



OPEN SHP MEM PLUS

ELECTRICAL SOLUTION FOR NEW HOMES

OPEN SHP MEM PLUS



MODELS/ CONFIGURATION	30 l puffer/disconnector + system circulator pump	Additional 50 l or 150 l DHW calorifier	Solar heating	DHW heating element	Heating element for space heating
Open SHP MEM Plus 6	●	○	○	○	○
Open SHP MEM Plus 8	●	○	○	○	○
Open SHP MEM Plus 10	●	○	○	○	○
Open SHP MEM Plus 12	●	○	○	○	○
Open SHP MEM 6	○	○	○	○	
Open SHP MEM 8	○	○	○	○	
Open SHP MEM 10	○	○	○	○	
Open SHP MEM 12	○	○	○	○	

● standard-supplied ○ available as an accessory

ENTIRELY ELECTRICAL INTEGRATED SOLUTION FOR NEW HOMES

Open SHP MEM Plus is the entirely electrical system with a Class A+++ heat pump for new homes. It features low energy consumption and can be combined with a solar heating system and heating elements. Designed for offering maximum performances during the heating, cooling and domestic hot water production phases, it can be

adapted to the various comfort requirements by choosing among 4 power levels and 3 sizes for the DHW storage tank.

It is easy and intuitive to adjust via the colour remote control and standard Wi-Fi connectivity which can be controlled through the "Sime Connect" app.



ENTIRELY ELECTRICAL

With a Class A+++ hydronic heat pump and the option of fitting heating elements on the space heating and domestic hot water circuits.



GUARANTEED DOMESTIC HOT WATER

The storage volume can be expanded at a later stage from 150 to 200 or 300* litres.

* for 300 litres the optional additional cabinet kit is required



STANDARD Wi-Fi TIMER-CONTROLLED THERMOSTAT

With colour display and room temperature control functions in heating and cooling mode, full management of the system and control via app.



RAPID RECOVERY OF THE DOMESTIC HOT WATER CALORIFIER

Maximum speed and efficiency in the recovery phase of the domestic hot water calorifier thanks to the broad-size plate heat exchanger.



PHOTOVOLTAIC SELF-CONSUMPTION FUNCTION

Digital input for connection to the photovoltaic inverter for fully exploiting the excess renewable electrical energy.



PATENTED INTEGRATED PUFFER/DISCONNECTOR

The internal shape, patented by Sime, allows for optimising the heat pump's operation in any system condition.



WIDE RANGE OF POWER LEVELS

The heat pump size can be chosen from 4 different power levels, from 6 kW to 12 kW.



INSTALLATION FLEXIBILITY

The product can be installed indoors thanks to the coated cabinet or outdoors thanks to the galvanised steel built-in cabinet.

OPEN SHP MEM IN DETAIL

150-LITRE DHW STAINLESS STEEL MAIN STORAGE TANK WITH COIL FOR INTEGRATION WITH SOLAR HEATING SYSTEM

MEM® REGULATION: SOURCE MANAGEMENT THROUGH OPTIMISED LOGICS

COLOUR REMOTE CONTROL WITH Wi-Fi CONNECTIVITY AND APP FOR REMOTE CONTROL

PLATE HEAT EXCHANGER FOR MAXIMUM DHW PERFORMANCE



AUTOMATIC FILLING SYSTEM MANAGED VIA REMOTE CONTROL

ADDITIONAL 50-LITRE DHW STORAGE TANK (OPTIONAL)*

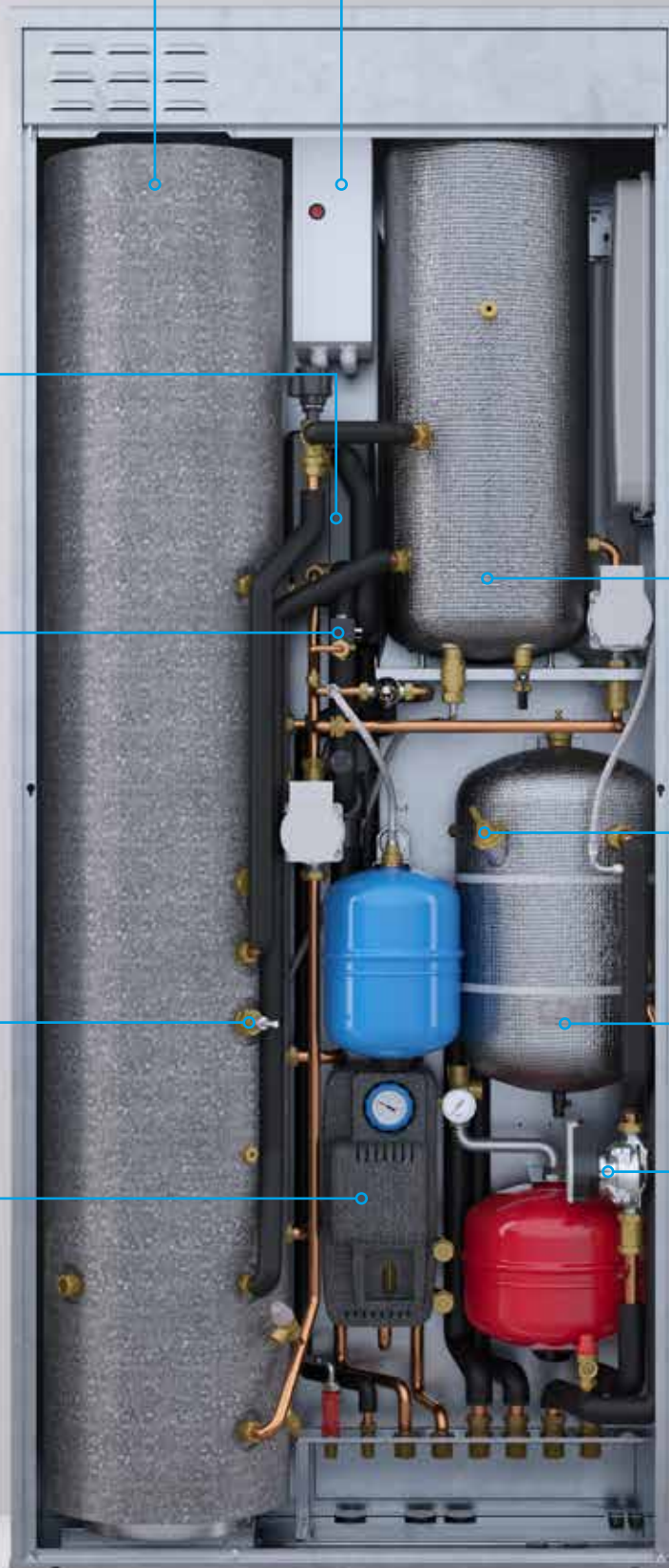
DHW INTEGRATION HEATING ELEMENT 1.5 kW (OPTIONAL)

HEATING INTEGRATION HEATING ELEMENT 2/3 kW (OPTIONAL)

SOLAR HEATING INTEGRATION ON DHW (OPTIONAL)

30-LITRE PUFFER/HYDRAULIC DISCONNECTOR (PLUS VERSION)

HIGH-PERFORMANCE MODULATING SYSTEM CIRCULATOR PUMP (PLUS VERSION)



* Possibility of fitting an additional 150-litre storage tank (optional) installable in the built-in cabinet kit on request

AIR-TO-WATER HEAT PUMP



The reversible air-to-water heat pumps of the SHP M Eco series are designed for use in residential applications, for space heating and for the production of domestic hot water up to a temperature of 60°C. The use of the INVERTER brushless compressor technology combined with the electronic expansion valve, the pump and the variable-speed fan, optimises consumption and the operating efficiency of the refrigerating components.

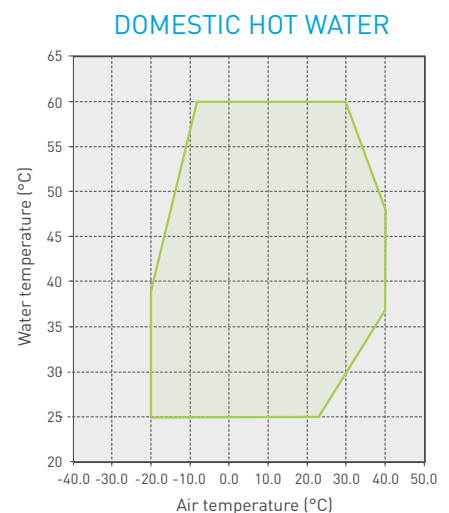
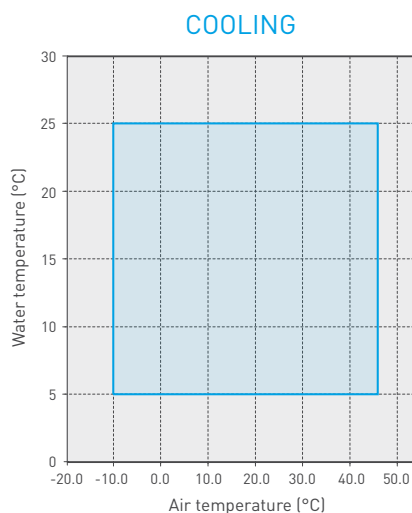
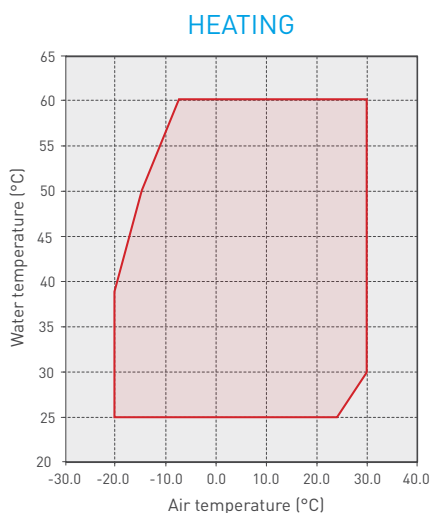
- ▶ **A+++ efficiency class**
- ▶ **New ecological refrigerant gas R32**
- ▶ **Full inverter technology for the compressor, fan, expansion valve and circulator pump**
- ▶ **ModBus communication for control and adjustment via MEM electronics**
- ▶ **Finned battery with “Gold Fin” anti-corrosion treatment**
- ▶ **Guaranteed operation from -15°C to +45°C**



BROAD OPERATING RANGE

SHP M Eco heat pumps are designed and built for operating in summer conditions, with condensation control, with outdoor air temperatures ranging between -10°C and 46°C. In heat pump mode, the allowed

outdoor air temperature interval ranges from -20°C to +40°C depending on the output water temperature, as shown in the graphs below.



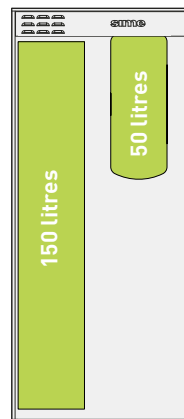
GUARANTEED DOMESTIC HOT WATER

POSSIBLE DHW CONFIGURATIONS WITH OPTIONAL KITS AND MAXIMUM WITHDRAWAL TIME

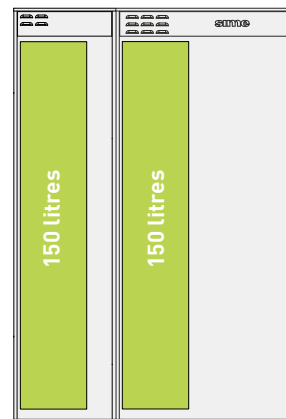
The energy accumulated in the calorifier is dispensed by the mixer valve at the pre-set comfort temperature of 40°C (modifiable). Once the maximum withdrawal time has elapsed, the output temperature drops to below 39°C, thus no longer guaranteeing a sufficient comfort level for the shower or bathtub. The table lists a few examples of maximum withdrawal times with the storage tank prepared at 50°C. Configure the volume of the DHW storage tank in relation to the desired continuous maximum withdrawal time.



Standard version



Standard version + extra 50-litre kit

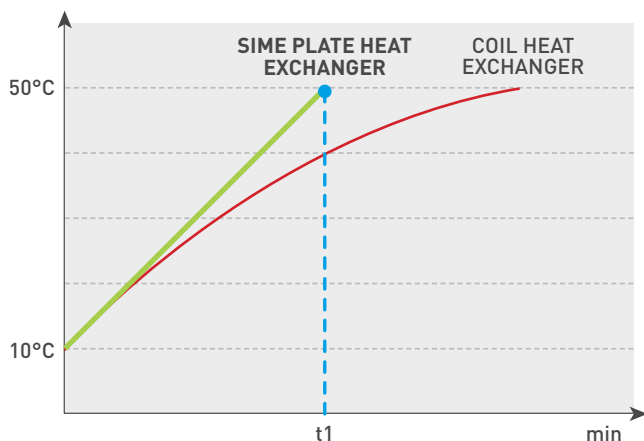


Standard version + extra 150-litre kit

Calorifier volume	150 l	150 l + 50 l	150 l + 150 l
Equivalent volume at 40°C	209 l	267 l	420 l
Maximum time for standard shower (7 l/min)	30'	38'	60'
Maximum time for XL shower (10 l/min)	21'	27'	42'

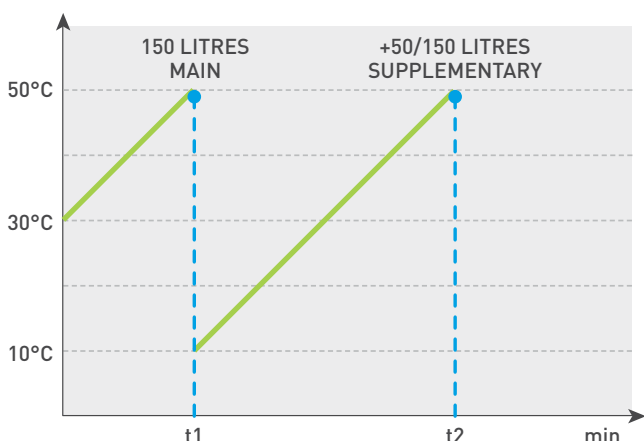
Times measured with calorifier prepared at 50°C and DHW withdrawal at 40°C, without activation of the heat pump or of the supplementary heating element during withdrawal. It is possible to calculate the duration at different flow rate values using the "Equivalent volume at 40°C" value and dividing it by the flow rate considered.

150-LITRE CALORIFIER RECOVERY



The linear trend of the heat pump recovery is guaranteed by the broad-size plate heat exchanger which enables the generator to supply all the available power without entering the modulation mode due to the small exchange surface typical of coil heat exchangers mounted on most products.

SEQUENTIAL RECOVERY OF 150-LITRE + 50/150-LITRE CALORIFIERS

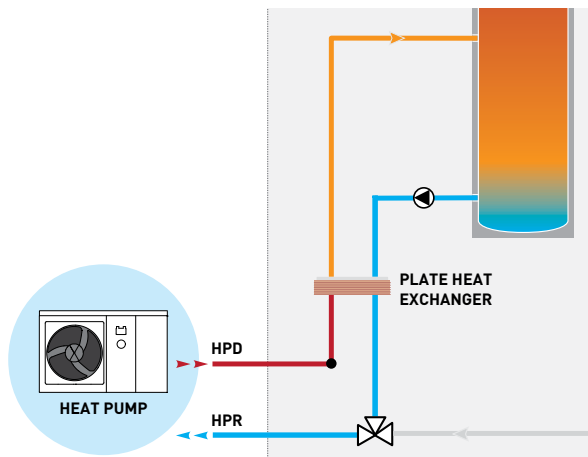


At the end of the maximum DHW withdrawal time, the temperature inside the supplementary 50- or 150-litre calorifier drops down to 10°C, while in the main 150-litre calorifier it reaches an average temperature of 30°C thanks to the contribution of the heat pump and the series connection between the 2 storage tanks, thus considerably reducing the recovery time of the main storage tank.

The recovery cycle entails the sequential heating of the main storage tank first and then the optional storage tank, so as to guarantee the subsequent domestic hot water service in the shortest possible time.

OPERATING LOGICS

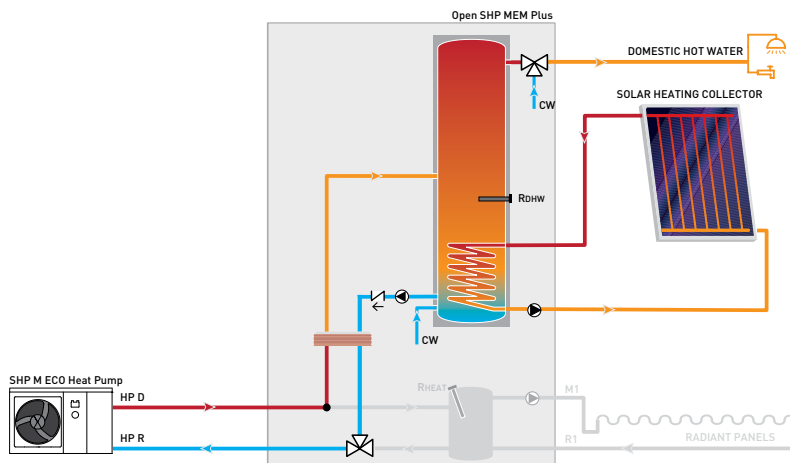
DOMESTIC HOT WATER - HEAT EXCHANGE



The DHW calorifier is heated by the heat pump through a broad-size plate heat exchanger which is essential for obtaining the maximum efficiency (COP) if the generator and reducing the preparation times.

Compared to conventional immersed coils in the calorifier, plate heat exchangers are characterised by a far higher exchange coefficient, even 5–10 times higher, thanks to the turbulent motion inside them. Their greater exchange capacity, conditions being equal, allows them to operate at sensibly lower delivery temperatures resulting in an actual improvement in efficiency (COP) of up to 20% during domestic hot water production.

DOMESTIC HOT WATER - 150-LITRE CALORIFIER

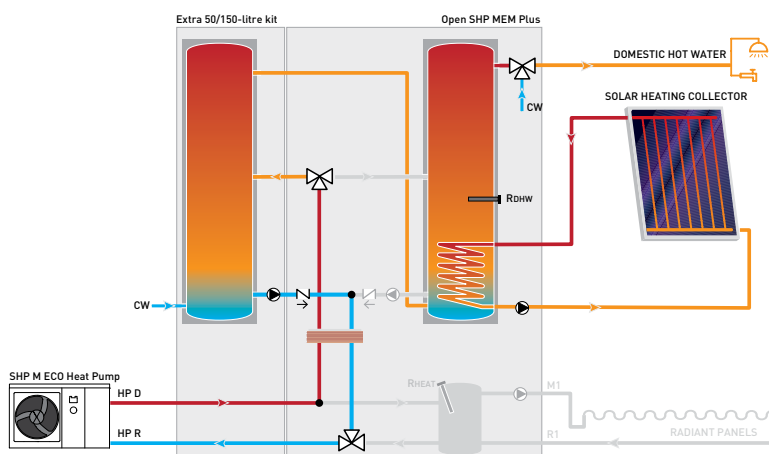


The 150-litre stainless steel storage tank is prepared by the solar heating system (if present) and by the heat pump.

The broad-size plate heat exchanger, unlike conventional coils, guarantees the maximum energy efficiency and the minimum recovery time.

The thermostatic mixer valve optimises comfort and reduces wastages by increasing the available withdrawal time. The supplementary heating element (optional) is activated to guarantee comfort also in extreme weather conditions and to complete the anti-Legionella cycle.

DOMESTIC HOT WATER - 150-LITRE + 50/150-LITRE CALORIFIER

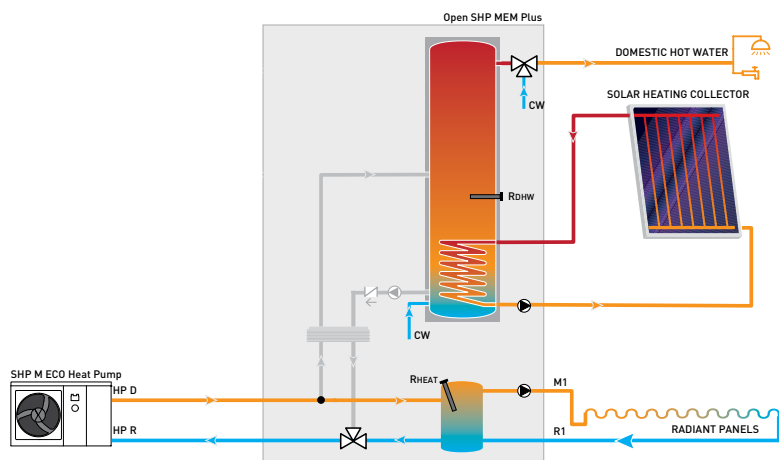


If, besides the main storage tank, there is also a supplementary 50-litre or 150-litre storage tank (optional), the recovery cycle entails the sequential heating of the main storage tank first followed by the supplementary storage tank, so as to guarantee the subsequent DHW service in the shortest possible time.

During withdrawal, the input water flows through the supplementary storage tank first and then through the main storage tank, so as to guarantee the maximum duration of withdrawal. An automatic function allows the transfer of energy from the main storage tank to the supplementary storage tank in the event of a solar heating system and the anti-Legionella cycle. The supplementary heating element (optional) is activated to guarantee comfort also in extreme weather conditions and for the anti-Legionella cycle.

OPERATING LOGICS

HEATING / COOLING



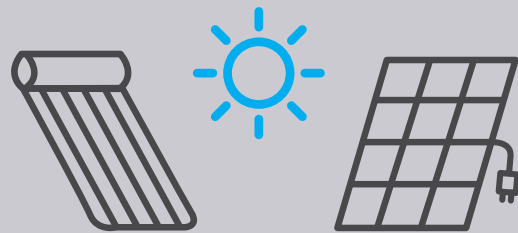
The heating and cooling functions are performed by the heat pump with climate adjustment of the delivery temperature and room compensation (Class VI adjustment) or fixed-point adjustment. The supplementary optional heating element for space heating is activated to guarantee comfort also in extreme weather conditions according to the parameters set by the user. The patented puffer / disconnecter, standard-supplied on PLUS models, optimises the heat pump's operation and allows operation with any system flow rate. The heat pump can switch to domestic hot water preparation as a priority in the event of a simultaneous request.

SOLAR THERMAL AND PHOTOVOLTAIC

Open SHP MEM PLUS, thanks to the solar thermal kit, can be used for connecting one or more SimeSol 182 solar collectors for integrating the domestic hot water.

Moreover, the electronics is standard-supplied with a digital input for the **photovoltaic self-consumption** function. When the contact is closed by the photovoltaic inverter or a load controller (not supplied by Sime), the operating logics of the generator are temporarily modified to fully exploit the excess renewable energy.

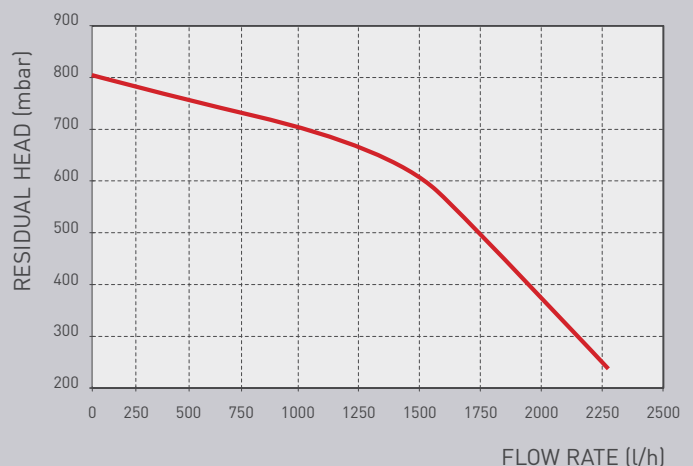
- Increase of the domestic hot water preparation temperature in the storage tanks



- Increase of the heat pump's delivery temperature in the heating phase
- Reduction of the heat pump's delivery temperature in the cooling phase

HIGH-HEAD SYSTEM CIRCULATOR PUMP

The high-efficiency and high-head modulating pump* is able to guarantee the necessary flow rate for the system by adjusting the number of revolutions (and thus the consumption) in relation to the system's instantaneous absorption.



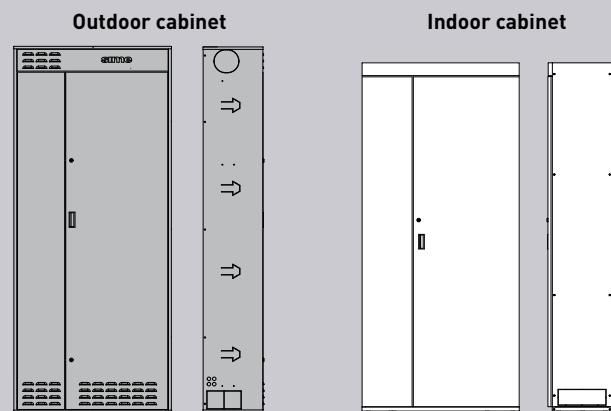
* Standard on Open SHP MEM PLUS and available through the optional accessory kit for Open SHP MEM.

ADVANCED ELECTRONICS AND DISPLAY



INSTALLATION FLEXIBILITY

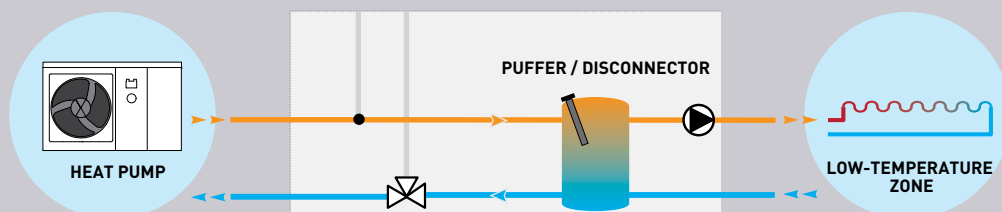
Open SHP MEM Plus can be installed outdoors thanks to the galvanised steel built-in cabinet, without having to occupy useful space inside the home. Alternatively, it can be installed indoors inside a coated technical cabinet positioned against a wall, occupying a width of only 1 metre.



INTEGRATED PUFFER / HYDRAULIC DISCONNECTOR

The 30-litre* inertial storage tank performs the two-fold function of a thermal flywheel and hydraulic separator, optimising operation with any system flow rate. It also allows for inserting an optional heating element to integrate the space heating function.

Thanks to its special design, it always guarantees the best possible work conditions for the heat pump, by ensuring that it works at the minimum temperature made available by the system (no mixing of the return inside the inertial storage tank).

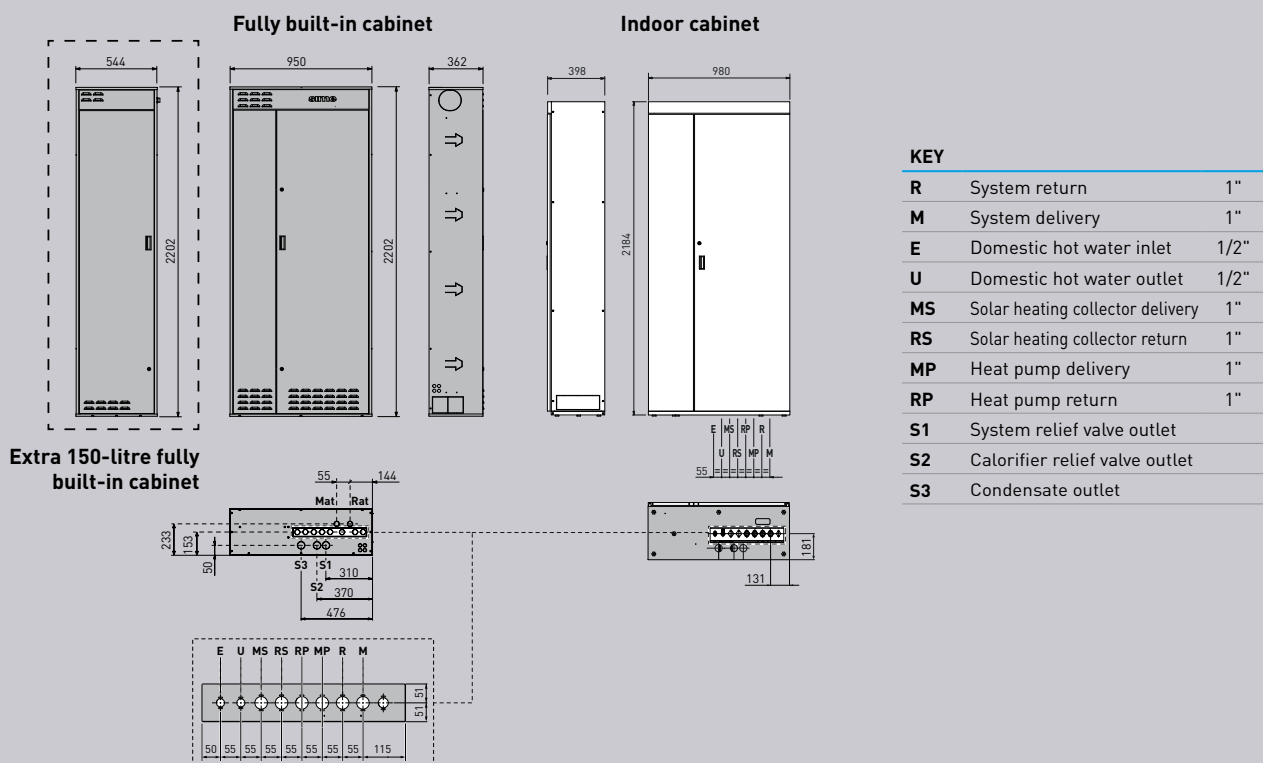


* Standard on Open SHP MEM PLUS and available through the optional accessory kit for Open SHP MEM.

OPEN SHP MEM PLUS

Open SHP MEM Plus - Open SHP MEM	6	8	10	12
DOMESTIC HOT WATER				
Standard version				
Standard storage capacity	150	150	150	150
Quantity of water at 40°C (Tcal = 50°C)	209	209	209	209
Stated domestic hot water profile	L	L	L	L
Energy efficiency class of DHW function	A	A	A	A
Standard version + extra 50-litre kit				
Standard storage capacity	200	200	200	200
Quantity of water at 40°C (Tcal = 50°C)	267	267	267	267
Stated domestic hot water profile	L	L	L	L
Energy efficiency class of DHW function	A	A	A	A
Standard version + extra 150-litre kit				
Standard storage capacity	300	300	300	300
Quantity of water at 40°C (Tcal = 50°C)	420	420	420	420
Stated domestic hot water profile	XL	XL	XL	XL
Energy efficiency class of DHW function	A	A	A	A
HEATING				
Energy efficiency class of heating function	A+++	A+++	A+++	A+++
HEAT PUMP (air 7°C - water 35°C) Heating heat output (min/nom/max ^[2])	3,95/6,08/6,99	3,95/7,81/8,98	5,33/10,10/11,62	5,33/11,80/13,57
COOLING				
HEAT PUMP (air 35°C - water 7°C) Cooling heat output (min/nom/max ^[2])	3,20/5,02/5,52	3,80/6,08/6,69	4,66/7,53/8,28	4,55/8,51/9,36
Weight / Built-in frame	71 / 50,4	71 / 50,4	71 / 50,4	71 / 50,4

[1] Test conducted at Δt 50°C and 15.5 l/min flow rate. [2] Activating the maximum Hz function



SHP M ECO HEAT PUMPS

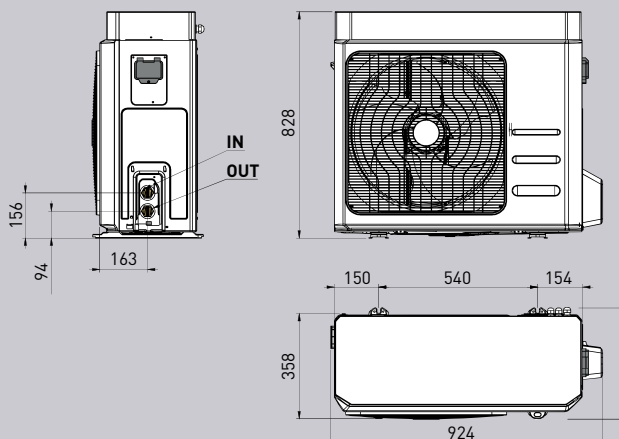
SHP M Eco		006	008	010	012	
Electrical data	Power supply	230V/1/50Hz	230V/1/50Hz	230V/1/50Hz	230V/1/50Hz	
	Maximum absorbed power	kW	3,5	3,9	4,6	5,1
	Maximum current draw	A	15,1	17,0	20,2	22,1
Cooling	Cooling power ^[1] (nom/max ^[7])	kW	6,18/6,80	7,72/8,49	9,50/10,45	11,60/12,76
	Absorbed power ^[1]	kW	1,28	1,76	2,15	2,79
	EER ^[1]	W/W	4,82	4,38	4,41	4,16
	Cooling power ^[2] (nom/max ^[7])	kW	5,02/5,52	6,08/6,69	7,53/8,28	8,51/9,36
	Absorbed power ^[2]	kW	1,60	1,99	2,39	2,79
	EER ^[2]	W/W	3,14	3,05	3,15	3,05
	Cooling power ^[3] (nom/max ^[7])	kW	6,08/6,99	7,81/8,98	10,10/11,62	11,80/13,57
Heating	Absorbed power ^[3]	kW	1,35	1,78	2,28	2,73
	COP ^[3]	W/W	4,51	4,38	4,43	4,32
	Cooling power ^[4] (nom/max ^[7])	kW	5,88/6,76	7,58/8,72	9,76/11,22	11,47/13,19
	Absorbed power ^[4]	kW	1,66	2,17	2,80	3,33
	COP ^[4]	W/W	3,54	3,50	3,48	3,44
	Energy efficiency class		A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++
Compressor	Type / Quantity	Twin Rotary DC Inverter / 1				
Fan	Type / Quantity	Motor DC Brushless / 1				
Refrigerant gas	Type / Quantity	kg	R32 / 1,5	R32 / 1,5	R32 / 2,5	R32 / 2,5
	CO ₂ equivalent quantity	ton	1,0	1,0	1,7	1,7
Circulator pump	Water flow rate ^[3]	l/s	0,28	0,37	0,47	0,55
	Useful head ^[3]	kPa	75,8	66,3	55,2	43,4
Hydraulic circuit	Plumbing fittings		1" M	1" M	1" M	1" M
	Minimum water volume ^[5]	l	40	40	50	60
Noise level	Sound power ^[6]	dB(A)	64	64	64	65
Weights	Net / gross weight	kg	72 / 84	72 / 84	96 / 110	96 / 110

PERFORMANCES REFERRED TO THE FOLLOWING CONDITIONS:

- [1] COOLING: outdoor air temperature 35°C - input/output water temperature 23°/18°C
- [2] COOLING: outdoor air temperature 35°C - input/output water temperature 12°/7°C
- [3] HEATING: outdoor air temperature 7°C dry bulb 6°C wet bulb - input/output water temperature 30°/35°C
- [4] HEATING: outdoor air temperature 7°C dry bulb 6°C wet bulb - input/output water temperature 40°/45°C

- [5] Calculated for a drop in the system water temperature of 10°C with a defrosting cycle lasting 6 minutes
- [6] SOUND POWER: heating mode condition [3]; value determined on the basis of readings taken in accordance with the UNI EN ISO 9614-2 standard, in full compliance with the requirements of the Eurovent certification
- [7] Activating the maximum Hz function

SHP M Eco 006/008 heat pump



SHP M Eco 010/012 heat pump

