ECOi-LOOP

Water source heat pumps

Water source heat pumps

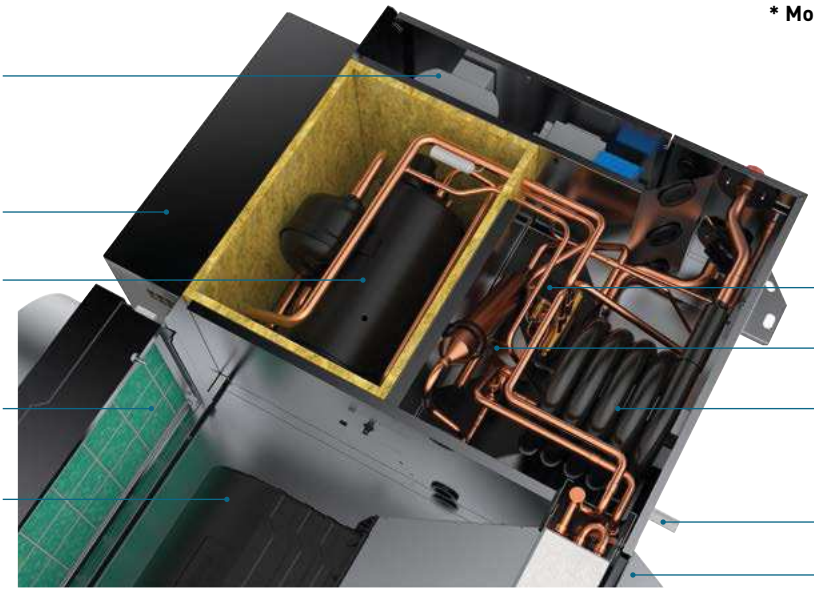
One building, different needs!
Water source heat pumps are ideal for best in class hotels, offices or shopping centers. This solution offers improved comfort by having several different indoor climates inside a building, while maintaining the energy through an internal closed water loop.

What is a water loop system with water source heat pumps?

The water loop system enables distributed cooling and heating production at different temperatures with a single water circuit.
The recovery of condensation heat units in cooling can used for units in heating and vice-versa, thus providing a balanced and highly efficient system. These indoor units are called water source heat pumps which are equipped with a compressor and 2 heat exchangers to allow energy transfer between the water loop and air within the space.

Environmentally friendly and economic

*** Model shown: ECOi-LOOP-N EVO.**



Key features for ECOi-LOOP.

- **High efficiency**
- **Heating and cooling of rooms at the same time. All units are connected to the same water loop**
- **Decentralised cool/heat production (closed water circuit)**
- **Water heater or cooling tower do not need to be operated as long as cooling and heating loads are roughly balanced. Temperature in the water loop will be kept between 16 and 32 °C**
- **Reduced refrigerant charge (no refrigerant pipes to an outdoor unit required)**
- **Low risk of leakage (hermetically sealed systems)**
- **Water source heat pumps can be easily added or removed without changing the system layout**
- **Each unit is autonomous and has its own controller allowing also its own safety**

Quick selection guide - Water source heat pumps

Page	Size	Cooling and heating capacity (kW)	NR sound levels (at MS)	Nominal air flow [1] (m³/h)	Pressure (Pa)	Fan	Dimensions (mm)
ECOi-LOOP C/H · R410A	15	1,5 / 1,9	26	435	0-140	EC	900 x 530 x 250 [2]
P. 106 	20	2,2 / 2,5	30	465	0-140	EC	900 x 530 x 250 [2]
	30	2,9 / 3,7	34	525	0-140	EC	900 x 530 x 250 [2]
ECOi-LOOP-N H · R513A	70	7,0 / 8,1	52	1727	0-495	EC	1142 x 762 x 516 [2]
	85	8,4 / 9,8	50	2165	0-495	EC	1142 x 762 x 516 [2]
	100	10,3 / 11,3	56	2826	0-335	EC	1333 x 818 x 580 [2]
P. 108 	110	11,2 / 12,5	54	3078	0-250	EC	1333 x 818 x 580 [2]
	120	12,1 / 13,8	55	3309	0-350	EC	1333 x 818 x 580 [2]
	135	13,3 / 14,6	57	3677	0-260	EC	1333 x 818 x 580 [2]
ECOi-LOOP-N EVO C/H · R513A							
P. 110 		2,9 / 3,8	25,8 [3]	525	0-140	EC	900 x 636 x 250 [2]

1) At high speed. 2) Without air inlet/outlet options. 3) At minimum thermal load. 4) Standard unit with cabinet and feet.

Page	Size	Cooling and heating capacity (kW)	NR sound levels (at MS)	Nominal air flow [1] (m³/h)	Pressure (Pa)	Fan	Dimensions (mm)
ECOi-LOOP HRW C/H · R407C **ECOi-LOOP HRWE H · R407C**	19	5,3 / 5,8	37	1250	>50	AC	900 x 600 x 439
	27	7,4 / 8,3	34	1190	>50	AC	1050 x 600 x 460
	27 HE	7,5 / 9,3	34	1180	>50	AC	1050 x 660 x 460
	30	8,7 / 9,8	35	1490	>100	AC	1050 x 660 x 460
	30 HE	8,9 / 10,0	35	1500	>100	AC	1050 x 660 x 460
	36	10,1 / 11,0	37	1580	>100	AC	1050 x 660 x 460
	36 HE	11,1 / 12,2	37	1580	>100	AC	1250 x 705 x 513
	42	11,4 / 14,4	40	2040	>100	AC	1250 x 705 x 513
	42 HE	12,5 / 14,5	40	2040	>100	AC	1250 x 705 x 513
P. 112 	48	13,0 / 14,9	43	2750	>100	AC	1250 x 705 x 513
	60	14,3 / 16,1	43	2840	>100	AC	1250 x 705 x 513
	60 HE	16,7 / 18,8	43	2840	>100	AC	1250 x 705 x 583
	72	17,1 / 21,5	39	3570	>100	AC	1250 x 705 x 513
	72 HE	20,6 / 22,6	39	3800	>100	AC	1680 x 955 x 770
	96	21,7 / 26,6	54	4700	>100	AC	1680 x 955 x 770
	96 HE	24,5 / 28,5	54	4700	>100	AC	1680 x 955 x 770
	20	30,0 / 38,1	53	5600	>200	AC	1680 x 955 x 770
ECOi-LOOP FS H · R407C	7	1,9 / 2,4	37	400	0	AC/EC	1138 x 251 x 821 [4]
P. 114 	9	2,1 / 2,5	38	460	0	AC/EC	1138 x 251 x 821 [4]
	12	2,7 / 3,2	40	510	0	AC/EC	1138 x 251 x 821 [4]
ECOi-LOOP-N FS H · R513A	7	1,7 / 1,8	34	340	0	AC/EC	1138 x 260 x 821 [4]
P. 116 	9	2,0 / 2,6	36	400	0	AC/EC	1138 x 260 x 821 [4]

1) At high speed. 2) Without air inlet/outlet options. 3) At minimum thermal load. 4) Standard unit with cabinet and feet.

ECOi-LOOP 15-30 C/H · R410A

Water source heat pumps cooling only and heat pump.

Cooling capacity: 1,5 to 2,9 kW.
Heating capacity: 1,9 to 3,7 kW.

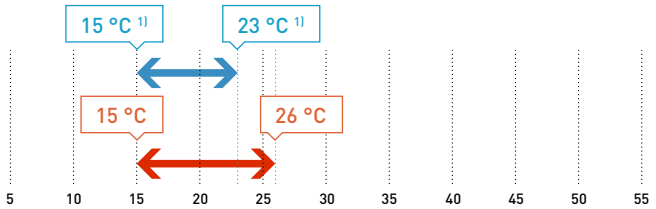
Optional controller.
RCS remote control.

Optional controller.
SRC - mini BMS controller.

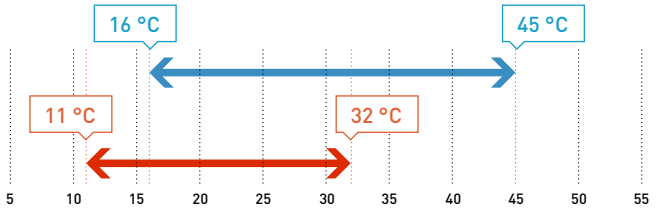
SEE PAGE 118 FOR MORE DETAILS ABOUT WATER SOURCE HEAT PUMPS CONTROL SYSTEMS

Operating limits

Air inlet temperature.



Water inlet temperature.



1) From 21 to 32 °C DB. * Maximum water pressure 10 bars.

The range at a glance

- 2 versions: C (cooling only) and H (heat pump)
- 3 sizes
- Horizontal installation
- Nominal air flow from 435 to 525 m³/h
- Many air and water configurations available
- 140 Pa maximum external static pressure
- Operating range: from 15 °C to 32 °C ambient air temperature
- Water inlet temperature from 11 °C to 45 °C

Advantages

- Very high performances: EER up to 5,05 and COP up to 5,70
- Low energy consumption EC fan
- In-line or perpendicular air flow
- Increased robustness: coaxial heat exchanger
- Easy access to the internal components: large electrical panel and filter accessible from 3 sides
- 100% factory tested

Equipment

- The refrigerant circuit comprises a rotary type hermetic compressor, a cycle reversal valve (H type only), a water/refrigerant heat exchanger, a liquid receiver, a capillary expansion device, a finned coil, HP and LP pressure switches and 2 Schrader valves (HP and LP)
- The rotary type hermetic compressor, mounted on spring anti-vibration mounts, is integrated in a compartment coated with reinforced acoustic insulation. It is also equipped with internal thermal protection
- The water/refrigerant heat exchanger is of copper/stainless steel coaxial type for an increased efficiency
- The units are equipped with a control system (POL423) utilising Modbus RTU
- The casing is made of galvanised steel sheet
- Condensate drain pan with an anti-corrosion treatment
- The electrical box is located on the hydraulic service side with a wide access panel
- The units are equipped with multi-position brackets for easy installation

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

ECOi-LOOP 15-30 C - cooling only			P-LPE015CA	P-LPE020CA	P-LPE030CA
ECOi-LOOP 15-30 H - heat pump			**P-LPE015HA**	**P-LPE020HA**	**P-LPE0130HA**
Total cooling capacity [1]		W	1507	2151	2902
Sensible cooling capacity [1]		W	1371	1733	2355
EER			4,51	5,05	4,25
Heating capacity [2]		W	1934	2510	3680
COP			5,49	5,70	4,97
Ventilation					
Number of fans				1	
Nominal air flow		m³/h	435	465	525
Motor power		W	24	38	53
Air filter	Number / efficiency		1 / Basic or G3M1	1 / Basic or G3M1	1 / Basic or G3M1
Hydraulic circuit					
Water heat exchanger	Number / type		1 / coaxial	1 / coaxial	1 / coaxial
Maximum water pressure		bar	10	10	10
Nominal water flow		l/h	317	444	617
WPD at nominal water flow		kPa	8	12	18
Connections - inlet/outlet (Ø)		Inch	½ Gas male	½ Gas male	½ Gas male
Condensate outlet - external (Ø)		mm	16	16	16
Refrigerant circuit					
Number of refrigerant circuits			1	1	1
Compressor type			Rotary	Rotary	Rotary
Load		g	415	565	565
Electrical data					
Power supply	Voltage	V	230	230	230
	Phase		Single phase	Single phase	Single phase
	Frequency	Hz	50 ±10%	50 ±10%	50 ±10%
Input power [3]	Cooling	W	365	471	742
	Heating	W	389	491	806
Electric heating coil [4]	Number / capacity	- / W	1 / 600+600	1 / 800+800	1 / 1000+1000
	Input power	W	1200	1600	2000
Sound levels - without acoustic options					
Sound power - radiated	Lo / Med / Hi	dB(A)	41,9 / 43,1 / 44,4	42,7 / 44,5 / 46,5	45 / 46,8 / 48,9
Sound power - discharge	Lo / Med / Hi	dB(A)	45,6 / 49,1 / 53	49,1 / 53,6 / 58,3	51,7 / 57,2 / 61,9
Sound pressure [5]	Lo / Med / Hi	dB(A)	27,1 / 30 / 33,5	30 / 34,1 / 38,4	32,7 / 37,6 / 42
NR [5]	Lo / Med / Hi		22,4 / 25,7 / 29,4	25,8 / 30,1 / 34,4	28,6 / 33,6 / 37,9
Sound levels - with air outlet silencer and insulation around the fan					
Sound power - radiated	Lo / Med / Hi	dB(A)	42,3 / 43,2 / 44,5	42,7 / 44,4 / 46,5	44,4 / 46,6 / 48,9
Sound power - discharge	Lo / Med / Hi	dB(A)	32,2 / 35,2 / 38,5	34,7 / 38,5 / 42,5	36,1 / 40,6 / 44,6
Sound pressure [5]	Lo / Med / Hi	dB(A)	23,2 / 25 / 27,3	24,8 / 27,7 / 31	27 / 30,6 / 34
NR [5]	Lo / Med / Hi		18,8 / 20,4 / 22,7	20,1 / 23 / 26,4	23,2 / 25,9 / 29,5
Dimensions - without air inlet/outlet options					
Length		mm	900	900	900
Width		mm	530	530	530
Height		mm	250	250	250
Weight - without air inlet/outlet options					
Operating weight		kg	48	48	48

1) Nominal cooling capacities based on entering air temperature of 27 °C DB, 19 °C WB with entering water temperature of 30 °C. 2) Nominal heating capacities based on entering air temperature of 20 °C DB, 15 °C WB with entering water temperature of 20 °C. 3) Input power at nominal conditions (compressor + fan at high speed). 4) Electric heating coil is available as an option. 5) Informative data, considering an hypothetical sound attenuation of the room and installation of 21 dB(A). In-line configuration with filter.

Accessories and options
Air outlet silencer
Basic or G3M1 filter
Circuit breaker
Controller with BACnet MSTP (LON and Modbus TCP/IP available upon request)
Drain outlet
Drain pump
Electric heaters

Accessories and options
Flow switch control
Insulation around the fan
Many air inlet/outlet and water connection configurations
Pressostatic valve (cooling only)
RCS remote control (for controller with protocol communication)
Room temperature sensor
SRC - mini BMS controller

EC MOTOR GREEN VENTILATION | HIGH SEER 5,05 | HIGH SCOP 5,70 | ROTARY COMPRESSOR | COAXIAL HEAT EXCHANGER | SUPER QUIET | VERY HIGH PERFORMANCE

ECOi-LOOP-N 70-135 H · R513A

Water source heat pumps heat pump.

Cooling capacity: 7,0 to 13,3 kW.
Heating capacity: 8,1 to 14,6 kW.

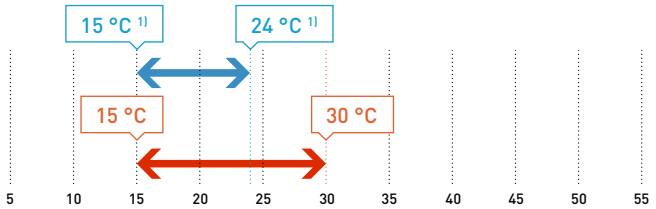
Optional controller.
RCS remote control.

Optional controller.
SRC - mini BMS controller.

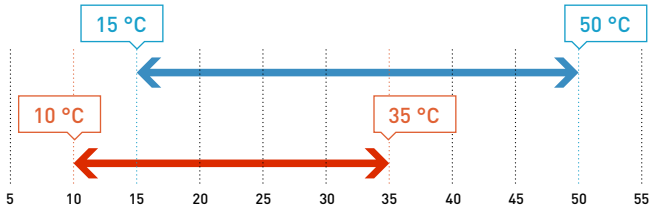
SEE PAGE 118 FOR MORE DETAILS ABOUT WATER SOURCE HEAT PUMPS CONTROL SYSTEMS

Operating limits

Air inlet temperature.



Water inlet temperature.



1) From 21 to 33 °C DB. * Maximum water pressure 10 bars.

The range at a glance

- 1 version: H (heat pump)
- 6 sizes
- Horizontal installation
- Nominal air flow from 1730 to 3680 m³/h
- In-line or perpendicular air flow
- Up to 495 Pa according to size
- Operating range: from 15 °C to 32 °C ambient air temperature
- Water inlet temperature from 11 °C to 45 °C

Advantages

- Very high performances: EER up to 3,95 and COP up to 4,58
- Low energy consumption EC fan
- Increased robustness: coaxial heat exchanger
- Easy access to the internal components: a wide removable panel allows an easy access to the electrical panel and the access to the filter is from the side of the unit, without removing the return duct
- 100% factory tested

Equipment

- The refrigerant circuit comprises a scroll type hermetic compressor, a cycle reversal valve, a water/refrigerant heat exchanger, a bi-flow thermostatic expansion valve, a finned coil, HP and LP pressure switches and 2 Schrader valves (HP and LP)
- The scroll type hermetic compressor, mounted on spring anti-vibration mounts, is integrated in a compartment coated with reinforced acoustic insulation. It is also equipped with internal thermal protection
- The water/refrigerant heat exchanger is of copper/stainless steel coaxial type for an increased efficiency
- The units are equipped with a control system (POL423) utilising Modbus RTU
- The casing is made of galvanised steel sheet.
- Condensate drain pan with an anti-corrosion treatment
- The electrical box is located inside the compressor compartment with a wide access panel

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

ECOi-LOOP-N 70-135 H - heat pump			P-LPN070HA	P-LPN085HA	P-LPN100HA	P-LPN110HA	P-LPN120HA	P-LPN135HA
Total cooling capacity [1]		W	7011	8407	10290	11183	12105	13301
Sensible cooling capacity [1]		W	5960	7146	8541	9282	10047	11040
Total absorbed power [2]		W	1776	2275	2743	3234	3161	3784
EER Compressor			4,53	4,21	4,36	4,0	4,46	4,1
EER according to EN14511			3,95	3,7	3,75	3,46	3,83	3,52
Total heating capacity [3]		W	8069	9808	11307	12514	13834	14639
Total absorbed power [2]		W	1761	2256	2590	3073	3081	3467
COP Compressor			5,27	4,96	5,12	4,75	5,25	5,0
COP according to EN14511			4,58	4,35	4,37	4,07	4,49	4,22
Ventilation								
EC voltage		V	3,80	5,50	7,80	8,80	7,60	8,60
Air flow	Min (LS)	m³/h	1123	1407	1837	2001	2157	2390
	Med (MS)	m³/h	1425	1786	2331	2539	2730	3034
	Max (nominal) (HS)	m³/h	1727	2165	2826	3078	3309	3677
Static pressure		Pa	100	100	100	100	100	100
Fan absorbed power		W	328	393	552	631	617	737
Fan power		W	684	653	703	738	671	722
Air filter	Number / efficiency		1 / G2M1	1 / G2M1	1 / G2M1	1 / G2M1	1 / G2M1	1 / G2M1
Hydraulic circuit								
Water heat exchanger	Number / type		1 / coaxial	1 / coaxial	1 / coaxial	1 / coaxial	1 / coaxial	1 / coaxial
Maximum water pressure		Bar	10	10	10	10	10	10
Nominal water flow	Cooling [1]	l/h	1497	1818	2274	2508	2649	2957
	Heating [3]	l/h	1882	2256	2514	2738	3143	3463
Cutoff water flow	Cooling	l/h	749	909	1137	1254	1325	1479
	Heating	l/h	941	1128	1257	1369	1572	1732
WPD at nominal water flow	Cooling [1]	kPa	35,9	49,8	39,6	46,6	30,6	38,3
	Heating [3]	kPa	52,7	71,3	46,8	53,9	43,4	53
Hydraulic connections - inlet/outlet		Inch	1 Gas male	1 Gas male	1 Gas male	1 Gas male	1 Gas male	1 Gas male
Condensate outlet (Ø)		mm	19	19	19	19	19	19
Refrigerant circuit								
Number of refrigerant circuits			1	1	1	1	1	1
Compressor type			Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Load		g	1040	1165	1108	1116	1355	1363
Electrical data								
Power supply	Voltage	V	400	400	400	400	400	400
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Maximum current without heating		A	12,8	13,4	15,6	18,2	17,3	18,1
Starting current		A	53,5	53,5	53,5	78,5	71,4	78,4
Sound levels								
Sound power Lw - radiated	Lo / Med / Hi	dB(A)	60,6/65/65,4	59,5/65,3/66,1	61/66,9/69,4	62,1/67,7/10,4	58/62,6/67,4	58,8/63,9/68,8
Sound power Lw - discharge	Lo / Med / Hi	dB(A)	53,8/62,9/71	62,8/69,5/73,6	68,4/72,7/77,1	68,8/72,6/77,2	64,5/69,3/73,5	65,7/71,2/75,6
Sound power Lw	Lo / Med / Hi	dB(A)	63,7/68,1/72,6	65,5/71,4/74,7	69,6/74,1/78,1	70,1/74,3/78,5	66,5/70,9/75,1	67,5/72,7/77
Sound pressure Lp [4]	Lo / Med / Hi	dB(A)	49/54,3/56,2	49,5/54,3/56,4	55,3/58,8/62,6	54,4/57,6/61,9	52,5/56,8/60,5	52,7/58,5/62,1
NR [4]	Lo / Med / Hi		45,9/51,5/51,2	45,9/49,9/50,9	52,3/55,5/58,5	52,3/54,4/59,1	50,7/55,2/58,4	50,7/56,9/60,3
Dimensions - without air inlet/outlet options								
Length		mm	1142	1142	1333	1333	1333	1333
Width		mm	762	762	818	818	818	818
Height		mm	516	516	580	580	580	580
Weight								
Operating weight		kg	134	134	153	153	160	160

1) Nominal cooling capacities based on entering air temperature of 27 °C DB, 19 °C WB with entering water temperature of 30 °C. 2) Input power at nominal conditions (compressor + fan at high speed).
3) Nominal heating capacities based on entering air temperature of 20 °C DB, 15 °C WB with entering water temperature of 20 °C. 4) Informative data, considering an hypothetical sound attenuation of the room and installation of 21 dB(A). In-line configuration with filter.

Accessories and options
G2M1 filter or G3 filter
Circuit breaker
Controller with BACnet MSTP or BACnet IP (LON and Modbus TCP/IP available upon request)
Drain pump
Electric heaters

Accessories and options
Flow switch control
General default report
Many air configurations
RCS remote control (for controller with protocol communication)
Room temperature sensor
SRC - mini BMS controller

EC MOTOR GREEN VENTILATION | HIGH SEER 3,95 | HIGH SCOP 4,58 | SCROLL COMPRESSOR | COAXIAL HEAT EXCHANGER | SUPER QUIET | VERY HIGH PERFORMANCE

ECOi-LOOP-N EVO C/H · R513A

Water source heat pumps cooling only and heat pump.

Cooling capacity: 1,7 to 2,9 kW.
Heating capacity: 2,0 to 3,8 kW.

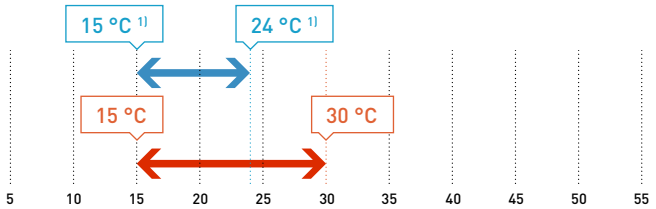
Optional controller.
RCS remote control.

Optional controller.
SRC - mini BMS controller.

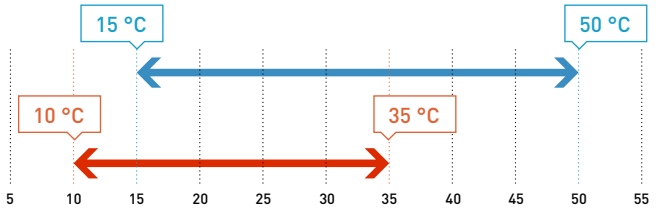
SEE PAGE 118 FOR MORE DETAILS ABOUT WATER SOURCE HEAT PUMPS CONTROL SYSTEMS

Operating limits

Air inlet temperature.



Water inlet temperature.



1) From 21 to 33 °C DB. * Maximum water pressure 10 bars.

The range at a glance

- Unique size available in C (cooling only) or H (heat pump) versions
- Horizontal installation
- Air flow from 290 to 525 m³/h
- Inverter compressor technology
- Many air and water configurations available
- 140 Pa maximum external static pressure
- Operating range: from 15 °C to 32 °C ambient air temperature
- Water inlet temperature from 11 °C to 45 °C

Advantages

- Eco-friendly: R513A refrigerant with very low GWP (631) and low energy consumption EC fan
- Economic: Inverter compressor adapting its speed according to the required capacity
- Extra silent unit: NR<26 at low speed and reinforced insulation
- Very high-performance: EER up to 4,25 and COP up to 4,53
- Low height for an easy integration: only 250 mm
- Highly customisable: many aeraulic configurations and selection of the hydraulic service side
- Increased robustness: coaxial heat exchanger
- Easy access to the internal components: large electrical panel and filter accessible from 3 sides
- 100% factory tested

Equipment

- The refrigerant circuit comprises an Inverter rotary type hermetic compressor, a cycle reversal valve (for H type), a water/refrigerant heat exchanger, a liquid receiver, a thermostatic expansion valve, a finned coil, HP and LP pressure switches and 2 Schrader valves (HP and LP)
- The Inverter rotary type hermetic compressor, mounted on spring anti-vibration mounts, is integrated in a compartment coated with reinforced acoustic insulation. It is also equipped with internal thermal protection
- The water/refrigerant heat exchanger is of copper/stainless steel coaxial type for an increased efficiency
- The unit is equipped with a complete control system (Modbus RTU or BACnet MSTP protocol communication)
- The casing is made of galvanised steel sheet
- Condensate drain pan with an anti-corrosion treatment
- The electrical box is located on the hydraulic service side with a wide access panel
- The units are equipped with multi-position brackets for easy installation

Technical features

ECOi-LOOP-N EVO C - cooling only			**P-LPVNCA**
ECOi-LOOP-N EVO H - heat pump			**P-LPVNHA**
Total cooling capacity [1]	Min - Max [2]	W	1687 - 2948
Sensible cooling capacity [1]	Min - Max [2]	W	1363 - 2337
EER	Min - Max [2]		4,25 - 3,06
Heating capacity [3]	Min - Max [2]	W	2004 - 3769
COP	Min - Max [2]		4,53 - 3,45
Ventilation			
Number of fans			1
Nominal air flow (at low and high speeds)	Min - Max [2]	m³/h	290 - 525
Motor power (at low and high speeds)	Min - Max [2]	W	13 - 54
Air filter	Number / efficiency		1 / Basic or G3
Hydraulic circuit			
Water heat exchanger	Number / type		1 / coaxial
Maximum water pressure		bar	10
Nominal water flow	Cooling Min - Max [2]	l/h	354 - 662
	Heating Min - Max [2]	l/h	458 - 789
WPD at nominal water flow [4]	Cooling Min - Max [2]	kPa	9 - 19,5
	Heating Min - Max [2]	kPa	12,3 - 24,6
Connections - inlet/outlet (Ø)		Inch	½ Gas male
Condensate outlet - external (Ø)		mm	16
Refrigerant circuit			
Number of refrigerant circuits			1
Compressor type			Inverter rotary
Load		g	514
Electrical data			
Power supply	Voltage	V	230
	Phase		Single phase
	Frequency	Hz	50 ±10%
Input power [5]	Cooling Min - Max [2]	W	397 - 964
	Heating Min - Max [2]	W	442 - 1093
Electric heating coil [6]	Number / capacity Min - Max [2]	- / W	1 / 600 + 600 - 1 / 1000 + 1000
	Input power Min - Max [2]	W	1200 - 2000
Sound levels - without acoustic options			
Sound power - radiated	Min - Max [2]	dB(A)	41,9 - 51,5
Sound power - discharge	Min - Max [2]	dB(A)	47,9 - 62,8
Sound pressure [7]	Min - Max [2]	dB(A)	29,3 - 43
NR [7]	Min - Max [2]		25,8 - 39,2
Sound levels - with air outlet silencer and insulation around the fan			
Sound power - radiated	Min - Max [2]	dB(A)	42,3 - 51,6
Sound power - discharge	Min - Max [2]	dB(A)	33,2 - 44,4
Sound pressure [7]	Min - Max [2]	dB(A)	24,5 - 35
NR [7]	Min - Max [2]		19,5 - 30,4
Dimensions - without air inlet/outlet options			
Length		mm	900
Width		mm	636
Height		mm	250
Weight - without air inlet/outlet options			
Operating weight		kg	51

1) Nominal cooling capacities based on entering air temperature of 27 °C DB, 19 °C WB with entering water temperature of 30 °C. 2) Thermal load. 3) Nominal heating capacities based on entering air temperature of 20 °C DB, 15 °C WB with entering water temperature of 20 °C. 4) Without valve. 5) Input power at nominal conditions (compressor + fan at high speed). 6) Electric heating coil is available as an option. 7) Informative data, considering an hypothetical sound attenuation of the room and installation of 21 dB. In-line configuration with filter.

Accessories and options
Air outlet silencer
Basic or G3M1 filter
Circuit breaker
Drain outlet
Drain pump
Electric heaters
Flow switch control

Accessories and options
General default report
Insulation around the fan
Many air inlet/outlet and water connection configurations
RCS remote control (for controller with protocol communication)
Room temperature sensor
SRC - mini BMS controller

EC MOTOR GREEN VENTILATION | HIGH SEER 4,25 | HIGH SCOP 4,53 | INVERTER | COAXIAL HEAT EXCHANGER | INVERTER ROTARY COMPRESSOR | SUPER QUIET | VERY HIGH PERFORMANCE

ECOi-LOOP HRW C/H and ECOi-LOOP HRWE H · R407C

Water source heat pumps cooling only and heat pump.

Cooling capacity: 5,3 to 30,0 kW.
Heating capacity: 5,8 to 38,1 kW.

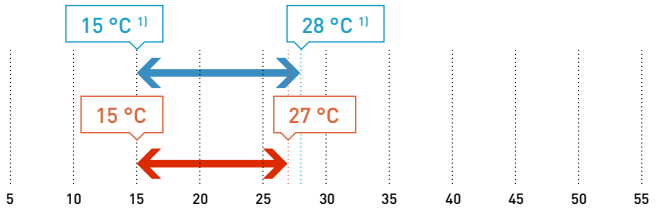
Optional controller.
RCS remote control.

Optional controller.
SRC - mini BMS controller.

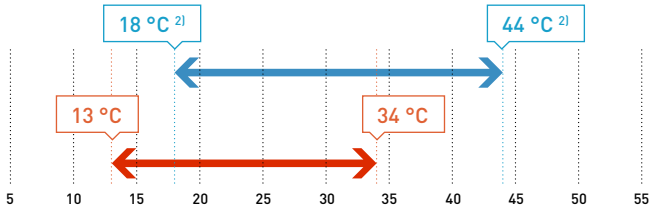
SEE PAGE 118 FOR MORE DETAILS ABOUT WATER SOURCE HEAT PUMPS CONTROL SYSTEMS

Operating limits

Air inlet temperature.



Water inlet temperature.



1) From 21 to 38 °C DB. 2) From 20 to 48 °C for 96-120. * Maximum water pressure 16 bars.

The range at a glance

- 2 versions: C (cooling only) and H (heat pump)
- 10 sizes
- Vertical installation
- Versions: standard or HE** (very high efficiency)
- Nominal air flow from 1180 to 5600 m³/h
- AC fan: 3-speed direct drive fan motor for sizes 19 to 72 and belt drive with variable pitch pulley for sizes 96 and 120
- Operating range: from 15 °C to 38 °C ambient air temperature
- Water inlet temperature from 13°C to 48 °C

Advantages

- Low sound levels: acoustic insulation between ventilation and compressor compartments
- Very high efficiency versions (HE)*: EER up to 4,74 and COP up to 4,46
- In-line or perpendicular air flow
- Easy access to components through wide removable panels
- Condensate drain pan with an anti-corrosion treatment and a float-type safety system
- 100% factory tested

Equipment

- The refrigerant circuit comprises a scroll or rotary type hermetic compressor, a cycle reversal valve (for H type), a water/refrigerant heat exchanger, a liquid receiver, a bi-flow thermostatic expansion valve and a finned coil, HP and LP pressure switches and 2 Schrader valves (HP and LP)
- The rotary or scroll type hermetic compressor, mounted on rubber anti-vibration mounts, is integrated in a compartment coated with reinforced acoustic insulation. It is also equipped with internal thermal protection
- The units are equipped with a control system (POL423) utilising Modbus RTU
- The water/refrigerant heat exchanger is made of brazed stainless steel plates, for improved efficiency
- Condensate drain pan with an anti-corrosion treatment and a float-type safety system
- A G2-M1air filter is provided within the unit

* HE versions only available for heat pump units.

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

ECOi-LOOP HRW C - cooling only	P-LPHM***CA		019	027	—	030	—	036	—	042	—	048	060	—	072	—	096	—	120
ECOi-LOOP HRW H - heat pump	**P-LPHM***HA**		**019**	**027**	**—**	**030**	**—**	**036**	**—**	**042**	**—**	**048**	**060**	**—**	**072**	**—**	**096**	**—**	**120**
ECOi-LOOP HRWE H - heat pump	**P-LPHEM***HA**		**—**	**—**	**027**	**—**	**030**	**—**	**036**	**—**	**042**	**—**	**—**	**060**	**—**	**072**	**—**	**096**	**—**
Total cooling capacity [1]		W	5278	7419	7320	8691	8710	10138	11060	11366	12500	12965	14344	16700	17174	20600	21743	24500	29951
Sensible cooling capacity [1]		W	4257	5824	5600	6315	6676	7278	9070	8849	9542	10051	10988	13900	13536	17700	17986	19500	24413
EER			4,20	3,72	4,00	3,77	4,15	3,77	4,31	3,44	4,00	4,03	3,23	4,44	3,26	4,74	3,84	4,61	4,21
Heating capacity [2]		W	5826	8342	9252	9759	9960	11036	12200	14422	14450	14904	16147	18800	21500	22600	26637	28500	38109
COP			4,40	3,69	4,21	3,50	4,30	3,38	4,28	3,84	4,36	4,25	3,33	4,20	3,15	4,23	3,54	4,46	4,25
Ventilation																			
Number of fans			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nominal air flow		m³/h	1250	1190	1180	1490	1500	1580	1580	2040	2040	2750	2840	2840	3570	3800	4700	4700	5600
Motor power		W	450	450	450	950	950	950	950	950	950	1500	1500	1500	1500	736	1100	1100	1500
Air filter	Number / efficiency		2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1	2 / G2-M1
Hydraulic circuit																			
Number of plate heat exchanger			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum water pressure		bar	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Nominal water flow		l/h	921	1540	1620	1764	1800	2030	2306	2592	2600	2822	3348	3550	3924	4300	4860	4960	6408
WPD at nominal water flow		kPa	13	17	13	23	20	25	21	33	28	34	40	35	61	50	55	55	80,5
Connections - inlet/outlet (Ø)		Inch	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G ¾ INT	ISO G 1 ¼	ISO G ¾ INT	ISO G 1 ¼	ISO G 1 ¼	ISO G 1 ¼	ISO G 1 ¼
Condensate outlet - external (Ø)		mm	19	19	19	19	19	19	19	19	19	19	19	19	19	22	22	22	22
Refrigerant circuit																			
Number of refrigerant circuits				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Compressor type			Rotary	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Load		g	1160	1483	2534	1594	1950	1950	3200	3200	2800	3200	3200	3400	2700	3800	5100	5100	5100
Electrical data																			
Power supply	Voltage	V	230	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	Phase		Single phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50 ±10%	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral	50 + Neutral
Input power [3]	Cooling	W	1557	2118	1981	2658	2357	3044	2909	3584	3423	4200	4989	4278	6280	5279	6317	5954	8547
	Heating	W	1611	2332	2382	2983	2475	3460	3203	3920	3479	4300	5150	5098	7347	6188	7895	7115	10224
Electric heating coil	Number / capacity	- / W	2 / 1500 + 750	1 / 3750	1 / 3750	1 / 3750	1 / 3750	1 / 4500	1 / 4500	1 / 5400	1 / 5400	1 / 6500	1 / 7500	1 / 7500	1 / 9000	1 / 9000	1 / 13000	1 / 13000	1 / 16000
Sound levels																			
Sound power - radiated	Lo / Med / Hi	dB(A)	51 / 54 / 58	54 / 56 / 57	54 / 56 / 57	53 / 54 / 57	53 / 54 / 57	53 / 56 / 58	53 / 56 / 58	54 / 56 / 58	54 / 56 / 58	55 / 59 / 63	55 / 59 / 63	55 / 59 / 63	57 / 60 / 63	55 / 59 / 62	70 / 69 / 68	70 / 69 / 68	72 / 69 / 70
NR	Lo / Med / Hi		34 / 37 / 40	33 / 34 / 37	33 / 34 / 37	33 / 35 / 38	33 / 35 / 38	34 / 37 / 41	34 / 37 / 41	36 / 40 / 43	36 / 40 / 43	39 / 43 / 46	39 / 43 / 46	39 / 43 / 46	36 / 39 / 44	36 / 39 / 44	56 / 54 / 52	56 / 54 / 52	56 / 53 / 50
Dimensions																			
Length		mm	900	1050	1050	1050	1050	1050	1250	1250	1250	1250	1250	1250	1250	1680	1680	1680	1680
Width		mm	600	600	660	660	660	660	705	705	705	705	705	705	705	955	955	955	955
Height		mm	439	460	460	460	460	460	513	513	513	513	513	583	513	770	770	770	770
Weight																			
Operating weight		kg	80	100	112	100	100	112	133	133	135	140	144	149	149	253	253	259	262

1) Nominal cooling capacities based on: entering air temperature of 27 °C DB, 19 °C WB with entering water temperature of 30 °C. 2) Nominal heating capacities based on: entering air temperature of 20 °C DB, 15 °C WB with entering water temperature of 20 °C. 3) Absorbed power (compressor + fan) at nominal conditions.

Accessories and options
Circuit breaker
Controller with BACnet MSTP (LON and Modbus TCP/IP available upon request)
Electric heaters
General alarm dry contact
Main switch

Accessories and options
Motorized water valve
RCS remote control (for controller with protocol communication)
Room sensor
SRC - mini BMS controller

HIGH SEER 4.74 | HIGH SCOP 4.46 | PLATE HEAT EXCHANGER | ROTARY/SCROLL COMPRESSOR | SUPER QUIET | VERY HIGH PERFORMANCE

ECOi-LOOP FS H · R407C

Water source heat pumps heat pump.

Cooling capacity: 1,9 to 2,7 kW.
Heating capacity: 2,4 to 3,2 kW.

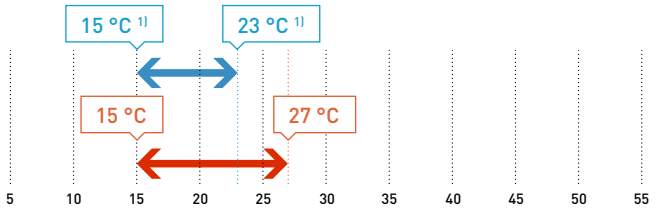
Optional controller.
RCS remote control.

Optional controller.
SRC - mini BMS controller.

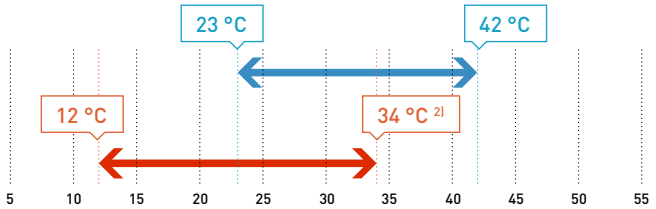
SEE PAGE 118 FOR MORE DETAILS ABOUT WATER SOURCE HEAT PUMPS CONTROL SYSTEMS

Operating limits

Air inlet temperature.



Water inlet temperature.



1) From 21 to 32 °C DB. 2) 32 °C for ECOi-LOOP FS 07 in low speed * Maximum water pressure 10 bars.

The range at a glance

- 1 version: H (heat pump)
- 3 sizes
- Vertical installation
- 4 versions: VC (standard version with cabinet), VCL (low height version with cabinet), VN (standard version without cabinet) and VNL (low height version without cabinet)
- EER up to 3,52 and COP up to 3,74
- Nominal air flow from 250 to 510 m³/h
- 3-speed AC fan (or optional low consumption EC fan)
- Many hydraulic and electric configurations available
- Front or bottom air intake
- Operating range: from 15 °C to 32 °C ambient air temperature
- Water inlet temperature from 12 °C to 42 °C

Advantages

- Low sound levels: acoustic insulation between ventilation and compressor compartments
- Design and elaborate finish cabinet enabling harmonious integration (RAL9010)
- Low energy consumption EC fan (option)
- Highly customisable. Many air routeing configurations and selection of hydraulic service side
- Easy access to components through a removable front panel
- Brazed stainless steel plate heat exchanger for improved efficiency
- 100% factory tested

Equipment

- The refrigerant circuit comprises a rotary type hermetic compressor, a cycle reversal valve, a water/refrigerant heat exchanger, a liquid receiver, a finned coil, HP and LP pressure switches and 2 Schrader valves (HP and LP)
- The rotary type hermetic compressor, mounted on spring anti-vibration mounts, is integrated in a compartment coated with reinforced acoustic insulation. It is also equipped with internal thermal protection
- The units are equipped with a control system (POL423) utilising Modbus RTU
- The water/refrigerant heat exchanger is made of brazed stainless steel plates, for improved efficiency
- RAL9010 painted cabinet for versions VC and VCL
- Condensate drain pan with an anti-corrosion treatment
- A G2 air filter is provided within the unit

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

ECOi-LOOP FS H - heat pump			P-LPFSM07HA	P-LPFSM09HA	P-LPFSM12HA
Total cooling capacity [1]		W	1942	2136	2743
Sensible cooling capacity [1]		W	1526	1775	2340
EER			3,41	3,52	3,25
Heating capacity [2]		W	2431	2542	3156
COP			3,56	3,74	3,49
Ventilation					
Number of fans			1	1	1
Air flow	Lo / Med / Hi	m³/h	250 / 340 / 400	340 / 400 / 460	400 / 460 / 510
Motor power (with AC / EC fan)		W	75 / 40	75 / 40	75 / 40
Air filter	Number / efficiency		1 / G2	1 / G2	1 / G2
Hydraulic circuit					
Number of plate heat exchanger			1	1	1
Maximum water pressure		bar	10	10	10
Nominal water flow		l/h	428	479	616
WPD at nominal water flow		kPa	5	3,4	12
Connections - inlet/outlet (ø)		Inch	ISO G ½ INT	ISO G ½ INT	ISO G ½ INT
Condensate outlet - external (Ø)		mm	15 x 20	15 x2 0	15 x 20
Refrigerant circuit					
Number of refrigerant circuits			1	1	1
Compressor type			Rotary	Rotary	Rotary
Load		g	490	430	750
Electrical data					
Power supply	Voltage	V	230	230	230
	Phase		Single phase	Single phase	Single phase
	Frequency	Hz	50 ±10%	50 ±10%	50 ±10%
Input power - AC fan [3]	Cooling	W	598	647	892
	Heating	W	710	720	954
Sound levels - AC fan					
Sound pressure [4]	Lo / Med / Hi	dB(A)	41 / 42 / 43	42 / 43 / 45	43 / 45 / 46
NR [4]	Lo / Med / Hi		36 / 37 / 38	37 / 38 / 40	38 / 40 / 41
Dimensions					
Standard with cabinet (VC)	LxWxH	mm	1138 x 251 x 720 min / 750 max (821 with feet)	1138 x 251 x 720 min / 750 max (821 with feet)	1138 x 251 x 720 min / 750 max (821 with feet)
Low height with cabinet (VCL)	LxWxH	mm	1323 x 251 x 580 min / 610 max (683 with feet)	1323 x 251 x 580 min / 610 max (683 with feet)	1323 x 251 x 580 min / 610 max (683 with feet)
Standard without cabinet (VN)	LxWxH	mm	1043,5 (1086 with feet) x 229 x 667,5 min / 697,5 max (769,5 with feet)	1043,5 (1086 with feet) x 229 x 667,5 min / 697,5 max (769,5 with feet)	1043,5 (1086 with feet) x 229 x 667,5 min / 697,5 max (769,5 with feet)
Low height without cabinet (VNL)	LxWxH	mm	1182,5 (1183 with feet) x 229 x 525 min / 555 max (627 with feet)	1182,5 (1183 with feet) x 229 x 525 min / 555 max (627 with feet)	1182,5 (1183 with feet) x 229 x 525 min / 555 max (627 with feet)
Weight					
Without cabinet / with cabinet - operating		kg	55 / 70	58 / 73	60 / 75

1) Nominal cooling capacities based on: entering air temperature of 27 °C DB/19 °C WB, with entering water temperature of 30 °C. 2) Nominal heating capacities based on: entering air temperature of 20 °C DB/15 °C WB, with entering water temperature of 20 °C. 3) Absorbed power (compressor + fan) at nominal conditions. 4) Sound pressure considering a local of 100 m³, a reverberation time of 0,5 sec and a distance of 1 m.

Accessories and options
Controller with BACnet MSTP (LON and Modbus TCP/IP available upon request)
EC fan
Feet
General remote alarm contact
Low noise

Accessories and options
Many electric, hydraulic and aeraulic configurations
RCS remote control (for controller with protocol communication)
SRC - mini BMS controller
Thermal overload

HIGH SEER 3.52 | HIGH SCOP 3.74 | EC MOTOR GREEN VENTILATION | PLATE HEAT EXCHANGER | ROTARY COMPRESSOR | SUPER QUIET

ECOi-LOOP-N FS H · R513A

Water source heat pumps heat pump.

Cooling capacity: 1,7 to 2,0 kW.
Heating capacity: 1,8 to 2,6 kW.

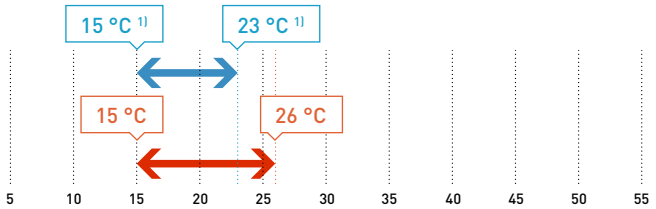
Optional controller.
RCS remote control.

Optional controller.
SRC - mini BMS controller.

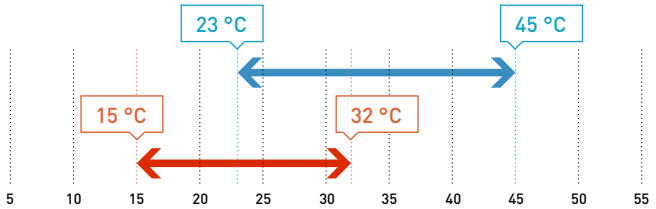
SEE PAGE 118 FOR MORE DETAILS ABOUT WATER SOURCE HEAT PUMPS CONTROL SYSTEMS

Operating limits

Air inlet temperature.



Water inlet temperature.



1) From 21 to 32 °C DB. * Maximum water pressure 10 bars.

The range at a glance

- 1 version: H (heat pump)
- 2 sizes
- Vertical installation
- 4 versions: VC (standard version with cabinet), VCL (low height version with cabinet), VN (standard version without cabinet) and VNL (low height version without cabinet)
- EER up to 4,9 and COP up to 4,6
- Nominal air flow from 250 to 460 m³/h
- 3-speed AC fan (or optional low consumption EC fan)
- Many hydraulic and electric configurations available
- Front or bottom air intake
- Operating range: from 15 °C to 32 °C ambient air temperature
- Water inlet temperature from 15 °C to 45 °C

Advantages

- Low sound levels: acoustic insulation between ventilation and compressor compartments
- Design and Elaborate finish cabinet enabling harmonious integration (RAL9010)
- Low energy consumption EC fan (option)
- Highly customisable. Many air routeing configurations and selection of hydraulic service side
- Easy access to components through a removable front panel
- Brazed stainless steel plate heat exchanger for improved efficiency
- 100% factory tested

Equipment

- The refrigerant circuit comprises a rotary type hermetic compressor, a cycle reversal valve, a water/refrigerant heat exchanger, a liquid receiver, a capillary expansion device, a finned coil, HP and LP pressure switches and 2 Schrader valves (HP and LP)
- The rotary type hermetic compressor is installed in a compartment covered with a 20 mm thick Isofeutre thermal-acoustic insulation. It is also equipped with internal thermal protection
- The units are equipped with a control system (POL423) utilising Modbus RTU
- The water/refrigerant heat exchanger is made of brazed stainless steel plates, for improved efficiency. A coaxial heat exchanger is available on request
- RAL9010 painted cabinet for versions VC and VCL
- Condensate drain pan with an anti-corrosion treatment
- A G2 air filter is provided within the unit

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

ECOi-LOOP-N FS H - heat pump			P-LPFSN07HA	P-LPFSN09HA
Total cooling capacity [1]			1690	2040
Sensible cooling capacity [1]			1410	1600
Input power (with EC / AC fan) [2]		W	345 / 355	480 / 487
EER according to EN14511 (with EC / AC fan)			4,9 / 4,75	4,25 / 4,19
Heating capacity [3]		W	1790	2630
Input power (with EC / AC fan) [2]		W	395 / 405	610 / 617
COP according to EN14511 (with EC / AC fan)			4,6 / 4,41	4,31 / 4,26
Ventilation				
Air flow	Min	m³/h	250	340
	Nominal	m³/h	340	400
	Max	m³/h	400	460
Nominal input power (with EC / AC fan)		W	15 / 25	20 / 27
Motor power (with EC / AC fan)		W	40 / 75	40 / 75
Air filter	Number / efficiency		1 / G2	1 / G2
Hydraulic circuit				
Number of water heat exchanger			1	1
Maximum water pressure		Bar	10	10
Nominal water flow	Cooling [1]	l/h	351	434
	Heating [3]	l/h	405	586
Cutoff water flow		l/h	180	180
WPD at nominal water flow	Cooling [1]	kPa	3,8	5,8
	Heating [3]	kPa	5,1	10,8
Hydraulic connections - inlet/outlet		Inch	Female ISO G ½ INT	Female ISO G ½ INT
Condensate outlet (Ø)		mm	15 x 20	15 x 20
Refrigerant circuit				
Number of refrigerant circuits			1	1
Type of compressor			Rotary	Rotary
Load		g	500	490
Electrical data				
Power supply	Voltage	V	230	230
	Phase		Single phase	Single phase
	Frequency	Hz	50 ±10%	50 ±10%
Maximum current [4]		A	4,6	5,7
Starting current [5]		A	16	16,5
Sound levels				
Sound power Lw	Lo / Med / Hi	dB(A)	47,2 / 49,8 / 51,5	49,8 / 51,5 / 54,3
Sound pressure Lp	Lo / Med / Hi	dB(A)	38,2 / 40,8 / 42,5	40,8 / 42,5 / 45,3
NR	Lo / Med / Hi	dB(A)	32 / 34 / 36	34 / 36 / 40
Sound levels - extra low noise version				
Sound power Lw	Lo / Med / Hi	dB(A)	42,5 / 44,6 / 46,5	44,7 / 46,5 / 48,6
Sound pressure Lp	Lo / Med / Hi	dB(A)	33,5 / 35,6 / 37,5	35,7 / 37,5 / 39,6
NR	Lo / Med / Hi	dB(A)	28 / 30 / 32	30 / 32 / 34
Dimensions				
Standard with cabinet (VC)	L x W x H	mm	1138 x 260 x 720 min / 750 max (821 with feet)	1138 x 260 x 720 min / 750 max (821 with feet)
Low height with cabinet (VCL)	L x W x H	mm	1322 x 260 x 582 min / 612 max (683 with feet)	1322 x 260 x 582 min / 612 max (683 with feet)
Standard without cabinet (VN)	L x W x H	mm	1055 (1084 with feet) x 241 x 667 min / 697 max (769 with feet)	1055 (1084 with feet) x 241 x 667 min / 697 max (769 with feet)
Low height without cabinet (VNL)	L x W x H	mm	1185 (1270 with feet) x 241 x 525 min / 555 max (626 with feet)	1185 (1270 with feet) x 241 x 525 min / 555 max (626 with feet)
Weight				
Without cabinet / with cabinet - operating		kg	55 / 70	58 / 73

1) Nominal cooling capacities based on: entering air temperature of 27 °C DB/19 °C WB, with entering water temperature of 30 °C. 2) Absorbed power (compressor + fan) at nominal conditions. 3) Nominal heating capacities based on: entering air temperature of 20 °C DB/15 °C WB, with entering water temperature of 20 °C. 4) Maximum currents are given at +/- 5%. 5) Starting currents are given at +/- 10%.

Accessories and options
Controller with BACnet MSTP (LON and Modbus TCP/IP available upon request)
EC fan
Feet
General remote alarm contact
Low noise

Accessories and options
Many electric, hydraulic and aeraulic configurations
RCS remote control (for controller with protocol communication)
SRC - mini BMS controller
Thermal overload

HIGH SEER 4,90 | HIGH SCOP 4,60 | EC MOTOR GREEN VENTILATION | PLATE HEAT EXCHANGER | ROTARY COMPRESSOR | SUPER QUIET

Water source heat pumps control systems

SRC - mini BMS controller

Smart controller. Mini building management system.
With the SRC - mini BMS controller - you can now remotely control multiple units or zones of units with a single interface.
Its time programming function offers you the possibility to fully control and rationalise the energy consumption of your HVAC system.
This smart controller is intuitive and easy to use thanks to its color touch screen, logical structure and clear control icons.
The modern and refined design fits perfectly in to any modern interior.

· Supervise fan coil units, chillers/heat pumps, air handling units and water source heat pumps
· Manage up to 31 units
· Communicate via Modbus protocol
· Time programming function
· A modern and refined design
· 3,5'' color touch screen
· Wall mounting

Used as a mini BMS.
With the SRC you can create up to 15 zones including several Panasonic units belonging to the same product lines [1].
· Chillers / heat pumps
· Air handling units
· Fan coil units

Used as a remote control.
The SRC can also control, in a unique zone, one or several units belonging to the same product line.
· Fan coil units
· Water source heat pumps

Control system with protocol communication

Ventilation:
· Compatibility: 3-speed AC fan motor or EC fan motor
· Manual speed (3 levels)
· Automatic speed

Communication:
· Modbus RTU or BACnet MSTP
· Modbus TCP/IP or LON upon request

Operating mode:
· OFF / Comfort / ECO

Function type:
· Summer
· Winter
· Ventilation
· Auto changeover (adjustment of the automatic mode according to the setpoint)

Setpoint:
· Extract air temperature
· Room thermostat
· BMS

RCS remote control

Main functions:
· ON / OFF
· Comfort / ECO modes
· Operating mode setting
· Setpoint adjustment
· Room temperature (OFF)
· Ventilation setting (manual or automatic)
· Time display and setting
· Alarm summary
· Zoning (up to 15 units)
· Scheduling