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

Data Book

COOLING HEATING

NX-N-G02-U 0152P - 0812P_202010_EN-CA R410A
ELCA_Engine ver.4.4.5.0

NX-N-G02-U 0152P - 0812P

41.2-226 kW 11.7-64.2 RT

Reversible Air-Source Heat Pump For Outdoor Installation

(Product image is indicative and may vary depending on the model)

R HFC R-410A
SCROLL
P PLATES
AHRI CERTIFIED
Intertek

- HIGH EFFICIENCY
- EXTREMELY SILENT OPERATION
- WIDE OPERATING LIMITS
- SMART DEFROST
- ELECTRONIC EXPANSION VALVE INCLUDED STANDARD
- INTEGRATED HYDRONIC PACKAGE
- AHRI CERTIFICATION

CERTIFICATIONS

Product certifications

Product without CE marking, it cannot be commercialized within the European Union

Quality System Certification

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

Quality System complying with the requirements of UNI EN ISO9001:2008 regulation
Environmental Management System complying with the requirements of UNI EN ISO14001:2004 regulation
Occupational Health and Safety Management System complying with the requirements of BS OHSAS 18001:2007

INDEX **NX-N-G02-U 0152P - 0812P**

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The units highlighted in this publication contain R410A [GWP100 2088] fluorinated greenhouse gases.

Functions

COOLING — Cooling

HEATING — Heating

Refrigerant

R HFC R-410A — R-410A

Compressors

SCROLL — Scroll compressor

Fan

AXIAL — Axial fan

Exchangers

PLATES — Plate heat exchanger

Other features

AHRI CERTIFIED® www.ahridirectory.org Air-Cooled Water Chilling Packages AHRI Standards 550/590 and 551/591 — AHRI - Air-Cooled Water Chilling Packages

C ETL LISTED US Intertek — ETL Listed Certificate for North America

FOCUS ON GREEN CERTIFICATIONS

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

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

Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. is committed to develop responsible and sustainable HVAC solutions. This is reflected by a full range of premium efficiency products and systems that are designed with close attention 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/EN/Environment/green_certifications/

Air-Source Heat Pumps for outdoor installation, for the production of chilled or hot water. The units feature hermetic scroll compressors using R-410A refrigerant, axial fans, plate heat exchanger, condensing coils with copper tubes and aluminum fins and electronic expansion valve. The range is composed by units equipped with two compressors in a single-circuit configuration.

1.3 HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to advanced technologies implemented in the Heat Pump. These units can contribute to a significant reduction in operating costs and can provide for highly attractive R.O.I.'s.

1.4 EXTREMELY SILENT OPERATION
The best balance between silence and efficiency, as a result of a systematic design process aimed to minimize sound levels.

1.5 WIDE OPERATING LIMITS
These units will operate at full load in heat pump mode down to -15 °C of outdoor air temperature. For temperatures lower than -15 °C, the control can easily manage control integration with an auxiliary heat source, to supplement the plant leaving water temperature. In chiller mode, full load operation is guaranteed from -10 °C up to 46 °C.

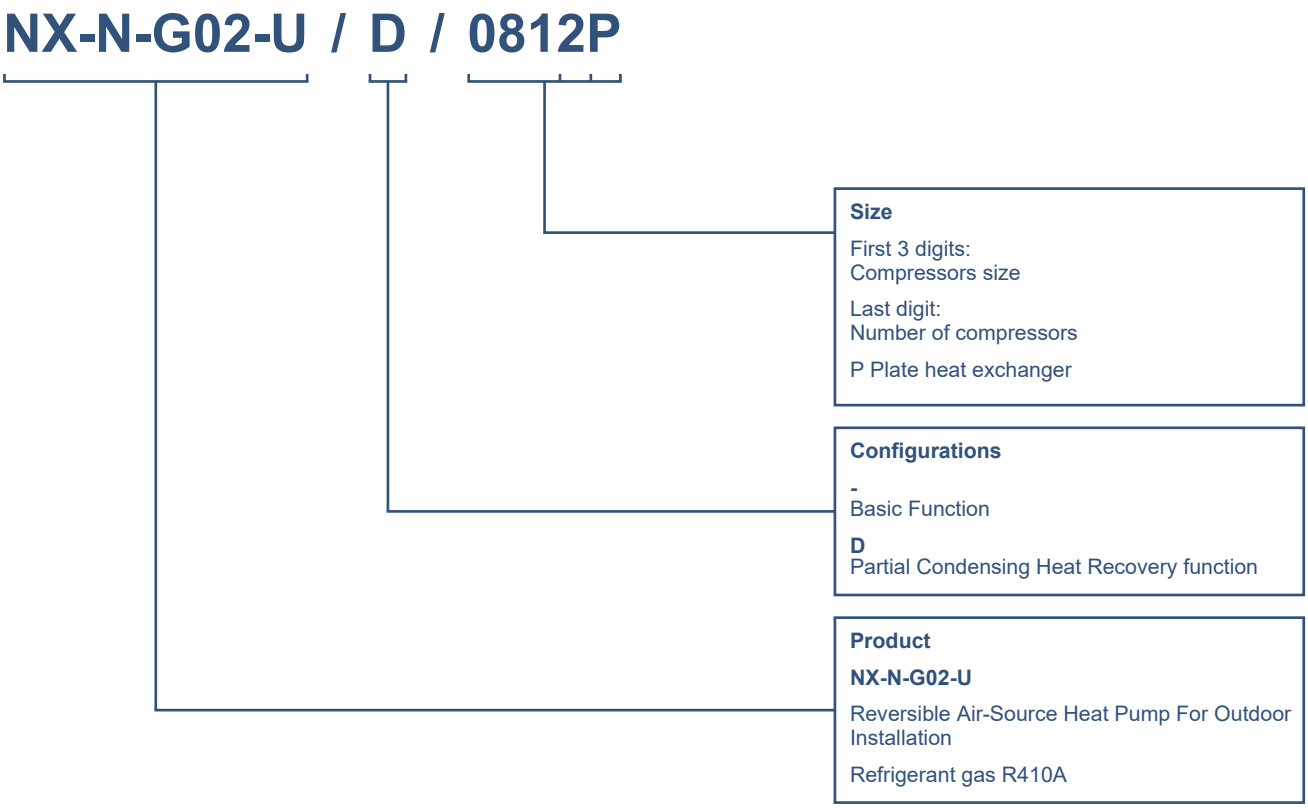
1.6 SMART DEFROST
The advanced self-adaptive proprietary Defrosting control logic takes into account all the operating parameters and the ambient temperature conditions. The frequency and duration of Defrost cycles are optimized and reduced to the minimum necessary, in order to ensure an increase in efficiency and net heating capacity of the units when operating in conditions that cause the formation of frost on the coil.

1.7 ELECTRONIC EXPANSION VALVE INCLUDED STANDARD
The use of the electronic expansion valve provides for significant benefits, especially in cases of varying external conditions. The EEV technology has been integrated into these units as a result of accurate design selections concerning the refrigerant circuit and the optimization of operation under various working conditions.

1.8 INTEGRATED HYDRONIC PACKAGE
Factory mounted, integrated hydronic modules are available with 1 or 2 pumps, high or low head.

1.9 AHRI CERTIFICATION
Certified in accordance with AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units can be found in the AHRI directory at www.ahridirectory.org.

1.10 ASHRAE 90.1 COMPLIANT
The performance in cooling mode surpasses the minimum efficiency requirement as set by ASHRAE 90.1-2019. This makes the unit the perfect solution for any project intended to meet stringent building energy efficiency certifications.


NX-N-G02-U / D / 0812P
Size
First 3 digits:
Compressors size
Last digit:
Number of compressors
P Plate heat exchanger
Configurations
-
Basic Function
D
Partial Condensing Heat Recovery function
Product
NX-N-G02-U
Reversible Air-Source Heat Pump For Outdoor Installation
Refrigerant gas R410A

3.1 STANDARD UNIT SPECIFICATIONS

3.2 Reversible Air-Source Heat Pump For Outdoor Installation
Air-Source Heat Pumps for outdoor installation, for the production of chilled or hot water. The units feature hermetic scroll compressors using R-410A refrigerant, axial fans, plate heat exchanger, condensing coils with copper tubes and aluminum fins and electronic expansion valve. The range is composed by units equipped with two compressors in a single-circuit configuration.

3.3 Installation Note
The Unit Is Supplied Fully Refrigerant Charged And Factory Tested. On Site Installation Only Requires Power And Hydraulic Connection.

3.4 Structure
Structure designed for outdoor installation. Base Frame is constructed from formed steel with a suitable thickness for rigidity that is hot-dipped galvanized and painted with a polyester powdercoat to ensure complete weather resistance (Longitudinal V-shaped coil module).

3.5 Structure
Base and Frame is constructed from hot-dipped galvanized and painted steel, complete with formed aluminium access panels (Dual Coil Module).

3.6 Panels
Specific panelling for outdoor installation constructed from aluminium alloy, which ensures total resistance to atmospheric agents. Panels are easily removable and are made in such a way as to allow unobstructed access to the internal components of the machine to facilitate inspection and maintenance activities (Dual coil module).

3.7 Compressor
Tandem Hermetic Scroll Compressors, Complete With Crankcase Heater, Electronic Overheating Protection with Centralized Manual Reset Switch and A Two-Pole Electric Motor.
- Compressor compartment separated from ventilation section.
- Compressor enclosure panels with soundproofing insulation in polyester fiber mat (thickness of 30 mm on sides and top, 15 mm on bottom)
- Compressors fastened to unit frame with anti-vibration mounts.

3.8 Plant Side Heat Exchanger
Brazed Plate Heat Exchanger with AISI 316 plates. The heat exchanger is insulated 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 water flow when the unit is operating, and prevents ice formation; if flow is not detected, the freeze protection function is activated, which uses an electric heater to defrost any ice that has formed.
The heat exchanger comes standard with safety pressure relief valve on the water side (10 bar).

3.9 Source Heat Exchanger
Fin-Tube Condenser Coil made from copper tubes and aluminium fins. The coil design is optimized to ensure high heat transfer efficiency. The differentiated circulation suitably distributes the liquid in the coil during the expansion phase.

3.10 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. 4 or 6 pole electric motor, depending on sizes, with built-in overload protection.
Fans diameter: 450 mm and 800 mm according to different sizes.
Variable Speed low-temperature Device (DVV) to control condensing by adjusting the rotational speed with voltage steps (auto-transformer) and is standard for all sizes.

3.11 Refrigerant Circuit
Cooling Circuit Main Components:
- Tandem Hermetic Scroll Compressors
- Crankcase Heater on Each Compressor
- Plate Heat Exchanger
- Antifreeze electric heater for heat exchanger
- Filter Drier
- Liquid line solenoid valve
- Refrigerant Line Sight Glass With Moisture Indicator
- Electronic expansion valve
- High And Low Pressure Transducers
- Discharge temperature probe for each compressor
- High pressure switches
- High and low pressure safety valve
- Liquid receivers
- Liquid separators

3.12 Electrical And Control Panel
Electrical power and control panel built in accordance with UL standard, complete with:
- Power supply 575V/~3ph/60Hz+PE+WYE
- Electric Panel With Single (V-shape) or Double Door (Dual-Coil) Access Panel
- Lockable Disconnect Switch with Door Interlock
- Control Circuit Transformer
- Numbered Wires
- Phases sequence control
- Circuit Breakers For Compressor and Fan power circuits
- Electronic control W3000+
- Power circuit with electric bus bar distribution system (from size 0562P to 0812P)
- Remote On/Off Input
- Dedicated General Alarm Contacts
- Relay output(s) for pump run command (For Field Installed Pumps)
- Ventilated electrical panel
- Outdoor air temperature probe

3.13 Certification And Applicable Standards
The Unit Complies with the Following Standards:
- ETL Listed Certificate for North America
- AHRI certification: standards AHRI 550/590 (I-P) and 551/591 (SI), 2015 Path B version
- ISO 9001 Company Quality Management System Certification
- ISO 14001 Company Environmental Management System Certification

3.14 Tests
Tests are performed throughout the production process, in accordance with ISO 9001.
Witness Performance or Sound Tests can be performed by highly qualified technicians in the presence of customers, upon request.
Standard Performance tests consists in measuring the following:
- Electrical Data
- Water Flow Rates
- Working Temperatures
- Power Input
- Power Output
- Pressure Drops on the water-side heat exchanger both at full load (at selection conditions and thus the most critical conditions for the condenser) and at part load conditions.

During Performance Testing The main Alarm conditions are verified.
Sound tests are performed to check sound emissions in accordance with ISO 9614.

3.15 Electronic control W3000+
W3000+ features an easy-to-use interface and a complete LCD display that allows comprehensive access to the unit via a multi-language menu (19 languages are available). The diagnostics includes a complete alarm management system. With the “black-box” feature, the alarm history displays all parameters at the time of the alarm event for enhanced analysis and troubleshooting of system operation. The programmable timer manages a weekly schedule via time bands to optimize unit performance by minimizing power consumption during unoccupied periods. Up to 10 daily time bands can be associated with different operating set points. KIPlink - Keyboard In Your Pocket, is also available as an option. KIPlink is the innovative user interface based on Wi-Fi technology that allows an authorized user to interface with the unit directly from a smartphone, tablet or PC by scanning a QR Code.
The regulation is based on the patented “Quickmind” water temperature regulation logic, which uses self-adapting control logic to maintain temperature setpoints and optimizes performance even in low water volume systems. As an alternative, proportional or proportional-integral regulations are also available.
Optional proprietary Plant Control solutions can control the individual units and their respective parameters in applications with plants containing multiple heat pump units. Energy Consumption Metering and Performance Monitoring solutions are also available upon request.
System Supervision can be easily integrated via proprietary devices available, or via integration with third party control systems through common Building Automation Control Protocols such as Mitsubishi M-NET, ModBus, Bacnet, Bacnet-over-IP, LonWorks and Konnex. Communication protocols are also compatible with the remote keyboard (up to 8 units). Reversible Air-Source Heat Pumps include a defrost control which follows a proprietary self-adaptive control logic. The specialized control logic monitors several operational parameters and helps to reduce both the frequency and duration of defrost cycles, and improves the overall energy efficiency of the heat pump when operating in heating mode.

3.15 KIPlink - Keyboard In your Pocket (option 6196)
KIPlink - Keyboard In your Pocket - is the innovative user interface based on WiFi technology that allows the user to service the unit directly from a smartphone, tablet or PC. Using KIPlink, it is possible to turn the unit on and off, adjust set-points, view and plot the main operating variables, monitor the status of the refrigerant circuits, the compressors, the fans and the pumps (if present), and display and reset any potential alarms.

3.15 Night Mode (Option 1430)
The night mode function allows for a reduction of the sound power of the unit by reducing the speed of the fans and the number of active compressors.

3.15 ULC - User Limit Control (Option 4960)
Guaranteed start-up of the units with the User Limit Control option, even when the critical working conditions could generate an alarm.
The controller can manage a 3-way mixing valve (field provided by others) using a 0-10V signal to ensure dynamic control of the water temperature at the heat exchanger inlet, according to the operating limits allowed. This ensures the start-up and correct functioning of the unit within the operating envelope, even with critical weather conditions.

3.16 Versions
- Basic version
Standard unit

3.17 Configurations
- , Standard Unit
Standard reversible Heat Pump unit for production of chilled or hot water according to the operation mode selected.

/D, With Partial Heat Recovery Desuperheater
Unit for the production of chilled water for the primary cooling loop and for domestic hot water in the recovery circuit.
This version features a dedicated desuperheater plate heat exchanger on the compressor discharge line, in series and upstream from traditional condenser. This allows to recover partial condensing heat for the production of medium-to-high temperature water on the secondary recovery circuit. Hot water can be produced in the recovery circuit for domestic hot water when the unit operates in cooling mode, either in summer or winter. The heating capacity output is approximately equal to the compressor power input

The NX-N-G02-U series is developed with two different construction types:

Longitudinal V-shaped coil structure

Dual coil structure

The following table shows the structure of all the available sizes:

Longitudinal V									Dual coil				
0152P	0182P	0202P	0252P	0262P	0302P	0402P	0452P	0502P	0562P	0612P	0662P	0712P	0812P

The following table shows fan diameters (mm), fan motor types and operating voltage of all the sizes:

Size													
0152P	0182P	0202P	0252P	0262P	0302P	0402P	0452P	0502P	0562P	0612P	0662P	0712P	0812P
Ø 450 4 poles					Ø 800 6 poles								

Note:
Fan speed controlled by autotransformers.

4.1 OPTIONS

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
380 **NUMBERED WIRING**			
381 NUMBERED WIRING ON ELEC. BOARD	Electrical board wires are identified by numbered labels. The reference numbers are indicated in the unit's wiring schematic for quick troubleshooting and comissioning.	Facilitates maintainance interventions by centralizing troubleshooting to the electrical board.	ALL
2410 **PHASE SEQUENCE RELAY**			
2411 WITH EXTERNAL PHASE SEQUENCE RELAY	Power Supply Phase-Sequence Monitoring Relay	Protects internal devices against damage due to phase loss and phase reversal protection	ALL
2412 PHASE SEQ. RELAY + OVER/UNDER VOLT. MONITORING	Power Supply Phase-sequence and voltage monitoring relay	The monitoring relay protects loads against faults due to phase reversal or imbalance, and it monitors whether the voltage exceeds or falls below a specified voltage in a three-phase power distribution system.	ALL
3300 **COMPRESSOR REPHASING**			
3301 COMPR.POWER FACTOR CORR.	PFC Capacitors on the compressors' power supply.	The unit's average power factor increases [cos(phi)].	ALL
3410 **AUTOMATIC CIRCUIT BREAKERS**			
3412 AUTOM. CIRCUIT BREAK. ON LOADS	Circuit Breaker on the Major Electrical Loads.	In case of overcurrent, allows manual resetting of the switch without the need to replace fuses.	ALL
3600 **COMPRESSOR RUN STATUS SIGNAL**			
3601 COMPRESSOR OPERATION SIGNAL	Auxiliary dry contact signal.	Allows remote signalling of compressor status and remote control of any auxiliary loads.	ALL
4160 **WINTER/SUMMER CHANGEOVER**			
4161 REMOTE SUMMER/WINTER CHANGEOVER SWITCH	Digital input (dry contact)	Allows for control of 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 via ModBUS protocol.	ALL
4182 SERIAL CARD FOR LONWORKS	Interface module for Echelon systems.	Allows integration with BMS operating via LonWorks protocols	ALL
4184 SERIAL CARD BACNET MS/TP RS485	Interface module for BACnet protocols.	Allows integration with BMS operating via BACnet protocol.	ALL
4185 SERIAL CARD FOR BACNET OVER IP	Interface module for BACnet OVER-IP protocols.	Allows to interconnect BACnet devices over IP within Wide-Area Networks.	ALL
4186 SERIAL CARD FOR KONNEX	Protocol for KNX system	Allows for integration with BMS operating via KNX protocol	ALL
4188 SERIAL CARD MODBUS TCP/IP	Interface module for ModBus TCP/IP protocol	Allows for integration with BMS operating via ModBus TCP/IP protocol.	ALL
4189 SERIAL CARD SNMP	Interface module for SNMP protocol	Allows integration with BMS operating via SNMP protocol.	ALL

OPTIONS

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
1470 MULTIFUNCTION CARD			
1431 NIGHT MODE	The option includes a controller expansion board and dedicated terminal block.	Night mode is a system setting to limit maximum sound level of the unit. Noise level is reduced by management of compressors and fan speed.	ALL
1471 4951 + 1431	The option includes a controller expansion board and dedicated terminal block.	Enables the functions corresponding to the accessory codes.	ALL
1472 4951 + 1431 + 4961	The option includes a controller expansion board and dedicated terminal block for integration and control of a 3 way valve.	Enables the functions corresponding to the accessory codes.	ALL
1473 4951 + 4961	The option includes a controller expansion board and dedicated terminal block for integration and control of a 3 way valve.	Enables the functions corresponding to the accessory codes.	ALL
1474 1431 + 4961	The option includes a controller expansion board and dedicated terminal block for integration and control of a 3 way valve.	Enables the functions corresponding to the accessory codes.	ALL
4951 WITH HYDRONIC SEPARATOR TEMP. PROBE	Water temperature probe on hydronic separator.	The pump activation can be set via a control parameter according to the buffer tank water temperature (in the primary-secondary type systems separated by a hydronic separator), achieving significant pumping savings during unit stand-by.	ALL
4961 U.L.C.F. - WITH OR WITHOUT FIX SPEED PUMP	Option to be selected for the unit without pump(s) or with fix speed pump(s) (4703,4706,4707,4711,4712). The option includes the required controller expansion board and a dedicated terminal block for field connections.	Guaranteed start-up of the units with the ULC option, even when the critical working condition would normally generate an alarm. The W3000+ controller can manage a 3 way mixing valve (provided by others) via a 0-10V signal to ensure dynamic control of the water temperature on user heat exchanger inlet according to the operating envelope allowed. This ensures the start-up and correct functioning of the unit into the operating envelope, even under critical weather conditions.	ALL
5920 MANAGEMENT & CONTROL SYSTEMS			
5924 ENERGY METER FOR BMS	This option includes the following devices installed in the electrical panel: - Network Analyzer with display operating on ModBUS protocol over RS-485 (without MID certification) - Current Transformers.	This option allows for the acquisition of the electrical data and power consumption from the unit and communicates via RS-485 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 includes the following devices installed in the electrical panel: - Network Analyzer with display, Factory installed - Current Transformers.	This option allows acquisition of the electrical and power consumption data from the unit. The figures are accessible through the unit's W3000 interface, and can be sent to the BMS via a wide variety of protocols by selecting the appropriate serial card from the option list.	ALL
6160 AUXILIARY INPUT (4-20 mA)			
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 SETPOINT	Allows to activate the set-back Temperature set-point for Energy Savings.	Allows for control of the operating set-point via a remote input	ALL
6170 DEMAND LIMIT			
6171 REMOTE INPUT DEMAND LIMIT	Digital input (dry contact)	It permits to limit the unit's power consumption for safety reasons or in temporary situations (Utility Savings).	ALL

OPTIONS

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
6190 **TYPE OF VISUAL DISPLAY**			
6192 COMPACT KEYBOARD	Keyboard with LCD display	Features a multi-language menu. Allows for the connection of a wired remote keyboard. When equipped with the real time clock option, the alarm history display function is enabled.	ALL
6198 KIPlink + KEYBOARD	The unit is equipped with KIPlink, the innovative user interface based on WiFi technology, and, in addition, the physical LCD keyboard.	Allows for Wi-Fi connection to the unit via smartphone, tablet or PC for intuitive control of the unit, in addition to Compact Keyboard access.	ALL
1510 **SOFT-STARTER**			
1511 UNIT WITH SOFT-STARTERS	Electronic option included to manage the compressor's inrush current.	Reduces compressor's inrush current compared to direct motor start, reducing the mechanical wear of the compressor motor windings. It also compensates for variances in power supply voltage and allows for favourable sizing of the electrical supply system to the unit.	ALL
5940 **SETPOINT COMPENSATION O.A. TEMP.**			
5941 WITH SETPOINT COMPENSATION	This option includes an outside air sensor to be installed outside the building and enables the climatic curve/remote Setback Function.	Optionally available, an outside air temperature probe can be used to control the system supply water temperature set point based on cooling and heating Climatic Curves. Depending on the operating mode, delivering water at reduced or increased temperature to the terminal units based on the outside air temperature achieves high seasonal efficiency ratios and can offer significant reductions in operating costs and increased occupant comfort.	ALL
6310 **VISUAL DISPLAY PROTECTION COVER**			
6311 WITH DISPLAY PROTECTION	Display protection in sealed access panel	Provide complete protection against UV rays, atmospheric agents, and dirt/dust ingress.	ALL
1400 **HP AND LP GAUGES**			
1401 HP AND LP GAUGES	High and low pressure gauges	Allows immediate reading of pressure on both low and high pressure refrigerant circuits	ALL
5040 **COMPRESSOR SUCTION AND DISCHARGE VALVES**			
5042 COMPRESSOR SUCTION AND DISCHARGE VALVES	Isolation valve on compressor's suction and discharge lines.	Simplifies maintenance activities	ALL
890 **CONDENSING COIL**			
894 CU PIPES/PREPAINTED AL FINS	Fin-Tube Coil constructed from copper tubes and aluminum fins with chemical cleaning treatment to remove impurities, followed by coating with protective paint with the following characteristics: - Fins treated with protective polyester resin paint; - Over 1000 hours of salt spray protection per ASTM B117 (fins without cross and protected edges); - Excellent resistance to UV rays.	Provides a good resistance against corrosion. For further information please refer to the Application Guideline “Finned Coil Heat Exchangers and Protection Against Corrosion” or contact your point of sales.	ALL

OPTIONS

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
895 FIN GUARD SILVER TREATMENT	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 ensures complete coating	Provides high resistance against corrosion, and is beneficial in aggressive environment. For further information please refer to the Application Guideline “Finned Coil Heat Exchangers and Protection Against Corrosion” or contact your point of sales.	ALL
1260 **DRAIN PAN**			
1261 HEATED DRAIN PAN	This option includes a freeze protection electric heater for the drain pan.	This option avoids defrosted condensate from re-freezing with an outdoor air temperature close to or below 0°C.	From size 0152P to size 0562P
820 **FAN CONTROL**			
802 VAR.FAN SPEED LOW AMB.CONTROL	Fan speed control based on condensing head pressure; the use of this option is mandatory in case the unit operates in cooling mode with low evaporator leaving water temperature combined with low outdoor air temperatures.	Extension of the unit operating envelope (see the dedicated section on operating limits). The device allows the unit to operate in the most extreme conditions while avoiding any risk of a low-pressure alarm intervention. The enhanced air flow management provides significant benefits: Higher Efficiency and Lower Sound Levels while guaranteeing operation.	ALL
819 DVVF	Fan speed control based on condensing head pressure; the use of this option is mandatory in case the unit operates in cooling mode with low evaporator leaving water temperature combined with low outdoor air temperatures.	Extension of the unit operating envelope (see the dedicated section on operating limits). The device allows the unit to operate in the most extreme conditions while avoiding any risk of a low-pressure alarm intervention. The enhanced air flow management provides significant benefits: Higher Efficiency and Lower Sound Levels while guaranteeing operation.	ALL
821 DVV2F	Fan speed control based on condensing head pressure; the use of this option is mandatory in case the unit operates in cooling mode with low evaporator leaving water temperature combined with low outdoor air temperatures.	Extension of the unit operating envelope (see the dedicated section on operating limits). The device allows the unit to operate in the most extreme conditions while avoiding any risk of a low-pressure alarm intervention. The enhanced air flow management provides significant benefits: Higher Efficiency and Lower Sound Levels while guaranteeing operation.	ALL
790 **DEV.FOR LOW AIR TEMP.(HP MODE)**			
814 COIL FREEZE PROTECTION ELECTRIC HEATERS	Includes an electrical resistance heater between the coil and drain pan to prevent ice build-up.	This option avoids the defrosted condensate from re-freezing with an outdoor air temperature close to or below 0°C.	ALL
2630 **INSULATION ON HEAT EXCHANGERS**			
2631 DOUBLE INSULATION ON HEAT EXCHANGERS	Thermal insulation in closed-cell flexible elastomeric foam (FEF), 16 mm thick coupled with a 3 mm layer of reticulated foam in polyurethane and an exterior embossed finishing polyurethane film. This option is mandatory if the unit is intended to operate with outdoor temperatures below -10 °C.	Reduces heat losses and prevents plate heat exchanger from sweating in humid environments.	ALL
4730 **U - HYDRONIC MODULE**			
4732 U - RELAY 1 PUMP (ON/OFF)	User side heat exchanger Hydronic Module, compatible with Constant Flow control. The unit is provided with one relay output to control the activation of 1 external pump via ON/OFF dry-contact signal.	The hydronic module allows for control of external pumps according to the unit's integrated controller logic.	ALL

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
4733 U - RELAY 2 PUMPS (ON/OFF)	User side heat exchanger Hydronic Module, compatible with constant flow control. The unit is provided with two relays outputs to control the activation of 2 external pumps via two ON/OFF dry-contact signal. The pumps are controlled in a duty/standby configuration, with running hours equalized and alternated between two pumps, with automatic changeover on pump failure.	The hydronic module allows for control of external pumps according to the unit's integrated controller logic.	ALL
4736 U - 1 PUMP 2P LH (FIXED SPEED)	User side heat exchanger Hydronic Module, compatible with Constant Flow control. The unit is provided with one fixed speed pump, with 2-pole motor. Residual head of approximately 100 kPa. Specifications and Pump Operating Curves are available in the dedicated section.	The hydronic module includes the pumps and the main hydronic components, optimizing hydronic and electrical installation footprint and reduces installation 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 one fixed speed pump, with 2-pole motor. Residual head of approximately 200 kPa. Specifications and Pump Operating Curves are available in the dedicated section.	The hydronic module includes the pumps and the main hydronic components, optimizing hydronic and electrical installation footprint and reduces installation time and costs.	ALL
4741 U - 2 PUMPS 2P LH (FIXED SPEED)	User side heat exchanger Hydronic Module, compatible with constant flow control. The unit is provided with two fixed speed pumps, with 2-pole motor. Residual head of approximately 100 kPa. The pumps are controlled in a duty/standby configuration, with running hours equalized and alternated between two pumps, with automatic changeover on pump failure. Specifications and Pump Operating Curves are available in the dedicated section.	The hydronic module includes the pumps and the main hydronic components, optimizing hydronic and electrical installation footprint and reduces installation time and costs.	ALL
4742 U - 2 PUMPS 2P HH (FIXED SPEED)	User side heat exchanger Hydronic Module, compatible with Constant Flow control. The unit is provided with two fixed speed pumps, with 2-pole motor. Residual head of approximately 200 kPa. The pumps are controlled in a duty/standby configuration, with running hours equalized and alternated between two pumps, with automatic changeover on pump failure. Specifications and Pump Operating Curves are available in the dedicated section.	The hydronic module includes the pumps and the main hydronic components, optimizing hydronic and electrical installation footprint and reduces installation 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 for control of external pumps according to the unit's integrated 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 for control of external pumps according to the unit's integrated controller logic.	ALL

OPTIONS

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
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 - Note: Hydronic Module 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 water flow control is field 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
2430 **WATER SIDE ANTIFREEZE PROTECTION HEATER**			
2431 PIPING ANTIFREEZE	Electrical heaters on pipes.This option is mandatory if the unit is supposed to work with outdoor temperature below 0°C	It prevents the unit against ice formation on hydronic components.	ALL
2432 ANTIFREEZE PIPING, PUMPS	Electrical heaters included on pipes and other hydronic components. This option is mandatory if the unit is intended to work with outdoor air temperatures below 0°C. Only for units provided with on-board pumps.	It prevents the unit against ice formation on hydronic components.	ALL
1420 **AUXILIARY HEAT SOURCE AND DHW MANAGEMENT**			
1421 AUXILIARY HEAT SOURCE AND DHW MANAGEMENT	The option includes a controller expansion board and dedicated terminal block for integration and control of a 3 way valve.	It allows for the integration of an auxiliary heating source as a back-up or supplemental source (e.g. solar collectors, gas boilers) and controls a 3-way valve for Domestic Hot Water production.	ALL
2020 **COIL ANTI-INTRUSION GRILLS**			
2021 ANTI-INTRUSION GRILLS	Anti-intrusion grilles	Provides protection again solid bodies from entering inside the unit's frame.	ALL
2030 **PROTECTION GRILLE**			
2032 COND. COIL PROTECTION NET	Perforated metal net Coil Protection	Finned coil protection	ALL
2620 **ACOUSTICAL ENCLOSURE**			
2621 ADDITIONAL SOUNDPROOFING INSULATION	Enhanced soundproofing enclosure for compressor compartment	Noise Emission reduction	ALL
9970 **PACKING**			
9969 NYLON + WOODEN CRATE PACKING	Unit packed in wooden cage and covered in nylon		ALL
9974 MARINE PACKING	Unit provided with barrier bag and wooden cage		ALL
9979 CONTAINER PACKING	Unit provided with container slides and packaged with nylon		ALL
9996 CONTAINER SLIDES	Unit provided with container slides		ALL
2100 **VIBRATION ISOLATORS**			
2101 RUBBER TYPE VIBRATION ISOLATORS			ALL

OPTIONS

OPTION	DESCRIPTIONS	BENEFITS	AVAILABLE FOR MODELS
1800 EVAPORATOR WATER FLOW SWITCH			
1801 EVAPORATOR WATER FLOW SWITCH	Flow switch with AISI 316L stainless steel basket and IP65 protection suitable for installation in industrial plant pipes. It must be installed in a straight pipe section without filters, valves, elbows, etc., at least 5 times the pipe diameter in length, both upstream and downstream from the switch for reliable measurement.	Provides a signal in the event of a lack of water flow. An alarm is generated which is an automatic or manual reset depending on the number of alarms per hour and the length of time of operation of the pump under low flow rate conditions.	ALL
9120 STRAINER			
9121 WITH STRAINER	Water-side Strainer, to be installed at the unit's inlet.		ALL

OPTIONS

Additional information - IMPORTANT -

Option 1431: NIGHT MODE
Option 1471: 4951 + 1431
Option 1472: 4951 + 1431 + 4961
Option 1473: 4951 + 4961
Option 1474: 1431 + 4961
Option 4951: WITH HYDRAULIC DECOUPLER PROBE
Option 4961: U.L.C.F. - WITH OR WITHOUT FIX SPEED PUMP
Option 819: DVVF
Option 821: DVV2F
Option 4743: U - RELAY 1 PUMP + 0-10V SIG
Option 4744: U - RELAY 2 PUMPS + 0-10V SIG
Option 1421: AUXILIARY SOURCE AND DHW MANAGEMENT
There are exclusion rules, concerning these options, involving sizes from 0152P to 0502P. It's not possible to choose two or more accessories, at the same time, belonging to different groups of options (i.e. option 1473 together with 819 is not available).

MULTIFUNCTION CARD	FAN CONTROL	U – HYDRONIC MODULE	AUXILIARY SOURCE AND DHW MANAGEMENT
1431 – NIGHT MODE 1471 – 4951 + 1431 1472 – 4951 + 1431 + 4961 1473 – 4951 + 4961 1474 – 1431 + 4961 4951 – WITH HYDRAULIC DECOUPLER PROBE 4961 – U.L.C.F. - WITH OR WITHOUT FIX SPEED PUMP	819 – DVVF 821 – DVV2F	4743- U - RELAY 1 PUMP + 0-10V SIG 4744 – U - RELAY 2 PUMPS + 0-10V SIG	1421 - AUXILIARY SOURCE AND DHW MANAGE-MENT

When one of the above option combinations is required, a feasibility analysis is needed, contact your local sales representative. If the configuration is available as a special execution, an extra-price may be quoted.

Option 2621: EXTRA SOUNDPROOFING INSULATION
Special soundproofing insulation (multilayer lining of polyurethane foam and sound-insulating gaiter, total thickness 30 mm).

Sizes	Standard unit	With option 2621
	[dBA]	[dBA]
0152P	81	79
0182P	81	79
0202P	81	79
0252P	82	80
0262P	82	80
0302P	82	80
0402P	82	80
0452P	85	83
0502P	86	84
0562P	88	85
0612P	89	86
0662P	89	87
0712P	89	87
0812P	90	88

Option 2101: RUBBER TYPE VIBRATION ISOLATORS
Option 1801: EVAPORATOR WATER FLOW SWITCH
Option 9121: WITH STRAINER
The above options are supplied loose.

5.1 GENERAL TECHNICAL DATA NX-N-G02-U

[Standard AHRI 551/591 - SI System]

NX-N-G02-U			0152P	0182P	0202P	0252P	0262P	0302P	0402P	0452P	0502P	0562P
Power supply		V/ph/Hz	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60
PERFORMANCE												
COOLING ONLY												
Cooling Capacity	(1)(2)(10)	**kW**	**41.15**	**45.47**	**53.54**	**61.28**	**68.39**	**76.78**	**91.69**	**105.8**	**119.3**	**135.0**
Total Power Input	(1)(2)(10)	kW	14.28	15.75	18.27	20.95	23.78	26.77	30.52	36.01	41.63	46.58
COPr	(1)(2)(10)	kW/kW	2.881	2.880	2.923	2.919	2.874	2.866	3.007	2.939	2.868	2.897
IPLV.SI REFERENCE	(1)(2)(10)	kW/kW	4.740	4.700	4,680	4.690	4.740	4.800	4.700	4.740	4.710	4.690
Rc (ASHRAE)		kg/kW	0.35	0.32	0.28	0.25	0.23	0.35	0.40	0.35	0.32	0.31
HEATING ONLY												
Total Heating Capacity	(3)	**kW**	**48.84**	**53.71**	**60.78**	**70.76**	**76.77**	**89.76**	**106.1**	**119.6**	**133.6**	**152.2**
Total Power Input	(3)	kW	16.59	17.37	20.22	23.74	25.43	29.14	34.78	38.24	42.34	49.34
COP	(3)	kW/kW	2.940	3.086	3.010	2.987	3.024	3.086	3.049	3.131	3.158	3.087
EXCHANGERS												
HEAT EXCHANGER (PLANT) IN COOLING MODE												
Water Flow	(1)(2)	l/s	1.789	1.977	2.328	2.664	2.973	3.338	3.986	4.599	5.186	5.867
Heat Exchanger Pressure Drop	(1)(2)	kPa	33.0	33.0	35.0	29.9	29.3	37.0	24.7	27.7	27.4	39.2
HEAT EXCHANGER (PLANT) IN HEATING MODE												
Water Flow	(3)	l/s	2.108	2.318	2.623	3.054	3.313	3.873	4.580	5.163	5.764	6.570
Heat Exchanger Pressure Drop	(3)	kPa	45.8	45.4	44.4	39.3	36.4	49.8	32.6	34.9	33.8	49.2
REFRIGERANT CIRCUIT												
No. Compressors		N°	2	2	2	2	2	2	2	2	2	2
Number Of Capacity Steps		N°	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1
Regulation			STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS
Min. Capacity Step		%	50	50	50	50	50	50	50	50	50	50
Refrigerant			R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant Charge		kg	14.5	14.5	15.0	15.0	15.5	27.0	36.2	37.0	38.0	42.0
Oil Charge		kg	3,50	3.50	5.00	5.00	6.50	6.50	6.50	7.90	9.30	11.5
FANS												
Quantity		N°	4	4	6	6	6	2	3	3	3	4
Air Flow		m³/s	5.33	5.33	6.07	7.44	7.44	8.50	12.23	12.23	12.23	16.11
Fan Power Input		kW	0.31	0.31	0.29	0.31	0.31	1.05	1.05	1.05	1.05	1.05
SOUND LEVEL												
Sound Pressure	(4)	dB(A)	49	49	49	50	50	50	50	53	54	56
Sound Power Level in Cooling	(5)(7)	dB(A)	81	81	81	82	82	82	82	85	86	88
Sound Power Level in Heating	(6)(8)	dB(A)	81	81	81	82	82	82	82	85	86	88
SIZE AND WEIGHT												
A	(9)	mm	2395	2395	2395	2395	2395	3360	3980	3980	3980	4110
B	(9)	mm	1195	1195	1195	1195	1195	1195	1195	1195	1195	2220
H	(9)	mm	1865	1865	1865	1865	1865	1980	1980	1980	1980	2150
Operating Weight	(9)	kg	670	680	710	730	770	960	1130	1220	1310	1900

Notes:
1 Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
2 Plant cooling exchanger water (out) 6.70°C, with water flow 0.043 l/s per kW; Source heat exchanger air (in) 35.0°C.
3 Plant Heating Mode Water (In/Out) 43.30°C/48.90°C; Source Heat Exchanger Ambient Air (In) 8.3°C - 87% R.H.
4 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.
5 Sound power ratings on the basis of measurements made in compliance with ISO 3744.
6 Sound Power in Compliance with ISO 9614.
7 Sound Power Level in Cooling, Outdoors.
8 Sound Power Level in Heating, Outdoors.
9 Standard Unit Configuration, Without Optional Accessories.
10 Performance rated to Altitude: 0 ft above sea level
- Not available

GENERAL TECHNICAL DATA NX-N-G02-U

[Standard AHRI 551/591 - SI System]

NX-N-G02-U			0612P	0662P	0712P	0812P
Power supply		V/ph/Hz	575/3/60	575/3/60	575/3/60	575/3/60
PERFORMANCE						
COOLING ONLY						
Cooling Capacity	(1)(2)(10)	**kW**	**154.0**	**180.2**	**205.6**	**225.6**
Total Power Input	(1)(2)(10)	kW	50.95	59.88	66.05	76.38
COPr	(1)(2)(10)	kW/kW	3.026	3.008	3.115	2.953
IPLV.SI REFERENCE	(1)(2)(10)	kW/kW	4.690	4.680	4.700	4.700
Rc (ASHRAE)		kg/kW	0.35	0.30	0.44	0.40
HEATING ONLY						
Total Heating Capacity	(3)	**kW**	**169.1**	**191.6**	**222.1**	**247.6**
Total Power Input	(3)	kW	54.71	63.93	73.24	82.12
COP	(3)	kW/kW	3.091	2.998	3.034	3.016
EXCHANGERS						
HEAT EXCHANGER (PLANT) IN COOLING MODE						
Water Flow	(1)(2)	l/s	6.697	7.835	8.939	9.808
Heat Exchanger Pressure Drop	(1)(2)	kPa	31.5	43.1	47.2	48.4
HEAT EXCHANGER (PLANT) IN HEATING MODE						
Water Flow	(3)	l/s	7.296	8.269	9.587	10.69
Heat Exchanger Pressure Drop	(3)	kPa	37.4	48.0	54.3	57.4
REFRIGERANT CIRCUIT						
No. Compressors		N°	2	2	2	2
Number Of Capacity Steps		N°	2	2	2	2
No. Circuits		N°	1	1	1	1
Regulation			STEPS	STEPS	STEPS	STEPS
Min. Capacity Step		%	50	50	50	50
Refrigerant			R410A	R410A	R410A	R410A
Refrigerant Charge		kg	53.9	54.1	89.5	91.0
Oil Charge		kg	13.6	13.1	12.6	12.6
FANS						
Quantity		N°	4	4	6	6
Air Flow		m³/s	15.51	16.91	22.52	22.52
Fan Power Input		kW	1.05	1.25	1.05	1.05
SOUND LEVEL						
Sound Pressure	(4)	dB(A)	57	57	57	58
Sound Power Level in Cooling	(5)(7)	dB(A)	89	89	89	90
Sound Power Level in Heating	(6)(8)	dB(A)	89	89	89	90
SIZE AND WEIGHT						
A	(9)	mm	4110	4110	5110	5110
B	(9)	mm	2220	2220	2220	2220
H	(9)	mm	2150	2150	2150	2150
Operating Weight	(9)	kg	2080	2090	2500	2530

Notes:
1 Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
2 Plant cooling exchanger water (out) 6.70°C, with water flow 0.043 l/s per kW; Source heat exchanger air (in) 35.0°C.
3 Plant Heating Mode Water (In/Out) 43.30°C/48.90°C; Source Heat Exchanger Ambient Air (In) 8.3°C - 87% R.H.
4 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.
5 Sound power ratings on the basis of measurements made in compliance with ISO 3744.
6 Sound Power in Compliance with ISO 9614.
7 Sound Power Level in Cooling, Outdoors.
8 Sound Power Level in Heating, Outdoors.
9 Standard Unit Configuration, Without Optional Accessories.
10 Performance rated to Altitude: 0 ft above sea level
- Not available

GENERAL TECHNICAL DATA

NX-N-G02-U

[Standard AHRI 550/590 - I-P System (US)]

NX-N-G02-U			0152P	0182P	0202P	0252P	0262P	0302P	0402P	0452P	0502P	0562P
Power supply		V/ph/Hz	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60	575/3/60
PERFORMANCE												
COOLING ONLY												
Cooling Capacity	(1)(2)(10)	**RT**	**11.70**	**12.93**	**15.22**	**17.43**	**19.45**	**21.83**	**26.07**	**30.08**	**33.92**	**38.38**
Total Power Input	(1)(2)(10)	kW	14.28	15.75	18.27	20.95	23.78	26.77	30.52	36.01	41.63	46.58
COPr	(1)(2)(10)	Btu/hW	9.831	9.826	9.975	9.960	9.806	9.778	10.26	10.03	9.785	9.885
IPLV.SI REFERENCE	(1)(2)(10)	Btu/hW	16.17	16.04	15.97	16.00	16.17	16.38	16.04	16.17	16.07	16.00
Rc (ASHRAE)		lbs/RT	2.74	2.48	2.17	1.90	1.76	2.73	3.06	2.71	2.47	2.41
HEATING ONLY												
Total Heating Capacity	(3)	**kBtu/h**	**166.7**	**183.2**	**207.4**	**241.5**	**261.9**	**306.3**	**362.2**	**408.2**	**455.7**	**519.5**
Total Power Input	(3)	kW	16.59	17.37	20.22	23.74	25.43	29.14	34.78	38.24	42.34	49.34
COP	(3)	Btu/hW	10.03	10.53	10.27	10.19	10.32	10.53	10.40	10.68	10.78	10.53
EXCHANGERS												
HEAT EXCHANGER (PLANT) IN COOLING MODE												
Water Flow	(1)(2)	GPM	28.36	31.33	36.89	42.23	47.13	52.91	63.18	72.90	82.21	93.00
Heat Exchanger Pressure Drop	(1)(2)	ft H2O	11.0	11.0	11.7	10.0	9.81	12.4	8.27	9.26	9.17	13.1
HEAT EXCHANGER (PLANT) IN HEATING MODE												
Water Flow	(3)	GPM	33.41	36.73	41.57	48.40	52.51	61.39	72.60	81.83	91.36	104.1
Heat Exchanger Pressure Drop	(3)	ft H2O	15.3	15.2	14.9	13.1	12.2	16.7	10.9	11.7	11.3	16.5
REFRIGERANT CIRCUIT												
No. Compressors		N°	2	2	2	2	2	2	2	2	2	2
Number Of Capacity Steps		N°	2	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1	1
Regulation			STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS	STEPS
Min. Capacity Step		%	50	50	50	50	50	50	50	50	50	50
Refrigerant			R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant Charge		lb	32.0	32.0	33.1	33.1	34.2	59.5	79.8	81.6	83.8	92.6
Oil Charge		lb	7.72	7.72	11.0	11.0	14.3	14.3	14.3	17.4	20.5	25.4
FANS												
Quantity		N°	4	4	6	6	6	2	3	3	3	4
Air Flow		cfm	11294	11294	12862	15764	15764	18010	25914	25914	25914	34135
Fan Power Input		kW	0.31	0.31	0.29	0.31	0.31	1.05	1.05	1.05	1.05	1.05
SOUND LEVEL												
Sound Pressure	(4)	dB(A)	49	49	49	50	50	50	50	53	54	56
Sound Power Level in Cooling	(5)(7)	dB(A)	81	81	81	82	82	82	82	85	86	88
Sound Power Level in Heating	(6)(8)	dB(A)	81	81	81	82	82	82	82	85	86	88
SIZE AND WEIGHT												
A	(9)	in	94.3	94.3	94.3	94.3	94.3	132.3	156.7	156.7	156.7	161.8
B	(9)	in	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	87.4
H	(9)	in	73.4	73.4	73.4	73.4	73.4	78.0	78.0	78.0	78.0	84.6
Operating Weight	(9)	lb	1477	1499	1565	1609	1698	2116	2491	2690	2888	4189

Notes:
1 Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
2 Plant cooling exchanger water (out) 44°F, with water flow 2.4 GPM/RT; Source heat exchanger air (in) 95.0°F.
3 Plant Heating Mode Water (In/Out) 110°F/120°F; Source Heat Exchanger Ambient Air (In) 46.9°F - 87% R.H.
4 Average Sound Pressure Level At 32.8ft Distance, Unit In A Free Field On A Reflective Surface; Non-Binding Value Calculated From The Sound Power Level. 5 Sound power ratings on the basis of measurements made in compliance with ISO 3744.
6 Sound Power in Compliance with ISO 9614.
7 Sound Power Level in Cooling, Outdoors.
8 Sound Power Level in Heating, Outdoors.
9 Standard Unit Configuration, Without Optional Accessories.
10 Performance rated to Altitude: 0 ft above sea level
- Not available

GENERAL TECHNICAL DATA — NX-N-G02-U

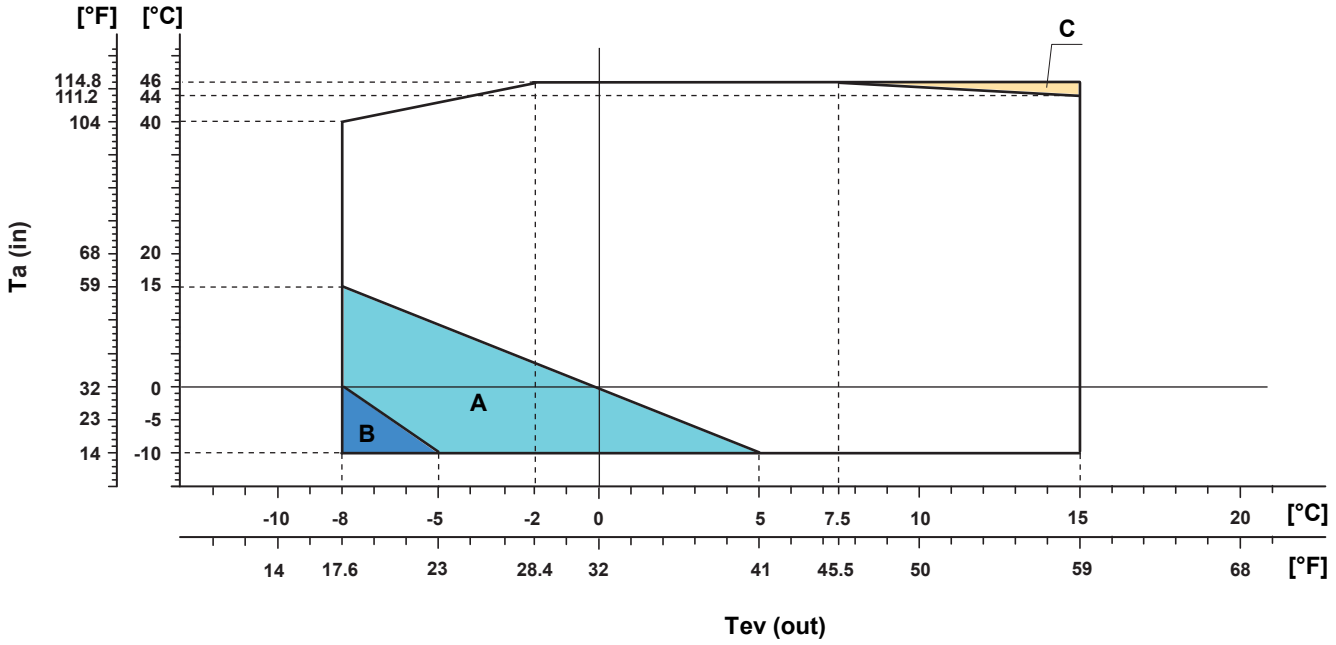
[Standard AHRI 550/590 - I-P System (US)]

NX-N-G02-U			0612P	0662P	0712P	0812P
Power supply		V/ph/Hz	575/3/60	575/3/60	575/3/60	575/3/60
PERFORMANCE						
COOLING ONLY						
Cooling Capacity	(1)(2)(10)	**RT**	**43.80**	**51.25**	**58.47**	**64.15**
Total Power Input	(1)(2)(10)	kW	50.95	59.88	66.05	76.38
COPr	(1)(2)(10)	Btu/hW	10.32	10.26	10.63	10.08
IPLV.SI REFERENCE	(1)(2)(10)	Btu/hW	16.00	15.97	16.04	16.04
Rc (ASHRAE)		lbs/RT	2.72	2.33	3.38	3.13
HEATING ONLY						
Total Heating Capacity	(3)	**kBtu/h**	**576,9**	**653.8**	**758.0**	**845.0**
Total Power Input	(3)	kW	54.71	63.93	73.24	82.12
COP	(3)	Btu/hW	10.55	10.23	10.35	10.29
EXCHANGERS						
HEAT EXCHANGER (PLANT) IN COOLING MODE						
Water Flow	(1)(2)	GPM	106.1	124.2	141.7	155.5
Heat Exchanger Pressure Drop	(1)(2)	ft H2O	10.5	14.4	15.8	16.2
HEAT EXCHANGER (PLANT) IN HEATING MODE						
Water Flow	(3)	GPM	115.6	131.1	152.0	169.4
Heat Exchanger Pressure Drop	(3)	ft H2O	12.5	16.1	18.2	19.2
REFRIGERANT CIRCUIT						
No. Compressors		N°	2	2	2	2
Number Of Capacity Steps		N°	2	2	2	2
No. Circuits		N°	1	1	1	1
Regulation			STEPS	STEPS	STEPS	STEPS
Min. Capacity Step		%	50	50	50	50
Refrigerant			R410A	R410A	R410A	R410A
Refrigerant Charge		lb	119	119	197	201
Oil Charge		lb	30.0	28.9	27.8	27.8
FANS						
Quantity		N°	4	4	6	6
Air Flow		cfm	32864	35830	47717	47717
Fan Power Input		kW	1.05	1.25	1.05	1.05
SOUND LEVEL						
Sound Pressure	(4)	dB(A)	57	57	57	58
Sound Power Level in Cooling	(5)(7)	dB(A)	89	89	89	90
Sound Power Level in Heating	(6)(8)	dB(A)	89	89	89	90
SIZE AND WEIGHT						
A	(9)	in	161.8	161.8	201.2	201.2
B	(9)	in	87.4	87.4	87.4	87.4
H	(9)	in	84.6	84.6	84.6	84.6
Operating Weight	(9)	lb	4586	4608	5512	5578

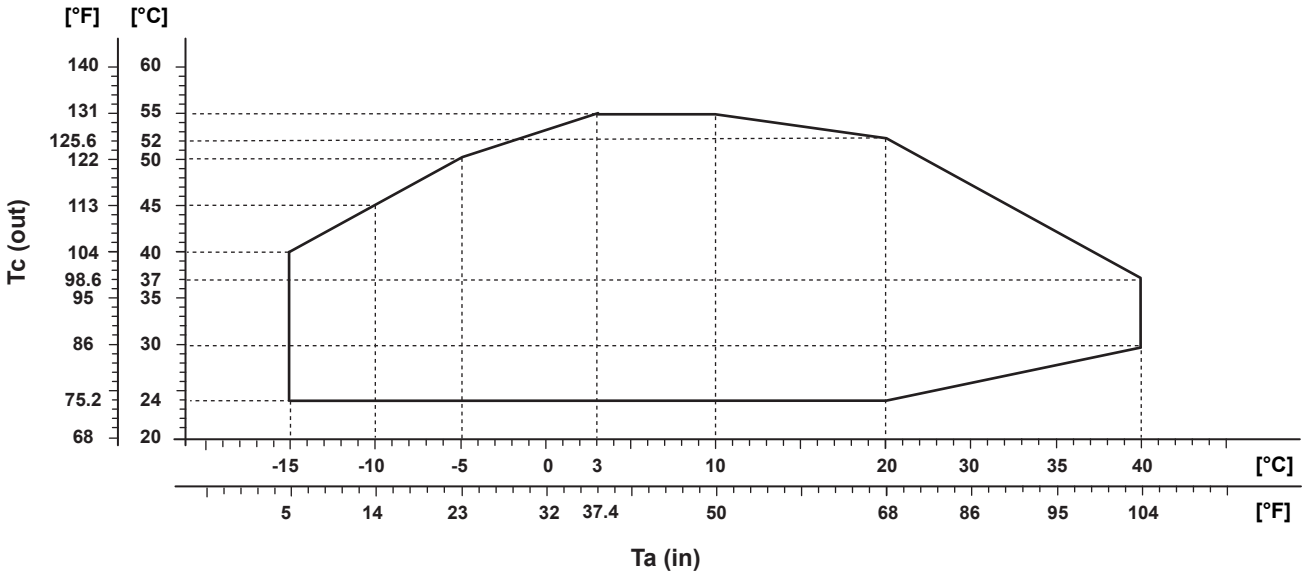
Notes:
1 Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
2 Plant cooling exchanger water (out) 44°F, with water flow 2.4 GPM/RT; Source heat exchanger air (in) 95.0°F.
3 Plant Heating Mode Water (In/Out) 110°F/120°F; Source Heat Exchanger Ambient Air (In) 46.9°F - 87% R.H.
4 Average Sound Pressure Level At 32.8ft Distance, Unit In A Free Field On A Reflective Surface; Non-Binding Value Calculated From The Sound Power Level. 5 Sound power ratings on the basis of measurements made in compliance with ISO 3744.
6 Sound Power in Compliance with ISO 9614.
7 Sound Power Level in Cooling, Outdoors.
8 Sound Power Level in Heating, Outdoors.
9 Standard Unit Configuration, Without Optional Accessories.
10 Performance rated to Altitude: 0 ft above sea level
- Not available

6.1 OPERATING LIMITS

COOLING



HEATING



Ta (in) Outdoor air temperature

Tev (out) Plant side cold heat exchanger leaving water temperature

Tc (out) Plant side hot heat exchanger leaving water temperature

A Required: DVVF device (code 819)

B Required: DVV2F device (code 821)

C Fan ventilation forced

Operating limits above are nominal values.
For the specific temperature limits of each model at the desired rating conditions, please refer to the selection software ElcaWorld.

OPERATING LIMITS

SIZE
NX-N-G02-U /0152P
NX-N-G02-U /0182P
NX-N-G02-U /0202P
NX-N-G02-U /0252P
NX-N-G02-U /0262P
NX-N-G02-U /0302P
NX-N-G02-U /0402P
NX-N-G02-U /0452P
NX-N-G02-U /0502P
NX-N-G02-U /0562P
NX-N-G02-U /0612P
NX-N-G02-U /0662P
NX-N-G02-U /0712P
NX-N-G02-U /0812P
NX-N-G02-U /D /0152P
NX-N-G02-U /D /0182P
NX-N-G02-U /D /0202P
NX-N-G02-U /D /0252P
NX-N-G02-U /D /0262P
NX-N-G02-U /D /0302P
NX-N-G02-U /D /0402P
NX-N-G02-U /D /0452P
NX-N-G02-U /D /0502P
NX-N-G02-U /D /0562P
NX-N-G02-U /D /0612P
NX-N-G02-U /D /0662P
NX-N-G02-U /D /0712P
NX-N-G02-U /D /0812P

6.2 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 table or consult the selection software ElcaWorld

	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.

6.3 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, or refer to the Selection Software ElcaWorld

SERIES	FOULING FACTORS	EVAPORATOR			CONDENSER/RECOVERY			DESUPERHEATER
	ff	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	1.80×10^{-5}	1.000	1.000	0.0	1.000	1.000	0.0	1.000
VARIOUS	4.40×10^{-5}	1.000	1.000	0.0	0.990	1.030	1.0	0.990
VARIOUS	8.80×10^{-5}	0.960	0.990	0.7	0.980	1.040	1.5	0.980
VARIOUS	13.20×10^{-5}	0.944	0.985	1.0	0.964	1.050	2.3	0.964
VARIOUS	17.20×10^{-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

7.1 HYDRONIC DATA

[Standard AHRI 551/591 - SI System]

Water flow and pressure drop

Water flow in the plant exchanger is given by:
Q=P/(4.186 x Dt)
Q: Water flow (l/s)
Dt: Difference between inlet and outlet water temp. (°C)
P: Heat exchanger capacity (kW)

Pressure drop is given by:
Dp= K x (3.6 x Q)^2/1000
Q: Water flow (l/s)
Dp: 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-G02-U /0152P	575/3/60	795	1.167	3.389	2.20	105	-	-	-	-
NX-N-G02-U /0182P	575/3/60	652	1.306	3.694	2.70	115	-	-	-	-
NX-N-G02-U /0202P	575/3/60	498	1.500	4.250	3.10	132	-	-	-	-
NX-N-G02-U /0252P	575/3/60	325	1.778	4.333	3.30	156	-	-	-	-
NX-N-G02-U /0262P	575/3/60	256	2.000	4.667	4.60	172	-	-	-	-
NX-N-G02-U /0302P	575/3/60	256	2.250	4.722	4.60	196	-	-	-	-
NX-N-G02-U /0402P	575/3/60	120	2.667	7.278	6.30	228	-	-	-	-
NX-N-G02-U /0452P	575/3/60	101	3.111	8.500	7.10	265	-	-	-	-
NX-N-G02-U /0502P	575/3/60	78.6	3.500	9.694	8.10	303	-	-	-	-
NX-N-G02-U /0562P	575/3/60	87.9	3.944	10.72	8.10	340	-	-	-	-
NX-N-G02-U /0612P	575/3/60	54.2	4.333	12.08	10.1	388	-	-	-	-
NX-N-G02-U /0662P	575/3/60	54.2	5.056	13.83	10.1	454	-	-	-	-
NX-N-G02-U /0712P	575/3/60	45.6	5.806	16.06	11.3	519	-	-	-	-
NX-N-G02-U /0812P	575/3/60	38.8	6.472	14.86	12.5	569	-	-	-	-
NX-N-G02-U /D /0152P	575/3/60	795	1.167	3.389	2.20	105	1767	-	0.750	0.44
NX-N-G02-U /D /0182P	575/3/60	652	1.306	3.694	2.70	115	1767	-	0.833	0.44
NX-N-G02-U /D /0202P	575/3/60	498	1.500	4.250	3.10	132	1767	-	0.944	0.44
NX-N-G02-U /D /0252P	575/3/60	325	1.778	4.333	3.30	156	1767	-	1.083	0.44
NX-N-G02-U /D /0262P	575/3/60	256	2.000	4.667	4.60	172	1767	-	1.222	0.44
NX-N-G02-U /D /0302P	575/3/60	256	2.250	4.722	4.60	196	871	-	1.361	0.63
NX-N-G02-U /D /0402P	575/3/60	120	2.667	7.278	6.30	228	871	-	1.500	0.63
NX-N-G02-U /D /0452P	575/3/60	101	3.111	8.500	7.10	265	871	-	1.806	0.63
NX-N-G02-U /D /0502P	575/3/60	78.6	3.500	9.694	8.10	303	613	-	2.111	0.76
NX-N-G02-U /D /0562P	575/3/60	87.9	3.944	10.72	8.10	340	613	-	2.306	0.76
NX-N-G02-U /D /0612P	575/3/60	54.2	4.333	12.08	10.1	388	412	-	2.556	0.95
NX-N-G02-U /D /0662P	575/3/60	54.2	5.056	13.83	10.1	454	412	-	2.889	0.95
NX-N-G02-U /D /0712P	575/3/60	45.6	5.806	16.06	11.3	519	277	-	3.250	1.26
NX-N-G02-U /D /0812P	575/3/60	38.8	6.472	14.86	12.5	569	277	-	3.806	1.26

Q min: minimum water flow allowable to the heat exchanger
Q max: maximum water flow allowable to the heat exchanger
C.a. min: minimum water content required in the hydronic system
C.A.S.: Heat Exchanger water volume

HYDRONIC DATA

[Standard AHRI 550/590 - I-P System (US)]

Water flow and pressure drop

SIZE	Power supply V/ph/Hz	HEAT EXCHANGER USER SIDE					HEAT RECOVERY EX. USER SIDE			
		K	Q min GPM	Q max GPM	C.A.S. GAL	C.a. min GAL	K	Q min GPM	Q max GPM	C.A.S. GAL
NX-N-G02-U /0152P	575/3/60	795	18.49	53.71	0.58	27.74	-	-	-	-
NX-N-G02-U /0182P	575/3/60	652	20.69	58.56	0.71	30.38	-	-	-	-
NX-N-G02-U /0202P	575/3/60	498	23.78	67.36	0.82	34.87	-	-	-	-
NX-N-G02-U /0252P	575/3/60	325	28.18	68.68	0.87	41.21	-	-	-	-
NX-N-G02-U /0262P	575/3/60	256	31.70	73.97	1.22	45.44	-	-	-	-
NX-N-G02-U /0302P	575/3/60	256	35.66	74.85	1.22	51.78	-	-	-	-
NX-N-G02-U /0402P	575/3/60	120	42.27	115.4	1.66	60.23	-	-	-	-
NX-N-G02-U /0452P	575/3/60	101	49.31	134.7	1.88	70.01	-	-	-	-
NX-N-G02-U /0502P	575/3/60	78,6	55.48	153.7	2.14	80.04	-	-	-	-
NX-N-G02-U /0562P	575/3/60	87.9	62.52	170.0	2.14	89.82	-	-	-	-
NX-N-G02-U /0612P	575/3/60	54.2	68.68	191.5	2.67	102.5	-	-	-	-
NX-N-G02-U /0662P	575/3/60	54,2	80.13	219.3	2.67	119.9	-	-	-	-
NX-N-G02-U /0712P	575/3/60	45,6	92.02	254.5	2.99	137.1	-	-	-	-
NX-N-G02-U /0812P	575/3/60	38,8	102.6	235.6	3.30	150.3	-	-	-	-
NX-N-G02-U /D /0152P	575/3/60	795	18.49	53.71	0.58	27.74	1767	-	11.89	0.12
NX-N-G02-U /D /0182P	575/3/60	652	20.69	58.56	0.71	30.38	1767	-	13.21	0.12
NX-N-G02-U /D /0202P	575/3/60	498	23.78	67.36	0.82	34.87	1767	-	14.97	0.12
NX-N-G02-U /D /0252P	575/3/60	325	28.18	68.68	0.87	41.21	1767	-	17.17	0.12
NX-N-G02-U /D /0262P	575/3/60	256	31.70	73.97	1.22	45.44	1767	-	19.37	0.12
NX-N-G02-U /D /0302P	575/3/60	256	35.66	74.85	1.22	51.78	871	-	21.57	0.17
NX-N-G02-U /D /0402P	575/3/60	120	42.27	115.4	1.66	60.23	871	-	23.78	0.17
NX-N-G02-U /D /0452P	575/3/60	101	49.31	134.7	1.88	70.01	871	-	28.62	0.17
NX-N-G02-U /D /0502P	575/3/60	78.6	55.48	153.7	2.14	80.04	613	-	33.46	0.20
NX-N-G02-U /D /0562P	575/3/60	87.9	62.52	170.0	2.14	89.82	613	-	36.54	0.20
NX-N-G02-U /D /0612P	575/3/60	54.2	68.68	191.5	2.67	102.5	412	-	40.51	0.25
NX-N-G02-U /D /0662P	575/3/60	54.2	80.13	219.3	2.67	119.9	412	-	45.79	0.25
NX-N-G02-U /D /0712P	575/3/60	45.6	92.02	254.5	2.99	137.1	277	-	51.51	0.33
NX-N-G02-U /D /0812P	575/3/60	38.8	102.6	235.6	3.30	150.3	277	-	60.32	0.33

Q min: minimum water flow allowable to the heat exchanger
Q max: maximum water flow allowable to the heat exchanger
C.a. min: minimum water content required in the hydronic system
C.A.S.: Heat Exchanger water volume

8.1 ELECTRICAL DATA NX-N-G02-U

[Standard AHRI 551/591 - SI System]

SIZE	Power supply V/ph/Hz	Maximum values								
		Compressor				Fans (1)		Total (1)(2)		
		n	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]
0152P	575/3/60	2	2 x 9.9	2 x 11.4	2 x 78	0.710	1	22.60	27	93
0182P	575/3/60	2	2 x 10.4	2 x 12.5	2 x 78	0.710	1	23.60	29	94
0202P	575/3/60	2	2 x 11.75	2 x 14.01	2 x 93.7	0.710	1	27.80	34	113
0252P	575/3/60	2	2 x 13.8	2 x 16.63	2 x 107.6	0.710	1	31.90	39	130
0262P	575/3/60	2	2 x 15.6	2 x 19.25	2 x 100	0.710	1	35.50	44	125
0302P	575/3/60	2	2 x 17.55	2 x 23.87	2 x 109	2.190	3	39.50	54	140
0402P	575/3/60	2	2 x 16.9	2 x 26.18	2 x 132	2.190	3	40.40	62	168
0452P	575/3/60	2	1x16.9 + 1x26.7	1x26.18 + 1x30.8	1x132 + 1x180	2,190	3	50.20	67	216
0502P	575/3/60	2	2 x 26.7	2 x 30.8	2 x 180	2.190	3	60.00	72	221
0562P	575/3/60	2	1x26.7 + 1x33.1	1x30.8 + 1x37.35	1x180 + 1x238	2.190	3	68.60	81	282
0612P	575/3/60	2	2 x 33.1	2 x 37.35	2 x 238	2.190	3	75.00	88	289
0662P	575/3/60	2	1x33.1 + 1x43.5	1x37.35 + 1x50.36	1x238 + 1x239	2.190	3	85.40	101	290
0712P	575/3/60	2	2 x 43.5	2 x 50.36	2 x 239	2.190	3	100.1	121	309
0812P	575/3/60	2	1x43.5 + 1x53.3	1x50.36 + 1x63.6	1x239 + 1x375	2.190	3	109.9	134	445

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 for sizing conductors and branch-circuit overcurrent protection

Data valid for standard units without any additional option.

Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)

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°C (-4°F) up to 55°C (131°F) (*), relative humidity range from 4 up to 100%, with possible precipitations, at air pressure from 70 kPa (23.4 ftH2O) and 106 kPa (34.5 ftH2O) and a maximum solar radiation of 1120 W/m2 (355.04 Btu/ft2*h)
- 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] - 0,0033 [ft] 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

9.1 FULL LOAD SOUND LEVEL DATA NX-N-G02-U

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								
0152P	83	81	82	81	75	70	64	58	**81**
0182P	83	81	82	81	75	70	64	58	**81**
0202P	83	81	82	81	75	70	64	58	**81**
0252P	84	82	83	82	76	71	65	59	**82**
0262P	84	82	83	82	76	71	65	59	**82**
0302P	84	82	83	82	76	71	65	59	**82**
0402P	84	82	83	82	76	71	65	59	**82**
0452P	87	85	86	85	79	74	68	62	**85**
0502P	88	86	87	86	80	75	69	63	**86**
0562P	90	88	89	88	82	77	71	65	**88**
0612P	91	89	90	89	83	78	72	66	**89**
0662P	91	89	90	89	83	78	72	66	**89**
0712P	91	89	90	89	83	78	72	66	**89**
0812P	92	90	91	90	84	79	73	67	**90**

Working conditions
Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
Sound power in compliance with ISO 3744
Sound Power Level in Cooling, Outdoors.

SOUND PRESSURE LEVEL IN COOLING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0152P	51	49	50	49	43	38	32	26	**49**
0182P	51	49	50	49	43	38	32	26	**49**
0202P	51	49	50	49	43	38	32	26	**49**
0252P	52	50	51	50	44	39	33	27	**50**
0262P	52	50	51	50	44	39	33	27	**50**
0302P	52	50	51	50	44	39	33	27	**50**
0402P	52	50	51	50	44	39	33	27	**50**
0452P	55	53	54	53	47	42	36	30	**53**
0502P	56	54	55	54	48	43	37	31	**54**
0562P	58	56	57	56	50	45	39	33	**56**
0612P	59	57	58	57	51	46	40	34	**57**
0662P	59	57	58	57	51	46	40	34	**57**
0712P	59	57	58	57	51	46	40	34	**57**
0812P	60	58	59	58	52	47	41	35	**58**

Working conditions
Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
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.
Rated In Accordance With AHRI Standard 550/590 (I-P) and 551/591 (S-I)
Average Sound Pressure Level At 32,8ft Distance, Unit In A Free Field On A Reflective Surface; Non-Binding Value Calculated From The Sound Power Level.

FULL LOAD SOUND LEVEL DATA NX-N-G02-U

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								
0152P	83	81	82	81	75	70	64	58	**81**
0182P	83	81	82	81	75	70	64	58	**81**
0202P	83	81	82	81	75	70	64	58	**81**
0252P	84	82	83	82	76	71	65	59	**82**
0262P	84	82	83	82	76	71	65	59	**82**
0302P	84	82	83	82	76	71	65	59	**82**
0402P	84	82	83	82	76	71	65	59	**82**
0452P	87	85	86	85	79	74	68	62	**85**
0502P	88	86	87	86	80	75	69	63	**86**
0562P	90	88	89	88	82	77	71	65	**88**
0612P	91	89	90	89	83	78	72	66	**89**
0662P	91	89	90	89	83	78	72	66	**89**
0712P	91	89	90	89	83	78	72	66	**89**
0812P	92	90	91	90	84	79	73	67	**90**

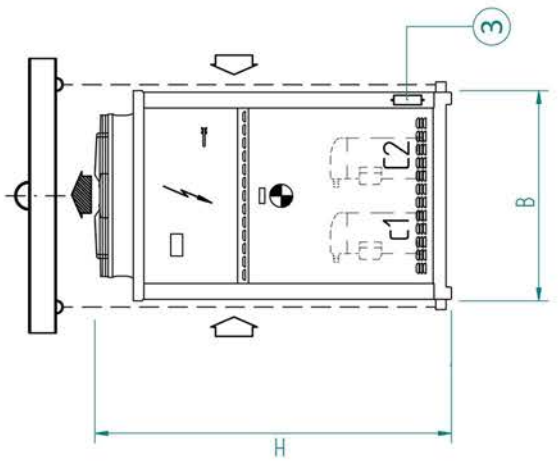
Working conditions

Plant Heating Mode Water (In/Out) 43,30°C/48,90°C; Source Heat Exchanger Ambient Air (In) 8,3°C - 87% R.H.
Plant Heating Mode Water (In/Out) 110°F/120°F; Source Heat Exchanger Ambient Air (In) 46,9°F - 87% R.H.
Sound power in compliance with ISO 3744
Sound Power Level in Heating, Outdoors.

SOUND PRESSURE LEVEL IN HEATING									
SIZE	Octave band [Hz]								Total sound level dB(A)
	63	125	250	500	1000	2000	4000	8000	
	Sound pressure level dB								
0152P	51	49	50	49	43	38	32	26	**49**
0182P	51	49	50	49	43	38	32	26	**49**
0202P	51	49	50	49	43	38	32	26	**49**
0252P	52	50	51	50	44	39	33	27	**50**
0262P	52	50	51	50	44	39	33	27	**50**
0302P	52	50	51	50	44	39	33	27	**50**
0402P	52	50	51	50	44	39	33	27	**50**
0452P	55	53	54	53	47	42	36	30	**53**
0502P	56	54	55	54	48	43	37	31	**54**
0562P	58	56	57	56	50	45	39	33	**56**
0612P	59	57	58	57	51	46	40	34	**57**
0662P	59	57	58	57	51	46	40	34	**57**
0712P	59	57	58	57	51	46	40	34	**57**
0812P	60	58	59	58	52	47	41	35	**58**

Working conditions

Plant Heating Mode Water (In/Out) 43.30°C/48.90°C; Source Heat Exchanger Ambient Air (In) 8.3°C - 87% R.H.
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.
Plant Heating Mode Water (In/Out) 110°F/120°F; Source Heat Exchanger Ambient Air (In) 46.9°F - 87% R.H.
Average Sound Pressure Level At 32,8ft Distance, Unit In A Free Field On A Reflective Surface; Non-Binding Value Calculated From The Sound Power Level.



1 ENTRATA ACQUA EVAPORATORE
EVAPORATOR WATER INLET

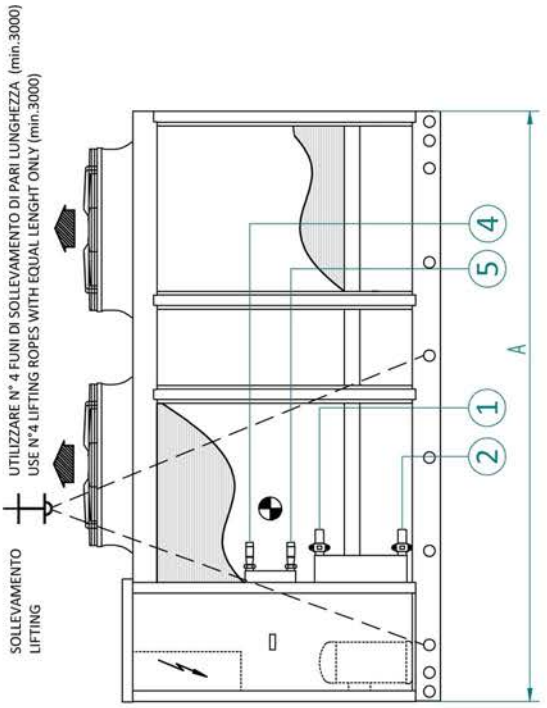
2 USCITA ACQUA EVAPORATORE
EVAPORATOR WATER OUTLET

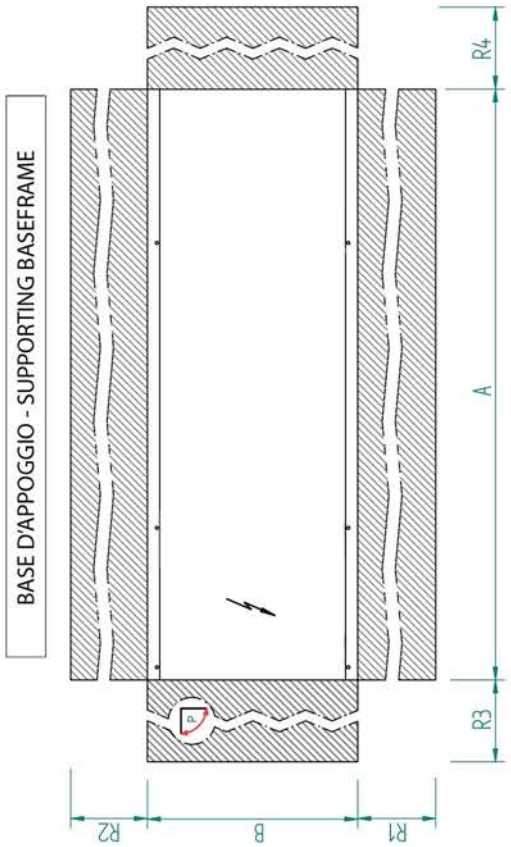
3 INGRESSO LINEA ELETTRICA
POWER INLET

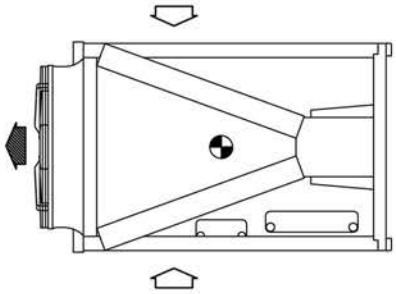
SOLO PER VERSIONI NX/D
ONLY VERSION NX/D

4 ENTRATA ACQUA DESURRISCALDATORE
DESUPERHEATER WATER INLET

5 USCITA ACQUA DESURRISCALDATORE
DESUPERHEATER WATER OUTLET







- ENTRATA ARIA
- AIR INLET

- USCITA ARIA
- AIR OUTLET

- BARICENTRO
- CENTER OF GRAVITY

- SPAZI DI RISPETTO
- MINIMUM CLEARANCE

- APERTURA PORTE
- DOOR OPENING

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

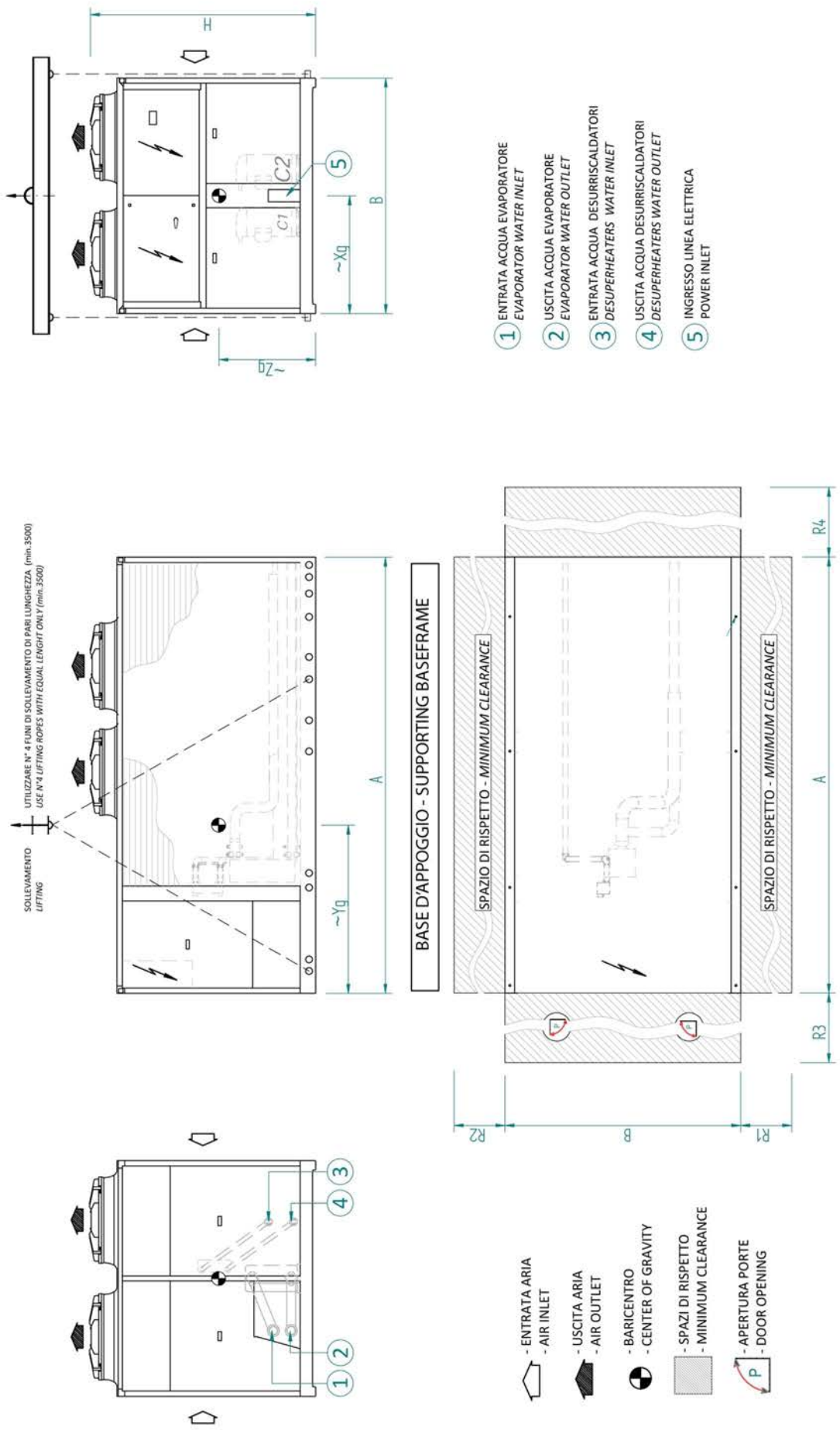
DIMENSIONAL DRAWINGS NX-N-G02-U 0152P - 0812P

[Standard AHRI 551/591 - 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-G02-U /0152P	2395	1195	1865	670	1000	1000	1000	1000	B1	1"1/2	-	-
NX-N-G02-U /0182P	2395	1195	1865	680	1000	1000	1000	1000	B1	1"1/2	-	-
NX-N-G02-U /0202P	2395	1195	1865	710	1000	1000	1000	1000	B1	1"1/2	-	-
NX-N-G02-U /0252P	2395	1195	1865	730	1000	1000	1000	1000	B1	1"1/2	-	-
NX-N-G02-U /0262P	2395	1195	1865	770	1000	1000	1000	1000	B1	1"1/2	-	-
NX-N-G02-U /0302P	3360	1195	1980	960	1000	1000	1000	1000	B1	2"	-	-
NX-N-G02-U /0402P	3980	1195	1980	1130	1000	1000	1000	1000	B1	2"	-	-
NX-N-G02-U /0452P	3980	1195	1980	1220	1000	1000	1000	1000	B1	2"1/2	-	-
NX-N-G02-U /0502P	3980	1195	1980	1310	1000	1000	1000	1000	B1	2"1/2	-	-
NX-N-G02-U /D /0152P	2395	1195	1865	670	1000	1000	1000	1000	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0182P	2395	1195	1865	680	1000	1000	1000	1000	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0202P	2395	1195	1865	710	1000	1000	1000	1000	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0252P	2395	1195	1865	730	1000	1000	1000	1000	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0262P	2395	1195	1865	770	1000	1000	1000	1000	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0302P	3360	1195	1980	960	1000	1000	1000	1000	B1	2"	B1	1"1/4
NX-N-G02-U /D /0402P	3980	1195	1980	1130	1000	1000	1000	1000	B1	2"	B1	1"1/4
NX-N-G02-U /D /0452P	3980	1195	1980	1220	1000	1000	1000	1000	B1	2"1/2	B1	1"1/4
NX-N-G02-U /D /0502P	3980	1195	1980	1310	1000	1000	1000	1000	B1	2"1/2	B1	1"1/4

Installation Note:

Unit clearance dimensions as specified above must be maintained in order to guarantee unit operation, even in cases of multi-unit plant consisting of multiple units.



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DIMENSIONAL DRAWINGS

NX-N-G02-U 0152P - 0812P

[Standard AHRI 551/591 - SI System]

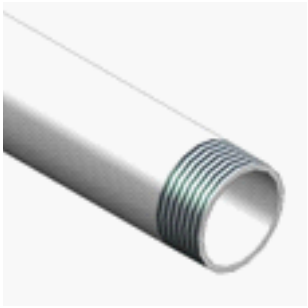
SIZE	DIMENSIONS AND WEIGHTS				CLEARANCE				HEAT EXCHANGER USER SIDE		HEAT RECOVERY EX. USER SIDE	
	A	B	H	WEIGHT	R1	R2	R3	R4	IN/OUT		IN/OUT	
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[mm]	TYPE	Ø	TYPE	Ø
NX-N-G02-U /0562P	4110	2220	2150	1900	2000	2000	1000	2000	B1	2"1/2	-	-
NX-N-G02-U /0612P	4110	2220	2150	2080	2000	2000	1000	2000	B1	3"	-	-
NX-N-G02-U /0662P	4110	2220	2150	2090	2000	2000	1000	2000	B1	3"	-	-
NX-N-G02-U /0712P	5110	2220	2150	2500	2000	2000	1000	2000	B1	3"	-	-
NX-N-G02-U /0812P	5110	2220	2150	2530	2000	2000	1000	2000	B1	3"	-	-
NX-N-G02-U /D /0562P	4110	2220	2150	1900	2000	2000	1000	2000	B1	2"1/2	B1	1"1/4
NX-N-G02-U /D /0612P	4110	2220	2150	2080	2000	2000	1000	2000	B1	3"	B1	1"1/2
NX-N-G02-U /D /0662P	4110	2220	2150	2090	2000	2000	1000	2000	B1	3"	B1	1"1/2
NX-N-G02-U /D /0712P	5110	2220	2150	2500	2000	2000	1000	2000	B1	3"	B1	1"1/2
NX-N-G02-U /D /0812P	5110	2220	2150	2530	2000	2000	1000	2000	B1	3"	B1	1"1/2

Installation Note:

Unit clearance dimensions as specified above must be maintained in order to guarantee unit operation, even in cases of multi-unit plant consisting of multiple units.

DIMENSIONAL DRAWINGS

LEGEND OF PIPE CONNECTIONS



TYPE = B
Male threaded 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

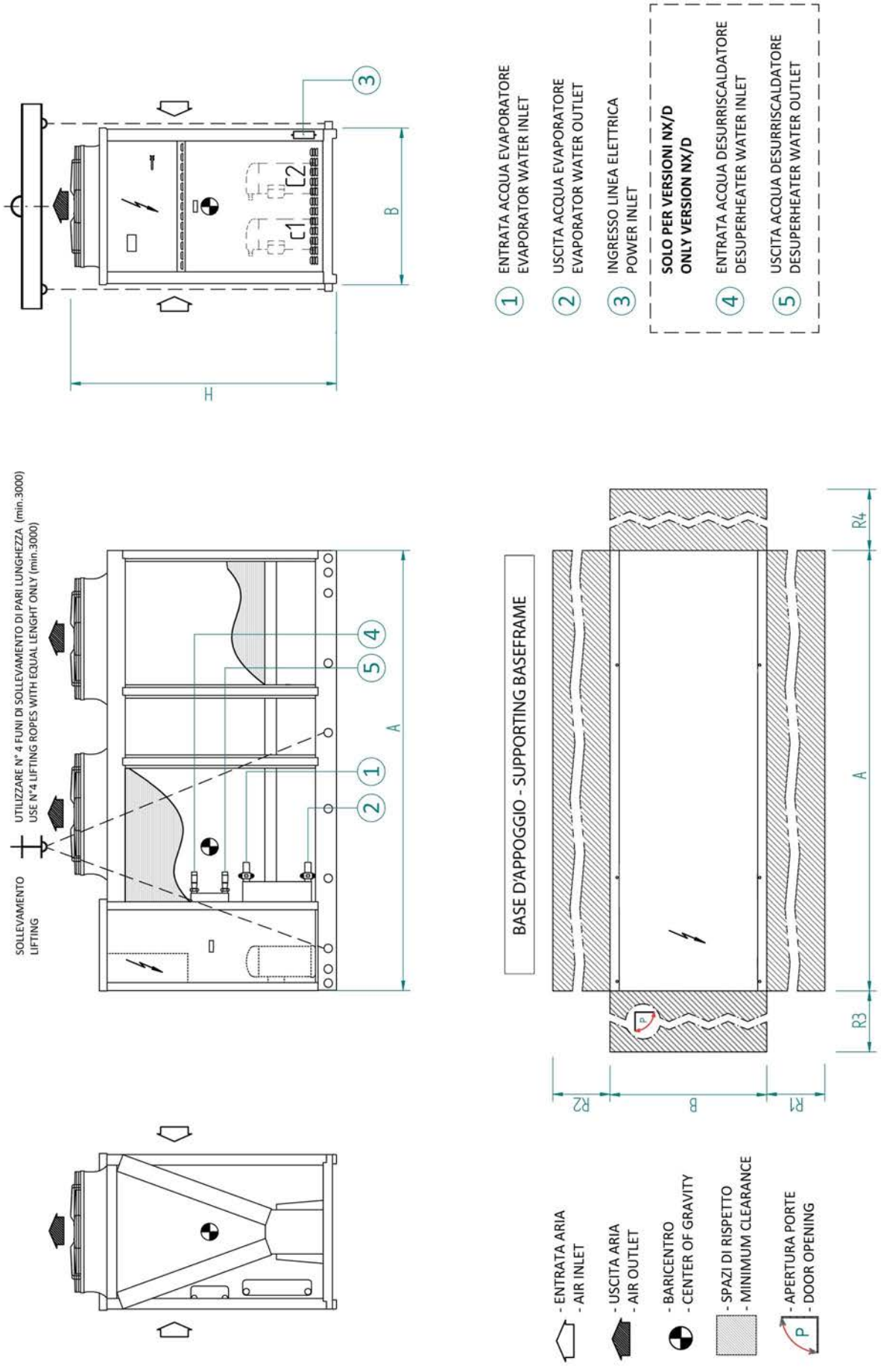
UNI ISO 228/13
Pipe threads where pressure-tight joints are not made on the threads - Designation, dimensions and tolerances
Used terminology:
G: Pipe threads where pressure-tight joints are not made on the threads
A: Close tolerance class for external pipe threads where pressure-tight joints are not 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



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DIMENSIONAL DRAWINGS

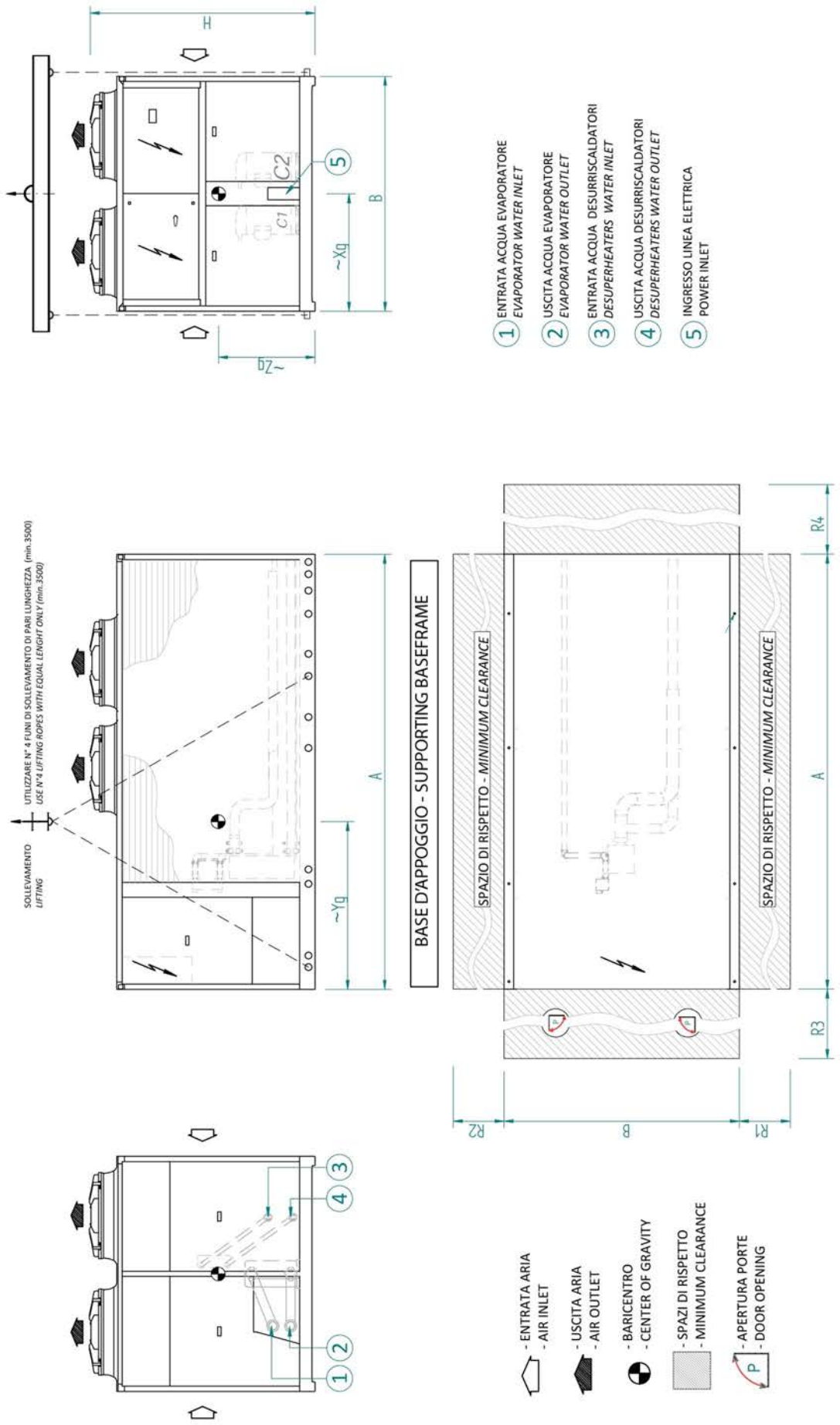
NX-N-G02-U 0152P - 0812P

[Standard AHRI 550/590 - I-P 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	
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[in]	TYPE	Ø	TYPE	Ø
NX-N-G02-U /0152P	94.3	47.0	73.4	1477	39.4	39.4	39.4	39.4	B1	1"1/2	-	-
NX-N-G02-U /0182P	94.3	47.0	73.4	1499	39.4	39.4	39.4	39.4	B1	1"1/2	-	-
NX-N-G02-U /0202P	94.3	47.0	73.4	1565	39.4	39.4	39.4	39.4	B1	1"1/2	-	-
NX-N-G02-U /0252P	94.3	47.0	73.4	1609	39.4	39.4	39.4	39.4	B1	1"1/2	-	-
NX-N-G02-U /0262P	94.3	47.0	73.4	1698	39.4	39.4	39.4	39.4	B1	1"1/2	-	-
NX-N-G02-U /0302P	132.3	47.0	78.0	2116	39.4	39.4	39.4	39.4	B1	2"	-	-
NX-N-G02-U /0402P	156.7	47.0	78.0	2491	39.4	39.4	39.4	39.4	B1	2"	-	-
NX-N-G02-U /0452P	156.7	47.0	78.0	2690	39.4	39.4	39.4	39.4	B1	2"1/2	-	-
NX-N-G02-U /0502P	156.7	47.0	78.0	2888	39.4	39.4	39.4	39.4	B1	2"1/2	-	-
NX-N-G02-U /D /0152P	94.3	47.0	73.4	1477	39.4	39.4	39.4	39.4	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0182P	94.3	47.0	73.4	1499	39.4	39.4	39.4	39.4	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0202P	94.3	47.0	73.4	1565	39.4	39.4	39.4	39.4	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0252P	94.3	47.0	73.4	1609	39.4	39.4	39.4	39.4	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0262P	94.3	47.0	73.4	1698	39.4	39.4	39.4	39.4	B1	1"1/2	B1	1"1/4
NX-N-G02-U /D /0302P	132.3	47.0	78.0	2116	39.4	39.4	39.4	39.4	B1	2"	B1	1"1/4
NX-N-G02-U /D /0402P	156.7	47.0	78.0	2491	39.4	39.4	39.4	39.4	B1	2"	B1	1"1/4
NX-N-G02-U /D /0452P	156.7	47.0	78.0	2690	39.4	39.4	39.4	39.4	B1	2"1/2	B1	1"1/4
NX-N-G02-U /D /0502P	156.7	47.0	78.0	2888	39.4	39.4	39.4	39.4	B1	2"1/2	B1	1"1/4

Installation Note:

Unit clearance dimensions as specified above must be maintained in order to guarantee unit operation, even in cases of multi-unit plant consisting of multiple units.



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DIMENSIONAL DRAWINGS

NX-N-G02-U 0152P - 0812P

[Standard AHRI 550/590 - I-P 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	
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[in]	TYPE	Ø	TYPE	Ø
NX-N-G02-U /0562P	161.8	87.4	84.6	4189	78.7	78.7	39.4	78.7	B1	2"1/2	-	-
NX-N-G02-U /0612P	161.8	87.4	84.6	4586	78.7	78.7	39.4	78.7	B1	3"	-	-
NX-N-G02-U /0662P	161.8	87.4	84.6	4608	78.7	78.7	39.4	78.7	B1	3"	-	-
NX-N-G02-U /0712P	201.2	87.4	84.6	5512	78.7	78.7	39.4	78.7	B1	3"	-	-
NX-N-G02-U /0812P	201.2	87.4	84.6	5578	78.7	78.7	39.4	78.7	B1	3"	-	-
NX-N-G02-U /D /0562P	161.8	87.4	84.6	4189	78.7	78.7	39.4	78.7	B1	2"1/2	B1	1"1/4
NX-N-G02-U /D /0612P	161.8	87.4	84.6	4586	78.7	78.7	39.4	78.7	B1	3"	B1	1"1/2
NX-N-G02-U /D /0662P	161.8	87.4	84.6	4608	78.7	78.7	39.4	78.7	B1	3"	B1	1"1/2
NX-N-G02-U /D /0712P	201.2	87.4	84.6	5512	78.7	78.7	39.4	78.7	B1	3"	B1	1"1/2
NX-N-G02-U /D /0812P	201.2	87.4	84.6	5578	78.7	78.7	39.4	78.7	B1	3"	B1	1"1/2

Installation Note:

Unit clearance dimensions as specified above must be maintained in order to guarantee unit operation, even in cases of multi-unit plant consisting of multiple units.

11.1 HYDRONIC GROUP

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

- Pump Signal terminals only (ON/OFF or Modulating)

The hydronic module allows to control the field-supplied pumps with the unit controller logic.

- Pumps (fixed speed)

The hydronic module includes the pumps and the main water circuit components, thus optimizing hydronic and electrical installation space, time and costs.

The complete list of the options available is included in the accessory section of the data book.

When the units are ordered without the hydronic modules and are provided with pump signal terminals only, the components that are provided and factory-mounted in the units are as follows:

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

Sizes from 0562P to 0812P (dual coil units) are provided with:

- External hydronic connections flush with the unit
- Drain valve
- Air Purge valve

For the hydronic modules with pump(s), the factory-mounted components are as follows:

- 1 or 2 pumps, 2 poles, low or high head, fixed speed
- Check valve (Clapet type for in-line pumps)
- Pressure Relief Valve set at 10 bar
- Air Purge valve
- Differential pressure switch (on heat exchanger)
- Drain valve (on heat exchanger)
- Oversized insulation lining on pipes, 19 mm thick, with closed cell expanded elastomeric material (Eurobatex type)
- Electric pump's volute insulated

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 thermal cut-out.

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

The hydronic group is protected by a special self-ventilated enclosure covered with 15 mm thick fiberform (bottom not included).

The hydronic kit of this family includes in-line pumps (singles or twins).

11.1 IN-LINE PUMPS

Low or High Head Pumps

Vertical In-Line centrifugal pumps, available in single or twin configurations. Cast iron pump casing with AISI 316L stainless or cast-iron impeller. Mechanical seal with ceramic/carbon and EPDM. Three-phase electric motor protected to IP55, Class F insulation, suitable for continuous service.

11.1 Special Pumps

Custom pump solutions available, contact your distributor for details.

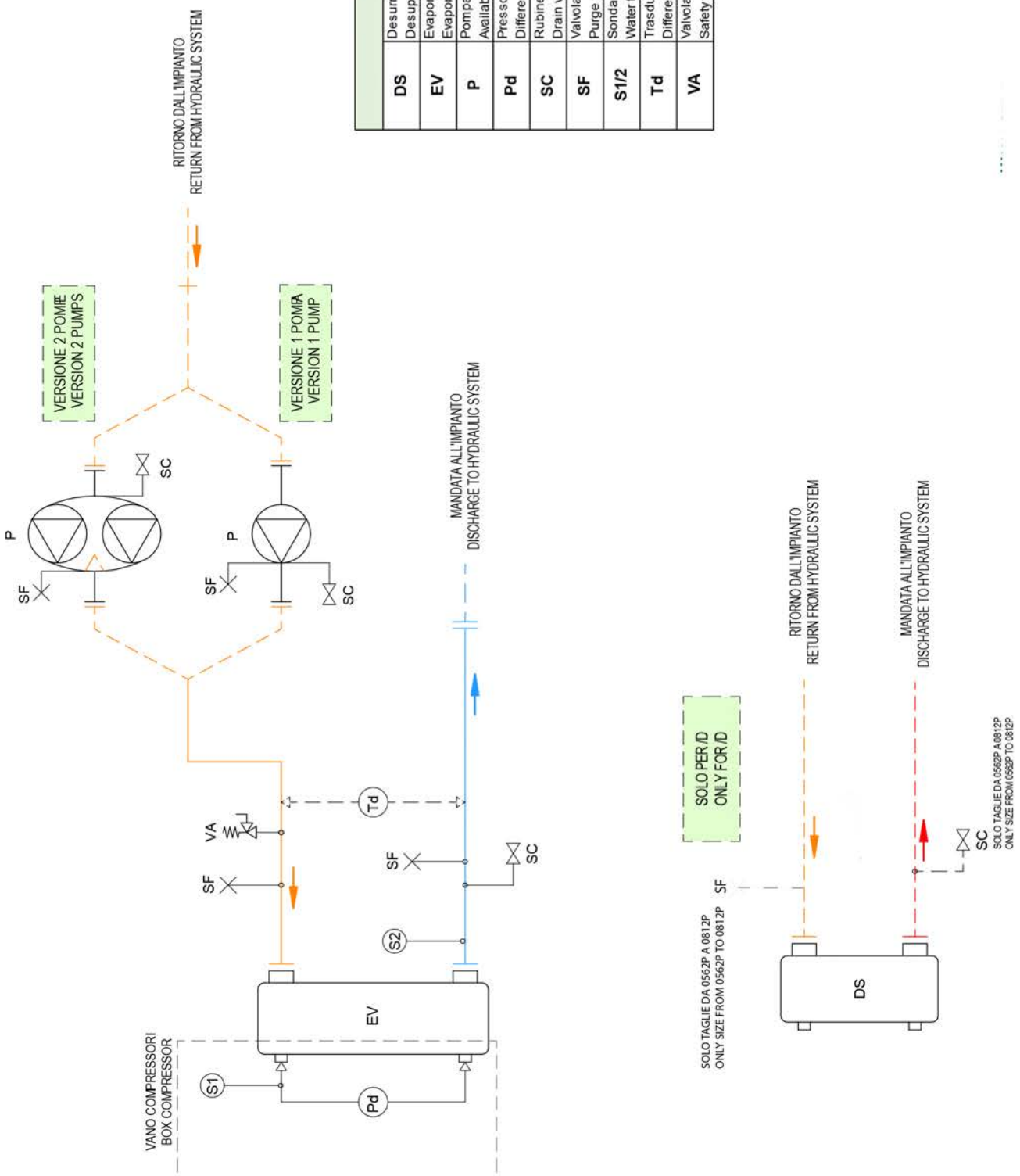
11.1 IN-LINE PUMP SPECIFICATION IN SINGLE OR TWIN VERSION AT FIXED SPEED

Centrifugal pumps with in-line suction and delivery flanges, in single or twin versions. Pump body and impeller in cast-iron, entirely laser technology welded. Mechanical seal with components in ceramics, carbon and EPDM elastomers. Three-phase electric motor protected to IP55, insulation class F, suitable for continuous service. “Back pull-out” design, impeller, adapter, and motor can be extracted without disconnecting the pump body from the piping system.

Possible configurations

PUMP GROUP	Versions
- 1 PUMP 2P LH (FIXED SPEED)(4736)	X
U - 1 PUMP 2P HH (FIXED SPEED)(4737)	X
U - 2 PUMPS 2P LH (FIXED SPEED)(4741)	X
57 U - 2 PUMPS 2P HH (FIXED SPEED)(4742)	X

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
SC	Rubinetto 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

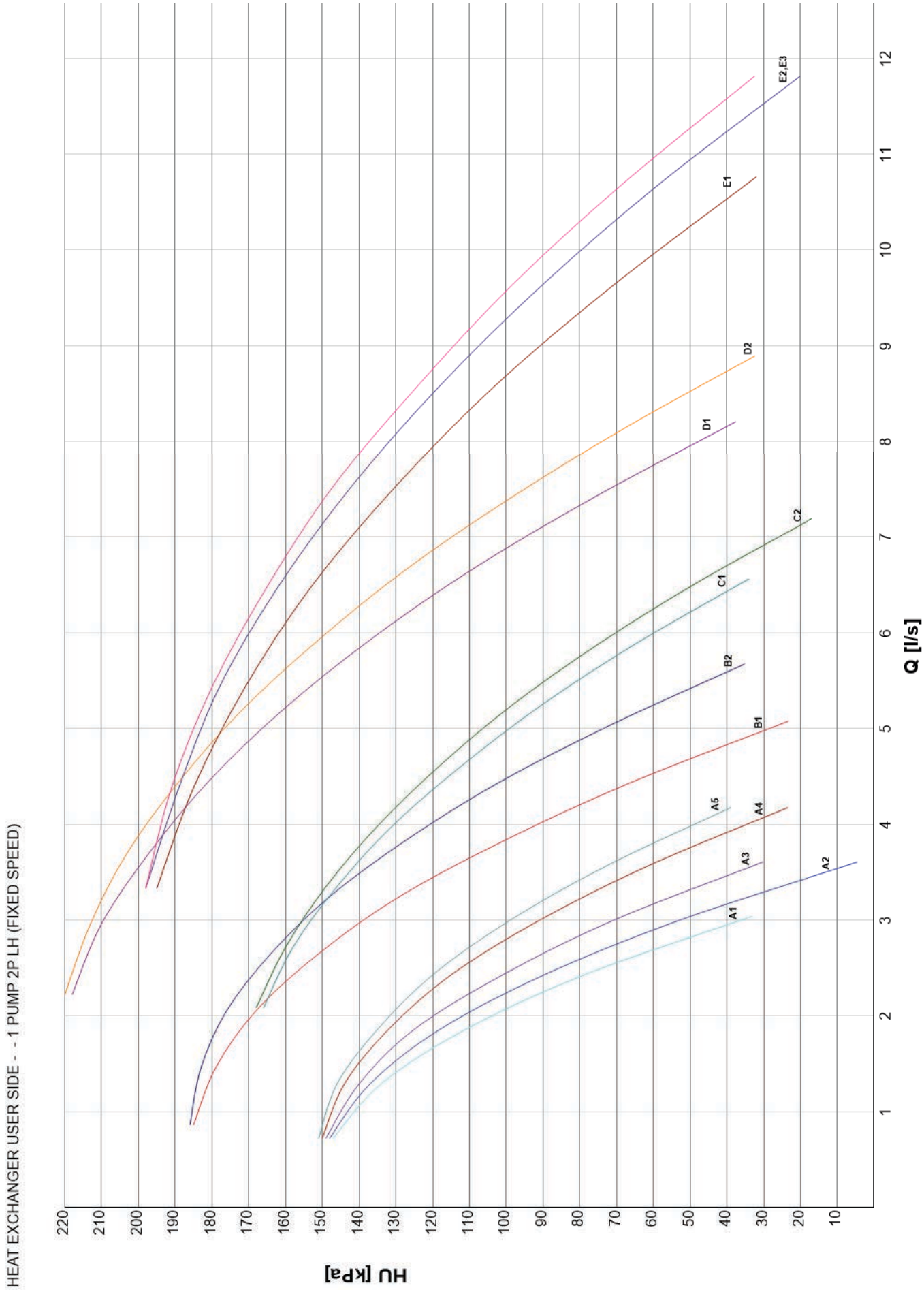


HYDRONIC GROUP

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

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Poles	[A]	[kW]	[kPa]	[kPa]
0152P		41.15	1.789	48.84	2.108	A1	LNEE 32-160/11/2 60Hz	2	2	1,100	115	98.3
0182P		45.47	1.977	53.71	2.318	A2					113	95.7
0202P		53.54	2.328	60.78	2.623	A3					106	91.7
0252P		61.28	2.664	70.76	3.054	A4					105	88.2
0262P		68.39	2.973	76.77	3.313	A5					99.9	85.0
0302P		76.78	3.338	89.76	3.873	B1	LNEE 32-160/15/2 60Hz	2	2	1,500	125	98.5
0402P		91.69	3.986	106.1	4.580	B2					121	94.8
0452P		105.8	4.599	119.6	5.163	C1	LNEE 40-125/15/2 60Hz	2	2	1,500	113	93.4
0502P		119.3	5.186	133.6	5.764	C2					100	79.5
0562P		135.0	5.867	152.2	6.570	D1	LNEE 40-125/22/2 60Hz	2	3	2,200	139	112
0612P		154.0	6.697	169.1	7.296	D2					126	103
0662P		180.2	7.835	191.6	8.269	E1	LNEE 50-125/30/2 60Hz	2	4	3,000	122	111
0712P		205.6	8.939	222.1	9.587	E2					109	91.4
0812P		225.6	9.808	247.6	10.69	E3					93.6	68.3

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)


HEAT EXCHANGER USER SIDE - - 1 PUMP 2P LH (FIXED SPEED)
HU [kPa]
Q [l/s]
E2,E3
E1
D2
D1
C2
C1
B2
B1
A5
A4
A3
A2
A1

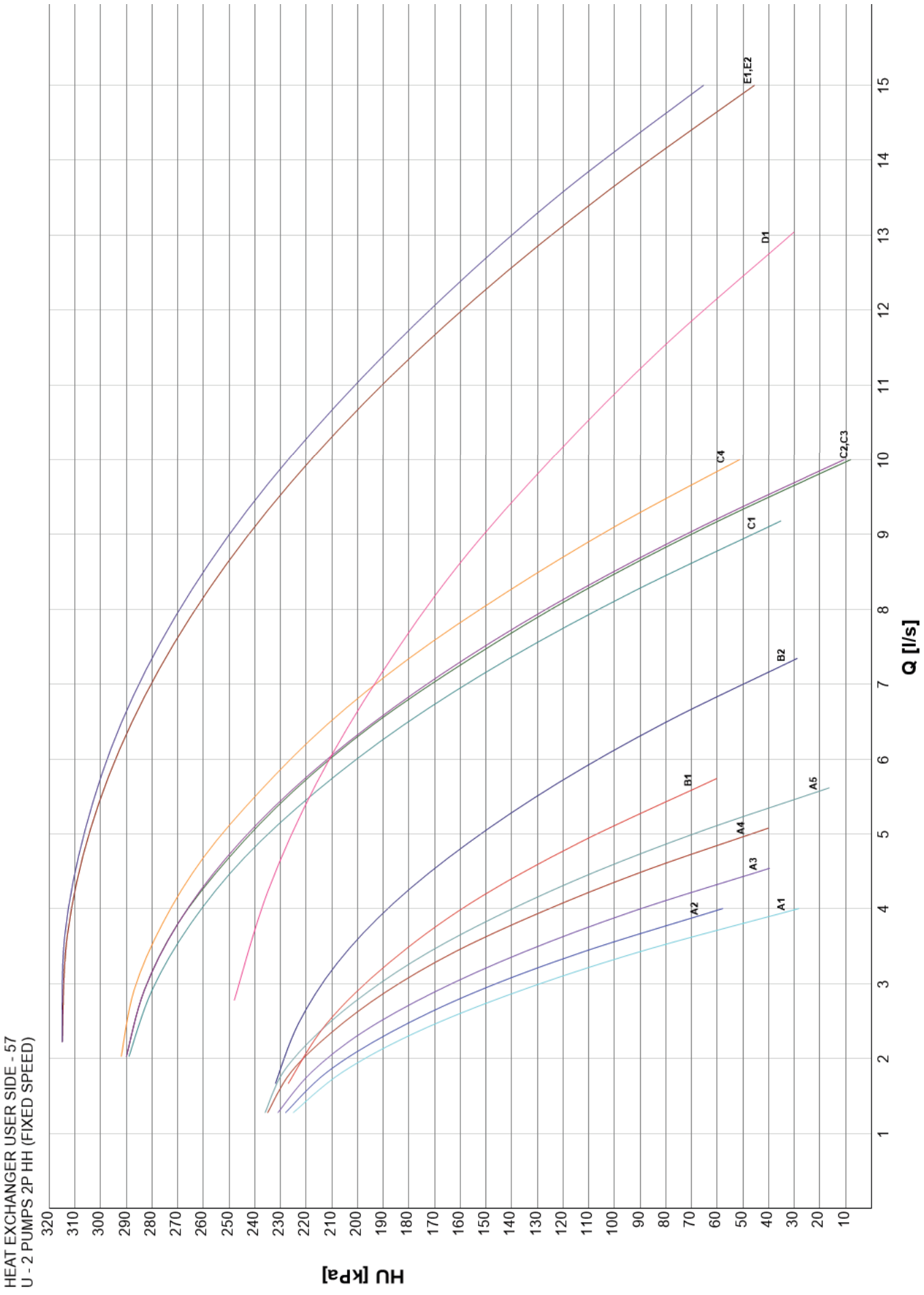
HYDRONIC GROUP

HEAT EXCHANGER USER SIDE - 57
U - 2 PUMPS 2P HH (FIXED SPEED)

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Poles	[A]	[kW]	[kPa]	[kPa]
0152P		41.15	1.789	48.84	2.108	A1	LNTE 32-160/22/2 60Hz	2	3	2,200	207	191
0182P		45.47	1.977	53.71	2.318	A2					205	189
0202P		53.54	2.328	60.78	2.623	A3					199	185
0252P		61.28	2.664	70.76	3.054	A4					199	181
0262P		68.39	2.973	76.77	3.313	A5					193	178
0302P		76.78	3.338	89.76	3.873	B1	LNTE 40-125/22/2 60Hz	2	3	2,200	186	165
0402P		91.69	3.986	106.1	4.580	B2					188	168
0452P		105.8	4.599	119.6	5.163	C1	LNTE 40-125/30/2 60Hz	2	4	3,000	246	230
0502P		119.3	5.186	133.6	5.764	C2					237	219
0562P		135.0	5.867	152.2	6.570	C3					216	190
0612P		154.0	6.697	169.1	7.296	C4					204	181
0662P		180.2	7.835	191.6	8.269	D1	LNTE 50-125/40/2 60Hz	2	5	4,000	177	168
0712P		205.6	8.939	222.1	9.587	E1	LNTE 50-160/55/2 60Hz	2	7	5,500	244	229
0812P		225.6	9.808	247.6	10.69	E2					232	210

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)

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

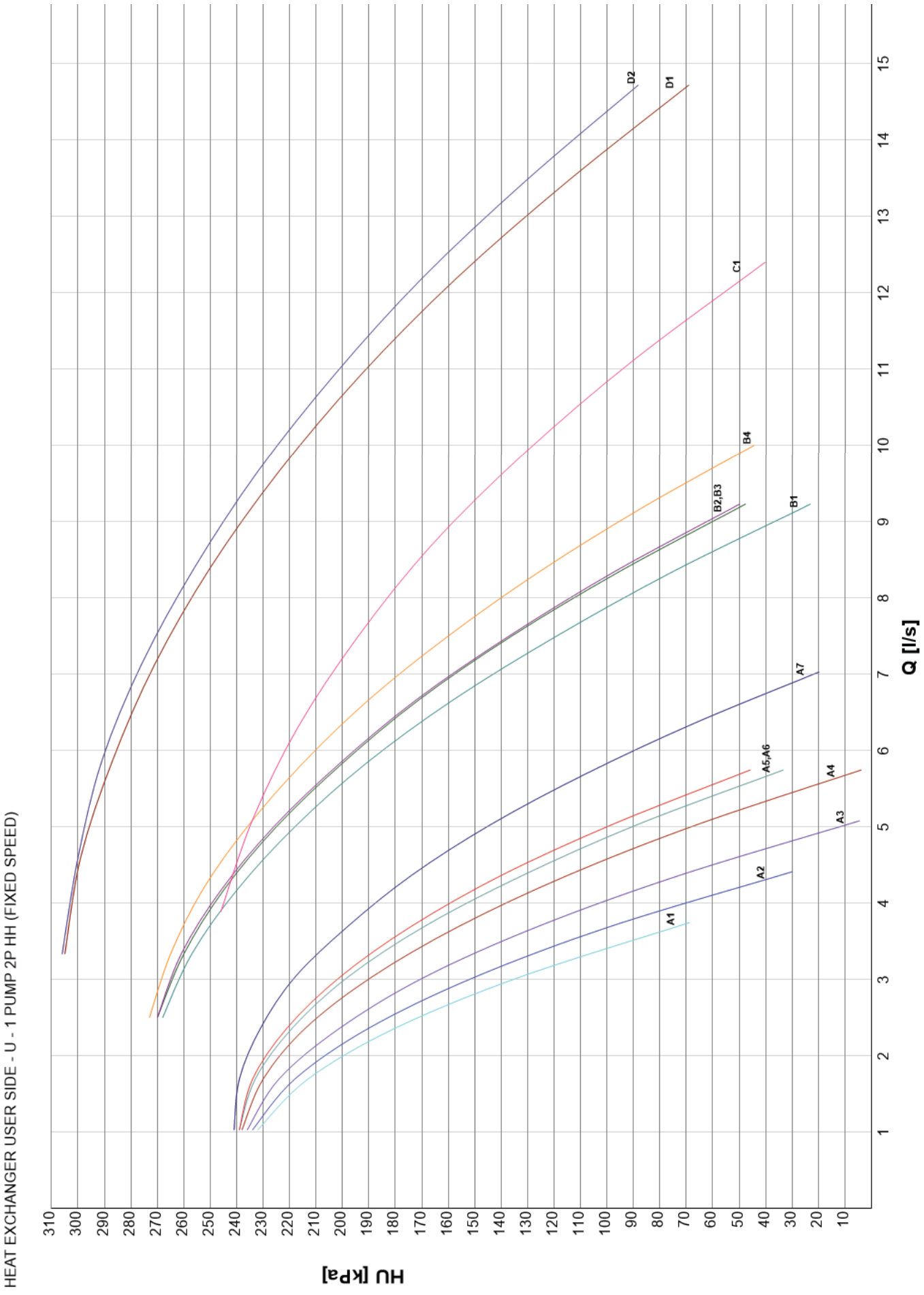

HEAT EXCHANGER USER SIDE - 57
U - 2 PUMPS 2P HH (FIXED SPEED)
HU [kPa]
Q [l/s]
E1,E2
D1
C4
C2,C3
C1
B2
B1
A5
A4
A3
A2
A1

HYDRONIC GROUP

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

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Poles	[A]	[kW]	[kPa]	[kPa]
0152P		41.15	1.789	48.84	2.108	A1	LNEE 32-160/22/2 60Hz	2	3	2,200	209	194
0182P		45.47	1.977	53.71	2.318	A2					208	192
0202P		53.54	2.328	60.78	2.623	A3					203	190
0252P		61.28	2.664	70.76	3.054	A4					204	188
0262P		68.39	2.973	76.77	3.313	A5					200	186
0302P		76.78	3.338	89.76	3.873	A6					189	165
0402P		91.69	3.986	106.1	4.580	A7					188	165
0452P		105.8	4.599	119.6	5.163	B1	LNEE 40-125/30/2 60Hz	2	4	3,000	229	213
0502P		119.3	5.186	133.6	5.764	B2					220	203
0562P		135.0	5.867	152.2	6.570	B3					200	175
0612P		154.0	6.697	169.1	7.296	B4					189	168
0662P		180.2	7.835	191.6	8.269	C1	LNEE 50-125/40/2 60Hz	2	5	4,000	187	177
0712P		205.6	8.939	222.1	9.587	D1	LNEE 50-160/55/2 60Hz	2	7	5,500	240	226
0812P		225.6	9.808	247.6	10.69	D2					229	209

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)

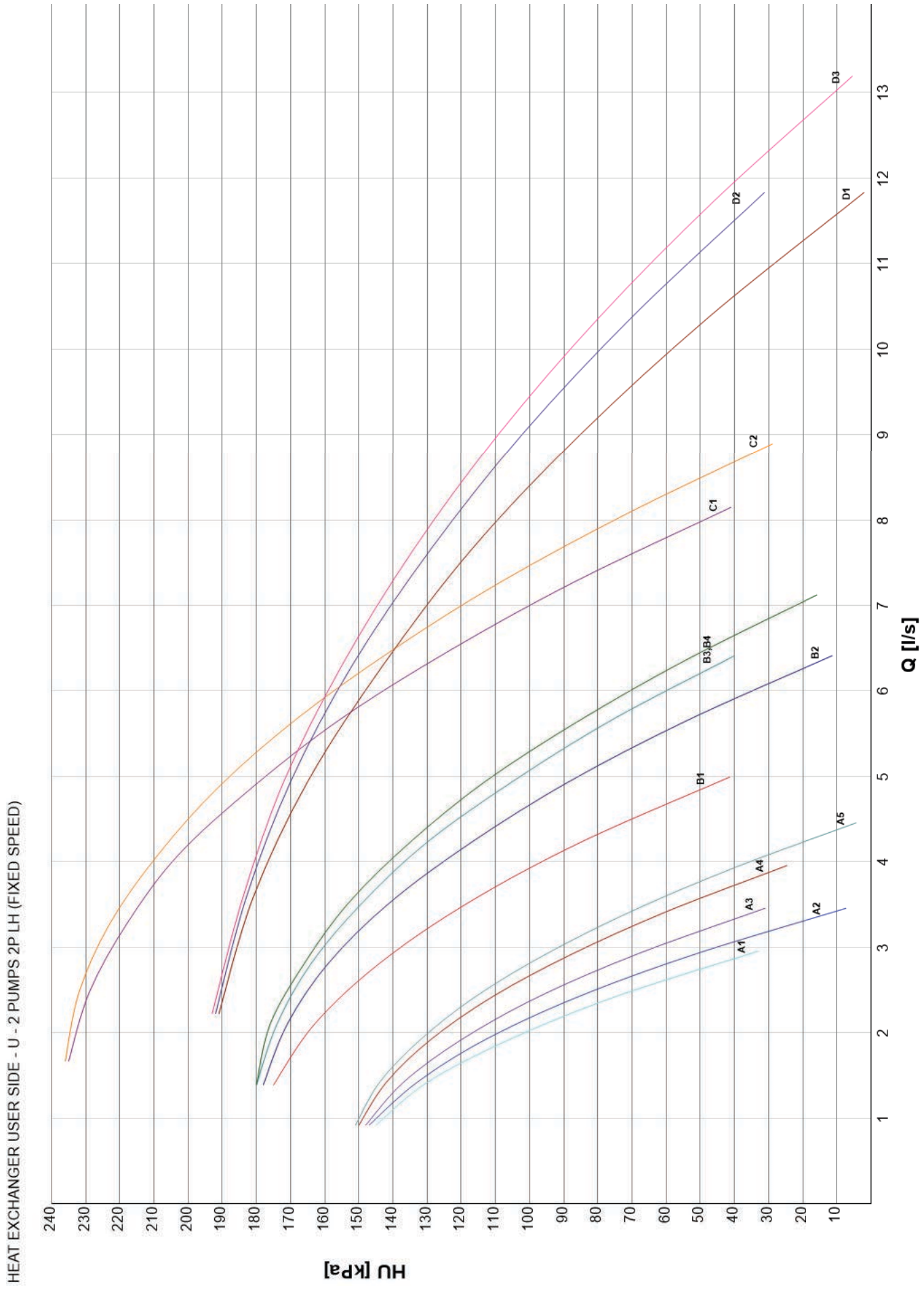

HEAT EXCHANGER USER SIDE - U - 1 PUMP 2P HH (FIXED SPEED)
HU [kPa]
Q [l/s]
D2
D1
C1
B4
B2,B3
B1
A7
A5,A6
A4
A3
A2
A1

HYDRONIC GROUP

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

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[kW] (1)	[l/s] (1)	[kW] (1)	[l/s] (1)			Poles	[A]	[kW]	[kPa]	[kPa]
0152P		41.15	1.789	48.84	2.108	A1	LNTE 32-160/11/2 60Hz	2	2	1.100	113	95.3
0182P		45,47	1,977	53,71	2,318	A2					110	91.8
0202P		53.54	2.328	60.78	2.623	A3					102	86.3
0252P		61.28	2.664	70.76	3.054	A4					99.9	80.5
0262P		68.39	2.973	76.77	3.313	A5					92.7	75.8
0302P		76.78	3.338	89.76	3.873	B1	LNTE 40-125/15/2 60Hz	2	2	1.500	126	103
0402P		91.69	3.986	106.1	4.580	B2					126	104
0452P		105.8	4.599	119.6	5.163	B3					118	96.7
0502P		119.3	5.186	133.6	5.764	B4					104	80.8
0562P		135.0	5.867	152.2	6.570	C1	LNTE 40-125/22/2 60Hz	2	3	2.200	148	119
0612P		154.0	6.697	169.1	7.296	C2					132	107
0662P		180.2	7.835	191.6	8.269	D1	LNTE 50-125/30/2 60Hz	2	4	3.000	113	103
0712P		205.6	8.939	222.1	9.587	D2					103	89.0
0812P		225.6	9.808	247.6	10.69	D3					92.3	72.2

(1) Values refer to nominal operating conditions
CH Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)

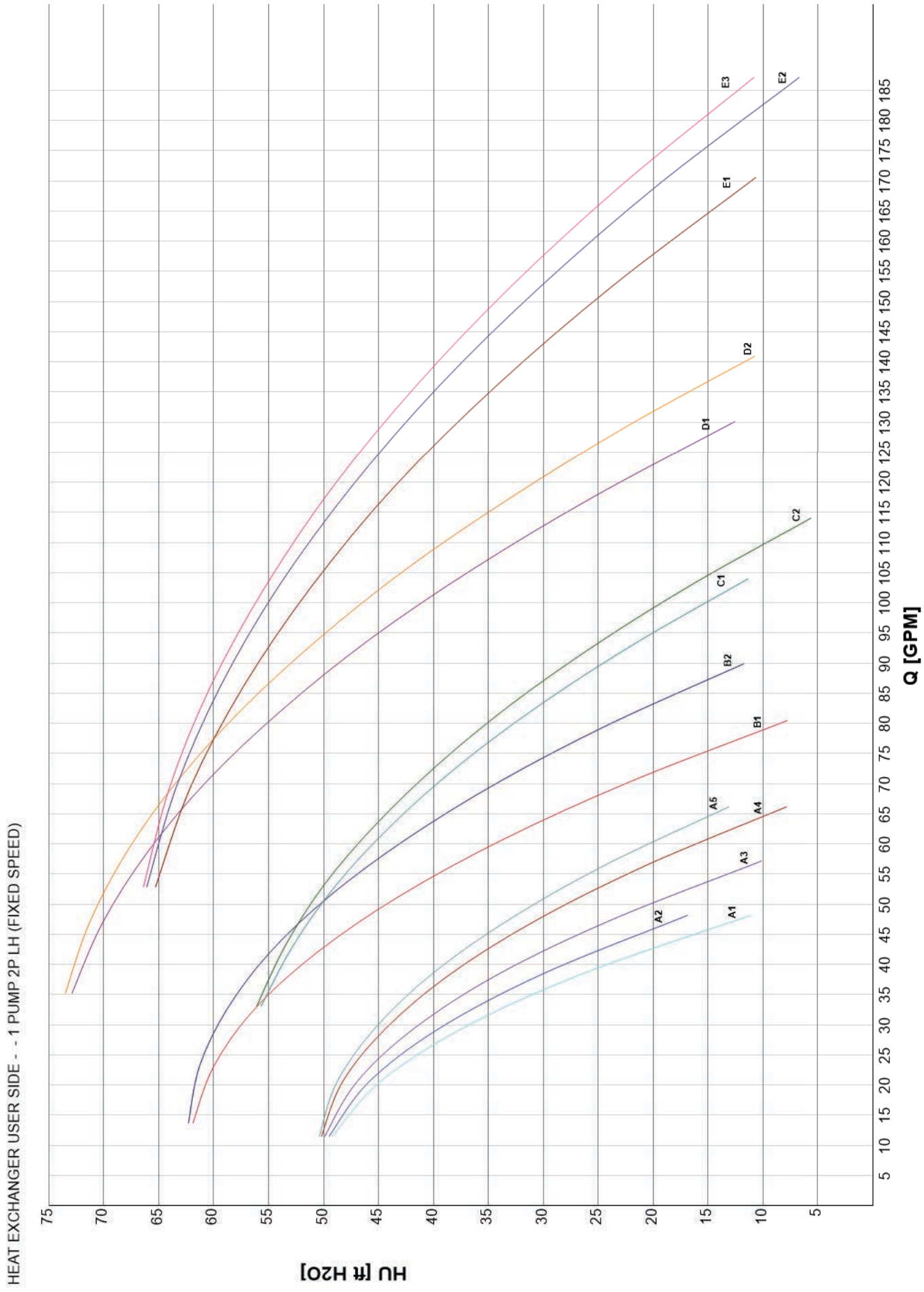

HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (FIXED SPEED)
HU [kPa]
Q [l/s]
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
1
2
3
4
5
6
7
8
9
10
11
12
13
D3
D2
D1
C2
C1
B3/B4
B2
B1
A5
A4
A3
A2
A1

HYDRONIC GROUP

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

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[RT] (1)	[GPM] (1)	[kBtu/h] (1)	[GPM] (1)			Poles	[A]	[kW]	[ft H2O]	[ft H2O]
0152P		11.70	28.36	166.7	33.41	A1	LNEE 32-160/11/2 60Hz	2	2	1,100	38.4	32.9
0182P		12.93	31.33	183.2	36.73	A2					37.7	32.0
0202P		15.22	36.89	207.4	41.57	A3					35.5	30.7
0252P		17.43	42.23	241.5	48.40	A4					35.3	29.5
0262P		19.45	47.13	261.9	52.51	A5					33.4	28.4
0302P		21.83	52.91	306.3	61.39	B1	LNEE 32-160/15/2 60Hz	2	2	1,500	41.7	32.9
0402P		26.07	63.18	362.2	72.60	B2					40.5	31.7
0452P		30.08	72.90	408.2	81.83	C1	LNEE 40-125/15/2 60Hz	2	2	1,500	37.7	31.3
0502P		33.92	82.21	455.7	91.36	C2					33.6	26.6
0562P		38.38	93.00	519.5	104.1	D1	LNEE 40-125/22/2 60Hz	2	3	2,200	46.4	37.6
0612P		43.80	106.1	576.9	115.6	D2					42.0	34.5
0662P		51.25	124.2	653.8	131.1	E1	LNEE 50-125/30/2 60Hz	2	4	3,000	41.0	37.2
0712P		58.47	141.7	758.0	152.0	E2					36.4	30.6
0812P		64.15	155.5	845.0	169.4	E3					31.3	22.9

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)

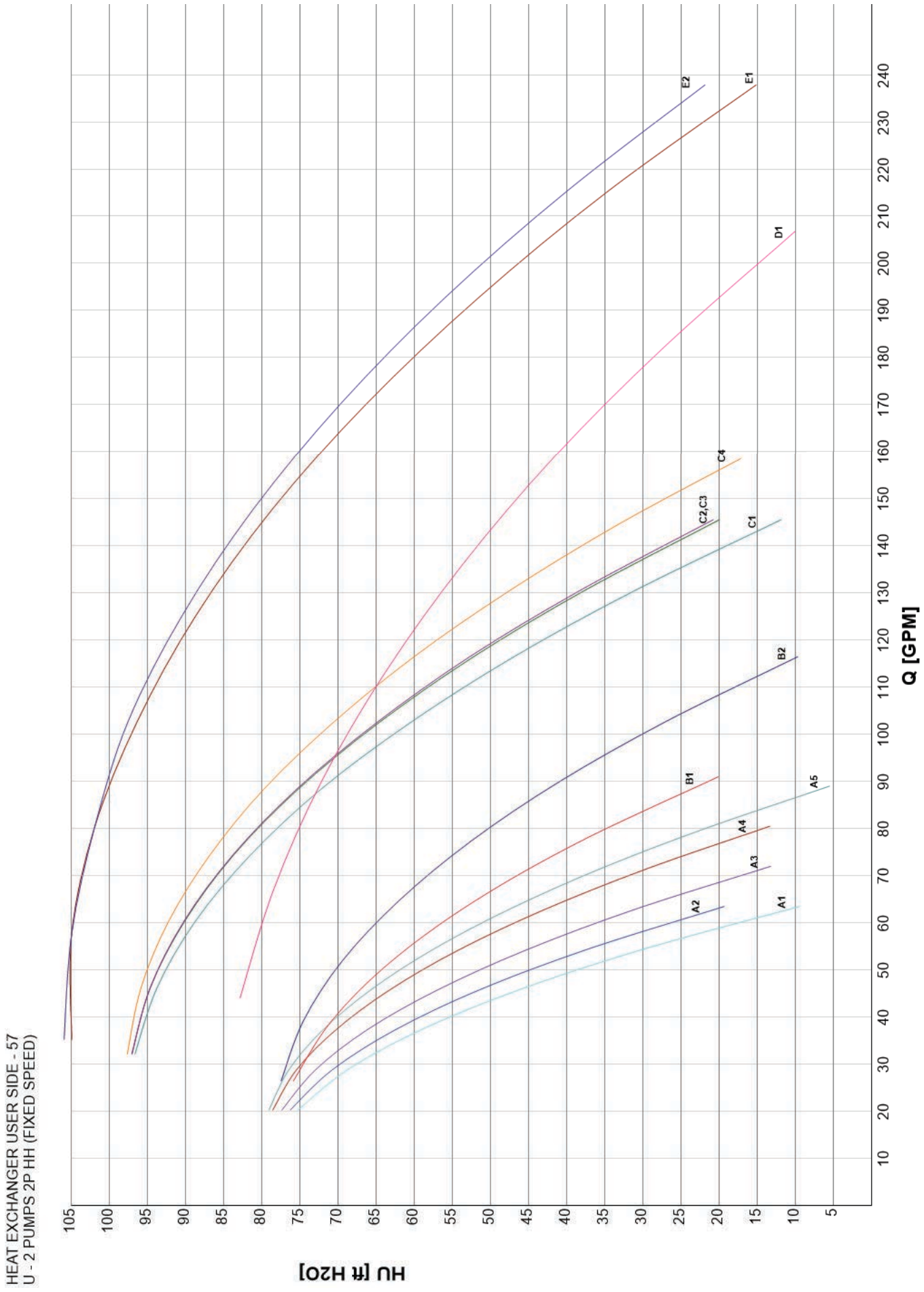

HEAT EXCHANGER USER SIDE - - 1 PUMP 2P LH (FIXED SPEED)
HU [ft H2O]
Q [GPM]
E3
E2
E1
D2
D1
C2
C1
B2
B1
A5
A4
A3
A2
A1

HYDRONIC GROUP

HEAT EXCHANGER USER SIDE - 57
U - 2 PUMPS 2P HH (FIXED SPEED)

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[RT] (1)	[GPM] (1)	[kBtu/h] (1)	[GPM] (1)			Poles	[A]	[kW]	[ft H2O]	[ft H2O]
0152P		11.70	28.36	166.7	33.41	A1	LNTE 32-160/22/2 60Hz	2	3	2,200	69.1	63.9
0182P		12.93	31.33	183.2	36,73	A2					68.6	63.1
0202P		15.22	36.89	207.4	41.57	A3					66.6	61.8
0252P		17.43	42.23	241.5	48.40	A4					66.4	60.6
0262P		19.45	47.13	261.9	52.51	A5					64.5	59.4
0302P		21.83	52.91	306.3	61.39	B1	LNTE 40-125/22/2 60Hz	2	3	2,200	62.2	55.1
0402P		26.07	63.18	362.2	72.60	B2					63.0	56.4
0452P		30.08	72.90	408.2	81.83	C1	LNTE 40-125/30/2 60Hz	2	4	3,000	82.4	76.8
0502P		33.92	82.21	455.7	91.36	C2					79.2	73.2
0562P		38.38	93.00	519.5	104.1	C3					72.3	63.7
0612P		43.80	106.1	576.9	115.6	C4					68.1	60.7
0662P		51.25	124.2	653.8	131.1	D1	LNTE 50-125/40/2 60Hz	2	5	4,000	59.2	56.1
0712P		58.47	141.7	758.0	152.0	E1	LNTE 50-160/55/2 60Hz	2	7	5,500	81.6	76.5
0812P		64.15	155.5	845.0	169.4	E2					77.5	70.2

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)


HEAT EXCHANGER USER SIDE - 57
U - 2 PUMPS 2P HH (FIXED SPEED)
HU [ft H2O]
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
Q [GPM]
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
E2
E1
D1
C4
C2,C3
C1
B2
B1
A5
A4
A3
A2
A1

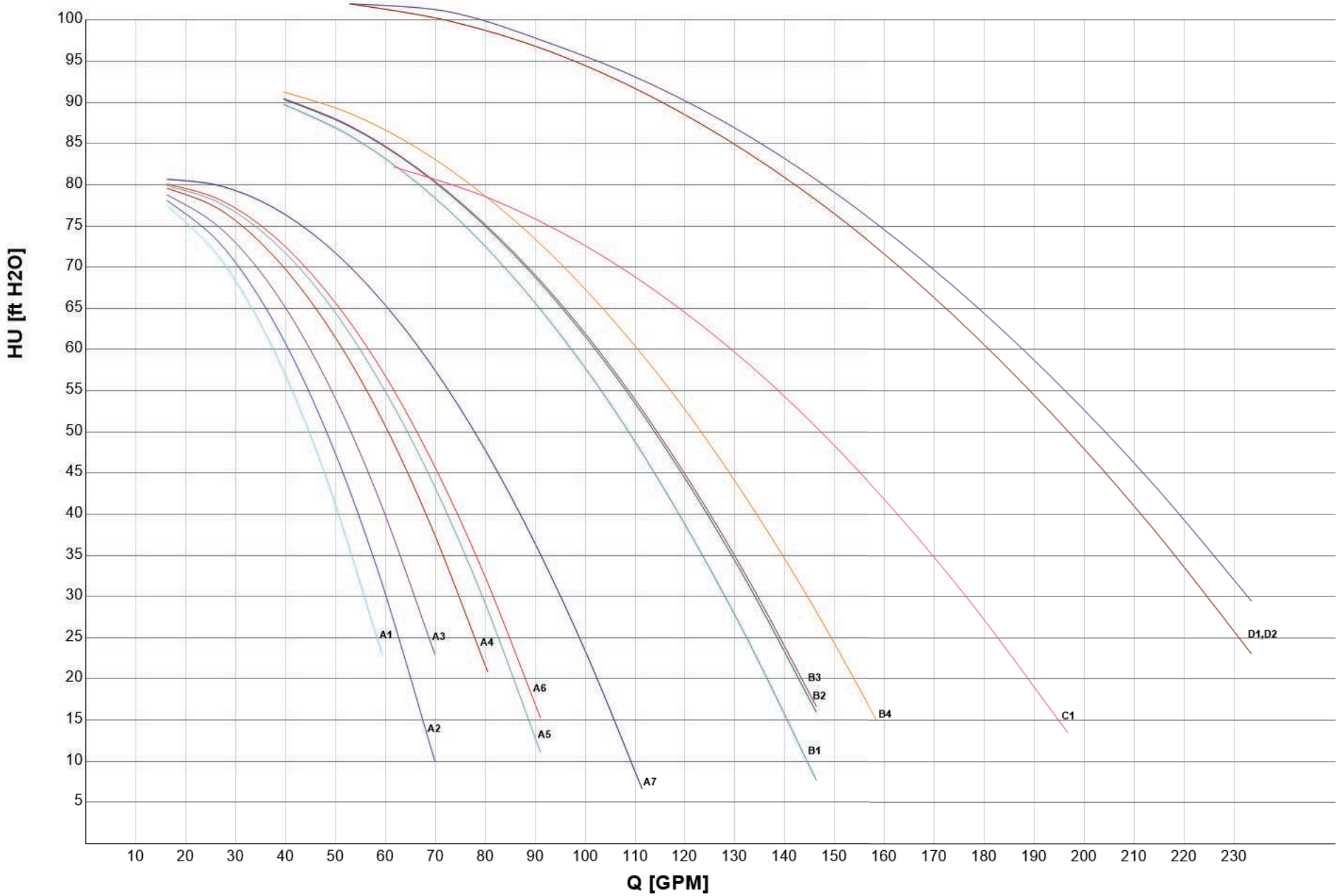
HYDRONIC GROUP

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

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[RT] (1)	[GPM] (1)	[kBtu/h] (1)	[GPM] (1)			Poles	[A]	[kW]	[ft H2O]	[ft H2O]
0152P		11.70	28.36	166.7	33.41	A1	LNEE 32-160/22/2 60Hz	2	3	2,200	69.8	64.9
0182P		12.93	31.33	183.2	36,73	A2					69.5	64.4
0202P		15.22	36.89	207.4	41.57	A3					67.8	63.5
0252P		17.43	42.23	241.5	48.40	A4					68.2	63.0
0262P		19.45	47.13	261.9	52.51	A5					66.8	62.3
0302P		21.83	52.91	306.3	61.39	A6					63.3	55.3
0402P		26.07	63.18	362.2	72.60	A7					63.0	55.1
0452P		30,08	72.90	408.2	81.83	B1	LNEE 40-125/30/2 60Hz	2	4	3,000	76.8	71.3
0502P		33.92	82.21	455.7	91.36	B2					73.7	67.8
0562P		38.38	93.00	519.5	104.1	B3					67.0	58.7
0612P		43.80	106.1	576.9	115.6	B4					63.2	56.1
0662P		51.25	124.2	653.8	131.1	C1	LNEE 50-125/40/2 60Hz	2	5	4,000	62.5	59.1
0712P		58.47	141.7	758.0	152.0	D1	LNEE 50-160/55/2 60Hz	2	7	5,500	80.2	75.5
0812P		64.15	155.5	845.0	169.4	D2					76.7	70.0

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)

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



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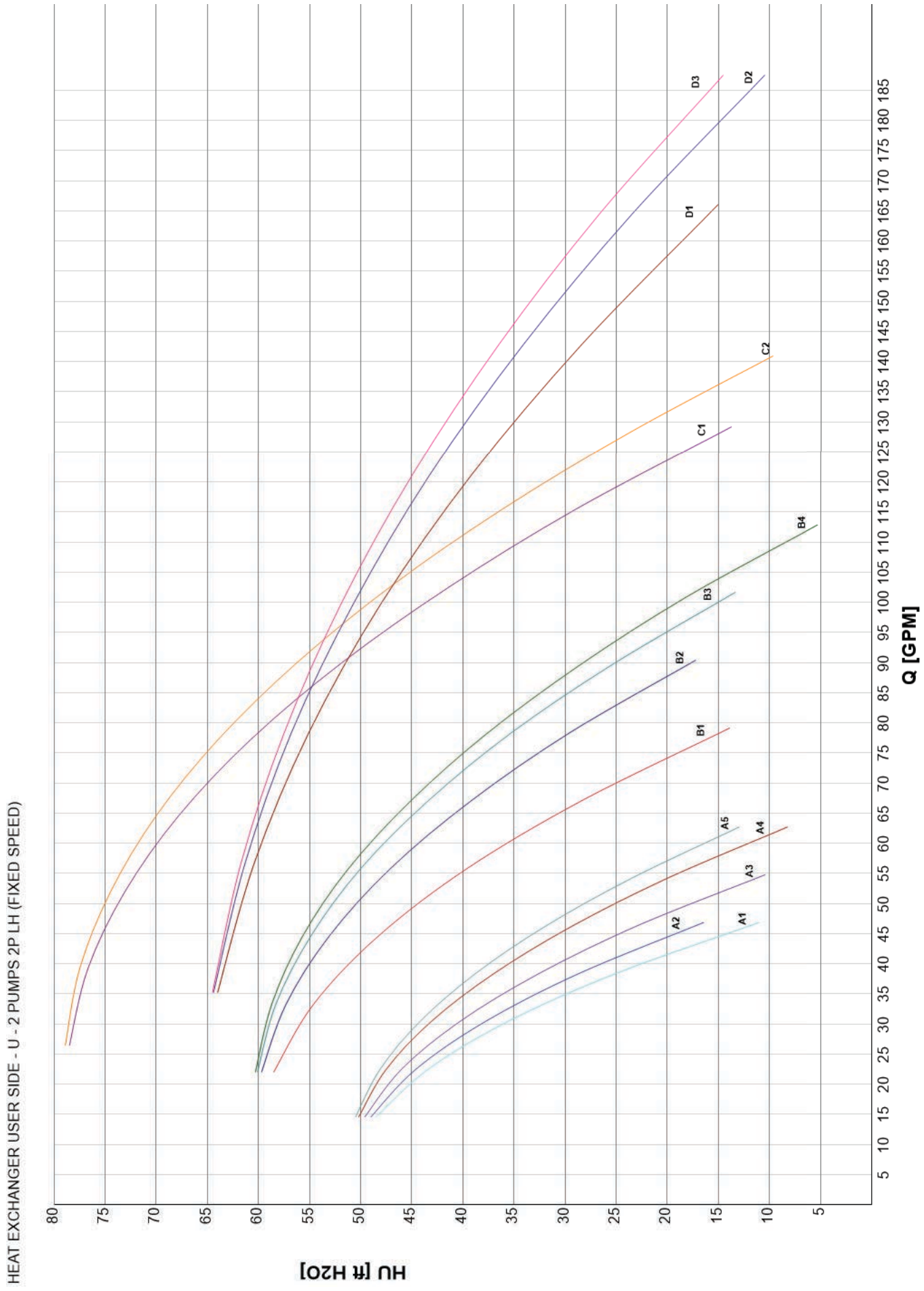
HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (FIXED SPEED)

SIZE		CH		HP		PUMP					CH	HP
		Pfgross	Qfgross	Ptgross	Qcdgross	Curve	Model	N.	F.L.A.	F.L.I.	HU	HU
		[RT] (1)	[GPM] (1)	[kBtu/h] (1)	[GPM] (1)			Poles	[A]	[kW]	[ft H2O]	[ft H2O]
0152P		11.70	28.36	166.7	33.41	A1	LNTE 32-160/11/2 60Hz	2	2	1,100	37.8	31.9
0182P		12.93	31.33	183.2	36.73	A2					36.9	30.7
0202P		15.22	36.89	207.4	41.57	A3					34.1	28.9
0252P		17.43	42.23	241.5	48.40	A4					33.4	26.9
0262P		19.45	47.13	261.9	52.51	A5					31.0	25.4
0302P		21.83	52.91	306.3	61.39	B1	LNTE 40-125/15/2 60Hz	2	2	1,500	42.1	34.3
0402P		26.07	63.18	362.2	72.60	B2					42.1	34.7
0452P		30.08	72.90	408.2	81.83	B3					39.4	32.4
0502P		33.92	82.21	455.7	91.36	B4					34.7	27.0
0562P		38.38	93.00	519.5	104.1	C1	LNTE 40-125/22/2 60Hz	2	3	2,200	49.5	40.0
0612P		43.80	106.1	576.9	115.6	C2					44.2	35.9
0662P		51.25	124.2	653.8	131.1	D1	LNTE 50-125/30/2 60Hz	2	4	3,000	37.7	34.5
0712P		58.47	141.7	758.0	152.0	D2					34.6	29.8
0812P		64.15	155.5	845.0	169.4	D3					30.9	24.2

(1) Values refer to nominal operating conditions
CH
Cooling mode
HP HP mode
Pf Unit's Cooling capacity (Cooling mode)
Pt Unit's Heating capacity (Heating mode)
Q Plant exchanger water flow
F.L.I. Pump power input
F.L.A. Pump running current
HU Available Pump pressure head (Units with hydronic group without strainer)


HEAT EXCHANGER USER SIDE - U - 2 PUMPS 2P LH (FIXED SPEED)
HU [ft H2O]
Q [GPM]
80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185
D3
D2
D1
C2
C1
B4
B3
B2
B1
A5
A4
A3
A2
A1

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