HPI-M

REVERSIBLE AIR-TO-WATER "MONOBLOC INVERTER" HEAT PUMPS

New Diematic Evolution interface

HPI-M 6 MR
HPI-M 8 MR
HPI-M 11 MR

- **HPI-M/E:**
  from 6 to 11 kW with additional heating by integrated electrical resistance
- **HPI-M/H:**
  from 6 to 11 kW with additional hydraulic heating by boiler (or without additional heating)

Heating and refreshing with underfloor heating/cooling or heating and air conditioning using fan coil units

Air-to-water heat pump

Electricity (power supplied to the compressor)

Free, natural and renewable energy

OPERATING CONDITIONS

operating temperature limits

In heating mode

- Water: + 18°C/+ 60°C
- Outside air: - 20°C/+ 35°C

In cooling mode

- Water: + 18°C/+ 25°C
- Outside air: + 7°C/+ 46°C

In air conditioning mode

Outside air: + 7/+ 46°C
Water: + 7/+ 25°C with options EH811 and HK25

Heating circuit

Max. operating pressure: 3 bar
Max. operating temp.: 95°C with (.../H) and
75°C with (.../E)

HPI-M heat pumps stand out for their compactness and high performances: operation down to -20°C and COP up to 4.83 at +7/+35°C. They are reversible and can be used for heating and for cooling in summer. They can also be equipped with an optional «insulation kit» for air conditioning using fan coil units.
They are composed of an outdoor monobloc «Inverter» unit, which is connected to the inside module by water connections.
The indoor module comes fully equipped and includes, in particular:

- DIEMATIC Evolution control panel with control system that can be programmed according to the outside temperature that communicates with the outdoor unit and, depending on the options connected, can be used to manage up to 3 heating circuits, direct or with mixing valves and a domestic hot water production circuit. Option of connecting HPI heat pumps and boilers with DIEMATIC Evolution control system in cascade;
- High energy efficiency pumps (EEI < 0.23);
- Hydraulic filter with isolating valve.

This module is available in 2 versions:

- MIT-M /E... for auxiliary heating by integrated electrical heater, which can be wired as either 2 or 6 kW single-phase (cannot be installed without the heat pump);
- MIT-M /H for auxiliary heating by boiler.

CE

De Dietrich
SUSTAINABLE COMFORT®

PRESENTATION OF THE RANGE

The **HPI-M** range of air/water Inverter heat pumps comes in models of 6 to 11kW (heating output at +7/+35°C in accordance with the EN 14511-2 standard). They comprise an outdoor unit **MONO AWHP** and a **MIT-M** indoor unit.
The highlights of this range are:
- possible operation with outside air temperatures down to -20 °C,
- the 6, 8 and 11 kW models produce water up to 60 °C,
- the models are reversible to operate in underfloor heating and cooling mode or in fan coil cooling mode with the «cooling mode insulation» option kit,
- increased savings thanks to the «Hybrid» function, which enables management and solutions combining a heat pump with a backup boiler, depending on climatic conditions, heating requirements or energy costs.

The outdoor module comprises:
- a modulating compressor (DC Inverter technology)
- a heat exchanger consisting of a coil of copper tubes and aluminium fins,
- a variable speed fan for quiet operation,
- an anti-shock bottle with power reserve,
- electronic pressure release valves, a filter, a HP pressure switch,
- a start-up current limitation system,
- a condenser formed by a stainless steel plate exchanger.

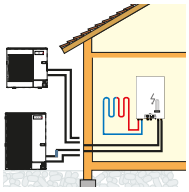
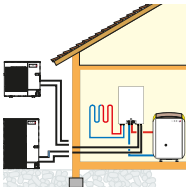
The indoor module is available in 2 versions:
- **MIT-M /E…:** with electrical backup via immersion heater which can be wired in 2 or 6 kW as desired,
- **MIT-M /H…:** with hydraulic backup via boiler.

Both modules are equipped with:
- an electronic pressure switch, a safety valve, automatic air vents, a flow rate controller, gate valves, a valve with integrated filter,
- 10-litre expansion vessel,
- a high energy efficiency heating pump (EEI < 0.23),
- integrated patented 40 litres decoupling tank to simplify connection and increase lifetime,
- DIEMATIC Evolution control panel with an electronic control programmable according to the outside temperature and communicating with the outdoor unit. It can be equipped with various remote controls, available as an option (see page 9).

MODELS AVAILABLE

HPI-M

ADVANCE

HEAT PUMP	BACKUP		OUTPUT	
	 ELETTRICA CON RESISTENZA 2 OR 6 KW SINGLE-PHASE	 HYDRAULIC VIA BOILER (OR WITHOUT BACKUP)	HEATING KW (1)	COOLING KW (2)
Reversible air-to-water «split inverter» heat pumps operating down to -20°C	HPI-M 6 MR/E	HPI-M 6 MR/H	6	6
	HPI-M 8 MR/E	HPI-M 8 MR/H	9	7,50
	HPI-M 11 MR/E	HPI-M 11 MR/H	11,20	10

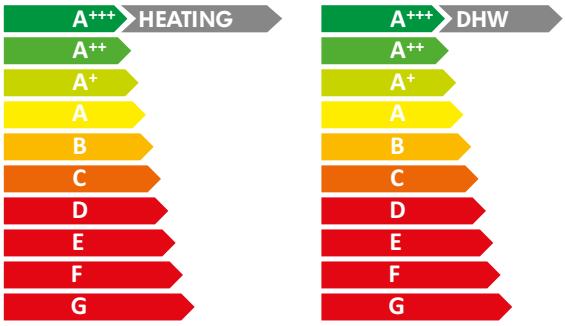
(1) Heating mode: outside air temperature/water temperature at outlet, +7°C / +35 °C performance in accordance with EN 14511-2.
(2) Cooling mode: outdoor air temperature/water temperature at the outlet+35°C/+18°C, performance according to EN 14511-2.

ENERGY LABELLING

The HPI-M heat pump is supplied with an energy label, which contains a large amount of information: energy efficiency, annual energy consumption, name of manufacturer, noise level, etc.
By combining your heat pump with, for example, a solar system, a DHW storage tank, a control system or even another generator, you can improve the performance of your installation and generate a «System» label corresponding to your installation: visit our website **«www.ecosolutions.dedietrich-heating.com»** for more information.

REFERENCE SCALE FOR THE SYSTEM ENERGY LABEL

The reference scale is given below for heating and DHW indicating the product's energy performance to be included on the corresponding energy label.



TECHNICAL SPECIFICATIONS

OPERATING TEMPERATURE LIMIT

In heating mode:
- Water: + 18°C/+ 60°C,
- Outside air: - 20°C/+ 35°C

In cooling mode:
- Water: + 18°C/+ 25°C,
- Outside air: +7°C/+ 46°C

In air conditioning mode (with options EH811 and HK25):
- Water: + 7°C/+ 25°C,
- Outside air: +7°C/+ 46°C

Heating circuit:
Max. operating pressure: 3 bar
Max. operating temp.:
- 95°C with (.../H)
- 75°C with (.../E)

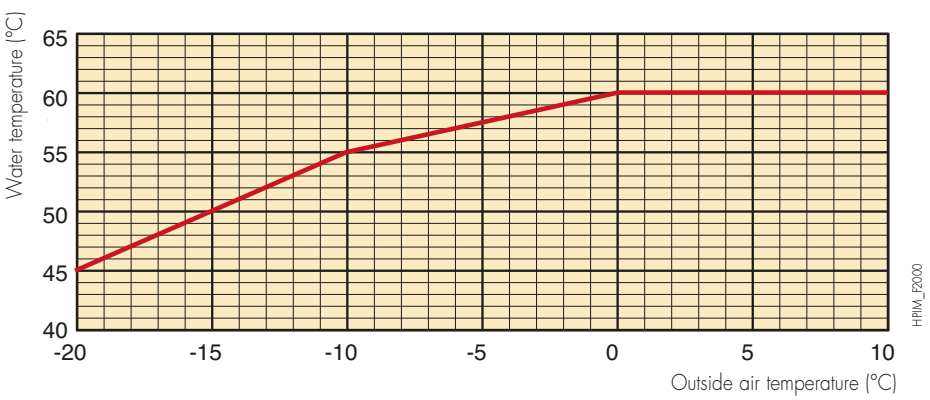
MODEL	HPI-M	6 MR	8 MR	11 MR
SEASONAL PERFORMANCES				
Energy class in heating ERP (35°C)		A+++	A++	A++
Energy class in heating ERP (55°C)		A++	A++	A++
SCOP (35°C/55°C)		4.67/3.30	4.35/3.50	4.34/3.40
Seasonal space heating energy efficiency under average temperature (35°C/55°C) *	%	184/129	171/137	170/133
Seasonal space heating energy efficiency under average temperature (35°C/55°C) (with outdoor sensor supplied as standard)	%	186/131	173/139	172/135
CERTIFIED THERMAL PERFORMANCE				
Heating output at +7°C/+35°C (1)	kW	6.00	9.00	11 .20
Heating COP at +7°C/+35°C (1)		4.83	4.51	4.54
Heating output at -7°C/+35°C (1)	kW	6.00	7.50	9.00
Heating COP at -7°C/+35°C (1)		3.11	2.69	3.27
Outdoor module sound power (3)	dB[A]	58	58	60
TECHNICAL SPECIFICATIONS				
Outdoor module perceived sound level(4)	dB[A]	36	36	38
Indoor module perceived sound level(4)	dB[A]	35	43	43
Cooling output at +35°C/+18°C (5)	kW	6.00	7.50	10.00
Cooling COP at +35°C/+18°C (5)		4.26	4.42	4.74
Nominal water flow rate at $\Delta T = 5$ K	m^3/h	1 .03	1 .55	1 .93
Total pressure head at nominal flow rate at $\Delta T = 5$ K	mbar	750	650	500
Maximum hydraulic connection distance	m	20	20	20
Connection diameter	pouce	1"	1"	1"
Power supply voltage of the outdoor unit	V	230 V single-phase	230 V single-phase	230 V single-phase
Maximum electrical power	kW	5.06	5.06	6.44
Start-up amperage	A	9	9	12
Curved circuit breaker protection C outdoor unit*	A	16	25	32
Power regulation mode (compressor)		variable speed	variable speed	variable speed
Soft starter		No	No	No
Refrigerant fluid R410A	kg	2.4	2.4	3.3
CO_2 equivalent	tonne	5.01	5.01	6.89
Weight of outdoor unit without charge	kg	97	97	118
Weight of indoor module without charge (tank) (version /H - Version /E)	kg	50 - 57	50 - 57	50 - 57

* Values certified according directives n°813/2013
(1) Heating mode: outside air temperature/water temperature at outlet, performance in accordance with EN 14511-2
(3) Test performed in accordance with standard EN 12102-1
(4) At 1 m in a free field (5 m for the outdoor unit)
(5) Air conditioning mode: outdoor air temperature/water temperature at the outlet, performance according to EN 14511-2.

WATER TEMPERATURE

HPI-M heat pump models can produce hot water up to a temperature of 60°C. The graph shows the water temperature produced for each model based on the outside temperature.

HPI-M 6, 8 AND 11 MR



TABLES FOR SIZING

MONO AWHP 6 MR

OUTSIDE TEMPERATURE [°C]	FLOW TEMPERATURE [°C]																	
	COOLING/ AIR CONDITIONING				HEATING													
	7		18		25		35		40		45		50		55		60	
	Output (kW)	EER	Output (kW)	EER	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP
-20	-	-	-	-	-	-	4.60	1.90	4.50	1.66	4.00	1.48	-	-	-	-	-	-
-15	-	-	-	-	-	-	6.30	2.30	5.60	2.05	5.00	1.84	-	-	-	-	-	-
-10	-	-	-	-	8.10	3.01	6.60	2.43	5.90	2.15	5.20	2.10	5.10	1.95	4.70	1.57	-	-
-7	-	-	-	-	8.50	3.11	7.40	2.70	6.50	2.39	5.90	2.22	5.70	2.07	5.30	1.88	-	-
2	-	-	-	-	9.70	3.57	9.00	3.31	8.30	3.03	7.40	2.78	6.80	2.56	6.20	2.24	5.40	2.00
7	-	-	-	-	10.90	5.52	10.50	4.35	10.10	3.84	9.00	3.41	8.30	3.06	7.20	2.81	6.60	2.41
12	-	-	-	-	11.00	5.31	10.70	4.37	10.50	3.91	9.60	3.58	8.70	3.28	7.80	2.93	7.10	2.63
15	-	-	-	-	11.90	5.33	11.50	4.63	11.30	4.16	10.30	3.80	9.20	3.52	8.30	3.18	7.50	2.84
20	6.10	3.11	7.80	3.46	13.30	5.37	12.90	5.05	12.40	4.58	10.80	4.21	9.70	3.98	8.80	3.75	8.00	3.30
25	6.20	3.25	8.00	3.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	6.40	3.40	8.30	4.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	6.00	2.95	7.90	3.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MONO AWHP 8 MR

OUTSIDE TEMPERATURE [°C]	FLOW TEMPERATURE [°C]																	
	COOLING/ AIR CONDITIONING				HEATING													
	7		18		25		35		40		45		50		55		60	
	Output (kW)	EER	Output (kW)	EER	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP
-20	-	-	-	-	-	-	4.60	1.90	4.50	1.66	4.50	1.46	-	-	-	-	-	-
-15	-	-	-	-	-	-	6.70	2.28	6.60	2.02	6.50	1.78	-	-	-	-	-	-
-10	-	-	-	-	8.10	3.01	7.80	2.37	7.70	2.10	7.60	1.86	7.50	1.83	7.30	1.61	-	-
-7	-	-	-	-	8.50	3.11	8.30	2.45	8.20	2.17	8.10	2.09	7.90	1.98	7.80	1.84	-	-
2	-	-	-	-	9.80	3.56	9.70	3.08	9.60	2.81	9.50	2.61	9.30	2.37	9.20	2.16	9.00	1.96
7	-	-	-	-	10.90	5.52	10.50	4.35	10.10	3.84	9.80	3.40	9.60	3.00	9.40	2.65	9.20	2.36
12	-	-	-	-	11.00	5.31	10.70	4.37	10.50	3.91	10.20	3.50	10.10	3.12	9.90	2.79	9.70	2.51
15	-	-	-	-	11.90	5.33	11.50	4.63	11.30	4.16	11.10	3.73	10.90	3.33	10.70	2.98	10.50	2.68
20	7.20	2.47	9.50	2.73	13.30	5.37	12.90	5.05	12.70	4.55	12.40	3.98	12.30	3.60	12.10	3.26	12.00	2.95
25	7.50	2.72	10.20	3.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	7.90	3.05	10.90	3.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	7.50	2.70	10.50	3.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MONO AWHP 11 MR

OUTSIDE TEMPERATURE [°C]	FLOW TEMPERATURE [°C]																	
	COOLING/ AIR CONDITIONING				HEATING													
	7		18		25		35		40		45		50		55		60	
	Output (kW)	EER	Output (kW)	EER	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP	Output (kW)	COP
-20	-	-	-	-	-	-	7.00	2.60	6.60	2.21	6.50	1.96	-	-	-	-	-	-
-15	-	-	-	-	-	-	7.60	2.78	7.30	2.41	7.00	2.08	-	-	-	-	-	-
-10	-	-	-	-	11.00	3.80	10.10	2.87	9.70	2.51	9.40	2.20	9.10	1.94	9.00	1.54	-	-
-7	-	-	-	-	11.30	4.09	10.40	3.14	10.00	2.75	9.60	2.41	9.30	2.11	9.00	1.84	-	-
2	-	-	-	-	13.10	3.85	12.50	3.08	12.20	2.73	11.90	2.42	11.60	2.14	11.30	1.87	10.90	1.65
7	-	-	-	-	14.30	5.47	13.50	4.41	13.10	3.87	12.70	3.22	12.20	2.80	11.70	2.43	11.20	2.20
12	-	-	-	-	14.40	6.06	13.70	5.11	13.30	4.59	13.00	4.08	12.60	3.59	12.10	3.13	11.70	2.72
15	-	-	-	-	15.50	5.71	14.80	5.23	14.50	4.79	14.10	4.32	13.60	3.85	13.20	3.39	12.60	2.97
20	10.10	2.95	13.40	3.51	17.30	7.21	16.90	6.76	16.50	5.68	16.10	4.80	15.60	4.05	15.10	3.65	14.40	3.27
25	10.40	3.19	14.10	4.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	10.60	3.35	14.80	4.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	10.00	2.83	13.90	3.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-

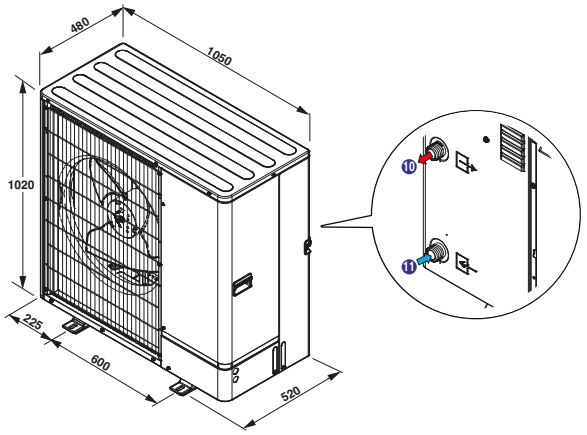
These performance levels are not certified, so they should only be used to size the heat pump.

MODELS AVAILABLE

MAIN DIMENSIONS (mm AND INCHES)

OUTDOOR UNIT

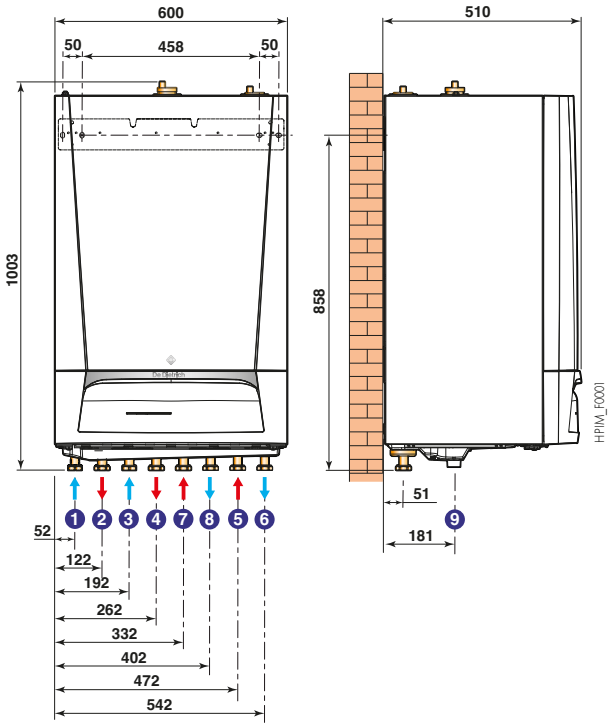
MONO AWHP 6, 8 AND 11 MR



KEY

⑩ Water output Ø G1
⑪ Water input Ø G1

MIT-M INDOOR MODULE



KEY

① Return 3-way valve circuit Ø G 1 (option)
- with HK21 package: internal 3-way valve set or
- with HK22 package: adaptation kit for external 3-way valve

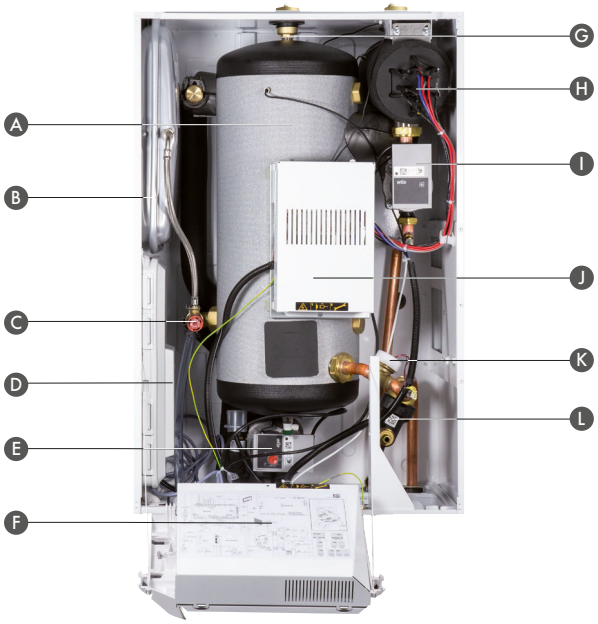
② Flow 3-way valve circuit Ø G 1 (option)
- with HK21 package: internal 3-way valve set or
- with HK22 package: adaptation kit for external 3-way valve

③ Direct circuit return Ø G1
④ Direct circuit flow Ø G1
⑤ Return outdoor unit Ø G1
⑥ Flow outdoor unit Ø G1
⑦ Connection to boiler flow (hot) Ø G1 (MIT-M/H only)
⑧ Connection to boiler return (cold) Ø G1 (MIT-M/H only)
⑨ Condensates drain Ø 34 mm ext. (for PVC pipe Ø 40 mm)

TECHNICAL SPECIFICATIONS

MIT INDOOR MODULE

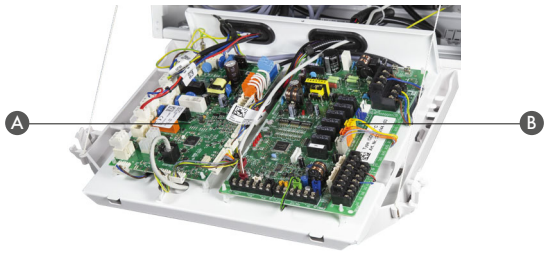
MIT-M



HPIS_Q0008

A 40L decoupling tank
B 10L expansion vessel
C Heating safety valve (3 bar)
D Interface PCB: electronic boards accessible under the cover
E High efficiency heating pump for direct circuit with EEI < 0.23
F Angled DIEMATIC Evolution control panel: electronic boards accessible under the hinge-mounted cover
G Automatic air vent
H Electrical backup (version/E)
I High energy efficiency primary circulating pump
J Electrical box for backup (version/E)
K Flowmeter
L Magnetic filter

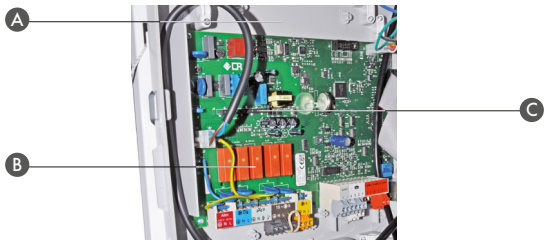
CONNECTION BLOCK CONTROL BOARDS



HPIS_Q0009

A Heat pump main control board
B Outdoor unit interface PCB

CONNECTION BLOCK INTERFACE



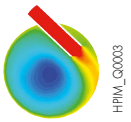
HPI_Q0015

A CB04 PCB location (option): autofilling
B SCB-10 control board
C AD249 PCB location (option): additional 3way valve circuit management

INTEGRATED DECOUPLING CYLINDER (40 L) PATENTED WITH VORTEX EFFECT

HPIM_Q0002

HPIM_Q0004

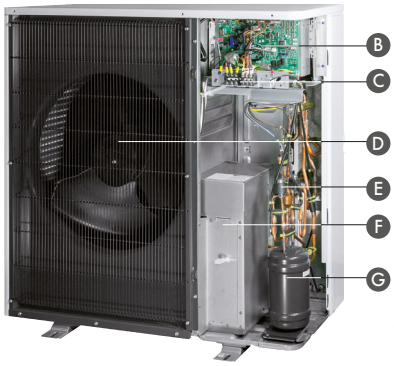


HPIM_Q0003

- Keep the stratification in the cylinder
- Increase the performances

OUTDOOR UNIT

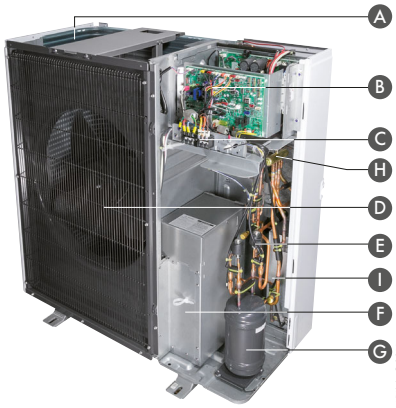
AWHP 6 MR



HPIM_Q0010

A Evaporator
B Electronic board
C Electrical connection
D Fan

AWHP 8 MR



HPIM_Q0011

E Electronic pressure release valve
G Liquid separator
F Inverter compressor with noise isolation
H 4-way cycle reversal valve

AWHP 11 MR

HPIM_Q0008

I Plate heat exchanger

CONTROL PANEL
MIT-M

PRESENTATION OF THE DIEMATIC EVOLUTION CONTROL PANEL

The DIEMATIC EVOLUTION control panel is a highly advanced panel with new ergonomic controls, with a built-in programmable electronic control system as standard which modulates the heat pump temperature, based on the outdoor temperature and possibly the room temperature if a thermostat or a room sensor (supplied as an option) is connected. As standard, the DIEMATIC EVOLUTION is able to automatically run a central heating system with 2 circuits direct without mixing valve or with mixing valve (however the flow sensors - package AD199 - must be ordered separately).
By simply adding 1 "PCB + sensor for 1 valve circuit" option (package AD249), it will be possible to control up to 3 circuits in total, with the option to equip each of these circuits with a room sensor (option).
Connecting a domestic hot water sensor can be used to program and control a DHW circuit (package AD212 - option).

This control system has been specifically developed to enable **optimal management of systems combining different heating generators** (boiler + heat pump or + solar system…). This control enables the installer to set up the entire heating system, regardless of its degree of complexity.

For larger installations, it is also possible to connect up to 8 appliances in cascade configuration.

An optimisation of the room temperature in cooling mode is possible thanks to the installation of SMART TC°, which makes it possible to manage both the heating setpoint and the cooling setpoint on an underfloor heating circuit, a fan coil circuit.

CHOICE OF OPTIONS ACCORDING TO THE CONNECTED CIRCUITS

		DHW	direct	direct + 1 valve		direct + 2 x valve	direct + 3 x valve
Circuit type (1)				Integrated	External		
DIEMATIC Evolution control panel (1) (2)	electrical options	1 x AD212	as standard	-	1 x AD199	2 x AD199	2 x AD199 + 1 x AD249
	hydraulic options	EH812	as standard	HK21	HK22	HK22 EA141 - EA140 2 x EA144 + 2 x EA142	HK22 EA141 - EA140 3 x EA144 + 3 x EA142

(1) Each of the circuits «**heating**» can be completed in choice by a remote control AD324, AD140, AD341, AD342, AD337, AD338 or AD345 (2) Cascade of 8 HP possible

CONTROL PANEL
MIT-M

CONTROL OPTIONS OF THE DIEMATIC EVOLUTION CONTROL PANEL

FLOW SENSOR DOWNSTREAM OF VALVE (LENGTH 2.5 M) - PACKAGE AD199

This sensor is required to connect the first with mixing valve to a boiler fitted with a DIEMATIC Evolution control panel. When using the package «Internal 3-way valve kit» HK21, it is not necessary to order this sensor which is originally included in the HK21 package.

ELECTRICAL CONNECTION KIT FOR DHW BACK UP - PACKAGE EH904

For e.g. hot water heater BEPC 300 with integrated electric auxiliary heater for hot water.

UNDERFLOOR HEATING THERMOSTAT CONNECTION KIT - PACKAGE HA255

Wired for connecting a safety thermostat to the circulating pump in an underfloor heating circuit.

SENSOR FOR BUFFER TANK - PACKAGE AD250

Comprises 1 sensor for managing a buffer tank with a boiler equipped with a DIEMATIC EVOLUTION control panel

SENSOR FOR DOMESTIC HOT WATER (LENGTH 5 M) - PACKAGE AD212

This is used for regulating the DHW temperature as a priority and programming of domestic hot water production with an independent calorifier.

SILENCER KIT FOR OUTSIDE MODULE - PACKAGE EH829

After installation allows reducing the sound level from outdoor unit.

Availability Q2/2021 depending on country

RADIO OUTSIDE TEMPERATURE SENSOR - PACKAGE AD346

The radio outside temperature sensor can be delivered as optional equipment for systems in which the installation of the external wire connection sensor delivered with DIEMATIC EVOLUTION control panel would be too complex.
This sensor must be used with a radio remote control (AD341), already combined with an "appliance radio module".

HUMIDITY SENSOR KIT (ON/OFF) - PACKAGE HK27

Sensor for measuring humidity in the flow part of an installation with underfloor heating/cooling. In "refreshing" mode, the heat pump is stopped if the humidity detected is high, avoiding the appearance of condensation.

HUMIDITY SENSOR (0 - 10 V) - PACKAGE HZ64

Collector for measuring the humidity in your installation in the flow part of the underfloor heating/cooling. In cooling mode, it is used to adapt the water flow temperature to avoid the appearance of condensation.

PCB + SENSOR FOR 1 MIXING VALVE - PACKAGE AD249

This is used to control a mixing valve with an electromechanical or electrothermal motor. The PCB is inserted into the DIEMATIC Evolution panel connected by pin connections. DIEMATIC Evolution can receive 1 "PCB + sensor" option, enabling it to control 1 additional mixing valve.

WIRED PROGRAMMABLE ROOM THERMOSTAT - PACKAGE AD337
WIRELESS PROGRAMMABLE ROOM THERMOSTAT 230 V - PACKAGE AD345
WIRELESS PROGRAMMABLE ROOM THERMOSTAT - PACKAGE AD338
NON-PROGRAMMABLE ROOM THERMOSTAT - PACKAGE AD140

Programmable thermostats provide weekly programming and regulation of the heating according to the various operating modes: "Automatic" depending on the programming, "Permanent" at a set temperature or "Holiday". The wireless version includes an emitter module which is fixed to the wall near the HPI-S.
The non-programmable thermostat is only used to regulate the room temperature based on the specific setpoint.

WIRED WIFI SMART TC° ROOM THERMOSTAT (R-BUS) - PACKAGE AD324
WIRELESS WIFI SMART TC° ROOM CONTROLLER (R-BUS) - PACKAGE AD341
WIRELESS WIFI SMART TC° ROOM CONTROLLER WITHOUT TRANSMITTER/ RECEIVER RADIO - PACKAGE AD342

This enables **remote control of the heating and domestic hot water** via an app which is free to download and **simple to use, with the option of providing a professional with access to your installation (with authorisation)**.
It is used to remote control the installation, including programmed times of operation and access to settings such as checking the energy consumption using data logs.
Smart TC° can also be used as a standard thermostat without using WiFi or any other app, although you are recommended to keep it connected to the Internet to benefit from the latest updates.
AD342 wireless SMART TC° room controller can be used to add a second or third circuit if there is already a AD341 on the first circuit with emitter/transmitter.

« ESTIMATE ENERGY CONSUMPTION » FEATURE

The control system on our indoor modules includes an "Estimate energy consumption" feature. Using parameters such as the performance of the system(s) (according to the weather conditions) and the type of energy sources being used, the control system calculates the energy consumption for each operating mode (DHW, heating, cooling). This estimate is shown on the screen of the control system.
This thermal energy metering is performed automatically by the using the standard integrated equipment.
For the metering of electrical energy, an impulse meter must be added and connected to the main board so that the information on electrical consumption are also shown on the display

«HYBRID» FEATURE

The hybrid feature incorporated into the control system of the indoor module is used to manage solutions which combine a heat pump (partially using renewable energy) and a low-temperature boiler or condensing boiler (oil-fired or gas) which operate alone or simultaneously depending on the weather conditions and the heating requirements.

The hybrid feature serves to meet the needs of the installation by always optimising energy consumption between gas, oil and electricity, and it does so by:
- Either using the cheapest energy source (to minimise heating costs).
- Or using the one with the lowest primary energy consumption based on sustainable management.

The «energy tariff» or «primary energy coefficient» values can be changed by adjusting the control system parameters.
This control coefficient mode also offers the following advantages:
- Reduction in the heat pump output to minimise electricity bills.
- Heating and DHW requirements are fully covered by the heat pump + boiler system.
- In the existing home, energy savings are higher compared to using a boiler alone, the installed boiler's CO_2 emissions are reduced, and connection is possible without changing the existing heat emitters, and no need to use a very high temperature.

PRIMARY ENERGY

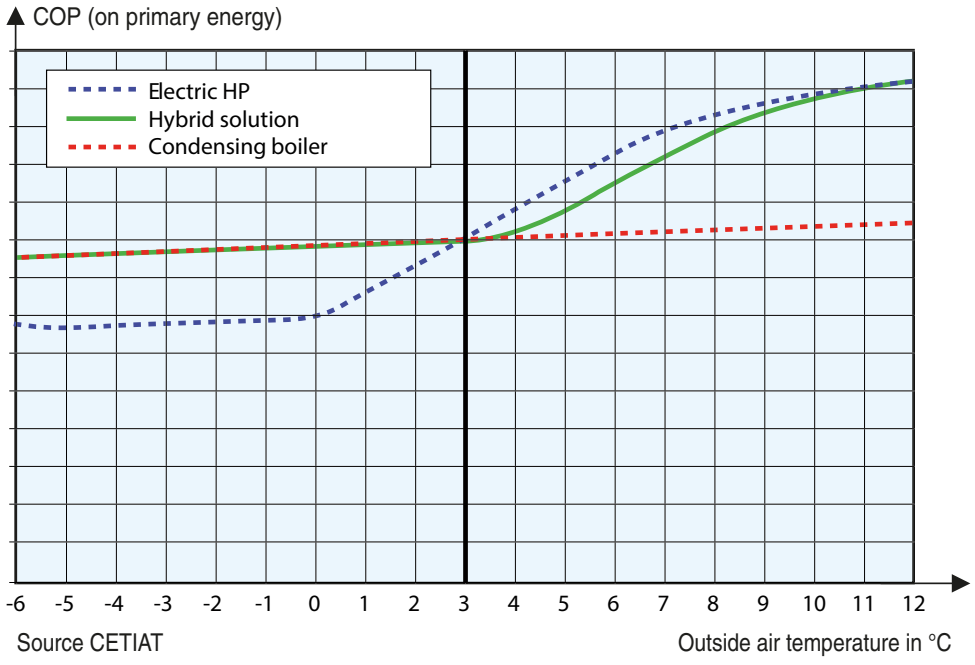
Using the lighting, domestic hot water and control system involves consuming energy (oil, wood, gas, electricity). This energy that is finally consumed is not always available in the same state as in nature (e.g. electricity) and sometimes needs to be transformed. Primary energy includes the energy used to transform and transport it. Primary energy is measured using the **"primary energy coefficient"**, which represents the amount of primary energy needed to obtain a unit of energy. In the case of electricity, the coefficient is approximately 2.4 (*), which means that to obtain 1 kWh of electrical energy, primary energy consumption is 2.4 kWh. For natural gas and oil, the coefficient is approximately 1.2.
(*) Electricity conventionally produced by the state

PERFORMANCE LEVELS OF A "HYBRID" SOLUTION

The graph below shows a comparison of the performance (COP) in terms of primary energy (for heating and DHW production) of various solutions:
- The hybrid solution: combination of a heat pump and a condensing boiler (renewable energy, electrical energy and energy from gas or oil).
- The solution with a heat pump alone (renewable energy with an electrical backup).
- The solution with a condensing boiler alone (energy from gas or oil).

For an outside air temperature below the tipping point, the hybrid solution improves the performance (primary energy COP) of the system compared to using a heat pump alone.
Moreover, for an outside air temperature above the tipping point, the hybrid solution offers superior performance compared to using a condensing boiler alone.

comparison of the primary energy performance levels of an electric heat pump, a condensing boiler and a hybrid solution



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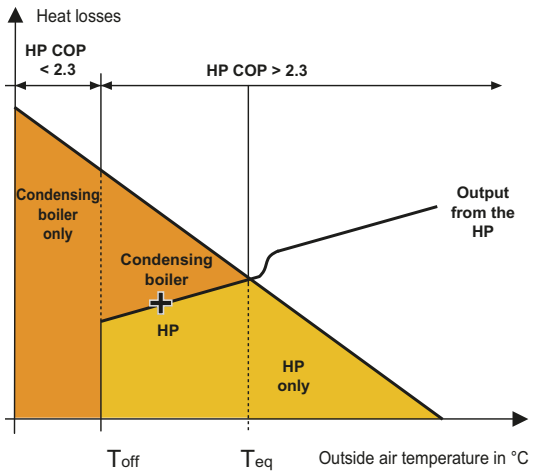
EXAMPLES OF HYBRID SOLUTIONS

EXAMPLE OF A HYBRID SOLUTION ACCORDING TO THE PRIMARY ENERGY CO-EFFICIENT

The graph opposite shows the different hybrid solutions according to the outside air temperature and the primary energy consumption.
When the COP of the heat pump > 2.3 and the Tair > Tbal only the heat pump will be used. For Tstop < Tair < Tbal, the control system will manage the heat pump in combination with the boiler. When the COP of the heat pump < 2.3, the control system will only manage the boiler.
Therefore, for each configuration, it is the control system which decides which generator or combination of generators will be used to meet the heating and DHW requirements.
This principle of management according to primary energy is especially valid for new builds.



PAC_F3007

EXAMPLE OF A HYBRID SOLUTION ACCORDING TO ENERGY COSTS

The graph opposite shows the operating principle of the hybrid feature according to the outside air temperature and energy costs.

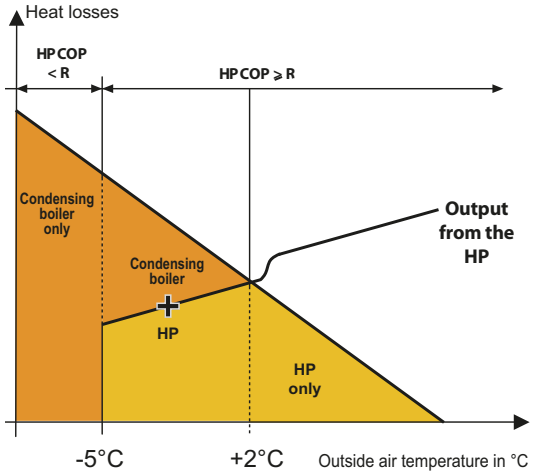
To calculate the energy cost ratio, R:

$$R = \frac{\text{Cost of electricity (€/kWh)}}{\text{Cost of gas (€/kWh)}} = 0.20/0.07 = 2.9$$

(the energy cost takes into account the annual tariff)
The coefficient R (the calculated energy cost ratio) and the outside air temperature are the parameters which the control system uses to define the various operating modes. In the example opposite:

- The heat pump is a HPI-M 11 MR model paired with a natural-gas-fired condensing boiler.
- The generators are installed in a 130-m² house.

When the heat pump COP > 3 and Tair > +2°C, the control system only manages the heat pump to meet the heating and DHW production requirements.
When the heat pump COP > 3 and -5°C < Tair < +2°C, the control system manages the heat pump in combination with the boiler. When the COP of the heat pump < 3, the control system will only manage the boiler.
Therefore, for each configuration, it is the control system which decides which generator or combination of generators will be used to meet the requirements.



PAC_F0301

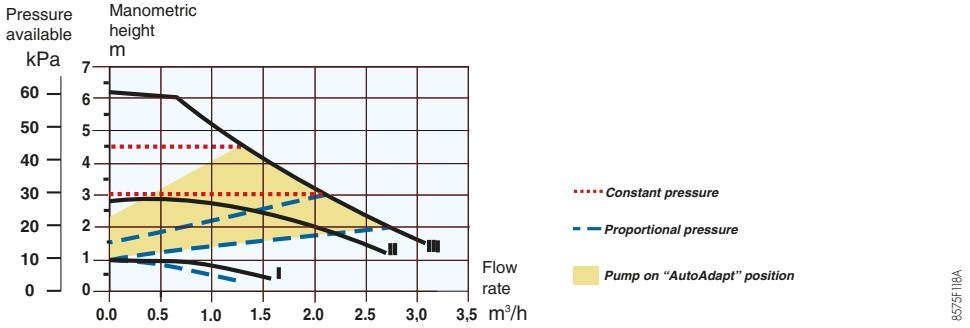
NB: Values given as an example

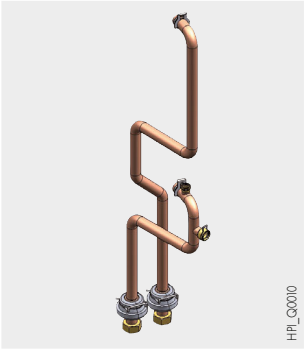
HYDRAULIC MODULE OPTIONS

INTERNAL 3-WAY VALVE KIT (WITH ENGINE AND FLOW SENSOR) - PACKAGE HK21

Allows the connection of a circuit with mixing valve.
This kit will be integrated under the casing of the MIT-M, includes the sensor.

specifications of the pump in the 3-way valve kit

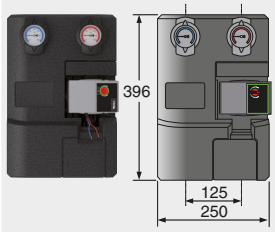




ADAPTER KIT FOR EXTERNAL 3-WAY VALVE - PACKAGE HK22

Allows the connection of a circuit with mixing valve outside the MIT-M.

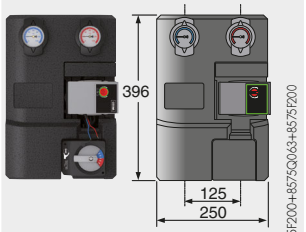
EA143



HYDRAULIC MODULE FOR 1 DIRECT CIRCUIT - PACKAGE EA143
(with a high performance energy pump, EEI ‹ 0.23)

Fully assembled, insulated and tested; fitted with an electronic pump, thermometers built into the gate valves, and a non return valve built into the return valve.

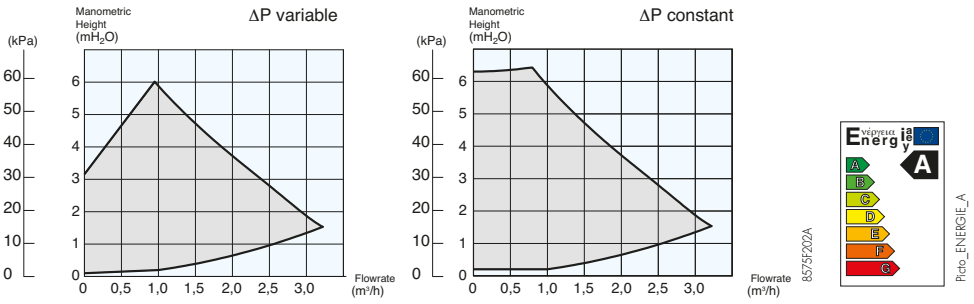
EA144

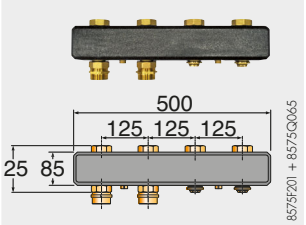


HYDRAULIC MODULE FOR 1 CIRCUIT WITH VALVE - PACKAGE EA144
(with a high performance energy pump, EEI ‹ 0.23)

Fully assembled, insulated and tested, fitted with an electronic pump, a motorized 3-way mixing valve, thermometers built into the gate valves and a non-return valve built into the return valve.

specifications heating circulating pump
(WILO-YONOS PARA RS 25/6 fitted to the module EA143 and EA144)





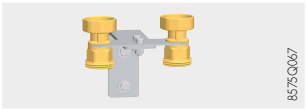
INSULATED COLLECTOR FOR 2 OR 3 MODULES - PACKAGE EA140

With an installation with 2 or 3 circuits with modules EA143/144.

OPTIONAL EQUIPMENT

HPI-M

HYDRAULIC MODULE OPTIONS



INSULATED COLLECTOR FOR 1 HYDRAULIC MODULE - PACKAGE EA142

This console allows secure one hydraulic module for one direct circuit or circuit with mixing valve on the wall.
Is used only when one of the two hydraulic modules is mounted. It includes two brass male / female connectors.

SET OF 2 WALLS CONSOLES FOR COLLECTOR - PACKAGE EA141

These consoles are used to fix the collector to the wall.

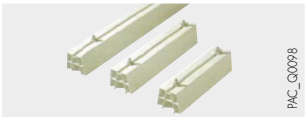
HYDRAULIC CONNECTION KIT (LENGTH 1 m) - EH19

Kit of two types of insulated hydraulic hoses with a length of 1 meter.

OUTDOOR UNIT OPTIONS

RUBBER SUPPORT FOR FLOOR-STANDING ASSEMBLY (600 mm) - PACKAGE EH879

A resistant rubber support, for installing the outdoor unit on the ground, compatible with all outdoor units



SUPPORT FOR FLOOR-STANDING INSTALLATION OF THE HPI-M (OUTDOOR UNIT) - PACKAGE EH112

Durable, highly resistant PVC support, for installing the outdoor unit on the ground. Bolts, washers and nuts are included for quick and easy assembly.

INSULATION KITS FOR AIR CONDITIONING USING FAN COIL UNITS

INSULATION SET FOR AIR CONDITIONING MODE MIT-M - PACKAGE EH811

INSULATION SET IN AIR-CONDITIONING MODE FOR INTERNAL 3-WAY VALVE KIT (HK21) - PACKAGE HK25

DHW PREPARATION

HEATING/DHW REVERSAL VALVE - PACKAGE EH812

This kit includes the motorised reversal valve with connector for connection to the DIEMATIC Evolution control panel and a connector. It enables connection of the MIT-M to an independent DHW tank (BPB/BLC… for example).

DHW CALORIFIER:
- BPB 150 TO 300 - PACKAGE EC609 TO 611
- BEPC 300 - PACKAGE ER615

In order to optimize domestic hot water performance, we recommend the following HP/DHW tank combinations:

MODELS	CAPACITY (l)	HPI-M 6 MR	HPI-M 8 MR	HPI-M 11 MR/TR
BPB 150	150	●	●	●
BPB 200	200	●	●	●
BPB 300	300	○	○	●
BEPC 300	300	●	●	●

● recommended association ○ not recommended association

An example of an installation combining a heat pump and a BPB DHW tank is shown on page 23.

HP/DHW TANK HYDRAULIC CONNECTION PACK - PACKAGE EH149

This pack, comprising 2 ribbed, insulated stainless steel pipes, is used to connect the MIT-M iSystem to a DHW tank BPB (length: 1250 mm).

OPTIONAL EQUIPMENT

OTHER ACCESSORIES


PAC_Q0021

BUFFER TANK B 80 T - PACKAGE EH85

The B 80 T tank is used to limit operation of the compressor in short cycles and to provide a reserve for the defrosting phase on reversible Air/Water heat pumps.
It is also recommended for all heat pumps connected to installations in which the water volume is less than 5 l/kW in heating output.
EXEMPLE: Heat pump output = 10 kW
Min. volume in the installation: 50 litres
Dimensions of buffer tank:: H 850 x L 440 x P 450 mm


8962Q024

BUFFER TANK B 150 T - PACKAGE EH60

The B 150 T tank is used to limit operation of the compressor in short cycles and to provide a reserve for the defrosting phase on reversible Air/Water heat pumps.
It is also recommended for all heat pumps connected to installations in which the water volume is less than 5 l/kW in heating output.

Dimensions of buffer tank: H 982 x Ø 600 mm

TF1 + raccords Fernox

FERNOX TF1 FILTER - PACKAGE EH896


PAC_Q5005

DIFFERENTIAL BY-PASS VALVE - PACKAGE HK150

This differential by-pass valve has to be installed on circuits equipped with thermostatic valves, in order to ensure a minimum flow rate in the MIT-M.


HPIS_Q0028

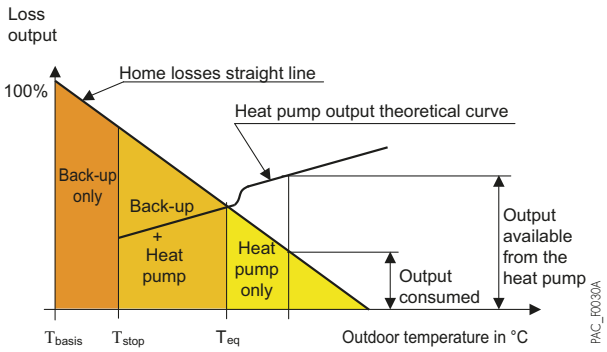
AUTOFILL SET - PACKAGE EH726

Allows the heating water to be refilled automatically.

SIZING AN INSTALLATION
WITH A **HEAT PUMP**

SIZING AIR-TO-WATER HEAT PUMPS

Air-to-water heat pumps alone cannot compensate for the heat losses of a home, as their output is reduced when the outside temperature drops, and they stop working at a certain temperature, known as the «stop temperature». For the HPI-M range, this temperature is - 20°C. Therefore, an electrical backup via an immersion heater or a hydraulic backup via a boiler is necessary. The balance temperature corresponds to the outside temperature at which the heat pump's output is equal to the losses.



TO OPTIMISE SIZING, IT IS RECOMMENDED TO APPLY THE FOLLOWING RULES:

- 70% of losses ≤ Heat pump output at T_o ≤ 100% of losses where $T_o = T_{base}$ if $T_{stop} < T_{base}$ and T_o = stop otherwise
- Heat pump output at T_{base} + Backup power = 120% of losses

T_{base} = Base outside temperature,
T_{bal} = Balance temperature,
T_{stop} = Stop temperature (See tables on page 5).

If these sizing rules are followed, it is possible to achieve coverage rates of 80 to over 90%, depending on the case.

SIZING AN INSTALLATION
WITH A **HEAT PUMP**

SELECTION TABLE

These tables allow a simplified definition of the HP power to be installed.

• SINGLE-PHASE HPI-M FOR FLOW AT 35°C (UNDERFLOOR HEATING)

LOSSES (KW)	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AT T_{BASE}°C 0	6 MR + 2	6 MR + 2	6 MR + 2	6 MR + 2	6 MR + 2	6 MR + 4 or 8 MR + 2	8 MR + 2	8 MR + 4	8 MR + 6 or 11 MR + 2	11 MR + 4	11 MR+6	11 MR + 6	11 MR + 6	Boiler backup
-1													Boiler backup	
-2														
-3														
-4							8 MR + 4		11 MR + 4			Boiler backup		
-5														
-6														
-7								8 MR + 6		11 MR + 6				
-8														
-9														
-10								11 MR + 6	11 MR + 6	Boiler backup	Boiler backup			
-11					6 MR + 4	6 MR + 6 or 8 MR + 4	8 MR + 6							
-12														
-13														
-14														
-15														
-16														
-17														
-18														
-19				6 MR + 4										
-20														

• SINGLE-PHASE HPI-M FOR FLOW AT 55°C (MEDIUM-TEMPERATURE RADIATOR)

LOSSES (KW)	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AT T_{BASE}°C 0	6 MR + 2	6 MR + 2	6 MR + 2	6 MR + 4	6 MR + 4	8 MR + 2	8 MR + 4	8 MR + 4	11 MR + 4	11 MR + 4	11 MR+6	Boiler backup	Boiler backup	Boiler backup
-1														
-2														
-3														
-4														
-5					8 MR + 2					11 MR+6				
-6														
-7								8 MR + 6 ou 11 MR + 2	11 MR + 6		Boiler backup			
-8						8 MR + 4								
-9														
-10				8 MR + 2										
-11					Boiler backup	Boiler backup	Boiler backup	Boiler backup	Boiler backup	Boiler backup				
-12														
-13														
-14														
-15	6 MR + 4	6 MR + 4	6 MR + 6	8 MR + 6										
-16														
-17														
-18														
-19														
-20														

+..: minimum electrical or hydraulic backup required in kW

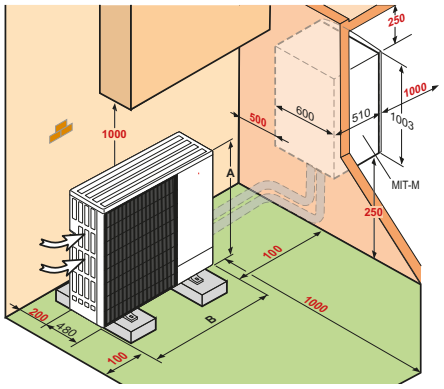
NOTES

- The losses must be calculated accurately and without a surplus power coefficient.
- + 2, + 4… corresponds to the minimum electrical or hydraulic backup required in kW
- The electrical backup is 6 kW max. and requires a single-phase power supply.
- In the case of installations with boiler replacement, it is possible to select a slightly undersized single-phase heat pump to not have to replace electrical cabinet.
- **At an outside temperature below the stop temperature of the heat pump (- 20°C or - 15°C) only the backups work.**

INSTALLING HPI-M HEAT PUMPS

- The outdoor units for HPI-M heat pumps should be installed close to the house, on a terrace, on the facade or in a garden. They are designed to operate in the rain but can also be installed under cover as long as there is sufficient ventilation.
- The outdoor unit must be installed protected from prevailing winds that may influence the installation's performance.
- We recommend positioning the unit above the average depth of snowfall in the region in which it is installed.
- The location of the outdoor unit should be carefully chosen in order for it to be compatible with environmental requirements: integration in the site, compliance with planning rules or co-ownership agreements.
- No obstacles must hinder the free circulation of air around the exchanger on intake and output. It is therefore necessary to allow clearance all around the appliance that will also facilitate connection, commissioning and maintenance operations (see installation diagrams below).

- **NB:** Before installing a MONO AWHP, it is important to remove the parts used to hold the compressor in place during transport. Refer to the outdoor unit manual.



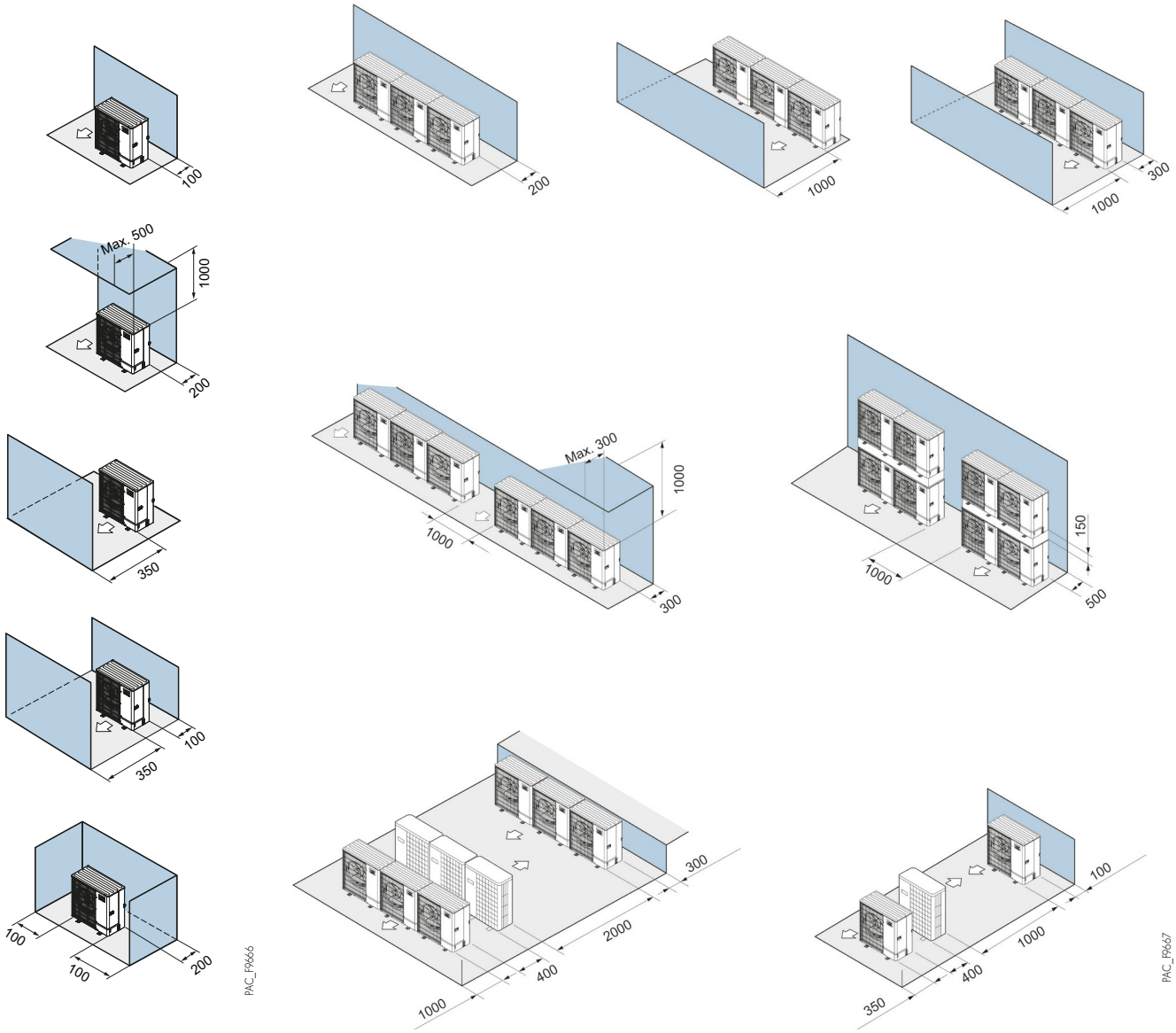
HPI_F0008A

HPI-M	6 / 8 / 11 MR
A (mm)	1 020
B (mm)	1 050

Dimensions in red (fat) = mimimum distances

OUTDOOR MODULE: MINIMUM DISTANCES FOR INSTALLATION (mm)

Heights MONO AWHP 6MR, 8MR and 11MR



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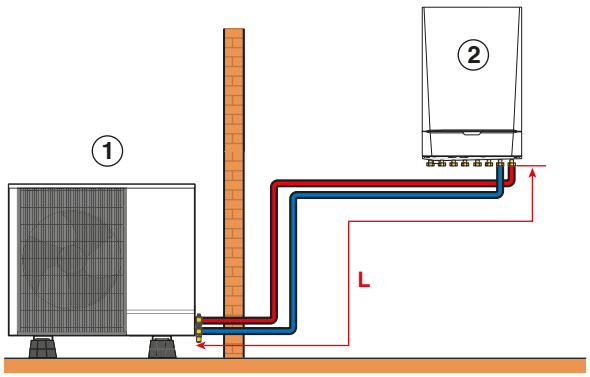
PAC_F9667

MAXIMUM DISTANCES FOR REFRIGERANT FLUID CHARGE

MAXIMUM CONNECTION DISTANCE (SEE DIAGRAM BELOW)

HPI-M	6/8/11 MR
Water output connection Ø	G1"
Water input connection Ø	G1"
L (m)	0 - 20

L: Minimum/maximum connection distance between the indoor module and the outdoor unit.
IMPORTANT: respect an internal diameter higher or equal to 20 mm



L: Max. connection distance
① Outdoor unit
② MIT-M indoor module

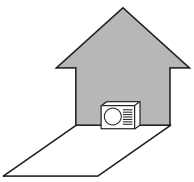
ACOUSTIC INTEGRATION OF HPI-M HEAT PUMPS

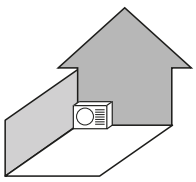
DEFINITIONS

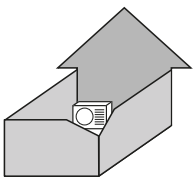
The acoustic performance levels of the outdoor units are defined by the following two values:
- **The sound power Lw expressed in dB[A]:** this characterises the sound emission capacity of the source, independently of its environment. It enables appliances to be compared.
- **The sound pressure Lp expressed in dB[A]:** this is the value perceived by the human ear, and depends on parameters such as the distance from the source, the size and the type of walls in the building.

RECOMMENDATIONS FOR ACOUSTIC INTEGRATION OF THE OUTDOOR MODULE

- Do not position the module close to bedrooms.
- Avoid placing it close to a terrace, and do not install the module opposite a wall. The increase in the noise level due to the installation configuration is shown in the diagrams below:

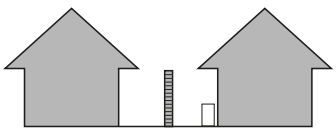

Module positioned against a wall: + 3 dB[A]

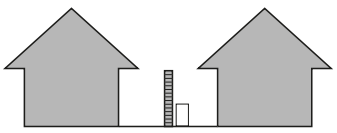

Module positioned in a corner: + 6 dB[A]

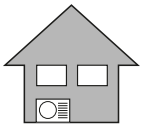

Module positioned in an inner courtyard: + 9 dB[A]

HPI_F0029

- The following configurations must not be used:


Ventilation directed towards the neighbouring property


Module positioned at the boundary of the property


Module positioned under a window

HPI_F0029

- The following recommendations should be followed to reduce environmental noise and the transmission of vibrations:
  - Installing the outdoor module on a metal frame or an inertia base. This base must be at least twice as heavy as the module and be independent of the building. Anti-vibration mounts will still need to be installed to reduce the transmission of vibrations.
  - The use of suitable sleeves at the points where the refrigerant connections are routed through the walls.
  - The use of flexible, anti-vibration materials for mountings.
  - The installation of vibration-damping devices such as loops or elbows on the refrigerant connections.

- It is also recommended to install an acoustic attenuation device, for example:
  - A wall dampener fitted on the wall behind the module.
  - A sound barrier: the surface of the barrier must be larger than the outdoor module and be positioned as close as possible to it, while allowing air to circulate freely. The barrier must be made from a suitable material such as acoustic bricks or concrete blocks covered with absorbent material. It is also possible to use natural barriers, such as banks of earth.

ELECTRICAL CONNECTION

The heat pumps must be electrically installed in accordance with the local norms, decrees and legal texts associated with them.
The cable will be carefully chosen according to the following information: maximum amperage on the outdoor unit (thermodynamic unit). See the table below, distance of the appliance from the original power supply, upstream protection, neutral operating conditions.

RECOMMENDATIONS ON CABLE CROSS-SECTIONS AND CIRCUIT BREAKERS TO BE INSTALLED

HEAT PUMP HPI-M	TYPE	OUTDOOR UNIT MONO AWHP			INDOOR MODULE MIT-M		
		MAX. AMPERAGE	OUTDOOR UNIT POWER SUPPLY		MIT-M INDOOR MODULE POWER SUPPLY		COMMUNICATION BUS
	...PHASE	A	CS (mm²)	CURVE C* CB	CS (mm²)	CURVE C CB	CS (mm²)
6 MR	Single	13	3 x 2,5	16 A	3 x 1,5	10 A	2 x 0,75
8 MR	Single	17	3 x 2,5	25 A	3 x 1,5	10 A	2 x 0,75
11 MR	Single	29,5	3 x 4	32 A	3 x 1,5	10 A	2 x 0,75

ELECTRICAL BACKUP		
MONO: 2 to 6 kW	SC	3 x 6 mm²
	DJ	Curve C, 32 A

KEY
CS =Cable cross-section in mm²
CB =Circuit breaker
* Differential protection

HYDRAULIC CONNECTION

The indoor MIT-M module on HPI-M heat pumps is fully equipped for the connection of a direct circuit (radiators or underfloor heating): a high energy efficiency circulating pump (EEI < 0.23), expansion vessel (10 litres), heating safety valve, pressure gauge, air vent…

IMPORTANT

It is mandatory to put in place the necessary means to ensure the safety of the installation. As the MIT-M module is not compatible with a glycol network, it must be used with pure water only.
The regulation will protect the installation against the risk of frost by maintaining a minimum temperature in the circuit when the installation is «frost-free» or when there is no demand.
In the rare cases of prolonged electrical failure and negative temperature, we recommend the installation of «Exogel» type thermal valves or equivalent to ensure the protection of the plate exchanger and the hydraulic connections. In order to ensure a rapid draining of the heating circuit, **we recommend the installation of 2 thermal valves at the inlet and outlet of the outdoor unit**.

REMINDER: the capsules of these valves should be replaced every 2 years during periodic maintenance.

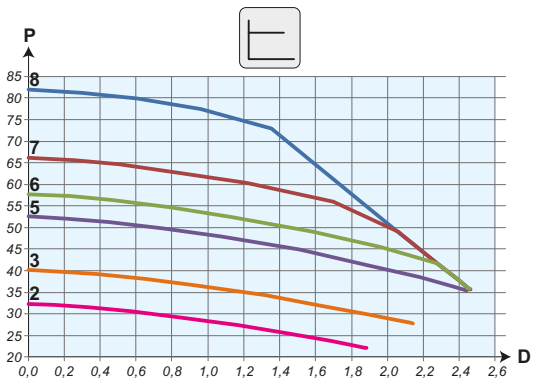
We do not recommend glycoling the installation for the following reasons:
- loss of performance;
- high pressure losses;
- high maintenance cost;
- harmful to the heating circuit (seals);
- circuit purging.

MANOMETRIC HEIGHT

MODEL	MONO AWHP	6 MR	8 MR	11 MR
Available manometric height at nominal flow rate (primary circuit)	kPa	75	65	50

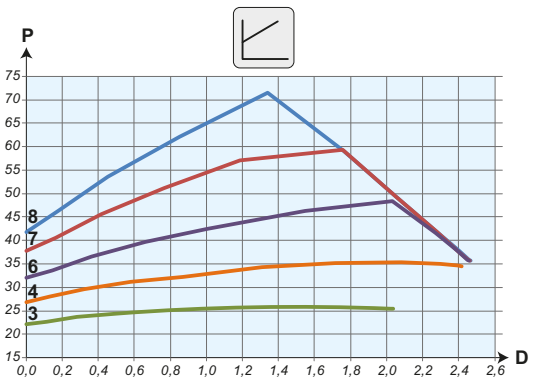
MANOMETRIC HEIGHT AVAILABLE FOR THE HEATING CIRCUIT

• CONSTANT



HPIS_F2005

• VARIABLE PRESSURE



HPIS_F2005

KEY
P Available pressure (kPa)
D Flow rate in m³/h
2 Speed 2
3 Speed 3
4 Speed 4
5 Speed 5
6 Speed 6
7 Speed 7
8 Speed 8

SIZING THE STORAGE TANK

- The volume of water contained in the heating installation must be capable of storing up all of the energy provided by the HP during its minimum running time. Therefore, the storage volume corresponds to the minimum water volume required from which we subtract the content of the network.
- The installation of a storage tank is recommended for installations in which the water volume is less than 5 l/kW in heating output on the HP (remember to factor in the 40 l in the MIT-M).
- Increasing the volume in an installation helps to limit short cycle running of the compressor (the greater the water volume the fewer the number of compressor start-ups and the longer its life span).

BUFFER VOLUME CALCULATION RULE

To estimate the buffer volume associated with an installation, the following 2 rules can be used:
- Installation with underfloor heating: 6 litres/kW
- Installation with radiators or fan coils: 5 litres/kW

minimum volume (litre) in a heating system depending on the HPI-M heat pump model

HP MODEL	INSTALLATION WITH UNDERFLOOR HEATING	INSTALLATION WITH RADIATORS	INSTALLATION WITH FAN COIL UNITS
HPI-M 6 MR	29	27	26
HPI-M 8 MR	57	47	44
HPI-M 11 MR	83	65	58

NB: Subtract the 40 litres built into the MIT-M.

volume of the expansion vessel

· underfloor heating installation: maximum temperature of 40 °C

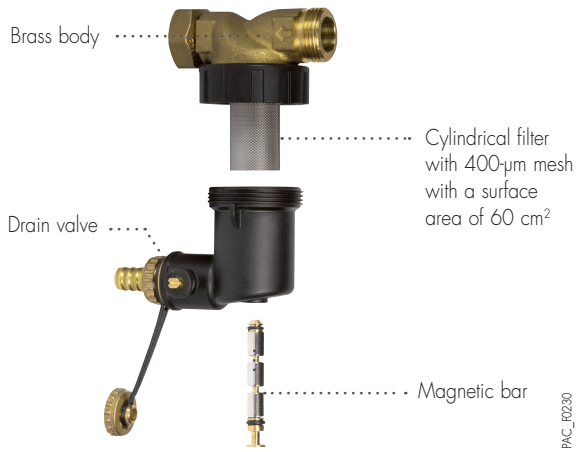
STATIC HEIGHT	CHARGING PRESSURE OF THE EXPANSION VESSEL	VOLUME OF THE EXPANSION VESSEL IN ACCORDANCE WITH THE VOLUME OF THE INSTALLATION (IN LITRES)							
		75	100	125	150	175	200	225	250
5 m	1 bar	7	7	8	8	8	9	9	9
10 m	1.3 bar	7	8	8	9	9	10	10	11
15 m	1.8 bar	10	10	11	11	12	13	13	14

· radiators installation: maximum temperature of 70 °C

STATIC HEIGHT	CHARGING PRESSURE OF THE EXPANSION VESSEL	VOLUME OF THE EXPANSION VESSEL IN ACCORDANCE WITH THE VOLUME OF THE INSTALLATION (IN LITRES)							
		75	100	125	150	175	200	225	250
5 m	1 bar	8	9	10	11	12	13	14	15
10 m	1.3 bar	9	11	12	13	14	15	16	17
15 m	1.8 bar	12	13	15	16	18	19	21	22

AIR-TO-WATER HEAT PUMPS

The magnetic sieve filter is a safe and long-lasting technical response to guarantee the correct operation of our heat pump solutions over time. **All our heat pumps and hybrid systems are factory equipped** with a brand new filter designed by Caleffi and specifically adapted to our products.
This filter consists of a sieve with a large collection surface, three times larger than a conventional sieve filter, and a magnetic bar with a very large capacity to retain all types of particles in the heating network. It also acts as a **mud pot** and has an **integrated drain valve** that can be operated with the back of the cap to remove the collected residues.



IMPORTANT

Fitting this filter does not preclude compliance with the norms which apply to installation and start-up.
The filter should be cleaned simply and quickly during each annual maintenance or in the case of insufficient flow. The specifications required for heating water indicated in the manual must be taken into account. Avoid any air infiltration in the hydraulic circuit; it is important to guarantee the correct size and filling pressure of the expansion vessel.

INSTALLATION EXAMPLES

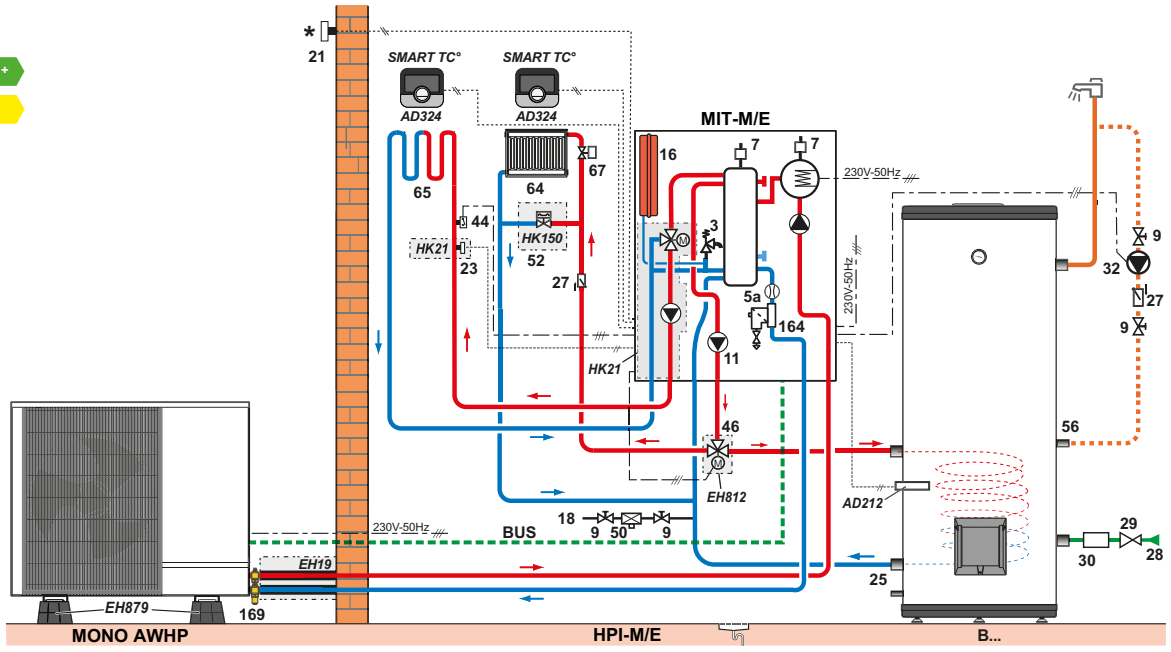
HPI-M HEAT PUMP WITH INDOOR UNIT MIT-M/E

- 1 direct circuit "radiators"
- 1 circuit with intregrated mixing valve (kit HK21)
- DHW production by independent tank

System

A++

A



HPIM_F2003

«Exogel» type thermal valves not supplied

* Element included in the delivery.

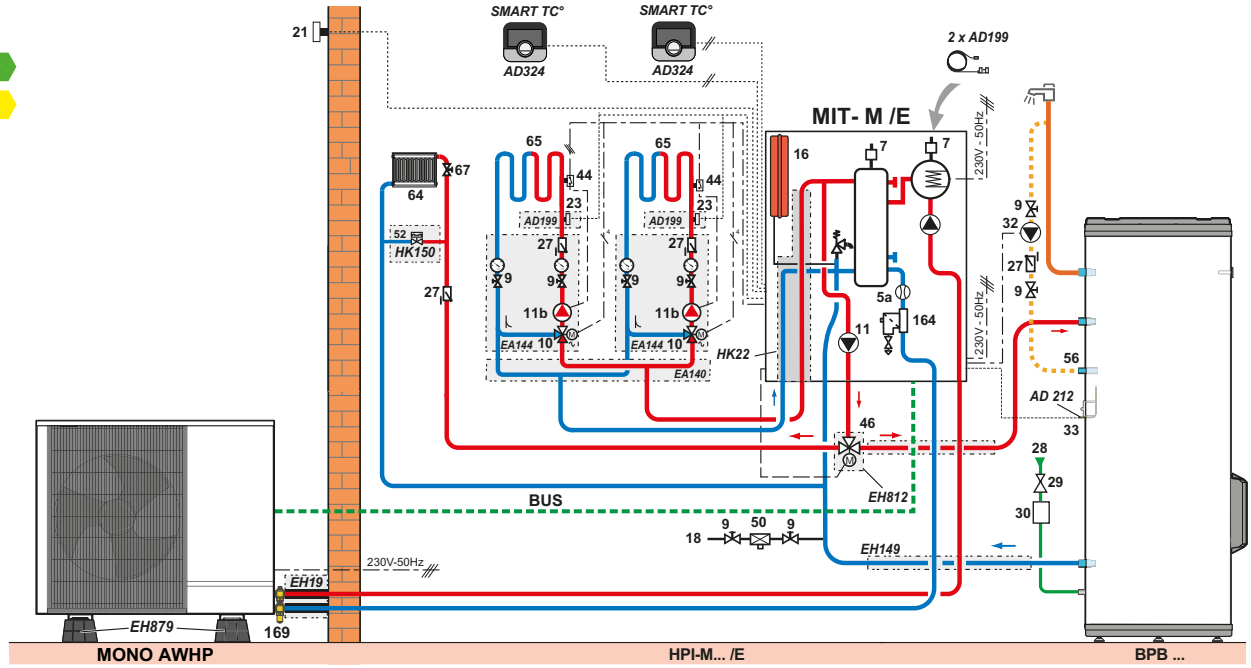
HPI-M HEAT PUMP WITH INDOOR UNIT MIT-M/E

- 1 direct circuit "radiators"
- 2 circuits with mixing valve
- DHW production by independent tank

System

A++

A



HPIM_F2005

«Exogel» type thermal valves not supplied

* Element included in the delivery.

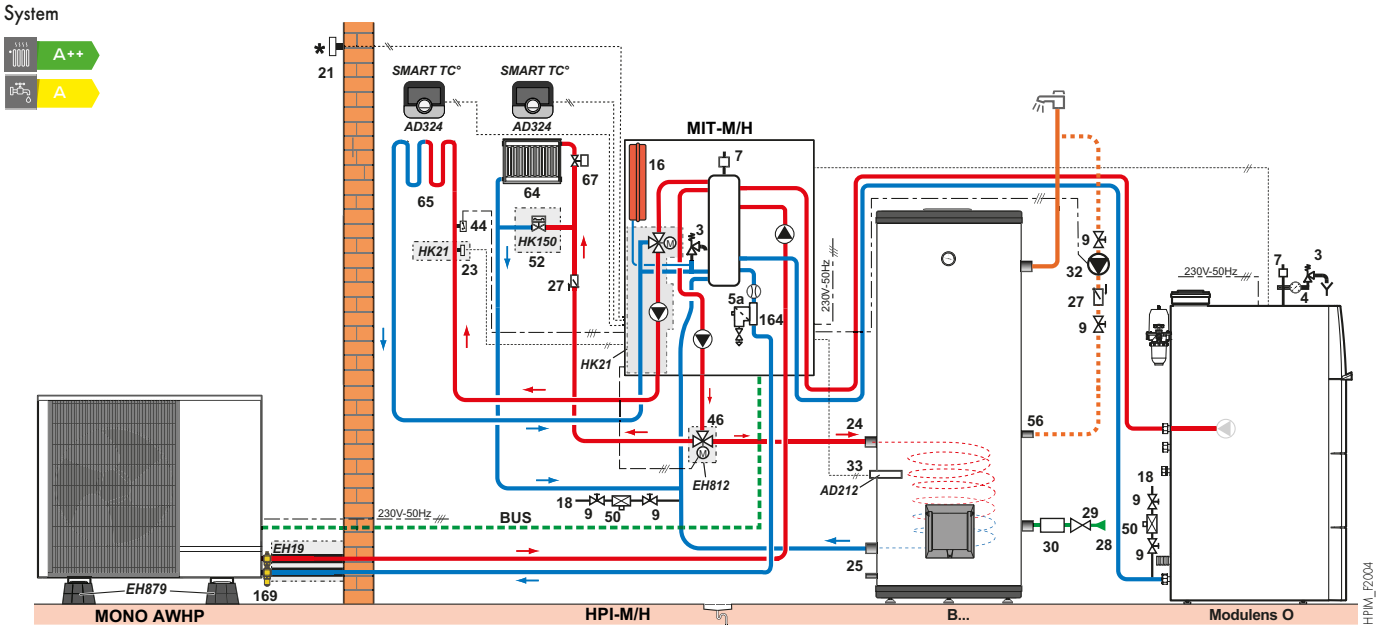
KEY: see page 26

INSTALLATION EXAMPLES

HPI-M HEAT PUMP WITH INDOOR UNIT MIT-M/H

- 1 direct circuit "radiators"
- 1 circuit with intregrated mixing valve (kit HK21)
- DHW production by independent tank
- 1 «heating-only» boiler as a backup

System

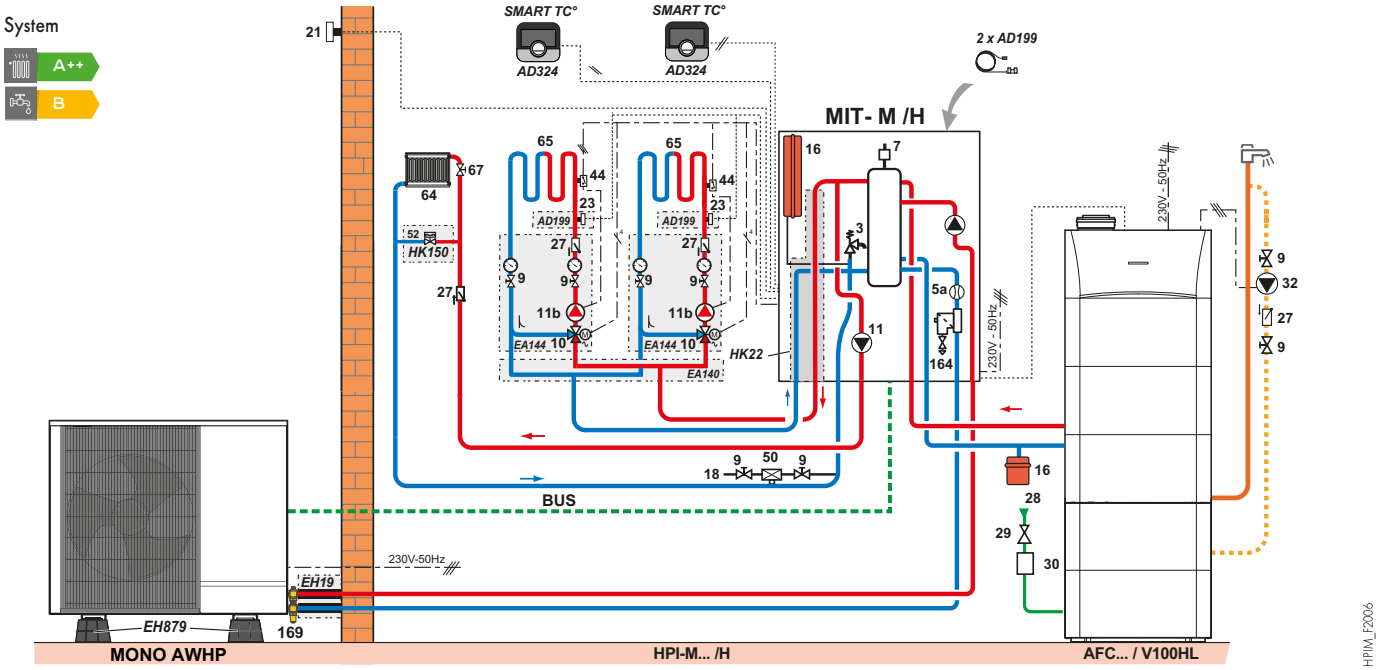


«Exogel» type thermal valves not supplied
* Element included in the delivery.

HPI-M HEAT PUMP WITH INDOOR UNIT MIT-M/H

- 1 direct circuit "radiators"
- 2 circuits with mixing valve
- 1 circuit with boiler backup and integrated DHW production

System



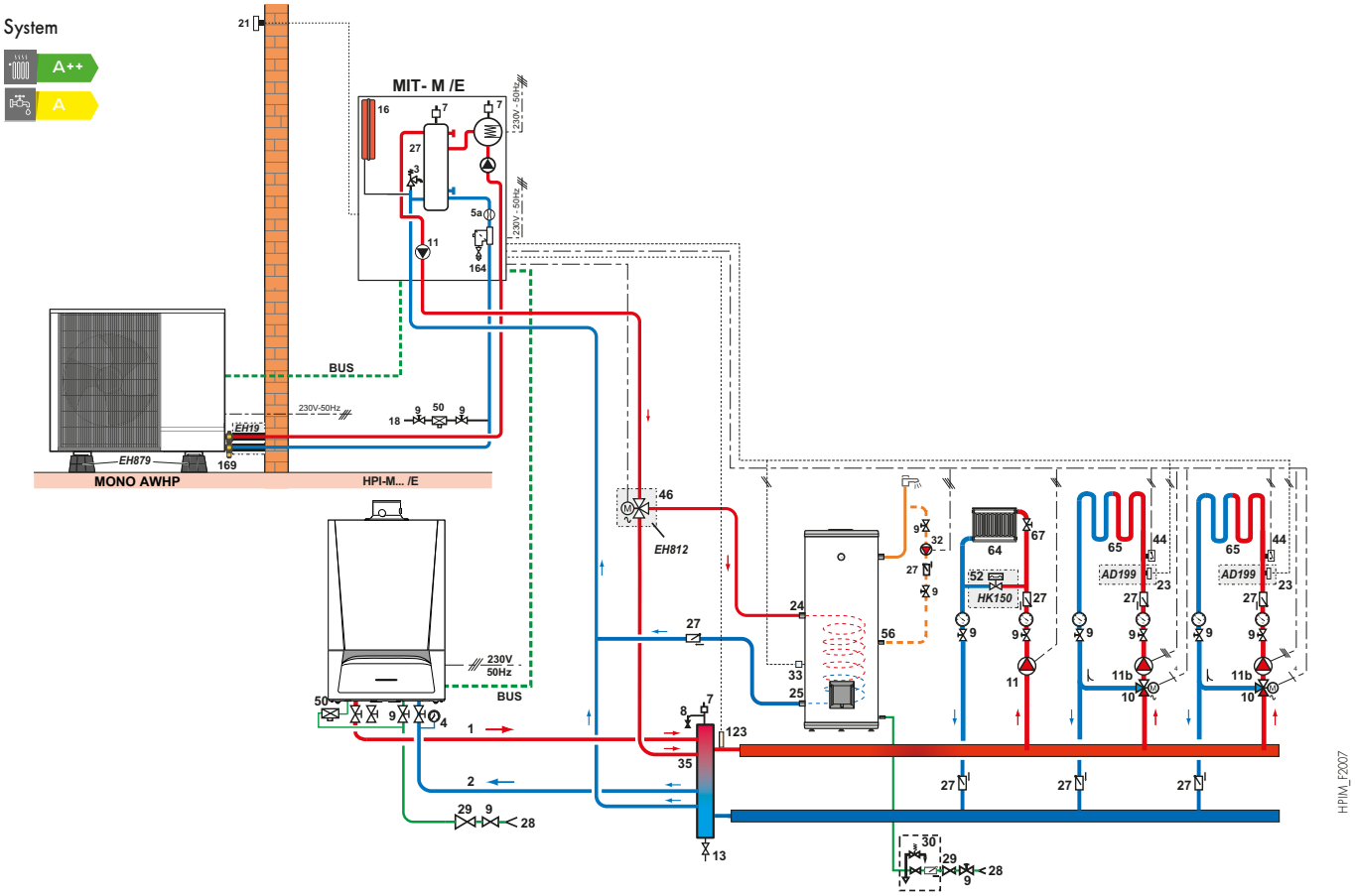
«Exogel» type thermal valves not supplied

KEY: see page 26

INSTALLATION EXAMPLES

CASCADE WITH A HPI-M HEAT PUMP (MIT-M/E INDOOR UNIT) AND AN EVODENS WALL-HUNG CONDENSING BOILER

- 1 direct circuit "radiators"
- 2 circuits with mixing valve
- DHW production by independent tank



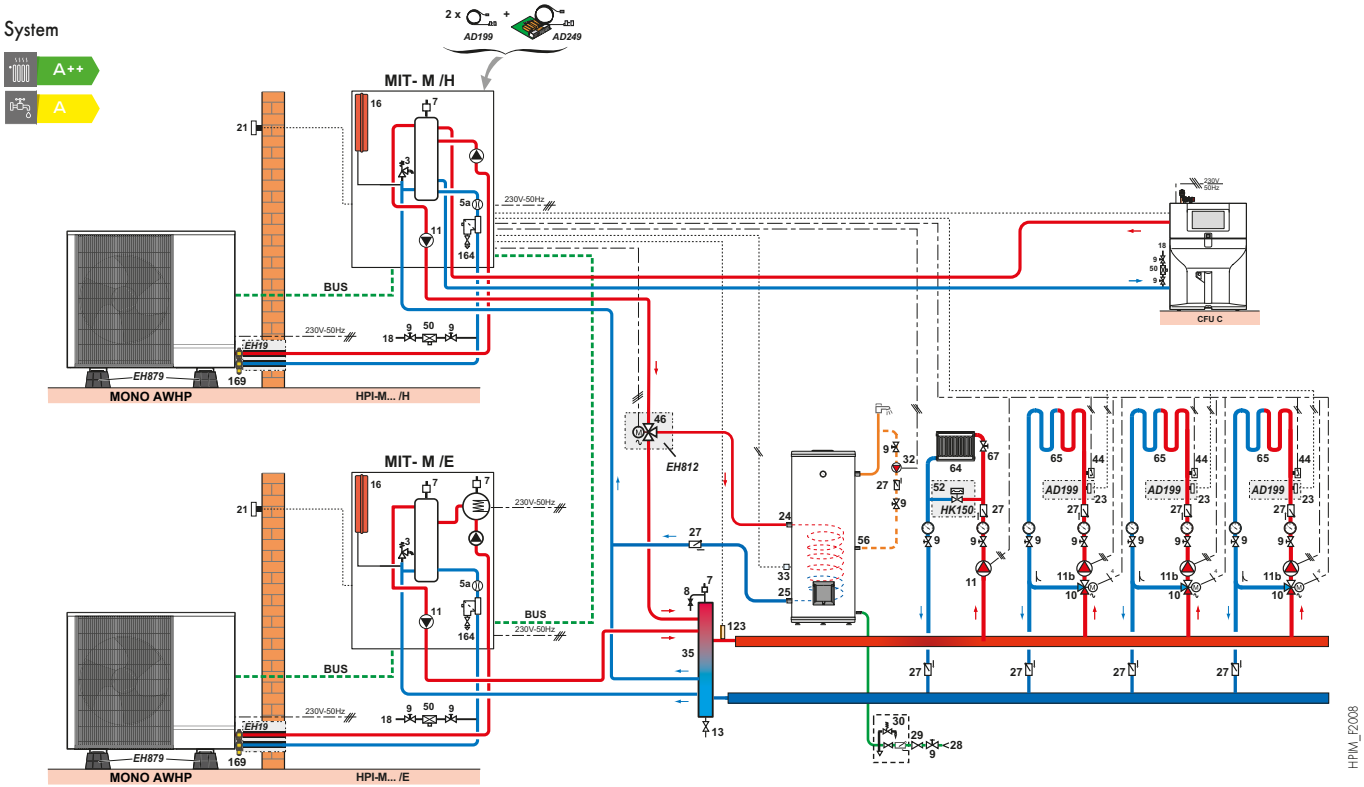
«Exogel» type thermal valves not supplied

KEY: see page 26

INSTALLATION EXAMPLES

2 HPI-M HEAT PUMPS WITH INDOOR UNIT MIT-M/E AND /H IN CASCADE (HEATING MODE ONLY) AND BACKUP BOILER

- 1 direct circuit "radiators"
- 3 circuits with mixing valve
- 1 circuit with boiler back-up
- DHW production by independent tank



«Exogel» type thermal valves not supplied

Connection of 2 and up to 8 HPI in cascade is only possible in heating mode.

KEY: see page 26

INSTALLATION EXAMPLES

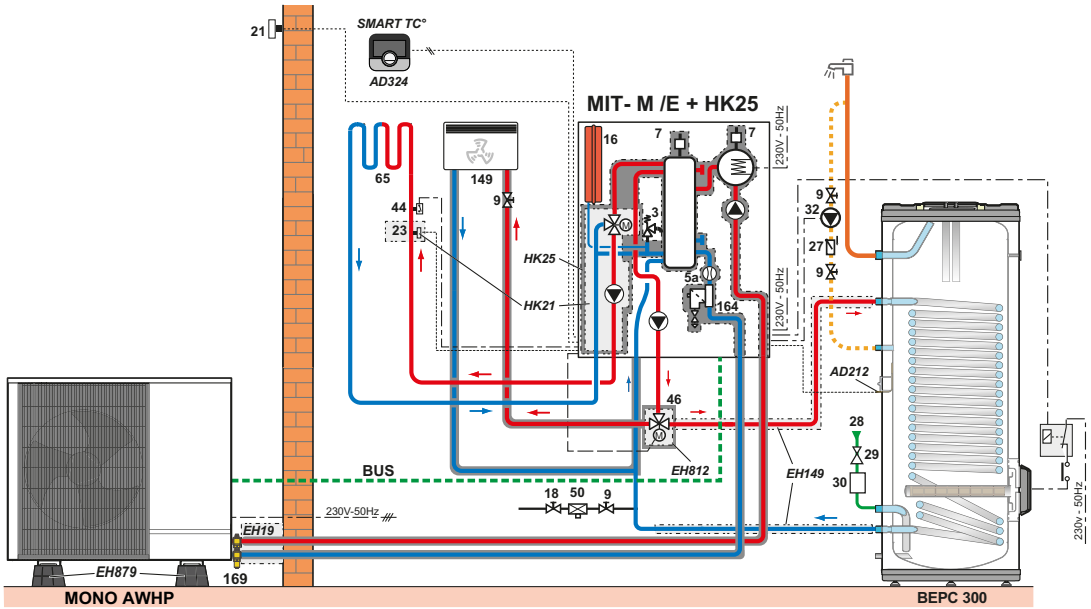
HPI-M HEAT PUMP WITH INDOOR UNIT MIT-M/E, AND INSULATION KIT HK25 AND EH811, ELECTRICAL BACK-UP

- 1 circuit with mixing valve
- 1 cooling circuit with fan coils (with kit HK21 and HK25)
- DHW production by independent calorifier BEPC 300

System

A++

A



HPIM_F2009

«Exogel» type thermal valves not supplied

KEY: see page 26

INSTALLATION EXAMPLES

KEY

3 3-bar safety valve
4 Manometer
5a Flowmeter
7 Automatic air vent
9 Shut-off valve
11 Heating pump
11b Heating accelerator for circuit with mixing valve
13 Flush valve
16 Expansion tank
18 Filling system
21 Outdoor temperature sensor
23 Outlet temperature sensor after mixing valve
26 Domestic water load pump
27 Non-return valve
28 Domestic cold water inlet
29 Pressure reducer
30 Sealed safety device calibrated to 7 bars
32 DHW loop pump (optional)
35 Low-loss header
44 65°C limiter thermostat with manual reset for underfloor heating
46 3-way directional valve with reversal motor
50 Disconnector
51 Thermostatic valve
52 Differential valve (only with module fitted with a 3-speed pump)
61 Thermometer
64 Direct heating circuit: radiators
65 Direct heating circuit: underfloor heating
67 Manual valve
81 Immersion heater
84 Stop valve with releasable non-return valve
85 Solar circuit pump (to be connected to the solar control system)
87 Safety valve calibrated and sealed to 6 bar
89 Container for heat-transporting fluid
109 Thermostatic mixing valve
112a Solar sensor probe
112b Solar tank sensor
114 Solar circuit drain valve (Caution: propylene glycol)
115 Thermostatic distribution valve per zone
117 Three-way reversal valves
123 Cascade flow sensor (to be connected to the slave boiler)
126 Solar control system
129 DUO Tubes
130 Manual air vent degasser (Airstop)
131 Battery of flat or tubular collectors
133 Interactive remote control
146 Fan coil
151 Motorised 4-way valve
164 Magnetic filter
169 Thermal valve type « Exogel »

NOTES

DE DIETRICH – HEAT PUMP MANUFACTURER SINCE 1981

Heat pump indoor units 100% manufactured in France.

The international heat pump Research & Development centre is based in the French city of Mertzwiller.
Since 2015, De Dietrich has owned the leading COFRAC accredited manufacturer's laboratory
for thermal and acoustic performance in Europe.

IMPORTANT RECOMMENDATIONS

In order to make the most of the performances of heat pumps for optimal comfort and to maximise their useful life, we recommend that you pay particular attention to their installation, commissioning and maintenance; to do this, abide by the various instructions that come with the appliances. In addition, the De Dietrich catalogue offers a commissioning service for heat pumps; we also strongly recommend that you take out a maintenance contract.

ECO SOLUTIONS
Eco-conception by De Dietrich

With De Dietrich ECO-SOLUTIONS, you can enjoy the latest generation of multi-energy products and systems which are more efficient and more economical, to guarantee your comfort and protect the environment. ECO-SOLUTIONS are the fruit of De Dietrich's extensive professional experience in the heating and domestic hot water segment.

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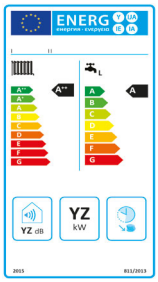

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