

NECS-Q 0604 - 1204

INTEGRA unit for 4-pipe systems, air source for outdoor installation
142-311 kW



Version

B	Basic
LN	Low noise
SL	Super-low noise version

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

TOTAL VERSATILITY

Climaveneta is the only company to offer all-in-one units with Scroll compressors in 3 versions designed to satisfy all service system and application requirements

CUTTING-EDGE ELECTRONICS

The Energy Raiser units are fitted with an evolved electronic unit that allows fully automatic management of the best type of operation to meet the load requirements

VENTILATION CONTROL FOR LOW-TEMPERATURE OPERATION

The standard units come fitted with pressure-operated control of ventilation, which allows the unit to produce cold water with an external air temperature down to -10°C

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, available for both plant and recovery circuits (up to 4 pumps).

Accessory

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)
- Soft starters
- Rubber anti-vibration mounting kit

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. This unit is equipped with hermetic rotary Scroll compressors, with R410A, axial fans, braze-welded plate-type exchanger and thermal expansion valve. External panels in Peraluman and base in galvanised sheet steel with paint finish. The range includes two-compressor and four-compressor versions, both with two independent refrigerant circuits.

Controls

W3000SE Large

The W3000SE Large controller offers advanced functions and algorithms.

The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.

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 includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. 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, Echelon LonWorks. Compatibility with the remote keyboard managing up to 10 units.

Availability of an internal real time clock for operation scheduling (4-day profiles with 10 hour belts).

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.



NECS-Q / B			0604	0704	0804	0904	1004	1104	1204
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	150	166	189	211	240	277	311
Total power input	(1)	kW	58,9	69,0	75,8	85,2	95,6	107	120
EER	(1)	kW/kW	2,54	2,41	2,49	2,48	2,51	2,58	2,58
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	149	166	188	210	239	276	310
EER	(1)(2)	kW/kW	2,50	2,37	2,45	2,44	2,48	2,54	2,54
ESEER	(1)(2)	kW/kW	-	-	-	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	167	185	209	234	266	306	344
Total power input	(3)	kW	58,0	64,9	72,1	79,8	92,0	104	116
COP	(3)	kW/kW	2,88	2,86	2,90	2,93	2,90	2,94	2,96
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	168	186	210	235	268	308	346
COP	(2)(3)	kW/kW	2,86	2,83	2,87	2,91	2,87	2,91	2,93
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(4)	kW	151	173	194	220	246	280	317
Total power input	(4)	kW	49,8	57,1	64,5	72,1	79,8	92,8	105
Recovery heat exchanger capacity	(4)	kW	198	226	255	288	321	368	415
TER		kW/kW	7,00	6,99	6,96	7,04	7,10	6,98	6,99
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	127	143	157	172	205	231	255
SCOP	(5)(14)		3,25	3,24	3,34	3,20	3,21	3,27	3,25
Performance ηs	(5)(15)	%	127	127	131	125	125	128	127
Seasonal efficiency class	(5)		-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,17	7,95	9,03	10,09	11,48	13,25	14,86
Pressure drop	(1)	kPa	41,9	43,0	43,7	42,8	44,4	47,3	47,2
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	8,07	8,95	10,10	11,30	12,86	14,79	16,60
Pressure drop	(3)	kPa	56,9	59,2	61,4	61,9	66,5	65,7	67,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	41,0	42,0	56,0	61,0	63,0	80,0	108
NOISE LEVEL									
Sound Pressure	(6)	dB(A)	60	60	60	61	62	63	63
Sound power level in cooling	(7)(8)	dB(A)	92	92	92	93	94	95	95
Sound power level in heating	(7)(9)	dB(A)	92	92	92	93	94	95	95
SIZE AND WEIGHT									
A	(10)	mm	3110	3110	3110	4110	4110	4110	4110
B	(10)	mm	2220	2220	2220	2220	2220	2220	2220
H	(10)	mm	2150	2150	2150	2150	2150	2150	2150
Operating weight	(10)	kg	1600	1840	2120	2320	2480	2680	2860

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 [GWP₁₀₀ 2088] fluorinated greenhouse gases.

NECS-Q / LN			0604	0704	0804	0904	1004	1104	1204
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	143	157	177	199	227	261	291
Total power input	(1)	kW	58,8	70,2	78,4	87,8	96,5	110	125
EER	(1)	kW/kW	2,43	2,24	2,26	2,27	2,36	2,37	2,32
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	142	156	176	198	226	260	290
EER	(1)(2)	kW/kW	2,40	2,21	2,23	2,24	2,33	2,34	2,29
ESEER	(1)(2)	kW/kW	-	-	-	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	160	176	198	225	254	290	324
Total power input	(3)	kW	54,0	60,8	67,9	75,7	85,8	97,9	110
COP	(3)	kW/kW	2,95	2,89	2,92	2,98	2,95	2,96	2,94
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	160	177	199	226	255	292	326
COP	(2)(3)	kW/kW	2,92	2,87	2,89	2,95	2,93	2,94	2,91
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(4)	kW	151	173	194	220	246	280	317
Total power input	(4)	kW	49,8	57,1	64,5	72,1	79,8	92,8	105
Recovery heat exchanger capacity	(4)	kW	198	226	255	288	321	368	415
TER		kW/kW	7,00	6,99	6,96	7,04	7,10	6,98	6,99
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	117	128	154	144	186	229	255
SCOP	(5)(14)		3,33	3,34	3,41	3,37	3,34	3,48	3,49
Performance ηs	(5)(15)	%	130	131	134	132	130	136	136
Seasonal efficiency class	(5)		-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	6,84	7,51	8,47	9,52	10,87	12,47	13,90
Pressure drop	(1)	kPa	38,2	38,4	38,5	38,1	39,8	41,9	41,3
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	7,70	8,50	9,56	10,88	12,24	14,01	15,63
Pressure drop	(3)	kPa	51,8	53,3	54,9	57,4	60,2	59,0	59,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	41,0	42,0	56,0	61,0	63,0	80,0	108
NOISE LEVEL									
Sound Pressure	(6)	dB(A)	54	54	54	55	56	57	57
Sound power level in cooling	(7)(8)	dB(A)	86	86	86	87	88	89	89
Sound power level in heating	(7)(9)	dB(A)	87	87	87	88	89	90	90
SIZE AND WEIGHT									
A	(10)	mm	3110	3110	3110	4110	4110	4110	4110
B	(10)	mm	2220	2220	2220	2220	2220	2220	2220
H	(10)	mm	2150	2150	2150	2150	2150	2150	2150
Operating weight	(10)	kg	1600	1840	2120	2320	2480	2680	2860

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.
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NECS-Q / SL			0604	0704	0804	0904	1004	1104	1204
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	142	160	183	201	225	261	294
Total power input	(1)	kW	58,0	67,4	75,4	87,3	95,5	108	123
EER	(1)	kW/kW	2,45	2,37	2,43	2,30	2,36	2,41	2,38
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	141	159	183	200	224	260	293
EER	(1)(2)	kW/kW	2,41	2,34	2,40	2,27	2,33	2,38	2,35
ESEER	(1)(2)	kW/kW	-	-	-	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	159	178	205	226	253	295	330
Total power input	(3)	kW	52,6	59,5	68,7	76,1	83,8	96,1	110
COP	(3)	kW/kW	3,02	2,99	2,99	2,97	3,02	3,06	3,00
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	160	179	206	227	254	296	332
COP	(2)(3)	kW/kW	2,99	2,96	2,96	2,94	2,99	3,03	2,97
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(4)	kW	151	173	194	220	246	280	317
Total power input	(4)	kW	49,8	57,1	64,5	72,1	79,8	92,8	105
Recovery heat exchanger capacity	(4)	kW	198	226	255	288	321	368	415
TER		kW/kW	7,00	6,99	6,96	7,04	7,10	6,98	6,99
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	125	141	137	149	200	229	257
SCOP	(5)(14)		3,72	3,76	3,48	3,50	3,72	3,84	3,71
Performance ηs	(5)(15)	%	146	148	136	137	146	151	145
Seasonal efficiency class	(5)		-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	6,79	7,64	8,77	9,60	10,77	12,47	14,05
Pressure drop	(1)	kPa	37,6	39,7	41,3	38,7	39,1	41,9	42,2
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	7,67	8,59	9,91	10,93	12,21	14,22	15,93
Pressure drop	(3)	kPa	51,5	54,5	59,0	57,9	59,9	60,8	62,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	55,0	67,0	60,0	61,0	78,0	110	112
NOISE LEVEL									
Sound Pressure	(6)	dB(A)	50	50	51	51	51	53	54
Sound power level in cooling	(7)(8)	dB(A)	82	82	83	83	83	85	86
Sound power level in heating	(7)(9)	dB(A)	83	83	84	84	84	86	87
SIZE AND WEIGHT									
A	(10)	mm	3110	3110	4110	4110	4110	5110	5110
B	(10)	mm	2220	2220	2220	2220	2220	2220	2220
H	(10)	mm	2150	2150	2150	2150	2150	2150	2150
Operating weight	(10)	kg	1700	1960	2350	2420	2590	2950	3100

Notes:

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