

HUB RADIATOR MINI

Patented high-efficiency direct exchange Termodinamica® boiler
refrigerant/water to produce domestic hot water and heating for small users

CALDAIA  TERMODINAMICA®



Technical and construction characteristics

The patented HUB RADIATOR MINI Termodinamica® Boiler represents the most innovative product on the market created to produce heating and DHW using renewable energy as the primary source of supply (Renewable energy 100%). This new boiler concept is able to provide more efficiency and more energy savings to the home during the home heating and domestic hot water production phases. The great creativity of our technicians has allowed us to design a compact thermodynamic system with direct refrigerant/water exchange that does not burn methane, has no flame or flue and can be used with any type of system terminals. This system today represents the best possible solution for producing thermal energy by increasing the energy performance index of buildings and fully enjoys all the tax breaks provided for by Italian law in this regard.

The Termodinamica® HUB RADIATOR MINI boiler is composed of:



- Internal unit with 70 liter technical water accumulator in the which the refrigerant/water condensers are inserted immersion and the double coil DHW exchanger;
- One or two external Moto-evaporators in cascade Booster which they close the refrigeration circuit and transfer the heat taken from the external air to the technical water of the system sequential accumulators located in the internal hanging unit;
- High efficiency inverter electronic circulation pump;
- Microprocessor electronic control and command panel; - 1.5 kW back-up electrical resistance;
- Priority diverter valve of the DHW circuit.

The internal wall unit presents itself as a perfect balance between compact dimensions, energy efficiency and innovative design. This system uses one or two on-board condensers connected separately and independently to one or two external units. HUB RADIATOR MINI during the period of use uses the electronic inverter pump to circulate the heat transfer fluid both for the production of DHW and for space heating. At the same time, the diverter valve comes into operation, activated by a special thermostat which gives priority to the use of the domestic hot water over the heating circuit.



	Code	€
HUB RADIATOR MINI 5.0 Booster double 2.5 + 2.5	76800790	7.300,00
HUB RADIATOR MINI 7.0 Booster single 7.0 HUB	76800800	7.420,00
RADIATOR MINI 10.0 Booster double 7.0 + 2.5 HUB	76800811	9.300,00
RADIATOR MINI 14.0 Booster double 7.0 + 7.0	76800810	10.900,00




















Accessories HUB RADIATOR MINI

	Flush-mounted command and remote control panel for 503 box	75100005	102,00
	Wall or wall adapter for control panel and remote control	75100029	24,00

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Caldia Termodinamica® brevettata ad alta efficienza a scambio diretto refrigerante/acqua per produrre acqua calda sanitaria e riscaldamento per piccole utenze

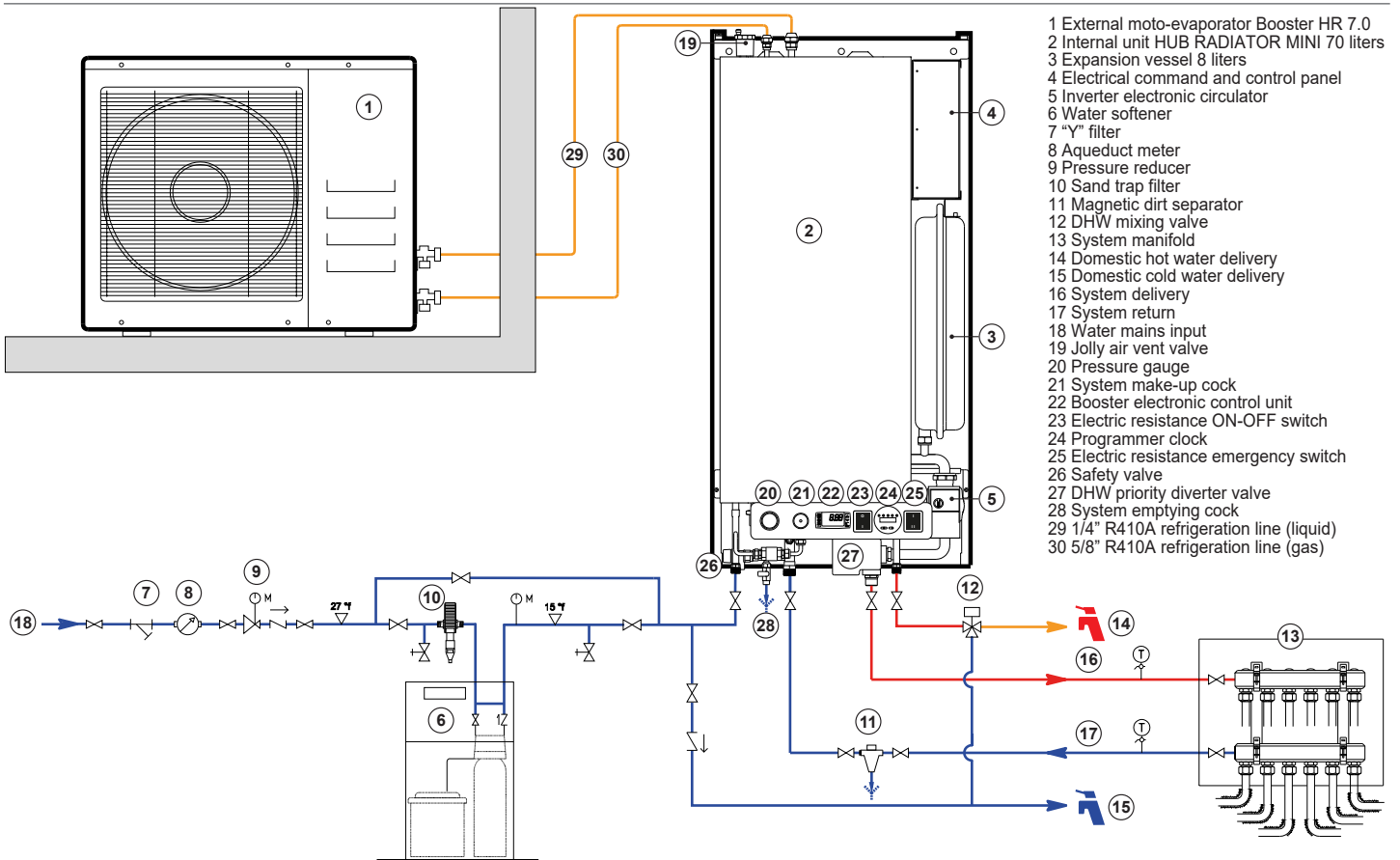
Accessories HUB RADIATOR MINI

			Code	€
	Load control relay for managing absorbed power	mod. Connection BUS mod. Radio frequency	37081062 37081063	172,00 460,00
	Mixing valve for radiant systems	mod. fixed mechanical adjustment mod. motorized adjustment	75101032 75101033	120,00 600,00
	Additional condenser for Booster HR	mod. only heat HR 2.5 mod. only heat HR 7.0	26505565 26515565	340,00 380,00
	Anchoring shelf for external Booster including rubber vibration dampers	mod. Booster HR 2.5 mod. Booster HR 7.0	37081060 37081061	50,00 90,00
	Anchoring shelf for sloping roof for external Boosters mod. HR 2.5 - 7.0 including rubber vibration dampers		37081064	218,00
	Anti-vibration floor base in vulcanized rubber (height from the ground 95 mm) with level and screws for Booster HR 2.5 - 7.0 (pack of 2 pieces)		75100018	102,00
	Anti-vibration kit for installation on shelves		75100022	22,00
	Stainless steel spring anti-vibration kits complete with bolts, washers and nuts (pack of 2)	mod. HR 2.5 mod. HR 7.0	37081065 37081066	62,00 64,00
	Anti-freeze condensate heating cable with thermal sensor, factory mounted	mod. 3 m 90 W mod. 6 m 120 W	37081067 37081068	76,00 80,00
	Auxiliary tray for installation under shelf equipped with 90 W heating cable	mod. HR 2.5 mod. HR 7.0	37081069 37081070	280,00 300,00
	Floor support complete with auxiliary tray equipped with 90 W heating cable	mod. HR 2.5 H fixed mod. HR 7.0 H fixed mod. HR 7.0 H variable	37081071 37081073 37081074	320,00 350,00 370,00
	1/2" DHW mixing valve kit		75100023	170,00
	Additional electronic management kit for heat generator with external temperature probe and additional hydraulic connections		75100024	220,00
	Flexible anti-vibration joint kit with connection plate and straight union	mod. HR 7.0 (5/8") mod. HR 2.5 (3/8")	75100014 75100015	120,00 60,00
	Flexible anti-vibration joint kit with connection plate and 90° curved union	mod. HR 7.0 (5/8") mod. HR 2.5 (3/8")	75100016 75100017	120,00 60,00
	Mandatory cover box for the installation of the internal unit outside the building HUB RADIATOR MINI made of insulated white pre-painted galvanized steel Height 120 cm - Width 60 cm - Depth 43 cm		75100019	360,00
	External recessed template for internal unit HUB RADIATOR MINI made of galvanized sheet metal Height 160 cm - Width 70 cm - Depth 28 cm		75101019	420,00
 <i>(fig.1)</i>	<i>Open shelf for n. 2 Booster external units mod. HR 7.0 complete with vibration dampers (fig.1)</i>		75060406	290,00
 <i>(fig.2)</i>	<i>RACK 2 cabinet for n. 2 Booster external units mod. HR 2.5 - 7.0 (fig.2)</i>		75060306	1.060,00

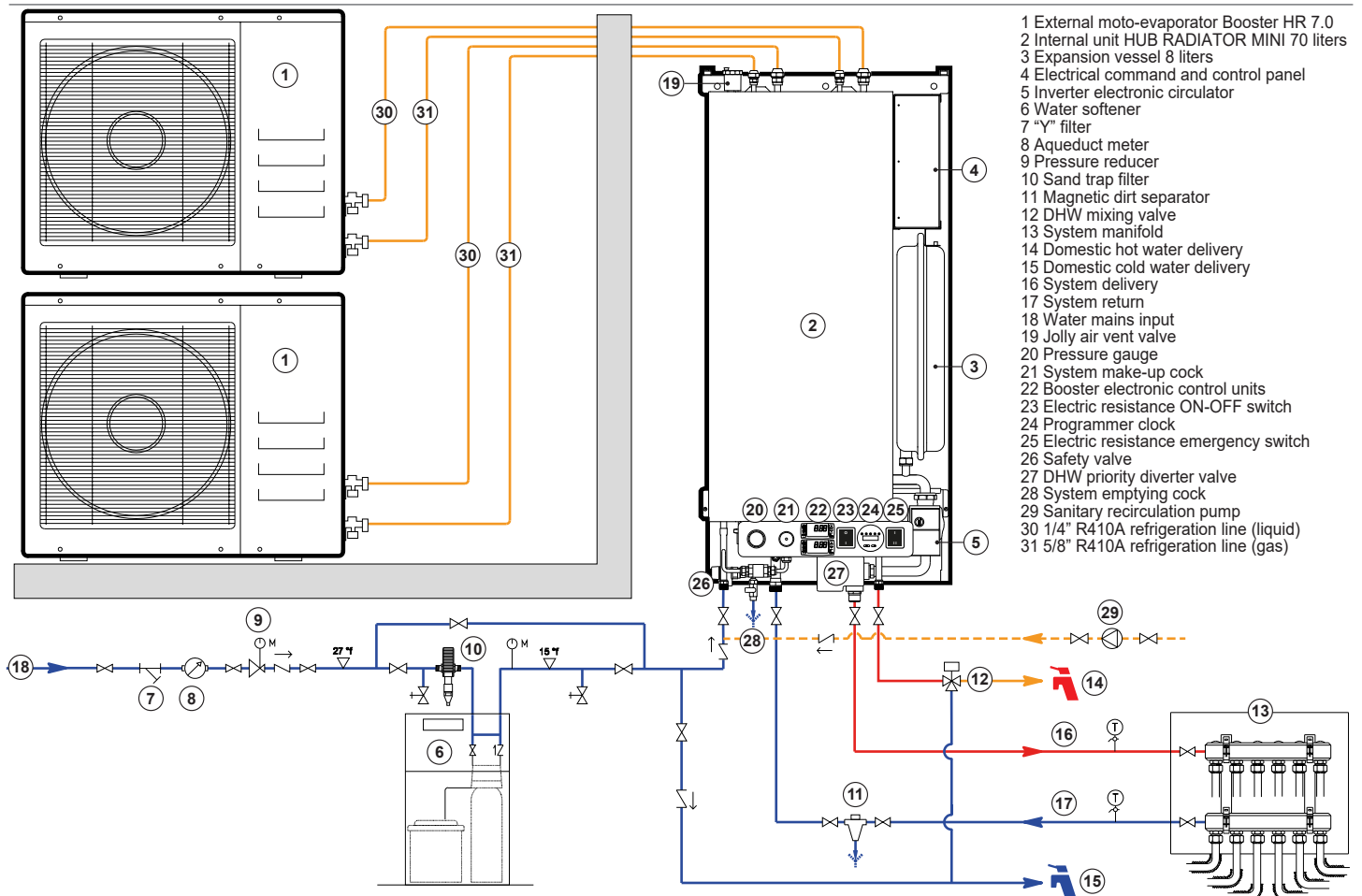
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Application example HUB RADIATOR MINI 7.0



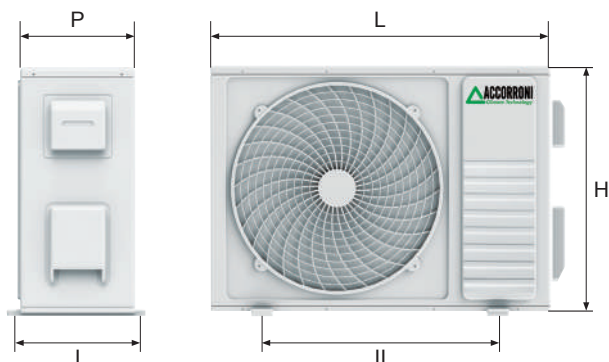
Application example HUB RADIATOR MINI 14.0



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External unit dimensions Booster HUB RADIATOR MINI



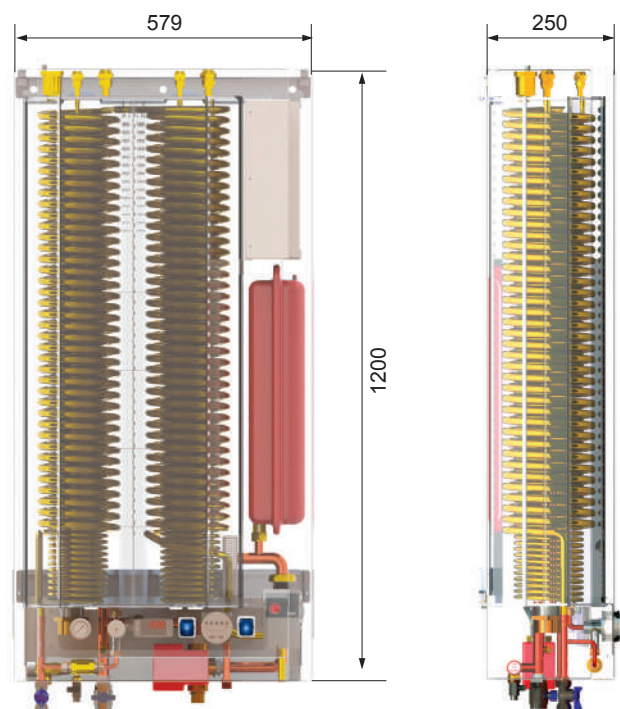
Booster	L mm	H mm	P mm	I mm	II mm
HR 2.5	700	552	256	275	435
HR 7.0	830	585	300	330	515

Technical data Booster

	U.M.	HR 2.5	HR 7.0
Refrigerant quantity	Kg	0,8	1,5
Refrigerant gas connections		3/8"	5/8"
Coolant connections		1/4"	1/4"
Power supply		230V/1/50Hz	
Sound power (1)	dB(A)	65,1	68,4
Sound pressure at one meter (2)	dB(A)	51,2	54,7
Weight	Kg	25	43

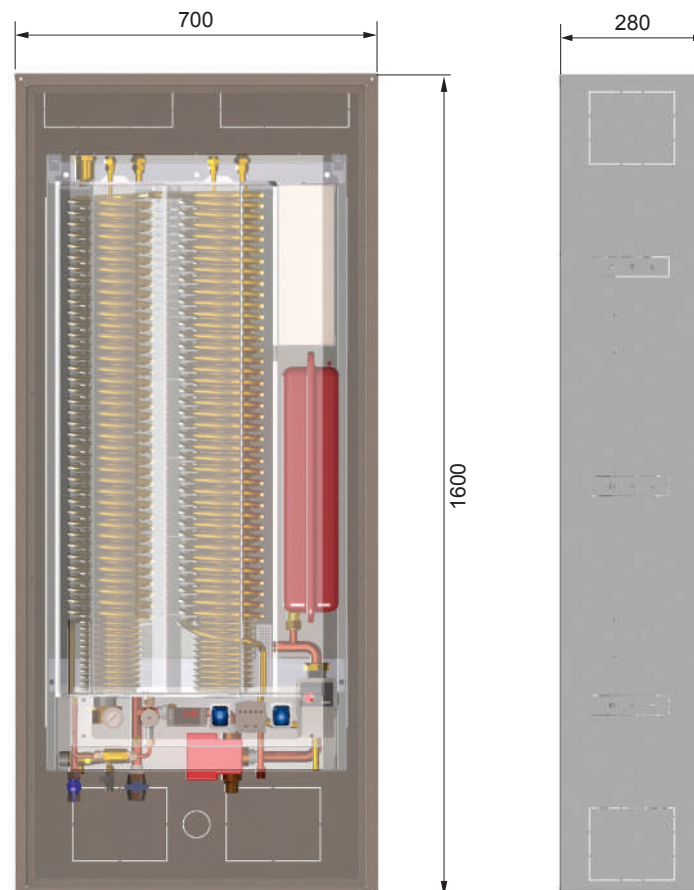
(1) Measurements carried out according to UNI EN 14511 i - heating 30/35 °C - Ext. temp. 7 °C db/6 °C db(2) Value calculated according to ISO 3744: 2010

Indoor wall unit HUB RADIATOR MINI



values expressed in mm

Built-in internal unit HUB RADIATOR MINI



Withdrawal table ACS HUB RADIATOR MINI

DESCRIZIONE	U.M.	5.0	7.0	10.0	14.0**
DHW withdrawal at 40 °C - accumulation at 55 °C - inlet water at 10 °C	l	50	51	52	54
DHW withdrawal at 40 °C - accumulation at 55 °C - inlet water at 15 °C	l	60	62	64	66
HP recovery time from 38 °C to 55 °C - External temp. 7 °C*	min	21	18	14	8
Recovery time PdC + resistance from 38 °C to 58 °C - External temp. 7 °C*	min	17	15	11	7
Water withdrawal at 40 °C with accumulation at 62 °C with inlet water at 10 °C	l	62	63	65	67
Water withdrawal at 40 °C with accumulation at 62 °C with inlet water at 15 °C	l	76	77	80	82
Recovery time PdC + resistance from 38 °C to 62 °C - External temp. 7 °C*	min	25	22	16	10
Recovery time from 10 °C to 55 °C - External temp. 7 °C*	min	45	39	30	19

*Data calculated with heating system off

** Continuous domestic hot water supply to a single user of 7 liters per minute (inlet water 10 °C - outlet 40 °C - external temperature 7 °C)

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Technical data table HUB RADIATOR MINI

DESCRIPTION	U.M.	HR MINI 5.0	HR MINI 7.0	HR MINI 10.0	HR MINI 14.0
Thermal power (1)	kW	4,96	7,0	9,5	14,04
Absorbed power (1)	kW	1,20	1,70	2,3	3,40
C.O.P. (1)	W/W	4,14	4,12	4,13	4,12
Thermal power (2)	kW	4,74	6,79	9,16	13,58
Absorbed power (2)	kW	1,56	2,21	2,99	4,42
C.O.P. (2)	W/W	3,02	3,07	3,06	3,07
Thermal power (3)	kW	4,12	5,90	7,96	11,80
Absorbed power (3)	kW	1,26	1,75	2,38	3,50
C.O.P. (3)	W/W	3,28	3,37	3,34	3,37
Thermal power (4)	kW	4,48	6,44	8,68	12,88
Absorbed power (4)	kW	1,80	2,54	3,44	5,08
C.O.P. (4)	W/W	2,50	2,53	2,52	2,53
Thermal power (5)	kW	4,22	5,52	7,63	11,04
Absorbed power (5)	kW	1,50	2,00	2,75	4,00
C.O.P. (5)	W/W	2,81	2,76	2,77	2,76
Thermal power (6)	kW	3,98	5,20	7,19	10,40
Absorbed power (6)	kW	1,88	2,53	3,47	5,06
C.O.P. (6)	W/W	2,11	2,05	2,07	2,06
S.C.O.P. (7)	W/W	3,78	3,71	3,72	3,71
Seasonal heating efficiency (η_s)	%	153,1	150,3	150,6	150,3
Energy efficiency (8)		A / A++			
Defrosting method		Cycle reversal with immersion condenser			
Type of refrigerant		R410A			
Technical water temperature min/max	°C	+ 30 / + 55			
Refrigerant quantity (pre-inserted)	kg	0,8 x 2	1,5	1,5 + 0,8	1,5 x 2
Min distance between outdoor and indoor unit	m	3			
Max distance between outdoor and indoor unit without charging	m	5			
Max distance between external and internal unit with charging	m	15			
Max height difference between external and internal unit	m	5			
Refrigerant gas line connection		3/8" x 2	5/8"	5/8" - 3/8"	5/8" x 2
Refrigerant fluid line fitting		1/4" x 2	1/4"	1/4" - 1/4"	1/4" x 2
External temperature operating limits	°C	-15 / +45			
Internal unit technical water content	l	70			
Max flow rate of inverter electronic circulator	m ³ /h	3,3			
Max inverter electronic circulator head	m	6,2			
Electrical absorption of inverter electronic circulator	W	3 - 45			
Expansion vessel volume	l	8			
Preload expansion tank	bar	1			
Safety valve calibration	bar	3			
Back up electrical resistance	W	1500			
Power supply		230V/1/50Hz			
Cold water inlet and DHW outlet hydraulic connections		1/2" M			
System delivery and return hydraulic connections		3/4" M			
Thermal dispersion of internal unit accumulations	kWh/24h	1,82			
Internal transport/operating unit weight	kg	79 / 134	70 / 125	79 / 134	79 / 134
Outdoor unit weight	kg	25 x 2	43	43 + 25	43 x 2

(1) Heating: external air temperature 7 °C d.b. - 6 °C b.u.; inlet/outlet water temperature 30/35 °C

(2) Heating: external air temperature 7 °C d.b. - 6 °C b.u.; inlet/outlet water temperature 40/45 °C

(3) Heating: external air temperature 0 °C db; inlet/outlet water temperature 30/35 °C

(4) Heating: external air temperature 0 °C d.b.; inlet/outlet water temperature 40/45 °C

(5) Heating: external air temperature -7 °C db; inlet/outlet water temperature 30/35 °C

(6) Heating: external air temperature -7 °C db; inlet/outlet water temperature 40/45 °C

(7) Heating: average climate conditions; inlet/outlet water temperature 30/35 °C

(8) Water 35°C / 55°C