



SMHP - High performance combined buffer store for heat pumps Smartwarm HP

Smartwarm HP is a combined buffer store for primary water with instantaneous production of domestic hot water (DHW) through a high efficiency heat exchanger made of a corrugated stainless steel pipe. It is available in two options: buffer store + DHW production (SMOHP) and buffer store + DHW production and auxiliary heat exchanger (SMIHP).

The high ratio between exchanging area and store volume, allows Smartwarm HP to deliver a high performance of DHW production even in combination with low temperature sources like the modern hydronic heat pumps. Cylinders are also prepared to host a backup immersion heater (not supplied).

HEAT SOURCE



APPLICATION



TECHNICAL FEATURES	Primary water buffer vessel	Material	S 235 Jr Carbon steel
		Internal protective treatment	None
		External protective treatment	Anti rust protection + epoxy painting
	DHW Heat exchanger	Rating (P max. / T max.)	3 bar / 95°C
		Material	AISI 316L Stainless steel (1.4404)
		Internal protective treatment	Pickling and passivation
	Auxiliary heat exchanger	External protective treatment	Pickling and passivation
		Rating (P max. / T max.)	6 bar / 95°C
		Type	Corrugated pipe
	General features	Material	AISI 316L Stainless steel (1.4404)
		Internal protective treatment	Pickling and passivation
		External protective treatment	Pickling and passivation
		Type	Corrugated pipe
		Rating (P max. / T max.)	6 bar / 95°C
		Capacity	300 - 400 L
		Warranty	5 years
	Insulation	Rigid polyurethane foam + PVC: Fire retardant class B3 (DIN 4102)	
	In compliance with	- Pressure Equipment Directive (PED) 2014/68/UE Art. 4 Para 3 - Italian MOH specifications (products suitable to contain potable water) - Energy related Products (Erp) Directive 2009/125/CE	

ACCESSORIES (page 218)



Electronic control unit



Thermostat

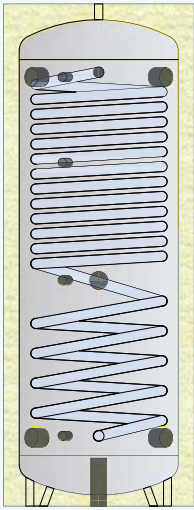


Thermometer



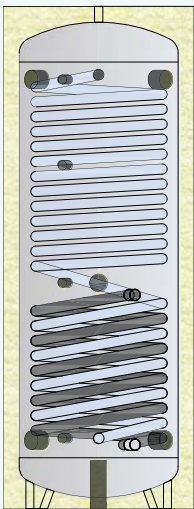
1 1/2 electric immersion heater

SMOHP - Hard insulation with rigid polyurethane foam and PVC jacket



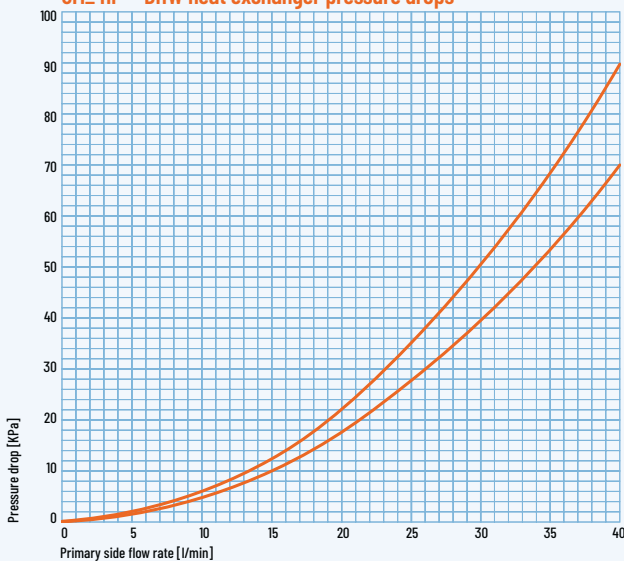
CODE	INSULATION THICK. (mm)	ErP CLASS	HEAT LOSS S (W)	REAL CAPACITY (L)	DHW HEAT EXCHANGER (m ²) / (L)*
SMOHP 00300 R	50	B	57,3	289,8	4,0 / 17,0
SMOHP 00400 R	50	B	69,8	404,9	5,0 / 20,6

SMIHP - Hard insulation with rigid polyurethane foam and PVC jacket

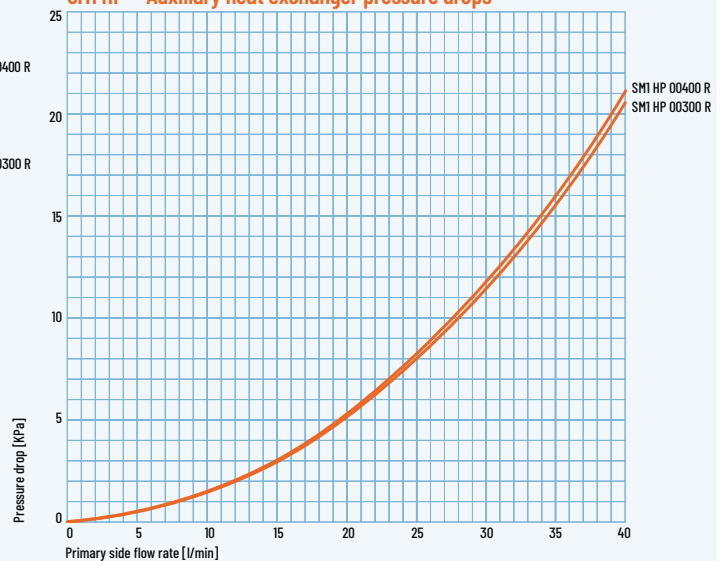


CODE	INSULATION THICK. (mm)	ErP CLASS	HEAT LOSS S (W)	REAL CAPACITY (L)	DHW HEAT EXCHANGER (m ²) / (L)*	AUXILIARY HEAT EXCHANGER (m ²) / (L)*
SMIHP 00300 R	50	B	57,3	289,8	4,0 / 17,0	1,2 / 4,4
SMIHP 00400 R	50	B	69,8	404,9	5,0 / 20,6	1,4 / 5,3

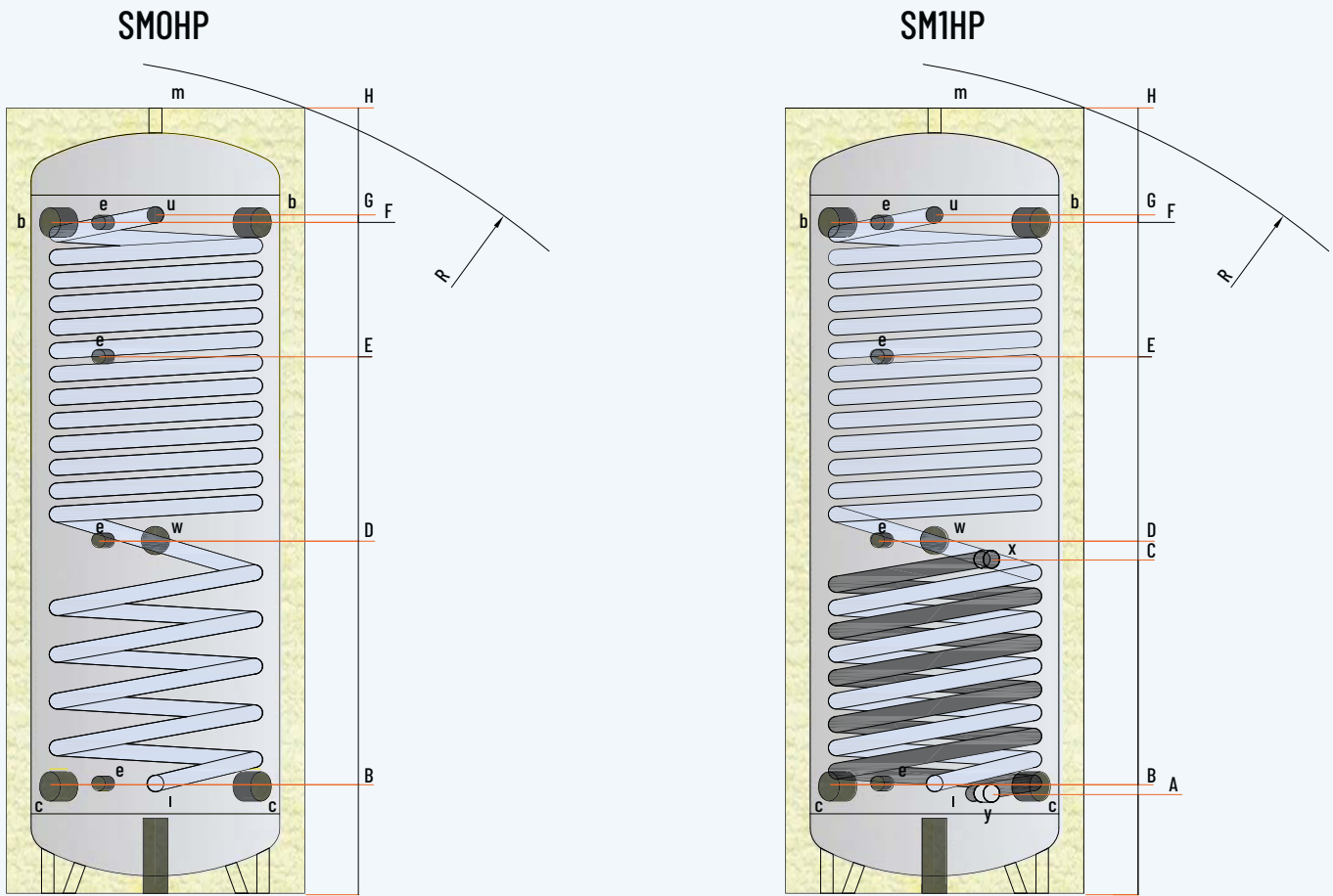
SM_HP - DHW heat exchanger pressure drops



SMI HP - Auxiliary heat exchanger pressure drops

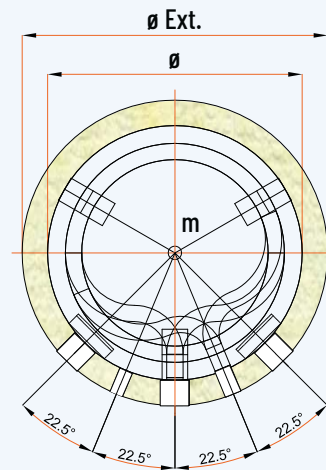


* Volume occupied by the heat exchanger and its support structure



LEGEND

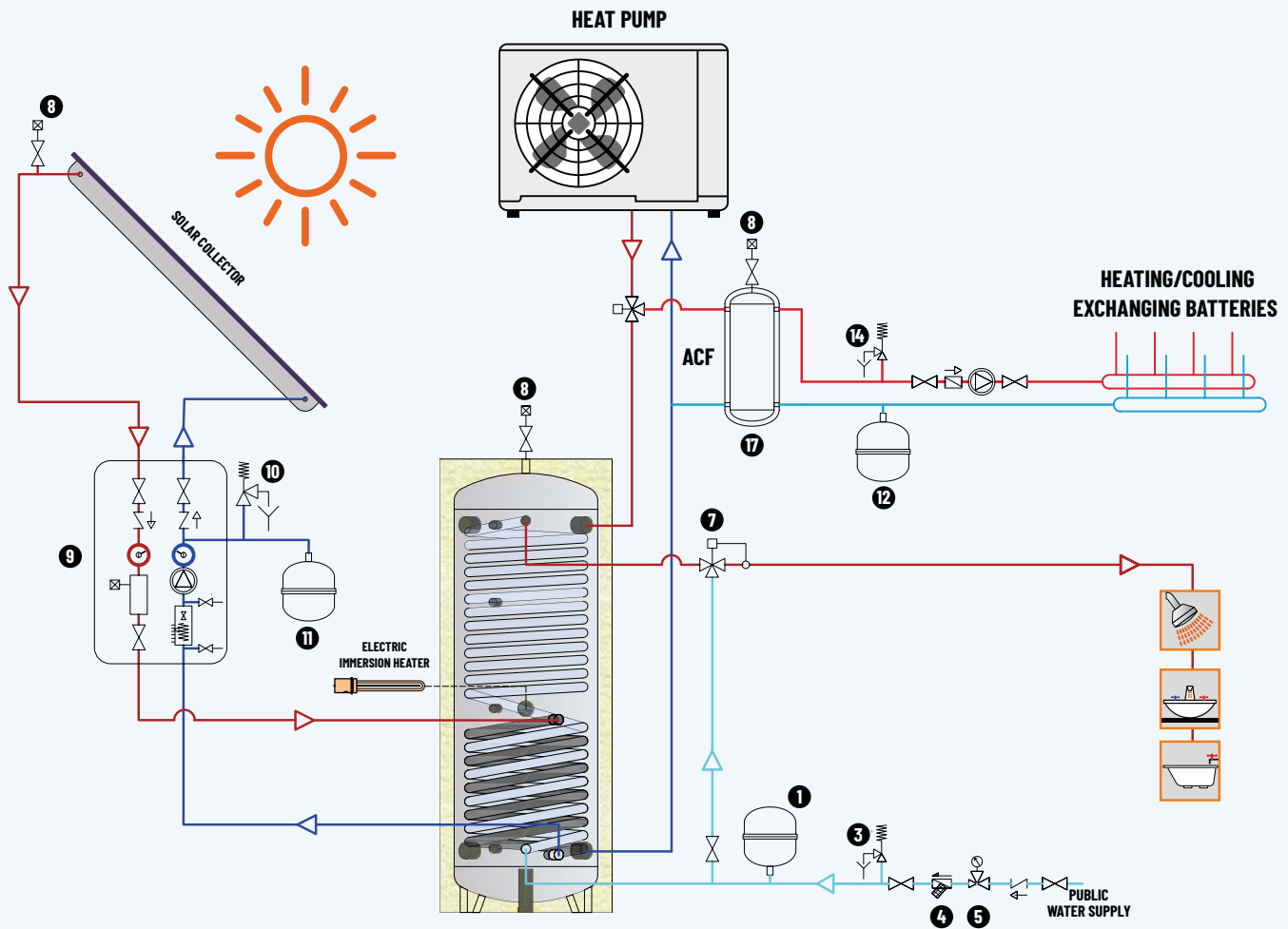
- b** . Heat source flow
- c** . Heat source return
- e** . Thermometer - Sensor
- i** . Domestic cold water inlet
- m** . Buffer vent
- u** . Domestic hot water outlet
- w** . Opening for immersion heater
- x** . Solar system flow
- y** . Solar system return



MODEL	DIMENSIONS (mm)		Ø EXT *	R	DHW HEAT EXCHANGER (m ²) / (L)	AUXILIARY HEAT EXCHANGER (m ²) / (L)	WEIGHT (kg)
	Ø	H					
SM_HP 00300 R	500	1580	600	1520	4,0 / 13,7	1,2 / 4,1	70
SM_HP 00400 R	600	1610	700	1660	5,0 / 17,0	1,4 / 4,8	104

* The insulation is not removable

MODEL	HEIGHTS (mm)							CONNECTIONS (GAS)					
	A	B	C	D	E	F	G	b c	x y	e	i u	m	w
SM_HP 00300 R	201	221	672	710	1080	1350	1365	1"½	¾"	½"	¾"	½"	1"½
SM_HP 00400 R	210	230	606	644	1090	1350	1365	1"½	¾"	½"	¾"	½"	1"½

Disclaimer: this layout is purely indicative. It does not replace consultant's design


COMBINED THERMAL STORES

LEGEND

- | | | |
|---|-------------------------------|--------------------------------------|
| 1 . Domestic water expansion vessel | 7 . DHW 3-way valve | 11 . Solar system expansion vessel |
| 3 . Domestic water safety valve (6 bar) | 8 . Vent with valve | 12 . Heating system expansion vessel |
| 4 . Strainer | 9 . Solar system control unit | 14 . Heating system safety valve |
| 5 . Pressure reducing valve | 10 . Solar system safety kit | 17 . Low loss header ACF |

SM_HP Domestic Hot Water performance

CODE	SM_HP 00300 R	SM_HP 00300 R
DHW Heat exchanger m ² (L)	4,0 (13,6)	5,0 (17,1)
Power (kW)	36,0	45,0
DHW Continuous draw ⁽¹⁾ (L/h)	884	1105
DHW ⁽²⁾ producible with a 10 L/min flow rate, with a totally heated buffer and a not running heat source		
Buffer at 55 °C (L)	82	112
Buffer at 65 °C (L)	185	252
Buffer at 70 °C (L)	269	367
DHW ⁽²⁾ producible with a 20 L/min flow rate, with a totally heated buffer and a not running heat source		
Buffer at 55 °C (L)	45	61
Buffer at 65 °C (L)	112	153
Buffer at 70 °C (L)	175	139
NL ⁽³⁾	1	1,2

(1) Average buffer temp. 65 °C, DHW from 10 to 45° C

(2) from 10 to 45° C

(3) Buffer at 70 °C, DHW from 10 to 45° C

SM1 HP auxiliary heat exchanger performance

CODE	SM1 HP 00300 R	SM1 HP 00300 R
Heat exchanger m ² (L)	1,2 (4,1)	1,3 (4,5)
Power (kW)		
$\Delta T^{(4)} = 10^\circ \text{C}$	6,3	6,8
$\Delta T^{(4)} = 15^\circ \text{C}$	9,5	10,2
$\Delta T^{(4)} = 20^\circ \text{C}$	12,6	13,6
$\Delta T^{(4)} = 25^\circ \text{C}$	15,8	17,0

(4): difference between the average temperature of the heating fluid (inside the heat exchanger) and the average temperature of the heated fluid (internal to the buffer in the area affected by the coil).