

i-KIR-MTD

0075t - 0151t 15,59-30,45 kW

Air cooled reversible heat pump, with axial fans and inverter driven compressor, for heating water up to 60°C



The system is based on an packaged external units with integrated hydronic module and by an internal unit with the electronic regulation. The heat pumps provide 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 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 installation.

The unit 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).

Control



NADISYSTEM

Electronic control that provides great application flexibility and dynamic control of delivery temperature water, optimizing indoor comfort and increasing the energy efficiency. The electronic board allows you to manage:

- Wired remote control, backlit display and with temperature probe 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 and 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
- Up to 6 time bands can be programmed

-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 zones.

Refrigerant



Versions

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 choice 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.

Accessories

- 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

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	15,59	19,35	22,13	23,95	26,45	28,68	30,45
Total power input	(1) kW	6,540	6,929	8,838	10,24	10,10	12,53	12,61
EER	(1) kW/kW	2,385	2,785	2,500	2,353	2,614	2,296	2,421
ESEER	(1) kW/kW	4,300	4,440	4,370	4,280	4,690	4,650	4,650
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2) kW	15,50	19,20	22,00	23,90	26,30	28,60	30,40
EER	(1)(2) kW/kW	2,350	2,750	2,460	2,320	2,590	2,270	2,390
ESEER	(1)(2) kW/kW	4,080	4,250	4,140	4,040	4,520	4,450	4,450
Cooling energy class		E	C	E	E	D	F	E
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(3) kW	21,62	30,35	32,86	35,63	35,85	39,19	44,39
Total power input	(3) kW	8,297	9,448	10,92	12,33	11,43	13,01	14,67
COP	(3) kW/kW	2,602	3,217	3,018	2,894	3,140	3,015	3,020
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(3)(2) kW	20,50	24,00	27,80	30,30	32,10	35,20	38,30
COP	(3)(2) kW/kW	2,760	3,340	3,070	2,940	3,390	3,260	3,270
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	16,0	23,1	25,2	27,4	25,8	28,4	32,4
SCOP	(4)(14)	3,58	4,05	4,00	3,94	4,13	4,12	4,28
Performance ηs	(4)(15) %	140	159	157	155	162	162	168
Seasonal efficiency class	(16)	A+	A++	A++	A++	A++	A++	A++
PDesign	(5) kW	16,6	22,5	24,7	27,2	25,8	28,7	32,5
SCOP	(5)(14)	2,87	3,26	3,25	3,22	3,31	3,32	3,41
Performance ηs	(5)(15) %	112	127	127	126	130	130	133
Seasonal efficiency class	(17)	A+	A++	A++	A++	A++	A++	A++
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1) l/s	0,745	0,925	1,059	1,145	1,265	1,371	1,456
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	0,983	1,155	1,333	1,455	1,546	1,692	1,839
Pressure drop	(3) kPa	23,2	19,0	25,3	30,2	15,5	18,6	21,9
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

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- 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.
- Unit in standard configuration/execution, without optional accessories.
- Parameter calculated according to [REGULATION (EU) N. 2016/2281]
- Seasonal energy efficiency ratio
- Seasonal space cooling energy efficiency
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R410A [GWP₁₀₀ 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	20,78	26,29	29,85	32,15	35,42	38,14	40,50
Total power input	(1) kW	6,915	7,215	9,304	10,85	10,64	13,32	13,41
EER	(1) kW/kW	3,010	3,648	3,215	2,945	3,340	2,865	3,022
ESEER	(1) kW/kW	4,300	4,440	4,370	4,280	4,690	4,650	4,650
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2) kW	19,30	24,30	27,50	30,20	30,40	34,30	36,20
EER	(1)(2) kW/kW	3,210	3,880	3,590	3,320	3,880	3,690	3,510
ESEER	(1)(2) kW/kW	4,080	4,250	4,140	4,040	4,520	4,450	4,450
Cooling energy class		E	C	E	E	D	F	E
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(3) kW	21,74	30,93	33,27	35,96	36,75	40,06	45,35
Total power input	(3) kW	6,833	7,866	9,073	10,22	9,357	10,72	12,08
COP	(3) kW/kW	3,177	3,926	3,671	3,529	3,932	3,748	3,752
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(3)(2) kW	19,80	24,60	28,30	31,10	32,30	35,60	39,40
COP	(3)(2) kW/kW	3,570	4,090	3,830	3,690	4,060	3,840	3,990
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	16,0	23,1	25,2	27,4	25,8	28,4	32,4
SCOP	(4)(14)	3,58	4,05	4,00	3,94	4,13	4,12	4,28
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SCOP	(5)(14)	2,87	3,26	3,25	3,22	3,31	3,32	3,41
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Seasonal efficiency class	(17)	A+	A++	A++	A++	A++	A++	A++
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1) l/s	0,932	1,168	1,329	1,456	1,461	1,649	1,746
Pressure drop	(1) kPa	20,8	19,4	25,2	30,2	13,8	17,6	19,8
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(3) l/s	0,947	1,180	1,353	1,485	1,549	1,710	1,884
Pressure drop	(3) kPa	21,5	19,8	26,1	31,4	15,5	19,0	23,0
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
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H	(10) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(10) kg	220	285	285	285	330	330	330

Notes

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
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Dimensional drawing

