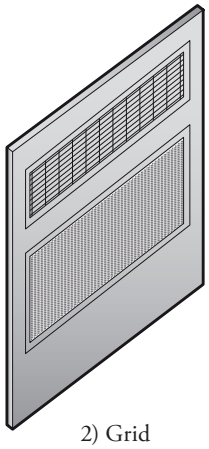
26 DEHUMIDIFIER

Designed to be coupled to cooling plants with radiant panels, the dehumidifier allows to keep the percentage of relative humidity in the room within the comfort values, preventing the possible formation of condensate on the walls.
The dehumidifier, which is designed to be installed vertically on the wall (recessed), has pre- and post-cooling coils.
These components allow excellent control of the air temperature and humidity.
However, it can function without the aid of pre and post cooling water coils, thus allowing to dehumidify when the cooling system is off, typical of mid-season.
In compliance with European Directives, it has EC declaration of conformity.
Dehumidification can take place:
- with **neutral air**: without variation of the air temperature, dehumidifies internal rooms;
- with **cooled air**: contributes to cooling the rooms, as well as reducing the internal relative humidity.

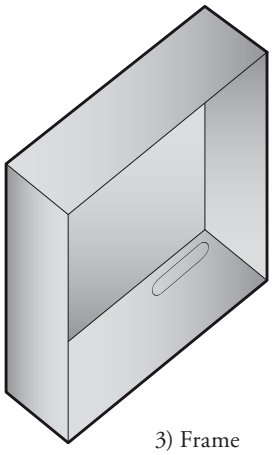
26.1 DIMENSIONS AND CONNECTIONS



1) Dehumidifier
code 3.021529

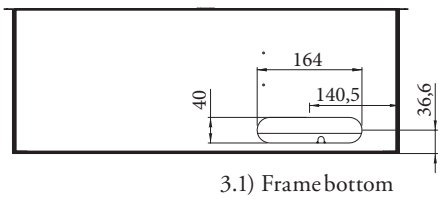


2) Grid
code 3.022147



3) Frame
code 3.022146

Model	A (mm)	B (mm)	C (mm)
1	681	545	223
2	750	660	20
3	718	632	227



3.1) Frame bottom

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

Optional MAGIS M TOP

26.2 TECHNICAL DATA

Refrigerant		R134a
Gas charge	kg	0.6
Humidity removed in neutral air condition [1]	litres/24h	20,1
Cooling capacity [1]	W	1250
Absorbed power [1]	W	360
Maximum absorbed power [2]	W	440
Maximum current absorbed [2]	A	2,7
Air flow rate	m^3/h	250
Nominal water flow rate	l/h	150
Head losses	kPa	7.8
Feed water temperature working range	°C	15 ÷ 45
Humidity working range	%	40 ÷ 90
Fan useful static head (maximum speed)	Pa	43
Sound power	dB(A)	43
Sound pressure [3]	dB(A)	30
Supply voltage	V/Ph/Hz	230/1~/50
Hydraulic F-R connections		1/2"F
Weight	kg	38

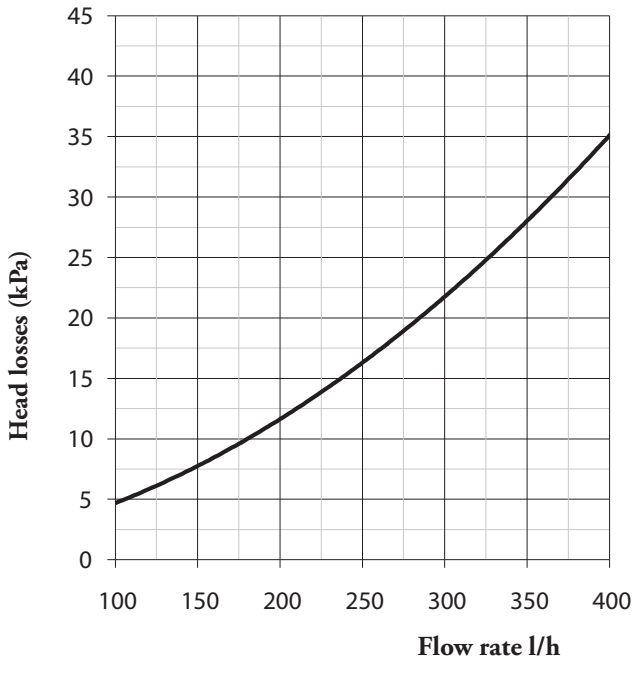
The data given refer to the following conditions:

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 ISO EN 3744

26.3 HEAD LOSS OF THE HYDRAULIC CIRCUIT



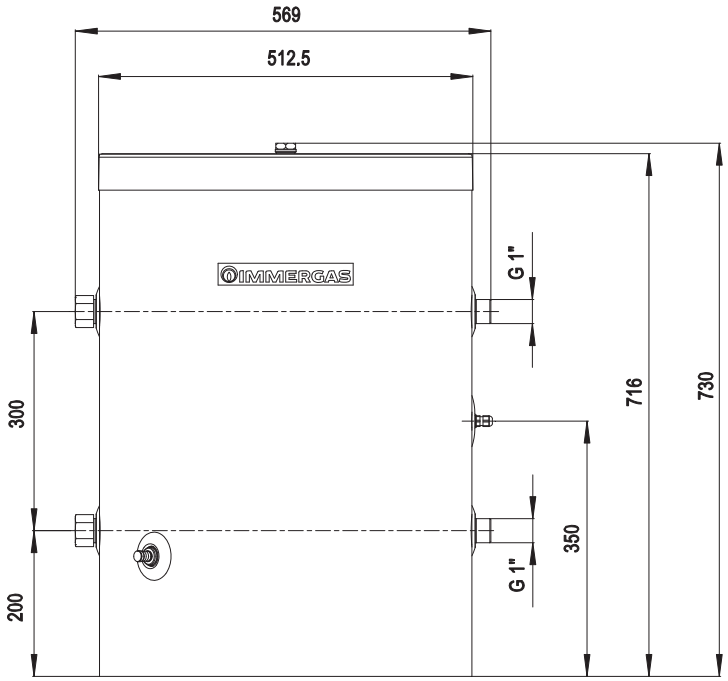
Optional MAGIS M TOP

27 INERTIAL STORAGE UNITS FOR HEAT PUMPS

The presence of a minimum water content always available in the system is essential to ensure the proper functioning of the MAGIS M TOP heat pump, particularly during defrosting.
The adoption of a thermal flywheel also offers advantages during normal machine operation, especially in zone systems where the amount of circulating water can vary significantly. The flywheel ensures greater stability and operational continuity, improving overall system performance.
A typical example is use with fan coils in cooling mode: under these conditions, very low flow temperatures and variations in the heat load (related to the activation or deactivation of the fan coils) make the presence of a constant mass of water even more important.
To ensure proper functioning, we recommend a minimum technical water content of **30 litres for sizes 5-8 kW and 50 litres for sizes 12-16 kW.**
These values are per machine; in the case of installations in battery, the minimum volume is to be multiplied by the number of units installed. Finally, as far as dehumidifiers are concerned, at least 3 litres per kW of machine power must be provided (reference to the hydraulic circuit connected to the dehumidifier).

27.1 75 LITRE INERTIAL STORAGE TANK (code 3.027288)

The 75-litre inertial storage tank has a layer of insulation 45 mm thick. The device has 4 connections and is supplied with plugs for unused connections; it can be used both as a pass accumulator and as a hydraulic separator.
On this model, there is is an additional 1/2" connection for the possible use of an air vent valve. It also has a drain with valve and probe holder.
There is an optional Kit available on the price list consisting of a bracket with plugs to be able to hang it on the wall.

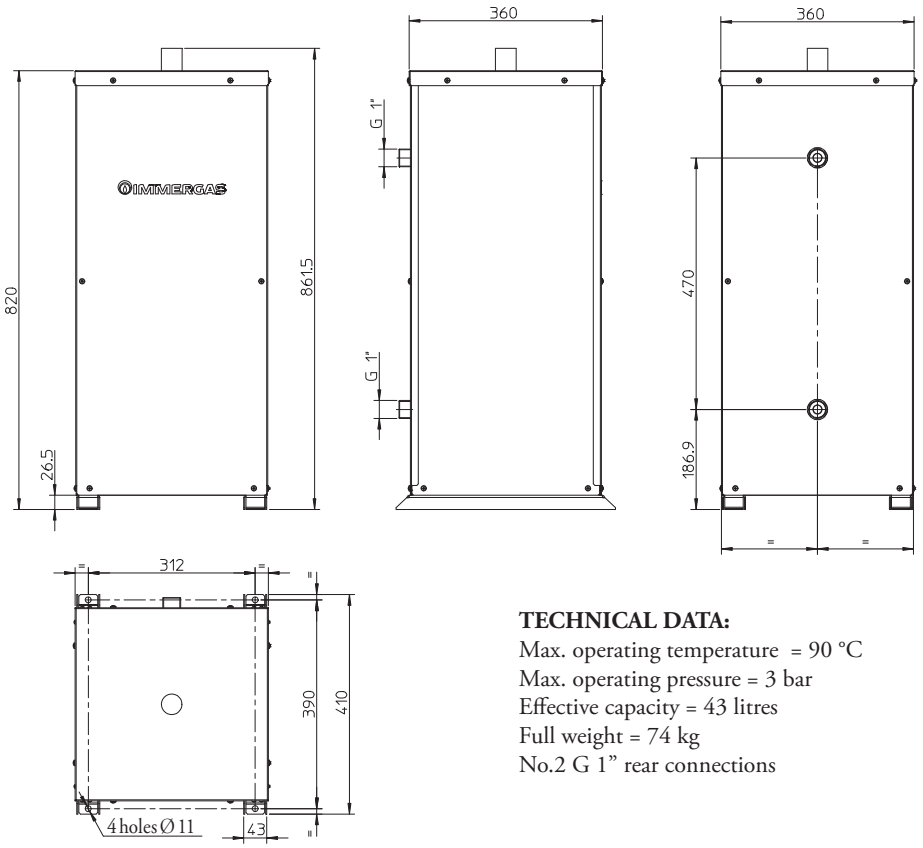


TECHNICAL DATA:
Max. operating temperature = 90 °C
Max. operating pressure = 3 bar
Effective capacity = 77 litres
Full weight = 95 kg
No.4 G 1" side connections

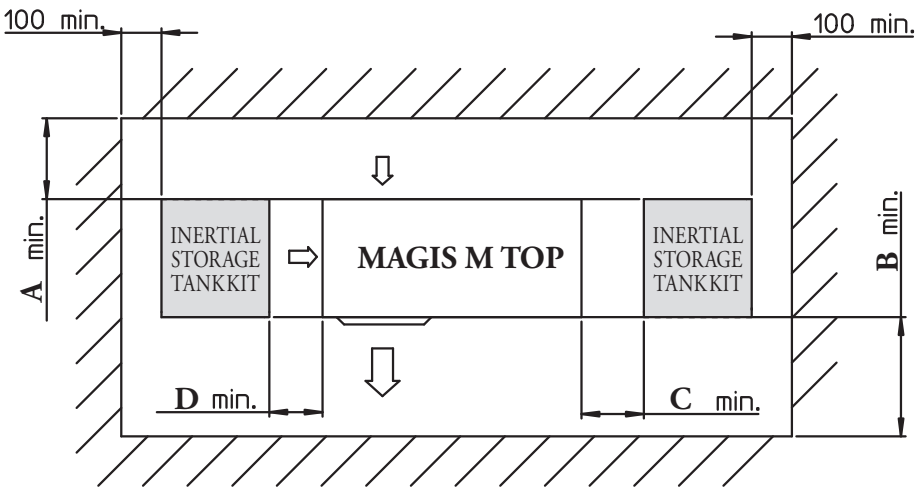
Optional MAGIS M TOP

27.2 50 LITRE VERTICAL INERTIAL STORAGE TANK (code 3.027539 & 3.036742)

The vertical inertial storage tank, supplied with vibration dampers, is complete with a 40 mm thick insulation coating, while the frame has been cataphoretically treated. The device has 2 rear connections and an air vent in the upper part. Each storage tank also has, under the removable front, the drain with valve. Two versions are available, functionally identical: one in RAL 7044 (code 3.027539) and one in colour RAL 7030 (code 3.036742). Hydraulic connections must be carried out connecting these to the system return pipe of the heat pump.



TECHNICAL DATA:
Max. operating temperature = 90 °C
Max. operating pressure = 3 bar
Effective capacity = 43 litres
Full weight = 74 kg
No.2 G 1" rear connections



NOTE: For more information on the minimum installation distances to be applied, please refer to the MAGIS M TOP Instruction Booklet

Optional MAGIS M TOP

28 STORAGE TANK UNIT FOR THE PRODUCTION OF DOMESTIC HOT WATER

MAGIS M TOP, in addition to room air-conditioning in heating or cooling mode, can be used for domestic hot water production with a dedicated external storage tank.
The storage tank units expressly designed for this combination are OMNISTOR and UB PRO SOL:

- **OMNISTOR**, available in sizes of 300 and 500 litres, is a *stainless steel* storage tank with an increased single coil. This coil allows larger heat exchange surfaces, ideal in full-electric solutions where the heat pump is the main generator. By means of an optional kit, external connection to a solar thermal system is possible;

- **UB PRO SOL**, ***available from September 2025*** in sizes of 800 and 1000 litres, these *vitrified steel* storage tanks can be used when there are very high DHW demands. Equipped with a double coil, it is possible to work with MAGIS M TOP on the upper coil, which has an increased exchange surface area, and with a solar thermal system on the lower coil.

All storage tanks come with:
- concentric stainless steel spiral-wound *water-to-water heat exchangers*, double in the case of and UB PRO SOL, single increased for OMNISTOR;
- *2 probe holders*, with and OMNISTOR *1 NTC probe* is also supplied as standard;
- immersion *thermometer*;
- *double magnesium anode* protecting the storage tank;
- *insulation that can be removed* if necessary;
- *provision for connection to a solar thermal system*;
- *possibility of installing a double electronic anode*, except when using UB PRO SOL;
- *possibility of installing an integrative electrical resistance*.

OMNISTOR

UB PRO SOL

Type	Code	Capacity [litres]	Thermal exchange coils	Exchange surface of coil [m²]	Dimensions [mm]		Energy efficiency class
					Height	Outside D.	
OMNISTOR 300	3.027910	276.8	1 Increased	2.6	1715	620	C
OMNISTOR 500	3.027911	480.3	1 Increased	3.2	1735	810	C
UB PRO SOL 800	3.035550	763	2 Separated, with 1 Increased	4.9 + 1.8	1985	990	C
UB PRO SOL 1000	3.035551	856	2 Separated, with 1 Increased	6.0 + 2.8	2185	990	C

29 DESCRIPTION SYSTEM MANAGER

The System manager is an electronic controller with microprocessor, realised with the objective of being a "unique manager" for integrated systems, consisting of condensation boiler and heat pump. Thanks to this supervisor, it is possible to activate the most convenient heat source depending on functional, environmental and "economic" parameters. In order to manage the entire system correctly, the System manager needs to acquire some basic data: the outside temperature and the flow temperature of the system, based on the preset climate curve (which can be set for both heating and cooling). In addition, fuel and electricity cost parameters must be configured to enable the system to optimise operation in terms of efficiency and convenience.
The user interface is made up from an LCD with matrix and a 6-key membrane keyboard. Installation takes place on a DIN guide for electric components from control board.

29.1 SYSTEM MANAGER TECHNICAL FEATURES

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

- up to 4 MAGIS M TOP heat pumps in battery;
- Immergas boiler;
- storage tank for D.H.W. production (the D.H.W. temperature is managed by the NTC probe);
- space heating puffer (the temperature inside the tank is managed by the NTC probe);
- up to 2 solar circulation units for systems with manifolds arranged on different slopes;
- temperature probes (NTC and/or PT1000);
- on-off request dry contact;
- integrative electric resistance for DHW;
- integrative electric resistance for heat system;
- 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);
- up to 8 expansion boards for air-conditioning system management. For each individual zone, it is possible to decide whether it is a mixed zone, a direct zone, or a direct zone with a water temperature probe (thus allowing correction of the flow temperature at the heat generator outlet);
- up to 2 expansions for special functions, such as:
  - heating/cooling switching on separate terminals;
  - recirculation pump management for DHW;
  - photovoltaic contact, used to optimise operation in the event of overproduction of energy by a solar photovoltaic system;
  - contact from a biomass system, used as a supplement to the integrated system set up with the Manager;
  - management of a pump downstream of the plate heat exchanger;
  - management of a pump for thermal discharge;
  - management of a remote activation or domotics remote control system via telephone dialer;
- temperature/humidity control devices, a maximum of 4 Zone Remote Panels can be associated only in zones 1-3 and HT (high temperature) zone. Alternatively, temperature/humidity sensor kits (blind sensors), one for each thermal zone, can be provided on all 8 manageable zones;
- up to 8 dehumidifiers, with the possibility of operation in cooled air (the treated air has a lower humidity and temperature) or in neutral air (only the humidity is reduced).

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

- external temperature (with probe on heat pump, or with optional external probe);
- system flow temperature;
- DHW storage tank temperature;
- display of error codes in the event of faults;
- 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 DHW integrative resistance);
- cost of combustion (Methane or LPG);
- cost of the electric energy;
- management of the heat/cooling sources.

- **System manager** **code 3.021522**

29.3 SYSTEM MANAGER OPTIONALS

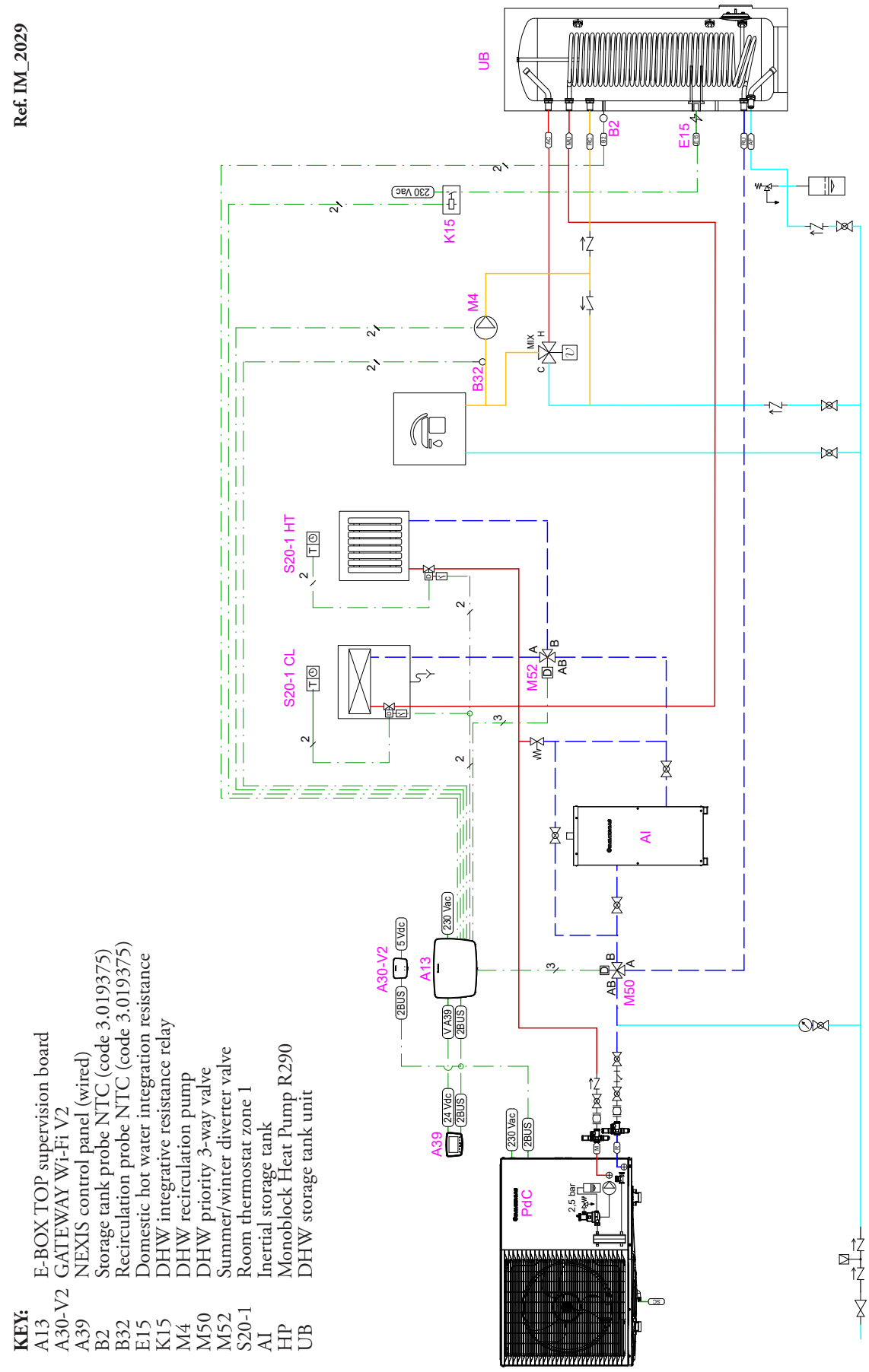
TEMPERATURE CONTROL OPTIONALS	Code
System Manager Kit	3.021522
Expansion Kit to manage zone or for auxiliaries	3.021547
Remote zone control	3.030863
Temperature and humidity sensor kit	3.021524
DOMINUS V2 interface board kit - allows the appliance to be managed via the smartphone App.	3.034903
CRONO 7 - wired digital weekly chrono-thermostat with potential-free contacts	3.021622
CRONO 7 WIRELESS - wireless digital weekly chrono-thermostat with potential-free contacts	3.021624
External probe - recommended if the external probe supplied with the heat pump is to be excluded	3.015266
Humidistat kit - room humidity control with potential-free contacts	3.023302
PT1000 probe kit for thermal solar collector	3.019374
NTC contact probe kit for DHW storage tank management, thermostat-controlled inertial tank and system flow probe	3.019375
NTC cuff kit with bracelet for system flow probe management	3.030913
EMR relay kit 12 VDC - for enabling DHW integrative resistance kit, downstream pump plate heat exchanger and dehumidifier cooling demand	3.023945
SSR 6 VDC relay kit - to enable thermal system integrative resistance kit	3.023946
OTHER OPTIONALS	Code
2 mixed zones kit for combination with MAGIS M5-8 TOP (wall-mounted or recessed)	3.021528
2 mixed zones and 1 direct zone kit for combination with MAGIS M5-8 TOP (wall-mounted or recessed)	3.021527
Three-way diverter valve kit 1"- used as DHW or heating/cooling system diverter	3.020632
System integrative electric resistance kit - adjustable to 2 - 4 - 6 kW, to be installed inside the home	3.021525
Safety thermostat kit - for use when working with low temperature system	3.013794

When installing **MAGIS M TOP**, it is always possible to use the dedicated heat pump options described on **Page 39,40**, except those falling under the category ***Temperature control*** on the same pages.

MAGIS M TOP Functional Diagrams

30 MAGIS M TOP + DIVERTER VALVE E/S + DHW RECIRCULATION

Ref. IM_2029



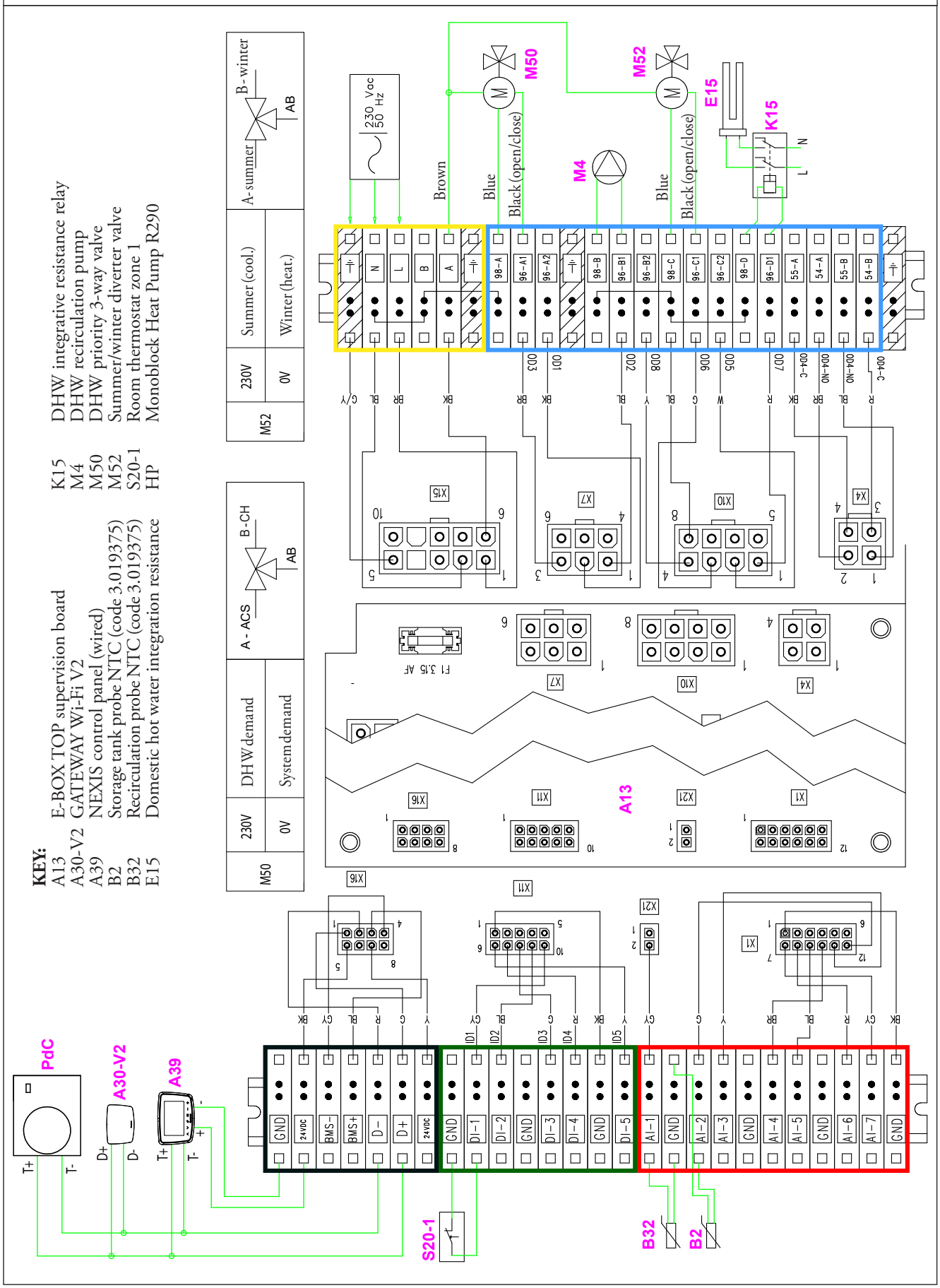
KEY:

A13	E-BOX TOP supervision board
A30-V2	GATEWAY Wi-Fi V2
A39	NEXIS control panel (wired)
B2	Storage tank probe NTC (code 3.019375)
B32	Recirculation probe NTC (code 3.019375)
E15	Domestic hot water integration resistance
K15	DHW integrative resistance relay
M4	DHW recirculation pump
M50	DHW priority 3-way valve
M52	Summer/winter diverter valve
S20-1	Room thermostat zone 1
AI	Inertial storage tank
HP	Monoblock Heat Pump R290
UB	DHW storage tank unit

NOTE: this functional diagram is by way of example, but not limited to. It is also required to convey the heat pump's condensate drain.

MAGIS M TOP Functional Diagrams

30.1 SYSTEM WIRING DIAGRAM: E-BOX TOP CONNECTIONS



MAGIS M TOP Functional Diagrams

30.2 SYSTEM WIRING DIAGRAM: CONFIGURABLE PARAMETERS

All digital/analogue inputs and digital outputs on the **E-BOX TOP** are to be configured from the wired **NEXIS** control panel. The following tables show the items in the ***Service*** menu (with their corresponding terminals on the E-BOX TOP) and the functions to be set.

Digital input items (terminals)	Value	Available functions
A108 (DI-1)	3	Zone 1 room thermostat
A109 (DI-2)	0	Off
A110 (DI-3)	0	Off
A111 (DI-4)	0	Off
A112 (DI-5)	0	Off

Analogue input items (terminals)	Value	Available functions
A101 (AI-1)	9	DHW recirculation probe
A102 (AI-2)	1	DHW storage tank probe
A103 (AI-3)	0	Off
A104 (AI-4)	0	Off
A105 (AI-5)	0	Off
A106 (AI-6)	0	Off
A107 (AI-7)	0	Off

Digital out-put items (terminals)	Value	Available functions
A113 (96-A1)	11	DHW diverter valve
A114 (96-A2)	0	Off
A115 (96-B1)	26	Domestic hot water recirculation pump
A116 (96-B2)	0	Off
A117 (96-C1)	21	Summer/winter diverter valve
A118 (96-C2)	0	Off
A119 (96-D1)	13	DHW integrative resistance
A120 (54/ 55-A)	0	Off
A121 (54/ 55-B)	0	Off

NOTE: a dedicated 230 Vac power supply must be provided for the **E-BOX TOP**supervision board. A 24 Vdc power supply output is also available on board, through which only the wired **NEXIS** control panel supplied as standard can be powered. The **GATEWAY Wi-Fi V2** is to be powered separately, where the 5 Vdc power supply is supplied as standard.

MAGIS M TOP Functional Diagrams

30.3 DESCRIPTION OF SYSTEM OPERATION

WINTER OPERATION

CH phase active
The on-off thermostat placed in the room makes the request during the winter phase by connecting the contacts on the digital input terminal block of the E-BOX TOP and configuring the dedicated parameter.
In the presence of a DHW integrative resistance (optional), the concomitance function can be activated. With this, MAGIS M TOP and DHW resistance can be activated simultaneously in the event of a simultaneous request from the system and DHW, thus ensuring greater comfort by simultaneously fulfilling 2 different services.
From the NEXIS control panel (wired) it will also be possible to set a manual (MAN) or automatic (AUTO) operating system:

- MAN, the Room Set on the on-off thermostat installed in the room is maintained throughout the day;
- AUTO, the Room Set on the thermostat will only be maintained within customisable time slots. You can set up to 8 time slots with different temperatures within each day.

Thanks to the presence of GATEWAY Wi-Fi V2, it is also possible to remotely manage the product's operating logic via a dedicated smartphone application.

Domestic hot water mode
MAGIS M TOP holds the storage tank at the DHW set temperature set by the NEXIS control panel (wired) via the probe located in the DHW storage tank. This storage tank probe is to be connected to the analogue input terminal block of the E-BOX TOP, by configuring the dedicated parameter.
The integrative resistance (optional) is activated according to 2 customisable parameters:

- Minimum DHW integration temperature, the resistance is activated if the temperature drops below a certain outside temperature (default, -20°C);
- DHW waiting time, if the DHW set with MAGIS M TOP alone cannot be reached within a certain time, DHW integration is activated (default, 120 min.).

Alternatively, by activating a function called DHW Boost, it is possible to exploit the contribution of both the heat pump and the electric resistance at the same time to offer superior comfort, minimising the heating time of the storage tank.
To have simultaneous DHW and CH operation, the previously described concurrent function is available.
Similarly to the heating phase, a manual (MAN) or automatic (AUTO) operation mode is available to keep the DHW Set constant or to schedule different temperatures. Outside the time slots, a settable eco temperature is maintained.
Finally, it is possible to manage the DHW recirculation through a probe and a dedicated pump, managing operation according to similar timetables to those already described.

SUMMER OPERATION

Cooling mode active
Through the fan coil located in the room, controlled by a thermostat, the cooling demand is made. In this diagram, switching to cooling service involves the use of a 3-way diverter valve, which is managed by the E-BOX TOP digital output terminal block. It is possible to set operating logics similar to those seen in winter operation, with the possibility of remote management thanks to the presence of GATEWAY Wi-Fi V2.

Domestic hot water mode
The same considerations made for winter operation apply.

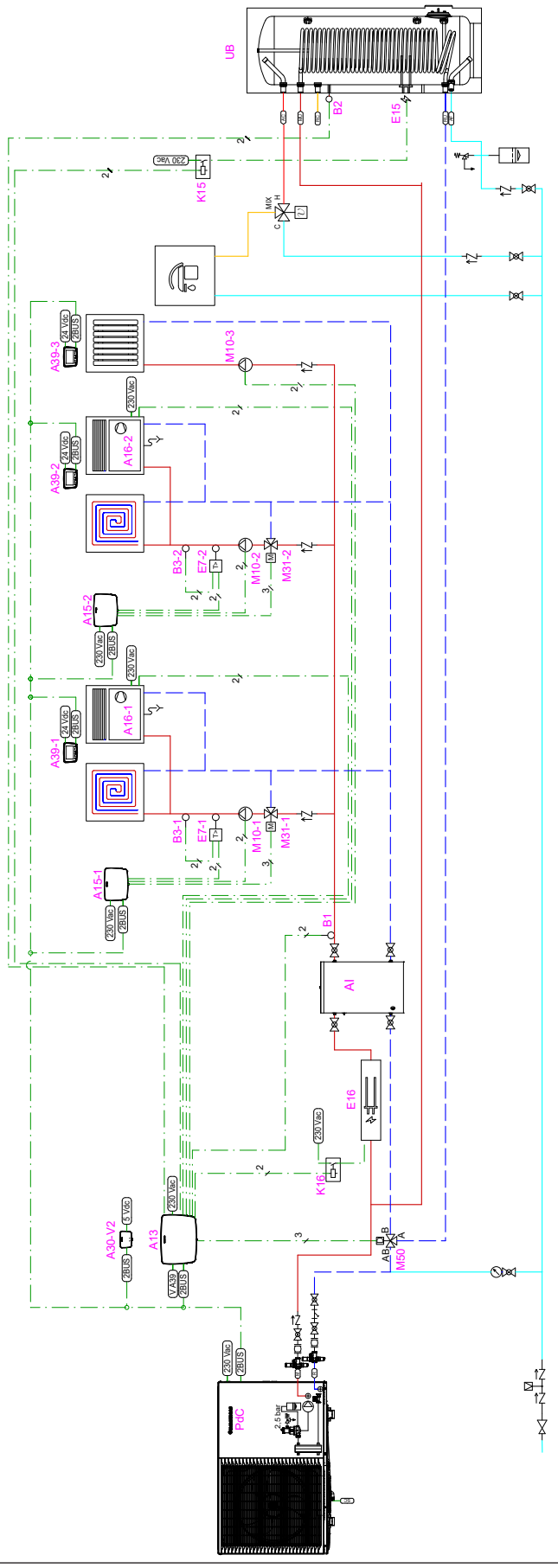
MAGIS M TOP Functional Diagrams

31 MAGIS M TOP + 3 ZONES (1 DIR. + 2 MIX.) WITH NEXIS PANELS

Ref. IM_2032

KEY:

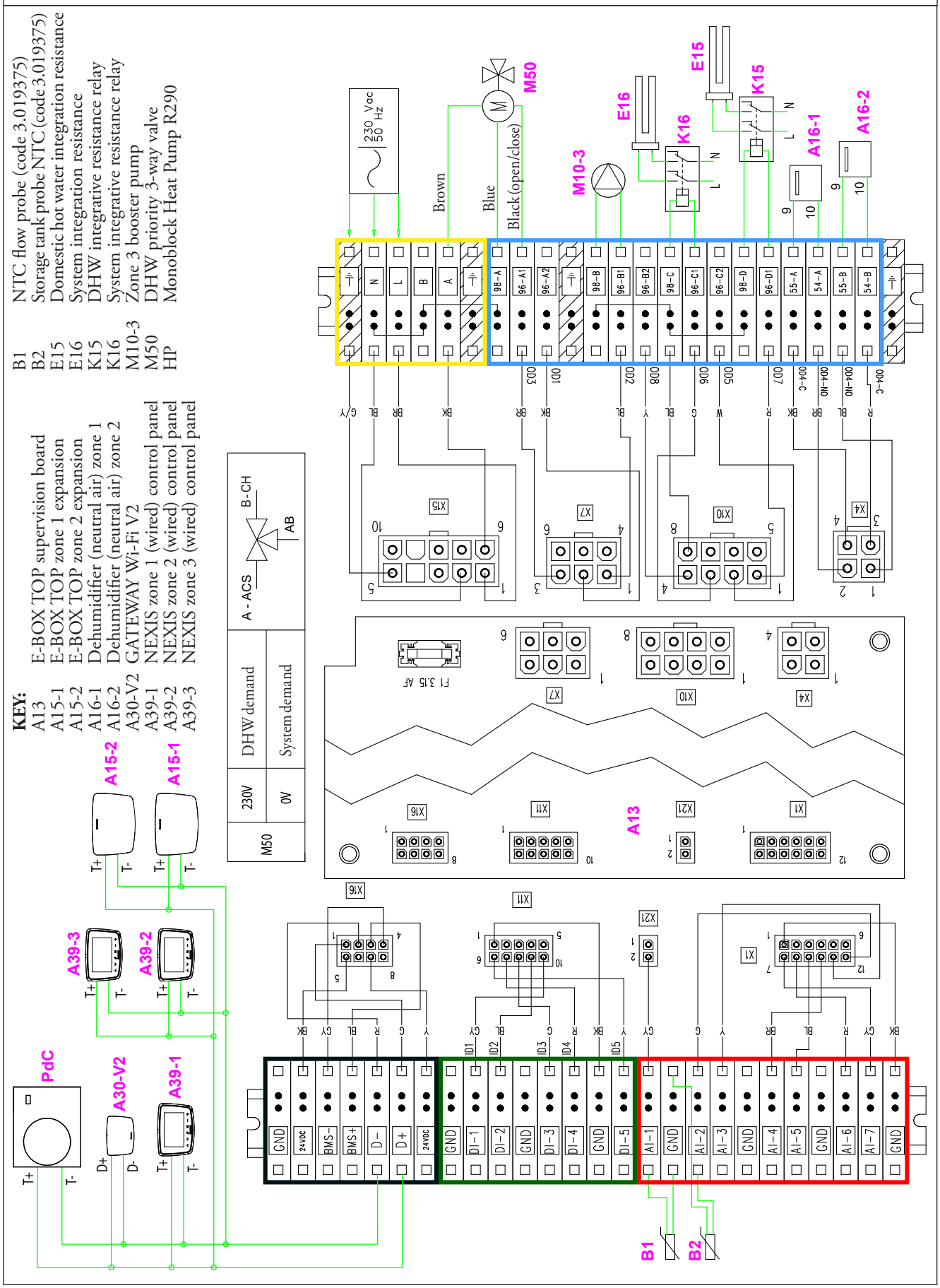
A13	E-BOX TOP supervision board	E15	Domestic hot water integration resistance
A15-1	E-BOX TOP zone 1 expansion	E16	System integration resistance
A15-2	E-BOX TOP zone 2 expansion	K15	DHW integrative resistance relay
A16-1	Dehumidifier zone 1	K16	System integrative resistance relay
A16-2	Dehumidifier zone 2	M10-1	Zone 1 booster pump
A30-V2	GATEWAY Wi-Fi V2	M10-2	Zone 2 booster pump
A39-1	NEXIS zone 1 (wired) control panel	M10-3	Zone 3 booster pump
A39-2	NEXIS zone 2 (wired) control panel	M31-1	Zone 1 mixing valve
A39-3	NEXIS zone 3 (wired) control panel	M31-2	Zone 2 mixing valve
B1	NTC flow sensor (code 3.019375)	M50	DHW priority 3-way valve
B2	Storage tank probe NTC (code 3.019375)	AI	Inertial storage tank
B3-1	Zone 1 flow probe (code 3.019375)	HP	Monoblock Heat Pump R290
B3-2	Zone 2 flow probe (code 3.019375)	UB	DHW storage tank unit
E7-1	Zone 1 safety thermostat		
E7-2	Zone 2 safety thermostat		



NOTE: this functional diagram is by way of example, but not limited to. It is also required to convey the heat pump's condensate drain.

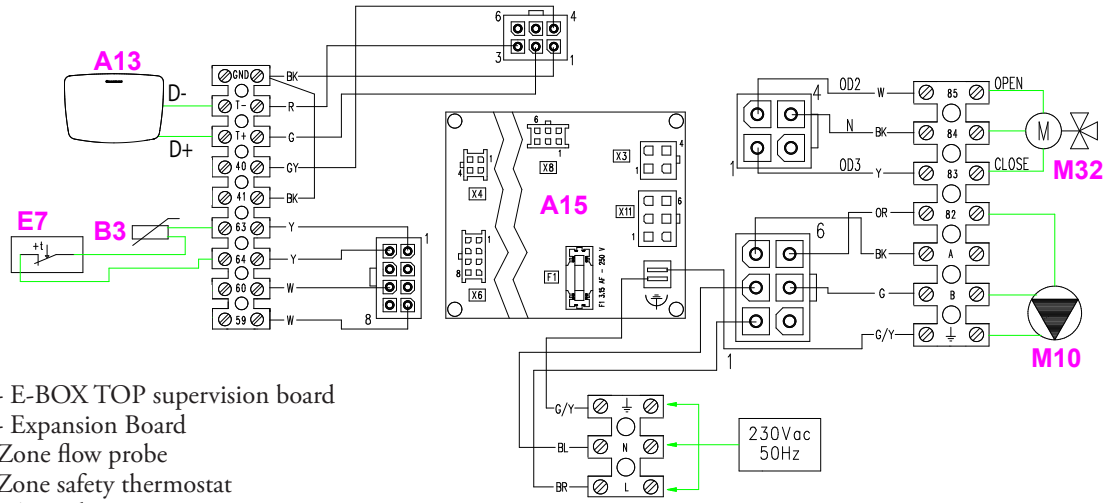
MAGIS M TOP Functional Diagrams

31.1 SYSTEM WIRING DIAGRAM: E-BOX TOP CONNECTIONS



MAGIS M TOP Functional Diagrams

31.2 SYSTEM WIRING DIAGRAM: EXPANSIONS CONNECTIONS



KEY:
A13 - E-BOX TOP supervision board
A15 - Expansion Board
B3 - Zone flow probe
E7 - Zone safety thermostat
M10 - Zone booster pump
M32 - Zone mixing valve

NOTE: depending on the zone managed, the Switches shown opposite will have to be set

Switch SW1				
SW=1	SW=2	SW=3	SW=4	Expansion Board
0	0	0	0	Zone 1
1	0	0	0	Zone 2

31.3 SYSTEM WIRING DIAGRAM: CONFIGURABLE PARAMETERS

Digital input items (terminals)	Value	Available functions
A108 (DI-1)	0	Off
A109 (DI-2)	0	Off
A110 (DI-3)	0	Off
A111 (DI-4)	0	Off
A112 (DI-5)	0	Off

Analogue input items (terminals)	Value	Available functions
A101 (AI-1)	8	System flow probe
A102 (AI-2)	1	DHW storage tank probe
A103 (AI-3)	0	Off
A104 (AI-4)	0	Off
A105 (AI-5)	0	Off
A106 (AI-6)	0	Off
A107 (AI-7)	0	Off

All digital/analogue inputs and digital outputs on the **E-BOX TOP** are to be configured from the wired **NEXIS** control panel. The following tables show the items in the ***Service*** menu (with their corresponding terminals on the E-BOX TOP) and the functions to be set.

Digital output items (terminals)	Value	Available functions
A113 (96-A1)	11	DHW diverter valve
A114 (96-A2)	0	Off
A115 (96-B1)	24	Zone 3 booster pump
A116 (96-B2)	0	Off
A117 (96-C1)	12	System integrative resistance
A118 (96-C2)	0	Off
A119 (96-D1)	13	DHW integrative resistance
A120 (54/ 55-A)	4	Dehum. in neutral air zone 1
A121 (54/ 55-B)	5	Dehum. in neutral air zone 2

NOTE: a dedicated 230 Vac power supply must be provided for the **E-BOX TOP** supervision board and for each of the **Supplementary Expansion boards.** A 24 Vdc power supply output is also available on board, through which only the wired **NEXIS** control panel supplied as standard can be powered. Optional NEXIS panels are supplied with a 24 Vdc power supply as standard. The **GATEWAY Wi-Fi V2** is to be powered separately, where the 5 Vdc power supply is supplied as standard.

MAGIS M TOP Functional Diagrams

31.4 DESCRIPTION OF SYSTEM OPERATION

WINTER OPERATION

CH phase active
NEXIS control panels (wired, 1 supplied as standard, the other 2 optional white or black) placed in the room make the request during the winter phase for the relevant thermal zone, reading temperature and humidity. These are to be connected on the ModBus port of the E-BOX TOP, assigning one panel per thermal zone.
To have more configurable inputs/outputs available on the E-BOX TOP, a Supplementary Expansion (up to 3) is used for each of the mixed zones. It is possible to connect booster pumps and mixing valves directly to E-BOX TOP, for a maximum of 9 programmable digital outputs. Like the NEXIS control panel, the Supplementary Expansions are also to be connected on the ModBus port of the E-BOX TOP.
The system integrative resistance (optional) is activated according to 2 customisable parameters:

- Minimum system integration temperature, the resistance is activated if the temperature drops below a certain outside temperature (default, -20°C);
- CH waiting time, if the DHW set with MAGIS M TOP alone cannot be reached within a certain time, DHW integration is activated (default, 60 min.).

In the presence of a DHW integrative resistance (optional), the concomitance function can be activated. With this, MAGIS M TOP and DHW resistance can be activated simultaneously in the event of a simultaneous request from the system and DHW, thus ensuring greater comfort by simultaneously fulfilling 2 different services.
From each NEXIS control panel (wired) it will also be possible to set a manual (MAN) or automatic (AUTO) operating system:

- MAN, the Room Set on the NEXIS panel installed in the room is maintained throughout the day;
- AUTO, the various Room Sets set within customisable time slots are maintained. You can set up to 8 time slots with different temperatures within each day.

Using the B1 flow probe, the system flow temperature can be checked and corrected. Each panel can manage the operating logics, calendars and temperatures of the other thermal zones. Thanks to the presence of GATEWAY Wi-Fi V2, it is also possible to remotely manage operating logics and room temperatures from a dedicated smartphone app.

Domestic hot water mode
MAGIS M TOP holds the storage tank at the DHW set temperature set by one of the NEXIS control panels (wired) via the probe located in the DHW storage tank. This storage tank probe is to be connected to the analogue input terminal block of the E-BOX TOP, by configuring the dedicated parameter.
The integrative resistance (optional) is activated according to 2 customisable parameters:

- Minimum DHW integration temperature, the resistance is activated if the temperature drops below a certain outside temperature (default, -20°C);
- DHW waiting time, if the DHW set with MAGIS M TOP alone cannot be reached within a certain time, DHW integration is activated (default, 120 min.).

Alternatively, by activating a function called DHW Boost, it is possible to exploit the contribution of both the heat pump and the electric resistance at the same time to offer superior comfort, minimising the heating time of the storage tank.
To have simultaneous DHW and CH operation, the previously described concurrent function is available.
Similarly to that described for heating mode, a manual (MAN) or automatic (AUTO) operating mode is available to keep the DHW Set constant or to schedule different temperatures. Outside the time slots, a settable eco temperature is maintained.

SUMMER OPERATION

Cooling mode active
Through the radiant floor, room cooling is carried out, while humidity is removed through the use of dedicated dehumidifiers. Again, temperature and humidity are measured by the NEXIS control panels. It is possible to set operating logics similar to those seen in winter operation, with the possibility of remote management.

Domestic hot water mode
The same considerations made for winter operation apply.

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

NOTE: Depending on the specific design and installation conditions, the diagrams and drawings provided in this documentation can require further integration or modifications, according to what is set forth by the Standards and technical regulations in force and applicable. 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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consulenza@immergas.com

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

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

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

The instruction manual is printed on environmentally-friendly paper.