HEAT PUMPS

i-KIR-MTD 0075t - 0151t

Air cooled reversible heat pump, with axial fans and inverter driven compressor, for heating water up to 60°C.
15,6-30,5 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-KIR 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-KIR 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 are some of the important innovations included with this product.
i-KIR units can be coupled with traditional systems or radiant panels, guaranteeing always very high energy efficiency. Intallation is strongly simplified thanks to the integrated hydronic module (optional).

Version

B Basic

Features

WIDE RANGE
Extended capacity range.
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 (optional) and the modulating the fans speed.
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.

Accessory

- Integrated hydronic module with on/off pump or high efficiency inverter pump
- Wired room terminal with backlit display, and with temperature and umidity probe
- Extension module for system configuration
- 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
- Cascade management kit
- Serial card RS485 for ModBus
- 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
- Copper-Copper heat exchanger coils
- Copper-Aluminum heat exchanger coils with epoxy treatment
- Electric heater for the base and for condensate collecting tray to avoid freezing

Controls

NADISYSTEM
Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air 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 control, backlit display and with remote temperature and humidity probe
-outdoor temperature sensor for water plant side modular set point compensation
-a zone of direct heating for radiator, floor heating or fan coil
-a zone with mix valve for floor heating
-Electrical heating element for possible integration and anti-legionella cycle for cylinder
-boiler or electric heater in substitution or in addition
-the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
-up to 4 heat pump in cascade (with N-CM component)
-several solutions through appropriate configurations of the controller and use of dedicated extension modules (accessorie), up to 5 zone

APPLICATION HYDRONIC TERMINAL

i-KIR-MTD			0075t	0091t	0095t	0101t	0121t	0135t	0151t
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
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	15,6	19,3	22,1	24,0	26,4	28,7	30,5
Total power input	(1)	kW	6,54	6,93	8,84	10,2	10,1	12,5	12,6
EER	(1)	kW/kW	2,39	2,78	2,50	2,35	2,61	2,30	2,42
ESEER	(1)	kW/kW	4,30	4,44	4,37	4,28	4,69	4,65	4,65
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	15,5	19,2	22,0	23,9	26,3	28,6	30,4
EER	(1)(2)	kW/kW	2,35	2,75	2,46	2,32	2,59	2,27	2,39
ESEER	(1)(2)	kW/kW	4,08	4,25	4,14	4,04	4,52	4,45	4,45
Cooling energy class			E	C	E	E	D	F	E
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	21,6	30,4	32,9	35,6	35,8	39,2	44,4
Total power input	(3)	kW	8,30	9,45	10,9	12,3	11,4	13,0	14,7
COP	(3)	kW/kW	2,60	3,22	3,02	2,89	3,14	3,02	3,02
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2)	kW	21,7	30,6	33,1	35,9	36,0	39,4	44,6
COP	(3)(2)	kW/kW	2,57	3,18	2,98	2,86	3,11	2,99	2,99
Cooling energy class			D	A	B	C	A	A	A
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Ambient refrigeration									
Prated,c	(11)	kW	-	-	-	-	-	-	-
SEER	(11)(12)		-	-	-	-	-	-	-
Performance ηs	(11)(13)	%	-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(4)	kW	15,9	23,1	25,3	27,5	25,9	28,5	32,5
SCOP	(4)(14)		3,61	4,14	4,08	4,00	4,17	4,16	4,36
Performance ηs	(4)(15)	%	141	163	160	157	164	163	171
Seasonal efficiency class	(4)		A+	A++	A++	A++	A++	A++	A++
PDesign	(5)	kW	16,7	22,8	25,0	27,4	26,0	28,9	32,9
SCOP	(5)(14)		2,88	3,29	3,28	3,24	3,32	3,33	3,43
Performance ηs	(5)(15)	%	112	129	128	127	130	130	134
Seasonal efficiency class	(5)		A+	A++	A++	A++	A++	A++	A++
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	0,75	0,93	1,06	1,15	1,26	1,37	1,46
Pressure drop	(1)	kPa	13,3	12,2	16,0	18,7	10,4	12,2	13,7
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	1,04	1,47	1,59	1,72	1,73	1,89	2,14
Pressure drop	(3)	kPa	26,1	30,6	35,9	42,2	19,4	23,2	29,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	5,90	9,30	9,30	9,30	10,8	10,8	10,8
NOISE LEVEL									
Sound power level in cooling	(6)(7)	dB(A)	71	72	74	75	76	77	77
Sound power level in heating	(6)(8)	dB(A)	72	73	75	76	77	78	78
Sound Pressure	(9)	dB(A)	55	56	58	59	60	61	61
SIZE AND WEIGHT									
A	(10)	mm	1470	1470	1470	1470	1720	1720	1720
B	(10)	mm	570	570	570	570	670	670	670
H	(10)	mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(10)	kg	220	285	285	285	330	330	330

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 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Sound power level in heating, outdoors.
9 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.
10 Unit in standard configuration/execution, without optional accessories.
11 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
12 Seasonal space heating energy index
13 Seasonal energy efficiency of the space cooling
14 Seasonal performance coefficient
15 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-KIR-MTD			0075t	0091t	0095t	0101t	0121t	0135t	0151t
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
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	20,8	26,3	29,9	32,1	35,4	38,1	40,5
Total power input	(1)	kW	6,91	7,21	9,30	10,9	10,6	13,3	13,4
EER	(1)	kW/kW	3,01	3,65	3,22	2,94	3,34	2,86	3,02
ESEER	(1)	kW/kW	4,30	4,44	4,37	4,28	4,69	4,65	4,65
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	20,7	26,2	29,7	31,9	35,3	37,9	40,3
EER	(1)(2)	kW/kW	2,94	3,56	3,14	2,87	3,28	2,82	2,97
ESEER	(1)(2)	kW/kW	4,08	4,25	4,14	4,04	4,52	4,45	4,45
Cooling energy class			E	C	E	E	D	F	E
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	21,7	30,9	33,3	36,0	36,8	40,1	45,4
Total power input	(3)	kW	6,83	7,87	9,07	10,2	9,36	10,7	12,1
COP	(3)	kW/kW	3,18	3,93	3,67	3,53	3,93	3,75	3,75
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2)	kW	21,8	31,1	33,5	36,3	37,0	40,3	45,6
COP	(3)(2)	kW/kW	3,13	3,85	3,61	3,47	3,89	3,70	3,70
Cooling energy class			D	A	B	C	A	A	A
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Ambient refrigeration									
Prated,c	(11)	kW	-	-	-	-	-	-	-
SEER	(11)(12)		-	-	-	-	-	-	-
Performance ηs	(11)(13)	%	-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(4)	kW	15,9	23,1	25,3	27,5	25,9	28,5	32,5
SCOP	(4)(14)		3,61	4,14	4,08	4,00	4,17	4,16	4,36
Performance ηs	(4)(15)	%	141	163	160	157	164	163	171
Seasonal efficiency class	(4)		A+	A++	A++	A++	A++	A++	A++
PDesign	(5)	kW	16,7	22,8	25,0	27,4	26,0	28,9	32,9
SCOP	(5)(14)		2,88	3,29	3,28	3,24	3,32	3,33	3,43
Performance ηs	(5)(15)	%	112	129	128	127	130	130	134
Seasonal efficiency class	(5)		A+	A++	A++	A++	A++	A++	A++
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,00	1,26	1,43	1,54	1,70	1,83	1,94
Pressure drop	(1)	kPa	23,8	22,7	29,2	33,9	18,7	21,7	24,4
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	1,05	1,49	1,60	1,73	1,77	1,93	2,18
Pressure drop	(3)	kPa	26,2	31,6	36,5	42,7	20,3	24,1	30,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	5,90	9,30	9,30	9,30	10,8	10,8	10,8
NOISE LEVEL									
Sound power level in cooling	(6)(7)	dB(A)	71	72	74	75	76	77	77
Sound power level in heating	(6)(8)	dB(A)	72	73	75	76	77	78	78
Sound Pressure	(9)	dB(A)	55	56	58	59	60	61	61
SIZE AND WEIGHT									
A	(10)	mm	1470	1470	1470	1470	1720	1720	1720
B	(10)	mm	570	570	570	570	670	670	670
H	(10)	mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(10)	kg	220	285	285	285	330	330	330

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 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
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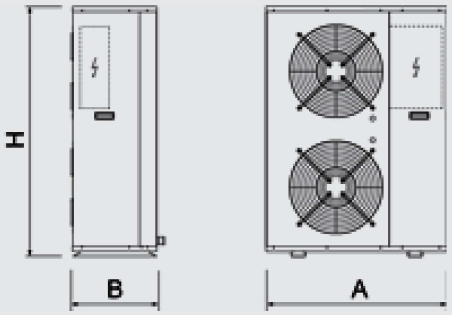
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