

REVERSO PF: Air / water reversible heat pumps
for indoor installation, equipped with scroll compressors and plug-fan
Cooling Capacity: **19,1 ÷ 255,0 kW**
Heating Capacity: **23,7 ÷ 324,0 kW**



reverso pf

rcgroupairconditioning



MAIN FEATURES

- Air / water reversible heat pump.
- 29 models available, for a wide selection opportunity..
- Average step of 12kW.
- EER up to 2,68.
- COP up to 3,47.
- ESEER up to 3,88.
- Scroll compressors.
- R410A Refrigerant charge.
- Single, double refrigerant circuit.
- Plate type heat exchanger.
- Plug fan EC.
- Electronic expansion valve.
- Single air circuit.
- Suitable for indoor installation.

MAIN BENEFITS

- Units with two scroll compressors for each refrigerant circuit to reach a high efficiency.
- Units with single, double refrigerant circuit.
- Defrosting dynamics control system IDEA®.
- High COP.
- Availability of kit for the reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Plug fan EC for an high efficiency.
- Easily of maintenance.
- Eurovent Certification.

IDEA® DEFROSTING SYSTEM

"Patented" defrosting system with dynamic reading of working parameters. Thanks to proprietary software it senses the real presence of brine on the coil starting defrosting cycles only in that situation. This brings a remarkable energy saving (more than 20-30% on the average) and a higher working continuity compared with traditional systems.

INDOOR INSTALLATION

The machines are designed for indoor installation and ducting for air suction and discharge. For outdoor installation the use of the dedicated optional kit is mandatory. The machine must be installed under a cover or anyway protected against atmospheric agents.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: -12÷20°C
Ambient temperature: -10÷45°C

WORKING LIMITS IN HEATING MODE

Hot water outlet temperature: 30÷60°C
Ambient temperature: -10÷30°C

MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Phase sequence electronic relay.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Terminal box with IP54 enclosure class.
- Rubber supports.

PLANT HEAT EXCHANGER

- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel:
 - With single refrigerant circuit for S version machines.
 - With double refrigerant circuit for D version machines.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Differential water pressure switch for water flow control.
- Antifreeze heater.

EXHAUSTION HEAT EXCHANGER

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
 - Maximum capacity relative to the size of the exchanger.
 - Minimum charge of refrigerant.
- Reduction of the air flow required for the heat exchange.
- Particular circulation on refrigerant side, in order to optimize performance in heat pump mode.
- Ambient temperature sensor
- Frame in galvanized steel.

FANS SECTION

- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fan).
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Maintenance-free bearings
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:

- Reversing valve for refrigeration cycle inversion.
- Electronic expansion valve.

The valve allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure. The electronic expansion valve exclude the installation of the electromagnetic valve on liquid line.
- Sight glass.
- Liquid receiver with service valve.
- Filter dryer on liquid line.
- Service valves on suction line and gas discharge.
- Non-return valve
- Safety valve on low pressure side.
- Safety valve on high pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Oil drainage and oil recovery systems.

- IDEA® defrosting system.

RC Group patented defrosting system based on a dynamic reading of the evaporating parameters. Through sensors the microprocessor realize the real ice presence on the gas/air heat exchanger and activates the defrosting cycle only when necessary, with consequent energy saving.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:

- Main switch with door lock safety.
- Magnetothermic switch or fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Summer / Winter working mode selector.
- Power supply: 400/3/50.

CONTROL SYSTEM

- MP.COM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
 - Voltage free contact for remote general alarm.
 - Main components hour-meter.
 - Clock card for alarms date and time displaying and storing.
 - Nonvolatile "Flash" memory for data storage.
 - Menu with protection password.
 - LAN connection.

HYDRAULIC CONNECTIONS OF HEAT EXCHANGERS

- The heat exchangers' threaded hydraulic connections are available up to a diameter of 3 " included, and correspond to ISO 228/1 – G M.
- The pipes' threaded hydraulic connections are available up to a diameter of 3 " included, and correspond to ISO 7/1 – R.
- The hydraulic connections with flange (FL) are not supplied with counter flange.
- The hydraulic connections with grooved end are not supplied with flexible joint (optional accessory).

OPTIONAL ACCESSORIES

REVERSO PF	22 P1	24 P1	28 P1	32 P1	36 P1	42 P1	53 P1	67 P1	55 P2	55 P2	62 P2
	S	S	S	S	S	S	S	S	S	D	S
SIZE	C1	C1	C1	C1	C1	C1	C2	C2	C2	C2	C2
739 - Pumping group (1 pump)	•	•	•	•	•	•	•	•	•	•	•
740 - Pumping group (2 pumps)	-	-	-	-	-	-	-	-	-	-	-
756 - Pumping group LN (1 pump)	•	•	•	•	•	•	•	•	•	•	•
757 - Pumping group LN (2 pumps)	-	-	-	-	-	-	-	-	-	-	-
768 - Chilled water storage tank	•	•	•	•	•	•	•	•	•	•	•
150 - LNO kit (noise reduction)	•	•	•	•	•	•	•	•	•	•	•
170 - Spring antivibration holders (kit)	•	•	•	•	•	•	•	•	•	•	•
172 - Rubber support (kit)	•	•	•	•	•	•	•	•	•	•	•
118 - Kit brine A	•	•	•	•	•	•	•	•	•	•	•
119 - Kit brine B	•	•	•	•	•	•	•	•	•	•	•
Plant heat exchanger flexible joint with adapter pipe (solder type)	-	-	-	-	-	-	-	-	-	-	-
Plant heat exchanger flexible joint with adapter for flange connection	-	-	-	-	-	-	-	-	-	-	-
450 - Desuperheater	•	•	•	•	•	•	•	•	•	•	•
251 - Coils protection nets	•	•	•	•	•	•	•	•	•	•	•
351 - Coils with pre-painted fins	•	•	•	•	•	•	•	•	•	•	•
Exhaustion Coil in special execution	•	•	•	•	•	•	•	•	•	•	•
160 - Discharge air plenum with sound attenuators	•	•	•	•	•	•	•	•	•	•	•
731 - Safety water flow switch	•	•	•	•	•	•	•	•	•	•	•
605 - Compr. power factor capacitor - 0,9	•	•	•	•	•	•	•	•	•	•	•
Ambient temperature sensor	•	•	•	•	•	•	•	•	•	•	•
923 - RC-Com MBUS/JBUS Serial board	•	•	•	•	•	•	•	•	•	•	•
926 - LON Serial board	•	•	•	•	•	•	•	•	•	•	•
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	•	•	•	•	•	•	•	•	•	•	•
932 - BACnet MS/TP Serial board	•	•	•	•	•	•	•	•	•	•	•
934 - MP.COM expansion card	•	•	•	•	•	•	•	•	•	•	•
942 - Serial card for GSM Modem	•	•	•	•	•	•	•	•	•	•	•
943 - Data Logger	•	•	•	•	•	•	•	•	•	•	•
460 - Kit for outdoor installation	•	•	•	•	•	•	•	•	•	•	•
889 - Master plant SEQUENCER	•	•	•	•	•	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•	•	•	•	•	•

REVERSO PF	62 P2	71 P2	71 P2	85 P2	85 P2	107 P2	107 P2	135 P2	135 P2	170 P2	170 P2
	D	S	D	S	D	S	D	S	D	S	D
SIZE	C2	C2	C2	C3	C3	C3	C3	C4	C4	C4	C4
739 - Pumping group (1 pump)	•	•	•	•	•	•	•	•	•	•	•
740 - Pumping group (2 pumps)	-	-	-	•	•	•	•	•	•	•	•
756 - Pumping group LN (1 pump)	•	•	•	•	•	•	•	•	•	•	•
757 - Pumping group LN (2 pumps)	-	-	-	•	•	•	•	•	•	•	•
768 - Chilled water storage tank	•	•	•	•	•	•	•	•	•	•	•
150 - LNO kit (noise reduction)	•	•	•	•	•	•	•	•	•	•	•
170 - Spring antivibration holders (kit)	•	•	•	•	•	•	•	•	•	•	•
172 - Rubber support (kit)	•	•	•	•	•	•	•	•	•	•	•
118 - Kit brine A	•	•	•	•	•	•	•	•	•	•	•
119 - Kit brine B	•	•	•	•	•	•	•	•	•	•	•
Plant heat exchanger flexible joint with adapter pipe (solder type)	-	-	-	•	•	•	•	•	•	•	•
Plant heat exchanger flexible joint with adapter for flange connection	-	-	-	•	•	•	•	•	•	•	•
450 - Desuperheater	•	•	•	•	•	•	•	•	•	•	•
251 - Coils protection nets	•	•	•	•	•	•	•	•	•	•	•
351 - Coils with pre-painted fins	•	•	•	•	•	•	•	•	•	•	•
Exhaustion Coil in special execution	•	•	•	•	•	•	•	•	•	•	•
160 - Discharge air plenum with sound attenuators	•	•	•	•	•	•	•	•	•	•	•
731 - Safety water flow switch	•	•	•	•	•	•	•	•	•	•	•
605 - Compr. power factor capacitor - 0,9	•	•	•	•	•	•	•	•	•	•	•
Ambient temperature sensor	•	•	•	•	•	•	•	•	•	•	•
923 - RC-Com MBUS/JBUS Serial board	•	•	•	•	•	•	•	•	•	•	•
926 - LON Serial board	•	•	•	•	•	•	•	•	•	•	•
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	•	•	•	•	•	•	•	•	•	•	•
932 - BACnet MS/TP Serial board	•	•	•	•	•	•	•	•	•	•	•
934 - MP.COM expansion card	•	•	•	•	•	•	•	•	•	•	•
942 - Serial card for GSM Modem	•	•	•	•	•	•	•	•	•	•	•
943 - Data Logger	•	•	•	•	•	•	•	•	•	•	•
460 - Kit for outdoor installation	•	•	•	•	•	•	•	•	•	•	•
889 - Master plant SEQUENCER	•	•	•	•	•	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•	•	•	•	•	•

• available accessory; - not available accessory

OPTIONAL ACCESSORIES

REVERSO PF	195 P2	195 P2	220 P2	220 P2	250 P3	265 P4	290 P4
SIZE	S	D	S	D	S	D	D
	C4	C4	C5	C5	C5	C5	C5
739 - Pumping group (1 pump)	•	•	•	•	•	•	•
740 - Pumping group (2 pumps)	•	•	•	•	•	•	•
756 - Pumping group LN (1 pump)	•	•	•	•	•	•	•
757 - Pumping group LN (2 pumps)	•	•	•	•	•	•	•
768 - Chilled water storage tank	•	•	•	•	•	•	•
150 - LNO kit (noise reduction)	•	•	•	•	•	•	•
170 - Spring antivibration holders (kit)	•	•	•	•	•	•	•
172 - Rubber support (kit)	•	•	•	•	•	•	•
118 - Kit brine A	•	•	•	•	•	•	•
119 - Kit brine B	•	•	•	•	•	•	•
Plant heat exchanger flexible joint with adapter pipe (solder type)	•	•	•	•	•	•	•
Plant heat exchanger flexible joint with adapter for flange connection	•	•	•	•	•	•	•
450 - Desuperheater	•	•	•	•	•	•	•
251 - Coils protection nets	•	•	•	•	•	•	•
351 - Coils with pre-painted fins	•	•	•	•	•	•	•
Exhaustion Coil in special execution	•	•	•	•	•	•	•
160 - Discharge air plenum with sound attenuators	•	•	•	•	•	•	•
731 - Safety water flow switch	•	•	•	•	•	•	•
605 - Compr. power factor capacitor - 0,9	•	•	•	•	•	•	•
Ambient temperature sensor	•	•	•	•	•	•	•
923 - RC-Com MBUS/JBUS Serial board	•	•	•	•	•	•	•
926 - LON Serial board	•	•	•	•	•	•	•
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	•	•	•	•	•	•	•
932 - BACnet MS/TP Serial board	•	•	•	•	•	•	•
934 - MP.COM expansion card	•	•	•	•	•	•	•
942 - Serial card for GSM Modem	•	•	•	•	•	•	•
943 - Data Logger	•	•	•	•	•	•	•
460 - Kit for outdoor installation	•	•	•	•	•	•	•
889 - Master plant SEQUENCER	•	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•	•

• available accessory; - not available accessory

TECHNICAL DATA REVERSO PF

REVERSO PF		22 P1	24 P1	28 P1	32 P1	36 P1	42 P1	53 P1	67 P1	55 P2	55 P2
SIZE		S C1	S C1	S C1	S C1	S C1	S C1	S C2	S C2	S C2	D C2
STANDARD	Summer working mode - Cooling capacity (1) kW	19,1	20,7	24,2	28,8	32	36,5	46,2	58,4	48,7	48,4
	Unit power input	kW	7,1	8,3	10,1	11,3	12,9	15,8	19,0	23,7	19,4
	Plant exchanger water flow rate	m³/h	3,3	3,6	4,2	5,0	5,5	6,3	7,9	10,0	8,4
	Plant exchanger pressure drop	kPa	27	35	37	29	35	36	32	29	36
	Winter working mode - Heating capacity (2) kW	23,7	25,1	29,3	35,5	39,8	45,6	58,2	73,1	61,5	62,0
	Unit power input	kW	6,8	7,8	9,4	10,6	12,1	14,3	18,3	22,5	19,1
	Compressors	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	1	1	1	1	1	1	1	1	2
	Capacity steps	n.	1	1	1	1	1	1	1	2	2
	Plug fans EC	n.	1	1	1	1	1	2	2	2	2
	Total air flow	m³/h	6500	7000	8500	10000	11000	12000	16000	21000	18000
	External static pressure	Pa	50	50	50	50	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	10,5	10,6	10,6	10,8	10,8	10,8	14,3	14,8	19,6
	Gas circuits	n.	1	1	1	1	1	1	1	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	20,3	25,3	26,3	29,9	35,9	38,9	48,6	56,9	53,8
	Unit starting current (LRA)	A	99,3	115,3	122,3	122,9	144,9	178,9	233,6	280,4	149,8
	EER (1)	kW/kW	2,68	2,49	2,40	2,54	2,48	2,31	2,43	2,46	2,49
OPTIONAL	COP (2)	kW/kW	3,47	3,22	3,12	3,35	3,30	3,18	3,18	3,25	3,22
	ESEER		3,29	3,07	3,00	3,20	3,07	2,81	3,00	3,04	3,65
	Sound power level [Lw] (3)	dB(A)	87,1	88,7	92,9	92,1	94,2	96	94,8	96,7	93,1
	Average sound pressure level [Lpm] (4)	dB(A)	70,6	72,1	76,3	75,6	77,6	79,4	77,6	79,5	75,9
	Net weight	kg	390	390	400	410	410	420	650	700	650
	Hydraulic connections										
	Plant exchanger IN/OUT - ISO 7/1 - R	Ø	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"
	Plant exchanger IN/OUT - OD (5)	Ø mm	--	--	--	--	--	--	--	--	--
	Partial heat recovery (6)										
	Heating capacity	kW	7,0	7,6	8,9	10,6	11,8	13,4	17,0	21,4	17,7
OPTIONAL	Pumping group										
	1 pump - 2 poles electric motor	kW	0,75	0,75	0,75	0,75	0,75	0,75	1,5	1,5	1,5
	2 pump - 2 poles electric motor	kW	--	--	--	--	--	--	--	--	--
	1 pump - 4 poles electric motor	kW	0,37	0,37	0,37	0,37	0,37	0,37	0,55	0,55	0,55
	2 pump - 4 poles electric motor	kW	--	--	--	--	--	--	--	--	--
LNO KIT 100%	Water tank - volume	l	130	130	130	130	130	130	210	210	210
	Summer working mode - Cooling capacity (1) kW	19,1	20,7	24,2	28,8	32,0	36,5	46,2	58,4	48,7	48,4
	Unit power input	kW	7,1	8,3	10,1	11,3	12,9	15,8	19,0	23,7	19,4
	Winter working mode - Heating capacity (2) kW	23,7	25,1	29,3	35,5	39,8	45,6	58,2	73,1	61,5	62,0
	Unit power input	kW	6,8	7,8	9,4	10,6	12,1	14,3	18,3	22,5	19,1
	Total air flow	m³/h	6500	7000	8500	10000	11000	12000	16000	21000	18000
	External static pressure	Pa	50	50	50	50	50	50	50	50	50
	EER (1)	kW/kW	2,68	2,49	2,40	2,54	2,48	2,31	2,43	2,46	2,49
	COP(2)	kW/kW	3,47	3,22	3,12	3,35	3,30	3,18	3,18	3,25	3,22
	Sound power level [Lw] (3)	dB(A)	87,1	88,7	92,8	92,1	94,1	96,0	94,6	96,4	93,1
LNO KIT 85%	Average sound pressure level [Lpm] (4)	dB(A)	70,5	72,1	76,2	75,5	77,5	79,4	77,4	79,2	75,9
	Summer working mode - Cooling capacity (1) kW	18,6	20,1	23,5	27,9	31,1	35,4	44,9	56,8	47,3	47,0
	Unit power input	kW	7,2	8,4	10,0	11,3	12,6	15,5	18,9	24,3	19,5
	Winter working mode - Heating capacity (2) kW	23,5	24,7	28,8	35,0	39,2	44,9	57,3	72,1	60,7	61,1
	Unit power input	kW	6,6	7,6	8,9	10,1	11,4	13,5	17,5	22,1	18,4
	Total air flow	m³/h	5525	5950	7225	8500	9350	10200	13600	17850	15300
	External static pressure	Pa	36	36	36	36	36	36	36	36	36
	EER (1)	kW/kW	2,59	2,40	2,34	2,47	2,46	2,29	2,38	2,34	2,42
	COP(2)	kW/kW	3,54	3,27	3,22	3,45	3,43	3,32	3,27	3,26	3,29
	Sound power level [Lw] (3)	dB(A)	83,6	85,2	89,3	88,6	90,6	92,5	91,2	93,0	89,6
LNO KIT 70%	Average sound pressure level [Lpm] (4)	dB(A)	67,0	68,6	72,7	72,0	74,0	75,9	74,0	75,8	72,4
	Summer working mode - Cooling capacity (1) kW	17,8	19,2	22,5	26,7	29,7	33,8	43,1	54,6	45,4	45,0
	Unit power input	kW	7,4	8,7	10,3	11,6	12,9	15,7	19,4	24,6	20,1
	Winter working mode - Heating capacity (2) kW	23,0	24,1	28,2	34,2	38,4	43,8	56,0	70,5	59,4	59,8
	Unit power input	kW	6,5	7,4	8,7	9,8	11,0	13,0	16,9	21,2	17,9
	Total air flow		4550	4900	5950	7000	7700	8400	11200	14700	12600
	External static pressure	Pa	25	25	25	25	25	25	25	25	25
	EER (1)	kW/kW	2,39	2,21	2,18	2,31	2,30	2,15	2,22	2,22	2,26
	COP(2)	kW/kW	3,55	3,27	3,25	3,48	3,50	3,38	3,32	3,32	3,41
	Sound power level [Lw] (3)	dB(A)	80,4	82,0	86,1	85,4	87,4	89,3	88,2	90,1	86,4
LNO KIT 70%	Average sound pressure level [Lpm] (4)	dB(A)	63,8	65,4	69,5	68,8	70,8	72,7	71,0	72,9	69,2

1. Referred to chilled water temperature 12/7°C; 35°C ambient air temperature according to Eurovent standard.
2. Referred to hot water outlet temperature 45°C; 7°C ambient temperature according to Eurovent standard.
3. Sound power level [Lw] according to ISO EN 9614 - 2.
4. Average sound pressure level [Lp_m] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA REVERSO PF

REVERSO PF		62 P2	62 P2	71 P2	71 P2	85 P2	85 P2	107 P2	107 P2	135 P2	135 P2	
SIZE		S C2	D C2	S C2	D C2	S C3	D C3	S C3	D C3	S C4	D C4	
STANDARD	Summer working mode - Cooling capacity (1) kW	54,8	54,8	62,0	61,5	72,8	71,9	93,1	91,0	115,0	112,0	
	Unit power input	kW	22,2	22,0	25,2	25,0	28,5	28,3	38,2	37,8	46,2	45,9
	Plant exchanger water flow rate	m³/h	9,4	9,4	10,7	10,5	12,5	12,4	16,0	15,7	19,8	19,3
	Plant exchanger pressure drop	kPa	35	18	34	20	37	23	35	26	36	30
	Winter working mode - Heating capacity (2) kW	69,5	69,3	77,7	77,4	85,7	92,4	117,0	117,0	147,0	147,0	
	Unit power input	kW	21,5	21,0	23,9	23,7	27,3	27,3	37,3	36,8	44,4	44,0
	Compressors	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n.	2	2	2	2	2	2	2	2	2	2
	Plug fans EC	n.	2	2	2	2	3	3	3	3	4	4
	Total air flow	m³/h	20500	20500	23000	23000	25500	25500	32000	32000	40000	40000
	External static pressure	Pa	50	50	50	50	50	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	14,5	19,6	15,0	19,9	21,6	24,0	30,1	33,1	33,2	36,4
	Gas circuits	n.	1	2	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	58,4	58,4	70,4	70,4	82,7	82,7	94,7	94,7	113,8	113,8
	Unit starting current (LRA)	A	151,4	151,4	179,4	179,4	222,7	222,7	279,7	279,7	337,3	337,3
	EER (1)	kW/kW	2,47	2,49	2,46	2,46	2,55	2,54	2,44	2,41	2,49	2,44
	COP (2)	kW/kW	3,24	3,30	3,25	3,27	3,14	3,39	3,14	3,18	3,31	3,34
	ESEER		3,67	3,26	3,55	3,17	3,20	3,61	3,04	3,39	3,10	3,61
	Sound power level [Lw] (3)	dB(A)	86,8	86,8	89,2	89,2	93,9	93,9	98,7	98,7	92,6	92,6
	Average sound pressure level [Lpm] (4)	dB(A)	69,6	69,6	72	72	76	76	80,8	80,8	74	74
	Net weight	kg	720	730	730	740	920	930	1120	1120	1510	1500
	Hydraulic connections											
	Plant exchanger IN/OUT - ISO 7/1 – R	Ø	2"	2"	2"	2"	--	--	--	--	--	--
	Plant exchanger IN/OUT - OD (5)	Ø mm	--	--	--	--	76,1	76,1	76,1	76,1	88,9	88,9
OPTIONAL	Partial heat recovery (6)											
	Heating capacity	kW	20,1	20,1	22,8	22,6	26,7	26,4	34,2	33,4	42,3	41,1
	Pumping group											
	1 pump - 2 poles electric motor	kW	1,5	1,5	1,5	1,5	2,2	2,2	2,2	2,2	2,2	2,2
	2 pump - 2 poles electric motor	kW	--	--	--	--	2,2	2,2	2,2	2,2	3,0	3,0
	1 pump - 4 poles electric motor	kW	0,55	0,55	0,55	0,55	1,5	1,5	1,5	1,5	3,0	3,0
	2 pump - 4 poles electric motor	kW	--	--	--	--	1,5	1,5	1,5	1,5	3,0	3,0
Water tank - volume	l	210	210	210	210	360	360	360	360	520	520	
LNO KIT 100%	Summer working mode - Cooling capacity (1) kW	54,8	54,8	62,0	61,5	72,8	71,9	93,1	91,0	115,0	112,0	
	Unit power input	kW	22,2	22,0	25,2	25,0	28,5	28,3	38,2	37,8	46,2	45,9
	Winter working mode - Heating capacity (2) kW	69,5	69,3	77,7	77,4	85,7	92,4	117,0	117,0	147,0	147,0	
	Unit power input	kW	21,5	21,0	23,9	23,7	27,3	27,3	37,3	36,8	44,4	44,0
	Total air flow	m³/h	20500	20500	23000	23000	25500	25500	32000	32000	40000	40000
	External static pressure	Pa	50	50	50	50	50	50	50	50	50	50
	EER (1)	kW/kW	2,47	2,49	2,46	2,46	2,55	2,54	2,44	2,41	2,49	2,44
COP(2)	kW/kW	3,24	3,30	3,25	3,27	3,14	3,39	3,14	3,18	3,31	3,34	
Sound power level [Lw] (3)	dB(A)	86,5	86,5	89,0	89,0	93,7	93,7	98,5	98,5	90,2	90,2	
Average sound pressure level [Lpm] (4)	dB(A)	69,3	69,3	71,8	71,8	75,8	75,8	80,6	80,6	71,6	71,6	
LNO KIT 85%	Summer working mode - Cooling capacity (1) kW	53,2	53,2	60,1	59,7	70,8	70,0	90,6	88,7	112,0	109,0	
	Unit power input	kW	22,2	22,0	24,9	24,8	28,5	28,3	37,6	37,3	46,5	46,2
	Winter working mode - Heating capacity (2) kW	68,5	68,3	76,6	76,4	84,3	90,9	115,0	115,0	144,0	144,0	
	Unit power input	kW	20,6	20,1	22,8	22,5	26,2	26,1	35,3	34,8	43,0	42,6
	Total air flow	m³/h	17425	17425	19550	19550	21675	21675	27200	27200	34000	34000
	External static pressure	Pa	36	36	36	36	36	36	36	36	36	36
	EER (1)	kW/kW	2,40	2,42	2,41	2,41	2,48	2,47	2,41	2,38	2,41	2,36
COP(2)	kW/kW	3,32	3,39	3,36	3,39	3,22	3,48	3,26	3,30	3,35	3,38	
Sound power level [Lw] (3)	dB(A)	83,1	83,1	85,5	85,5	90,3	90,3	95,1	95,1	87,8	87,8	
Average sound pressure level [Lpm] (4)	dB(A)	65,9	65,9	68,3	68,3	72,4	72,4	77,2	77,2	69,2	69,2	
LNO KIT 70%	Summer working mode - Cooling capacity (1) kW	50,9	50,9	57,6	57,1	67,9	67,2	87,1	85,3	107,0	105,0	
	Unit power input	kW	22,8	22,7	25,4	25,3	29,1	29,0	38,4	37,9	48,0	47,7
	Winter working mode - Heating capacity (2) kW	67,1	66,9	75,0	74,8	82,4	88,8	113,0	113,0	141,0	141,0	
	Unit power input	kW	20,0	19,6	22,0	21,7	25,4	25,4	33,9	33,5	42,0	41,6
	Total air flow	m³/h	14350	14350	16100	16100	17850	17850	22400	22400	28000	28000
	External static pressure	Pa	25	25	25	25	25	25	25	25	25	25
	EER (1)	kW/kW	2,23	2,24	2,27	2,26	2,33	2,32	2,27	2,25	2,23	2,20
COP(2)	kW/kW	3,35	3,42	3,41	3,44	3,24	3,50	3,33	3,37	3,36	3,39	
Sound power level [Lw] (3)	dB(A)	80,2	80,2	82,5	82,5	87,2	87,2	92,0	92,0	86,9	86,9	
Average sound pressure level [Lpm] (4)	dB(A)	63,0	63,0	65,3	65,3	69,3	69,3	74,1	74,1	68,3	68,3	

1. Referred to chilled water temperature 12/7°C; 35°C ambient air temperature according to Eurovent standard.

2. Referred to hot water outlet temperature 45°C; 7°C ambient temperature according to Eurovent standard.

3. Sound power level [Lw] according to ISO EN 9614 - 2.

4. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.

5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.

6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

TECHNICAL DATA REVERSO PF

REVERSO PF		170 P2	170 P2	195 P2	195 P2	220 P2	220 P2	250 P3	265 P4	290 P4
SIZE		S	D	S	D	S	D	S	D	D
		C4	C4	C4	C4	C5	C5	C5	C5	C5
STANDARD	Summer working mode - Cooling capacity (1) kW	150,0	146,0	175,0	170,0	201,0	195,0	230,0	231,0	255,0
	Unit power input	kW	61,5	61,1	72,6	71,7	77,3	76,8	94,7	113,3
	Plant exchanger water flow rate	m³/h	25,8	25,1	30,2	29,3	34,6	33,6	39,6	44,0
	Plant exchanger pressure drop	kPa	35	33	41	35	42	36	40	44
	Winter working mode - Heating capacity (2) kW	189,0	189,0	211,0	198,0	241,0	241,0	273,0	291,0	324,0
	Unit power input	kW	59,4	59,4	66,6	65,6	73,0	72,4	85,3	101,6
	Compressors	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	3	4	4
	Capacity steps	n.	2	2	2	2	2	3	4	4
	Plug fans EC	n.	4	4	4	4	5	5	5	5
	Total air flow	m³/h	52000	52000	54000	54000	62500	62500	64000	66000
	External static pressure	Pa	50	50	50	50	50	50	50	50
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	37,7	40,4	38,8	41,8	78,8	95,6	79,5	106,8
	Gas circuits	n.	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	147,6	147,6	164,2	164,2	185,0	185,0	217,2	315,8
	Unit starting current (LRA)	A	392,2	392,2	456,2	456,2	477,0	477,0	461,8	607,8
	EER (1)	kW/kW	2,44	2,39	2,41	2,37	2,60	2,54	2,43	2,25
	COP (2)	kW/kW	3,18	3,18	3,17	3,02	3,30	3,33	3,20	3,23
	ESER		3,03	3,43	3,47	3,01	3,69	3,22	3,88	3,64
	Sound power level [Lw] (3)	dB(A)	95,9	95,9	96,6	96,6	96,6	96,6	96,9	97,4
	Average sound pressure level [Lpm] (4)	dB(A)	77,3	77,3	78	78	77,3	77,3	77,7	78,1
	Net weight	kg	1600	1590	1650	1640	2050	2040	2220	2430
	Hydraulic connections									
	Plant exchanger IN/OUT - ISO 7/1 - R	Ø	--	--	--	--	--	--	--	--
	Plant exchanger IN/OUT - OD (5)	Ø mm	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	kW	55,0	53,5	64,4	62,5	73,9	71,7	84,5	93,6
	Pumping group									
	1 pump - 2 poles electric motor	kW	2,2	2,2	2,2	2,2	4,0	4,0	4,0	4,0
	2 pump - 2 poles electric motor	kW	3,0	3,0	3,0	3,0	5,5	5,5	5,5	5,5
	1 pump - 4 poles electric motor	kW	3,0	3,0	3,0	3,0	4,0	4,0	4,0	4,0
	2 pump - 4 poles electric motor	kW	3,0	3,0	3,0	3,0	4,0	4,0	4,0	4,0
	Water tank - volume	l	520	520	520	520	720	720	720	720
LNO KIT 100%	Summer working mode - Cooling capacity (1) kW	150,0	146,0	175,0	170,0	201,0	195,0	230,0	231,0	255,0
	Unit power input	kW	61,5	61,1	72,6	71,7	77,3	76,8	94,7	113,3
	Winter working mode - Heating capacity (2) kW	189,0	189,0	211,0	198,0	241,0	241,0	273,0	291,0	324,0
	Unit power input	kW	59,4	59,4	66,6	65,6	73,0	72,4	85,3	101,6
	Total air flow	m³/h	52000	52000	54000	54000	62500	62500	64000	66000
	External static pressure	Pa	50	50	50	50	50	50	50	50
	EER (1)	kW/kW	2,44	2,39	2,41	2,37	2,60	2,54	2,43	2,25
LNO KIT 85%	Summer working mode - Cooling capacity (1) kW	146,0	142,0	170,0	165,0	196,0	190,0	223,0	224,0	245,0
	Unit power input	kW	60,6	60,2	72,3	71,4	77,2	76,3	95,3	115,6
	Winter working mode - Heating capacity (2) kW	186,0	186,0	208,0	194,0	237,0	237,0	268,0	286,0	317,0
	Unit power input	kW	56,5	56,5	63,2	62,4	69,7	69,1	82,0	97,5
	Total air flow	m³/h	44200	44200	45900	45900	53125	53125	54400	56100
	External static pressure	Pa	36	36	36	36	36	36	36	36
	EER (1)	kW/kW	2,41	2,36	2,35	2,31	2,54	2,49	2,34	2,12
LNO KIT 70%	Summer working mode - Cooling capacity (1) kW	140,0	136,0	163,0	158,0	188,0	182,0	211,0	213,0	231,0
	Unit power input	kW	61,7	61,3	74,4	73,5	79,3	78,8	99,1	120,9
	Winter working mode - Heating capacity (2) kW	182,0	182,0	203,0	190,0	231,0	231,0	261,0	279,0	308,0
	Unit power input	kW	54,3	54,3	61,0	59,9	67,3	67,0	79,6	94,8
	Total air flow	m³/h	36400	36400	37800	37800	43750	43750	44800	46200
	External static pressure	Pa	25	25	25	25	25	25	25	25
	EER (1)	kW/kW	2,27	2,22	2,19	2,15	2,37	2,31	2,13	1,91
LNO KIT 70%	COP(2)	kW/kW	3,35	3,35	3,33	3,17	3,43	3,45	3,28	3,35
	Sound power level [Lw] (3)	dB(A)	89,7	89,7	90,3	90,3	90,5	90,5	90,8	91,2
	Average sound pressure level [Lpm] (4)	dB(A)	71,1	71,1	71,7	71,7	71,2	71,2	71,5	71,9

1. Referred to chilled water temperature 12/7°C; 35°C ambient air temperature according to Eurovent standard.
2. Referred to hot water outlet temperature 45°C; 7°C ambient temperature according to Eurovent standard.
3. Sound power level [Lw] according to ISO EN 9614 - 2.
4. Average sound pressure level [Lp_m] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end. The flexible joint is an optional accessory.
6. Referred to chiller water temperature 12/7°C; 35°C ambient temperature and hot water temperature 40/45°C.

DIMENSIONS (mm)

SIZE C			
	a	b	c
C1	1250	890	1950
C2	1800	1040	2000
C3	2600	1200	2000
C4	3700	1260	2000
C5	4950	1260	2040

