HEAT PUMPS

i-KIR2-MTD 0011m - 0061m

Air cooled reversible heat pump, with axial fans and inverter driven compressor, for heating water up to 60°C.
4,03-12,5 kW

The Climaveneta system is based on an packaged external units with integrated hydronic module and by an internal unit with the electronic regulation. The i-KIR2 heat pumps provide for heating, cooling and domestic hot water production. Particular care is taken for winter mode, that thanks to the Inverter technology is guaranteed beyond traditional units working limits, water production up to 60°C.
The i-KIR2 reverse-cycle heat pumps feature high seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the building.
This excellent result has been achieved by carefully sizing all the components. Special attention has been paid to all heat exchange surfaces and the fans. The use of newly designed condensing coils, with larger surfaces and special layout, new asymmetrical evaporators with better and more efficient refrigerant distribution, both in the liquid and gas phase, and high efficiency fans with DC motor are some of the important innovations included with this product.
i-KIR2 units can be coupled with traditional systems or radiant panels, guaranteeing always very high energy efficiency. Installation is strongly simplified thanks to the integrated hydronic module with inverter pump.

Version

- Basic

Features

SYSTEM EFFICIENCY

The unit is designed as a system: all components are regulated using proprietary control's logic for the highest efficiency.

HIGH EFFICIENCY AT PARTIAL LOAD

High seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the building. High efficiency for low energy consumption during the operating hours.

HIGH EFFICIENCY COMPONENTS

In terms of improving performance and reducing power consumption, the electronic thermostatic valve is an important component that maximises system efficiency, same for the choise the hydronic kit with inverter water pump and the modulating the fans speed with DC motor as standard equipments.

EXTENSIVE OPERATING LIMITS

Particular care is taken for winter mode, that thanks to inverter technology is guaranteed beyond traditional units working limits, supplying hot water up to 60°C and down to -20°external air.

INTEGRATED HYDRONIC MODULE

The integrated hydronic include all the water circuit components so as to optimize installation space, times and costs.

Accessory

- Wired remote keyboard with backlit display, and with temperature probe (it is a mandatory accessory)
- Outside air temperature probe for plant water set point compensation.
- DHW temperature probe and Buffer temperature probe
- i-EMR2 Internal module kit can be used for cascade configuration or for management up to 5 secondary circuits.
- Extension module for system configuration (only in combination with i-EMR2)
- Cascade management kit (only in combination with i-EMR2)
- Three-way valve for domestic hot water
- Electric heater of integration for the heating system
- Electric heater for hot water cylinder, of integration and for anti-legionellosis
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 liters thermal store for domestic hot water, for DOMH2O kit
- 300,500,1000 liters thermal store for domestic hot water with solar heat exchanger, for DOMH2O kit
- DOMH2O15 e DOMH2O24 kit for domestic hot water with external plate heat exchanger and pump

Controls

NADISYSTEM LT

Electronic control provides great application flexibility. The remote keyboard kit wired indoor and outdoor temperature sensors allow dynamic control of delivery temperature water, optimizing comfort in the room and increasing the energy efficiency.
The electronic board allows you to manage:
-Wired remote keypad, backlit display complete with remote temperature
-outdoor air temperature sensor on board for climatic curve
-one zone with mixing valve for floor heating and one zone of direct heating for radiator, floor heating or fan coil
-domestic hot water production by external three-way valve (accessory)
-electric heater for possible integration and anti-legionella cycle for DHW tank
-gas boiler or electric heater in substitution or in addition for space heating
- the built-in clock can be used to create an operating profile containing time bands for space heating/cooling and for DHW
-up to 4 heat pump in cascade (with the accessories N-CM and one internal module i-EMR2 each units)
The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

APPLICATION HYDRONIC TERMINAL

i-KIR2-MTD			0011m	0031m	0061m
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50
COOLING ONLY (GROSS VALUE)					
Cooling capacity	(1)	kW	4,03	6,50	12,5
Total power input	(1)	kW	1,45	3,04	4,22
EER	(1)	kW/kW	2,78	2,14	2,96
ESEER	(1)	kW/kW			
COOLING ONLY (EN14511 VALUE)					
Cooling capacity	(1)(2)	kW	4,05	6,54	12,5
EER	(1)(2)	kW/kW	2,79	2,18	3,02
ESEER	(1)(2)	kW/kW	4,00	4,17	3,90
Cooling energy class			C	C	A
HEATING ONLY (GROSS VALUE)					
Total heating capacity	(3)	kW	5,32	9,40	15,3
Total power input	(3)	kW	1,75	2,95	5,37
COP	(3)	kW/kW	3,04	3,19	2,85
HEATING ONLY (EN14511 VALUE)					
Total heating capacity	(3)(2)	kW	5,31	9,37	15,2
COP	(3)(2)	kW/kW	3,05	3,23	2,87
Cooling energy class			B	A	A
ENERGY EFFICIENCY					
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)					
Ambient refrigeration					
Prated,c	(10)	kW	-	-	-
SEER	(10)(11)		-	-	-
Performance ηs	(10)(12)	%	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)					
PDesign	(4)	kW	3,92	7,15	11,7
SCOP	(4)(13)		4,01	4,14	3,77
Performance ηs	(4)(14)	%	157	162	148
Seasonal efficiency class	(4)		A++	A++	A+
EXCHANGERS					
HEAT EXCHANGER USER SIDE IN REFRIGERATION					
Water flow	(1)	l/s	0,19	0,31	0,60
Available unit's head	(1)	kPa	148	137	91,4
HEAT EXCHANGER USER SIDE IN HEATING					
Water flow	(3)	l/s	0,26	0,45	0,74
Available unit's head	(3)	kPa	123	102	66,2
REFRIGERANT CIRCUIT					
Compressors nr.		N°	1	1	1
No. Circuits		N°	1	1	1
Refrigerant charge		kg	1,05	1,70	2,99
NOISE LEVEL					
Sound power level in cooling	(5)(6)	dB(A)	60	64	65
Sound power level in heating	(5)(7)	dB(A)	61	65	66
Sound Pressure	(8)	dB(A)	46	50	50
SIZE AND WEIGHT					
A	(9)	mm	825	850	1000
B	(9)	mm	300	330	330
H	(9)	mm	675	882	1418
Operating weight	(9)	kg	52	74	119

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511-3:2013.
3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
5 Sound power on the basis of measurements made in compliance with ISO 9614.
6 Sound power level in cooling, outdoors.
7 Sound power level in heating, outdoors.
8 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
9 Unit in standard configuration/execution, without optional accessories.
10 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
11 Seasonal space heating energy index
12 Seasonal energy efficiency of the space cooling
13 Seasonal performance coefficient
14 Seasonal space heating energy efficiency
The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

APPLICATION FLOOR HEATING

i-KIR2-MTD			0011m	0031m
Power supply		V/ph/Hz	230/1/50	230/1/50
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	5,12	8,65
Total power input	(1)	kW	1,39	2,86
EER	(1)	kW/kW	3,68	3,02
ESEER	(1)	kW/kW		
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2)	kW	5,14	8,68
EER	(1)(2)	kW/kW	3,71	3,09
ESEER	(1)(2)	kW/kW	4,00	4,17
Cooling energy class			C	C
HEATING ONLY (GROSS VALUE)				
Total heating capacity	(3)	kW	5,87	9,74
Total power input	(3)	kW	1,46	2,48
COP	(3)	kW/kW	4,02	3,93
HEATING ONLY (EN14511 VALUE)				
Total heating capacity	(3)(2)	kW	5,86	9,72
COP	(3)(2)	kW/kW	4,03	4,00
Cooling energy class			B	A
ENERGY EFFICIENCY				
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)				
Ambient refrigeration				
Prated,c	(10)	kW	-	-
SEER	(10)(11)		-	-
Performance ηs	(10)(12)	%	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)				
PDesign	(4)	kW	3,92	7,15
SCOP	(4)(13)		4,01	4,14
Performance ηs	(4)(14)	%	157	162
Seasonal efficiency class	(4)		A++	A++
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN REFRIGERATION				
Water flow	(1)	l/s	0,25	0,41
Available unit's head	(1)	kPa	128	112
HEAT EXCHANGER USER SIDE IN HEATING				
Water flow	(3)	l/s	0,28	0,47
Available unit's head	(3)	kPa	112	98,4
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	1,05	1,70
NOISE LEVEL				
Sound power level in cooling	(5)(6)	dB(A)	60	64
Sound power level in heating	(5)(7)	dB(A)	61	65
Sound Pressure	(8)	dB(A)	46	50
SIZE AND WEIGHT				
A	(9)	mm	825	850
B	(9)	mm	300	330
H	(9)	mm	675	882
Operating weight	(9)	kg	52	74

Notes:
1 Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511-3:2013.
3 Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
5 Sound power on the basis of measurements made in compliance with ISO 9614.
6 Sound power level in cooling, outdoors.
7 Sound power level in heating, outdoors.
8 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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