



NX-N 0152P - 0812P  
NX-N 0604P - 1204P  
NECS-N 0202T - 0612T  
NX-N 0604T - 1204T  
NECS-N 1314 - 3218  
RECS 1052 - 1952  
RECS 1062 - 1962  
FOCS-N 2022 - 4822  
NECS-CN 0152 - 1204  
NECS-WN 0152 - 1204  
RECS-W 0802 - 3202  
NECS-W /H 0152 - 1204  
FOCS-W /H 0401 - 1902  
FOCS2-W /H 1301 - 9604  
TECS2-W /H 0251 - 1614  
NECS-NR 0152 - 1204  
NECS-NR 1314 - 3218  
FOCS-NR 1062 - 3222  
NECS-WNR 0152 - 1604  
FOCS-WNR 0802 - 3202

# Commercial and industrial heat pumps

# Commercial and industrial heat pumps NECS-W /H 0152 - 1204



## Water to water heat pump, reversible on hydraulic side 43,4-371 kW

Water to water indoor unit for the production of chilled/hot water with hermetic rotary Scroll compressors, braze-welded plate-type exchanger and thermal expansion valve. External panels in pre-clad sheet steel (simil-Peraluman) and structure in galvanised steel with paint finish. The range includes the single-circuit two-compressor versions and the dual circuit four-compressor versions.

### Controls

W3000 Base – W3000SE Compact

The controller in two different versions according to the unit's type:

W3000 Base: electronic controller complete with keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a menu up to three languages (Italian and English come standard, a further language can be chosen within French, Spanish, German, Russian and Swedish)

W3000SE Compact: electronic controller complete with 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-language menu, with selectable language setting on site. This controller also includes an internal clock.

All the W3000 electronic controllers offer 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 is based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional- integral regulations are also available.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation (available on W3000SE Compact only).

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.

The internal real time clock allows to manage a weekly schedule operating on 4-day profiles with 10 hour belts (available on W3000SE Compact only, optional on W3000 Base controller).

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.



### Version

B Basic

### Configurations

H Function with heat pump, reversible on hydraulic side

### Features

REFRIGERANT GAS R410A

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

TOTAL VERSATILITY

Climaveneta has designed the NECS-W units with a range of integral accessories in mind for operation with total water loss (well, water bed, etc.), dry cooler or cooling tower so as to satisfy all service system and installation requirements.

INTEGRATED HYDRONIC MODULE ON COOLER/CONDENSER SIDE

The built-in hydronic module includes the main water circuit components; it is available in various configurations with one or two pumps with high or low head both on the evaporator and the condenser side.

INTEGRATED CONDENSATION'S CONTROL

The electronics of the units manages the most suitable condensing control for each type of application: pressure-controlled valve, two or three-way modulating valve and inverter control for the pumps

### Accessory

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Condensing control device: two or three-way modulating pressure-controlled valve and inverter on pumps
- Water connections directed upwards (for 2 compressors units only)
- Acoustical enclosure to reduce the noise emissions.
- Rubber anti-vibration mounting kit. Spring anti-vibration mounting kit (4 compressors models only)



| NECS-W / B / H  |        |                   | 0152     | 0182     | 0202     | 0252     | 0262     | 0302     | 0352     | 0412     | 0452     | 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 | 400/3/50 | 400/3/50 |
| <b>PERFORMANCE</b>                                    |        |                   |          |          |          |          |          |          |          |          |          |          |
| <b>COOLING ONLY (GROSS VALUE)</b>                     |        |                   |          |          |          |          |          |          |          |          |          |          |
| Cooling capacity                                      | (1)    | kW                | 43,4     | 50,1     | 58,9     | 66,4     | 72,6     | 86,7     | 101      | 115      | 129      | 144      |
| Total power input                                     | (1)    | kW                | 10,00    | 11,3     | 13,0     | 15,2     | 16,6     | 19,5     | 22,7     | 25,9     | 28,9     | 32,2     |
| EER   | (1)    | kW/kW             | 4,34     | 4,43     | 4,53     | 4,37     | 4,37     | 4,45     | 4,46     | 4,43     | 4,45     | 4,46     |
| ESEER   | (1)    | kW/kW             | 5,81     | 5,98     | 6,01     | 5,69     | 5,59     | 5,66     | 5,80     | 5,71     | 5,79     | 5,78     |
| <b>COOLING ONLY (EN14511 VALUE)</b>                   |        |                   |          |          |          |          |          |          |          |          |          |          |
| Cooling capacity                                      | (1)(2) | kW                | 43,0     | 49,7     | 58,5     | 66,0     | 72,1     | 86,3     | 101      | 114      | 128      | 143      |
| EER   | (1)(2) | kW/kW             | 4,04     | 4,15     | 4,24     | 4,10     | 4,08     | 4,23     | 4,26     | 4,22     | 4,25     | 4,27     |
| ESEER   | (1)(2) | kW/kW             | 4,36     | 4,47     | 4,57     | 4,38     | 4,28     | 4,47     | 4,50     | 4,47     | 4,49     | 4,51     |
| Cooling energy class                                  |        |                   | D        | D        | D        | D        | D        | D        | C        | D        | C        | C        |
| <b>HEATING ONLY (GROSS VALUE)</b>                     |        |                   |          |          |          |          |          |          |          |          |          |          |
| Total heating capacity                                | (3)    | kW                | 50,3     | 57,9     | 67,7     | 76,7     | 84,6     | 100      | 116      | 131      | 148      | 165      |
| Total power input                                     | (3)    | kW                | 12,6     | 14,0     | 16,4     | 18,8     | 20,7     | 24,2     | 27,8     | 31,6     | 35,3     | 39,2     |
| COP   |        | kW/kW             | 3,99     | 4,14     | 4,13     | 4,08     | 4,09     | 4,15     | 4,19     | 4,16     | 4,18     | 4,20     |
| <b>HEATING ONLY (EN14511 VALUE)</b>                   |        |                   |          |          |          |          |          |          |          |          |          |          |
| Total heating capacity                                | (3)(2) | kW                | 50,6     | 58,2     | 68,1     | 77,1     | 85,1     | 101      | 117      | 132      | 148      | 165      |
| COP   | (3)(2) | kW/kW             | 3,70     | 3,85     | 3,85     | 3,83     | 3,80     | 3,95     | 4,00     | 3,95     | 3,98     | 4,01     |
| Cooling energy class                                  |        |                   | D        | D        | D        | D        | D        | C        | C        | C        | C        | C        |
| <b>SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)</b> |        |                   |          |          |          |          |          |          |          |          |          |          |
| PDesign   | (4)    | kW                | 60,1     | 68,8     | 81,3     | 91,6     | 101      | 120      | 139      | 159      | 178      | 197      |
| SCOP  | (4)    |                   | 5,08     | 5,42     | 5,35     | 5,33     | 5,07     | 5,46     | 5,62     | 5,43     | 5,51     | 5,67     |
| Performance $\eta_s$ (Reg. 811/2013 UE)               | (4)    | %                 | 195      | 209      | 206      | 205      | 195      | 210      | 217      | 209      | 212      | 219      |
| Seasonal efficiency class (Regulation (UE) 811/2013)  | (4)    |                   | A++      | A++      | -        | -        | -        | -        | -        | -        | -        | -        |
| <b>EXCHANGERS</b>                                     |        |                   |          |          |          |          |          |          |          |          |          |          |
| <b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>      |        |                   |          |          |          |          |          |          |          |          |          |          |
| Water flow  | (1)    | m <sup>3</sup> /h | 7,46     | 8,62     | 10,1     | 11,4     | 12,5     | 14,9     | 17,4     | 19,7     | 22,1     | 24,7     |
| Pressure drop   | (1)    | kPa               | 57,8     | 49,4     | 49,5     | 47,0     | 56,2     | 34,3     | 32,8     | 42,1     | 39,7     | 38,5     |
| <b>HEAT EXCHANGER USER SIDE IN HEATING</b>            |        |                   |          |          |          |          |          |          |          |          |          |          |
| Water flow  | (3)    | m <sup>3</sup> /h | 11,0     | 12,8     | 15,0     | 16,9     | 18,7     | 22,3     | 25,9     | 29,2     | 32,8     | 36,7     |
| Pressure drop   | (3)    | kPa               | 126      | 109      | 108      | 103      | 126      | 76,5     | 72,4     | 92,0     | 87,3     | 84,8     |
| <b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>    |        |                   |          |          |          |          |          |          |          |          |          |          |
| Water flow  | (1)    | m <sup>3</sup> /h | 9,14     | 10,5     | 12,3     | 14,0     | 15,3     | 18,2     | 21,2     | 24,1     | 27,0     | 30,1     |
| Pressure drop   | (1)    | kPa               | 35,9     | 37,5     | 42,0     | 44,1     | 52,8     | 36,7     | 36,0     | 36,0     | 36,4     | 33,5     |
| <b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>          |        |                   |          |          |          |          |          |          |          |          |          |          |
| Water flow  | (3)    | m <sup>3</sup> /h | 8,73     | 10,1     | 11,8     | 13,3     | 14,7     | 17,5     | 20,2     | 22,8     | 25,7     | 28,6     |
| Pressure drop   | (3)    | kPa               | 32,8     | 34,4     | 38,2     | 40,1     | 48,9     | 33,8     | 32,7     | 32,4     | 32,9     | 30,3     |
| <b>COMPRESSORS</b>                                    |        |                   |          |          |          |          |          |          |          |          |          |          |
| Compressors nr.                                       |        | N°                | 2        | 2        | 2        | 2        | 2        | 2        | 2        | 2        | 2        | 2        |
| No. Circuits  |        | N°                | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        |
| <b>NOISE LEVEL</b>                                    |        |                   |          |          |          |          |          |          |          |          |          |          |
| Noise Pressure  | (5)    | dB(A)             | 58       | 59       | 59       | 59       | 60       | 60       | 61       | 61       | 62       | 62       |
| Sound power level in cooling                          | (6)(7) | dB(A)             | 73       | 74       | 74       | 74       | 75       | 76       | 77       | 77       | 78       | 78       |
| Sound power level in heating                          | (6)(8) | dB(A)             | 73       | 74       | 74       | 74       | 75       | 76       | 77       | 77       | 78       | 78       |
| <b>SIZE AND WEIGHT</b>                                |        |                   |          |          |          |          |          |          |          |          |          |          |
| A   | (9)    | mm                | 1055     | 1055     | 1055     | 1055     | 1055     | 1222     | 1222     | 1222     | 1222     | 1222     |
| B   | (9)    | mm                | 649      | 649      | 649      | 649      | 649      | 873      | 873      | 873      | 873      | 873      |
| H   | (9)    | mm                | 1255     | 1255     | 1255     | 1255     | 1255     | 1496     | 1496     | 1496     | 1496     | 1496     |
| Operating weight                                      | (9)    | kg                | 285      | 300      | 310      | 320      | 325      | 570      | 610      | 640      | 680      | 725      |

## Notes:

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.

2 Values in compliance with EN14511-3:201H

3 Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C

4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]

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, indoors.

8 Sound power level in heating, indoors.

9 Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



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