UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

NX-Q 0152P - 0602P

INTEGRA unit for 4-pipe systems, air source for outdoor installation 43,9-169 kW

Multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent hydronic circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler.
Unit with two independent refrigerant circuits, each circuit works with an inverter driven hermetic rotary Scroll compressors using R410A, axial fans, braze-welded plate-type exchanger and thermal expansion valve.

Version

-	Basic
SL	Super-low noise version

Configurations

-	Basic function

Features

UNIQUE PROPOSAL
Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting
ENERGY SAVING
Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be
ErP READY
The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP and for cooling, SEER, according with the eco-sustainable design requirements for all products using energy.
INTEGRATED HYDRONIC GROUP
The built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line pump, for achieving both low or high head, fixed or variable speed, available for both plant and recovery circuits (up to 4 pumps).
WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C to 46°C of outdoor air temperature, from -8°C to 18°C of evaporator leaving water temperature and hot water up to 55°C.

Accessory

- Touch Screen visual display
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Hydronic kit available in different configurations with 1 or 2 pumps fixed speed or variable speed, for achieving both low or high head, available for both plant and recovery circuits.
- EC fans with electronic DC brushless motor
- LOW NOISE KIT (only on no silenced versions)
- Soft starters
- Electronic expansion valve

Controls

Electronic control W3000TE
The W3000TE controller offers advanced functions and algorithms.
The LARGE keyboard with a large format and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). In addition to or as an alternative at Large Keyboard, the KIPlink - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet.
The regulation operates on both water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. This allows to satisfy simultaneously the different requests of both cooling and heating, with no need of mode setting.
The diagnostics comprises a complete alarm management system, with the "black-box" (via PC) and the alarm history display (via display or also PC) for enhanced analysis of the unit operation
Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well.
Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with the remote keyboard (up to 8 units).
The programmable timer manages a weekly schedule organised into time bands to optimise unit performance by minimising power consumption during periods of inactivity. Up to 10 daily time bands can be associated with different operating set points.
The defrosting (air source reversible unit only) follows a proprietary self-adaptive logic, which features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

NX-Q			0152P	0182P	0202P	0252P	0262P	0302P	0402P	0502P	0602P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	43,9	50,8	58,1	64,0	71,6	85,5	111	138	169
Total power input	(1)	kW	12,7	14,8	17,6	19,2	22,2	25,6	33,4	42,3	56,5
EER	(1)	kW/kW	3,46	3,43	3,30	3,33	3,23	3,34	3,31	3,26	2,98
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	43,8	50,6	57,9	63,8	71,4	85,2	110	137	168
EER	(1)(2)	kW/kW	3,41	3,38	3,26	3,28	3,18	3,29	3,27	3,21	2,94
ESEER	(1)(2)	kW/kW	4,17	4,11	4,02	4,15	3,97	4,05	4,03	3,97	3,68
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(3)	kW	46,4	53,2	60,6	67,3	75,2	90,1	115	145	177
Total power input	(3)	kW	13,5	15,3	17,5	19,3	21,4	25,6	32,7	41,3	52,1
COP	(3)	kW/kW	3,44	3,48	3,46	3,49	3,51	3,52	3,52	3,51	3,40
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(2)(3)	kW	46,6	53,4	60,8	67,6	75,5	90,4	116	145	178
COP	(2)(3)	kW/kW	3,41	3,44	3,43	3,46	3,48	3,49	3,49	3,47	3,37
COOLING WITH TOTAL HEAT RECOVERY											
Cooling capacity	(4)	kW	44,0	51,1	58,9	64,3	73,1	86,9	112	140	176
Total power input	(4)	kW	11,6	13,4	15,7	17,3	19,8	23,4	30,5	39,5	50,7
Recovery heat exchanger capacity	(4)	kW	54,9	63,7	73,7	80,5	91,7	109	141	177	224
TER		kW/kW	8,53	8,57	8,45	8,37	8,32	8,37	8,28	8,01	7,90
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	33,2	38,2	43,6	49,4	55,6	65,8	83,0	106	135
SCOP	(5)(14)		3,59	3,60	3,63	3,75	3,77	3,71	3,69	3,66	3,64
Performance ηs	(5)(15)	%	141	141	142	147	148	145	144	143	143
Seasonal efficiency class	(5)		A+	A+	A+	A+	A+	A+	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	2,10	2,43	2,78	3,06	3,42	4,09	5,29	6,59	8,06
Pressure drop	(1)	kPa	14,7	19,7	15,8	19,2	17,1	19,4	22,3	26,2	31,8
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(3)	l/s	2,24	2,57	2,93	3,25	3,63	4,35	5,56	6,99	8,56
Pressure drop	(3)	kPa	16,7	21,9	17,5	21,6	19,3	21,9	24,6	29,5	35,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	20,8	22,4	22,9	30,2	30,9	37,2	53,2	64,8	66,6
NOISE LEVEL											
Sound Pressure	(6)	dB(A)	53	53	53	53	53	54	55	56	56
Sound power level in cooling	(7)(8)	dB(A)	85	85	85	85	85	86	87	88	88
Sound power level in heating	(7)(9)	dB(A)	85	85	85	85	85	86	87	88	88
SIZE AND WEIGHT											
A	(10)	mm	2625	2625	2625	2625	2625	3250	3875	4500	4500
B	(10)	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
H	(10)	mm	2070	2070	2070	2070	2070	2070	2070	2070	2070
Operating weight	(10)	kg	850	870	890	960	970	1130	1430	1670	1730

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 (side) heat exchanger water (in/out) 40°C/45°C.
5 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
6 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
7 Sound power on the basis of measurements made in compliance with ISO 9614.
8 Sound power level in cooling, outdoors.
9 Sound power level in heating, outdoors.
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.

NX-Q /SL			0152P	0182P	0202P	0252P	0262P	0302P	0402P	0502P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	43,2	49,8	58,5	63,2	71,6	84,8	108	131
Total power input	(1)	kW	12,5	14,7	17,3	19,4	22,0	25,5	33,4	44,3
EER	(1)	kW/kW	3,46	3,39	3,38	3,26	3,25	3,33	3,25	2,95
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	43,1	49,6	58,3	63,0	71,4	84,5	108	130
EER	(1)(2)	kW/kW	3,41	3,33	3,34	3,21	3,21	3,28	3,21	2,91
ESEER	(1)(2)	kW/kW	4,24	4,13	4,14	4,07	4,03	4,06	4,00	3,68
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(3)	kW	46,5	53,3	62,2	67,1	76,8	91,1	116	141
Total power input	(3)	kW	12,9	14,7	17,3	19,1	21,3	25,2	32,3	40,0
COP	(3)	kW/kW	3,60	3,63	3,60	3,51	3,61	3,62	3,60	3,53
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(3)	kW	46,7	53,5	62,4	67,4	77,1	91,4	117	142
COP	(2)(3)	kW/kW	3,57	3,59	3,56	3,48	3,57	3,58	3,57	3,50
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(4)	kW	44,0	51,1	58,9	64,3	73,1	86,9	112	140
Total power input	(4)	kW	11,6	13,4	15,7	17,3	19,8	23,4	30,5	39,5
Recovery heat exchanger capacity	(4)	kW	54,9	63,7	73,7	80,5	91,7	109	141	177
TER		kW/kW	8,53	8,57	8,45	8,37	8,32	8,37	8,28	8,01
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	33,2	38,6	45,5	48,9	56,4	66,7	84,3	105
SCOP	(5)(14)		3,81	3,81	3,80	3,78	3,88	3,83	3,82	3,75
Performance ηs	(5)(15)	%	150	150	149	148	152	150	150	147
Seasonal efficiency class	(5)		A++	A++	A+	A+	A++	A++	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	2,07	2,38	2,80	3,02	3,42	4,05	5,19	6,25
Pressure drop	(1)	kPa	14,2	18,9	16,0	18,7	17,1	19,0	21,4	23,6
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(3)	l/s	2,25	2,57	3,00	3,24	3,71	4,40	5,62	6,82
Pressure drop	(3)	kPa	16,8	22,1	18,4	21,5	20,1	22,4	25,1	28,0
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	27,9	29,5	29,7	29,9	42,0	50,4	63,1	64,8
NOISE LEVEL										
Sound Pressure	(6)	dB(A)	47	47	48	48	48	49	50	52
Sound power level in cooling	(7)(8)	dB(A)	79	79	80	80	80	81	82	84
Sound power level in heating	(7)(9)	dB(A)	79	79	80	80	80	81	82	84
SIZE AND WEIGHT										
A	(10)	mm	2625	2625	3250	3250	3250	3875	4500	4500
B	(10)	mm	1350	1350	1350	1350	1350	1350	1350	1350
H	(10)	mm	2070	2070	2070	2070	2070	2070	2070	2070
Operating weight	(10)	kg	890	910	1000	1030	1090	1270	1610	1680

Notes:
1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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