HEAT PUMPS

i-BX-N 004 - 013

Reversible heat pump, air source for outdoor installation 4,20-12,4 kW

Outdoor unit for the production of chilled/hot water with variable speed (Inverter Driven) Scroll compressors, optimized for R410A in a single-circuit configuration, axial-flow fans, condensing coil with copper tubes and aluminum fins, plate heat exchanger on water side and electronic expansion valve as standard equipment.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise temperature control together with the use of inverter technology. The high performance's level, both full and partial load, is achieved thanks to the accurate unit's design and to the use of variable speed (inverter) motor.
The i-BX-N 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.

Version

- Basic

Features

ErP READY
The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP according with the eco-sustainable design requirements for all products using energy.
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 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 (anti-freeze electrical heater on plate heat exchanger, air vents, flow switch, water filter, safety valve, EC water pumps, expansion tank) so as to optimize installation space, times and costs.

Accessory

- Remote keyboard
- Wired room terminal with backlit display, and with temperature and umidity probe
- Cascade management kit
- DHW temperature probe and Buffer temperature probe
- Copper-Aluminum heat exchanger coils with epoxy treatment
- Copper-Copper heat exchanger coils
- Buffer tank
- Domestic hot water storage tank
- Electric heater for the base and for condensate collecting tray to avoid freezing
- Serial card RS485 for ModBus
- Rubber anti-vibration mounting kit

Controls

NADISYSTEM
The keypad features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu. 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
-night mode to limit the noise level of the units. Noise level is reduced limiting the maximum speed of the compressor and fans.
-up to 4 heat pump in cascade (with the accessories N-CM)
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.

i-BX-N			004	006	008	010	013
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	4,20	5,90	7,50	9,90	12,4
Total power input	(1)	kW	1,55	2,08	2,72	3,64	4,54
EER	(1)	kW/kW	2,71	2,84	2,76	2,72	2,73
ESEER	(1)	kW/kW	4,24	4,32	4,45	4,21	4,24
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	4,20	5,90	7,51	9,91	12,4
EER	(1)(2)	kW/kW	2,76	2,88	2,81	2,73	2,75
ESEER	(1)(2)	kW/kW	4,61	4,56	4,83	4,26	4,37
Cooling energy class			C	C	C	C	C
HEATING ONLY (GROSS VALUE)							
Total heating capacity	(3)	kW	4,63	6,36	8,51	11,0	14,3
Total power input	(3)	kW	1,51	2,03	2,65	3,65	4,53
COP	(3)	kW/kW	3,07	3,13	3,21	3,01	3,16
HEATING ONLY (EN14511 VALUE)							
Total heating capacity	(3)(2)	kW	4,62	6,37	8,50	11,0	14,3
COP	(3)(2)	kW/kW	3,12	3,19	3,26	3,02	3,19
Cooling energy class			B	B	A	B	B
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	3,40	4,80	6,02	8,18	10,4
SCOP	(4)(13)		3,58	3,89	4,15	3,54	3,81
Performance ηs	(4)(14)	%	140	153	163	139	149
Seasonal efficiency class	(4)		A+	A++	A++	A+	A+
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	0,20	0,28	0,36	0,47	0,59
Pressure drop	(1)	kPa	8,10	13,9	12,5	13,9	15,0
HEAT EXCHANGER USER SIDE IN HEATING							
Water flow	(3)	l/s	0,22	0,31	0,41	0,53	0,69
Pressure drop	(3)	kPa	10,0	16,5	16,4	17,5	20,5
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	1,44	2,19	3,70	3,97	4,47
NOISE LEVEL							
Sound Pressure	(5)	dB(A)	50	51	51	54	55
Sound power level in cooling	(6)(7)	dB(A)	64	65	66	69	70
Sound power level in heating	(6)(8)	dB(A)	64	65	66	69	70
SIZE AND WEIGHT							
Operating weight	(9)	kg	80	85	100	115	135
A	(9)	mm	900	900	900	900	900
B	(9)	mm	370	370	420	420	420
H	(9)	mm	940	940	1240	1240	1390

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 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.
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 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