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**CWW/Y/BH 81-P÷1204-P**

SPECIFICATION ITEMS

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**WATER COOLED HEAT PUMPS FOR HOT WATER PRODUCTION AT VERY HIGH TEMPERATURE WITH SCROLL COMPRESSORS FROM 37 KW TO 550 KW.**

**CWW/Y/BH 81-P÷1204-P**

**UNITS**

Watercooled heat pumps for very high temperature water production with scroll compressors and plate exchangers.

**CERTIFICATIONS**

**EUROVENT**. The EUROVENT certification attests the reliability of performance of the individual products. It is a guarantee of the quality of CLINT products and their characteristics.

**ErP SCOP**. The heat pump product ranges comply with ErP SCOP: Regulation no. 813/2013 sets precise efficiency standards for heat pump units.

**PERFORMANCE**

Heating capacity: .......... kW

Absorbed power: .......... kW

COP: ………

SCOP: ………

In heating: heated water from .... to .... °C, temperature of water to the evaporator from .... to .... °C.

Refrigerant: R134a.

Available also with R513A low GWP refrigerant.

**VERSIONS**

CWW/Y/BH: Heat pump

**UNIT DESCRIPTION**

**Design.**

Unit design aimed at simplifying maintenance activities and minimising the overall dimensions. Positioning of the front electrical board and components for easy access.

Units comply with the EMC Directive on electromagnetic compatibility.

**Frame.**

Self-supporting galvanized steel frame further protected with polyester powder painting. Easy to remove panels allow access to the inside of the unit for maintenance and other necessary operations.

**Compressors.**

The unit is equipped with Scroll compressors with oil sight glass. They are fitted with internal overheat protection and crankcase heater. They are installed on rubber shock absorbers. The compressors are controlled according to the thermal load and are managed by the controller in order to optimize the efficiency of the unit at partial loads.

**Condenser.**

AISI 316 stainless steel braze welded plate type, with one circuit on the refrigerant side and one on the water side for 81-P÷602-P models; with two independent circuits on the refrigerant side and one on the water side for 804-P÷1204-P models.

**Evaporator.**

AISI 316 stainless steel braze welded plate type, with one circuit on the refrigerant side and one on the water side for 81-P÷602-P models; with two independent circuits on the refrigerant side and one on the water side for 804-P÷1204-P models.

**Refrigerant circuit.**

Made of copper pipe, it includes the following components on all models: thermostatic electronic expansion valve; filter drier; liquid and humidity indicator; high and low pressure switches (with fixed setting).

**Water circuit user side.**

It includes: condenser; temperature sensors; water differential pressure switch.

**Water circuit source side.**

It includes: evaporator; temperature sensors; water differential pressure switch.

**Electrical board.**

It includes: main switch with door safety interlock; fuses; thermal protection relays for compressors; interface relays; electrical terminals for external connections.

**Microprocessor.**

For automatic control of the unit allowing continuous display of the operational status of the unit, control set and real water temperature and, in case of partial or total block of the unit, indication of security device that intervened.

**Power supply.**

400/3+N/50 three-phase electric power supply.

**Operating range.**

Heating operation with outlet temperature from the evaporator from 7 °C to 40 °C and with outlet temperature from the condenser from 70 °C to 80 °C.

**ADDITIONAL OPTIONS – WATER CIRCUIT**

The following options are available in addition to the basic configuration:

**PV3E - 3-WAY ELECTRONIC PRESSOSTATIC VALVE FOR EVAPORATION CONTROL.**

The option allows to enter withwater at a temperature higher than 45 °C. The option foresees the supply of the pressostaticvalve and the relative control and regulation system. The valve is supplied as standard but itis not foreseen to be mounted on board.

**PV3C - 3-WAY ELECTRONIC PRESSOSTATIC VALVE FOR COLD START**

The option allows to cold start the unit even with a high thermal load on the user side, respecting the operating range of the unit. The option foresees the supply of the pressostatic valve and the relative control and regulation system. The valve is supplied as standard but it is not foreseen to be mounted on board.

**ADDITIONAL OPTIONS - ACCESSORIES**

The following options are available in addition to the basic configuration:

**IM – AUTOMATIC CIRCUIT BREAKERS**

Factory fitted option. Alternative to fuses and thermal relays. The device consists of a magnetic part and a thermal part. It ensures effective protection in case of short circuits (the magnetic part of the device trips) and overloads (the thermal part of the device trips).

**SL – UNIT SILENCEMENT**

Factory fitted option. Soundproofing compressors: a “hood” is applied on the compressors composed of sound-absorbing material. Externally there is a plastic layer that further protects the compressors from impacts, scratches and rain. Noise reduction equal to 2-3 dB(A).

**RFM – COOLING CIRCUIT SHUT-OFF VALVE ON DISCHARGE LINE**

Factory fitted option. Shut-off valve placed on the refrigerant circuit, one per circuit, positioned between the compressors and the condensing coil. It allows the circuit to be closed for simple maintenance of the refrigerant circuit. It simplifies maintenance on the refrigerant circuit and avoids the refrigerant flow inversion during the unit stop.

**RFL – COOLING CIRCUIT SHUT-OFF VALVE ON LIQUID LINE**

Factory fitted option. Shut-off valve placed on the refrigerant circuit, one per circuit, positioned before the filter. It allows the circuit to be closed for simple maintenance of the refrigerant circuit.

**FI – ANTIFREEZE HEATER FOR EVAPORATOR AND CONDENSER.**

Factory fitted option. Electrical heater placed on the evaporator and the condenser with thermostat intervention. It consists of an adhesive strip applied externally on the evaporator side and on the condenser side (fixed between the evaporator and the insulation). A sensor positioned on the evaporator outlet and on the condenser outlet measures the water temperature and the electronic controller of the unit activates/deactivates the heater when the temperature reaches the preset levels.

**SS – SOFT START**

Factory fitted option. Electronic device that manages the compressor motor voltage, thus its speed, limiting the starting current of the compressor. One device is provided for each compressor. It prolongs the life span of compressors and it is not necessary for the installation electrical system to be oversized.

**IS – MODBUS RTU PROTOCOL, RS485 SERIAL INTERFACE**

Factory fitted option. The supervision of the unit can be easily developed through proprietary devices or through integration in third-party systems according to the Modbus RTU protocol on the RS485 serial interface.

**ISB – BACNET MSTP PROTOCOL, RS485 SERIAL INTERFACE**

Factory fitted option. The supervision of the unit can be easily developed through proprietary devices or through integration in third-party systems according to the BACnet MSTP protocol on the RS485 serial interface.

**ISBT – BACNET TCP/IP PROTOCOL, ETHERNET PORT**

Factory fitted option. The supervision of the unit can be easily developed through proprietary devices or through integration in third-party systems according to the BACnet TCP/IP protocol through Ethernet port.

**ISL – LONWORKS PROTOCOL, FFT-10 SERIAL INTERFACE**

Factory fitted option. The supervision of the unit can be easily developed through proprietary devices or through integration in third-party systems according to the LonWorks protocol on the FTT-10 serial interface.

**IAV – REMOTE SET-POINT WITH 0-10 V SIGNAL**

Factory fitted option. The IAV accessory allows you to remotely modify the unit set-point, based on the user’s needs. This set-point does not define a single parameter but rather a working interval, proportional to the analogue input of the voltage and is limited between the minimum and maximum values. The function is managed through 0-10 V signal using remote wiring.

**IAA – REMOTE SET-POINT WITH 4-20 mA SIGNAL**

Factory fitted option. The IAA accessory allows you to remotely modify the unit set-point, based on the user’s needs. This set-point does not define a single parameter but rather a working interval, proportional to the analogue input of the current and is limited between the minimum and maximum values. The function is managed through 4-20 mA signal using remote wiring.

**IAS – REMOTE SIGNAL FOR SECOND SET-POINT ACTIVATION**

Factory fitted option. It allows to reset the different operating modes of the unit, modifying the standard operating setpoint, adding or subtracting a set value. The second setpoint function is activated by changing the status of the dedicated digital input. As standard setpoint, the second setpoint can also have values within a default working range. With the IAS accessory the second setpoint is enabled via digital input.

**IDL – DEMAND LIMIT FROM DIGITAL INPUT**

Factory fitted option. It allows the unit to self-limit the absorbed power and supplied power, to a certain percentage, set by a parameter (value set as % of the total supplied power). The power limitation can be managed through a digital input. The absorbed power is lower, and the total energy consumption is reduced in certain conditions.

**IVE - 0-10 V SIGNAL FOR THE MANAGEMENT OF THE 3-WAY ELECTRONIC PRESSOSTATIC VALVE FOR EVAPORATION CONTROL.**

**IVC - 0-10 V SIGNAL FOR THE MANAGEMENT OF THE 3-WAY ELECTRONIC PRESSOSTATIC VALVE FOR COLD START.**

**MN – HIGH AND LOW PRESSURE GAUGES**

Option supplied separately from the unit. The pressure gauges installed for each circuit measure the refrigerant pressure inside the refrigerant circuit, both on the high pressure and low pressure sides. They are viewed through analogue devices positioned on the control panel door. They allow a quick and easy display of the measured pressure.

**CR – REMOTE CONTROL PANEL**

Option supplied separately from the unit. Remote control panel with LCD display. It has all the functions of the on-board electronic controller, allowing the unit to be controlled fully, both on-board and remotely.

**AG – RUBBER SHOCK ABSORBERS**

Option supplied separately from the unit. Inserted at the base of the unit to dampen possible vibrations due to an irregular floor. The shock absorbers are made of very thick rubber sections protected by metal base and cap with anti-corrosion treatment suitable for outdoors, that protects the component from weathering, UV rays, liquids that could stiffen the rubber part. The rounded shape allows liquids to flow to the ground.

**AM – SPRING SHOCK ABSORBERS**

Option supplied separately from the unit. To be inserted in the lower part of the unit to dampen possible vibrations due to an irregular floor. Each element, 86 mm high, consists of 5 steel springs, compliant with UNI EN 10270-1 SH with surface cataphoresis treatment, fixed to 2 galvanised steel 5 mm thick platforms, coated with high-resistance thermoplastic.

**COMPLIANCE**

The use and installation manual will be present inside each device. CLINT refrigerant unit, series BOOSTER, CE marked and compliant with EUROPEAN Directives currently in force. The unit complies with the following Directives:

* 2006/42/EC (Machinery Directive)
* 2014/68/EU (PED)
* 2014/30/EU (EMC)
* 2014/35/EU (LVD)
* 813/2013/EU (ErP)