HEAT PUMPS

i-NRG 0061m - 0061t

Reversible heat pump with inverter compressor, total heat recovery, air source for indoor/outdoor installation 14,7-14,7 kW

The new i-NRG heat pump provides exactly the energy required by the system, perfectly following the real load of the building, thanks to the modulation of the DC inverter fan. One single unit for the highest efficiency, sustainability and huge savings, thanks to the advantages of DC frequency driven fans and circulating pumps (inverter) for both plant and domestic hot water circuits. i-NRG is the new generation heat pump for all year round operation in any operating mode: single cycle (air conditioning, heating, domestic hot water) as well as combined cycle in total heat recovery (domestic hot water together with cooling). Domestic hot water production is guaranteed by the dedicated exchanger for heat recovery: total, for free domestic hot water production, or partial. Domestic hot water is stored in a properly dimensioned storage tank. The unit can be installed indoor or outdoor, thus ensuring complete flexibility. Extended operating limits for all year, specially in heating:
-Maximum flow temperature 60°C
-Maximum external air temperature 45°C
-Minimum external air temperature -15°C

Version

- Basic

Features

Structure and base in hot-dip galvanised steel with epoxy powder paint finish.
High efficiency and low pressure drop stainless steel AISI 316 plate exchangers (at the domestic hot water side). It is positioned next after the compressor and it ensures the domestic hot water production. The unit has full or partial recovery system, with the constant optimization of efficiency through logic advanced adjusting controller
High efficiency and low pressure drop stainless steel AISI 316 plate exchangers meet the supply of both hot and cold water for the facility, regardless of the domestic hot water
DC inverter scroll compressor with self-adaptive capacity adjustment. Reduced inrush current due to modulation by an inverter.
Electronic expansion valve
Finned coils made with copper pipes and aluminium fins with large exchange surface area (100% fully quality tested)
Axial electric fan in continuous current housed in aerodynamic conveyor profile with safety grill.
Low external air temperature device:
continuous fan speed regulation with pressure switch
The water circuit comes complete with:

- Variable flow circulator plant side, the curves are selected by control. Class A energy efficiency
- Variable flow circulator domestic hot water side. Class A energy efficiency.
- Expansion tank
- Safety valve
- Pressure switch system side
- Pressure gauge
- Manual filling assembly

Accessory

- Wired room terminal with backlit display, and with temperature and umidity probe
- Extension module for system configuration
- Acoustic insulation casing kit (MANDATORY for outside installation)
- Rectangular air ducts kit and grills for indoor installation
- 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
- i-BT85 85 liters storage tank, to place under the heat pump
- 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
Electronic control Nadisystem 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 control, backlit display complete 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
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-NRG			0061m	0061t
Power supply		V/ph/Hz	230/1/50	400/3/50
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	14,7	14,7
Total power input	(1)	kW	5,10	5,10
EER	(1)	kW/kW	2,88	2,88
ESEER	(1)	kW/kW	4,47	4,33
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2)	kW	14,7	14,7
EER	(1)(2)	kW/kW	2,85	2,85
ESEER	(1)(2)	kW/kW	4,24	4,20
HEATING ONLY (GROSS VALUE)				
Total heating capacity	(3)	kW	15,7	15,7
Total power input	(3)	kW	4,80	4,70
COP	(3)	kW/kW	3,27	3,34
HEATING ONLY (EN14511 VALUE)				
Total heating capacity	(2)(3)	kW	15,7	15,7
COP	(2)(3)	kW/kW	3,21	3,28
COOLING WITH TOTAL HEAT RECOVERY				
Cooling capacity	(4)	kW	13,7	13,8
Total power input	(4)	kW	4,40	4,40
Recovery heat exchanger capacity	(4)	kW	17,9	18,0
TOTAL RECOVERY ONLY				
Total heating capacity	(3)	kW	15,7	15,7
Total power input	(3)	kW	4,80	4,70
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	(5)	kW	11,2	11,2
SCOP	(5)(14)		3,80	3,74
Performance ηs	(5)(15)	%	149	147
Seasonal efficiency class	(5)		A+	A+
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN REFRIGERATION				
Water flow	(1)	l/s	0,70	0,70
Available unit's head	(1)	kPa	89,2	89,2
HEAT EXCHANGER USER SIDE IN HEATING				
Water flow	(3)	l/s	0,76	0,76
Available unit's head	(3)	kPa	84,3	84,3
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION				
Water flow	(4)	l/s	0,86	0,87
Pressure drop	(4)	kPa	37,3	37,8
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING				
Water flow	(4)	l/s	0,74	0,74
Pressure drop	(4)	kPa	27,9	27,8
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	6,55	6,55
NOISE LEVEL				
Sound power level in cooling	(6)(7)	dB(A)	68	69
Sound power level in heating	(6)(8)	dB(A)	69	70
Sound Pressure	(9)	dB(A)	52	53
SIZE AND WEIGHT				
A	(10)	mm	750	750
B	(10)	mm	1050	1050
H	(10)	mm	1600	1600
Operating weight	(10)	kg	260	260

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 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
5 Seasonal space heating energy efficiency class LOW 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.

APPLICATION FLOOR HEATING

i-NRG			0061m	0061t
Power supply		V/ph/Hz	230/1/50	400/3/50
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	19,7	19,7
Total power input	(1)	kW	5,38	5,38
EER	(1)	kW/kW	3,66	3,66
ESEER	(1)	kW/kW	4,47	4,33
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2)	kW	19,7	19,7
EER	(1)(2)	kW/kW	3,61	3,61
ESEER	(1)(2)	kW/kW	4,24	4,20
HEATING ONLY (GROSS VALUE)				
Total heating capacity	(3)	kW	16,2	16,3
Total power input	(3)	kW	4,02	3,96
COP	(3)	kW/kW	4,03	4,12
HEATING ONLY (EN14511 VALUE)				
Total heating capacity	(2)(3)	kW	16,2	16,2
COP	(2)(3)	kW/kW	3,96	4,03
COOLING WITH TOTAL HEAT RECOVERY				
Cooling capacity	(4)	kW	19,0	19,2
Total power input	(4)	kW	4,35	4,35
Recovery heat exchanger capacity	(4)	kW	23,1	23,3
TOTAL RECOVERY ONLY				
Total heating capacity	(3)	kW	16,2	16,3
Total power input	(3)	kW	4,02	3,96
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	(5)	kW	11,2	11,2
SCOP	(5)(14)		3,80	3,74
Performance ηs	(5)(15)	%	149	147
Seasonal efficiency class	(5)		A+	A+
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN REFRIGERATION				
Water flow	(1)	l/s	0,94	0,94
Available unit's head	(1)	kPa	65,1	65,2
HEAT EXCHANGER USER SIDE IN HEATING				
Water flow	(3)	l/s	0,78	0,78
Available unit's head	(3)	kPa	82,1	82,0
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION				
Water flow	(4)	l/s	1,12	1,12
Pressure drop	(4)	kPa	62,6	63,4
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING				
Water flow	(4)	l/s	0,74	0,74
Pressure drop	(4)	kPa	27,9	27,8
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	6,55	6,55
NOISE LEVEL				
Sound power level in cooling	(6)(7)	dB(A)	68	69
Sound power level in heating	(6)(8)	dB(A)	69	70
Sound Pressure	(9)	dB(A)	52	53
SIZE AND WEIGHT				
A	(10)	mm	750	750
B	(10)	mm	1050	1050
H	(10)	mm	1600	1600
Operating weight	(10)	kg	260	260

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 Plant (side) cooling exchanger water (in/out) 23°C/18°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
5 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
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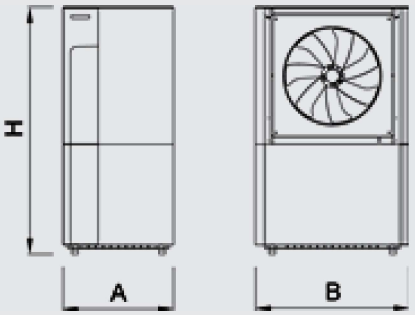
INSTALLAZIONE
ESTERNA
OUTDOOR
INSTALLATION
(B) + (2x393mm)


H
A
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