

Data Book

NX-N-G06 0604P - 1204P_201911_EN R454B



NX-N-G06 0604P - 1204P

142-306 kW

Reversible unit, air source for outdoor installation



(The photo of the unit is indicative and may vary depending on the model)

- ✓ LOW GWP REFRIGERANT
- ✓ WIDE OPERATING LIMITS

- ✓ TWO SOUND EMISSION LEVELS
- ✓ INTEGRATED HYDRONIC GROUP

CERTIFICATIONS

Product certifications



Voluntary product certifications

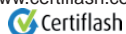


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www.eurovent-certification.com

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www.certiflash.com



System certifications



MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

Quality System complying with the requirements of UNI EN ISO 9001:2008 regulation
Environmental Management System complying with the requirements of UNI EN ISO 14001:2004 regulation
Occupational Health and Safety Management System complying with the requirements of BS OHSAS 18001:2007

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The units highlighted in this publication contain R454B [GWP₁₀₀ 466] fluorinated greenhouse gases.

Functions

-  COOLING Cooling
-  HEATING Heating

Refrigerant

-  R454B R454B

Compressors

-  SCROLL Scroll compressor

Fan

-  AXIAL Axial fan

Exchangers

-  PLATES Plates heat exchanger

Other features

-  Eurovent

1.1 PRODUCT PRESENTATION

GREEN CERTIFICATION RELEVANT

Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., as a major player in the world HVAC market and a leading manufacturer of energy efficient, sustainable HVAC solutions, recognizes and supports the diffusion of green certification systems, as an effective way to deliver high performance buildings and improve the quality and the sustainability of the built environment.

Since the first certification system was introduced at the beginning of the 1990s, the demand for certified buildings has grown considerably, as well as the number of standards, rating and certification programs. Operating worldwide Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., has extensive experience with many of them and is active member of Green Building Council Italy.

Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A., commitment to develop responsible and sustainable HVAC solutions, is reflected by a full range of premium efficiency products and systems, designed with special care to improve building energy performance ratings, according to major certification protocols, including LEED, BREAM, GREENSTAR, BCA, NABERS, DNGB, HQE and BEAM.

To find out more about how our products contribute to enhanced green certification rating and energy performance of a building, please refer to:

<https://www.melcohit.com/GLOBAL/Company/Green-Certifications/QR%20code/>



PRODUCT PRESENTATION

Outdoor reversible unit for the production of chilled/hot water with hermetic rotary Scroll compressors optimized for low-GWP and ozone-friendly refrigerant R454B, axial-flow fans, copper tubes aluminum fins air coils, braze-welded plate-type exchanger and thermostatic expansion valve. External panels in pre-clad sheet steel and base in galvanised steel with paint finish. The range is composed by units equipped with four compressors in tandem configuration on two independent refrigerant circuits.

1.3 LOW GWP REFRIGERANT

The new generation refrigerant R454B is the most eco-sustainable alternative to traditional refrigerant R410A, offering a 76% reduction in terms of GWP (Global Warming Potential GWP of R454B = 466, GWP of R410A = 1924 as per IPCC rev. 5th) and zero impact on the ozone layer.

1.4 WIDE OPERATING LIMITS

These units are operative at full load in heat pump mode down to -15°C of outdoor air temperature, and up to 46°C in chiller mode without needing additional options. At -15°C of outdoor air temperature, these heat pumps are able to produce hot water up to 42°C at full load.

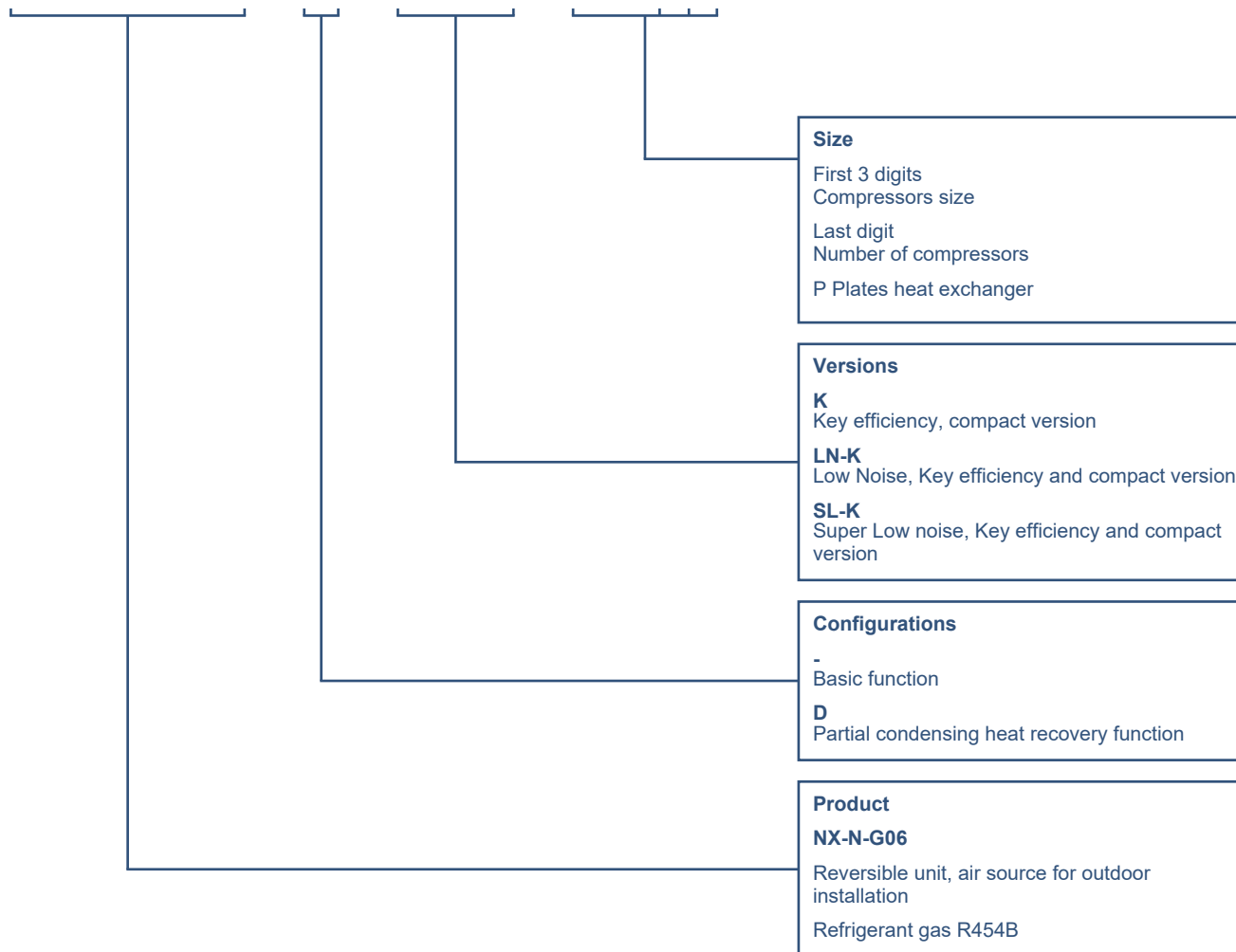
1.5 TWO SOUND EMISSION LEVELS

Two different sound emission levels available. This means the best unit can be identified based on requirements, according to the system where it will be installed and the application.

1.6 INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

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3.1 UNIT STANDARD COMPOSITION

3.2 Reversible unit, air source for outdoor installation

Outdoor reversible unit for the production of chilled/hot water with hermetic rotary Scroll compressors optimized for low-GWP and ozone-friendly refrigerant R454B, axial-flow fans, copper tubes aluminum fins air coils, braze-welded plate-type exchanger and thermostatic expansion valve. External panels in pre-clad sheet steel and base in galvanized steel with paint finish. The range is composed by units equipped with four compressors in tandem configuration on two independent refrigerant circuits.

3.3 Structure

Specific structure for outdoor installation, with hot galvanized steel sheet base painted with polyester powder coat, perimeter frame made of aluminum section bars. Fan compartment separate from the compressor compartments. Aluminum alloy panelling specific for outdoor installation, completely weatherproof, easily removable, designed to allow total access to internal components for inspection and maintenance (removal of front and side panels). Condensate collection and disposal system composed by double pan, insulated with closed-cell neoprene lagging and heated by dedicated electrical heaters. Double nozzle for water expelling with a 1 1/4" diameter. Ventilation of compressor compartments.

3.4 Refrigerant circuit

Main components of the cooling circuit:

- circuit with hermetic scroll compressors in tandem configuration
- R454B refrigerant
- plate heat exchanger
- crankcase heater on each compressor
- drier filter with replaceable cartridge
- refrigerant line sight glass with humidity indicator
- externally equalised thermostatic valve
- high and low pressure safety valves, conveyed to external discharge
- liquid receivers
- liquid separators
- 4-way reverse cycle valve
- high and low pressure transducers
- safety switching device for limiting the pressure

3.5 R454B REFRIGERANT

The refrigerant used in these units is R454B, one of the most eco-sustainable refrigerants for replacing traditional R410A, thanks to the 76% lower GWP.

Unlike R410A, R454B is classified as A2L according to ISO 817. The first digit defines toxicity (A: NON-TOXIC), while the last digits define the flammability level (2L: MILDLY FLAMMABLE - low burning velocity). It is classified by PED Directive into Group 1.

The main characteristics of this refrigerant and some additional guidelines are reported below. Despite the minimal risk, the indications provided cannot replace a more detailed risk analysis if required, also based on any regulations in force in the installation area.

Further and more detailed guidelines are available in the dedicated area of the website www.melcohit.com (Guidelines) or in the dedicated addendum of the general installation and maintenance manual.

Main characteristics of R454B refrigerant:

- Safety classification (ASHRAE / ISO 817): A2L
- PED Group: 1
- Ozone Depletion Potential (ODP) (R11=1): 0
- AR5 (AR4) GWP (CO2=1): 467 (466)
- Composition (Wt %): 68,9% R32, 31,1% R1234yf
- LFL@23°C, 50% RH (% v/v): 11,7
- UFL@23°C, 50% RH (% v/v): 22,0
- Burning velocity (cm/s): 5,2
- Minimum Ignition Energy (mJ) (ASTM E582-13): 100-300

- All operations on the unit must be performed by trained and qualified personnel on flammable refrigerants handling, in accordance with the relevant local standards and codes of practice.
- The refrigerant is heavier than air and can stagnate, reaching a dangerous concentration. To avoid risks, maintain a safe environment by ensuring adequate ventilation.
- The units must be installed in such a way as to prevent any refrigerant leaks from flowing into the buildings or any place where it could cause damage to people, animals or properties. Pay particular attention to the presence and disposition of any external air intakes, doors, shutters, etc.
- The units are equipped with conveyed safety valves with external discharge. In case of over-pressure, refrigerant gas can escape from these valves: the discharge of these ducts must be directed towards safe areas and away from the ground or potential sources of ignition.
- Do not braze pipes and components containing refrigerant.
- Do not use flames to cut / open pipes.
- The units are equipped with a safety valve (water side). In case of

breakage of the heat exchanger and resulting overpressure, refrigerant gas can escape from these valves: the discharge of these valves must be directed towards safe areas and away from the ground or potential sources of ignition.

- The hydraulic circuit must be designed in such a way as to prevent the release of refrigerant gas inside the buildings or in any case in places where it can cause damage to people, animals or properties.

3.6 Compressor

Hermetic scroll compressors complete with an oil sump heater, electronic overheating protection with centralised manual reset and a two-pole electric motor.

3.7 Plant side heat exchanger

Braze welded AISI 316 plate heat exchanger. The heat exchanger is lined on the outside with 9 mm thick closed-cell neoprene lagging to prevent condensation, with a thermal conductivity of 0,33 W/mK at 0°C. The heat exchanger is fitted with a differential pressure switch to monitor the correct flow of water when the unit is operating, thus preventing ice form forming inside; if no flow is detected, the frost protection function is activated using a special heater.

The heat exchanger comes standard with safety pressure release valve (water side) (10 bar).

3.8 Source side heat exchanger

Finned coil exchanger made by copper tubes mechanically bounded to aluminium fins. The aluminium fins are correctly spaced to guarantee optimum heat exchange efficiency.

3.9 Fan section source side

Axial electric fans, protected to IP 54, with external rotor and plastic-coated aluminium blades. Housed in aerodynamic hoods complete with safety grille. 6-pole electric motor with built-in overload protection. Fan diameter of 800 mm. Separated ventilation control with inactive circuit fan disabling. Fan section controlled with pressostatic device for version K, with fan speed adjusted by autotransformers for versions LN-K, SL-K.

3.10 Electrical and control panel

Electrical and control panel built in accordance with EN60204-1 standard, complete with:

- control circuit transformer
- general door lock isolator
- fuses and contactors for compressors and fans
- terminals for cumulative alarm block
- remote ON/OFF terminals
- spring-type control circuit terminal board
- electric panel with double door and seals for outdoor installation
- electronic controller
- multi-language user keypad with LCD display
- IP44 protection
- Pump control relay + 0-10V modulating signal to control an external variable speed pump with the VPF.E control logic (plant-side constant ΔT for plants with primary circuit only and terminals with bypass)
- Power supply: 400V~ $\pm 10\%$ 3ph 50Hz PE

3.11 Certification and applicable directives

The unit complies with the following directives and relative amendments:

- EUROVENT Certification program
- CE Declaration of conformity certificate for the European Union
- Machine directive 2006/42/EC
- Pressure Equipment Directive 2014/68/EU
- 2014/30/EC EMC Directive
- ErP Directive 2009/125/EC

3.12 Tests

Tests performed throughout the production process, as indicated in ISO9001.

Performance or noise tests can be performed by highly qualified staff in the presence of customers.

Performance tests comprise the measurement of:

- electrical data
- water flow rates
- working temperatures
- power input
- power output
- pressure drops on the water-side exchanger both at full load (at the conditions of selection and at the most critical conditions of the condenser) and at part load conditions.

During performance testing it is also possible to simulate the main alarm states.

Noise tests are performed to check noise emissions according to ISO9614.

UNIT STANDARD COMPOSITION

3.13 Electronic control W3000TE

W3000TE Compact control features an easy-to-use interface and a complete LCD display that allows consulting and intervening on the unit by means of a multi-language menu (19 languages are available).

The regulation is based on the patented "Quickmind" water temperature regulation logic uses self-adapting control to maintain flow temperatures and optimise performance even in low water content scenarios. As an alternative, the proportional or proportional-integral regulations are also available.

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.



3.13 KIPlink - Keyboard In your Pocket (option 6196)

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. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the refrigerant circuits, the compressors, the fans (if present) and the pumps (if present) and display and reset the possible alarms.



3.13 Night mode (option 1430)

The night mode function allows to reduce the sound power of the unit, reducing the speed of the fans and the number of active compressors.

3.13 U.L.C. - User limit control (option 4960)

Guaranteed the start-up of the units with the option U.L.C. even when the critical working condition could generate an alarm.

The controller can manage a 3way mixing valve (not provided) by 0-10V signal for ensuring a dynamic control of the water temperature on user heat exchanger according to the operating limits allowed. This ensures the start-up and correct functioning of the unit into the envelope, also even critical whether condition.

3.14 Versions

/K - Key efficiency, compact version

Key efficiency, compact version.

/LN-K - Low Noise, Key efficiency and compact version

This configuration features a special soundproofing for the compressor compartment and the pumps (if present) and a reduced fan speed.

The fan speed is automatically increased in case of particularly tough environmental conditions.

/SL-K - Super Low noise, Key efficiency and compact version

This configuration features a special soundproofing for the compressor compartment and the pumps (if present), a reduced fan speed and an oversized condensing section.

The fan speed is automatically increased in case of particularly tough environmental conditions.

3.15 Configurations

- , standard unit

Reversible standard unit for production of chilled/hot water according to the selected operation mode.

/D, unit with partial heat recovery

Unit for the production of water for the primary circuit and for sanitary purposes.

This version features an additional water/coolant heat exchanger on the gas delivery line, fitted in series with the traditional cooling circuit condenser. This allows to recover the de-superheating heat for the production of medium-to-high temperature water (secondary or recovery circuit). Hot water can be produced in the recovery circuit for domestic hot water and the like both in summer and winter. The heating capacity of this circuit is approximately equal to the power input of the compressor.

4.1 OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
PF232 EVAPORATOR WATER FLOW SWITCH			
C5140131 Evaporator flowswitch	Flow switch with stainless scoop AISI 316L and IP65 protection suitable for installation in industrial plant pipes. It should be installed in a straight pipe without filters, valves, etc., long at least 5 times its diameter, both upstream and downstream.	Signaling of lack of or excessive reduction of flow, it generates an alarm that is in automatic or manual reset depending on n ° alarms per hour and the maximum time of operation of the pump under conditions of low flow rate.	ALL
C5140120 Evaporator water flow switch	Flow switch with stainless scoop AISI 316L and IP65 protection suitable for installation in industrial plant pipes. It should be installed in a straight pipe without filters, valves, etc., long at least 5 times its diameter, both upstream and downstream.	Signaling of lack of or excessive reduction of flow, it generates an alarm that is in automatic or manual reset depending on n ° alarms per hour and the maximum time of operation of the pump under conditions of low flow rate.	ALL
1960 PRESSURE RELIEF VALVES			
1961 DUAL RELIEF VALVES WITH SWITCH	Dual relief valve with switch	Allows to unselect a relief valve in order to service the unit avoiding medium or long inoperative periods	ALL
380 NUMBERED WIRING			
381 NUMBERED WIRING ON EL. BOARD	Electrical board wires are identified by numbered labels. The reference numbers are indicated in the unit's wiring scheme.	Facilitate maintenance interventions to the electrical board connections.	ALL
382 PWR WIRINGS ACC.TO UK REQUEST		Facilitate maintenance interventions to the electrical board connections.	ALL
383 NUMBERED WIRINGS+UK REQUESTS	Electrical board wires are identified by numbered labels. The reference numbers are indicated in the unit's wiring scheme.	Facilitate maintenance interventions to the electrical board connections.	ALL
2410 PHASE SEQUENCE RELAY			
2411 WITH EXTERNAL PHASE SEQUENCE RELAY	Relay for checking mains phase-sequence	Protects loads against faults due to incorrect connection of mains	ALL
2412 PHASE SEQU. RELAY + OVER/UNDER VOLT. MONIT.	Relay for checking mains phase-sequence and voltage	The monitoring relay protects loads against faults due to incorrect connection of mains, and it monitors whether it exceeds or falls below a specified voltage in a three-phase network.	ALL
3300 COMPRESSOR REPHASING			
3301 COMPR.POWER FACTOR CORR.	Capacitors on the compressors' power inlet line.	The unit's average cos(phi) increases.	ALL
3410 AUTOMATIC CIRCUIT BREAKERS			
3412 AUTOM. CIRCUIT BREAK. ON LOADS	Over-current switch on the major electrical loads.	In case of overcurrent allows resetting of the switch without the replacement of relative fuses.	ALL
3600 ON/OFF COMPRESSOR SIGNAL			
3601 COMPRESSOR OPERATION SIGNAL	Auxiliary contacts providing a voltage-free signal.	Allows remote signalling of compressor's activation or remote control of any auxiliary loads.	ALL
4160 WINTER/SUMMER SWITCHOVER			
4161 REMOTE SUMMER/WINTER SWITCH	Digital input (voltage free)	Allows to change the operating mode (Cooling/Heating) according to a remote switch	ALL
4180 REMOTE CONNECTION ARRANGEMENT			
4181 SERIAL CARD MODBUS	Interface module for ModBUS protocols.	Allows integration with BMS operating with ModBUS protocol.	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
4182 SERIAL CARD FOR LONWORKS	Interface module for Echelon systems.	Allows integration with BMS operating with LonWorks protocols	ALL
4184 SERIAL CARD BACNET MS/TP RS485	Interface module for BACnet protocols.	Allows integration with BMS operating with BACnet protocol.	ALL
4185 SERIAL CARD FOR BACNET OVER IP	Interface module for BACnet OVER-IP protocols.	Allows to interconnect BACnet devices over Internet Protocol within wide-area networks.	ALL
4186 SERIAL CARD FOR KONNEX	Protocol for KNX system	Allows integration with BMS operating with KNX protocol	ALL
4187 M-Net W3000 INTERFACE KIT	Interface kit for M-Net protocol.	Interface module to allow the integration of the unit with Mitsubishi Electric proprietary communication protocol M-Net.	ALL
4188 SERIAL CARD MODBUS TCP/IP	Interface module for ModBus TCP/IP protocol	Allows integration with BMS operating with ModBus TCP/IP protocol.	ALL
4189 SERIAL CARD SNMP	Interface module for SNMP protocol	Allows integration with BMS operating with SNMP protocol.	ALL
6160 AUXILIARY INPUT			
6161 AUXILIARY SIGNAL 4-20mA	4-20 mA analog input	Allows to change the operating set-point according to the value of current applied to the analogue input.	ALL
6162 REMOTE SIGNAL DOUBLE SP	Allows to activate the Energy Saving set-point.	Allows to change the operating set-point according to a remote switch	ALL
6170 DEMAND LIMIT			
6171 INPUT REMOTE DEMAND LIMIT	Digital input (voltage free)	It permits to limit the unit's power absorption for safety reasons or in temporary situation.	ALL
1470 MULTIFUNCTION CARD			
1431 NIGHT MODE	The option includes a related controller expansion board and dedicated terminal block.	Night mode is a system setting to limit maximum noise level of the unit. Noise level is reduced limiting maximum compressor frequency and fan speed.	ALL
1471 4951 + 1431	The option includes a related controller expansion board and dedicated terminal block.	Enables the functions corresponding to the indicated accessory codes.	ALL
1472 4951 + 1431 + 4961	The option includes a related controller expansion board and dedicated terminal block (it is necessary to install a 3 way valve).	Enables the functions corresponding to the indicated accessory codes.	ALL
1473 4951 + 4961	The option includes a related controller expansion board and dedicated terminal block (it is necessary to install a 3 way valve).	Enables the functions corresponding to the indicated accessory codes.	ALL
1474 1431 + 4961	The option includes a related controller expansion board and dedicated terminal block (it is necessary to install a 3 way valve).	Enables the functions corresponding to the indicated accessory codes.	ALL
1475 4962 + 4951	The option includes a related controller expansion board and dedicated terminal block (it is necessary to install a 3 way valve).	Enables the functions corresponding to the indicated accessory codes.	ALL
1476 4962 + 1431	The option includes a related controller expansion board and dedicated terminal block (it is necessary to install a 3 way valve).	Enables the functions corresponding to the indicated accessory codes.	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
1477 4962 + 4951 + 1431	The option includes a related controller expansion board and dedicated terminal block (it is necessary to install a 3 way valve).	Enables the functions corresponding to the indicated accessory codes.	ALL
4951 WITH HYDRAULIC DECOUPLER PROBE	Water temperature probe on hydraulic decoupler.	The pump activation can be set by parameter according to the water temperature on buffer tank measuring by the sensor (in the systems with the primary and secondary circuits separated by a hydraulic decoupler), thus bringing significant pump consumption reduction during unit's stand-by.	ALL
4961 U.L.C.F. - WITH OR WITHOUT FIX SPEED PUMP	Option to be selected with the unit without pump/s or with fix speed pump/s (4703,4706,4707,4711,4712). The option includes a related controller expansion board and dedicated terminal block.	Guaranteed the start-up of the units with the option U.L.C. even when the critical working condition could generate an alarm. The W3000TE controller can manage a 3way mixing valve (not provided from MEHITS) by 0-10V signal for ensuring a dynamic control of the water temperature on user heat exchanger according to the operating limits allowed. This ensures the start-up and correct functioning of the unit into the envelope, also even critical whether condition.	ALL
4962 U.L.C.F. - WITH VARIABLE WATER FLOW	Option to be selected with the unit with variable speed pump/s (4713,4714,4717,4718,4722,4723). The option includes a related controller expansion board and dedicated terminal block.	Guaranteed the start-up of the units with the option U.L.C. even when the critical working condition could generate an alarm. The W3000TE controller can manage a 3way mixing valve (not provided from MEHITS) by 0-10V signal for ensuring a dynamic control of the water temperature on user heat exchanger according to the operating limits allowed. This ensures the start-up and correct functioning of the unit into the envelope, also even critical whether condition.	ALL
1510 SOFT-STARTER			
1511 UNIT WITH SOFT-START	Electronic device adopted to manage the inrush current.	Break down of the inrush current compared to the direct motor start, lower motor windings' mechanical wear, avoidance of mains voltage fluctuations during starting, favourable sizing for the electrical system.	ALL
6190 TYPE OF VISUAL DISPLAY			
6196 KIPLink	The unit is equipped with KIPLink, the innovative user interface based on WiFi technology		ALL
6198 KIPLink + KEYBOARD	In addition to KIPLink, the innovative user interface based on WiFi technology, the unit is equipped with the Large keyboard with a wide LCD display and led icons.		ALL
6310 VISUAL DISPLAY PROTECTION			
6311 WITH DISPLAY PROTECTION	Display protection sealed panel	Provide complete protection against UV rays, atmospheric agents, sand storms.	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
5920 MANAGEMENT & CONTROL SYSTEMS			
5922 ClimaPRO ModBUS RS485 - MID	This option includes all following devices on-board the unit panel: - MID certified network analyzer operating on ModBUS over RS-485 - Current transformers - W3000TE controller - Software release LA09 or later version.	This accessory allows to acquire the electrical data and the power absorbed by the unit and communicate with ClimaPRO via high level communication interface based on ModBUS over EIA RS-485. More specifically, the data collected are: power supply, current, frequency, power factor ($\cos\phi$), electrical power consumption, energy consumption. This specific energy meter model is MID certified and can therefore be used for billing applications. This option also ensures the compatibility between the units and ClimaPRO, thus allowing ClimaPRO to acquire all the main unit's operating variables and status by means of a high level communication interface to the controller installed onboard the unit panel.	ALL
5923 ClimaPRO BacNET over IP	This option includes all following devices on-board the unit panel: - network analyzer operating on BACnet over IP - Current transformers - W3000TE controller - Software release LA09 or later version.	This accessory allows to acquire the electrical data and the power absorbed by the unit and communicate with ClimaPRO via high level communication interface based on BACnet over IP. More specifically, the data collected are: power supply, current, frequency, power factor ($\cos\phi$), electrical power consumption, energy consumption. This network analyzer is not MID certified and cannot therefore be used for billing applications. This option also ensures the compatibility between the units and ClimaPRO, thus allowing ClimaPRO to acquire all the main unit's operating variables and status by means of a high level communication interface to the controller installed onboard the unit panel.	ALL
5924 ENERGY METER FOR BMS	This option includes all following devices on-board the unit panel: - network analyzer with display operating on ModBUS protocol over RS-485 (without certification MID) - current transformers.	This accessory allows to acquire the electrical data and the power absorbed by the unit and send them via RS-485 bus to the BMS for energy metering.	ALL
5925 ENERGY METER FOR W3000	This option includes all following devices on-board the unit panel: - network analyzer with display, already cabled to unit's controller - current transformers.	This option allows to acquire the electrical data and the power absorbed by the unit. The figures are accessible through the unit's W3000 interface, and be sent to the BMS via several protocols by selecting the dedicated serial card in the option list.	ALL
5940 SETP. COMPENSATION OUT. TEMP.			
5941 WITH SETPOINT COMPENSATION	This option includes an outside air sensor to be installed outside the building and enable the climatic curve function.	Available as option an outside air temperature probe to control the system water temperature set point based on cooling and heating (reversible units) climatic curves. Delivering water at different temperatures to the terminals based on the outside air temperature achieves high seasonal efficiency ratios and brings considerable savings in running costs.	ALL
3430 REFRIGERANT LEAK DETECTOR			
3431 REFRIG. LEAK DETECTOR	Refrigerant leak detection system, supplied factory mounted and wired in the electrical board. In case of leak detection it will raise an alarm.	It promptly detects gas leakages	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
3433 GAS LEAK CONTACT + COMPR. OFF	Refrigerant leak detection system, supplied factory mounted and wired in the electrical board. In case of leak detection it will raise an alarm and stop the unit.	It promptly detects gas leakages and stops the unit	ALL
600 LIQUID LINE SOLENOID VALVE			
601 LIQUID LINE SOLENOID VALVE	Solenoid valve on the refrigerant liquid line.	Intercepts the liquid refrigerant and grants the correct operation of the unit in all the different operating modes.	ALL
1400 HP AND LP GAUGES			
1401 HP AND LP GAUGES	High and low pressure gauges	Allows immediate reading of the pressure values on both low and high pressure circuits	ALL
1900 COMPRESSOR SUCTION VALVE			
1901 COMPRESSOR SUCTION VALVE	Shut-off valve on compressor's suction circuit.	Simplifies maintenance activities	ALL
1910 COMPRESSOR DISCHARGE VALVE			
1911 COMPR. DISCHARGE LINE VALVE	Shut-off solenoid valve on compressor discharge circuit	Simplifies maintenance activities	ALL
1930 ELECTRONIC EXPANSION VALVES			
1925 EEV FOR UNITS WITHOUT DVV	Electronic expansion valve. This code includes the DVV device for the ventilation control. This code can be selected only for the models equipped with the pressostatic fan control (DP device).	The electronic valve ensures a quick, fluctuating-free refrigerant circuit regulation, and therefore a highly accurate adjustment to the load swings. Furthermore it allows to reduce the super heating in the evaporator, thus enhancing unit's operating efficiency.	ALL
1926 EEV FOR UNITS WITH DVV	Electronic expansion valve. This code can be selected only for the models already equipped with a fan speed control device (DVV, DVVF, DVV2F).	The electronic valve ensures a quick, fluctuating-free refrigerant circuit regulation, and therefore a highly accurate adjustment to the load swings. Furthermore it allows to reduce the super heating in the evaporator, thus enhancing unit's operating efficiency.	ALL
890 CONDENSING COIL			
881 Cu/Cu EXTERNAL COIL	Finned coil heat exchanger made from suitably-spaced copper tubes and fins designed to ensure maximum heat exchange efficiency.	This type of coil is not subject to galvanic corrosion, being made from just one material. For further information please refer to the Guidelines "Finned coil heat exchangers and protection against corrosion", available in the download section of the website www.melcohit.com/EN/Download/Corporate or contact our sales department.	ALL GUIDELINES
894 Cu PIPES/PREPAINTED ALL. FINS	Finned coil heat exchanger made from copper tubes and aluminum fins with chemical cleaning treatment to remove impurities, and then coated with protective paint with the following characteristics: - fins treated with protective polyester resin paint; - over 1000 hours of salt spray protection as per ASTM B117 (fins without cross and protected edges); - excellent resistance to UV rays.	Provide a good resistance against corrosion. For further information please refer to the Guidelines "Finned coil heat exchangers and protection against corrosion", available in the download section of the website www.melcohit.com/EN/Download/Corporate or contact our sales department.	ALL GUIDELINES

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
895 FIN GUARD SILVER TREATM	Copper-aluminum heat exchanger coils with polyurethane paint Fin Guard Silver SB. Coil completely coated by a protective layer of polyurethane paint with the following characteristics: - polyurethane paint with metallic emulsion; - over 3000 hours of salt spray protection as per ASTM B117; - excellent resistance to UV rays; - high-pressure spray painting system.	Provide a very high resistance against corrosion, also in very aggressive environment. For further information please refer to the Guidelines "Finned coil heat exchangers and protection against corrosion", available in the download section of the website www.melcohit.com/EN/Download/Corporate/ or contact our sales department.	ALL GUIDELINES
2030 PROTECTION GRILL			
2032 COND. COIL PROTECTION NET	Covering metal net on the coil	Finned coil protection	ALL
820 FAN CONTROL			
801 PRESSOST. LOW AMBIENT CONTROL	Pressostatic control of the fans	Extension of the unit operating range (see the section dedicated to the operating limits). The device allows the unit to operate in the most extreme conditions avoiding any risk of low pressure alarm intervention. The enhanced air flow management delivers also benefits in terms of both efficiency and quietness.	ALL
802 VAR.FAN SPEED LOW AMB.CONTROL	Fan speed control according to the condensing pressure; the use of this device is mandatory in case the unit operates with low evaporator leaving water temperature combined with low outdoor air temperatures	Extension of the unit operating range (see the section dedicated to the operating limits). The device allows the unit to operate in the most extreme conditions avoiding any risk of low pressure alarm intervention. The enhanced air flow management delivers also benefits in terms of both efficiency and quietness.	ALL
808 EC FANS	Electronically commutated fans (EC fans). The brushless motor, governed by a special controller, continuously adjust fans' speed.	Reduced energy consumption and minimized current's absorption during start-up phase. The efficiency is increased by approximately: +1% of EER and +4/5% of ESEER. The noise reduces proportionally to the unit's partialization.	ALL
819 DVVF	Fan speed control according to the condensing pressure; the use of this device is mandatory in case the unit operates with low evaporator leaving water temperature combined with low outdoor air temperatures	Extension of the unit operating range (see the section dedicated to the operating limits). The device allows the unit to operate in the most extreme conditions avoiding any risk of low pressure alarm intervention. The enhanced air flow management delivers also benefits in terms of both efficiency and quietness.	ALL
821 DVV2F	Fan speed control according to the condensing pressure; the use of this device is mandatory in case the unit operates with low evaporator leaving water temperature combined with low outdoor air temperatures	Extension of the unit operating range (see the section dedicated to the operating limits). The device allows the unit to operate in the most extreme conditions avoiding any risk of low pressure alarm intervention. The enhanced air flow management delivers also benefits in terms of both efficiency and quietness.	ALL
790 DEV.FOR LOW AIR TEMP.(HP MODE)			
814 COIL ANTIFREEZE HEATERS	L'opzione prevede l'inserimento di una resistenza elettrica tra batteria e bacinella di scarico condensa.	This option avoid the water freezing with a outdoor air temperature close to 0°C or lower.	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
4730 U - HYDRONIC MODULE			
4736 U - 1 PUMP 2P LH (FIX SPEED)	User side heat exchanger hydronic module, compatible with constant flow control. The unit is provided with 1 fixed speed pump, with 2-pole motor. Residual head of 100 kPa approximately. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4737 U - 1 PUMP 2P HH (FIX SPEED)	User side heat exchanger hydronic module, compatible with constant flow control. The unit is provided with 1 fixed speed pump, with 2-pole motor. Residual head of 200 kPa approximately. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4741 U - 2 PUMPS 2P LH (FIX SPEED)	User side heat exchanger hydronic module, compatible with constant flow control. The unit is provided with 2 fixed speed pumps, with 2-pole motor. Residual head of 100 kPa approximately. The pumps are controlled in duty/standby, with running hours equalization and changeover on device failure. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4742 U - 2 PUMPS 2P HH (FIX SPEED)	User side heat exchanger hydronic module, compatible with constant flow control. The unit is provided with 2 fixed speed pumps, with 2-pole motor. Residual head of 200 kPa approximately. The pumps are controlled in duty/standby, with running hours equalization and changeover on device failure. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4743 U - RELAY 1 PUMP + 0-10V SIG	User side heat exchanger hydronic module, compatible with constant or variable flow control. The unit is provided with 1 relay and a 0-10V signal terminal to control the activation and the speed of 1 external variable speed pump.	The hydronic module allows to control the external pumps with the unit controller logic.	ALL
4744 U - RELAY 2 PUMPS + 0-10V SIG	User side heat exchanger hydronic module, compatible with constant or variable flow control. The unit is provided with 2 relays and a 0-10V signal terminal to control the activation and the speed of 2 external variable speed pump. The pumps are controlled in duty/standby, with running hours equalization and changeover on device failure.	The hydronic module allows to control the external pumps with the unit controller logic.	ALL
4747 U - 1 PUMP 2P LH (VAR SPEED)	User side heat exchanger hydronic module, compatible with constant or variable flow control. The unit is provided with 1 variable speed pump, with 2-pole motor. Residual head of 100 kPa approximately. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
4748 U - 1 PUMP 2P HH (VAR SPEED)	User side heat exchanger hydronic module, compatible with constant or variable flow control. The unit is provided with 1 variable speed pump, with 2-pole motor. Residual head of 200 kPa approximately. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4752 U - 2 PUMPS 2P LH (VAR SPEED)	User side heat exchanger hydronic module, compatible with constant or variable flow control. The unit is provided with 2 variable speed pumps, with 2-pole motor. Residual head of 100 kPa approximately. The pumps are controlled in duty/standby, with running hours equalization and changeover on device failure. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4753 U - 2 PUMPS 2P HH (VAR SPEED)	User side heat exchanger hydronic module, compatible with constant or variable flow control. The unit is provided with 2 variable speed pumps, with 2-pole motor. Residual head of 200 kPa approximately. The pumps are controlled in duty/standby, with running hours equalization and changeover on device failure. Specifications and characteristic curves are available in the dedicated bulletin section.	The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.	ALL
4870 U - PRIMARY FLOW CONTROL			
4871 U - CONSTANT FLOW	User side heat exchanger water flow control (plant primary circuit): constant flow. Compatible with hydronic modules without regulation devices (no pumps, no contacts), with ON/OFF regulation devices (relays) or with fixed speed pumps (codes: 4731, 4732, 4733, 4734, 4735, 4736, 4737, 4738, 4739, 4741, 4742 - hydronic modules availability depends on unit model).	The unit is set up to operate with a constant water flow in the heat exchanger (plant primary circuit). This is the only option available in case of unit without any water flow regulation devices (no pumps, no contacts), which means with water flow control provided by others. In case of unit with ON/FF regulation devices or fixed speed pumps, the unit controller manages the pump activation to reduce pump consumption.	ALL
4872 U - CONSTANT FLOW (PARAMETER)	User side heat exchanger water flow control (plant primary circuit): constant flow (parameter set). Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model).	The unit is set up to operate with a constant water flow in the heat exchanger (plant primary circuit). The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal. The option provides the possibility to set the pump speed with a controller parameter. Once set, the speed pump remains constant until the next parameter adjustment. The parameter set constant flow control is useful during the unit installation and commissioning, to adjust water flow and pressure head according to the real plant characteristics.	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
<p>4874 U - VPF (plant DP trans excl)</p>	<p>User side heat exchanger water flow control (plant primary circuit): variable flow (delta P control). Only for single unit systems. Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model). The option includes: differential pressure transducer on the unit's heat exchanger and related controller expansion board, controller expansion board to read the plant side differential pressure transducer (4-20mA signal) and manage the hydraulic by-pass valve opening (0-10V signal). Compulsory equipment, supplied by others: plant side differential pressure transducer, plant side hydraulic by-pass valve.</p>	<p>The unit is set up to operate with a variable water flow in the heat exchanger (plant primary circuit). The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal. The option provides a pump speed management based on the VPF (Variable Primary Flow) function. It keeps the delta P constant on the plant side (primary circuit), thus bringing significant pump consumption reduction during part load operation. The VPF function is applicable in systems with only the primary circuit. Further information available in the dedicated bulletin section.</p>	<p>ALL</p>
<p>4875 U - VPF (plant DP trans incl)</p>	<p>User side heat exchanger water flow control (plant primary circuit): variable flow (delta P control). Only for single unit systems. Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model). The option includes: differential pressure transducer on the unit's heat exchanger and related controller expansion board, plant side differential pressure transducer (installation by others), controller expansion board to read the plant side differential pressure transducer (4-20mA signal) and manage the hydraulic by-pass valve opening (0-10V signal). Compulsory equipment, supplied by others: plant side hydraulic by-pass valve.</p>	<p>The unit is set up to operate with a variable water flow in the heat exchanger (plant primary circuit). The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal. The option provides a pump speed management based on the VPF (Variable Primary Flow) function. It keeps the delta P constant on the plant side (primary circuit), thus bringing significant pump consumption reduction during part load operation. The VPF function is applicable in systems with only the primary circuit. Further information available in the dedicated bulletin section.</p>	<p>ALL</p>
<p>4876 U - VPF MULTI-UNIT SYSTEM</p>	<p>User side heat exchanger water flow control (plant primary circuit): variable flow (delta P control). Only for multi-unit systems. Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model). The option includes: differential pressure transducer on the unit's heat exchanger and related controller expansion board. It shall be the customer responsibility to configure the multi-unit control system (Manager3000 or ClimaPRO) with option VPF.</p>	<p>The unit is set up to operate with a variable water flow in the heat exchanger (plant primary circuit). The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal. The option provides a pump speed management based on the VPF (Variable Primary Flow) function. It keeps the delta P constant on the plant side (primary circuit), thus bringing significant pump consumption reduction during part load operation. The VPF function is applicable in systems with only the primary circuit. Further information available in the dedicated bulletin section.</p>	<p>ALL</p>

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
4877 U - VPF.D	<p>User side heat exchanger water flow control (plant primary circuit): variable flow (delta T control). Only for single unit systems.</p> <p>Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model).</p> <p>The option includes: 2 plant side NTC temperature sensors (installation by others).</p>	<p>The unit is set up to operate with a variable water flow in the heat exchanger (plant primary circuit).</p> <p>The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal.</p> <p>The option provides a pump speed management based on the VPF.D (Variable Primary Flow with Decoupler) function. It keeps the delta T constant on the plant side (primary circuit), thus bringing significant pump consumption reduction during part load operation.</p> <p>The VPF.D function is applicable in systems with the primary and secondary circuits separated by a hydraulic decoupler.</p> <p>Further information available in the dedicated bulletin section.</p>	ALL
4878 U - VPF.D MULTI-UNIT SYSTEM	<p>User side heat exchanger water flow control (plant primary circuit): variable flow (delta T control). Only for multi-unit systems.</p> <p>Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model).</p> <p>It shall be the customer responsibility to configure the multi-unit control system (Manager3000 or ClimaPRO) with option VPF.D.</p>	<p>The unit is set up to operate with a variable water flow in the heat exchanger (plant primary circuit).</p> <p>The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal.</p> <p>The option provides a pump speed management based on the VPF.D (Variable Primary Flow with Decoupler) function. It keeps the delta T constant on the plant side (primary circuit), thus bringing significant pump consumption reduction during part load operation.</p> <p>The VPF.D function is applicable in systems with the primary and secondary circuits separated by a hydraulic decoupler.</p> <p>Further information available in the dedicated bulletin section.</p>	ALL
4879 U - VPF.E	<p>User side heat exchanger water flow control (plant primary circuit): variable flow (delta T control).</p> <p>Compatible with hydronic modules with modulating regulation devices (0-10V signal) or with variable speed pumps (codes: 4743, 4744, 4745, 4746, 4747, 4748, 4749, 4751, 4752, 4753 - hydronic modules availability depends on unit model).</p>	<p>The unit is set up to operate with a variable water flow in the heat exchanger (plant primary circuit).</p> <p>The unit controller manages the pump activation to reduce pump consumption. The pump speed is adjusted via 0-10V signal.</p> <p>The option provides a pump speed management based on the VPF.E function. It keeps the delta T constant on the plant side (primary circuit), thus bringing significant pump consumption reduction during part load operation.</p> <p>The VPF.E function is applicable in systems with only the primary circuit and with the hydraulic terminals equipped 3 way valve (by-pass).</p> <p>Further information available in the dedicated bulletin section.</p>	ALL
4940 BUFFER TANK			
4942 U - WITH BUFFER TANK	<p>Buffer tank covered by a 20 mm thick of insulation lining in closed-cell reticulated foam, which capacity depends on the unit size (see the dedicated table). In the dedicated section are described all the factory-mounted components included in the buffer tank system.</p>	<p>It helps to reach the plant water content required for the correct unit operation (see dedicated section "Hydraulic Data").</p>	ALL

OPTIONS

OPTIONS	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
2430 PIPING KIT ANTIFREEZE HEATER			
2432 ANTIFREEZE PIPING, PUMPS	Electrical heaters on pipes and other hydraulic unit's components. This option is mandatory if the unit is supposed to work with outdoor temperature below 0°C.	It protects the unit against ice formation on its hydraulic components.	ALL
2433 ANTIFREEZE PIPING, PUMPS, TANK	Electrical heaters on pipes and other hydraulic unit's components. This option is mandatory if the unit is supposed to work with outdoor temperature below 0°C.		ALL
2660 HEAT-EXCHANGER INSULATION			
2640 STANDARD INSULATION 10mm.		Reduces heat losses and prevent from condensate problems.	ALL
2641 EXTRA INSULATION ON EXCHANGERS	Increased thermal insulation on the heat exchanger: 20 mm thick closed-cell expanded polyurethane.	Reduces heat losses and prevent from condensate problems.	ALL
2620 ACOUSTICAL ENCLOSURE			
2621 EXTRA SOUNDPROOFING INSULATION	Increased soundproofing enclosure for compressor section	Noise emission reduction	ALL
9970 PACKING			
9968 NYLON, SUPP., COIL PROT. PACK.	Unit provided plastic supports, with polypropylene panels for coils protection and covered with nylon		ALL
9973 WOODEN CAGE PACKING	Unit provided with wooden cage		ALL
9977 SUPPORTS + COILS PROTECTION	Unit provided plastic supports and covered with nylon		ALL

OPTIONS

Additional information - IMPORTANT -

3301 – Compressor power factor correction

1511 – Soft starter

There is a mutual exclusion rule between the compressor rephasing condensers and the soft start device. When both accessories are required together, a feasibility analysis is needed. If the configuration is available as a special execution, an extra-price may be quoted.

1925-1926 – Electronic expansion valve

601 – Liquid line solenoid valve

The use of the electronic expansion valve entails the selection of the solenoid valve.

808 - EC fans

These fans are suitable to operate up to 46°C of outdoor temperature. In case of higher temperatures, fans with oversized motors must be used. For the quotation of these components, please contact our sales department.

3431 – Leak detector

3433 - Leak detector + compress. Off

The purpose of these options is to check and raise an alarm whether a leak occurs; they should not be considered as safety devices.

4942 - U - With buffer tank

4747, 4748, 4752, 4753 - U – Pump/s 2p (VAR SPEED)

There is a mutual exclusion rule between the accessories buffer tank and the variable speed pumps.

OPTIONS

Chiller Plant Control with Active Optimization System

ClimaPRO System Manager

ClimaPRO System Manager represents the state-of-the-art platform for chiller plant management and control.

ClimaPRO ensures to actively optimize the entire chiller plant by managing and adjusting each component directly involved in the production and the distribution of the heating and the cooling energies, therefore involving chillers and heat pumps, pumping groups as well as the source-side devices like, for example, the cooling towers.

In particular, ClimaPRO measures in real-time all the operating variables from the field, for each individual device and each of the main system branches, by using serial communication lines as well as dedicated analogue signals.

The acquired data are then compared with the design data of each single unit at any different working conditions, thus allowing to implement control strategies based on dynamic algorithms which take into account the real operating conditions.

On the basis of these values, an advanced diagnostic module also allows to assess the level of efficiency for each individual unit, translating data into easy-to-read information in order to simplify and optimize the maintenance activities.

The "Chart Builder" software module allows to display the trends of the main operating variables. The "Reporting" module allows to send reports to selected users, including data and system's status of the main devices as well as to perform calculation of the energy indexes for each single unit and for the entire chiller plant.

The accessibility to ClimaPRO System Manager is ensured by an integrated web server that makes it visible from any computer equipped with a web browser, either locally or remotely.



5.1 GENERAL TECHNICAL DATA

NX-N-G06/K

[SI System]

NX-N-G06/K		0604P	0704P	0804P	0904P	1004P	1104P	1204P	
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	153,7	178,4	202,5	235,4	263,2	286,0	306,5
Total power input	(1)	kW	53,47	63,25	71,14	83,39	93,30	99,83	108,6
EER	(1)	kW/kW	2,873	2,818	2,848	2,823	2,821	2,866	2,822
ESEER	(1)	kW/kW							
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	153,3	178,0	202,2	235,1	262,8	285,7	306,1
EER	(1)(2)	kW/kW	2,830	2,780	2,810	2,790	2,790	2,830	2,790
ESEER	(1)(2)	kW/kW	-	-	-	-	-	-	-
Cooling energy class			-	-	-	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	163,1	189,6	216,6	255,0	281,5	304,5	323,9
Total power input	(3)	kW	52,03	61,14	69,38	82,25	90,54	97,31	103,8
COP	(3)	kW/kW	3,137	3,103	3,121	3,098	3,110	3,129	3,120
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2)	kW	163,4	190,0	216,9	255,4	281,9	304,9	324,4
COP	(3)(2)	kW/kW	3,100	3,070	3,080	3,060	3,070	3,090	3,080
Cooling energy class			-	-	-	-	-	-	-
COOLING WITH PARTIAL RECOVERY									
Cooling capacity	(4)	kW	159,4	185,0	210,1	244,2	273,0	296,8	318,0
Total power input	(4)	kW	51,88	61,32	68,93	80,89	90,46	96,76	105,2
Desuperheater heating capacity	(4)	kW	40,59	49,32	56,36	63,72	72,57	78,40	86,24
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,349	8,529	9,686	11,26	12,58	13,68	14,66
Pressure drop at the heat exchanger	(1)	kPa	39,2	39,8	41,3	45,3	45,4	40,3	46,2
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	7,873	9,154	10,46	12,31	13,59	14,70	15,64
Pressure drop at the heat exchanger	(3)	kPa	45,0	45,8	48,2	54,2	52,9	46,5	52,6
PARTIAL RECOVERY USER SIDE IN REFRIGERATION									
Water flow	(4)	l/s	1,959	2,381	2,720	3,076	3,503	3,784	4,163
Pressure drop at the heat exchanger	(4)	kPa	15,7	23,1	30,2	30,7	39,8	37,1	44,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
Number of capacity steps		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Regulation			STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS
Min. capacity step		%	25	25	25	25	25	25	25
Refrigerant			R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge		kg	33,8	52,5	74,5	74,6	77,9	97,0	97,0
Oil charge		kg	10,8	10,8	10,8	16,0	21,2	21,2	21,2
Rc (ASHRAE)	(5)	kg/kW	0,22	0,30	0,37	0,32	0,30	0,34	0,32
FANS									
Quantity		N°	2	2	2	3	3	3	3
Air flow		m³/s	19,48	22,92	22,30	29,22	29,22	32,51	32,51
Fans power input		kW	2,00	2,00	2,00	2,00	2,00	2,00	2,00
NOISE LEVEL									
Sound Pressure	(6)	dB(A)	60	60	61	62	63	63	63
Sound power level in cooling	(7)(8)	dB(A)	92	92	93	94	95	95	95
Sound power level in heating	(7)(9)	dB(A)	92	92	93	94	95	95	95
SIZE AND WEIGHT									
A	(10)	mm	3110	4110	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	1670	1880	2000	2280	2460	2790	2800

Notes:

- Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40,00°C/45,00°C; Source (side) heat exchanger air (in) 7,0°C - 87% R.H.
- Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.
- Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 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.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.
- Not available

Certified data in EUROVENT

GENERAL TECHNICAL DATA

NX-N-G06/LN-K

[SI System]

NX-N-G06/LN-K		0604P	0704P	0804P	0904P	1004P	1104P	1204P	
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	146,6	167,4	192,7	224,9	247,8	271,4	291,0
Total power input	(1)	kW	53,25	64,08	73,18	84,23	94,81	101,6	111,4
EER	(1)	kW/kW	2,750	2,612	2,633	2,671	2,614	2,671	2,612
ESEER	(1)	kW/kW							
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	146,3	167,0	192,3	224,6	247,5	271,1	290,6
EER	(1)(2)	kW/kW	2,720	2,580	2,600	2,640	2,590	2,640	2,580
ESEER	(1)(2)	kW/kW	-	-	-	-	-	-	-
Cooling energy class			-	-	-	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	155,4	180,7	208,1	239,7	266,7	291,5	309,3
Total power input	(3)	kW	48,38	57,75	65,85	76,99	85,17	91,97	98,34
COP	(3)	kW/kW	3,211	3,126	3,158	3,113	3,130	3,168	3,146
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2)	kW	155,7	181,0	208,4	240,0	267,1	291,9	309,7
COP	(3)(2)	kW/kW	3,170	3,090	3,120	3,080	3,090	3,140	3,110
Cooling energy class			-	-	-	-	-	-	-
COOLING WITH PARTIAL RECOVERY									
Cooling capacity	(4)	kW	152,1	173,7	199,9	233,4	257,1	281,6	301,9
Total power input	(4)	kW	51,55	62,00	70,78	81,53	91,74	98,30	107,7
Desuperheater heating capacity	(4)	kW	43,25	52,91	61,04	68,76	78,20	84,27	92,99
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,012	8,005	9,213	10,76	11,85	12,98	13,91
Pressure drop at the heat exchanger	(1)	kPa	35,7	35,0	37,4	41,4	40,2	36,2	41,6
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	7,503	8,722	10,05	11,57	12,88	14,07	14,93
Pressure drop at the heat exchanger	(3)	kPa	40,9	41,6	44,5	47,9	47,5	42,6	48,0
PARTIAL RECOVERY USER SIDE IN REFRIGERATION									
Water flow	(4)	l/s	2,088	2,554	2,946	3,319	3,775	4,068	4,489
Pressure drop at the heat exchanger	(4)	kPa	17,8	26,6	35,4	35,7	46,2	42,9	52,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
Number of capacity steps		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Regulation			STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS
Min. capacity step		%	25	25	25	25	25	25	25
Refrigerant			R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge		kg	33,8	52,5	74,5	74,6	77,9	97,0	97,0
Oil charge		kg	10,8	10,8	10,8	16,0	21,2	21,2	21,2
Rc (ASHRAE)	(5)	kg/kW	0,23	0,32	0,39	0,33	0,32	0,36	0,34
FANS									
Quantity		N°	2	2	2	3	3	3	3
Air flow		m³/s	13,56	16,70	16,01	20,35	20,35	22,96	22,96
Fans power input		kW	1,20	1,20	1,20	1,20	1,20	1,20	1,20
NOISE LEVEL									
Sound Pressure	(6)	dB(A)	54	54	55	56	57	58	58
Sound power level in cooling	(7)(8)	dB(A)	86	86	87	88	89	90	90
Sound power level in heating	(7)(9)	dB(A)	87	87	88	89	90	91	91
SIZE AND WEIGHT									
A	(10)	mm	3110	4110	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	1720	1930	2040	2320	2510	2840	2850

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
- 2 Values in compliance with EN14511
- 3 Plant (side) heat exchanger water (in/out) 40,00°C/45,00°C; Source (side) heat exchanger air (in) 7,0°C - 87% R.H.
- 4 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.
- 5 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 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.

- Not available

Certified data in EUROVENT

GENERAL TECHNICAL DATA

NX-N-G06/SL-K

[SI System]

NX-N-G06/SL-K		0604P	0704P	0804P	0904P	1004P	1104P	1204P	
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	142,1	168,5	193,6	222,7	245,4	269,8	291,2
Total power input	(1)	kW	54,04	64,12	73,78	82,41	93,71	103,3	111,6
EER	(1)	kW/kW	2,631	2,629	2,623	2,703	2,619	2,612	2,609
ESEER	(1)	kW/kW							
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	141,8	168,1	193,3	222,4	245,1	269,5	290,9
EER	(1)(2)	kW/kW	2,600	2,600	2,590	2,670	2,590	2,590	2,580
ESEER	(1)(2)	kW/kW	-	-	-	-	-	-	-
Cooling energy class			-	-	-	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	150,6	181,4	209,8	241,4	265,7	288,9	310,3
Total power input	(3)	kW	46,89	58,37	66,45	75,29	83,51	91,86	99,17
COP	(3)	kW/kW	3,211	3,106	3,155	3,206	3,182	3,144	3,128
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2)	kW	151,0	181,7	210,2	241,8	266,1	289,2	310,7
COP	(3)(2)	kW/kW	3,180	3,070	3,120	3,170	3,140	3,110	3,090
Cooling energy class			-	-	-	-	-	-	-
COOLING WITH PARTIAL RECOVERY									
Cooling capacity	(4)	kW	147,4	174,8	200,9	231,1	254,6	279,9	302,2
Total power input	(4)	kW	52,27	62,06	71,39	79,72	90,62	99,93	107,9
Desuperheater heating capacity	(4)	kW	45,02	52,41	61,04	68,74	78,83	85,78	92,43
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	6,796	8,057	9,259	10,65	11,74	12,90	13,93
Pressure drop at the heat exchanger	(1)	kPa	33,5	35,5	37,8	40,6	39,5	35,8	41,7
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	l/s	7,270	8,757	10,13	11,65	12,83	13,94	14,98
Pressure drop at the heat exchanger	(3)	kPa	38,4	41,9	45,2	48,6	47,1	41,8	48,3
PARTIAL RECOVERY USER SIDE IN REFRIGERATION									
Water flow	(4)	l/s	2,173	2,530	2,946	3,318	3,805	4,141	4,462
Pressure drop at the heat exchanger	(4)	kPa	19,3	26,1	35,4	35,7	46,9	44,4	51,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
Number of capacity steps		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Regulation			STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS
Min. capacity step		%	25	25	25	25	25	25	25
Refrigerant			R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge		kg	33,8	56,1	74,5	73,9	77,1	97,0	97,0
Oil charge		kg	10,8	10,8	10,8	16,0	21,2	21,2	21,2
Rc (ASHRAE)	(5)	kg/kW	0,24	0,34	0,39	0,33	0,32	0,36	0,34
FANS									
Quantity		N°	2	3	3	3	3	4	4
Air flow		m³/s	10,67	17,35	16,01	18,15	18,15	21,34	23,55
Fans power input		kW	0,90	0,90	0,90	0,90	0,90	0,90	1,00
NOISE LEVEL									
Sound Pressure	(6)	dB(A)	50	51	51	52	53	54	55
Sound power level in cooling	(7)(8)	dB(A)	82	83	83	84	85	86	87
Sound power level in heating	(7)(9)	dB(A)	83	84	84	85	86	87	88
SIZE AND WEIGHT									
A	(10)	mm	3110	4110	4110	5110	5110	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	1720	2020	2130	2620	2790	2950	2960

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
- 2 Values in compliance with EN14511
- 3 Plant (side) heat exchanger water (in/out) 40,00°C/45,00°C; Source (side) heat exchanger air (in) 7,0°C - 87% R.H.
- 4 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.
- 5 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 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.

- Not available

Certified data in EUROVENT

6.1 TECHNICAL DATA SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)

NX-N-G06/K

[SI System]

NX-N-G06/K - LOW TEMPERATURE application			0604P	0704P	0804P	0904P	1004P	1104P
Power supply		(V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
WEATHER CONDITIONS - AVERAGE								
Rated heat output at Tdesignh	(1)(2)	kW	121	140	162	190	213	229
Bivalent temperature	(1)(2)	°C	-7	-7	-7	-7	-7	-7
SCOP	(1)(2)		3,51	3,54	3,54	3,46	3,51	3,52
Seasonal space heating energy efficiency	(1)(2)	%	137	138	138	135	137	138
Seasonal space heating energy efficiency class	(1)(2)		-	-	-	-	-	-

1 Seasonal space heating energy efficiency class LOW TEMPERATURE [REGULATION (EU) N. 813/2013]

2 Tipo di calcolo con portata variabile e temperatura variabile.

NX-N-G06/K - LOW TEMPERATURE application			1204P
Power supply		(V/ph/Hz)	400/3/50
WEATHER CONDITIONS - AVERAGE			
Rated heat output at Tdesignh	(1)(2)	kW	246
Bivalent temperature	(1)(2)	°C	-7
SCOP	(1)(2)		3,47
Seasonal space heating energy efficiency	(1)(2)	%	136
Seasonal space heating energy efficiency class	(1)(2)		-

1 Seasonal space heating energy efficiency class LOW TEMPERATURE [REGULATION (EU) N. 813/2013]

2 Tipo di calcolo con portata variabile e temperatura variabile.

**TECHNICAL DATA SEASONAL
EFFICIENCY IN HEATING (EN14825
VALUE)**

NX-N-G06/LN-K

[SI System]

NX-N-G06/LN-K - LOW TEMPERATURE application			0604P	0704P	0804P	0904P	1004P	1104P
Power supply		(V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
WEATHER CONDITIONS - AVERAGE								
Rated heat output at Tdesignh	(1)(2)	kW	119	127	161	185	210	226
Bivalent temperature	(1)(2)	°C	-7	-7	-7	-7	-7	-7
SCOP	(1)(2)		3,63	3,60	3,84	3,66	3,67	3,73
Seasonal space heating energy efficiency	(1)(2)	%	142	141	151	144	144	146
Seasonal space heating energy efficiency class	(1)(2)		-	-	-	-	-	-

1 Seasonal space heating energy efficiency class LOW TEMPERATURE [REGULATION (EU) N. 813/2013]

2 Tipo di calcolo con portata variabile e temperatura variabile.

NX-N-G06/LN-K - LOW TEMPERATURE application			1204P
Power supply		(V/ph/Hz)	400/3/50
WEATHER CONDITIONS - AVERAGE			
Rated heat output at Tdesignh	(1)(2)	kW	242
Bivalent temperature	(1)(2)	°C	-7
SCOP	(1)(2)		3,75
Seasonal space heating energy efficiency	(1)(2)	%	147
Seasonal space heating energy efficiency class	(1)(2)		-

1 Seasonal space heating energy efficiency class LOW TEMPERATURE [REGULATION (EU) N. 813/2013]

2 Tipo di calcolo con portata variabile e temperatura variabile.

**TECHNICAL DATA SEASONAL
EFFICIENCY IN HEATING (EN14825
VALUE)**

NX-N-G06/SL-K

[SI System]

NX-N-G06/SL-K - LOW TEMPERATURE application			0604P	0704P	0804P	0904P	1004P	1104P
Power supply		(V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
WEATHER CONDITIONS - AVERAGE								
Rated heat output at Tdesignh	(1)(2)	kW	118	129	162	186	207	225
Bivalent temperature	(1)(2)	°C	-7	-7	-7	-7	-7	-7
SCOP	(1)(2)		3,77	3,52	3,80	3,89	3,80	3,70
Seasonal space heating energy efficiency	(1)(2)	%	148	138	149	152	149	145
Seasonal space heating energy efficiency class	(1)(2)		-	-	-	-	-	-

1 Seasonal space heating energy efficiency class LOW TEMPERATURE [REGULATION (EU) N. 813/2013]

2 Tipo di calcolo con portata variabile e temperatura variabile.

NX-N-G06/SL-K - LOW TEMPERATURE application			1204P
Power supply		(V/ph/Hz)	400/3/50
WEATHER CONDITIONS - AVERAGE			
Rated heat output at Tdesignh	(1)(2)	kW	243
Bivalent temperature	(1)(2)	°C	-7
SCOP	(1)(2)		3,72
Seasonal space heating energy efficiency	(1)(2)	%	146
Seasonal space heating energy efficiency class	(1)(2)		-

1 Seasonal space heating energy efficiency class LOW TEMPERATURE [REGULATION (EU) N. 813/2013]

2 Tipo di calcolo con portata variabile e temperatura variabile.

7.1 TECHNICAL DATA SEASONAL EFFICIENCY IN COOLING (EN14825 VALUE)

[SI System]

ENERGY EFFICIENCY

SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)

Ambient refrigeration

NX-N-G06/K			0604P	0704P	0804P	0904P	1004P	1104P	1204P			
Prated,c	(1)	kW	153,3	178,0	202,2	235,1	262,8	285,7	306,1			
SEER	(1) (2)	-	3,71	3,90	3,96	3,85	3,92	3,97	3,93			
Performance ηs	(1) (3)	%	146,0	153,0	155,0	151,0	154,0	156,0	154,0			

NX-N-G06/LN-K			0604P	0704P	0804P	0904P	1004P	1104P	1204P			
Prated,c	(1)	kW	146,3	167,0	192,3	224,6	247,5	271,1	290,6			
SEER	(1) (2)	-	3,77	3,94	3,97	3,96	3,93	3,96	3,90			
Performance ηs	(1) (3)	%	148,0	155,0	156,0	155,0	154,0	156,0	153,0			

NX-N-G06/SL-K			0604P	0704P	0804P	0904P	1004P	1104P	1204P			
Prated,c	(1)	kW	141,8	168,1	193,3	222,4	245,1	269,5	290,9			
SEER	(1) (2)	-	3,85	3,92	3,96	4,00	4,03	3,96	3,91			
Performance ηs	(1) (3)	%	151,0	154,0	155,0	157,0	158,0	155,0	154,0			

Notes:

(1) Parameter calculated according to [REGULATION (EU) N. 2016/2281]

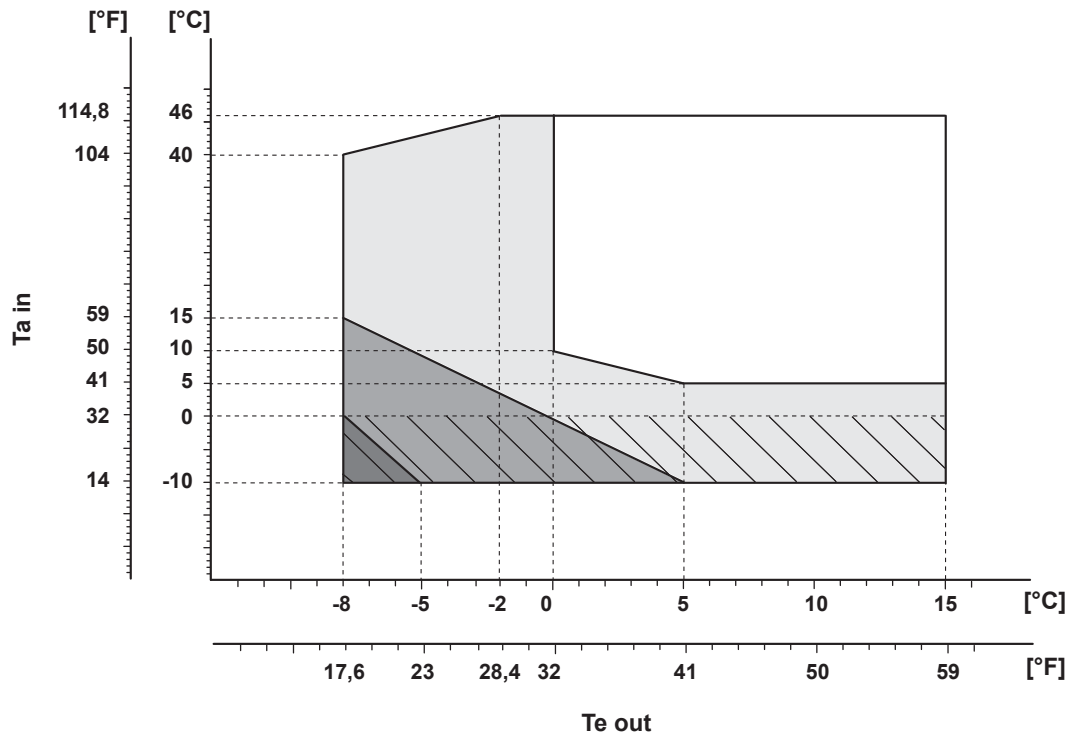
(2) Seasonal energy efficiency ratio

(3) Seasonal space cooling energy efficiency

The units highlighted in this publication contain R454B [GWP₁₀₀ 466] fluorinated greenhouse gases.

8.1 OPERATING LIMITS

COOLING



$T_{a \text{ in}}$ Outdoor air temperature

$T_{e \text{ out}}$ Plant (side) cooling exchanger water temperature



Pressostatic control DP option (801) required (Only for /K version)



DVV option (code 802) required or EC fans (code 808) required



DVVF option (819) required or EC fans (code 808) required



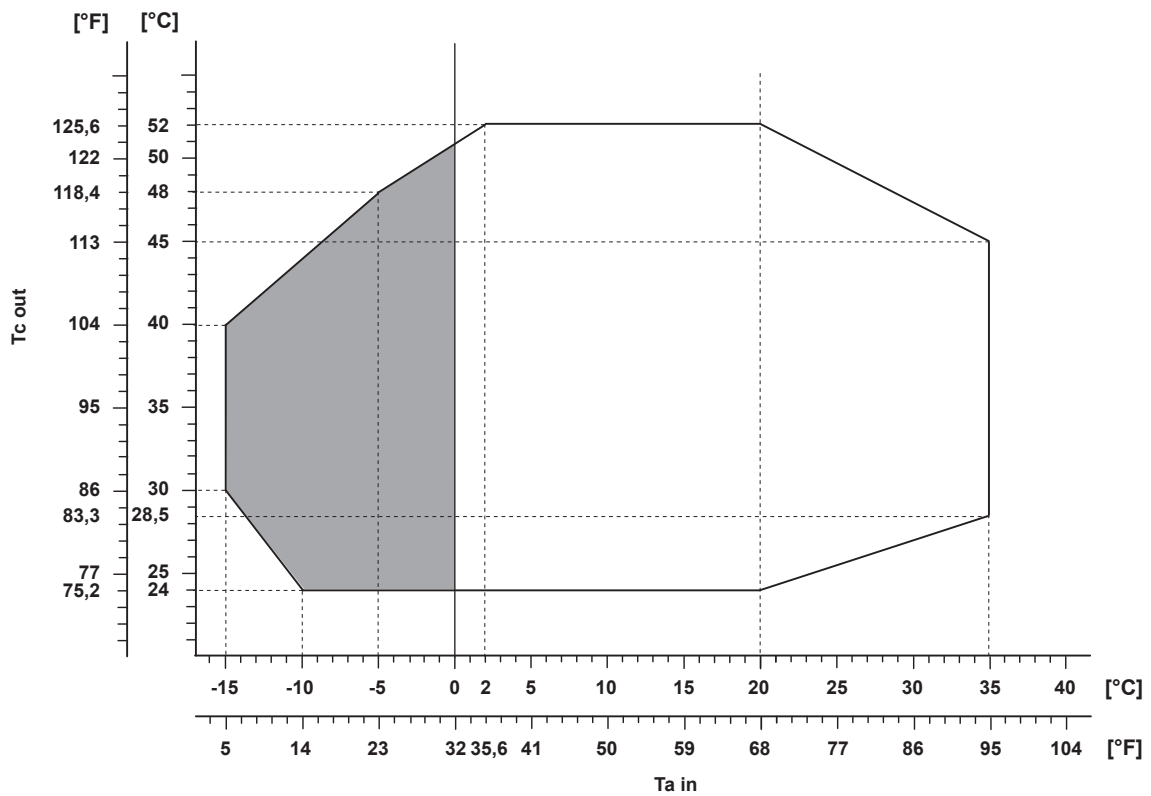
DVV2F option (821) required or EC fans (code 808) required



Antifreeze on pipes + pumps option (2432) required if hydronic kit is present

OPERATING LIMITS

HEAT PUMP /K /LN-K /SL-K version



Ta in Outdoor air temperature

Tc out Plant (side) heat exchanger water

- Coil antifreeze heaters option (814) required
- Antifreeze on pipes + pumps option (2432) required if hydronic kit is present
- Antifreeze on pipes + pumps + tank option (2433) required if hydronic kit is present

OPERATING LIMITS

NX-N-G06 0604P - 1204P

SIZE
NX-N-G06 /K /0604P
NX-N-G06 /K /0704P
NX-N-G06 /K /0804P
NX-N-G06 /K /0904P
NX-N-G06 /K /1004P
NX-N-G06 /K /1104P
NX-N-G06 /K /1204P
NX-N-G06 /D /K /0604P
NX-N-G06 /D /K /0704P
NX-N-G06 /D /K /0804P
NX-N-G06 /D /K /0904P
NX-N-G06 /D /K /1004P
NX-N-G06 /D /K /1104P
NX-N-G06 /D /K /1204P
NX-N-G06 /LN-K /0604P
NX-N-G06 /LN-K /0704P
NX-N-G06 /LN-K /0804P
NX-N-G06 /LN-K /0904P
NX-N-G06 /LN-K /1004P
NX-N-G06 /LN-K /1104P
NX-N-G06 /LN-K /1204P
NX-N-G06 /D /LN-K /0604P
NX-N-G06 /D /LN-K /0704P
NX-N-G06 /D /LN-K /0804P
NX-N-G06 /D /LN-K /0904P
NX-N-G06 /D /LN-K /1004P
NX-N-G06 /D /LN-K /1104P
NX-N-G06 /D /LN-K /1204P
NX-N-G06 /SL-K /0604P
NX-N-G06 /SL-K /0704P
NX-N-G06 /SL-K /0804P
NX-N-G06 /SL-K /0904P
NX-N-G06 /SL-K /1004P
NX-N-G06 /SL-K /1104P
NX-N-G06 /SL-K /1204P
NX-N-G06 /D /SL-K /0604P
NX-N-G06 /D /SL-K /0704P
NX-N-G06 /D /SL-K /0804P
NX-N-G06 /D /SL-K /0904P
NX-N-G06 /D /SL-K /1004P
NX-N-G06 /D /SL-K /1104P
NX-N-G06 /D /SL-K /1204P

8.2 ETHYLENE GLYCOL MIXTURE

Ethylene glycol and water mixture, used as a heat-conveying fluid, cause a variation in unit performance. For correct data, use the factors indicated in the following tabel.

	Freezing point (°C)							
	0	-5	-10	-15	-20	-25	-30	-35
	Ethylene glycol percentage by weight							
	0%	12%	20%	30%	35%	40%	45%	50%
cPf	1	0,985	0,98	0,974	0,97	0,965	0,964	0,96
cQ	1	1,02	1,04	1,075	1,11	1,14	1,17	1,2
cdp	1	1,07	1,11	1,18	1,22	1,24	1,27	1,3

cPf: cooling power correction factor
cQ: flow correction factor
cdp: pressure drop correction factor

For data concerning other kind of anti-freeze solutions (e.g. propylene glycol) please contact our Sale Department.

8.3 FOULING FACTORS

Performances are based on clean condition of tubes (fouling factor = 1). For different fouling values, performance should be adjusted using the correction factors shown in the following table.

SERIES	FOULING FACTORS	EVAPORATOR			CONDENSER/RECOVERY			DESUPERHEATER
	ff (m ² °CW)	F1	FK1	KE [°C]	F2	FK2	KC [°C]	R3
VARIOUS	0	1,000	1,000	0,0	1,000	1,000	0,0	1,000
VARIOUS	1,80 x 10 ⁻⁵	1,000	1,000	0,0	1,000	1,000	0,0	1,000
VARIOUS	4,40 x 10 ⁻⁵	1,000	1,000	0,0	0,990	1,030	1,0	0,990
VARIOUS	8,80 x 10 ⁻⁵	0,960	0,990	0,7	0,980	1,040	1,5	0,980
VARIOUS	13,20 x 10 ⁻⁵	0,944	0,985	1,0	0,964	1,050	2,3	0,964
VARIOUS	17,20 x 10 ⁻⁵	0,930	0,980	1,5	0,950	1,060	3,0	0,950

ff: fouling factors

F1 - F2: potential correction factors

FK1 - FK2: compressor power input correction factors

R3: capacity correction factors

KE: minimum evaporator outlet temperature increase

KC: maximum condenser outlet temperature decrease

9.1 HYDRAULIC DATA

[SI System]

Water flow and pressure drop

Water flow in the plant (side) exchanger is given by:

$$Q = P / (4,186 \times \Delta t)$$

Q: water flow (l/s)

Δt : difference between inlet and outlet water temp. (°C)

P: heat exchanger capacity (kW)

Pressure drop is given by:

$$\Delta p = K \times (3,6 \times Q)^2 / 1000$$

Q: water flow (l/s)

Δp : pressure drop (kPa)

K: unit size ratio

SIZE	Power supply V/ph/Hz	HEAT EXCHANGER USER SIDE					HEAT RECOVERY EX. USER SIDE			
		K	Q min l/s	Q max l/s	C.A.S. l	C.a. min l	K	Q min l/s	Q max l/s	C.A.S. l
NX-N-G06 /K /0604P	400/3/50	56,0	4,528	12,81	8,60	400	-	-	-	-
NX-N-G06 /K /0704P	400/3/50	42,2	5,278	14,86	10,5	465	-	-	-	-
NX-N-G06 /K /0804P	400/3/50	34,0	6,000	16,86	12,3	528	-	-	-	-
NX-N-G06 /K /0904P	400/3/50	27,6	6,972	17,22	15,1	613	-	-	-	-
NX-N-G06 /K /1004P	400/3/50	22,1	7,806	19,11	18,9	685	-	-	-	-
NX-N-G06 /K /1104P	400/3/50	16,6	8,500	19,11	23,0	745	-	-	-	-
NX-N-G06 /K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	-	-	-	-
NX-N-G06 /D /K /0604P	400/3/50	56,0	4,528	12,81	8,60	400	315	-	2,611	1,22
NX-N-G06 /D /K /0704P	400/3/50	42,2	5,278	14,86	10,5	465	315	-	3,167	1,22
NX-N-G06 /D /K /0804P	400/3/50	34,0	6,000	16,86	12,3	528	315	-	3,611	1,22
NX-N-G06 /D /K /0904P	400/3/50	27,6	6,972	17,22	15,1	613	250	-	4,083	1,46
NX-N-G06 /D /K /1004P	400/3/50	22,1	7,806	19,11	18,9	685	250	-	4,667	1,46
NX-N-G06 /D /K /1104P	400/3/50	16,6	8,500	19,11	23,0	745	200	-	5,028	1,83
NX-N-G06 /D /K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	200	-	5,528	1,83
NX-N-G06 /LN-K /0604P	400/3/50	56,0	4,528	12,81	8,60	400	-	-	-	-
NX-N-G06 /LN-K /0704P	400/3/50	42,2	5,278	14,86	10,5	465	-	-	-	-
NX-N-G06 /LN-K /0804P	400/3/50	34,0	6,000	16,86	12,3	528	-	-	-	-
NX-N-G06 /LN-K /0904P	400/3/50	27,6	6,972	17,22	15,1	613	-	-	-	-
NX-N-G06 /LN-K /1004P	400/3/50	22,1	7,806	19,11	18,9	685	-	-	-	-
NX-N-G06 /LN-K /1104P	400/3/50	16,6	8,500	19,11	23,0	745	-	-	-	-
NX-N-G06 /LN-K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	-	-	-	-
NX-N-G06 /D /LN-K /0604P	400/3/50	56,0	4,528	12,81	8,60	400	315	-	2,611	1,22
NX-N-G06 /D /LN-K /0704P	400/3/50	42,2	5,278	14,86	10,5	465	315	-	3,167	1,22
NX-N-G06 /D /LN-K /0804P	400/3/50	34,0	6,000	16,86	12,3	528	315	-	3,611	1,22
NX-N-G06 /D /LN-K /0904P	400/3/50	27,6	6,972	17,22	15,1	613	250	-	4,083	1,46
NX-N-G06 /D /LN-K /1004P	400/3/50	22,1	7,806	19,11	18,9	685	250	-	4,667	1,46
NX-N-G06 /D /LN-K /1104P	400/3/50	16,6	8,500	19,11	23,0	745	200	-	5,028	1,83
NX-N-G06 /D /LN-K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	200	-	5,528	1,83
NX-N-G06 /SL-K /0604P	400/3/50	56,0	4,528	12,81	8,60	400	-	-	-	-
NX-N-G06 /SL-K /0704P	400/3/50	42,2	5,278	14,86	10,5	465	-	-	-	-
NX-N-G06 /SL-K /0804P	400/3/50	34,0	6,000	16,86	12,3	528	-	-	-	-
NX-N-G06 /SL-K /0904P	400/3/50	27,6	6,972	17,22	15,1	613	-	-	-	-
NX-N-G06 /SL-K /1004P	400/3/50	22,1	7,806	19,11	18,9	685	-	-	-	-
NX-N-G06 /SL-K /1104P	400/3/50	16,6	8,500	19,11	23,0	745	-	-	-	-
NX-N-G06 /SL-K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	-	-	-	-
NX-N-G06 /D /SL-K /0604P	400/3/50	56,0	4,528	12,81	8,60	400	315	-	2,611	1,22
NX-N-G06 /D /SL-K /0704P	400/3/50	42,2	5,278	14,86	10,5	465	315	-	3,167	1,22
NX-N-G06 /D /SL-K /0804P	400/3/50	34,0	6,000	16,86	12,3	528	315	-	3,611	1,22
NX-N-G06 /D /SL-K /0904P	400/3/50	27,6	6,972	17,22	15,1	613	250	-	4,083	1,46
NX-N-G06 /D /SL-K /1004P	400/3/50	22,1	7,806	19,11	18,9	685	250	-	4,667	1,46
NX-N-G06 /D /SL-K /1104P	400/3/50	16,6	8,500	19,11	23,0	745	200	-	5,028	1,83
NX-N-G06 /D /SL-K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	200	-	5,528	1,83

Q min: minimum water flow admitted to the heat exchanger
 Q max: maximum water flow admitted to the heat exchanger
 C.a. min: minimum water content admitted in the plant
 C.A.S.: Exchanger water content

HYDRAULIC DATA

[SI System]

SIZE	Power supply V/ph/Hz	HEAT EXCHANGER USER SIDE					HEAT RECOVERY EX. USER SIDE			
		K	Q min l/s	Q max l/s	C.A.S. l	C.a. min l	K	Q min l/s	Q max l/s	C.A.S. l
NX-N-G06 /D /SL-K /1204P	400/3/50	16,6	9,111	19,11	23,0	798	200	-	5,528	1,83

Q min: minimum water flow admitted to the heat exchanger
Q max: maximum water flow admitted to the heat exchanger
C.a. min: minimum water content admitted in the plant
C.A.S.: Exchanger water content

10.1 ELECTRICAL DATA

NX-N-G06/K

[SI System]

SIZE	Power supply V/ph/Hz	Maximum values								
		n	Compressor			Fans (1)		Total (1)(2)		
			F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A. [A]	F.L.I. [kW]	F.L.A. [A]	S.A. [A]
0604P	400/3/50	4	4x15,36	4x24,9	4x172	2,000	4	77,00	133	301
0704P	400/3/50	4	2x15,36+2x21,4	2x24,9+2x34,2	2x172+2x211	2,000	4	90,00	157	332
0804P	400/3/50	4	4x21,4	4x34,2	4x211	2,000	4	103,0	176	351
0904P	400/3/50	4	2x21,4+2x27	2x34,2+2x42,5	2x211+2x210	2,000	4	120,0	207	415
1004P	400/3/50	4	4x27	4x42,5	4x210	2,000	4	132,0	229	438
1104P	400/3/50	4	2x27+2x34,5	2x42,5+2x55,1	2x210+2x326	2,000	4	143,0	243	505
1204P	400/3/50	4	4x34,5	4x55,1	4x326	2,000	4	153,0	256	518

F.L.I.: Full load power

F.L.A.: Full load current

L.R.A.: Locked rotor amperes for single compressor

S.A.: Inrush current

(1) Values calculated referring to the version with the maximum number of fans working at the max absorbed current

(1)(2) Safety values to be considered when cabling the unit for power supply and line-protections

Data valid for standard units without any additional option.

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

Voltage tolerance: 10%

Maximum voltage unbalance: 3%

Give the typical operating conditions of units designed for outdoor installation, which can be associated (according to reference document IEC 60721) to the following classes:

- climatic conditions class 4K4H: air temperature range from -20 up to 55°C (*), relative humidity range from 4 up to 100%, with possible precipitations, at air pressure from 70 and 106 kPa and a maximum solar radiation of 1120 W/m2

- special climatic conditions negligible

- biological conditions class 4B1 and 4C2: locations in a generic urban area

- mechanically active substances class 4S2: locations in areas with sand or dust representative of urban areas

- mechanical conditions class 4M1: locations protected from significant vibrations or shocks

The required protection level for safe operation, according to reference document IEC 60529, is IP43XW (protection against access, to the most critical unit's parts, of external devices with diameter larger than 1 mm and rain).

The unit can be considered IP44XW protected, i.e. protected against access of external devices (with diameter larger than 1 mm) and water in general.

(*) for the unit's operating limits, see "selection limits" section

ELECTRICAL DATA

NX-N-G06/LN-K

[SI System]

SIZE	Power supply V/ph/Hz	Maximum values								
		n	Compressor			Fans (1)		Total (1)(2)		
			F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A. [A]	F.L.I. [kW]	F.L.A. [A]	S.A. [A]
0604P	400/3/50	4	4x15,36	4x24,9	4x172	2,000	4	77,00	133	301
0704P	400/3/50	4	2x15,36+2x21,4	2x24,9+2x34,2	2x172+2x211	2,000	4	90,00	157	332
0804P	400/3/50	4	4x21,4	4x34,2	4x211	2,000	4	103,0	176	351
0904P	400/3/50	4	2x21,4+2x27	2x34,2+2x42,5	2x211+2x210	2,000	4	120,0	207	415
1004P	400/3/50	4	4x27	4x42,5	4x210	2,000	4	132,0	229	438
1104P	400/3/50	4	2x27+2x34,5	2x42,5+2x55,1	2x210+2x326	2,000	4	143,0	243	505
1204P	400/3/50	4	4x34,5	4x55,1	4x326	2,000	4	153,0	256	518

F.L.I.: Full load power

F.L.A.: Full load current

L.R.A.: Locked rotor amperes for single compressor

S.A.: Inrush current

(1) Values calculated referring to the version with the maximum number of fans working at the max absorbed current

(1)(2) Safety values to be considered when cabling the unit for power supply and line-protections

Data valid for standard units without any additional option.

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

Voltage tolerance: 10%

Maximum voltage unbalance: 3%

Give the typical operating conditions of units designed for outdoor installation, which can be associated (according to reference document IEC 60721) to the following classes:

- climatic conditions class 4K4H: air temperature range from -20 up to 55°C (*), relative humidity range from 4 up to 100%, with possible precipitations, at air pressure from 70 and 106 kPa and a maximum solar radiation of 1120 W/m²

- special climatic conditions negligible

- biological conditions class 4B1 and 4C2: locations in a generic urban area

- mechanically active substances class 4S2: locations in areas with sand or dust representative of urban areas

- mechanical conditions class 4M1: locations protected from significant vibrations or shocks

The required protection level for safe operation, according to reference document IEC 60529, is IP43XW (protection against access, to the most critical unit's parts, of external devices with diameter larger than 1 mm and rain).

The unit can be considered IP44XW protected, i.e. protected against access of external devices (with diameter larger than 1 mm) and water in general.

(*) for the unit's operating limits, see "selection limits" section

ELECTRICAL DATA

NX-N-G06/SL-K

[SI System]

SIZE	Power supply V/ph/Hz	Maximum values								
		n	Compressor			Fans (1)		Total (1)(2)		
			F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A. [A]	F.L.I. [kW]	F.L.A. [A]	S.A. [A]
0604P	400/3/50	4	4x15,36	4x24,9	4x172	1,200	4	74,00	133	301
0704P	400/3/50	4	2x15,36+2x21,4	2x24,9+2x34,2	2x172+2x211	1,200	4	89,00	165	340
0804P	400/3/50	4	4x21,4	4x34,2	4x211	1,200	4	102,0	184	359
0904P	400/3/50	4	2x21,4+2x27	2x34,2+2x42,5	2x211+2x210	1,200	4	115,0	207	415
1004P	400/3/50	4	4x27	4x42,5	4x210	1,200	4	127,0	229	438
1104P	400/3/50	4	2x27+2x34,5	2x42,5+2x55,1	2x210+2x326	1,200	4	140,0	251	513
1204P	400/3/50	4	4x34,5	4x55,1	4x326	1,200	4	151,0	264	527

F.L.I.: Full load power

F.L.A.: Full load current

L.R.A.: Locked rotor amperes for single compressor

S.A.: Inrush current

(1) Values calculated referring to the version with the maximum number of fans working at the max absorbed current

(1)(2) Safety values to be considered when cabling the unit for power supply and line-protections

Data valid for standard units without any additional option.

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

Voltage tolerance: 10%

Maximum voltage unbalance: 3%

Give the typical operating conditions of units designed for outdoor installation, which can be associated (according to reference document IEC 60721) to the following classes:

- climatic conditions class 4K4H: air temperature range from -20 up to 55°C (*), relative humidity range from 4 up to 100%, with possible precipitations, at air pressure from 70 and 106 kPa and a maximum solar radiation of 1120 W/m²
- special climatic conditions negligible
- biological conditions class 4B1 and 4C2: locations in a generic urban area
- mechanically active substances class 4S2: locations in areas with sand or dust representative of urban areas
- mechanical conditions class 4M1: locations protected from significant vibrations or shocks

The required protection level for safe operation, according to reference document IEC 60529, is IP43XW (protection against access, to the most critical unit's parts, of external devices with diameter larger than 1 mm and rain).

The unit can be considered IP44XW protected, i.e. protected against access of external devices (with diameter larger than 1 mm) and water in general.

(*) for the unit's operating limits, see "selection limits" section

ELECTRICAL DATA

MAXIMUM CABLES/BARS SECTION CONNECTED TO MAIN SWITCH AND SHORT TIME CURRENT STANDARD UNITS

Unit size (all versions)	Main switch type (category VCP)	Cable section	Bar dimensions	Further technical data
		∅ [mm ²]	□ [mm]	
0604	"TECHNOELECTRIC VC2P 3x 200A"	120	20x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html
0704	"TECHNOELECTRIC VC2P 3x 200A"	120	20x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html
0804	"TECHNOELECTRIC VC2P 3x 250A"	120	20x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html
0904	"TECHNOELECTRIC VC2P 3x 250A"	120	20x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html
1004	"TECHNOELECTRIC VC3P 3x 315A"	240	2x25x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html
1104	"TECHNOELECTRIC VC3P 3x 315A"	240	2x25x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html
1204	"TECHNOELECTRIC VC3P 3x 400A"	240	2x25x5	http://www.technoelectric.it/ing/VCP_tab_dati_ing.html

Electrical data valid for standard units without any additional option

Voltage tolerance: 10%

Maximum voltage unbalance: 3%

11.1 FULL LOAD SOUND LEVEL

NX-N-G06/K

SOUND POWER LEVEL IN COOLING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB								
0604P	95	94	91	89	88	83	77	72	92
0704P	95	94	91	89	88	83	77	72	92
0804P	96	95	92	90	89	84	78	73	93
0904P	97	96	93	91	90	85	79	74	94
1004P	98	97	94	92	91	86	80	75	95
1104P	98	97	94	92	91	86	80	75	95
1204P	98	97	94	92	91	86	80	75	95

Working conditions

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

Sound power in compliance with ISO 3744 for non-certified units.

Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

Sound power level in cooling, outdoors.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0604P	63	62	59	57	56	51	45	40	60
0704P	63	62	59	57	56	51	45	40	60
0804P	64	63	60	58	57	52	46	41	61
0904P	65	64	61	59	58	53	47	42	62
1004P	66	65	62	60	59	54	48	43	63
1104P	66	65	62	60	59	54	48	43	63
1204P	66	65	62	60	59	54	48	43	63

Working conditions

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

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.

FULL LOAD SOUND LEVEL

NX-N-G06/K

SOUND POWER LEVEL IN HEATING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB								
0604P	0	0	0	0	0	0	0	0	92
0704P	0	0	0	0	0	0	0	0	92
0804P	0	0	0	0	0	0	0	0	93
0904P	0	0	0	0	0	0	0	0	94
1004P	0	0	0	0	0	0	0	0	95
1104P	0	0	0	0	0	0	0	0	95
1204P	0	0	0	0	0	0	0	0	95

Working conditions

Sound power in compliance with ISO 3744 for non-certified units.

Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

Sound power level in heating, outdoors.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0604P	0	0	0	0	0	0	0	0	60
0704P	0	0	0	0	0	0	0	0	60
0804P	0	0	0	0	0	0	0	0	61
0904P	0	0	0	0	0	0	0	0	62
1004P	0	0	0	0	0	0	0	0	63
1104P	0	0	0	0	0	0	0	0	63
1204P	0	0	0	0	0	0	0	0	63

Working conditions

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.

FULL LOAD SOUND LEVEL

NX-N-G06/LN-K

SOUND POWER LEVEL IN COOLING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB								
0604P	88	87	86	84	81	76	69	63	86
0704P	88	87	86	84	81	76	69	63	86
0804P	89	88	87	85	82	77	70	64	87
0904P	90	89	88	86	83	78	71	65	88
1004P	91	90	89	87	84	79	72	66	89
1104P	92	91	90	88	85	80	73	67	90
1204P	92	91	90	88	85	80	73	67	90

Working conditions

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

Sound power in compliance with ISO 3744 for non-certified units.

Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

Sound power level in cooling, outdoors.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0604P	56	55	54	52	49	44	37	31	54
0704P	56	55	54	52	49	44	37	31	54
0804P	57	56	55	53	50	45	38	32	55
0904P	58	57	56	54	51	46	39	33	56
1004P	59	58	57	55	52	47	40	34	57
1104P	60	59	58	56	53	48	41	35	58
1204P	60	59	58	56	53	48	41	35	58

Working conditions

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

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.

FULL LOAD SOUND LEVEL

NX-N-G06/LN-K

SOUND POWER LEVEL IN HEATING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB								
0604P	0	0	0	0	0	0	0	0	87
0704P	0	0	0	0	0	0	0	0	87
0804P	0	0	0	0	0	0	0	0	88
0904P	0	0	0	0	0	0	0	0	89
1004P	0	0	0	0	0	0	0	0	90
1104P	0	0	0	0	0	0	0	0	91
1204P	0	0	0	0	0	0	0	0	91

Working conditions

Sound power in compliance with ISO 3744 for non-certified units.

Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

Sound power level in heating, outdoors.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0604P	0	0	0	0	0	0	0	0	55
0704P	0	0	0	0	0	0	0	0	55
0804P	0	0	0	0	0	0	0	0	56
0904P	0	0	0	0	0	0	0	0	57
1004P	0	0	0	0	0	0	0	0	58
1104P	0	0	0	0	0	0	0	0	59
1204P	0	0	0	0	0	0	0	0	59

Working conditions

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.

FULL LOAD SOUND LEVEL

NX-N-G06/SL-K

SOUND POWER LEVEL IN COOLING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB								
0604P	84	83	82	80	77	72	65	59	82
0704P	85	84	83	81	78	73	66	60	83
0804P	85	84	83	81	78	73	66	60	83
0904P	86	85	84	82	79	74	67	61	84
1004P	87	86	85	83	80	75	68	62	85
1104P	88	87	86	84	81	76	69	63	86
1204P	89	88	87	85	82	77	70	64	87

Working conditions

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

Sound power in compliance with ISO 3744 for non-certified units.

Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

Sound power level in cooling, outdoors.

SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0604P	52	51	50	48	45	40	33	27	50
0704P	53	52	51	49	46	41	34	28	51
0804P	53	52	51	49	46	41	34	28	51
0904P	54	53	52	50	47	42	35	29	52
1004P	55	54	53	51	48	43	36	30	53
1104P	56	55	54	52	49	44	37	31	54
1204P	57	56	55	53	50	45	38	32	55

Working conditions

Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.

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.

FULL LOAD SOUND LEVEL

NX-N-G06/SL-K

SOUND POWER LEVEL IN HEATING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound power level dB								
0604P	0	0	0	0	0	0	0	0	83
0704P	0	0	0	0	0	0	0	0	84
0804P	0	0	0	0	0	0	0	0	84
0904P	0	0	0	0	0	0	0	0	85
1004P	0	0	0	0	0	0	0	0	86
1104P	0	0	0	0	0	0	0	0	87
1204P	0	0	0	0	0	0	0	0	88

Working conditions

Sound power in compliance with ISO 3744 for non-certified units.

Such certification refers specifically to the sound Power Level in dB(A). This is therefore the only acoustic data to be considered as binding.

Sound power level in heating, outdoors.

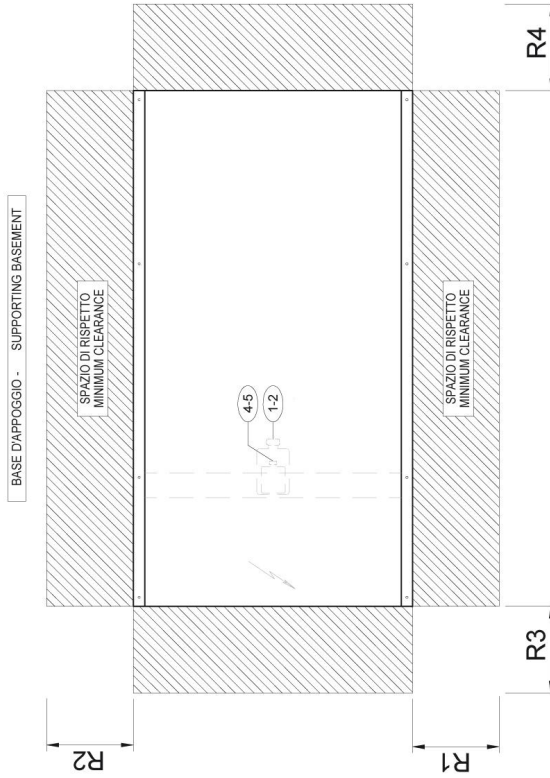
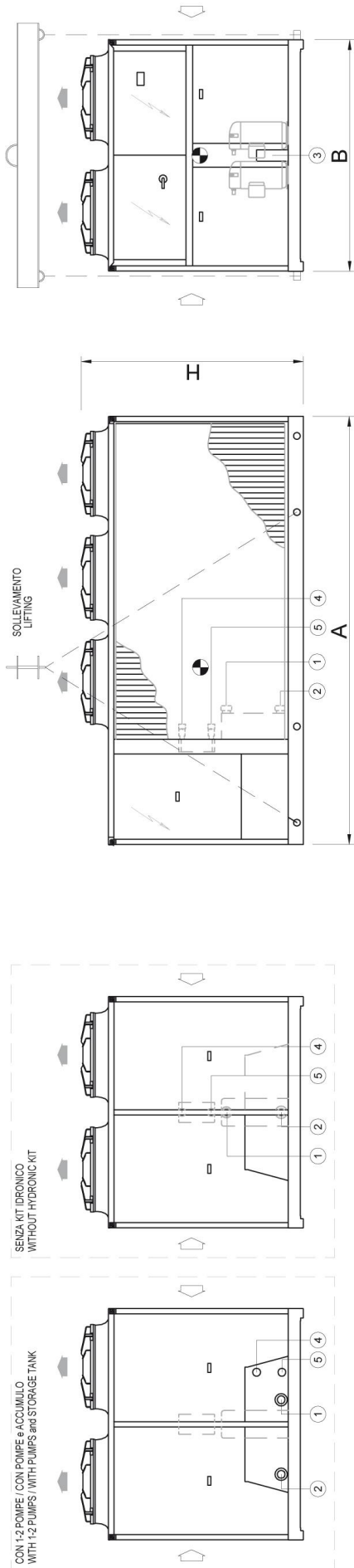
SOUND PRESSURE LEVEL									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0604P	0	0	0	0	0	0	0	0	51
0704P	0	0	0	0	0	0	0	0	52
0804P	0	0	0	0	0	0	0	0	52
0904P	0	0	0	0	0	0	0	0	53
1004P	0	0	0	0	0	0	0	0	54
1104P	0	0	0	0	0	0	0	0	55
1204P	0	0	0	0	0	0	0	0	56

Working conditions

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.

12.1 DIMENSIONAL DRAWINGS

NX-N-G06 0604P - 1204P



- ◁ - ENTRATA ARIA - AIR INLET
- ▷ - USCITA ARIA - AIR OUTLET
- - BARICENTRO - CENTER OF GRAVITY
- ① - ENTRATA ACQUA EVAP. / COND. - EVAP. / COND. WATER INLET
- ② - USCITA ACQUA EVAP. / COND. - EVAP. / COND. WATER OUTLET
- ③ - INGRESSO LINEA ELETTRICA - POWER INLET

Solo per versione NX-N/D
Only for NX-N/D version

- ④ - ENTRATA ACQUA DESURRISCALDATORI - DESUPERHEATERS WATER INLET
- ⑤ - USCITA ACQUA DESURRISCALDATORI - DESUPERHEATERS WATER OUTLET

REMARKS: For installation purposes, please refer to the documentation sent after the purchase contract. This technical data should be considered as indicative. Mitsubishi Electric Hydraulics & IT Cooling Systems S.p.A. may modify them at any moment. Data valid for standard units without any additional option.

DIMENSIONAL DRAWINGS

NX-N-G06 0604P - 1204P

[SI System]

SIZE	DIMENSIONS AND WEIGHTS				CLEARANCE				HEAT EXCHANGER USER SIDE		HEAT RECOVERY EX. USER SIDE	
	A	B	H	WEIGHT	R1	R2	R3	R4	IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø
NX-N-G06 /K /0604P	3110	2220	2150	1670	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /K /0704P	4110	2220	2150	1880	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /K /0804P	4110	2220	2150	2000	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /K /0904P	4110	2220	2150	2280	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /K /1004P	4110	2220	2150	2460	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /K /1104P	5110	2220	2150	2790	2000	2000	1100	2000	A	4"	-	-
NX-N-G06 /K /1204P	5110	2220	2150	2800	2000	2000	1100	2000	A	4"	-	-
NX-N-G06 /D /K /0604P	3110	2220	2150	1670	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /K /0704P	4110	2220	2150	1880	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /K /0804P	4110	2220	2150	2000	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /K /0904P	4110	2220	2150	2280	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /K /1004P	4110	2220	2150	2460	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /K /1104P	5110	2220	2150	2790	2000	2000	1100	2000	A	4"	A	1" 1/2
NX-N-G06 /D /K /1204P	5110	2220	2150	2800	2000	2000	1100	2000	A	4"	A	1" 1/2
NX-N-G06 /LN-K /0604P	3110	2220	2150	1720	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /LN-K /0704P	4110	2220	2150	1930	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /LN-K /0804P	4110	2220	2150	2040	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /LN-K /0904P	4110	2220	2150	2320	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /LN-K /1004P	4110	2220	2150	2510	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /LN-K /1104P	5110	2220	2150	2840	2000	2000	1100	2000	A	4"	-	-
NX-N-G06 /LN-K /1204P	5110	2220	2150	2850	2000	2000	1100	2000	A	4"	-	-
NX-N-G06 /D /LN-K /0604P	3110	2220	2150	1720	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /LN-K /0704P	4110	2220	2150	1930	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /LN-K /0804P	4110	2220	2150	2040	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /LN-K /0904P	4110	2220	2150	2320	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /LN-K /1004P	4110	2220	2150	2510	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /LN-K /1104P	5110	2220	2150	2840	2000	2000	1100	2000	A	4"	A	1" 1/2
NX-N-G06 /D /LN-K /1204P	5110	2220	2150	2850	2000	2000	1100	2000	A	4"	A	1" 1/2
NX-N-G06 /SL-K /0604P	3110	2220	2150	1720	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /SL-K /0704P	4110	2220	2150	2020	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /SL-K /0804P	4110	2220	2150	2130	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /SL-K /0904P	5110	2220	2150	2620	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /SL-K /1004P	5110	2220	2150	2790	2000	2000	1100	2000	A	3"	-	-
NX-N-G06 /SL-K /1104P	5110	2220	2150	2950	2000	2000	1100	2000	A	4"	-	-
NX-N-G06 /SL-K /1204P	5110	2220	2150	2960	2000	2000	1100	2000	A	4"	-	-
NX-N-G06 /D /SL-K /0604P	3110	2220	2150	1720	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /SL-K /0704P	4110	2220	2150	2020	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /SL-K /0804P	4110	2220	2150	2130	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /SL-K /0904P	5110	2220	2150	2620	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /SL-K /1004P	5110	2220	2150	2790	2000	2000	1100	2000	A	3"	A	1" 1/2
NX-N-G06 /D /SL-K /1104P	5110	2220	2150	2950	2000	2000	1100	2000	A	4"	A	1" 1/2
NX-N-G06 /D /SL-K /1204P	5110	2220	2150	2960	2000	2000	1100	2000	A	4"	A	1" 1/2

DIMENSIONAL DRAWINGS

LEGEND OF PIPE CONNECTIONS



TYPE = A
Grooved pipe

NOMINAL PIPE SIZE	PIPE OUTSIDE DIAMETER
ø inches	ø mm
¾	26,7
1	33,7
1 ¼	42,4
1 ½	48,3
2	60,3
2 ½	76,1
3	88,9
3 ½	101,6

NOMINAL PIPE SIZE	PIPE OUTSIDE DIAMETER
ø inches	ø mm
4	114,3
4 ½	127,0
5	139,7
6	168,3
8	219,1
10	273,0
12	323,9
14	355,6

UNI ISO 228/13

Pipe threads where pressure-tight joints are not made on the threads - Designation, dimensions and tolerances

Used terminology:

G: Pipe threads where pressure-tight joints are not made on the threads

A: Close tolerance class for external pipe threads where pressure-tight joints are not made on the threads

B: Wider tolerance class for external pipe threads where pressure-tight joints are not made on the threads

Internal threads: G letter followed by thread mark (only tolerance class)

External threads: G letter followed by thread mark and by A letter for A class external threads or by B letter for B class external threads.

UNI EN 10226-1

Pipe threads where pressure-tight joints are made on the threads - Designation, dimensions and tolerances

Used terminology:

Rp: Internal cylindrical threads where pressure-tight joints are made on the threads

Rc: Internal conical threads where pressure-tight joints are made on the threads

R: External conical threads where pressure-tight joints are made on the threads

Internal cylindrical threads: R letter followed by p letter

Internal conical threads: R letter followed by c letter

External conical threads: R letter

DESIGNATION	DESCRIPTION
UNI EN 10226-1 - Rp 1 1/2	Internal cylindrical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 1 1/2"
UNI EN 10226-1 - Rp 2 1/2	Internal cylindrical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 2 1/2"
UNI EN 10226-1 - Rp 3	Internal cylindrical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 3"
UNI EN 10226-1 - R 3	External conical threads where pressure-tight joints are made on the threads, defined by standard UNI ISO 7/1 Conventional ø 3"
UNI ISO 228/1 - G 4 B	Internal cylindrical threads where pressure-tight joints are not made on the threads, defined by standard UNI ISO 228/1 Tolerance class B for external thread Conventional ø 4"
DN 80 PN 16	Flange Nominal Diameter: 80 mm Nominal Pressure: 16 bar

NOTE:

Conventional diameter value [in inches] identifies short thread designation, based upon the relative standard.

All relative values are defined by standards.

As example, here below some values:

	UNI EN 10226-1	UNI ISO 228/1
Conventional ø	1"	1"
Pitch	2.309 mm	2.309 mm
External ø	33.249 mm	33.249 mm
Core ø	30.291 mm	30.291 mm
Thread height	1.479 mm	1.479 mm

13.1 HYDRONIC GROUP

13.1 HYDRONIC GROUP

The units can be fitted with the following types hydronic module:

- Only terminals (ON/OFF or modulating)
- The hydronic module allows to control the external pumps with the unit controller logic.
- Pumps (fixed or variable speed)
- The hydronic module includes the pumps and the main water circuit components, thus optimizing hydraulic and electrical installation space, time and costs.

The complete list of the options available is present in the accessory section of the bulletin.

For the hydronic modules with only terminals, the factory-mounted components are:

- Terminals for external pumps control (only relays or relays + 0-10V signal)
- Differential pressure switch (on heat exchanger)
- Drain valve (on heat exchanger)

For the hydronic modules with pumps, the factory-mounted components are:

- 2 pumps, 2 or 4 poles, low or high head, fixed speed or variable speed (inverter)
- Pump suction and discharge valves
- One-way valve (Clapet type for in-line pumps)
- Purge valve
- Drain plug
- Differential pressure switch (on heat exchanger)
- Drain valve (on heat exchanger)
- 10 mm insulation lining on pumps and pipes

The pumps are controlled in duty/standby, with running hours equalization and changeover on device failure.

The electrical panel of the unit is protected with fuses and contactors with thermals cut-out.

Each of the components of the hydraulic group has been designed to optimise hydraulic and electrical installation space, time and costs.

The hydronic group is protected by a special casing ventilating (versions LN and SL).

The hydronic kit of this family includes in-line pumps.

13.1 IN-LINE PUMPS

Low or high head pumps

Centrifugal pumps with in-line suction and delivery flanges, in single or twin versions. Pump body in cast iron and impeller in AISI 316L stainless steel or cast-iron, entirely laser technology welded. Mechanical seal with EPDM elastomers. Three-phase electric motor protected to IP55, insulation class F, suitable for continuous service.

13.1 BUFFER TANK

The buffer tank system features:

- buffer tank, which capacity depends on the unit size (see the dedicated table)
- 20 mm insulation lining on buffer tank
- expansion vessel (EPDM membrane), with 2,5 bar pre-charge
- safety valve calibrated to 5 bars (Longitudinal-V shaped units) or 6 bars (Horizontal V-shaped units)
- pressure gauge
- filling valve
- drain valve
- air vent

13.1 SPECIAL PUMPS

For pumps with different configurations, please contact our sales department.

13.1 OTHER COMPONENTS

The hydronic kits do not include the following accessories though these are recommended to ensure correct system operation:

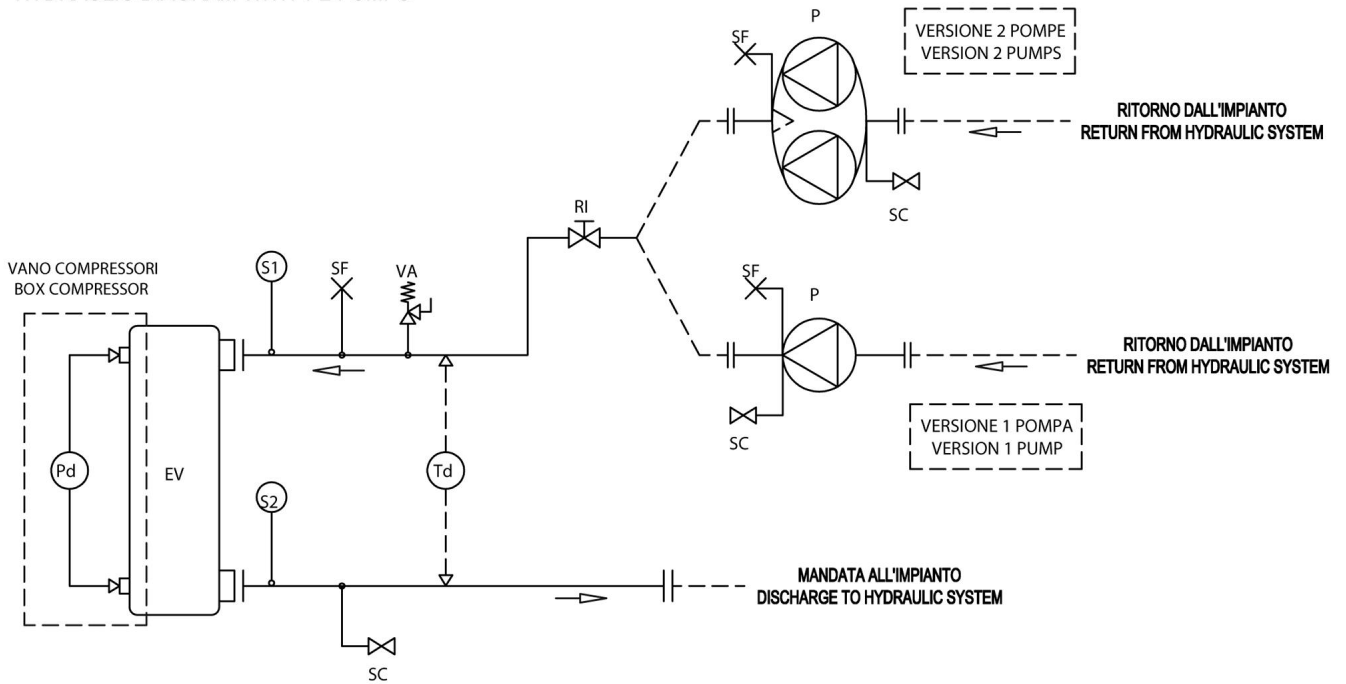
- Flow-out switch
- Pressure gauges upline and downline from the unit
- Flexible joints on piping
- On-off valves
- Outlet control thermometer
- Mains filter.

Possible configurations

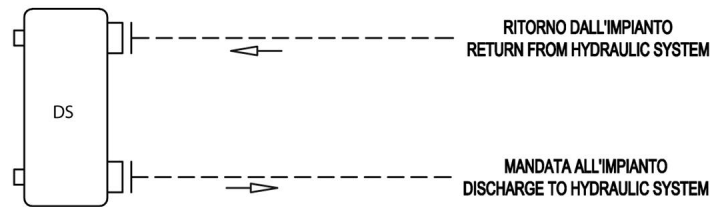
PUMP GROUP	Versions		
	K	LN-K	SL-K
U - 1 PUMP 2P LH (FIX SPEED)(4736)	X	X	X
U - 1 PUMP 2P HH (FIX SPEED)(4737)	X	X	X
U - 2 PUMPS 2P LH (FIX SPEED)(4741)	X	X	X
U - 2 PUMPS 2P HH (FIX SPEED)(4742)	X	X	X
U - 1 PUMP 2P LH (VAR SPEED)(4747)	X	X	X
U - 1 PUMP 2P HH (VAR SPEED)(4748)	X	X	X
U - 2 PUMPS 2P LH (VAR SPEED)(4752)	X	X	X
U - 2 PUMPS 2P HH (VAR SPEED)(4753)	X	X	X

HYDRONIC GROUP

SCHEMA IDRAULICO CON 1-2 POMPE
HYDRAULIC DIAGRAM WITH 1-2 PUMPS



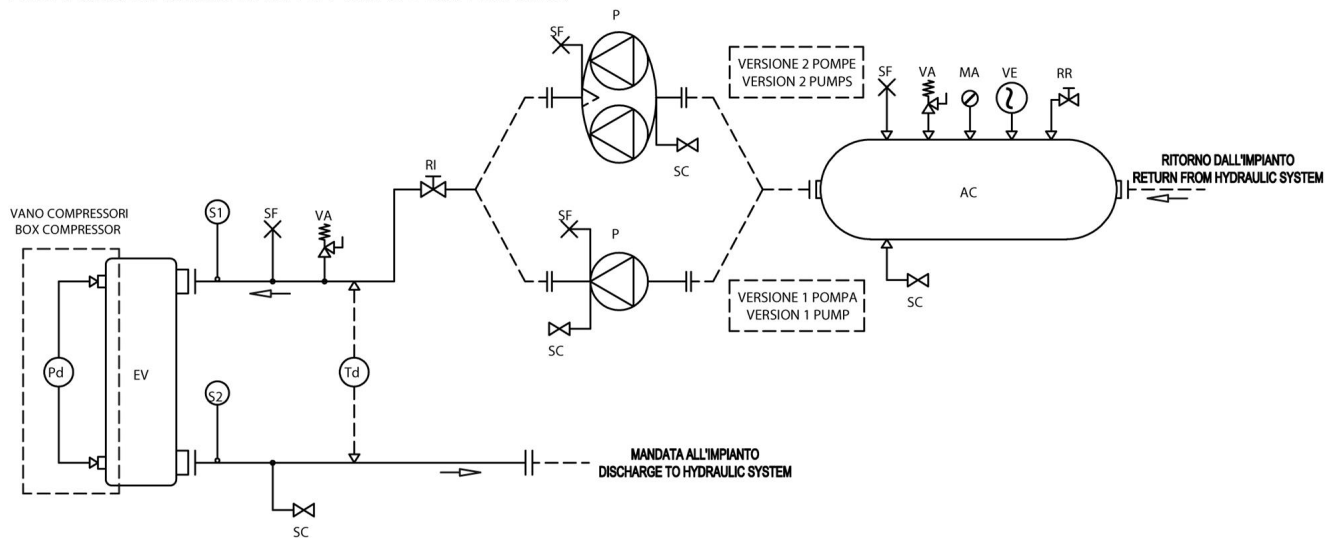
SOLO PER /D
ONLY FOR /D



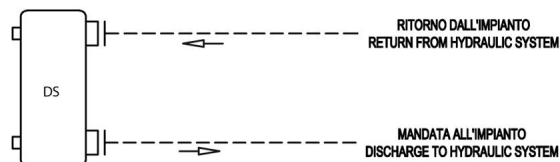
LEGENDA - LEGEND	
DS	Desurriscaldatore (scambiatore a piastre - opzionale) Desuperheater (plate exchanger - optional)
EV	Evaporatore (scambiatore a piastre) Evaporator (plate exchanger)
P	Pompa di circolazione Available pressure pump
Pd	Pressostato differenziale Differential pressure switch
RI	Rubinetto di intercettazione Shut-off valve
SC	Valvola di scarico Drain valve
SF	Valvola di sfiato aria Purge valve
S1/2	Sonda temperatura acqua Water temperature probe
Td	Trasduttore di pressione differenziale (solo con VPF) Differential pressure transducer (only with VPF)
VA	Valvola di sicurezza Safety valve

HYDRONIC GROUP

SCHEMA IDRAULICO CON 1-2 POMPE + ACCUMULO
HYDRAULIC DIAGRAM WITH 1-2 PUMPS + BUFFER TANK



SOLO PER /D
ONLY FOR /D



LEGENDA - LEGEND

LEGENDA - LEGEND	
AC	Accumulo Water tank
DS	Desurriscaldatore (scambiatore a piastre - opzionale) Desuperheater (plate exchanger - optional)
EV	Evaporatore (scambiatore a piastre) Evaporator (plate exchanger)
MA	Manometro Water pressure gauge
P	Pompa di circolazione Available pressure pump
Pd	Pressostato differenziale Differential pressure switch
RI	Rubinetto di intercettazione Shut-off valve
RR	Rubinetto reintegro Filling valve
SC	Valvola di scarico Drain valve
SF	Valvola di sfiato aria Purge valve
S1/2	Sonda temperatura acqua Water temperature probe
Td	Trasduttore di pressione differenziale (solo con VPF) Differential pressure transducer (only with VPF)
VA	Valvola di sicurezza Safety valve
VE	Vaso di espansione Expansion tank

HYDRONIC GROUP

Hydronic kit positioning

	Version	U - 1 PUMP 2P LH (FIX SPEED) (4736)				U - 1 PUMP 2P HH (FIX SPEED) (4737)				U - 2 PUMPS 2P LH (FIX SPEED) (4741)				U - 2 PUMPS 2P HH (FIX SPEED) (4742)			
		extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]	extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]	extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]	extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]
0604P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
0704P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
0804P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
0904P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
1004P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
1104P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
1204P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-

NOT AVAILABLE

- extra L** Unit's extra length
- extra W** Unit's extra operating width (NOT to be considered for transport)
- extra H** Unit's extra height
- extra H** Unit's extra weight (pumps and piping)
- U - 1 PUMP 2P LH (FIX SPEED)** U - 1 PUMP 2P LH (FIX SPEED)
- U - 1 PUMP 2P HH (FIX SPEED)** U - 1 PUMP 2P HH (FIX SPEED)
- U - 2 PUMPS 2P LH (FIX SPEED)** U - 2 PUMPS 2P LH (FIX SPEED)
- U - 2 PUMPS 2P HH (FIX SPEED)** U - 2 PUMPS 2P HH (FIX SPEED)
- Not available

HYDRONIC GROUP

Hydronic kit positioning

	Version	U - 1 PUMP 2P LH (VAR SPEED) (4747)				U - 1 PUMP 2P HH (VAR SPEED) (4748)				U - 2 PUMPS 2P LH (VAR SPEED) (4752)				U - 2 PUMPS 2P HH (VAR SPEED) (4753)			
		extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]	extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]	extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]	extra L [mm]	extra W [mm]	extra H [mm]	extra WGT [kg]
0604P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
0704P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
0804P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
0904P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
1004P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
1104P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
1204P	K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	LN-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-
	SL-K	/	/	/	-	/	/	/	-	/	/	/	-	/	/	/	-

NOT AVAILABLE

extra L	Unit's extra length
extra W	Unit's extra operating width (NOT to be considered for transport)
extra H	Unit's extra height
extra H	Unit's extra weight (pumps and piping)
U - 1 PUMP 2P LH (VAR SPEED)	U - 1 PUMP 2P LH (VAR SPEED)
U - 1 PUMP 2P HH (VAR SPEED)	U - 1 PUMP 2P HH (VAR SPEED)
U - 2 PUMPS 2P LH (VAR SPEED)	U - 2 PUMPS 2P LH (VAR SPEED)
U - 2 PUMPS 2P HH (VAR SPEED)	U - 2 PUMPS 2P HH (VAR SPEED)
-	Not available

HYDRONIC GROUP

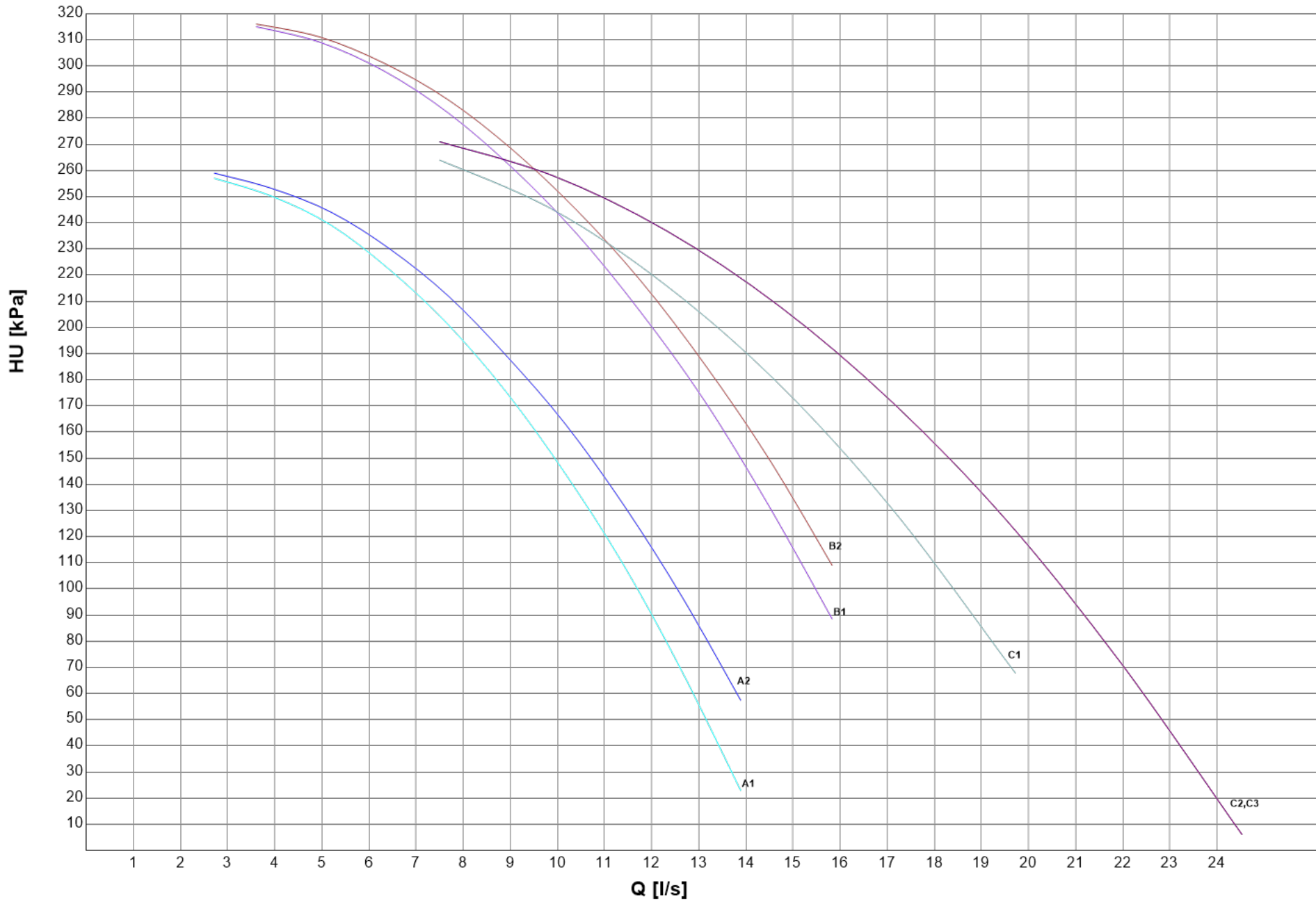
HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P HH (FIX SPEED)

SIZE		CH		HP		PUMP				CH	HP	
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]
0604P	K	153,7	7,349	163,1	7,873	A1	LNEE 50-160/40/2	2	8	4,000	208	198
	LN-K	146,6	7,012	155,4	7,503						213	205
	SL-K	142,1	6,796	150,6	7,270						217	209
0704P	K	178,4	8,529	189,6	9,154	A2	LNEE 50-160/40/2	2	8	4,000	197	185
	LN-K	167,4	8,005	180,7	8,722						206	193
	SL-K	168,5	8,057	181,4	8,757						206	193
0804P	K	202,5	9,686	216,6	10,46	B1	LNEE 50-160/55/2	2	11	5,500	250	235
	LN-K	192,7	9,213	208,1	10,05						258	243
	SL-K	193,6	9,259	209,8	10,13						258	242
0904P	K	235,4	11,26	255,0	12,31	B2	LNEE 50-160/55/2	2	11	5,500	228	205
	LN-K	224,9	10,76	239,7	11,57						238	222
	SL-K	222,7	10,65	241,4	11,65						240	220
1004P	K	263,2	12,58	281,5	13,59	C1	LNEE 50-160/55/2	2	11	5,500	212	197
	LN-K	247,8	11,85	266,7	12,88						222	208
	SL-K	245,4	11,74	265,7	12,83						224	209
1104P	K	286,0	13,68	304,5	14,70	C2	LNEE 65-125/75/2	2	14	7,500	222	208
	LN-K	271,4	12,98	291,5	14,07						230	217
	SL-K	269,8	12,90	288,9	13,94						231	218
1204P	K	306,5	14,66	323,9	15,64	C3	LNEE 65-125/75/2	2	14	7,500	209	195
	LN-K	291,0	13,91	309,3	14,93						219	205
	SL-K	291,2	13,93	310,3	14,98						219	205

(1) Values refer to nominal conditions
 CH Cooling mode
 HP HP mode
 Pf Cooling capacity unit (Cooling mode)
 Pt Heating capacity unit (Heating mode)

Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P HH (FIX SPEED)



HYDRONIC GROUP

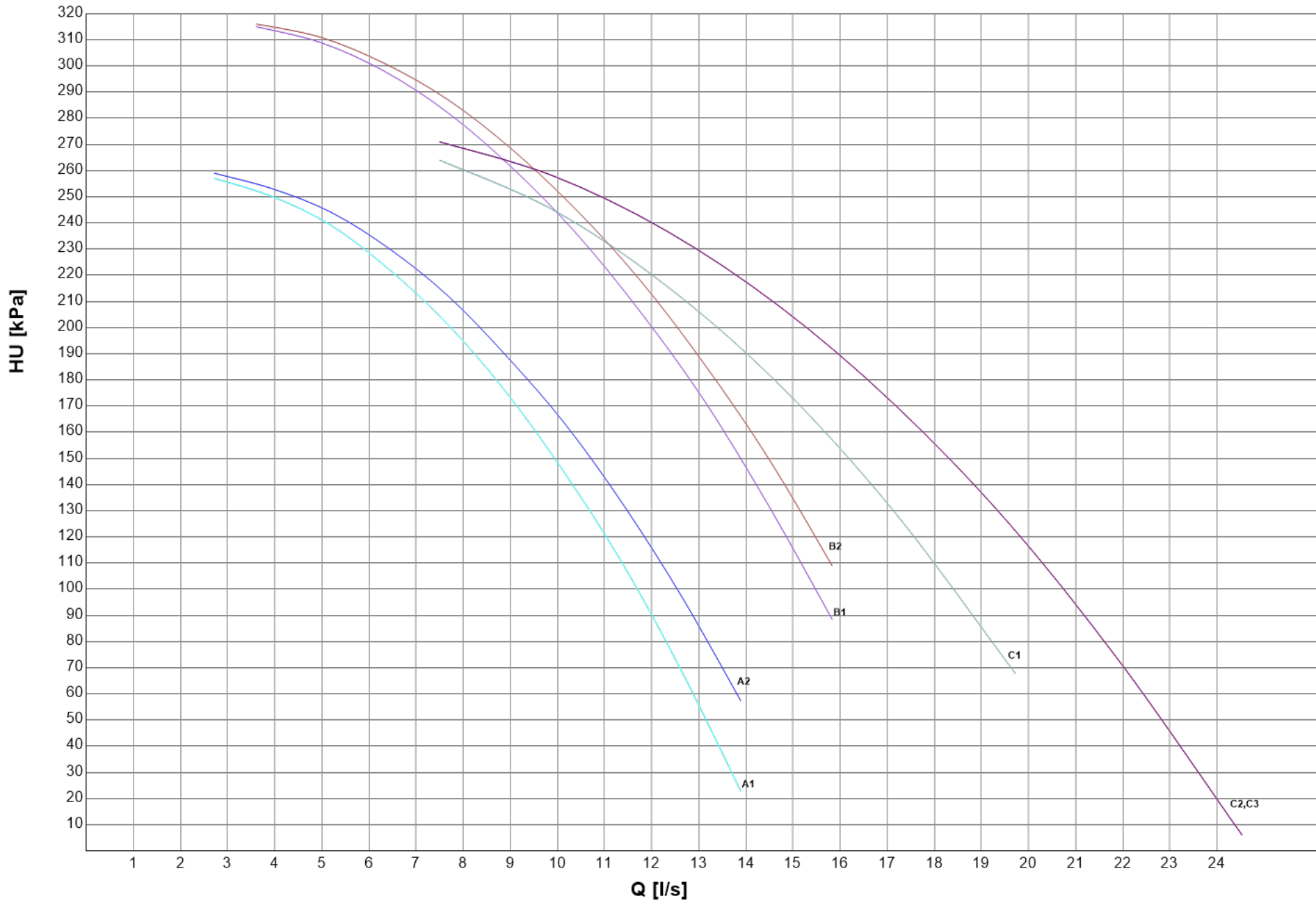
HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P HH (VAR SPEED)

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]
0604P	K	153,7	7,349	163,1	7,873	A1	LNEE 50-160/40/2	2	8	4,000	208	198
	LN-K	146,6	7,012	155,4	7,503						213	205
	SL-K	142,1	6,796	150,6	7,270						217	209
0704P	K	178,4	8,529	189,6	9,154	A2	LNEE 50-160/40/2	2	8	4,000	197	185
	LN-K	167,4	8,005	180,7	8,722						206	193
	SL-K	168,5	8,057	181,4	8,757						206	193
0804P	K	202,5	9,686	216,6	10,46	B1	LNEE 50-160/55/2	2	11	5,500	250	235
	LN-K	192,7	9,213	208,1	10,05						258	243
	SL-K	193,6	9,259	209,8	10,13						258	242
0904P	K	235,4	11,26	255,0	12,31	B2	LNEE 50-160/55/2	2	11	5,500	228	205
	LN-K	224,9	10,76	239,7	11,57						238	222
	SL-K	222,7	10,65	241,4	11,65						240	220
1004P	K	263,2	12,58	281,5	13,59	C1	LNEE 50-160/55/2	2	11	5,500	212	197
	LN-K	247,8	11,85	266,7	12,88						222	208
	SL-K	245,4	11,74	265,7	12,83						224	209
1104P	K	286,0	13,68	304,5	14,70	C2	LNEE 65-125/75/2	2	14	7,500	222	208
	LN-K	271,4	12,98	291,5	14,07						230	217
	SL-K	269,8	12,90	288,9	13,94						231	218
1204P	K	306,5	14,66	323,9	15,64	C3	LNEE 65-125/75/2	2	14	7,500	209	195
	LN-K	291,0	13,91	309,3	14,93						219	205
	SL-K	291,2	13,93	310,3	14,98						219	205

(1) Values refer to nominal conditions
 CH Cooling mode
 HP HP mode
 Pf Cooling capacity unit (Cooling mode)
 Pt Heating capacity unit (Heating mode)

Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P HH (VAR SPEED)



HYDRONIC GROUP

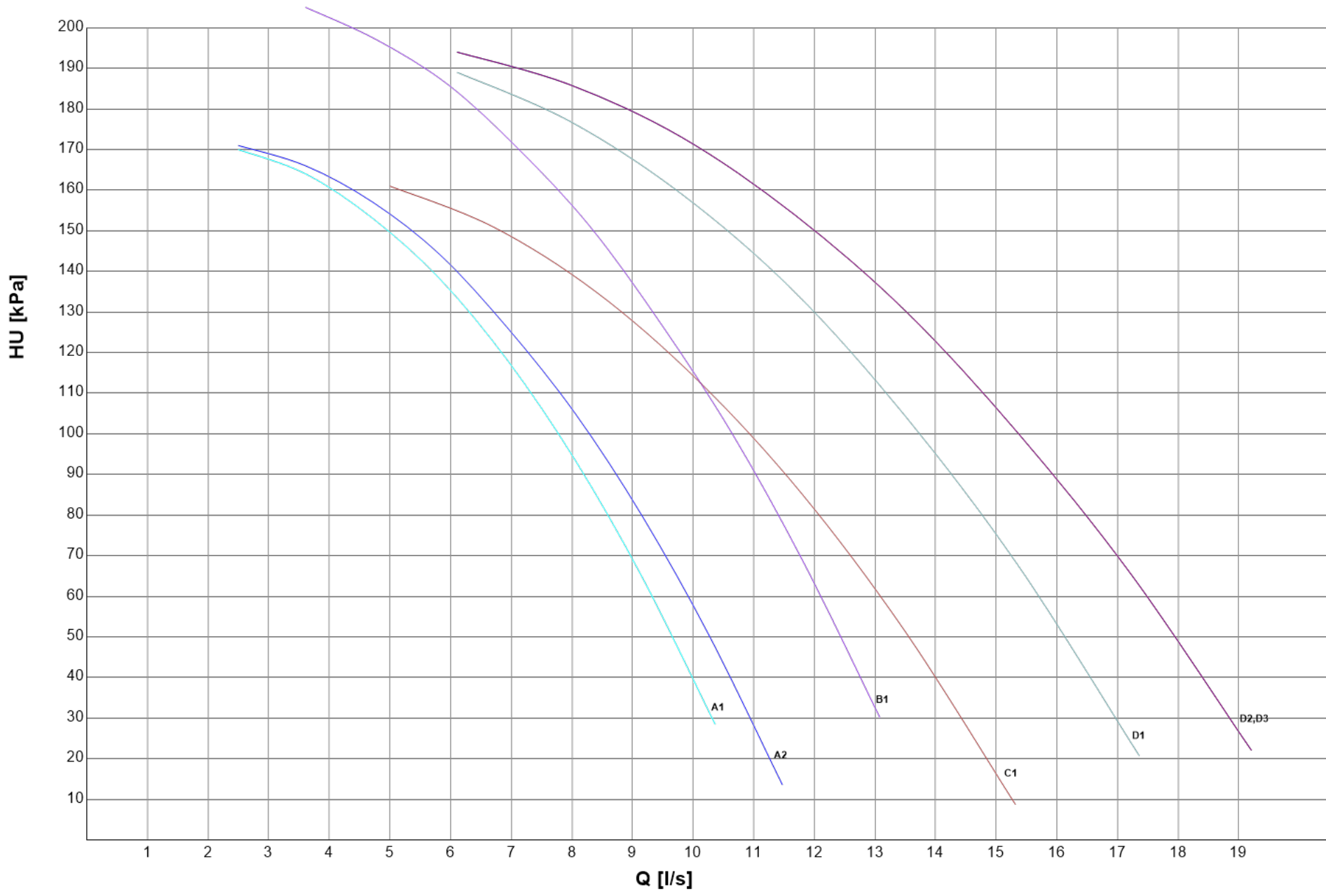
HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P LH (FIX SPEED)

SIZE		CH		HP		PUMP				CH	HP	
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]
0604P	K	153,7	7,349	163,1	7,873	A1	LNEE 50-125/22/2	2	5	2,200	110	97,8
	LN-K	146,6	7,012	155,4	7,503						117	106
	SL-K	142,1	6,796	150,6	7,270						121	111
0704P	K	178,4	8,529	189,6	9,154	A2	LNEE 50-125/22/2	2	5	2,200	94,7	79,9
	LN-K	167,4	8,005	180,7	8,722						106	90,3
	SL-K	168,5	8,057	181,4	8,757						105	89,5
0804P	K	202,5	9,686	216,6	10,46	B1	LNEE 50-125/30/2	2	6	3,000	123	105
	LN-K	192,7	9,213	208,1	10,05						133	115
	SL-K	193,6	9,259	209,8	10,13						132	113
0904P	K	235,4	11,26	255,0	12,31	C1	LNEE 65-125/30/2	2	6	3,000	94,7	75,6
	LN-K	224,9	10,76	239,7	11,57						103	89,3
	SL-K	222,7	10,65	241,4	11,65						105	87,8
1004P	K	263,2	12,58	281,5	13,59	D1	LNEE 65-125/30/2	2	6	3,000	121	103
	LN-K	247,8	11,85	266,7	12,88						132	116
	SL-K	245,4	11,74	265,7	12,83						134	117
1104P	K	286,0	13,68	304,5	14,70	D2	LNEE 65-125/40/2	2	8	4,000	128	112
	LN-K	271,4	12,98	291,5	14,07						138	122
	SL-K	269,8	12,90	288,9	13,94						139	124
1204P	K	306,5	14,66	323,9	15,64	D3	LNEE 65-125/40/2	2	8	4,000	113	95,8
	LN-K	291,0	13,91	309,3	14,93						124	108
	SL-K	291,2	13,93	310,3	14,98						124	107

(1) Values refer to nominal conditions
 CH Cooling mode
 HP HP mode
 Pf Cooling capacity unit (Cooling mode)
 Pt Heating capacity unit (Heating mode)

Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P LH (FIX SPEED)



HYDRONIC GROUP

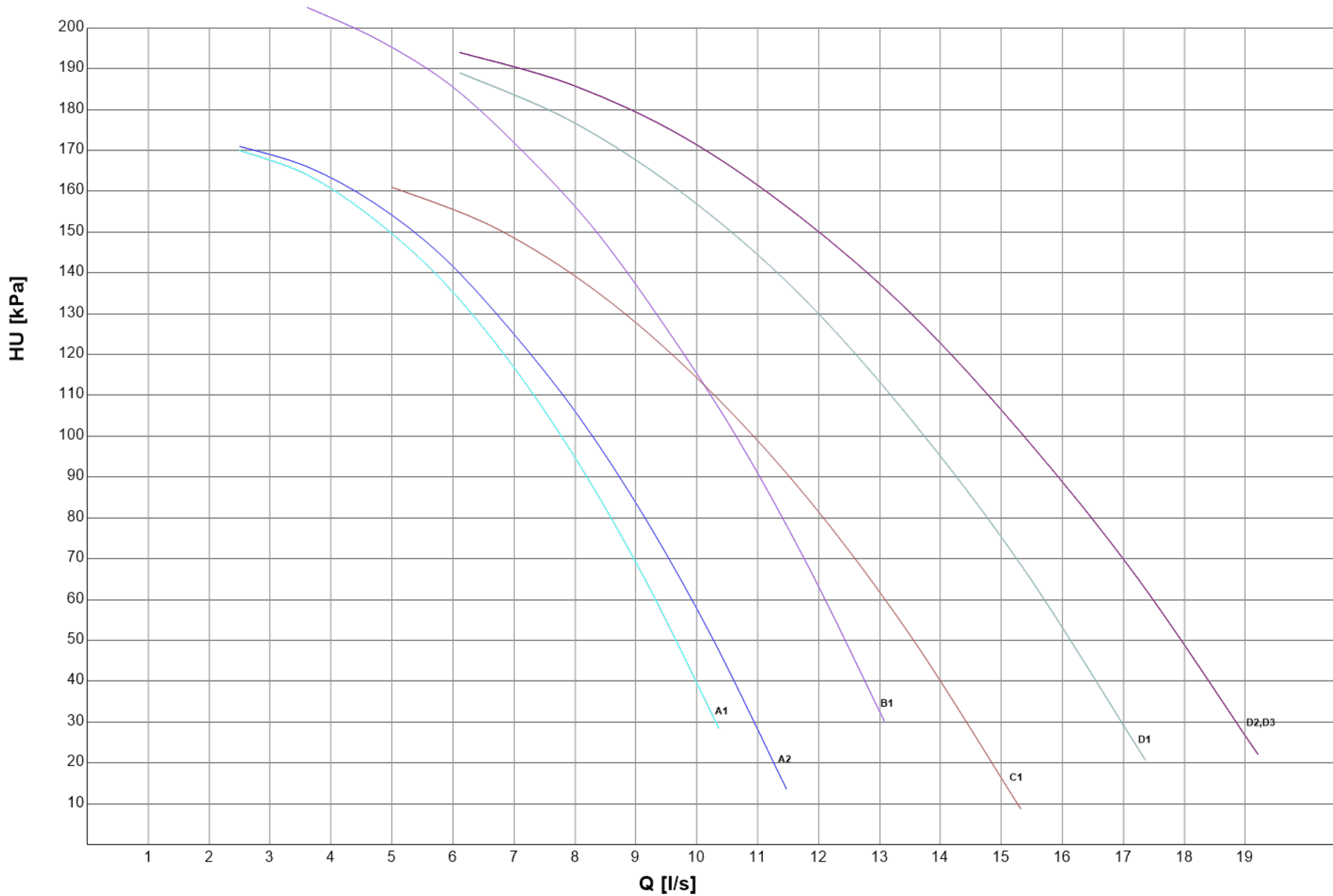
HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P LH (VAR SPEED)

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]
0604P	K	153,7	7,349	163,1	7,873	A1	LNEE 50-125/22/2	2	5	2,200	110	97,8
	LN-K	146,6	7,012	155,4	7,503						117	106
	SL-K	142,1	6,796	150,6	7,270						121	111
0704P	K	178,4	8,529	189,6	9,154	A2	LNEE 50-125/22/2	2	5	2,200	94,7	79,9
	LN-K	167,4	8,005	180,7	8,722						106	90,3
	SL-K	168,5	8,057	181,4	8,757						105	89,5
0804P	K	202,5	9,686	216,6	10,46	B1	LNEE 50-125/30/2	2	6	3,000	123	105
	LN-K	192,7	9,213	208,1	10,05						133	115
	SL-K	193,6	9,259	209,8	10,13						132	113
0904P	K	235,4	11,26	255,0	12,31	C1	LNEE 65-125/30/2	2	6	3,000	94,7	75,6
	LN-K	224,9	10,76	239,7	11,57						103	89,3
	SL-K	222,7	10,65	241,4	11,65						105	87,8
1004P	K	263,2	12,58	281,5	13,59	D1	LNEE 65-125/30/2	2	6	3,000	121	103
	LN-K	247,8	11,85	266,7	12,88						132	116
	SL-K	245,4	11,74	265,7	12,83						134	117
1104P	K	286,0	13,68	304,5	14,70	D2	LNEE 65-125/40/2	2	8	4,000	128	112
	LN-K	271,4	12,98	291,5	14,07						138	122
	SL-K	269,8	12,90	288,9	13,94						139	124
1204P	K	306,5	14,66	323,9	15,64	D3	LNEE 65-125/40/2	2	8	4,000	113	95,8
	LN-K	291,0	13,91	309,3	14,93						124	108
	SL-K	291,2	13,93	310,3	14,98						124	107

(1) Values refer to nominal conditions
 CH Cooling mode
 HP HP mode
 Pf Cooling capacity unit (Cooling mode)
 Pt Heating capacity unit (Heating mode)

Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P LH (VAR SPEED)



HYDRONIC GROUP

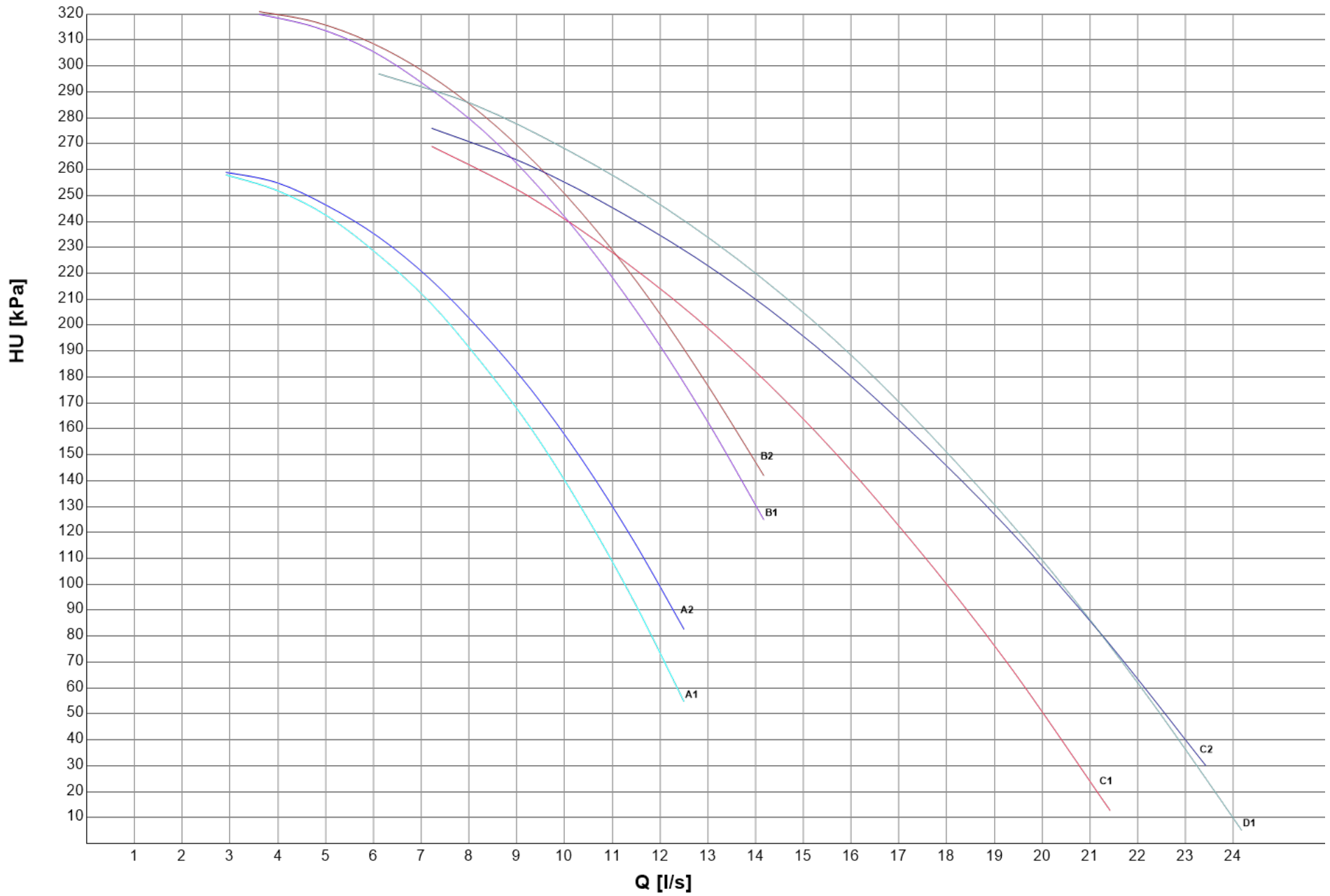
HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P HH (FIX SPEED)

SIZE		CH		HP		PUMP				CH	HP	
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]
0604P	K	153,7	7,349	163,1	7,873	A1	LNTE 50-160/40/2	2	8	4,000	206	195
	LN-K	146,6	7,012	155,4	7,503						212	202
	SL-K	142,1	6,796	150,6	7,270						216	207
0704P	K	178,4	8,529	189,6	9,154	A2	LNTE 50-160/40/2	2	8	4,000	193	179
	LN-K	167,4	8,005	180,7	8,722						203	188
	SL-K	168,5	8,057	181,4	8,757						202	188
0804P	K	202,5	9,686	216,6	10,46	B1	LNTE 50-160/55/2	2	11	5,500	249	232
	LN-K	192,7	9,213	208,1	10,05						258	241
	SL-K	193,6	9,259	209,8	10,13						258	239
0904P	K	235,4	11,26	255,0	12,31	B2	LNTE 50-160/55/2	2	11	5,500	223	196
	LN-K	224,9	10,76	239,7	11,57						234	215
	SL-K	222,7	10,65	241,4	11,65						237	213
1004P	K	263,2	12,58	281,5	13,59	C1	LNTE 65-125/75/2	2	14	7,500	206	189
	LN-K	247,8	11,85	266,7	12,88						217	201
	SL-K	245,4	11,74	265,7	12,83						218	202
1104P	K	286,0	13,68	304,5	14,70	C2	LNTE 65-125/75/2	2	14	7,500	214	200
	LN-K	271,4	12,98	291,5	14,07						223	209
	SL-K	269,8	12,90	288,9	13,94						224	210
1204P	K	306,5	14,66	323,9	15,64	D1	LNTE 65-160/75/2	2	14	7,500	210	194
	LN-K	291,0	13,91	309,3	14,93						221	206
	SL-K	291,2	13,93	310,3	14,98						221	205

(1) Values refer to nominal conditions
 CH Cooling mode
 HP HP mode
 Pf Cooling capacity unit (Cooling mode)
 Pt Heating capacity unit (Heating mode)

Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P HH (FIX SPEED)



HYDRONIC GROUP

HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P HH (VAR SPEED)

SIZE		CH		HP		PUMP				CH	HP	
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]
0604P	K	153,7	7,349	163,1	7,873	A1	LNTE 50-160/40/2	2	8	4,000	206	195
	LN-K	146,6	7,012	155,4	7,503						212	202
	SL-K	142,1	6,796	150,6	7,270						216	207
0704P	K	178,4	8,529	189,6	9,154	A2	LNTE 50-160/40/2	2	8	4,000	193	179
	LN-K	167,4	8,005	180,7	8,722						203	188
	SL-K	168,5	8,057	181,4	8,757						202	188
0804P	K	202,5	9,686	216,6	10,46	B1	LNTE 50-160/55/2	2	11	5,500	249	232
	LN-K	192,7	9,213	208,1	10,05						258	241
	SL-K	193,6	9,259	209,8	10,13						258	239
0904P	K	235,4	11,26	255,0	12,31	B2	LNTE 50-160/55/2	2	11	5,500	223	196
	LN-K	224,9	10,76	239,7	11,57						234	215
	SL-K	222,7	10,65	241,4	11,65						237	213
1004P	K	263,2	12,58	281,5	13,59	C1	LNTE 65-125/75/2	2	14	7,500	206	189
	LN-K	247,8	11,85	266,7	12,88						217	201
	SL-K	245,4	11,74	265,7	12,83						218	202
1104P	K	286,0	13,68	304,5	14,70	C2	LNTE 65-125/75/2	2	14	7,500	214	200
	LN-K	271,4	12,98	291,5	14,07						223	209
	SL-K	269,8	12,90	288,9	13,94						224	210
1204P	K	306,5	14,66	323,9	15,64	D1	LNTE 65-160/75/2	2	14	7,500	210	194
	LN-K	291,0	13,91	309,3	14,93						221	206
	SL-K	291,2	13,93	310,3	14,98						221	205

(1) Values refer to nominal conditions

CH Cooling mode

HP HP mode

Pf Cooling capacity unit (Cooling mode)

Pt Heating capacity unit (Heating mode)

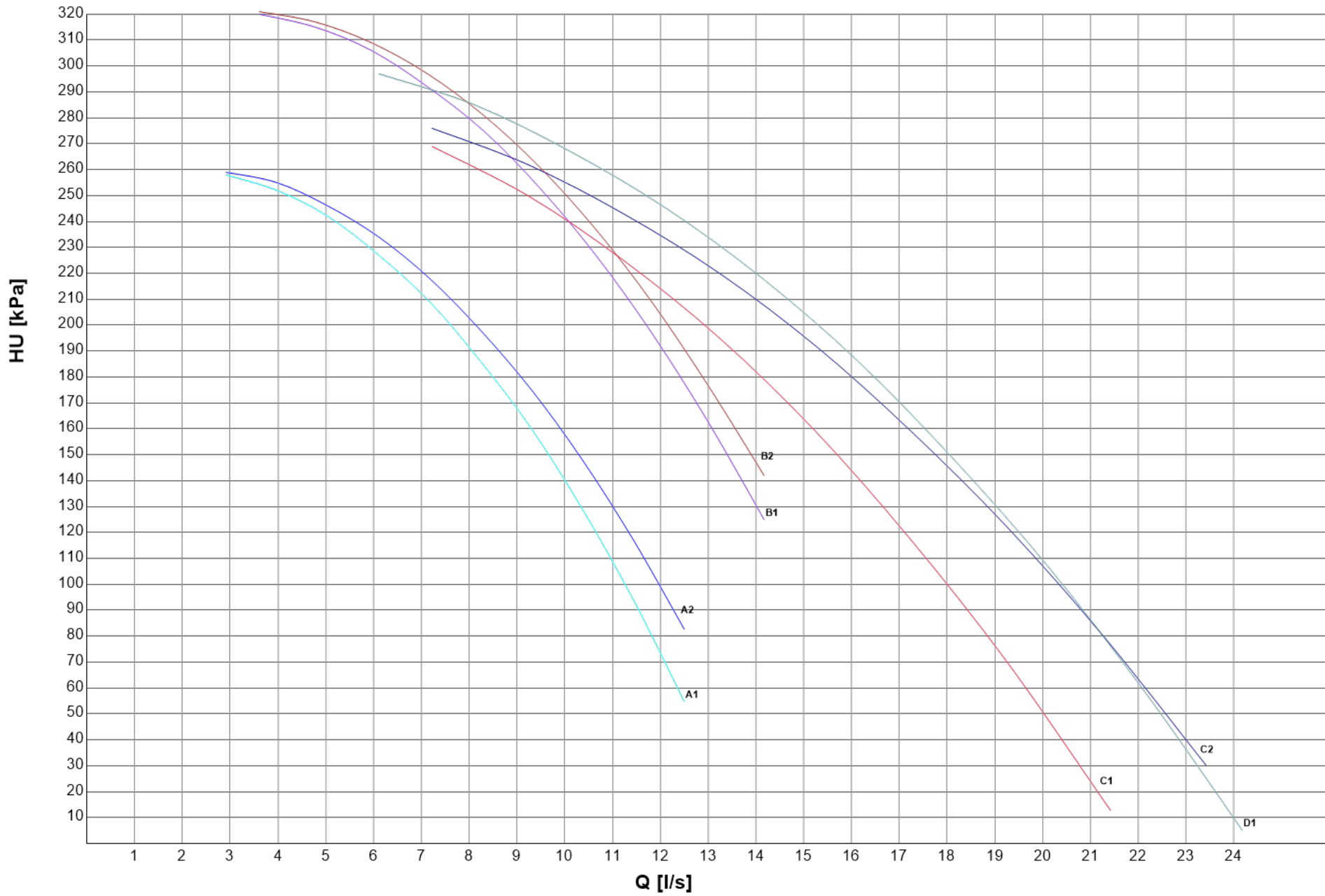
Q Plant (side) exchanger water flow

F.L.I. Pump power input

F.L.A. Pump running current

HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P HH (VAR SPEED)



HYDRONIC GROUP

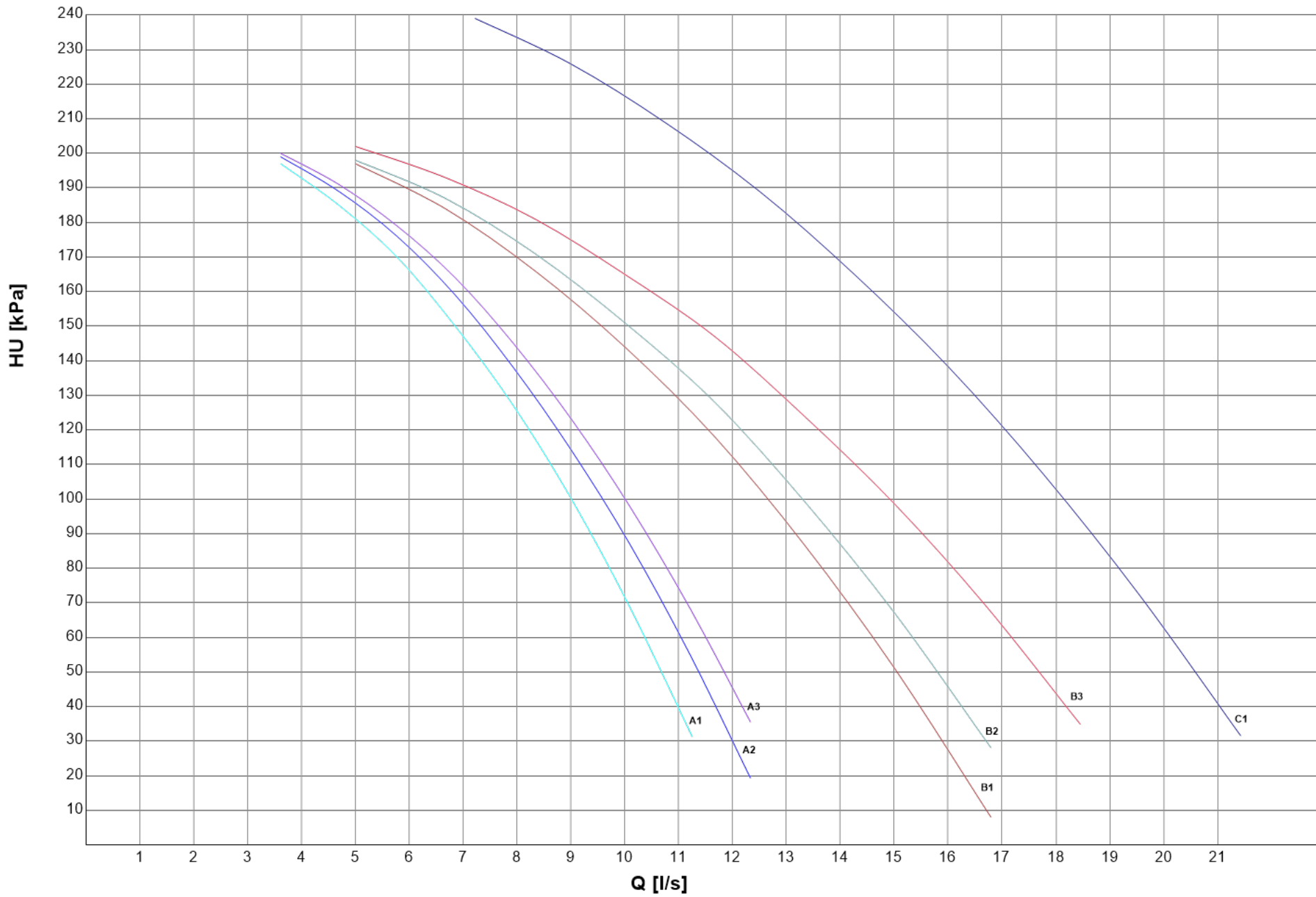
HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (FIX SPEED)

SIZE		CH		HP		PUMP					CH	HP								
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU								
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]								
0604P	K	153,7	7,349	163,1	7,873	A1	LNTE 50-125/30/2	2	6	3,000	140	128								
	LN-K	146,6	7,012	155,4	7,503						147	137								
	SL-K	142,1	6,796	150,6	7,270						151	142								
0704P	K	178,4	8,529	189,6	9,154	A2					LNTE 50-125/30/2	2	6	3,000	125	111				
	LN-K	167,4	8,005	180,7	8,722										137	121				
	SL-K	168,5	8,057	181,4	8,757										136	120				
0804P	K	202,5	9,686	216,6	10,46	A3									LNTE 50-125/30/2	2	6	3,000	108	88,7
	LN-K	192,7	9,213	208,1	10,05														119	99,0
	SL-K	193,6	9,259	209,8	10,13														118	97,0
0904P	K	235,4	11,26	255,0	12,31	B1	LNTE 65-125/40/2	2	8	4,000									125	106
	LN-K	224,9	10,76	239,7	11,57														133	119
	SL-K	222,7	10,65	241,4	11,65														135	118
1004P	K	263,2	12,58	281,5	13,59	B2					LNTE 65-125/40/2	2	8	4,000					113	94,8
	LN-K	247,8	11,85	266,7	12,88														125	108
	SL-K	245,4	11,74	265,7	12,83														126	108
1104P	K	286,0	13,68	304,5	14,70	B3									LNTE 65-125/40/2	2	8	4,000	119	104
	LN-K	271,4	12,98	291,5	14,07														129	113
	SL-K	269,8	12,90	288,9	13,94														130	115
1204P	K	306,5	14,66	323,9	15,64	C1	LNTE 65-125/55/2	2	11	5,500									159	144
	LN-K	291,0	13,91	309,3	14,93														170	155
	SL-K	291,2	13,93	310,3	14,98														170	155

(1) Values refer to nominal conditions
 CH Cooling mode
 HP HP mode
 Pf Cooling capacity unit (Cooling mode)
 Pt Heating capacity unit (Heating mode)

Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (FIX SPEED)



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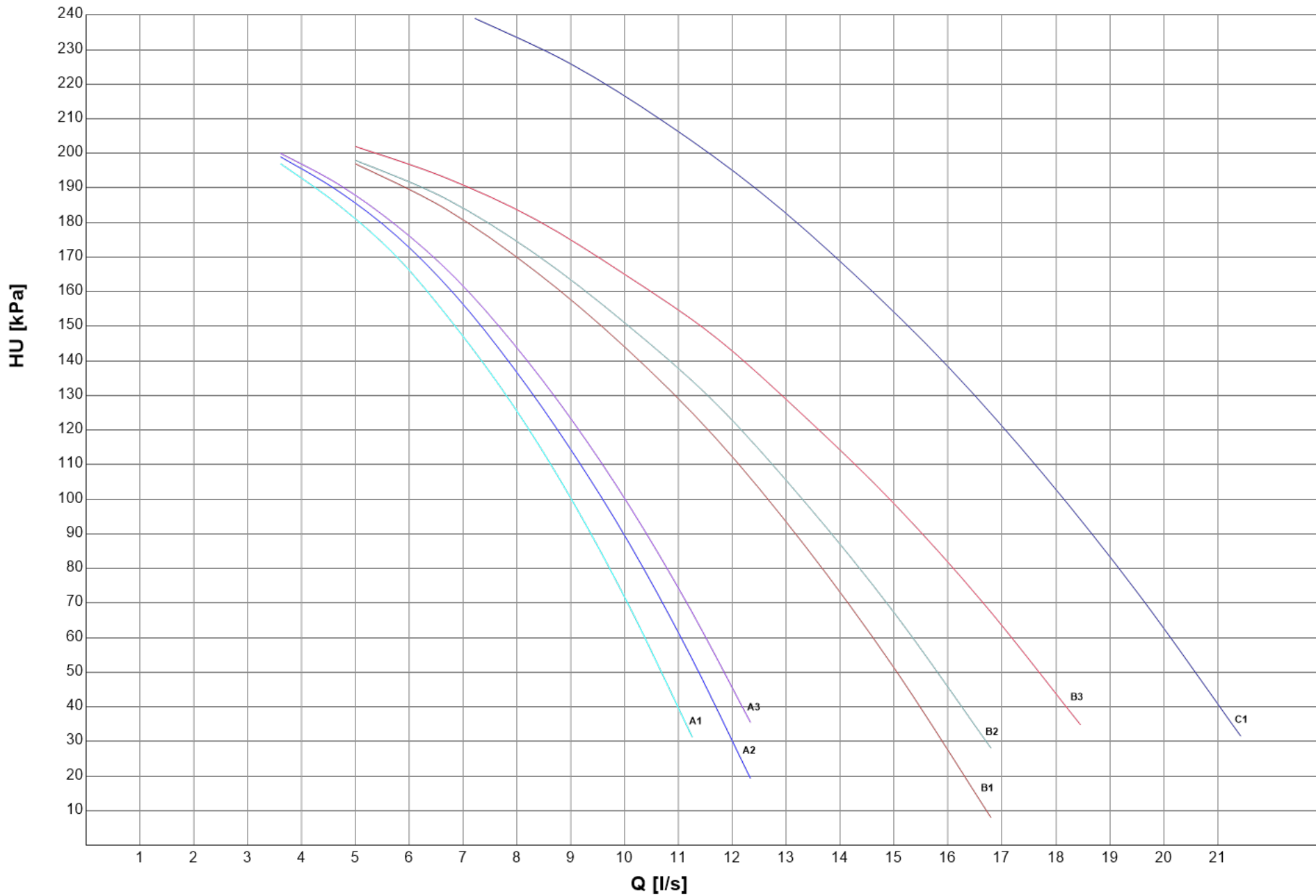
HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (VAR SPEED)

SIZE		CH		HP		PUMP					CH	HP	
		Pfgross	Qfgross	Ptgross	Qcdgross	Rif.	Model	N.	F.L.A.	F.L.I.	HU	HU	
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Pole	[A]	[kW]	[kPa]	[kPa]	
0604P	K	153,7	7,349	163,1	7,873	A1	LNTE 50-125/30/2	2	6	3,000	140	128	
	LN-K	146,6	7,012	155,4	7,503						147	137	
	SL-K	142,1	6,796	150,6	7,270						151	142	
0704P	K	178,4	8,529	189,6	9,154	A2					125	111	
	LN-K	167,4	8,005	180,7	8,722						137	121	
	SL-K	168,5	8,057	181,4	8,757						136	120	
0804P	K	202,5	9,686	216,6	10,46	A3		108	88,7				
	LN-K	192,7	9,213	208,1	10,05			119	99,0				
	SL-K	193,6	9,259	209,8	10,13			118	97,0				
0904P	K	235,4	11,26	255,0	12,31	B1		LNTE 65-125/40/2	2	8	4,000	125	106
	LN-K	224,9	10,76	239,7	11,57							133	119
	SL-K	222,7	10,65	241,4	11,65							135	118
1004P	K	263,2	12,58	281,5	13,59	B2	113					94,8	
	LN-K	247,8	11,85	266,7	12,88		125					108	
	SL-K	245,4	11,74	265,7	12,83		126					108	
1104P	K	286,0	13,68	304,5	14,70	B3	119		104				
	LN-K	271,4	12,98	291,5	14,07		129		113				
	SL-K	269,8	12,90	288,9	13,94		130		115				
1204P	K	306,5	14,66	323,9	15,64	C1	LNTE 65-125/55/2		2	11	5,500	159	144
	LN-K	291,0	13,91	309,3	14,93							170	155
	SL-K	291,2	13,93	310,3	14,98							170	155

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Q Plant (side) exchanger water flow
 F.L.I. Pump power input
 F.L.A. Pump running current
 HU Pump residual pressure head (Units with hydronic group without mains filter)

HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (VAR SPEED)



Storage tank combinations

	Version	TANK
		Capacity
		[l]
0604P	K	400
	LN-K	
	SL-K	
0704P	K	500
	LN-K	
	SL-K	
0804P	K	500
	LN-K	
	SL-K	
0904P	K	500
	LN-K	850
	SL-K	
1004P	K	500
	LN-K	850
	SL-K	
1104P	K	850
	LN-K	
	SL-K	
1204P	K	850
	LN-K	
	SL-K	



for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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