HMG_P

Reversible air/water heat pump

Cooling capacity 33 ÷ 130 kW – Heating capacity 36 ÷ 131 kW

- **R32 ecological refrigerant gas.**
- **Touch-screen control panel**
- **Easy and quick to install**
- **Reliability and compactness**
- **Hermetically sealed equipment**
- **Modularity**

DESCRIPTION

HMG_P the new outdoor reversible inverter heat pump system for producing chilled and heated water.
These units are designed to meet the plant engineering needs of residential or commercial contexts, or industrial applications.
HMG and HMG_P Are designed to meet the needs of both the new constructions market and the renovation market, replacing or working alongside conventional boilers.
They can be combined with low-temperature emission systems such as floor heating or fan coils.
They are formed of fully independent modules that can be linked together to create a modular system.
The structure and the panels are made of galvanized steel treated with polyester paint.
HMG_P comes supplied with the main hydraulic components needed, thereby facilitating the final installation and is supplied with Integrated hydronic kit

FEATURES

Operating limits

Operation from -20°C outside air temperature (winter) to 52°C (summer).
Production of hot water up to 50 °C.
For more information about the operating limits of these units, refer to the specific paragraph on this product data sheet.

Modularity

HMG_P unit can be installed in a modular system of reversible inverter heat pumps for producing hot and chilled water, with connectable base modules purposely designed to minimise the overall dimensions.

For HMG_P units, connection is only possible between units of the same capacity.
Modularity allows the installation of these units to be adapted to the real system development requirements, so the installed power can be increased over time in a simple and cost effective manner.
On the basis of these requirements, the user can choose either: **homogeneous modularity** or **sequential modularity**.

Homogeneous modularity

Made possible with the use of a control panel **TCP** (mandatory accessory) to be connected to the master unit of the system.
This type of modularity allows the modules to work with a homogeneous capacity control logic whilst still guaranteeing delay switch-on and switch-off to avoid power consumption peaks and intelligent defrosting (the simultaneous defrosting of up to 1/3 of the modules installed).
Up to 3 modules of equal capacity, can be linked together with this operating mode.

Sequential modularity

Made possible with the use of accessories **TCP** (mandatory accessory), **IC-2P, VMF-485LINK** e **VMF-E6.**
This type of modularity allows the HMG_P units to be added to the control system of the whole hydraulic/aeraulic system, so DHW can also be managed.
Unit switch-on and switch-off is managed in a sequential manner, according to a selected control logic (free regulation, regulation by load or regulation by temperature difference).
For more information about VMF system, refer to the dedicated documentation.
Up to 3 modules of equal capacity, can be linked together with this operating mode.

Main components

HMG_P

— DC brushless axial flow fans designed for aerodynamic optimisation, reducing the noise level whilst at the same time increasing the efficiency and air flow rate.
— Scroll inverter compressor
— Special coil with fin golden coating.
— High-efficiency plate heat exchanger (system side) for excellent reliability and a long lifespan.
— Electronic expansion valve.
— Fitted with a electrical anti-freeze heater in fan compartment, to avoid the formation of ice and encourage the drainage of condensate during heating operation.

Main hydraulic components

— Flow switch.
— Inverter pump.
— Expansion tank.
— Drain valve.
— Safety valve.
— Water filter supplied (mandatory installation).

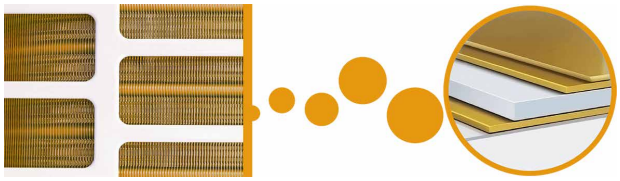
Regulation

Adjustment via **touch-screen control panel (TCP accessory compulsory)**::

— management of (up to) two auxiliary electric resistors (not supplied),
— **Quiet** function for reduced noise operation,
— climatic regulation function,
— unit anti-freeze protection at low temperatures,
— weekly programming in time periods,
— high and low pressure protection,
— smart compressor control, extending the lifespan of the unit and enhancing its reliability,
— alarm history.

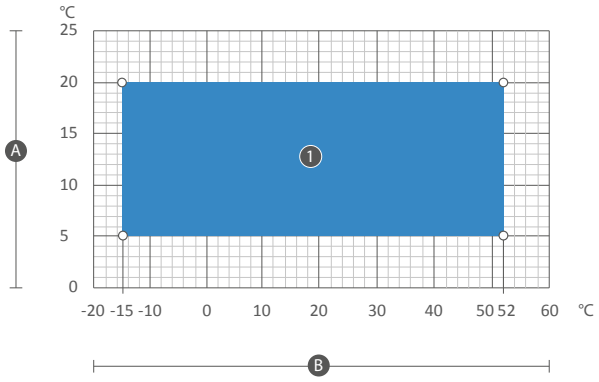
Special golden fin coil

Unlike normal batteries, this special golden epoxy coating silicon free is able to protect the heat exchanger against rust and corrosion, in areas where the air has a high salt content.



OPERATING LIMITS

Cooling mode



KEY

1 Cooling mode
A Water produced (°C)
B Outdoor air temperature

ACCESSORIES

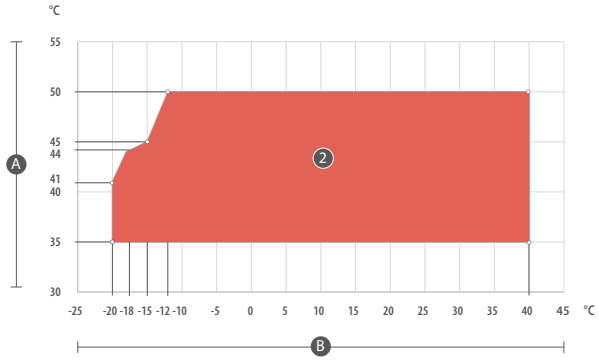
TCP: Touch-screen control panel. (Accessory compulsory).
IC-2P: Connector for communication via Mod Bus or VMF -485LINK. Accessory compulsory if combined with VMF-485LINK, or for third party supervision systems.
VMF-485LINK: Expansion to interface the unit with the VMF communication protocol, making it possible to manage it from the VMF-E5 or VMF-E6 supervisors.
VMF-E6: White flush-mounting panel with 4.3 inch colour touchscreen. For the centralised command/control of a complete hydronic/aeraulic system consisting of: fan coils (up to 64 fan coil zones formed of 1 master + max. 5 slaves), heat pumps (up to 4), MZC accessories (up to 5) for the management of radiant panels (using a suitable number of VMF-REB accessories, up to 64 radiant panels associated with the fan coil zones and up to 32 radiant panels associated with the zones served by MZC), the complete management of DHW production, control of the RAS heater and/or the boiler, management of digital I/Os, control of heat recovery units and VOC probes (up to 4).
LOGATW: Diagnostic tool for air-water heat pumps.
SGD: Electronic expansion that enables connecting to the photovoltaic system and heat pumps to accumulate heat in the DHW tank or in the heating system during the photovoltaic production phase and release it at times when heating demand is highest.

COMPATIBILITY WITH VMF SYSTEM

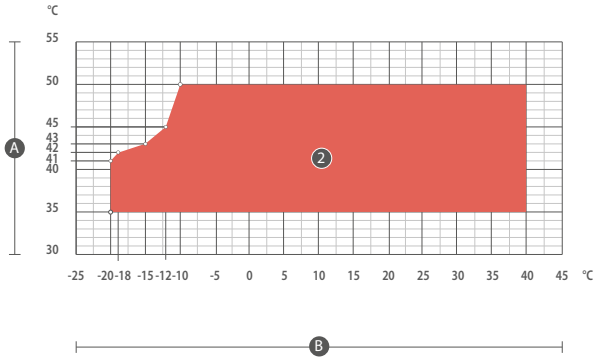
For more information about VMF system, refer to the dedicated documentation.

Heating mode range

HMG0350P - HMG0600P



HMG01000P - HMG1300P



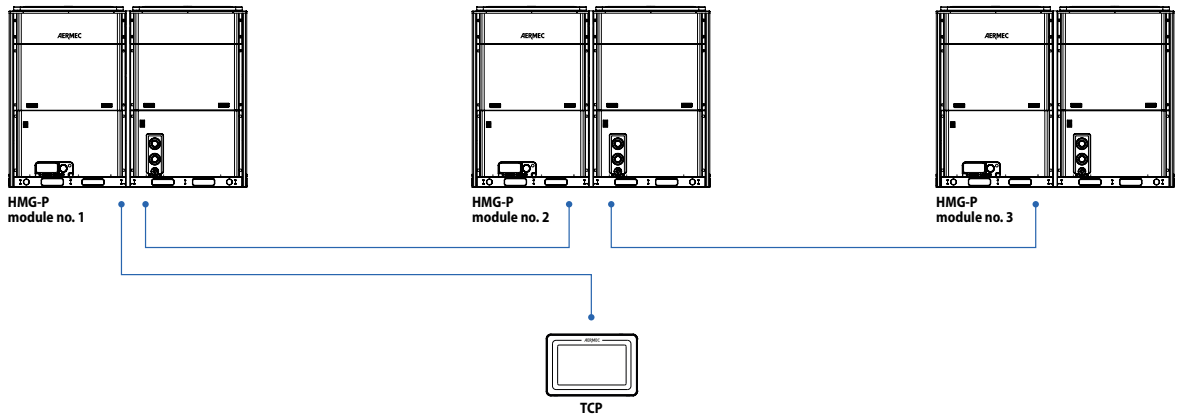
KEY

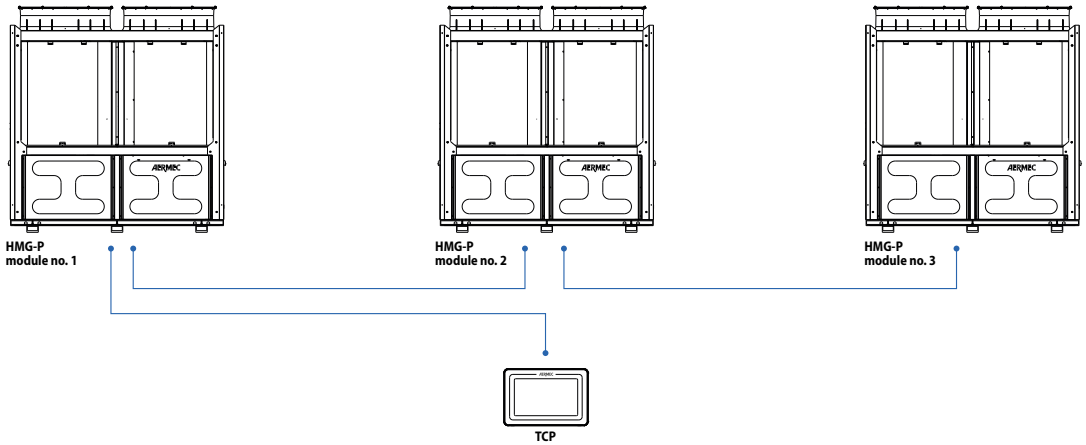
2 Heating mode range
A Water produced (°C)
B Outdoor air temperature

MODULARITY

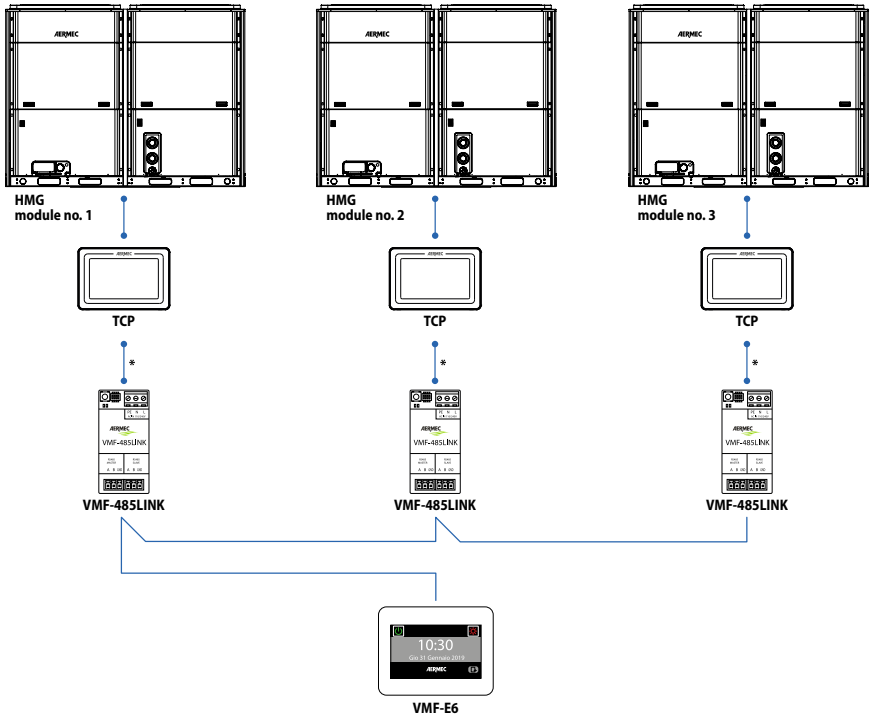
Connection is only possible between units of the same capacity.

Homogeneous modularity - connection diagram

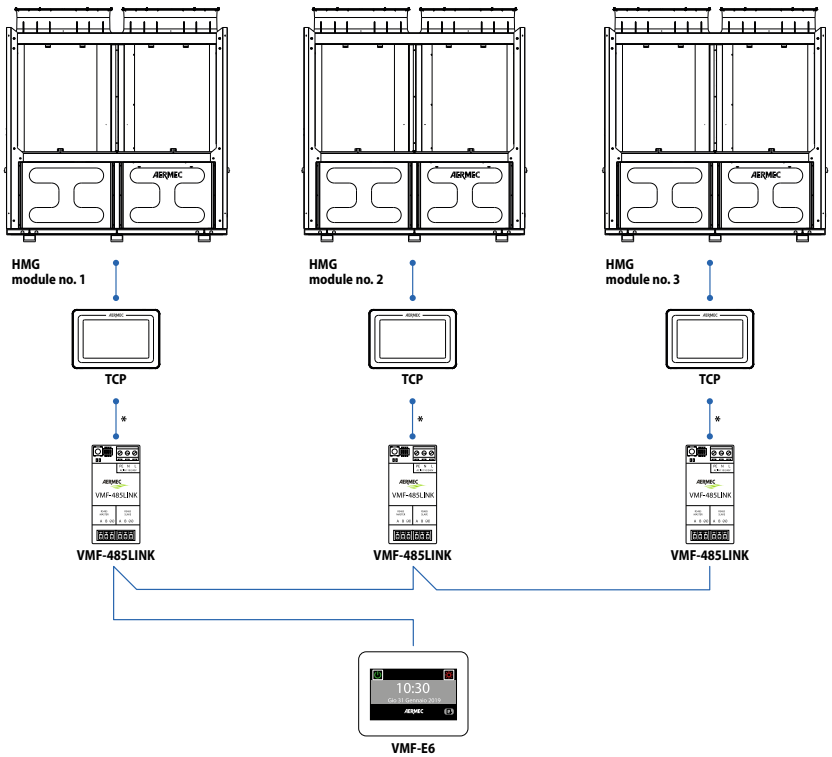




Sequential modularity - connection diagram



* Connection to be made with the aid of the accessory IC-2P.



* Connection to be made with the aid of the accessory IC-2P.

PERFORMANCE SPECIFICATIONS

		HMG0350P	HMG0600P	HMG1000P	HMG1300P
Cooling performance 12 °C / 7 °C (1)					
Cooling capacity	kW	33,00	60,00	100,00	130,00
Input power	kW	11,40	21,10	32,00	44,00
EER	W/W	2,89	2,84	3,12	2,95
Evaporator side water flow rate	l/h	5680	10320	17200	22360
Useful static pressure	kPa	203,00	210,00	116,50	66,15
Cooling total input current	A	18,7	33,2	51,3	65,8
Heating performance 40 °C / 45 °C (2)					
Heating capacity	kW	36,00	65,00	105,00	131,00
Input power	kW	10,90	19,70	30,20	41,60
COP	W/W	3,30	3,30	3,47	3,14
Condenser side water flow rate	l/h	6190	11180	17200	22360
Useful static pressure	kPa	180,00	200,00	116,50	66,15
Heating total input current	A	18,1	32,3	50,2	70,5
Cooling performance 23 °C / 18 °C (3)					
Cooling capacity	kW	32,80	64,00	130,00	150,00
Input power	kW	8,00	18,00	33,00	39,00
EER	W/W	4,10	3,57	3,93	3,84
Evaporator side water flow rate	l/h	5648	11015	17200	22360
Cooling total input current	A	13,3	28,4	53,3	63,5
Heating performance 30 °C / 35 °C (4)					
Heating capacity	kW	33,50	61,60	100,00	126,00
Input power	kW	8,40	16,00	23,90	33,00
COP	W/W	4,00	3,86	3,94	3,85
Condenser side water flow rate	l/h	5729	10650	17200	22360
Heating total input current	A	13,8	25,4	38,0	50,2

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C
(2) Data EN 14511:2022; System side water heat exchanger 40 °C / 45 °C; Outside air 7 °C d.b. / 6 °C w.b.
(3) Data EN 14511:2022; System side water heat exchanger 23 °C/ 18 °C; External air 35 °C
(4) Data EN 14511:2022; System side water heat exchanger 30 °C / 35 °C; External air 7 °C d.b. / 6 °C w.b.

ENERGY DATA

		HMG0350P	HMG0600P	HMG1000P	HMG1300P
Cooling performance 12 °C / 7 °C (1)					
SEER	W/W	4,65	4,74	4,90	5,03
ηsc	%	183,00	186,60	193,00	198,60
Heating performance 30 °C / 35 °C (2)					
SCOP	W/W	4,00	4,01	4,12	4,17
ηsc	%	157,00	157,50	161,90	163,90
P_design	kW	24,0	52,0	74,0	90,0
Efficiency energy class		A++	A++	-	-

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C
(2) Data EN 14511:2022; System side water heat exchanger 30 °C / 35 °C; External air 7 °C d.b. / 6 °C w.b.

ELECTRIC DATA

		HMG0350P	HMG0600P	HMG1000P	HMG1300P
Electric data					
Rated power input (1)	kW	13,40	25,60	42,38	52,75
Power supply					
Power supply		380-415V 3N ~ 50Hz	380-415V 3N ~ 50Hz	380-415V 3N ~ 50Hz	380-415V 3N ~ 50Hz

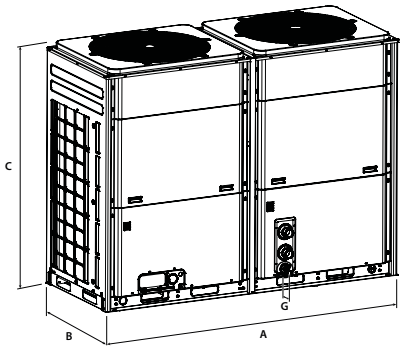
(1) The rated power input (rated current input) is the maximum input electrical power (maximum current input) from the system, in accordance with the Standards EN 60335-1 and EN 60335-2-40.

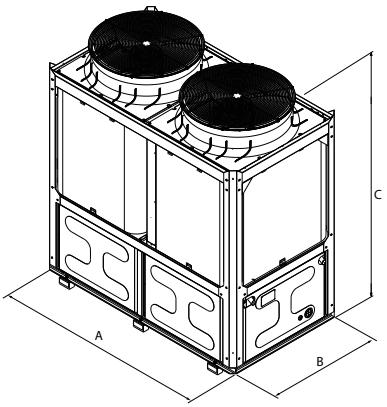
GENERAL TECHNICAL DATA

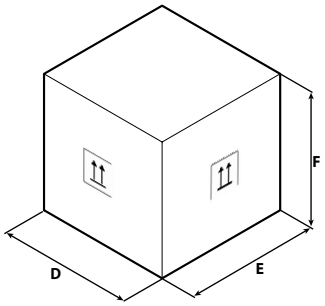
		HMG0350P	HMG0600P	HMG1000P	HMG1300P
Compressor					
Type	type	Inverter rotary	Inverter rotary	Scroll inverter	Scroll inverter
Number	no.	1	2	2	2
Circuits	no.	1	2	2	2
Refrigerant	type	R32	R32	R32	R32
Compressor					
Refrigerant load circuit 1	kg	5,20	5,35	10,00	10,00
Refrigerant load circuit 2	kg	-	5,35	10,00	10,00
System side heat exchanger					
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate
Quantity	no.	1	1	1	1
Minimum water flow rate	l/h	3600	6700	9700	9700
Maximum water flow rate	l/h	8500	14000	29100	29100
Connections	Ø	1"1/4	2"	DN65	DN65
Fan					
Type	type	Axial	Axial	Axial	Axial
Fan motor	type	Inverter	Inverter	Inverter	Inverter
Number	no.	2	2	2	2
Total maximum air flow rate	m^3/h	12600	24000	45000	45000
Sound data measured in cold operation					
Sound power level	dB(A)	81,0	86,0	78,0	87,0
Sound data measured in hot operation					
Sound power level	dB(A)	66,0	71,0	70,0	72,0

Sound power level in cold operation - According to EN12102-1: Outdoor air 35°C, Utility side exchanger water 7°C, at full load.
Sound power level in hot operation - According to EN12102-1: Outdoor air 7°C, Utility side exchanger water 35°C, partial load.

DIMENSIONS







Carton Box Example

		HMG0350P	HMG0600P	HMG1000P	HMG1300P
Dimensions and weights					
A	mm	1340	2200	2235	2235
B	mm	765	880	1283	1283
C	mm	1605	1675	2355	2355
G	mm	37	57	-	-
D	mm	1775	1867	2285	2285
E	mm	1420	2267	1305	1305
F	mm	905	1030	2355	2355
Net weight	kg	323,0	609,0	1016,0	1016,0
Weight for transport	kg	340,0	645,0	1030,0	1030,0

G: tap protrusion

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