

# NECS-WQ 0152 - 1204

**INTEGRA unit for 4-pipe systems,  
water source  
48,4-412 kW**



#### Version

B Basic

#### Features

##### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

##### INTEGRATED CONDENSATION'S CONTROL

A 2 way valve is supplied as standard for the condensing pressure control. For all the applications in which a constant waterflow through the condenser is needed, a 3-way valve option is also available under request.

##### 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

##### HOT WATER SUPPLY

Production of hot water up to 55°C to meet the most demanding application needs.

#### Accessory

- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Acoustical enclosure to reduce the noise emissions.
- Water connections directed upwards (for 2 compressors units only)

Multi-purpose indoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent water circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching. Water-source unit equipped with hermetic rotary Scroll compressors, with R410A, plate heat exchangers and thermostatic expansion valve. The range is composed by units equipped with two and four compressors, all with two independent refrigerant circuits.

#### Controls

##### W3000 large

The controller W3000 large offers the latest control and functions developed directly by Climaveneta on the basis of their experience gained over the years with these particular units and the related plant engineering. The keypad is generously sized with full operating status display. The controls and detailed LCD make access to machine settings easy and safe. Temperature regulation managed on the two water circuits, with a proportional logic referred to the return water temperatures. This allows to satisfy simultaneously the different heating- and cooling requests, with no need of mode changeover. The diagnostics includes full management of alarms with black-box functions and alarm record for better analysis of unit performance. Supervision is easy through Climaveneta devices or with various options for interfacing to ModBus, Bacnet, Echelon LonTalk protocols. Compatibility with remote keyboard (management up to 10 units). Clock available with programming of operation (standard 4 days and 10 time bands). Exclusive self-adaptive defrost logic, monitoring multiple operational- and ambient parameters, which allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.



NECS-WQ			0152	0182	0202	0252	0262	0302	0412	0512
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	400/3/50
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	48,4	55,6	64,6	73,4	82,8	97,0	127	158
Total power input	(1)	kW	8,56	9,73	11,2	13,2	14,7	17,4	22,8	28,2
EER	(1)	kW/kW	5,65	5,71	5,77	5,56	5,63	5,57	5,56	5,59
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	48,2	55,4	64,3	73,1	82,4	96,6	126	157
EER	(1)(2)	kW/kW	5,45	5,53	5,59	5,39	5,45	5,40	5,38	5,41
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	52,1	59,7	69,3	79,0	88,9	104	135	169
Total power input	(3)	kW	12,4	13,8	16,2	18,5	20,4	23,9	31,0	38,4
COP	(3)	kW/kW	4,20	4,33	4,28	4,27	4,36	4,37	4,35	4,40
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3)	kW	52,4	60,0	69,6	79,4	89,3	105	136	170
COP	(2)(3)	kW/kW	4,10	4,23	4,19	4,18	4,26	4,27	4,25	4,30
<b>COOLING WITH TOTAL HEAT RECOVERY</b>										
Cooling capacity	(4)	kW	40,4	46,7	54,1	61,7	69,7	82,0	106	133
Total power input	(4)	kW	12,4	13,8	16,2	18,5	20,4	23,9	31,0	38,4
Recovery heat exchanger capacity	(4)	kW	52,1	59,7	69,3	79,0	88,9	104	135	169
TER		kW/kW	7,46	7,71	7,62	7,61	7,77	7,80	7,75	7,85
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Ambient refrigeration</b>										
Prated,c	(11)	kW	-	-	-	-	-	-	-	-
SEER	(11)(12)		-	-	-	-	-	-	-	-
Performance ηs	(11)(13)	%	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(5)	kW	62,2	71,1	82,8	94,4	106	125	162	202
SCOP	(5)(14)		5,71	5,88	5,93	5,74	5,79	5,79	5,73	5,72
Performance ηs	(5)(15)	%	220	227	229	222	224	224	221	221
Seasonal efficiency class	(5)		A++	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	2,31	2,66	3,09	3,51	3,96	4,64	6,06	7,54
Pressure drop	(1)	kPa	28,4	25,6	25,0	28,7	31,9	33,8	39,1	42,4
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	0,85	0,97	1,13	1,28	1,45	1,70	2,22	2,76
Pressure drop	(1)	kPa	3,79	3,42	3,32	3,85	4,26	4,53	5,25	5,68
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(4)	l/s	2,51	2,88	3,35	3,82	4,29	5,04	6,51	8,15
Pressure drop	(4)	kPa	33,5	30,1	29,3	34,0	37,5	39,8	45,1	49,5
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>										
Water flow	(3)	l/s	1,38	1,60	1,85	2,11	2,38	2,80	3,61	4,53
Pressure drop	(3)	kPa	10,1	9,25	8,95	10,4	11,5	12,3	13,9	15,3
<b>REFRIGERANT CIRCUIT</b>										
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	5,60	6,40	7,40	8,20	8,80	10,0	14,0	16,4
<b>NOISE LEVEL</b>										
Sound Pressure	(6)	dB(A)	42	43	43	43	44	45	46	47
Sound power level in cooling	(7)(8)	dB(A)	73	74	74	74	75	76	77	78
Sound power level in heating	(7)(9)	dB(A)	73	74	74	74	75	76	77	78
<b>SIZE AND WEIGHT</b>										
A	(10)	mm	1220	1220	1220	1220	1220	1220	1220	1220
B	(10)	mm	877	877	877	877	877	877	877	877
H	(10)	mm	1496	1496	1496	1496	1496	1496	1496	1496
Operating weight	(10)	kg	450	470	490	505	525	550	745	825

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°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 water (in/out) 14°C/7°C.
  - 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, indoors.
  - 9 Sound power level in heating, indoors.
  - 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<sub>100</sub> 2088] fluorinated greenhouse gases.

NECS-WQ			0612	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	400/3/50
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	205	193	224	254	284	315	363	412
Total power input	(1)	kW	36,6	34,7	40,1	45,5	50,9	56,4	64,8	73,0
EER	(1)	kW/kW	5,60	5,57	5,59	5,59	5,58	5,59	5,60	5,64
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	204	192	223	253	283	314	362	410
EER	(1)(2)	kW/kW	5,43	5,40	5,43	5,43	5,43	5,44	5,45	5,49
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	219	208	240	270	303	338	388	440
Total power input	(3)	kW	49,9	47,7	54,7	61,8	69,2	76,8	88,4	99,6
COP	(3)	kW/kW	4,39	4,36	4,38	4,37	4,38	4,40	4,39	4,41
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3)	kW	220	209	241	271	305	339	390	442
COP	(2)(3)	kW/kW	4,29	4,27	4,29	4,28	4,30	4,31	4,31	4,33
<b>COOLING WITH TOTAL HEAT RECOVERY</b>										
Cooling capacity	(4)	kW	172	163	188	212	238	266	305	346
Total power input	(4)	kW	49,9	47,7	54,7	61,8	69,2	76,8	88,4	99,6
Recovery heat exchanger capacity	(4)	kW	219	208	240	270	303	338	388	440
TER		kW/kW	7,83	7,79	7,82	7,80	7,83	7,86	7,84	7,89
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Ambient refrigeration</b>										
Prated,c	(11)	kW	-	-	-	-	-	297	342	387
SEER	(11)(12)		-	-	-	-	-	5,14	5,24	5,25
Performance ηs	(11)(13)	%	-	-	-	-	-	198	202	202
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(5)	kW	262	248	289	325	360	-	-	-
SCOP	(5)(14)		5,76	5,80	5,65	5,77	5,93	-	-	-
Performance ηs	(5)(15)	%	222	224	218	223	229	-	-	-
Seasonal efficiency class	(5)		-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	9,79	9,24	10,72	12,16	13,58	15,08	17,35	19,69
Pressure drop	(1)	kPa	44,0	41,7	44,1	43,7	43,0	43,9	43,7	44,2
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	3,58	3,38	3,93	4,45	4,97	5,52	6,35	7,20
Pressure drop	(1)	kPa	5,89	5,60	5,91	5,85	5,77	5,89	5,86	5,91
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(4)	l/s	10,57	10,05	11,56	13,04	14,64	16,30	18,74	21,22
Pressure drop	(4)	kPa	51,2	49,3	51,3	50,2	50,0	51,3	51,0	51,4
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>										
Water flow	(3)	l/s	5,88	5,58	6,43	7,24	8,14	9,07	10,42	11,82
Pressure drop	(3)	kPa	15,8	15,2	15,8	15,5	15,5	15,9	15,8	15,9
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	2	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	21,2	22,6	25,0	30,4	31,2	33,2	37,4	40,2
<b>NOISE LEVEL</b>										
Sound Pressure	(6)	dB(A)	48	54	55	56	57	58	59	59
Sound power level in cooling	(7)(8)	dB(A)	79	86	87	88	89	90	91	91
Sound power level in heating	(7)(9)	dB(A)	79	86	87	88	89	0	0	0
<b>SIZE AND WEIGHT</b>										
A	(10)	mm	1220	2560	2560	2560	2560	2560	2560	2560
B	(10)	mm	877	891	891	891	891	891	891	891
H	(10)	mm	1496	1810	1810	1810	1810	1810	1810	1810
Operating weight	(10)	kg	910	975	1165	1365	1445	1610	1710	1810

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°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 water (in/out) 14°C/7°C.
  - 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, indoors.
  - 9 Sound power level in heating, indoors.
  - 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<sub>100</sub> 2088] fluorinated greenhouse gases.

