

NRB 0800-3600

Technical manual



AIR-WATER CHILLER

Cooling capacity 217 ÷ 1049 kW

Dear Customer,

Thank you for wanting to learn about a product Aermec. This product is the result of many years of experience and in-depth engineering research, and it is built using top quality materials and advanced technologies.

The manual you are about to read is meant to present the product and help you select the unit that best meets the needs of your system.

However, please note that for a more accurate selection, you can also use the Magellano selection program, available on our website.

Aermec Aermec, always attentive to the continuous changes in the market and its regulations, reserves the right to make all the changes deemed necessary for improving the product, including technical data.

Thank you again.

AERMEC S.p.A.

CERTIFICATIONS



COMPANY CERTIFICATIONS



SAFETY CERTIFICATIONS



This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled disposal of Waste Electrical and Electronic Equipment (WEEE), please return the device using appropriate collection systems, or contact the retailer where the product was purchased. Please contact your local authority for further details. Illegal dumping of the product by the user entails the application of administrative sanctions provided by law.

EC DECLARATION OF CONFORMITY



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NRB 0800-3600

MODEL _____
SERIAL NUMBER _____
DATE _____

We, the undersigned, hereby declare under our own responsibility that the assembly in question, defined as follows:

Name: NRB
Type: Air-water chiller
Models: NRB_1411_CO, NRB 0800 - 3600 EE50

to which this declaration refers, complies with all the provisions related to the following directives:

Machinery Directive 2006/42/EC
Erp Directive 2009/125/CE
RoHS Directive on the restriction of the use of certain hazardous substances in EEE: 2011/65/UE
PED Directive regarding pressurised devices: 2014/68/UE
Electromagnetic Compatibility Directive EMCD: 2014/30/UE

The above-mentioned declaration complies with the harmonised European standards:

UNI EN ISO 12100: 2010
UNI EN 378-2: 2017
CEI EN IEC 61000-6-4: 2020
CEI EN IEC 61000-6-2: 2019
UNI EN 12735-1: 2020
CEI EN 60204-1: 2018

This declaration of conformity has been released under the exclusive responsibility of the manufacturer.
The person authorised to draw up the technical file is Luca Martin via Roma 996, 37040 Bevilacqua (VR) Italy..

The unit complies with the project data indicated in the technical file in the paragraph Definition of the Assembly, is in agreement with Directive 2014/68/EU and satisfies the Total Guarantee procedure (form H) with certificate no. 06/270-QT33664 Rev.14 issued by the notified body no. 1131 CEC via Pisacane 46 Legnano (MI) - Italia.
The list of critical components relevant to the above factory number, in accordance with the provisions of Directive 2014/68/EU, is provided together with this Declaration of Conformity (doc. "List of components for Declaration of Conformity").

We also declare that, at the time this preloaded equipment was placed on the European market by Aermec S.p.A. (which imports or manufactures in the Union), the hydro-fluorocarbons contained therein are considered in the unit system of the Union referred to in Chapter IV of EU Regulation 517/2014 as they were placed on the market by a manufacturer or importer of hydrofluorocarbons to which Article 15 of EU Regulation 517/2014 applies.

Signed for and on behalf of: AERMEC S.p.A.

Bevilacqua (VR),

Marketing manager
Luigi Zucchi

EC DECLARATION OF INCORPORATION



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NRB 0800-3600 C

MODEL	_____	[]
SERIAL NUMBER	_____	
DATE	_____	

We, the undersigned, hereby declare under our own responsibility that the assembly in question, defined as follows:

Name: NRB

Type:

Models: NRB_1411_EL

to which this declaration refers, complies with all the provisions related to the following directives:

Machinery Directive 2006/42/EC

The relevant technical documentation is compiled in accordance with part B of Annex VII; this documentation, or part of it, will be transmitted by mail, in response to a reasoned request by the national authorities.

The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC.

Signed for and on behalf of: AERMEC S.p.A.

Bevilacqua (VR),

Marketing manager
Luigi Zucchi

A handwritten signature in black ink, appearing to read 'Luigi Zucchi'.

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1 PRODUCT DESCRIPTION

Air-cooled outdoor chiller designed to meet air conditioning needs in residential/commercial complexes or industrial applications.

They are outdoor units with axial fan scroll compressors, microchannel batteries and plate exchangers.

In the unit with desuperheater, it is also possible to produce free-hot water.

The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

ACOUSTIC EFFICIENCY

This product range does not consider the energy class as the only selection parameter. Chillers can be chosen between different noise levels that do not affect the energy class but maintain the best energy efficiency status.

The different versions have been designed to identify the unit according to the intended use of the system.

The NRB range excludes any compromise in technological choices, as efficiency and silence can coexist perfectly.

MAXIMUM ADAPTABILITY

To obtain a solution that allows you to save money and to facilitate installation. These units can be configured with an integrated hydronic system.

The kit contains the main hydraulic components, and is available in various configurations with a single pump or a standby pump and with various heads. (see configurator)

EXTENDED OPERATING RANGE

This range can work at full load with outdoor temperature up to + 50°C. This occurs in the high efficiency versions and also, for example, in versions with silent operation. Therefore, their natural location is in urban centres, where environmental requirements are strictly related to noise.

Furthermore, versions A-E-U-N can produce water cooled to -10°C.

CONTROL

The controller with liquid crystal display is supplied as per standard with all the units. It has a multilingual user interface, which is available also in remote version (accessory) to be connected to the unit with serial connection.

The presence of an internal clock allows you to program the operation in time periods in order to improve the system efficiency and reduce consumption during periods of non-use.

This option (Night Mode) is perfect for night operation, since it guarantees greater acoustic comfort in the evenings, and a high efficiency in the time of greater load.

Night Mode for standard versions is mandatory DCPX accessory (standard on all low noise versions) or "J" inverter fan.

Systems consisting of two chillers allow the unit to be adjusted via (Master/Slave), supplied as per standard. In case of several chillers through the Multichiller_EVO.

The supervision is possible thanks to different options, with proprietary devices or by integrating other systems via ModBus, Bacnet, LonWorks etc. protocols.

VERSION WITH DESUPERHEATER OR TOTAL RECOVERY

Cooler complete with a desuperheater / total recovery section.

In this configuration a coolant/water heat exchanger is added on the gas flow line.

The exchanger is set i series before the condenser and is appropriately sized to guarantee the recovery of all or part of the heat produced, for the free production of hot water at a medium-high temperature for domestic or other uses.

Each exchanger is protected by an anti-freeze resistance.

DUAL-CIRCUIT UNIT

Unit with 2 refrigerant circuits designed to provide maximum efficiency at full load, ensuring high efficiency at partial loads also and ensuring continuity in case one of the circuits stops.

ALUMINIUM MICROCHANNEL COILS

The microchannel condensing aluminum coils ensure high levels of efficiency, reduced quantities of refrigerant and lower unit weight. The treatment "O" available as configurator it ensures high resistance to corrosion even in the most aggressive environments.

ELECTRONIC EXPANSION VALVE

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy efficiency of the unit.

It is standard in all sizes from 1805 to 3600.

2 CONFIGURATOR

Field	Description
1,2,3	NRB
	Size
4,5,6,7	0800, 0900, 1000, 1100, 1200, 1400, 1600, 1805, 2006, 2206, 2406, 2600, 2800, 3000, 3200, 3400, 3600
8	Operating field
	° Standard mechanic thermostatic valve (1)
	X Electronic thermostatic expansion valve (1)
	Y Low temperature mechanic thermostatic valve (2)
	Z Low temperature electronic thermostatic valve (2)
9	Model
	° Cooling only
	C Motocondensing unit (3)
10	Heat recovery
	° Without heat recovery
	D With desuperheater (4)
	T With total recovery (5)
11	Version
	° Standard
	A High efficiency
	E Silenced high efficiency
	L Standard silenced
	N Silenced very high efficiency
	U Very high efficiency
12	Coils
	° Aluminium microchannel
	I Copper-aluminium
	O Coated aluminium microchannel
	R Copper-copper
	S Tinned copper
	V Copper-painted aluminium
13	Fans
	° Standard
	J Inverter
	M Oversized
14	Power supply
	° 400V ~ 3 50Hz with magnet circuit breakers
15,16	Integrated hydronic kit
	Without hydronic kit
	00 Without hydronic kit
	Kit with n° 1 pump
	PA Pump A
	PB Pump B
	PC Pump C
	PD Pump D
	PE Pump E
	PF Pump F
	PG Pump G
	PH Pump H

Field	Description
	PI Pump I
	PJ Pump J (6)
	Pump n° 1 pump + stand-by pump
	DA Pump A + stand-by pump (7)
	DB Pump B + stand-by pump (7)
	DC Pump C + stand-by pump (7)
	DD Pump D + stand-by pump (7)
	DE Pump E + stand-by pump (7)
	DF Pump F + stand-by pump (7)
	DG Pump G + stand-by pump (7)
	DH Pump H + stand-by pump (7)
	DI Pump I + stand-by pump (7)
	DJ Pump J + stand-by pump (8)
	Kit with storage tank and n° 1 pump
	AA Storage tank and pump A
	AB Storage tank and pump B
	AC Storage tank and pump C
	AD Storage tank and pump D
	AE Storage tank and pump E
	AF Storage tank and pump F
	AG Storage tank and pump G
	AH Storage tank and pump H
	AI Storage tank and pump I
	AJ Storage tank and pump J (6)
	Kit with storage tank and n° 1 pump + stand-by pump
	BA Storage tank with pump A + stand-by pump (7)
	BB Storage tank with pump B + stand-by pump (7)
	BC Storage tank with pump C + stand-by pump (7)
	BD Storage tank with pump D + stand-by pump (7)
	BE Storage tank with pump E + stand-by pump (7)
	BF Storage tank with pump F + stand-by pump (7)
	BG Storage tank with pump G + stand-by pump (7)
	BH Storage tank with pump H + stand-by pump (7)
	BI Storage tank with pump I + stand-by pump (7)
	BJ Storage tank with pump J + stand-by pump (8)

(1) Water produced from 4 °C ÷ 18 °C

(2) Processed water from 4°C to -8°C for the ° - L versions, and from 4°C to -10°C for A - E - U - N versions

(3) Condensing units "C" are not compatible with the Y/X/Z/T/D option

(4) The temperature of the water in the heat exchanger inlet must never drop below 35°C.

(5) None of the hydronic kits (from PA to BJ) are compatible with the following sizes and with versions with heat recovery I: 0800 - 0900 - 1000 - 1100 version °; 0800 - 0900 version A; 0800 - 0900 version L. None of the hydronic kits with pump(s) and storage tank (from AA to BJ) are compatible with all the sizes and with versions with heat recovery I

(6) For all configurations including pump J please contact the factory.

(7) None of the hydronic kits with twin pump (from DA to DJ and from BA to BJ) are compatible for the following sizes and versions with desuperheater D: 1805 versions °-L-A, 2006-2206 version °.

(8) For all combinations with pump J, please contact our head office. None of the hydronic kits with twin pump (from DA to DJ and from BA to BJ) are compatible for the following sizes and versions with desuperheater D: 1805 versions °-L-A, 2006-2206 version °.

3 UNIT COMPONENTS DESCRIPTION

REFRIGERANT CIRCUIT

Compressors

Compressori ermetici di tipo scroll ad alta efficienza (montati su supporti elastici antivibranti), azionati da un motore elettrico a due poli con protezione termica interna.

Crankcase heaters as standard, automatically activated when the unit stops, as long as power is maintained to the unit.

Microchannel coils

The full range uses aluminium microchannel coils, ensuring very high levels of efficiency.

This allows using less refrigerant compared to traditional copper coils.

System side heat exchanger

Brazed plate heat exchanger in stainless steel. It is externally insulated with closed cell neoprene anti-condensation material.

When the unit is not functioning, it's protected against the formation of ice by an electric heater.

Filter drier

Hermetic-mechanical made of hygroscopic material, able to withhold impurities and any traces of humidity present in the cooling circuit.

Mechanic thermostatic valve

The mechanical type valve, with external equaliser located at the evaporator outlet, modulates the flow of refrigerant into the evaporator based on the load and ensures the correct superheat of the suction gas.

Electronic thermostatic expansion valve

Compared with a mechanical thermostatic valve, the electronic one offers better overheating control so the evaporator is used more efficiently in all conditions, thereby boosting machine output.

Its use in comfort dedicated applications allows to make substantial benefits especially in the presence of varying loads, because it allows you to maintain the maximum efficiency with any external air temperature.

In industrial applications, where there is often a need to make temperature changes in a wide range of environmental conditions, the use of the electronic valve is ideal because it avoids the need for continuous calibration, adapting the system to different load conditions and hence making it independent.

■ *Sizes from 1805 ÷ 3600 come standard with the electronic thermostatic valve (X).*

Solenoid valves

The valves close when the compressor switches off, blocking the flow of refrigerant gas to the evaporator, recovery and the coil.

■ *Only with the mechanical thermostatic valve*

Sight glass

It is used to verify that the expansion system is powered correctly and the presence of humidity in the cooling circuit.

HYDRAULIC CIRCUIT

Water filter

Equipped with steel filtering mesh, it prevents the heat-exchanger from clogging system side due to any impurity inside the circuit.

■ *Installed in versions with the hydronic kit, it is supplied for version 00.*

Recovery side heat exchanger (optional)

Brazed plate heat exchanger in stainless steel. It is externally insulated with closed cell neoprene anti-condensation material.

When the unit is not functioning, it's protected against the formation of ice by an electric heater.

HYDRAULIC CIRCUIT (VERSIONS WITH HYDRONIC KIT)

Pump

They provide useful static pressure to the system, excluding the unit pressure drops.

■ *The pumps are programmed in rotation with automatic exchange if the running pump fails*

Expansion vessel

Membrane type precharged with nitrogen.

Pressure relief valve

Calibrated at 6 Bar and drain pipe, it activates by discharging overpressure if abnormal pressure occurs.

Air drain valve

Mounted at the highest level of the hydraulic system. The air vent is used for the release of any air pockets from the hydraulic circuit.

Drain valve

System buffer tank

In steel to reduce heat gain and avoid the formation of condensation.

Insulated with polyurethane material of adequate thickness.

It reduces the number of compressor starts and stabilises the water temperature delivered to the system.

It is equipped with antifreeze electrical resistances to ensure minimum temperature of stored water of +5°, with minimum outdoor temperature of -20°C. The resistance is activated by a water temperature probe placed inside the unit's hydronic circuit.

■ *Available only on request the tank in stainless steel AISI 304.*

STRUCTURE AND FANS

Structure

Supporting structure for outdoor installation, in hot-dipped galvanized sheet steel, with RAL 9003 polyester powder coating.

Designed to ensure the maximum access for service and maintenance.

Standard fan unit

Equipped with accident-prevention net, it consists of axial fans and 6-pole motor with external rotor and protection rating IP54.

Moreover, the motor is equipped with inner thermal protection with automatic reset.

Inverter fans

Continuous modulation of revolution speed according to the condensation pressure, highly efficient motor for low energy consumption.

CONTROL AND SAFETY COMPONENTS

High pressure switch

With fixed calibration, placed on the high pressure side of the cooling circuit, it inhibits the operation of the compressor if abnormal work pressure occurs.

■ *Manual reset*

Low pressure transducer

Placed on low pressure side of cooling circuit, it signals the work pressure to the control board, generating a pre-warning in case abnormal pressure occurs.

High pressure transducer

Placed on the high pressure side of the cooling circuit, signals the work pressure to control board, generating a pre-warning in case abnormal pressure occurs.

Condensation control temperature

Device for electronically controlling the condensation, for functioning even at low temperatures, which allows adjusting the air flow rate to actual system demand with resulting advantages in terms of consumption reduction.

■ *Standard in the silenced versions or with the desuperheater; an accessory for all other versions.*

ELECTRICAL CONTROL AND POWER PANEL

Complete with:

- door interlocked isolator
- Magnet circuit breakers and contactors for compressors and fans
- external electrical panel
- electronic controller
- All numbered cables

Door interlocked isolator

Access to the electrical panel is by operating the handle of the door interlocked isolator which removes power to the unit.

To avoid accidentally powering up the unit during maintenance the isolator is fitted with a locking mechanism.

Controller keypad

Allows complete control of the unit.

For further information refer to the user manual.

Electronic controller

The microprocessor controls features cutting edge functions and proprietary adjustments.

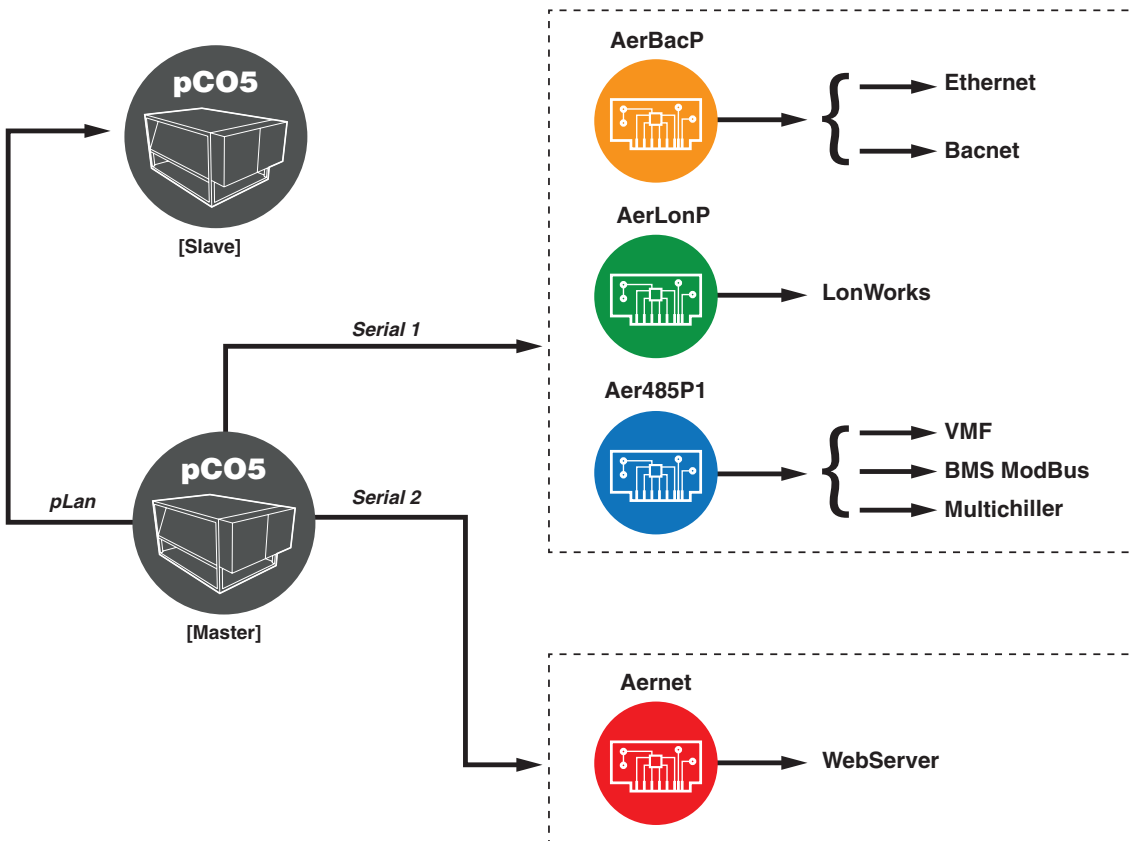
The control panel allows the user to consult and manage the unit operating parameters thanks to a purposely designed multi-language graphic interface.

The multi-level menu can be used to control:

- The system temperature for cooling the environments or industrial processes. The different temperatures are managed automatically according to the unit work conditions and requirements.
- Management and alarm log to have always a prompt diagnosis of the unit operation.
- Creation of operation time periods required for efficient programming
- A self-adaptive logic is used to defrost. This logic allows you to adjust the number of defrosts in order to increase efficiency.
- Systems consisting of two chillers allow the unit to be adjusted via (Master/ Slave), supplied as per standard. In case of several chillers through the Multichiller_EVO. The supervision is possible thanks to different options, with proprietary devices or by integrating other systems via ModBus, Bacnet, LonWorks etc. protocols.

A specific keyboard for wall-mounting installation (PGD1 accessory) allows the remote control of all the functions.

■ Note: For further information, refer to the user manual.

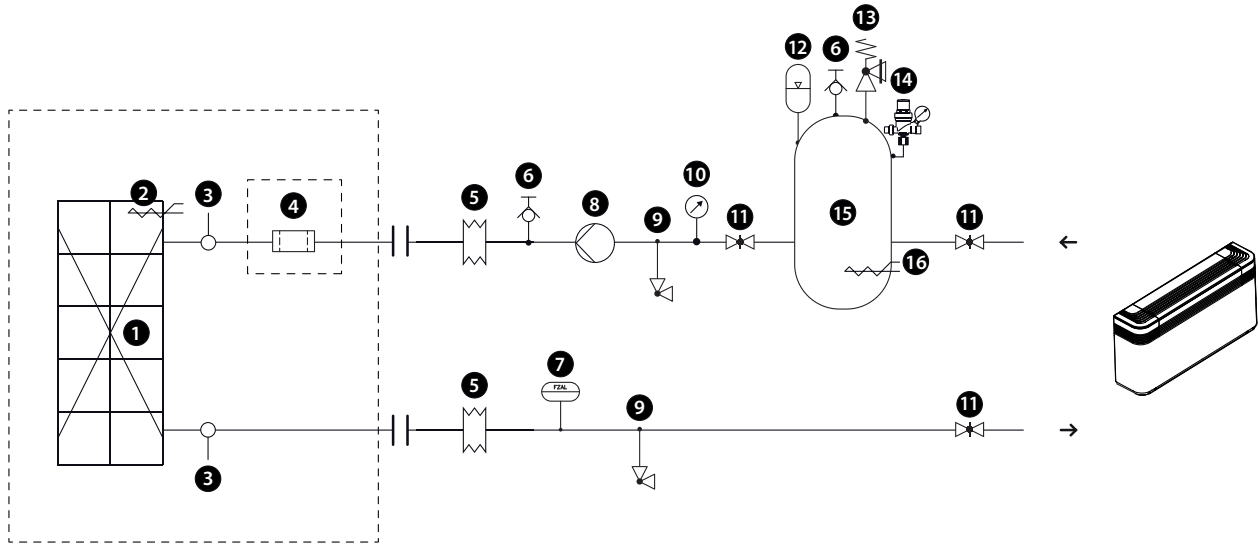


4 MAIN HYDRAULIC CIRCUITS

WITHOUT HYDRONIC KIT

■ **Water filter:** Installation in the immediate vicinity of the heat exchanger is mandatory.

■ **Do not fill up the hydraulic system by glycol near the suction of the pump.** High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.



Components as standard

- 1 Plate heat exchanger
- 2 Antifreeze electric heater
- 3 Water temperature sensors (IN/OUT)
- 4 Water filter (as standard)

Components not provided and responsibility of the installer

- 5 Anti-vibration joints
- 6 Air drain valve
- 7 Flow switch (MANDATORY)

- 8 Pump
- 9 Drain valve
- 10 Pressure gauge
- 11 Flow shut-off valves
- 12 Expansion vessel
- 13 Pressure relief valve
- 14 Loading unit
- 15 Storage tank

Water characteristics

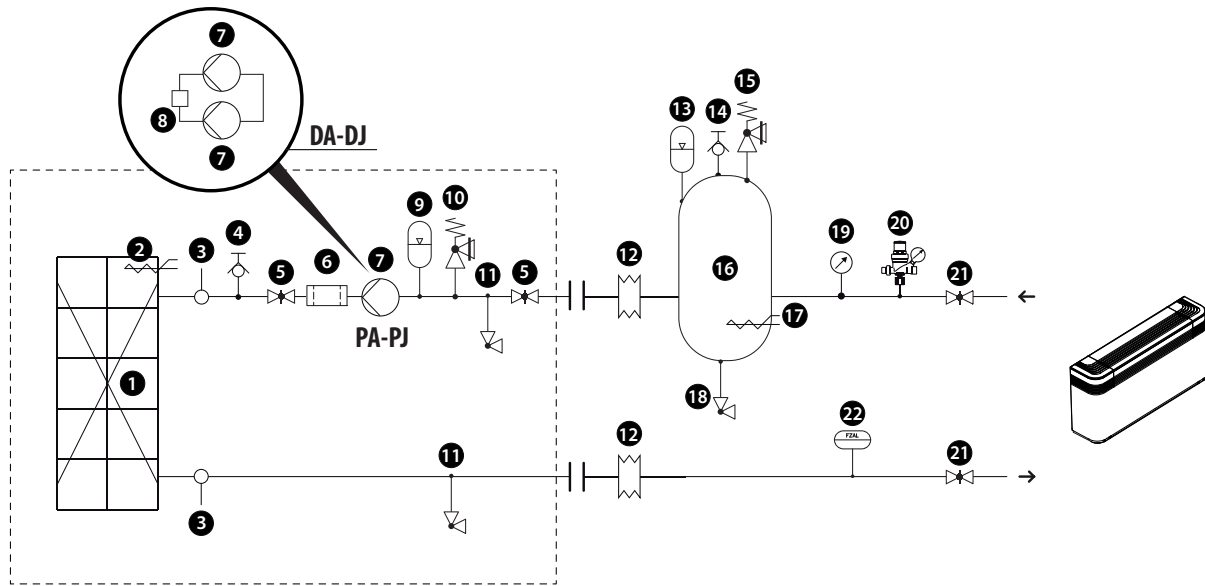
System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

! It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.

WITH PUMPS

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.



Components as standard

- 1 Plate heat exchanger
- 2 Antifreeze electric heater
- 3 Water temperature sensors (IN/OUT)
- 4 Air drain valve
- 5 Flow shut-off valves
- 6 Water filter
- 7 Pump
- 8 Clapet valve
- 9 Expansion vessel
- 10 Pressure relief valve
- 11 Drain valve

Components not provided and responsibility of the installer

- 12 Anti-vibration joints
- 13 Expansion vessel
- 14 Air drain valve
- 15 Pressure relief valve
- 16 Storage tank
- 17 Antifreeze electric heater
- 18 Drain valve
- 19 Pressure gauge
- 20 Loading unit
- 21 Flow shut-off valves
- 22 Flow switch (MANDATORY)

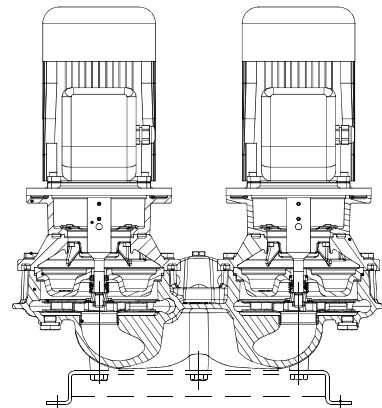
Water characteristics

System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

! It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.

Clapet valve

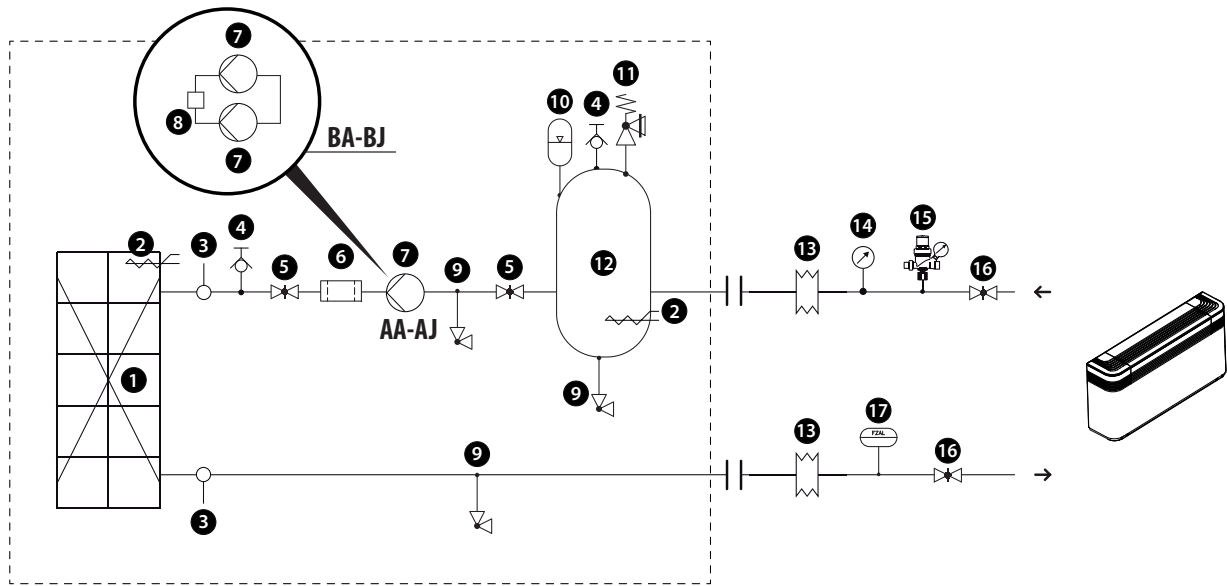


1 Clapet valve

The unit with double pump circuit does not have one-way valves. If you choose to install two units in parallel or in cascade, it is recommended to provide one-way valves for the correct operation of the unit.

WITH PUMPS AND STORAGE TANK

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.



Components as standard

- 1 Plate heat exchanger
- 2 Antifreeze electric heater
- 3 Water temperature sensors (IN/OUT)
- 4 Air drain valve
- 5 Flow shut-off valves
- 6 Water filter
- 7 Pump
- 8 Clapet valve
- 9 Drain valve

- 10 Expansion vessel
- 11 Pressure relief valve
- 12 Storage tank

Components not provided and responsibility of the installer

- 13 Anti-vibration joints
- 14 Pressure gauge
- 15 Loading unit
- 16 Flow shut-off valves
- 17 Flow switch (MANDATORY)

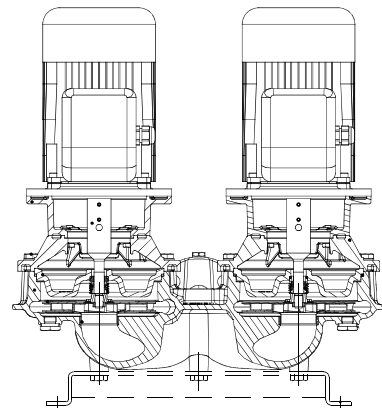
Water characteristics

System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

! It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.

Clapet valve

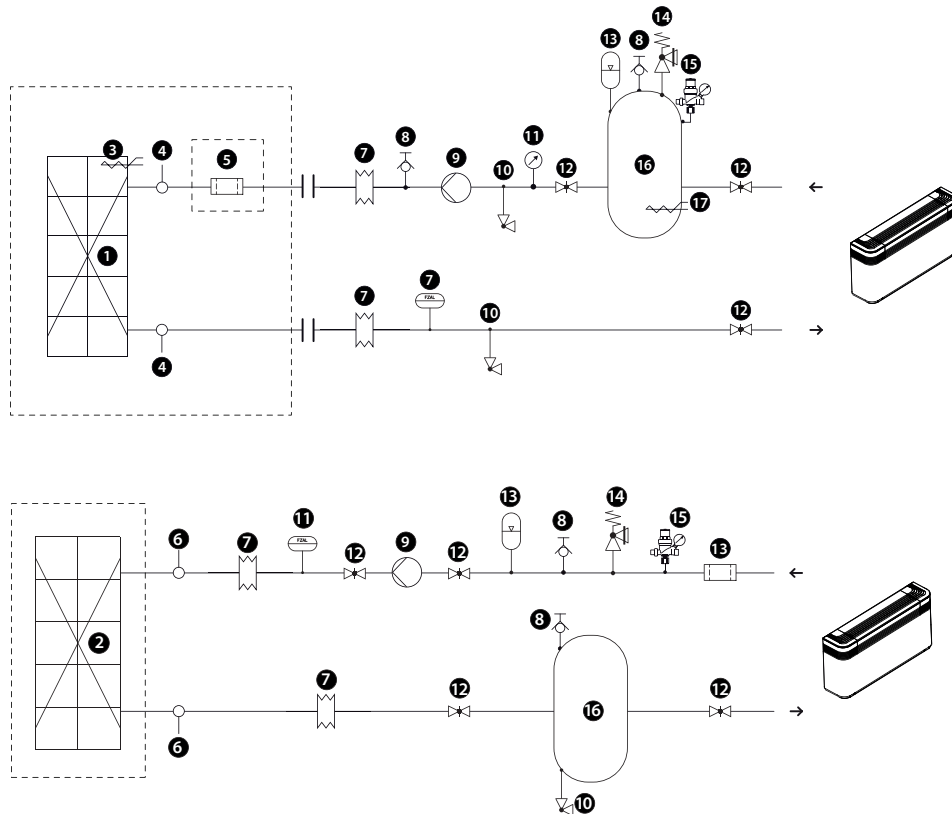


1 Clapet valve

The unit with double pump circuit does not have one-way valves. If you choose to install two units in parallel or in cascade, it is recommended to provide one-way valves for the correct operation of the unit.

WITH DESUPERHEATER

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.



Components as standard

- 1 Plate heat exchanger
- 2 Plate heat exchanger (desuperheater)
- 3 Antifreeze electric heater
- 4 Water temperature sensors (IN/OUT)
- 5 Water filter (as standard)

Components not provided and responsibility of the installer

- 6 Water temperature sensors (IN/OUT)
- 7 Anti-vibration joints
- 8 Air drain valve
- 9 Pump
- 10 Drain valve
- 11 Pressure gauge
- 12 Flow shut-off valves
- 13 Expansion vessel
- 14 Pressure relief valve
- 15 Loading unit
- 16 Storage tank
- 17 Antifreeze electric heater

Water characteristics

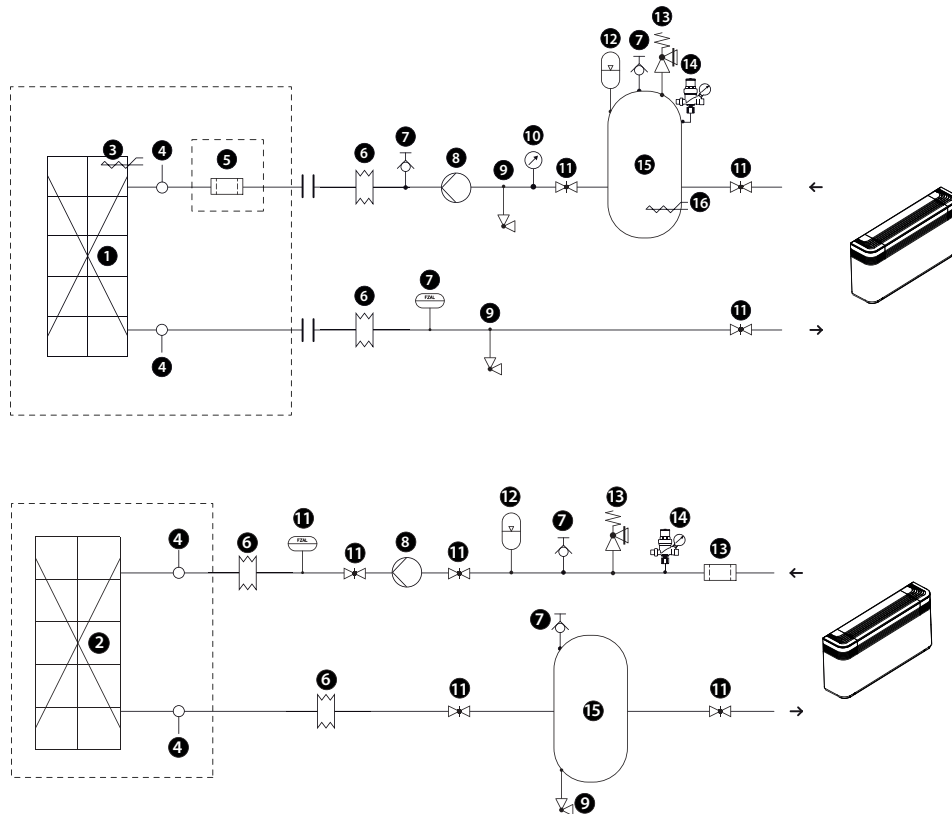
System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

! It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.

WITH TOTAL RECOVERY

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.



Components as standard

- 1 Plate heat exchanger
- 2 Plate heat exchanger (total recovery)
- 3 Antifreeze electric heater
- 4 Water temperature sensors (IN/OUT)
- 5 Water filter (as standard)

Components not provided and responsibility of the installer

- 6 Anti-vibration joints
- 7 Air drain valve
- 8 Pump
- 9 Drain valve
- 10 Pressure gauge

- 11 Flow shut-off valves
- 12 Expansion vessel
- 13 Pressure relief valve
- 14 Loading unit
- 15 Storage tank
- 16 Antifreeze electric heater

Water characteristics

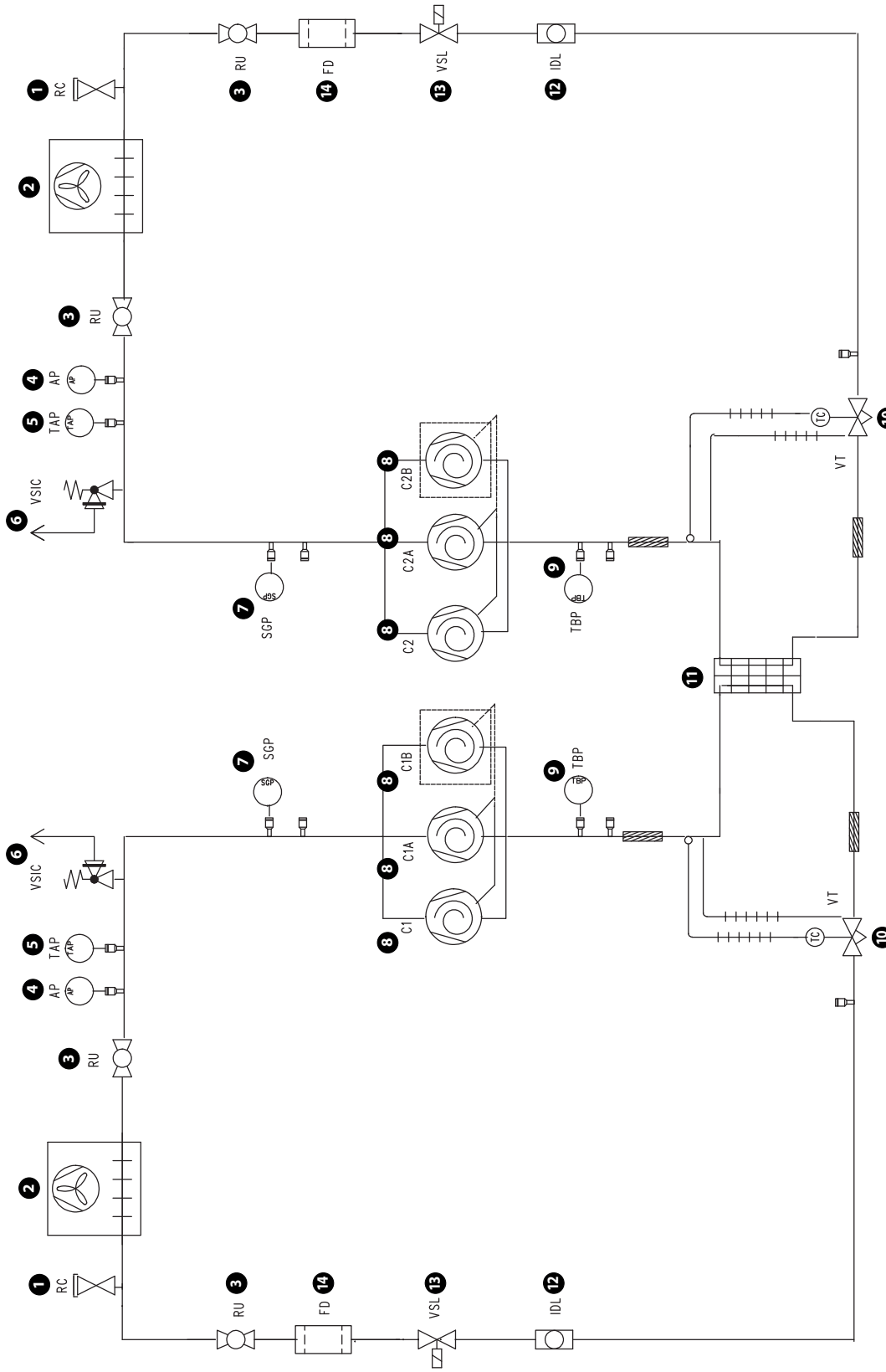
System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS/cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

! It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.

5 MAIN COOLING REFRIGERANT LAYOUTS

NRB 0800 ÷ 1600 - VALVE °

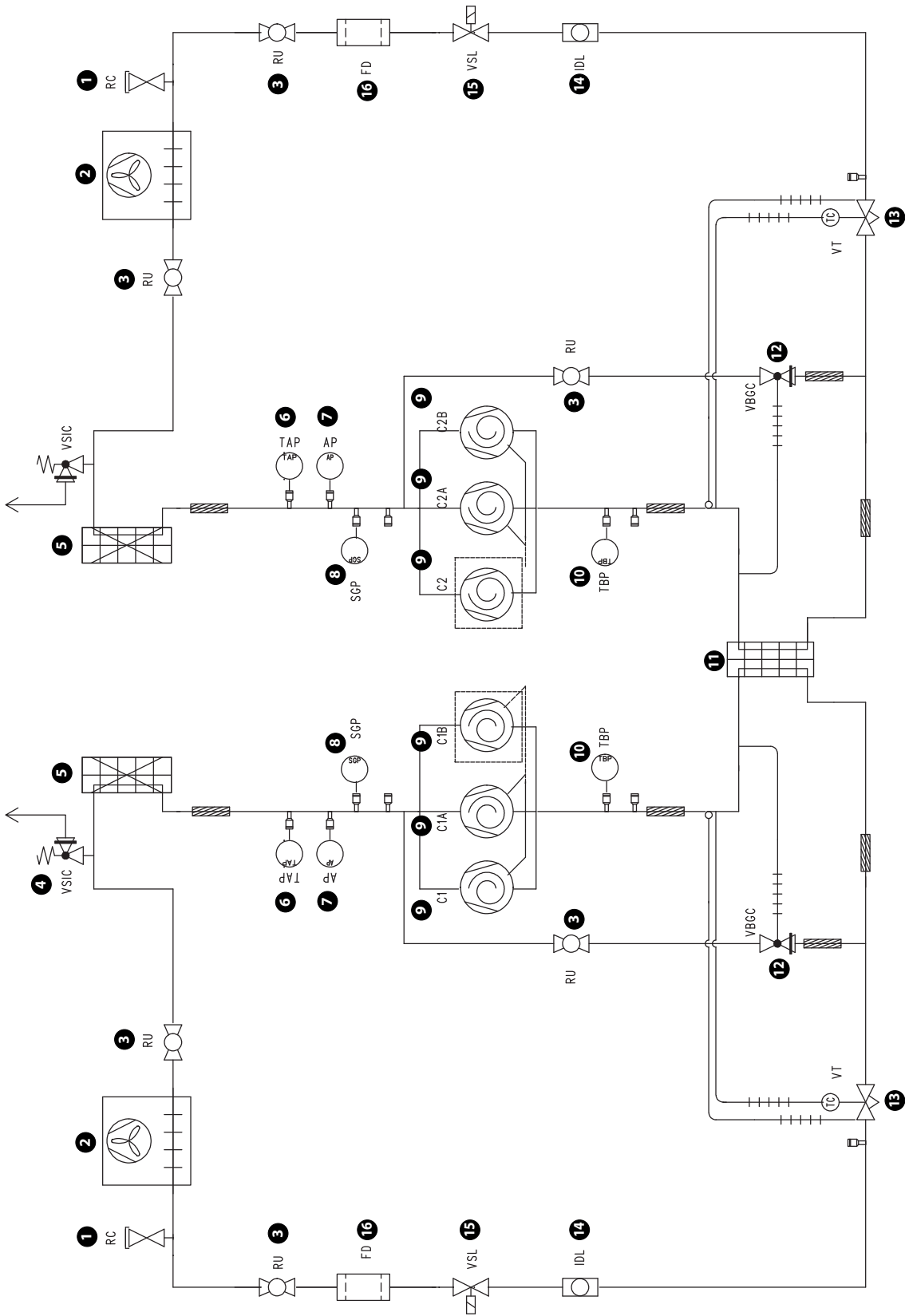


- 1 Charging connection
- 2 Condenser
- 3 Isolation valve
- 4 High pressure switch
- 5 High pressure transducer

- 6 Pressure relief valve
- 7 Discharge gas temperature probe
- 8 Compressor
- 9 Low pressure transducer
- 10 Mechanic thermostatic valve

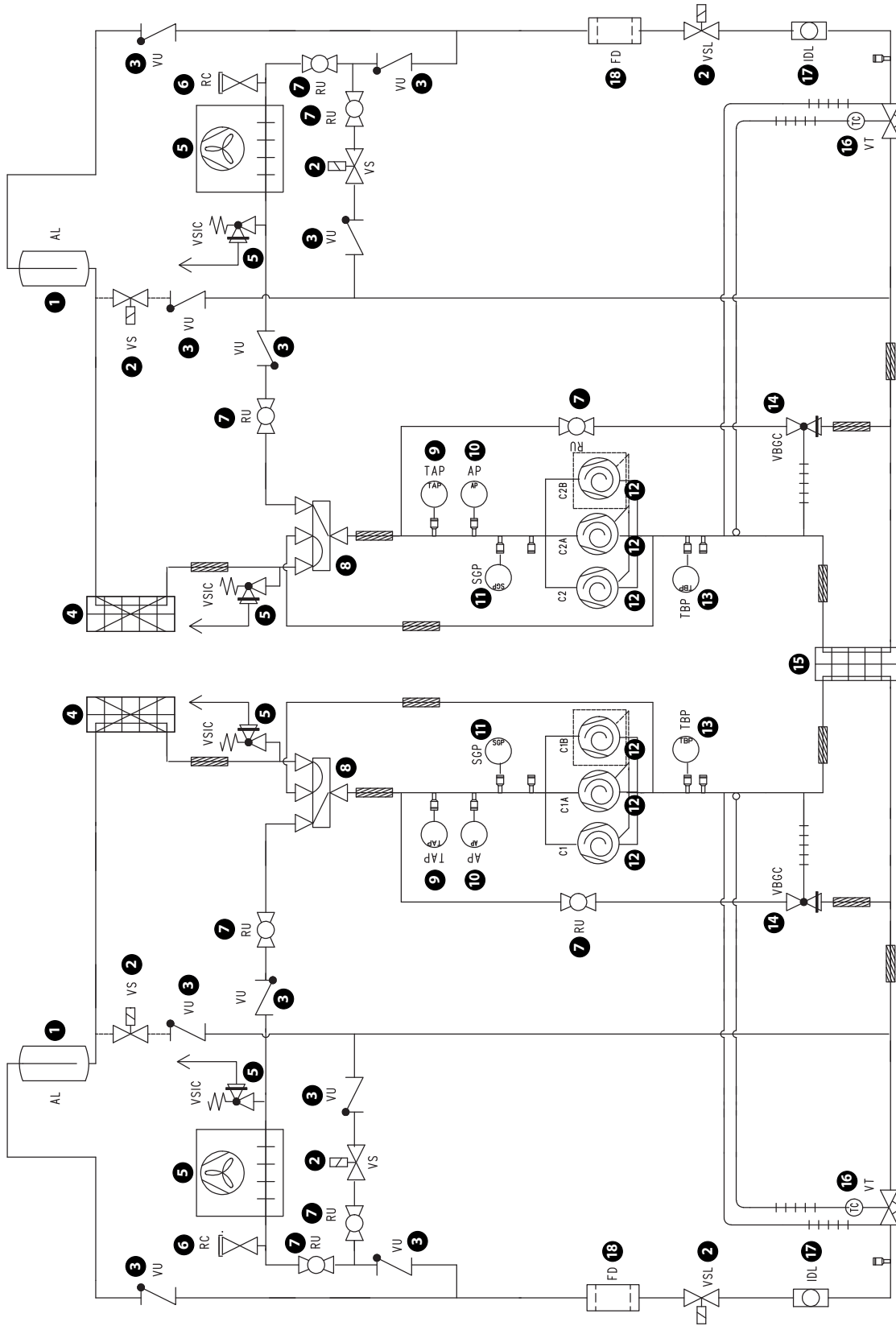
- 11 Evaporator
- 12 Sight glass
- 13 Solenoid valve for bleeding
- 14 Filter drier

NRB 0800 ÷ 1600 - VALVE ° - DESUPERHEATER D



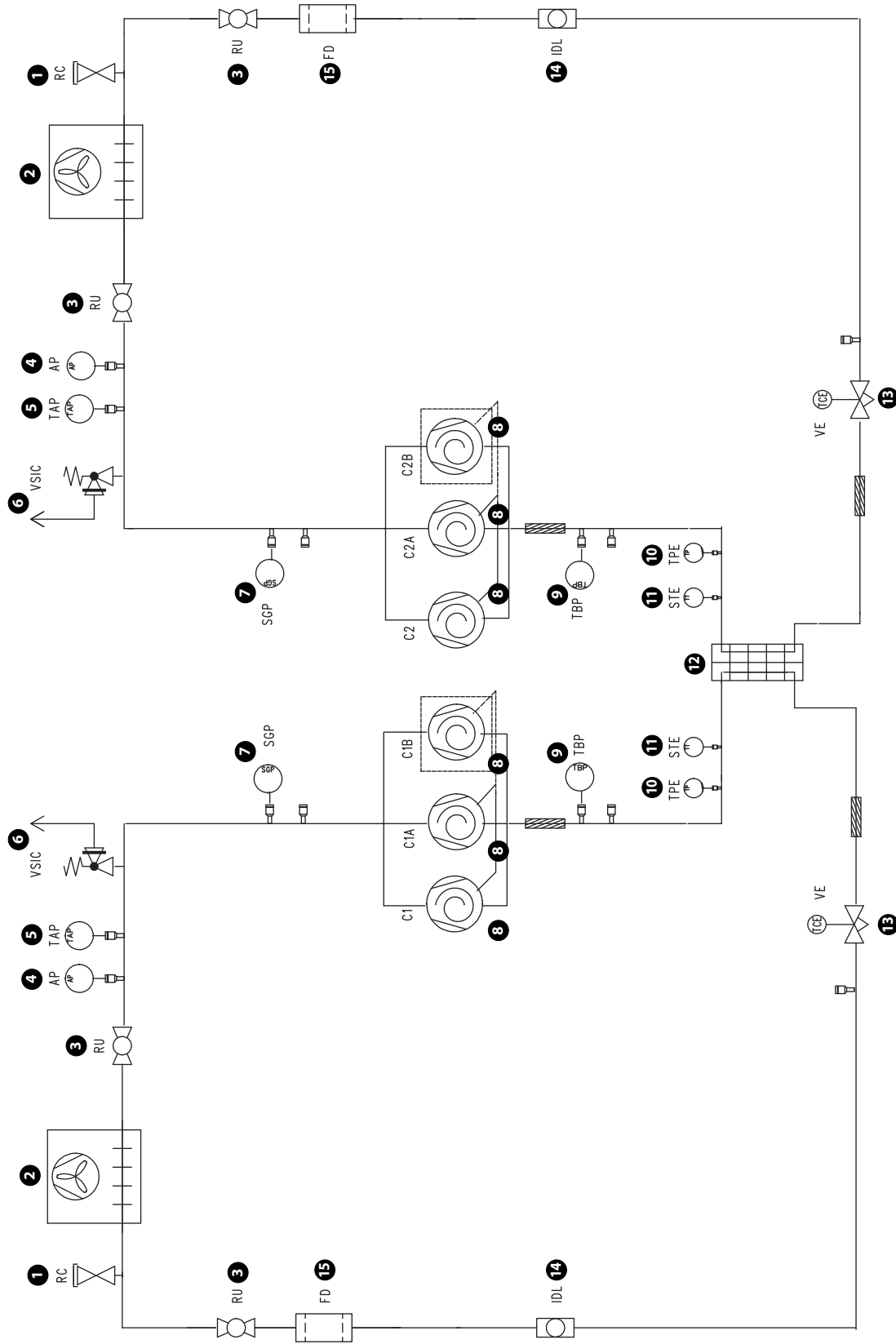
- | | | | |
|----|---------------------------------|----|-----------------------------|
| 1 | Charging connection | 13 | Mechanic thermostatic valve |
| 2 | Condenser | 14 | Sight glass |
| 3 | Isolation valve | 15 | Solenoid valve for bleeding |
| 4 | Pressure relief valve | 16 | Filter drier |
| 5 | Desuperheater | | |
| 6 | High pressure transducer | | |
| 7 | High pressure switch | | |
| 8 | Discharge gas temperature probe | | |
| 9 | Compressor | | |
| 10 | Low pressure transducer | | |
| 11 | Evaporator | | |
| 12 | Hot gas injection valve | | |

NRB 0800 ÷ 1600 - VALVE ° - TOTAL RECOVERY T



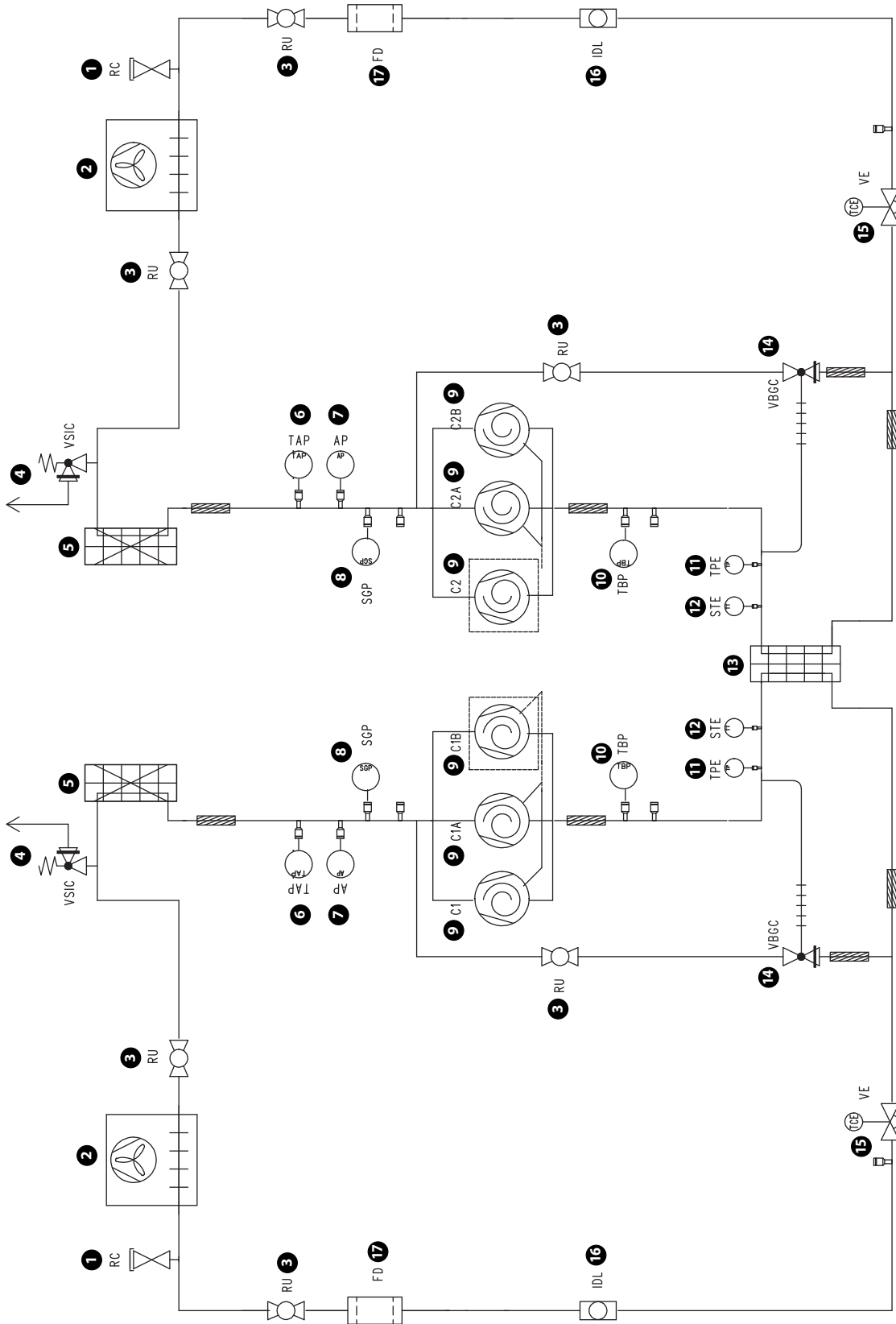
- | | |
|----|---------------------------------|
| 1 | Liquid accumulator |
| 2 | Solenoid valve for bleeding |
| 3 | One-way valve |
| 4 | Total recovery |
| 5 | Condenser |
| 6 | Charging connection |
| 7 | Isolation valve |
| 8 | 4-way cycle inversion valve |
| 9 | High pressure transducer |
| 10 | High pressure transducer |
| 11 | Discharge gas temperature probe |
| 12 | Compressor |
| 13 | Low pressure transducer |
| 14 | Hot gas injection valve |
| 15 | Evaporator |
| 16 | Mechanic thermostatic valve |
| 17 | Sight glass |
| 18 | Filter drier |

NRB 1805 ÷ 3600 - VALVE X / NRB 0800 ÷ 1600 - VALVE X OPTIONAL



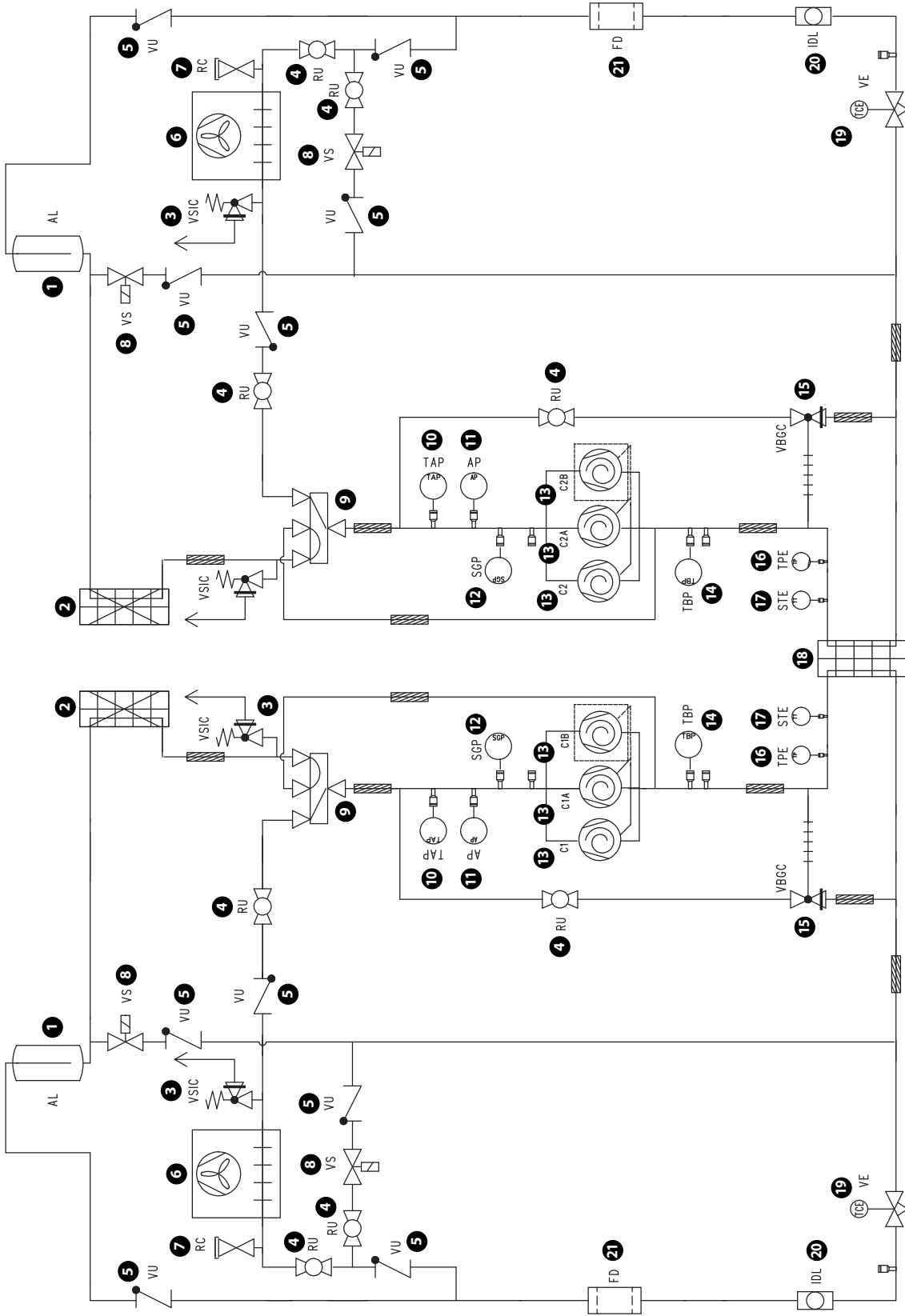
- | | | | |
|----|--|----|--|
| 1 | Charging connection | 11 | Electronic expansion valve temperature probe |
| 2 | Condenser | 12 | Evaporator |
| 3 | Isolation valve | 13 | Electronic expansion valve |
| 4 | High pressure switch | 14 | Sight glass |
| 5 | High pressure transducer | 15 | Filter drier |
| 6 | VSIC | | |
| 7 | SGP | | |
| 8 | Compressor | | |
| 9 | Low pressure transducer | | |
| 10 | Electronic expansion valve pressure transducer | | |
| 11 | Pressure relief valve | | |
| 12 | Discharge gas temperature probe | | |
| 13 | Compressor | | |
| 14 | IDL | | |
| 15 | Filter drier | | |

NRB 1805 ÷ 3600 - VALVE X - DESUPERHEATER D / NRB 0800 ÷ 1600 - VALVE X OPTIONAL - DESUPERHEATER D



- | | | | |
|----|--|----|----------------------------|
| 1 | Charging connection | 13 | Evaporator |
| 2 | Condenser | 14 | Hot gas injection valve |
| 3 | Isolation valve | 15 | Electronic expansion valve |
| 4 | Pressure relief valve | 16 | Sight glass |
| 5 | Desuperheater | 17 | Filter drier |
| 6 | High pressure transducer | | |
| 7 | High pressure switch | | |
| 8 | Discharge gas temperature probe | | |
| 9 | Compressor | | |
| 10 | Low pressure transducer | | |
| 11 | Electronic expansion valve pressure transducer | | |
| 12 | Electronic expansion valve temperature probe | | |

NRB 1805 ÷ 3600 - VALVE X - TOTAL RECOVERY T / NRB 0800 ÷ 1600 - OPTIONAL VALVE X - TOTAL RECOVERY T



- | | |
|----|--|
| 1 | Liquid accumulator |
| 2 | Total recovery pressure relief valve |
| 3 | Isolation valve |
| 4 | One-way valve |
| 5 | Condenser |
| 6 | Charging connection |
| 7 | |
| 8 | Solenoid valve for bleeding |
| 9 | 4-way cycle inversion valve |
| 10 | High pressure transducer |
| 11 | High pressure switch |
| 12 | Discharge gas temperature probe |
| 13 | Compressor |
| 14 | Low pressure transducer |
| 15 | |
| 16 | Hot gas injection valve |
| 17 | Electronic expansion valve pressure transducer |
| 18 | Electronic expansion valve temperature probe |
| 19 | Evaporator |
| 20 | Sight glass |
| 21 | Filter drier |

6 ACCESSORIES

AER485P1: RS-485 interface for supervision systems with MODBUS protocol.

AERBACP: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP

AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

FL: Flow switch.

MULTICHILLER_EVO: Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel, always ensuring constant flow rate to the evaporators.

PGD1: Allows you to control the unit at a distance.

AVX: Spring anti-vibration supports.

DCPX: Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.

RIF: Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current.

GP_: Anti-intrusion grid kit

T6: Double safety valve with exchange cock, both on the high and low pressure branches.

XLA: The Kit, which consists of resistances for the electric power board and "J" inverter fans, allows the outdoor air temperature operating range to be extended from -10°C to -20°C outdoor air.

ACCESSORIES COMPATIBILITY

Model	Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
AER485P1	°A,E,L,N,U	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
AERBACP	°A,E,L,N,U	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
AERNET	°A,E,L,N,U	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FL	°A,E,L,N,U	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MULTICHILLER_EVO	°A,E,L,N,U	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PGD1	°A,E,L,N,U	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Antivibration

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Integrated hydronic kit: 00																		
°	AVX805	AVX805	AVX805	AVX805	AVX808	AVX808	AVX808	AVX810	AVX810	AVX810	AVX809	AVX815	AVX819	AVX819	AVX819	AVX818	AVX818	
A,L	AVX805	AVX805	AVX806	AVX808	AVX808	AVX808	AVX810	AVX810	AVX809	AVX809	AVX863	AVX813	AVX818	AVX818	AVX816	AVX816	AVX816	
E,U	AVX806	AVX806	AVX808	AVX807	AVX807	AVX810	AVX809	AVX863	AVX863	AVX813	AVX813	AVX816	AVX816	AVX817	AVX820	AVX820	AVX820	
N	AVX807	AVX807	AVX807	AVX809	AVX809	AVX809	AVX863	AVX812	AVX812	AVX814	AVX814	AVX817	AVX817	AVX820	AVX821	AVX821	AVX821	
Integrated hydronic kit: AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, BA, BB, BC, BD, BE, BF, BG, BH																		
°	AVX844	AVX844	AVX844	AVX844	AVX844	AVX848	AVX848	AVX845	AVX845	AVX845	AVX847	AVX853	AVX857	AVX859	AVX859	AVX858	AVX858	
A,L	AVX844	AVX844	AVX844	AVX844	AVX844	AVX848	AVX848	AVX845	AVX847	AVX847	AVX849	AVX854	AVX858	AVX858	AVX861	AVX861	AVX861	
E,U	AVX844	AVX844	AVX844	AVX845	AVX845	AVX845	AVX847	AVX849	AVX849	AVX851	AVX851	AVX855	AVX855	AVX856	AVX860	AVX860	AVX860	
N	AVX845	AVX845	AVX845	AVX847	AVX847	AVX847	AVX849	AVX850	AVX851	AVX852	AVX852	AVX856	AVX856	AVX860	AVX862	AVX862	AVX862	
Integrated hydronic kit: BI																		
°	AVX844	AVX844	AVX844	AVX844	AVX846	AVX848	AVX848	AVX845	AVX845	AVX845	AVX847	AVX853	AVX857	AVX859	AVX859	AVX858	AVX858	
A,L	AVX844	AVX844	AVX846	AVX846	AVX846	AVX848	AVX845	AVX845	AVX847	AVX847	AVX849	AVX854	AVX858	AVX858	AVX861	AVX861	AVX861	
E,U	AVX844	AVX844	AVX846	AVX845	AVX845	AVX845	AVX847	AVX849	AVX849	AVX851	AVX851	AVX855	AVX855	AVX856	AVX860	AVX860	AVX860	
N	AVX845	AVX845	AVX845	AVX847	AVX847	AVX847	AVX849	AVX850	AVX851	AVX852	AVX852	AVX856	AVX856	AVX860	AVX862	AVX862	AVX862	
Integrated hydronic kit: BJ																		
°	-	AVX844	AVX844	AVX844	AVX846	AVX848	AVX848	AVX845	AVX845	AVX845	AVX847	AVX853	AVX857	AVX859	AVX859	AVX858	AVX858	
A,L	AVX844	AVX844	AVX846	AVX846	AVX846	AVX848	AVX845	AVX845	AVX847	AVX847	AVX849	AVX854	AVX858	AVX858	AVX861	AVX861	AVX861	
E,U	AVX844	AVX844	AVX846	AVX845	AVX845	AVX845	AVX847	AVX849	AVX849	AVX851	AVX851	AVX855	AVX855	AVX856	AVX860	AVX860	AVX860	
N	AVX845	AVX845	AVX845	AVX847	AVX847	AVX847	AVX849	AVX850	AVX851	AVX852	AVX852	AVX856	AVX856	AVX860	AVX862	AVX862	AVX862	
Integrated hydronic kit: DA, DB, DC, PA, PB, PC, PD, PE, PF, PG, PH																		
°	AVX822	AVX822	AVX822	AVX822	AVX825	AVX825	AVX825	AVX826	AVX826	AVX826	AVX828	AVX834	AVX839	AVX839	AVX839	AVX840	AVX840	
A,L	AVX822	AVX822	AVX825	AVX825	AVX825	AVX825	AVX826	AVX826	AVX828	AVX828	AVX830	AVX835	AVX840	AVX840	AVX842	AVX842	AVX842	
E,U	AVX825	AVX825	AVX825	AVX826	AVX826	AVX826	AVX828	AVX830	AVX830	AVX832	AVX832	AVX836	AVX836	AVX837	AVX841	AVX841	AVX841	
N	AVX826	AVX826	AVX826	AVX828	AVX828	AVX828	AVX830	AVX831	AVX831	AVX833	AVX833	AVX837	AVX837	AVX841	AVX843	AVX843	AVX843	
Integrated hydronic kit: DD, DE, DF, DG, DH, PI, PJ																		
°	AVX823	AVX823	AVX823	AVX823	AVX825	AVX825	AVX825	AVX826	AVX826	AVX826	AVX829	AVX834	AVX839	AVX839	AVX839	AVX840	AVX840	
A,L	AVX823	AVX823	AVX825	AVX825	AVX825	AVX825	AVX826	AVX826	AVX829	AVX829	AVX830	AVX835	AVX840	AVX840	AVX842	AVX842	AVX842	
E,U	AVX825	AVX825	AVX825	AVX826	AVX826	AVX826	AVX829	AVX830	AVX830	AVX832	AVX832	AVX836	AVX836	AVX838	AVX841	AVX841	AVX841	
N	AVX826	AVX826	AVX826	AVX829	AVX829	AVX829	AVX830	AVX831	AVX831	AVX833	AVX833	AVX838	AVX838	AVX841	AVX843	AVX843	AVX843	
Integrated hydronic kit: DI, DJ																		
°	AVX864	AVX864	AVX829	AVX864	AVX825	AVX825	AVX827	AVX827	AVX827	AVX827	AVX829	AVX834	AVX839	AVX839	AVX839	AVX840	AVX840	
A,L	AVX864	AVX864	AVX825	AVX825	AVX825	AVX825	AVX827	AVX827	AVX829	AVX829	AVX830	AVX835	AVX840	AVX840	AVX842	AVX842	AVX842	
E,U	AVX825	AVX825	AVX825	AVX827	AVX827	AVX827	AVX829	AVX830	AVX830	AVX832	AVX832	AVX836	AVX836	AVX838	AVX841	AVX841	AVX841	
N	AVX827	AVX827	AVX827	AVX829	AVX829	AVX829	AVX830	AVX831	AVX831	AVX833	AVX833	AVX838	AVX838	AVX841	AVX843	AVX843	AVX843	

Condensation control temperature

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006
Fans: °									
°	DCPX120	DCPX120	DCPX120	DCPX120	DCPX121	DCPX121	DCPX121	DCPX121	DCPX150
A	DCPX120	DCPX120	DCPX121	DCPX121	DCPX121	DCPX121	DCPX122	DCPX150	DCPX151
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
U	DCPX121	DCPX121	DCPX122	DCPX122	DCPX122	DCPX122	DCPX123	DCPX124	DCPX124
Fans: M									
°	DCPX130	DCPX130	DCPX130	DCPX130	DCPX131	DCPX131	DCPX131	DCPX155	DCPX155
A	DCPX130	DCPX130	DCPX131	DCPX131	DCPX131	DCPX131	DCPX132	DCPX155	DCPX156
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006
U	DCPX131	DCPX131	DCPX131	DCPX132	DCPX132	DCPX132	DCPX133	DCPX134	DCPX134
Ver	2206	2406	2600	2800	3000	3200	3400	3600	
Fans: °									
°	DCPX150	DCPX151	DCPX123	DCPX124	DCPX124	DCPX124	DCPX125	DCPX125	DCPX125
A	DCPX151	DCPX124	DCPX125	DCPX125	DCPX125	DCPX126	DCPX126	DCPX126	DCPX126
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
U	DCPX125	DCPX125	DCPX126	DCPX126	DCPX127	DCPX128	DCPX128	DCPX128	DCPX128
Fans: M									
°	DCPX155	DCPX156	DCPX133	DCPX134	DCPX134	DCPX134	DCPX135	DCPX135	DCPX135
A	DCPX156	DCPX134	DCPX135	DCPX135	DCPX135	DCPX136	DCPX136	DCPX136	DCPX136
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
U	DCPX135	DCPX135	DCPX136	DCPX136	DCPX137	DCPX138	DCPX138	DCPX138	DCPX138

Device for peak current reduction

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006
°A,E,L,N,U	DRENRB0800 (1)	DRENRB0900 (1)	DRENRB1000 (1)	DRENRB1100 (1)	DRENRB1200 (1)	DRENRB1400 (1)	DRENRB1600 (1)	DRENRB1805 (1)	DRENRB2006 (1)

(1) Only for supplies of 400V 3N ~ 50Hz and 400V 3 ~ 50Hz. x 2 or x 3 (if present) indicates the quantity to be ordered.
A grey background indicates the accessory must be assembled in the factory

Ver	2206	2406	2600	2800	3000	3200	3400	3600	
°A,E,L,N,U	DRENRB2206 (1)	DRENRB2406 (1)	-	-	-	-	-	-	-

(1) Only for supplies of 400V 3N ~ 50Hz and 400V 3 ~ 50Hz. x 2 or x 3 (if present) indicates the quantity to be ordered.
The accessory cannot be fitted on the configurations indicated with -
A grey background indicates the accessory must be assembled in the factory

Power factor correction

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006
°	RIFNRB0800	RIFNRB0900	RIFNRB1000	RIFNRB1100	RIFNRB1200	RIFNRB1400	RIFNRB1600	RIFNRB1805	RIFNRB2006
A,L	RIFNRB0800	RIFNRB0900	RIFNRB1000	RIFNRB1100	RIFNRB1200	RIFNRB1400	RIFNRB1601	RIFNRB1805	RIFNRB2006
E,U	RIFNRB0800	RIFNRB0900	RIFNRB1000	RIFNRB1101	RIFNRB1201	RIFNRB1401	RIFNRB1601	RIFNRB1815	RIFNRB2016
N	RIFNRB0801	RIFNRB0901	RIFNRB1001	RIFNRB1101	RIFNRB1201	RIFNRB1401	RIFNRB1601	RIFNRB1815	RIFNRB2016

A grey background indicates the accessory must be assembled in the factory

Ver	2206	2406	2600	2800	3000	3200	3400	3600	
°	RIFNRB2206	RIFNRB2406	RIFNRB2600	RIFNRB2800	RIFNRB3000	RIFNRB3200	RIFNRB3400	RIFNRB3600	
A,L	RIFNRB2206	RIFNRB2416	RIFNRB2600	RIFNRB2800	RIFNRB3000	RIFNRB3200	RIFNRB3400	RIFNRB3600	
E,N,U	RIFNRB2216	RIFNRB2416	RIFNRB2600	RIFNRB2800	RIFNRB3000	RIFNRB3200	RIFNRB3400	RIFNRB3600	

A grey background indicates the accessory must be assembled in the factory

Anti-intrusion grid

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
°	GP2VN	GP2VN	GP2VN	GP3VN	GP3VN	GP3VN	GP4VN	GP4VN	GP4VN	GP4VN	GP5VN	GP6V	GP6V	GP6V	GP6V	GP7V	GP7V
A,L	GP2VN	GP2VN	GP3VN	GP3VN	GP3VN	GP4VN	GP4VN	GP5VN	GP5VN	GP5VN	GP7V	GP7V	GP7V	GP7V	GP8V	GP8V	GP8V
E,U	GP3VN	GP3VN	GP3VN	GP4VN	GP4VN	GP4VN	GP5VN	GP6V	GP6V	GP7V	GP7V	GP8V	GP8V	GP9VN	GP10V	GP10V	GP10V
N	GP4VN	GP4VN	GP4VN	GP5VN	GP5VN	GP5VN	GP6V	GP7V	GP7V	GP8V	GP4VN	GP9VN	GP9VN	GP10V	GP11V	GP11V	GP11V

A grey background indicates the accessory must be assembled in the factory

■ GP2VN becomes GP2VNA if configured with a type A or B hydronic kit

Double safety valves

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
°	T6NRB13	T6NRB13	T6NRB13	T6NRB13	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15
A,L	T6NRB13	T6NRB13	T6NRB14	T6NRB14	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15
E,U	T6NRB14	T6NRB14	T6NRB14	T6NRB14	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15
N	T6NRB14	T6NRB14	T6NRB14	T6NRB14	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15	T6NRB15

A grey background indicates the accessory must be assembled in the factory

Kit for low temperature

Ver	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
°	-	-	-	-	-	-	-	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)
A,L	-	-	-	-	-	-	-	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)
E,U	-	-	-	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)
N	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)	XLA (1)

(1) With the accessory XLA do not use the DCPX.
The accessory cannot be fitted on the configurations indicated with -
A grey background indicates the accessory must be assembled in the factory

7 SELECTION CRITERIA OF THE HEAT EXCHANGERS ACCORDING TO THE PLACE OF INSTALLATION OF THE UNIT

The guide provides advice for applications. Although recommendations are given, all the details about the real world application of our products cannot be fully covered in this document.

For these reasons, this section contains the basic warnings and precautions to be taken into account in general, it being understood that:

- The final choice of the type of exchanger according to the place of installation is left to the client (or to the professional appointed by him).
- In any case, it is recommended to wash the coils with adequate frequency (a maximum time interval of three months is recommended, shorter in conditions of particularly dirty and aggressive atmospheres) to preserve their condition and ensure the proper functioning of the unit.

Potentially corrosive outdoor environments include areas near coasts, industrial sites, densely populated urban areas, certain rural areas or a combination of these environments. Other factors, including the presence of effluent gas, sewage vents or open sewage systems and the exhaust of diesel engines can all be harmful for the microchannel coil.

The purpose of this application guide is to provide general information on the mechanisms of corrosion and corrosive environments.

SEA COAST ENVIRONMENTS

Coastal or marine environments are characterized by the abundance of sodium chloride (salt) which is carried by sea spray, mist, or fog. Most importantly, this salt water can be carried more than several miles by ocean breezes and tidal currents. It's not uncommon to experience salt-water contamination as far as 10km from the coast.

For this reason, it may be necessary to protect the exchangers from electrolytes of marine origin through the appropriate choice of materials and / or appropriate protective treatment.

INDUSTRIAL ENVIRONMENTS

Industrial applications are associated with several different conditions that can potentially produce a variety of atmospheric emissions.

Contaminants from sulphur and nitrogen oxides are most often linked to high-density urban environments. The combustion of coal oils and fuel oils releases sulphur oxides (SO_2 , SO_3) and nitrogen oxides (NO_x) into the atmosphere. These gases accumulate in the atmosphere and return to the ground as acid rain or low pH dew.

Industrial emissions are not only potentially corrosive: many industrial dust particles can be loaded with harmful components such as metal oxides, chlorides, sulphates, sulfuric acid, carbon and carbon compounds.

In the presence of oxygen, water or high humidity environments, these particles can be extremely corrosive and in several forms, including general and localised corrosion, such as pitting and anthill.

MIX OF SEASIDE AND INDUSTRIAL ENVIRONMENTS

Sea mist loaded with salt, associated with the harmful emissions of an industrial environment, poses a serious risk.

The combined effects of the salt loaded mist and industrial emissions accelerate corrosion.

Within the manufacturing plants, corrosive gas may result from the processing of chemicals or by the typical industrial processes used in manufacturing.

Potential sources of risk to be considered are open sewage systems, exhaust vents, diesel engine exhaust, emissions from heavy traffic, landfills, aircraft and ocean-go-

ing ship engine exhaust, industrial production, chemical treatment facilities (cooling towers in the vicinity) and fossil fuel power plants.

URBAN ENVIRONMENTS

Densely populated areas generally have high levels of emissions of motor vehicles and increases in dual use for heating buildings.

Both conditions elevate sulfur oxide (SO_x) and nitrogen oxide (NO_x) concentrations. Corrosive atmospheres may even occur in some closed areas, such as facilities with swimming pools and water treatment systems.

It is advisable to pay particular attention to the positioning of the units if it occurs in the immediate vicinity of these places, and to avoid that they are installed in the vicinity of outlets for the expulsion of air coming from them, or in any case exposed to such atmospheres.

Corrosion severity in this environment is a function of the pollution levels, which in turn depend on several factors including population density in the area.

Any equipment installed in locations immediately adjacent to diesel engine exhausts, incinerator flues, fuel-fired boiler flues, or areas exposed to fossil fuel emissions shall be considered subject to the same measures as an industrial application.

RURAL ENVIRONMENTS

Rural environments may contain high levels of pollution from ammonia and nitrogen products from animal excrements, fertilizers and high concentration of diesel engine exhaust. The approach to these environments must be entirely similar to that of industrial environments.

Local weather conditions have a major role in the concentration or dispersion of outdoor gaseous contaminants.

Thermal inversions can trap pollutants, thereby producing serious air pollution problems.

ADDITIONAL TIPS

Although each of the above corrosive environments can be detrimental to the life of the heat exchanger, several additional factors must be considered before choosing the final design.

The local climate surrounding the site of application may be influenced by the presence of:

- wind
- dust
- road salts
- swimming pools
- diesel engines discharge / traffic
- Localised mist
- cleaning agents for domestic use
- Sewage system outlets
- many other separate contaminants

Even within 3-5 km from these particular local climates a normal environment with moderate characteristics can be classified as an environment that requires preventive corrosion measures. When these factors are directly and immediately part of the environment, their influence is further aggravating.

Only in the absence of potentially risky situations such as those indicated above can an environment be considered moderate.

Application	Tip
Severe environments	Coils with suitable protection
Moderate environments	Standard coil °

8 BASIC PRINCIPLES ON MICROCHANNEL COIL CORROSION

The main material in Aermec heat exchangers is aluminium.

Aluminum is a very reactive metal, which is easily oxidized on its surface. As long as this hard layer of aluminum oxide remains intact, the aluminum at the base will remain resistant to corrosion (unlike other materials, such as steel, where the oxide layer peels off the surface and flakes off, allowing the constant attack of the underlying metal).

However, aggressive environments can damage the oxide layer, which may not regenerate as quickly as necessary to provide the product with sufficient protection. These harsh environments are typified by very high or very low pH levels.

Normally, aluminum's protective oxide layer is generally stable in the pH range of 4.5 to 8.5; the lack of exposure to excessively acidic or basic pH conditions is not in itself sufficient to exclude the need for appropriate protective treatments on the batteries.

The presence of salt (associated with marine environments) as well as the presence of other aggressive substances can in fact induce widespread or localized galvanic corrosion (pitting or anthill corrosion).

OTHER RISK FACTORS FOR CORROSION

The principal cause of corrosion is elevated humidity and/or temperatures in the presence of contaminant gases. These conditions alone, or in combination, accelerate the natural corrosion process in metals.

Humidity

Moisture in air can be considered the lifeblood of galvanic corrosion. A galvanic corrosion cell requires an electrolyte or current carrying media, to reach a dynamic state. The electrolyte can be water or any water-soluble substance with good conducting properties. Moisture in the air is one such electrolyte. Humid air contaminated with corrosive gasses further accelerates the corrosion rate as the air's current carrying potential increases.

Temperature

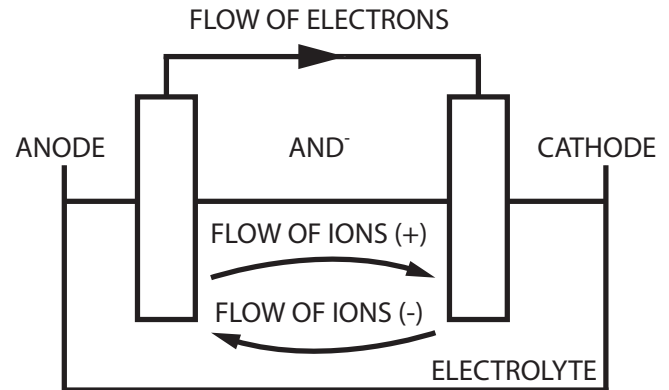
Chemical reactions generally depend on the temperature, for reactions that involve corrosion of aluminum by an increase in temperature, faster reaction frequencies usually arise.

Corrosive gases

Not all gases cause corrosion. Specifically, we are concerned with three types of gases:

- Acidic gases, such as hydrogen sulfide, sulfur oxides, chlorides, hydrogen fluoride (HF) and nitrogen oxides;
- Caustic gases, such as ammonia;
- Oxidizing gases, such as ozone

■ *Of the gases that can cause corrosion, the acidic gases are typically the most harmful.*



9 CLEANING MICRO-CHANNEL COIL

Keeping the surfaces of the microchannel coils clean is essential to ensure the correct operation of the unit and to avoid punctures on the coil with the consequent loss of refrigerant gas which would lead to the replacement of the coil itself.

⚠ WARNING Damage to the coil due to neglect or lack of or poor cleaning is not covered by the warranty.

Dirt, grease, oil, and other foreign material must be removed periodically from the surface of the battery according to the following recommendations.

Required elements:

- Personal protective equipment
- Hot water
- High-pressure washing

Procedure:

Use a high-pressure washer with a large cast and enough force to remove all foreign material, proceed with care to avoid damage and possible wear of the louvers. Lastly, also rinse the carpentry and the fans thoroughly to be sure that all impurities have been removed.

■ *Aermecwe assume no liability for the completeness of the information contained in this document.*

10 PERFORMANCE SPECIFICATIONS

NRB 0800-3600

NRB - °

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performance 12 °C / 7 °C (1)																			
Cooling capacity	kW	221,5	244,5	270,3	299,7	353,1	404,9	439,0	511,2	560,9	598,2	675,8	721,6	786,8	830,6	880,2	945,8	998,2	
Input power	kW	73,3	83,1	94,1	110,3	117,5	135,4	155,1	175,7	194,0	216,6	236,5	256,0	270,3	292,6	314,7	329,4	355,2	
Cooling total input current	A	128,3	143,1	160,0	185,5	201,6	229,9	260,8	299,7	329,8	366,5	404,6	434,0	459,4	498,2	534,6	562,9	606,0	
EER	W/W	3,02	2,94	2,87	2,72	3,00	2,99	2,83	2,91	2,89	2,76	2,86	2,82	2,91	2,84	2,80	2,87	2,81	
Water flow rate system side	l/h	38117	42077	46498	51565	60733	69640	75512	87913	96469	102883	116222	124100	135305	142813	151332	162608	171611	
Pressure drop system side	kPa	46	55	38	45	44	39	46	40	47	53	52	58	60	36	39	46	43	
Pressure drop on the service side with the filter installed	kPa	56	67	51	63	70	71	58	56	67	76	81	72	77	56	62	72	72	

(1) Data EN 14511:2018; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

NRB - L

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performance 12 °C / 7 °C (1)																			
Cooling capacity	kW	216,9	237,7	272,7	307,7	343,9	391,0	438,4	498,2	555,4	608,2	666,2	727,2	770,0	834,2	886,6	952,6	1004,1	
Input power	kW	73,0	85,9	92,0	107,4	122,7	139,0	151,9	173,3	191,6	213,6	233,8	246,8	270,1	284,5	307,5	323,1	347,9	
Cooling total input current	A	122,8	142,3	154,5	179,0	203,4	231,8	250,8	289,7	318,6	359,2	390,2	412,6	448,8	478,6	512,6	544,6	585,4	
EER	W/W	2,97	2,77	2,97	2,87	2,80	2,81	2,89	2,87	2,90	2,85	2,85	2,95	2,85	2,93	2,88	2,95	2,89	
Water flow rate system side	l/h	37323	40891	46905	52926	59137	67243	75381	85669	95498	104586	114564	125029	132382	143408	152424	163777	172632	
Pressure drop system side	kPa	25	20	27	24	29	23	30	28	37	36	44	28	31	30	34	39	43	
Pressure drop on the service side with the filter installed	kPa	34	30	43	44	53	54	43	44	56	60	72	43	48	51	58	66	73	

(1) Data EN 14511:2018; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

NRB - A

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performance 12 °C / 7 °C (1)																			
Cooling capacity	kW	224,1	252,2	283,7	326,1	361,2	411,7	462,2	519,2	576,0	633,3	697,6	757,5	805,8	867,0	928,7	980,8	1026,8	
Input power	kW	70,6	80,9	90,2	104,7	115,3	131,8	147,6	166,3	183,5	203,1	223,3	240,5	256,5	277,0	297,0	314,4	330,3	
Cooling total input current	A	123,9	139,9	158,8	181,8	198,2	224,1	252,4	283,8	316,2	348,7	386,3	417,6	441,6	475,9	513,3	541,6	567,7	
EER	W/W	3,17	3,12	3,15	3,12	3,13	3,12	3,13	3,12	3,14	3,12	3,12	3,15	3,14	3,13	3,13	3,12	3,11	
Water flow rate system side	l/h	38561	43394	48802	56076	62118	70789	79487	89271	99048	108894	119965	130236	138537	149048	159671	168622	176531	
Pressure drop system side	kPa	27	22	30	27	32	25	34	30	39	39	48	30	34	32	38	41	45	
Pressure drop on the service side with the filter installed	kPa	37	34	46	49	59	58	48	47	61	65	80	47	53	55	63	70	77	

(1) Data EN 14511:2018; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

NRB - E

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performance 12 °C / 7 °C (1)																			
Cooling capacity	kW	219,2	248,3	275,0	321,4	358,7	403,2	455,0	514,5	569,0	637,2	688,3	741,1	794,3	857,9	911,7	965,1	1019,4	
Input power	kW	69,6	79,4	88,5	102,2	114,9	129,8	144,5	164,7	183,0	203,4	221,4	236,5	255,5	274,7	290,6	310,5	327,8	
Cooling total input current	A	119,5	134,7	148,8	172,1	192,6	215,7	240,1	275,1	306,1	342,6	372,8	397,0	425,9	459,5	487,5	520,6	549,0	
EER	W/W	3,15	3,13	3,11	3,15	3,12	3,11	3,15	3,12	3,11	3,13	3,11	3,13	3,11	3,12	3,14	3,11	3,11	
Water flow rate system side	l/h	37710	42726	47303	55271	61679	69338	78240	88465	97841	109550	118323	127417	136570	147496	156744	165934	175268	
Pressure drop system side	kPa	19	23	20	27	21	27	26	33	33	22	25	30	34	33	38	41	46	
Pressure drop on the service side with the filter installed	kPa	29	36	35	49	49	60	40	51	55	49	56	46	52	56	63	70	77	

(1) Data EN 14511:2018; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

NRB - U

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performance 12 °C / 7 °C (1)																			
Cooling capacity	kW	227,6	257,6	286,5	329,6	369,8	414,6	466,9	529,2	594,0	655,1	716,9	765,5	815,3	879,0	940,9	999,7	1049,5	
Input power	kW	68,8	77,7	86,8	99,5	111,7	126,1	140,9	159,5	179,0	197,8	215,3	229,4	248,9	265,7	282,3	302,5	319,5	
Cooling total input current	A	124,3	138,5	152,9	176,0	195,6	218,0	244,0	278,3	311,7	347,7	377,4	401,2	431,5	463,1	493,9	527,9	556,4	
EER	W/W	3,30	3,31	3,30	3,31	3,31	3,28	3,31	3,32	3,32	3,31	3,33	3,34	3,28	3,31	3,33	3,30	3,28	
Water flow rate system side	l/h	39151	44308	49294	56689	63596	71302	80286	91003	102137	112618	123250	131616	140179	151126	161768	171875	180443	
Pressure drop system side	kPa	20	25	21	29	23	28	27	35	36	23	27	32	36	35	40	44	49	
Pressure drop on the service side with the filter installed	kPa	32	39	38	52	52	65	43	54	60	53	61	49	55	59	68	75	83	

(1) Data EN 14511:2018; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performance 12 °C / 7 °C (1)																			
Cooling capacity	kW	227,7	260,4	284,7	327,7	367,7	412,3	466,1	521,6	579,1	645,7	702,6	749,4	804,7	866,4	926,7	973,5	1029,9	
Input power	kW	68,5	78,9	86,4	98,5	111,9	125,4	140,4	157,8	176,0	194,6	212,9	229,0	246,7	263,5	282,7	301,1	319,3	
Cooling total input current	A	118,2	135,1	146,9	166,9	188,6	209,4	234,0	264,2	295,4	328,9	360,0	385,3	412,5	442,0	475,2	506,2	536,4	
EER	W/W	3,32	3,30	3,30	3,33	3,29	3,29	3,32	3,31	3,29	3,32	3,30	3,27	3,26	3,29	3,28	3,23	3,23	
Water flow rate system side	l/h	39166	44792	48972	56365	63234	70905	80151	89691	99569	111009	120789	128849	138355	148961	159328	167377	177077	
Pressure drop system side	kPa	20	25	21	28	23	28	27	34	34	23	26	30	35	34	39	42	47	
Pressure drop on the service side with the filter installed	kPa	32	39	38	52	52	64	42	53	57	51	59	47	54	57	66	71	79	

(1) Data EN 14511:2018; Heat exchanger water (services side) 12 °C / 7 °C; outside air 35 °C

NRB 0800-3600 WITH DESUPERHEATER

NRB D°

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with desuperheater (1)																			
Recovered heating power	kW	97,7	110,7	125,9	147,4	157,0	181,2	207,4	235,3	259,4	289,5	316,0	341,9	360,7	392,4	421,8	440,9	475,8	
Desuperheater water flow rate	l/h	16984	19236	21874	25623	27287	31493	36046	40890	45090	50312	54928	59430	62691	68193	73316	76622	82696	
Pressure drop desuperheater	kPa	24	31	36	47	32	38	50	64	59	75	89	75	75	81	87	88	96	
Desuperheater																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	8493	9619	10939	12814	13646	15749	18026	20448	22549	25160	27468	29720	31350	34102	36663	38317	41354	
Maximum water flow rate	l/h	28310	32063	36462	42712	45485	52495	60087	68160	75162	83865	91560	99065	104500	113672	122210	127722	137845	
Connections (in/out)	Type	Grooved joints																	
Water content	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NRB DL

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with desuperheater (1)																			
Recovered heating power	kW	97,8	115,4	123,2	144,1	164,5	186,7	203,7	232,6	256,8	286,3	313,0	331,3	362,5	381,9	412,5	432,9	465,9	
Desuperheater water flow rate	l/h	17000	20054	21420	25038	28589	32451	35401	40425	44626	49756	54392	57583	62999	66373	71686	75238	80967	
Pressure drop desuperheater	kPa	24	34	35	45	35	41	49	62	58	73	87	71	76	77	83	85	92	
Desuperheater																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	8502	10029	10712	12521	14297	16228	17703	20216	22317	24882	27200	28796	31504	33192	35848	37624	40490	
Maximum water flow rate	l/h	28338	33428	35705	41737	47655	54093	59010	67385	74388	82938	90667	95985	105013	110638	119493	125413	134965	
Connections (in/out)	Type	Grooved joints																	
Water content	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NRB DA

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with desuperheater (1)																			
Recovered heating power	kW	94,5	108,5	120,8	140,3	154,5	176,8	197,6	223,0	245,5	271,8	298,4	322,5	343,8	371,4	397,8	420,9	441,9	
Desuperheater water flow rate	l/h	16424	18865	20993	24382	26848	30729	34349	38759	42669	47241	51855	56053	59748	64545	69144	73144	76806	
Pressure drop desuperheater	kPa	23	30	33	43	31	37	46	57	53	66	79	67	68	73	77	80	83	
Desuperheater																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	8214	9434	10498	12193	13426	15367	17177	19382	21338	23624	25931	28031	29878	32277	34577	36577	38409	
Maximum water flow rate	l/h	27378	31447	34993	40643	44753	51223	57255	64607	71127	78745	86437	93435	99593	107590	115257	121923	128028	
Connections (in/out)	Type	Grooved joints																	
Water content	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with desuperheater (1)																			
Recovered heating power	kW	93,4	106,4	118,8	136,9	154,2	174,1	193,9	220,7	245,2	273,3	297,2	317,3	342,5	368,2	389,2	415,7	438,5	
Desuperheater water flow rate	l/h	16235	18500	20652	23793	26799	30259	33692	38357	42614	47496	51661	55147	59519	63994	67643	72252	76208	
Pressure drop desuperheater	kPa	22	29	32	41	31	36	44	56	53	67	79	65	68	72	74	78	82	
Desuperheater																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	8119	9251	10328	11899	13402	15132	16849	19182	21311	23752	25834	27578	29764	32002	33827	36132	38110	
Maximum water flow rate	l/h	27062	30837	34425	39662	44672	50440	56162	63938	71035	79172	86113	91925	99212	106672	112755	120438	127032	
Connections (in/out)	Type	Grooved joints																	
Water content	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NRB DU

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with desuperheater (1)																			
Recovered heating power	kW	92,3	104,1	116,4	133,2	149,9	169,0	188,9	213,6	239,5	265,5	288,8	307,4	333,3	356,0	377,8	404,5	426,9	
Desuperheater water flow rate	l/h	16048	18100	20229	23154	26048	29378	32829	37120	41631	46150	50194	53431	57932	61867	65655	70301	74198	
Pressure drop desuperheater	kPa	22	28	31	39	29	33	42	53	50	63	74	61	64	67	70	74	78	
Desuperheater																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	8025	9051	10116	11579	13026	14691	16417	18563	20819	23079	25101	26720	28970	30938	32833	35156	37105	
Maximum water flow rate	l/h	26750	30170	33720	38597	43420	48970	54723	61875	69395	76928	83670	89065	96567	103125	109442	117185	123682	
Connections (in/out)	Type	Grooved joints																	
Water content	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NRB DN

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with desuperheater (1)																			
Recovered heating power	kW	91,9	105,7	115,8	131,9	150,2	168,0	188,3	211,3	235,6	261,4	285,7	307,0	330,5	353,1	378,4	402,9	426,9	
Desuperheater water flow rate	l/h	15970	18366	20128	22930	26099	29202	32725	36721	40955	45425	49662	53355	57443	61367	65761	70029	74198	
Pressure drop desuperheater	kPa	21	28	31	38	29	33	42	52	49	61	73	61	63	66	70	74	78	
Desuperheater																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	7986	9184	10066	11467	13052	14603	16365	18364	20481	22716	24835	26681	28726	30688	32885	35020	37105	
Maximum water flow rate	l/h	26620	30613	33552	38222	43505	48677	54550	61212	68268	75718	82782	88937	95752	102293	109617	116732	123682	
Connections (in/out)	Type	Grooved joints																	
Water content	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NRB 0800-3600 WITH TOTAL RECOVERY

NRB T°

Size	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with total recovery (1)																		
Cooling capacity	kW	197,6	223,1	248,6	285,2	321,8	366,4	410,9	464,5	518,0	571,6	625,1	674,3	723,5	777,0	830,6	884,2	937,7
Input power	kW	60,6	68,6	76,6	87,3	98,0	111,2	124,4	141,0	157,6	174,2	190,8	205,3	219,8	236,4	253,0	269,6	286,2
Recovered heating power	kW	255,2	288,2	321,3	368,1	414,9	472,0	529,1	598,4	667,8	737,1	806,4	869,4	932,3	1001,6	1071,0	1140,3	1209,6
Total recovery water flow rate	l/h	44347	50096	55845	63979	72113	82035	91957	104006	116054	128103	140152	151092	162033	174082	186130	198179	210228
Total pressure drop total recovery	kPa	28	35	31	41	32	42	39	50	52	63	40	46	53	51	59	66	74

Total recovery

Type	type	Brazen plate																
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum water flow rate	l/h	22174	25048	27923	31990	36057	41018	45979	52003	58027	64052	70076	75546	81017	87041	93065	99090	105114
Maximum water flow rate	l/h	73912	83493	93075	106632	120188	136725	153262	173343	193423	213505	233587	251820	270055	290137	310217	330298	350380
Connections (in/out)	Type	Grooved joints																
Sizes (in/out)	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	5"	5"	5"	5"

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

NRB TL

Size	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with total recovery (1)																		
Cooling capacity	kW	204,8	231,1	257,3	295,4	333,6	379,9	426,1	481,1	536,1	591,1	646,1	697,6	749,2	804,2	859,1	914,1	969,1
Input power	kW	60,8	68,8	76,8	87,4	98,0	111,4	124,8	141,4	158,0	174,6	191,2	205,8	220,4	237,0	253,6	270,2	286,8
Recovered heating power	kW	262,6	296,4	330,3	378,5	426,7	485,7	544,7	615,4	686,2	757,0	827,7	893,1	958,6	1029,3	1100,0	1170,8	1241,6
Total recovery water flow rate	l/h	45636	51518	57399	65780	74160	84414	94668	106965	119261	131557	143854	155224	166595	178892	191188	203484	215780
Total pressure drop total recovery	kPa	29	37	33	44	34	44	41	52	55	66	42	49	56	54	62	69	78

Total recovery

Type	type	Brazen plate																
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum water flow rate	l/h	22818	25759	28700	32890	37080	42207	47334	53483	59631	65779	71927	77612	83298	89446	95594	101742	107890
Maximum water flow rate	l/h	76060	85863	95665	109633	123600	140690	157780	178275	198768	219262	239757	258707	277658	298153	318647	339140	359633
Connections (in/out)	Type	Grooved joints																
Sizes (in/out)	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	5"	5"	5"	5"	5"

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

NRB TA

Size	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with total recovery (1)																		
Cooling capacity	kW	204,8	231,1	257,3	295,4	333,6	379,9	426,1	481,1	536,1	591,1	646,1	697,6	749,2	804,2	859,1	914,1	969,1
Input power	kW	60,8	68,8	76,8	87,4	98,0	111,4	124,8	141,4	158,0	174,6	191,2	205,8	220,4	237,0	253,6	270,2	286,8
Recovered heating power	kW	262,6	296,4	330,3	378,5	426,7	485,7	544,7	615,4	686,2	757,0	827,7	893,1	958,6	1029,3	1100,0	1170,8	1241,6
Total recovery water flow rate	l/h	45636	51518	57399	65780	74160	84414	94668	106965	119261	131557	143854	155224	166595	178892	191188	203484	215780
Total pressure drop total recovery	kPa	29	37	33	44	34	44	41	52	55	66	42	49	56	54	62	69	78

Total recovery

Type	type	Brazen plate																
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum water flow rate	l/h	22818	25759	28700	32890	37080	42207	47334	53483	59631	65779	71927	77612	83298	89446	95594	101742	107890
Maximum water flow rate	l/h	76060	85863	95665	109633	123600	140690	157780	178275	198768	219262	239757	258707	277658	298153	318647	339140	359633
Connections (in/out)	Type	Grooved joints																
Sizes (in/out)	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	5"	5"	5"	5"	5"

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

NRB TE

Size	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with total recovery (1)																		
Cooling capacity	kW	207,1	233,5	260,0	298,5	337,0	383,5	430,0	485,9	541,8	597,7	653,7	705,2	756,8	812,7	868,6	924,6	980,5
Input power	kW	60,8	68,8	76,8	87,6	98,4	111,8	125,2	141,7	158,2	174,7	191,2	206,0	220,8	237,3	253,8	270,3	286,8
Recovered heating power	kW	264,9	298,9	332,9	381,7	430,5	489,7	548,9	620,5	692,1	763,7	835,3	900,9	966,6	1038,2	1109,8	1181,4	1253,0
Total recovery water flow rate	l/h	46032	51947	57861	66343	74824	85111	95398	107842	120286	132730	145175	156580	167986	180430	192874	205318	217762
Total pressure drop total recovery	kPa	30	38	34	44	35	45	42	53	55	68	43	50	57	55	63	70	79

Total recovery

Type	type	Brazen plate																
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum water flow rate	l/h	23016	25974	28931	33172	37412	42556	47699	53921	60143	66365	72588	78290	83993	90215	96437	102659	108881
Maximum water flow rate	l/h	76720	86578	96435	110572	124707	141852	158997	179737	200477	221217	241958	260967	279977	300717	321457	342197	362937
Connections (in/out)	Type	Grooved joints																
Sizes (in/out)	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	5"	5"	5"	5"	5"	5"	5"

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with total recovery (1)																			
Cooling capacity	kW	207,1	233,5	260,0	298,5	337,0	383,5	430,0	485,9	541,8	597,7	653,7	705,2	756,8	812,7	868,6	924,6	980,5	
Input power	kW	60,8	68,8	76,8	87,6	98,4	111,8	125,2	141,7	158,2	174,7	191,2	206,0	220,8	237,3	253,8	270,3	286,8	
Recovered heating power	kW	264,9	298,9	332,9	381,7	430,5	489,7	548,9	620,5	692,1	763,7	835,3	900,9	966,6	1038,2	1109,8	1181,4	1253,0	
Total recovery water flow rate	l/h	46032	51947	57861	66343	74824	85111	95398	107842	120286	132730	145175	156580	167986	180430	192874	205318	217762	
Total pressure drop total recovery	kPa	30	38	34	44	35	45	42	53	55	68	43	50	57	55	63	70	79	
Total recovery																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	23016	25974	28931	33172	37412	42556	47699	53921	60143	66365	72588	78290	83993	90215	96437	102659	108881	
Maximum water flow rate	l/h	76720	86578	96435	110572	124707	141852	158997	179737	200477	221217	241958	260967	279977	300717	321457	342197	362937	
Connections (in/out)	Type	Grooved joints																	
Sizes (in/out)	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	5"	5"	5"	5"	5"	5"	5"	

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Cooling performances with total recovery (1)																			
Cooling capacity	kW	207,1	233,5	260,0	298,5	337,0	383,5	430,0	485,9	541,8	597,7	653,7	705,2	756,8	812,7	868,6	924,6	980,5	
Input power	kW	60,8	68,8	76,8	87,6	98,4	111,8	125,2	141,7	158,2	174,7	191,2	206,0	220,8	237,3	253,8	270,3	286,8	
Recovered heating power	kW	264,9	298,9	332,9	381,7	430,5	489,7	548,9	620,5	692,1	763,7	835,3	900,9	966,6	1038,2	1109,8	1181,4	1253,0	
Total recovery water flow rate	l/h	46032	51947	57861	66343	74824	85111	95398	107842	120286	132730	145175	156580	167986	180430	192874	205318	217762	
Total pressure drop total recovery	kPa	30	38	34	44	35	45	42	53	55	68	43	50	57	55	63	70	79	
Total recovery																			
Type	type	Braze plate																	
Number	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Minimum water flow rate	l/h	23016	25974	28931	33172	37412	42556	47699	53921	60143	66365	72588	78290	83993	90215	96437	102659	108881	
Maximum water flow rate	l/h	76720	86578	96435	110572	124707	141852	158997	179737	200477	221217	241958	260967	279977	300717	321457	342197	362937	
Connections (in/out)	Type	Grooved joints																	
Sizes (in/out)	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	5"	5"	5"	5"	5"	5"	5"	

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

11 ENERGY DATA

ENERGY INDICES (REG. 2016/2281 EU)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600		
SEER - 12/7 (EN14825:2018) with standard fans (1)																				
SEER	°	W/W	4,22	4,13	4,10	4,11	4,19	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	
	A	W/W	4,41	4,34	4,39	4,45	4,48	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	E	W/W	4,46	4,40	4,40	4,54	4,54	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	L	W/W	4,31	4,16	4,24	4,27	4,31	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	N	W/W	4,61	4,56	4,58	4,72	4,68	4,72	4,78	4,66	4,58	4,61	4,61	4,64	4,59	4,62	4,60	4,59	4,62	4,59
	U	W/W	4,51	4,51	4,51	4,63	4,64	4,65	4,69	4,61	4,56	4,57	4,59	4,58	4,56	4,59	4,57	4,56	4,56	4,56
Seasonal efficiency	°	%	166,0%	162,3%	161,0%	161,2%	164,7%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	A	%	173,5%	170,6%	172,4%	174,9%	176,0%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	E	%	175,6%	173,1%	173,1%	178,7%	178,5%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	L	%	169,4%	163,6%	166,8%	167,6%	169,2%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	N	%	181,3%	179,3%	180,0%	185,7%	184,1%	185,9%	188,2%	183,4%	180,3%	181,5%	181,6%	182,7%	180,6%	181,7%	180,9%	180,6%	181,7%	181,9%
	U	%	177,2%	177,4%	177,2%	182,1%	182,5%	183,1%	184,8%	181,4%	179,2%	179,9%	180,5%	180,3%	179,3%	180,6%	179,7%	179,5%	179,3%	179,3%
SEER - (EN14825:2018) 12/7 with inverter fans (1)																				
SEER	°	W/W	4,44	4,33	4,26	4,25	4,39	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	A	W/W	4,65	4,55	4,66	4,70	4,69	4,73	4,76	4,64	4,63	4,62	4,61	4,68	4,66	4,66	4,68	4,64	4,63	4,63
	E	W/W	4,75	4,67	4,62	4,81	4,81	4,76	4,88	4,73	4,67	4,69	4,74	4,69	4,71	4,74	4,80	4,72	4,71	4,73
	L	W/W	4,55	4,42	4,50	4,51	4,58	4,59	4,67	4,56	4,58	4,56	4,61	4,56	4,57	4,58	4,57	4,58	4,56	4,56
	N	W/W	4,85	4,79	4,83	4,96	4,93	4,97	5,03	4,93	4,82	4,88	4,82	4,89	4,80	4,84	4,83	4,73	4,73	4,73
	U	W/W	4,76	4,75	4,70	4,89	4,85	4,86	4,91	4,84	4,77	4,82	4,78	4,87	4,81	4,85	4,92	4,82	4,81	4,81
Seasonal efficiency	°	%	174,6%	170,1%	167,6%	167,1%	172,7%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	A	%	182,8%	179,1%	183,4%	185,0%	184,7%	186,2%	187,3%	182,7%	182,4%	181,7%	181,5%	184,2%	183,5%	183,3%	184,0%	182,7%	182,0%	182,0%
	E	%	187,0%	183,7%	182,0%	189,3%	189,6%	187,5%	192,3%	186,2%	183,9%	184,8%	186,4%	184,7%	185,3	186,4%	189,1%	185,8%	186,1%	186,1%
	L	%	179,2%	173,8%	177,0%	177,5%	180,1%	180,4%	183,9%	179,5%	179,4%	180,1%	179,6%	181,3%	179,4%	179,9%	180,3%	181,6%	179,3%	179,3%
	N	%	191,1%	188,4%	190,3%	195,4%	194,2%	195,9%	198,1%	194,1%	189,9%	192,4%	190,0%	192,7%	189,1%	190,6%	190,2%	186,3%	186,2%	186,2%
	U	%	187,4%	187,1%	185,2%	192,5%	191,0%	191,3%	193,3%	190,7%	187,7%	189,6%	188,1%	191,9%	189,4%	191,1%	193,8%	190,0%	189,4%	189,4%
SEER - 23/18 (EN14825: 2018) with standard fans (3)																				
SEER	°	W/W	5,08	4,98	4,92	4,82	5,20	5,26	5,03	4,91	4,97	4,63	4,91	4,84	4,86	4,77	4,72	4,85	4,80	4,80
	A	W/W	5,29	5,15	5,25	5,28	5,35	5,37	5,42	5,15	5,22	5,09	5,22	5,30	5,18	5,15	5,17	5,13	5,13	5,13
	E	W/W	5,36	5,24	5,28	5,40	5,43	5,37	5,54	5,21	5,22	5,21	5,30	5,33	5,14	5,17	5,22	5,17	5,21	5,21
	L	W/W	5,06	4,87	5,07	5,08	5,05	5,10	5,19	5,02	5,02	4,92	4,99	5,21	4,94	5,03	4,99	5,06	5,07	5,07
	N	W/W	5,57	5,47	5,50	5,66	5,61	5,65	5,73	5,48	5,48	5,44	5,54	5,48	5,32	5,37	5,37	5,29	5,32	5,32
	U	W/W	5,41	5,44	5,41	5,58	5,56	5,60	5,63	5,46	5,49	5,39	5,50	5,57	5,29	5,35	5,48	5,36	5,38	5,38
Seasonal efficiency	°	%	200,1%	196,0%	193,6%	189,9%	205,1%	207,3%	198,3%	193,3%	195,7%	182,0%	193,5%	190,6%	191,5%	187,9%	186,0%	191,0%	189,2%	189,2%
	A	%	208,4%	203,0%	206,8%	208,0%	211,1%	211,6%	213,6%	203,1%	205,7%	200,6%	205,6%	209,1%	204,0%	203,0%	203,6%	202,1%	202,1%	202,1%
	E	%	211,4%	206,4%	208,3%	213,0%	214,0%	211,8%	218,5%	205,5%	205,7%	205,3%	208,9%	210,3%	202,4%	203,9%	205,9%	203,7%	205,5%	205,5%
	L	%	199,4%	191,9%	199,7%	200,1%	199,1%	200,8%	204,4%	197,7%	197,6%	193,9%	196,4%	205,2%	194,5%	198,0%	196,4%	199,5%	199,5%	199,5%
	N	%	219,7%	215,8%	216,8%	223,4%	221,5%	223,0%	226,2%	216,0%	216,3%	214,6%	218,4%	216,3%	209,6%	211,6%	211,8%	208,5%	209,7%	209,7%
	U	%	213,4%	214,4%	213,3%	220,0%	219,5%	221,0%	222,2%	215,3%	216,4%	212,5%	216,9%	219,7%	208,7%	211,1%	216,1%	211,4%	212,0%	212,0%
SEER - 23/18 (EN14825: 2018) with inverter fans																				
SEER	°	W/W	5,28	5,16	5,07	4,96	5,40	5,44	5,18	5,07	5,13	4,77	5,07	5,09	4,98	4,92	5,09	5,01	5,01	5,01
	A	W/W	5,50	5,35	5,50	5,51	5,55	5,55	5,63	5,34	5,44	5,30	5,42	5,41	5,43	5,38	5,43	5,36	5,40	5,40
	E	W/W	5,62	5,53	5,46	5,70	5,69	5,63	5,77	5,50	5,52	5,48	5,59	5,47	5,41	5,47	5,77	5,50	5,51	5,51
	L	W/W	5,34	5,14	5,35	5,33	5,37	5,34	5,47	5,26	5,32	5,20	5,26	5,35	5,20	5,25	5,21	5,32	5,23	5,23
	N	W/W	5,82	5,71	5,76	5,91	5,88	5,91	5,99	5,75	5,74	5,71	5,75	5,74	5,55	5,62	5,64	5,54	5,54	5,54
	U	W/W	5,65	5,67	5,59	5,82	5,76	5,80	5,83	5,67	5,69	5,61	5,68	5,77	5,59	5,66	5,85	5,70	5,69	5,69
Seasonal efficiency	°	%	208,1%	203,4%	199,8%	195,4%	212,9%	214,5%	204,1%	199,9%	202,1%	187,8%	199,6%	200,4%	200,4%	196,1%	193,9%	200,4%	197,4%	197,4%
	A	%	217,0%	210,9%	217,0%	217,5%	219,1%	219,1%	222,1%	210,5%	214,6%	209,1%	213,6%	213,4%	214,2%	212,0%	214,3%	211,5%	213,0%	213,0%
	E	%	221,9%	218,3%	215,3%	224,9%	224,5%	222,2%	227,7%	216,8%	217,7%	216,0%	220,6%	215,7%	213,4%	215,6%	227,9%	216,8%	217,2%	217,2%
	L	%	210,4%	202,7%	211,0%	210,2%	211,6%	210,4%	215,8%	207,4%	209,7%	205,1%	207,5%	211,0%	204,8%	206,9%	205,4%	209,9%	206,2%	206,2%
	N	%	229,9%	225,3%	227,5%	233,5%	232,1%	233,4%	236,4%	226,8%	226,4%	225,5%	227,1%	226,4%	219,1%	221,6%	222,4%	218,4%	218,5%	218,5%
	U	%	222,8%	233,7%	220,7%	229,9%	227,5%	228,8%	230,2%	223,8%	224,5%	221,5%	224,0%	227,8%	220,6%	223,4%	231,0%	225,0%	224,4%	224,4%
SEPR - (EN14825: 2018) High temperature with standard fans (3)																				
SEPR	°	W/W	5,39	5,21	5,17	5,03	5,35	5,50	5,52	5,57	5,52	5,51	5,51	5,53	5,54	5,55	5,50	5,53	5,53	5,53
	A	W/W	5,64	5,29	5,58	5,29	5,55	5,51	5,55	5,55	5,56	5,54	5,55	5,54	5,59	5,54	5,59	5,56	5,56	5,56
	E	W/W	5,56	5,21	5,46	5,25	5,52	5,55	5,58	5,54	5,52	5,55	5,55	5,55	5,52	5,55	5,52	5,50	5,55	5,55
	L	W/W	5,31	5,05	5,31	5,04	5,17	5,04	5,52	5,53	5,52	5,52	5,54	5,54	5,54	5,51	5,53	5,51	5,53	5,53
	N	W/W	5,69	5,54	5,66	5,59	5,64	5,61	5,66	5,57	5,62	5,59	5,64	5,60	5,50	5,63	5,69	5,51	5,63	5,63
	U	W/W	5,67	5,53	5,65	5,53	5,67	5,59	5,68	5,55	5,55	5,57	5,72	5,74	5,59	5,70	5,67	5,71	5,58	5,58

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Non-compliant with 2016/2281 EU regulation for comfort applications 12°C / 7°C

(3) Calculation performed with FIXED water flow rate.

⚠ The following sizes and versions are not sold in Europe because they do not comply with regulation 2016/2281 EU for comfort applications 12°C / 7°C:

— from 1400 to 3600 versions °-L-A-E with standard fans

— from 1400 to 3600 version ° with an inverter fan

ENERGY DATA (GLOBAL CATALOG)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
SEER - 12/7 (EN14825:2018) with standard fans (1)																			
SEER	°	W/W	4,22	4,13	4,10	4,11	4,19	4,25	4,13	4,12	4,17	4,11	4,14	4,14	4,23	4,16	4,13	4,19	4,12
	A	W/W	4,41	4,34	4,39	4,45	4,48	4,37	4,43	4,30	4,25	4,20	4,26	4,37	4,29	4,27	4,27	4,22	4,20
	E	W/W	4,46	4,40	4,40	4,54	4,54	4,35	4,51	4,33	4,23	4,30	4,31	4,38	4,28	4,30	4,34	4,25	4,28
	L	W/W	4,31	4,16	4,24	4,27	4,31	4,15	4,27	4,17	4,14	4,12	4,12	4,28	4,14	4,19	4,18	4,18	4,16
	N	W/W	4,61	4,56	4,58	4,72	4,68	4,72	4,78	4,66	4,58	4,61	4,61	4,64	4,59	4,62	4,60	4,59	4,62
	U	W/W	4,51	4,51	4,51	4,63	4,64	4,65	4,69	4,61	4,56	4,57	4,59	4,58	4,56	4,59	4,57	4,56	4,56
Seasonal efficiency	°	%	166%	162%	161%	161%	165%	167.1%	162.0%	161.9%	163.7%	161.2%	162.5%	162.7%	166.0%	163.2%	162.1%	164.7%	161.8%
	A	%	174%	171%	172%	175%	176%	165.9%	174.0%	168.8%	167.0%	165.1%	167.4%	171.6%	168.7%	167.8%	167.9%	165.9%	164.9%
	E	%	176%	173%	173%	179%	178%	167.0%	177.2%	170.0%	166.2%	168.9%	169.5%	172.2%	168.0%	168.8%	170.4%	167.0%	168.2%
	L	%	169%	164%	167%	168%	169%	164.3%	167.7%	163.6%	162.5%	161.8%	161.9%	168.3%	162.5%	164.6%	164.1%	164.3%	163.5%
	N	%	181,3%	179,3%	180,0%	185,7%	184,1%	185,9%	188,2%	183,4%	180,3%	181,5%	181,6%	182,7%	180,6%	181,7%	180,9%	180,6%	181,7%
	U	%	177,2%	177,4%	177,2%	182,1%	182,5%	183,1%	184,8%	181,4%	179,2%	179,9%	180,5%	180,3%	179,3%	180,6%	179,7%	179,5%	179,3%
SEER - (EN14825:2018) 12/7 with inverter fans (1)																			
SEER	°	W/W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	W/W	4,65	4,55	4,66	4,70	4,69	4,73	4,76	4,64	4,63	4,62	4,61	4,68	4,66	4,66	4,68	4,64	4,63
	E	W/W	4,75	4,67	4,62	4,81	4,81	4,76	4,88	4,73	4,67	4,69	4,74	4,69	4,71	4,74	4,80	4,72	4,73
	L	W/W	4,55	4,42	4,50	4,51	4,58	4,59	4,67	4,56	4,56	4,58	4,56	4,61	4,56	4,57	4,58	4,61	4,56
	N	W/W	4,85	4,79	4,83	4,96	4,93	4,97	5,03	4,93	4,82	4,88	4,82	4,89	4,80	4,84	4,83	4,73	4,73
	U	W/W	4,76	4,75	4,70	4,89	4,85	4,86	4,91	4,84	4,77	4,82	4,78	4,87	4,81	4,85	4,92	4,82	4,81
Seasonal efficiency	°	%																	
	A	%	182,8%	179,1%	183,4%	185,0%	184,7%	186,2%	187,3%	182,7%	182,4%	181,7%	181,5%	184,2%	183,5%	183,3%	184,0%	182,7%	182,0%
	E	%	187,0%	183,7%	182,0%	189,3%	189,6%	187,5%	192,3%	186,2%	183,9%	184,8%	186,4%	184,7%	185,3	186,4%	189,1%	185,8%	186,1%
	L	%	179,2%	173,8%	177,0%	177,5%	180,1%	180,4%	183,9%	179,5%	179,4%	180,1%	179,6%	181,3%	179,4%	179,9%	180,3%	181,6%	179,3%
	N	%	191,1%	188,4%	190,3%	195,4%	194,2%	195,9%	198,1%	194,1%	189,9%	192,4%	190,0%	192,7%	189,1%	190,6%	190,2%	186,3%	186,2%
	U	%	187,4%	187,1%	185,2%	192,5%	191,0%	191,3%	193,3%	190,7%	187,7%	189,6%	188,1%	191,9%	189,4%	191,1%	193,8%	190,0%	189,4%
SEER - 23/18 (EN14825: 2018) with standard fans (2)																			
SEER	°	W/W	5,08	4,98	4,92	4,82	5,20	5,26	5,03	4,91	4,97	4,63	4,91	4,84	4,86	4,77	4,72	4,85	4,80
	A	W/W	5,29	5,15	5,25	5,28	5,35	5,37	5,42	5,15	5,22	5,09	5,22	5,30	5,18	5,15	5,17	5,13	5,13
	E	W/W	5,36	5,24	5,28	5,40	5,43	5,37	5,54	5,21	5,22	5,21	5,30	5,33	5,14	5,17	5,22	5,17	5,21
	L	W/W	5,06	4,87	5,07	5,08	5,05	5,10	5,19	5,02	5,02	4,92	4,99	5,21	4,94	5,03	4,99	5,06	5,07
	N	W/W	5,57	5,47	5,50	5,66	5,61	5,65	5,73	5,48	5,48	5,44	5,54	5,48	5,32	5,37	5,37	5,29	5,32
	U	W/W	5,41	5,44	5,41	5,58	5,56	5,60	5,63	5,46	5,49	5,39	5,50	5,57	5,29	5,35	5,48	5,36	5,38
Seasonal efficiency	°	%	200.1%	196.0%	193.6%	189.9%	205.1%	207.3%	198.3%	193.3%	195.7%	182.0%	193.5%	190.6%	191.5%	187.9%	186.0%	191.0%	189.2%
	A	%	208.4%	203.0%	206.8%	208.0%	211.1%	211.6%	213.6%	203.1%	205.7%	200.6%	205.6%	209.1%	204.0%	203.0%	203.6%	202.1%	202.1%
	E	%	211.4%	206.4%	208.3%	213.0%	214.0%	211.8%	218.5%	205.5%	205.7%	205.3%	208.9%	210.3%	202.4%	203.9%	205.9%	203.7%	205.5%
	L	%	199.4%	191.9%	199.7%	200.1%	199.1%	200.8%	204.4%	197.7%	197.6%	193.9%	196.4%	205.2%	194.5%	198.0%	196.4%	199.5%	199.8%
	N	%	219.7%	215.8%	216.8%	223.4%	221.5%	223.0%	226.2%	216.0%	216.3%	214.6%	218.4%	216.3%	209.6%	211.6%	211.8%	208.5%	209.7%
	U	%	213.4%	214.4%	213.3%	220.0%	219.5%	221.0%	222.2%	215.3%	216.4%	212.5%	216.9%	219.7%	208.7%	211.1%	216.1%	211.4%	212.0%
SEER - 23/18 (EN14825: 2018) with inverter fans																			
SEER	°	W/W	5,28	5,16	5,07	4,96	5,40	5,44	5,18	5,07	5,13	4,77	5,07	5,09	5,09	4,98	4,92	5,09	5,01
	A	W/W	5,50	5,35	5,50	5,51	5,55	5,55	5,63	5,34	5,44	5,30	5,42	5,41	5,43	5,38	5,43	5,36	5,40
	E	W/W	5,62	5,53	5,46	5,70	5,69	5,63	5,77	5,50	5,52	5,48	5,59	5,47	5,41	5,47	5,77	5,50	5,51
	L	W/W	5,34	5,14	5,35	5,33	5,37	5,34	5,47	5,26	5,32	5,20	5,26	5,35	5,20	5,25	5,21	5,32	5,23
	N	W/W	5,82	5,71	5,76	5,91	5,88	5,91	5,99	5,75	5,74	5,71	5,75	5,74	5,55	5,62	5,64	5,54	5,54
	U	W/W	5,65	5,67	5,59	5,82	5,76	5,80	5,83	5,67	5,69	5,61	5,68	5,77	5,59	5,66	5,85	5,70	5,69
Seasonal efficiency	°	%	208.1%	203.4%	199.8%	195.4%	212.9%	214.5%	204.1%	199.9%	202.1%	187.8%	199.6%	200.4%	200.4%	196.1%	193.9%	200.4%	197.4%
	A	%	217.0%	210.9%	217.0%	217.5%	219.1%	219.1%	222.1%	210.5%	214.6%	209.1%	213.6%	213.4%	214.2%	212.0%	214.3%	211.5%	213.0%
	E	%	221.9%	218.3%	215.3%	224.9%	224.5%	222.2%	227.7%	216.8%	217.7%	216.0%	220.6%	215.7%	213.4%	215.6%	227.9%	216.8%	217.2%
	L	%	210.4%	202.7%	211.0%	210.2%	211.6%	210.4%	215.8%	207.4%	209.7%	205.1%	207.5%	211.0%	204.8%	206.9%	205.4%	209.9%	206.2%
	N	%	229.9%	225.3%	227.5%	233.5%	232.1%	233.4%	236.4%	226.8%	226.4%	225.5%	227.1%	226.4%	219.1%	221.6%	222.4%	218.4%	218.5%
	U	%	222.8%	233.7%	220.7%	229.9%	227.5%	228.8%	230.2%	223.8%	224.5%	221.5%	224.0%	227.8%	220.6%	223.4%	231.0%	225.0%	224.4%
SEPR - (EN14825: 2018) High temperature with standard fans (2)																			
SEPR	°	W/W	5,39	5,21	5,17	5,03	5,35	5,50	5,52	5,57	5,52	5,51	5,51	5,53	5,54	5,55	5,50	5,53	
	A	W/W	5,64	5,29	5,58	5,29	5,55	5,51	5,55	5,55	5,56	5,54	5,55	5,54	5,59	5,54	5,59	5,56	5,56
	E	W/W	5,56	5,21	5,46	5,25	5,52	5,55	5,58	5,54	5,52	5,55	5,55	5,55	5,52	5,55	5,52	5,50	5,55
	L	W/W	5,31	5,05	5,31	5,04	5,17	5,04	5,52	5,53	5,52	5,52	5,54	5,54	5,54	5,51	5,53	5,51	5,53
	N	W/W	5,69	5,54	5,66	5,59	5,64	5,61	5,66	5,57	5,62	5,59	5,64	5,60	5,50	5,63	5,69	5,51	5,63
	U	W/W	5,67	5,53	5,65	5,53	5,67	5,59	5,68	5,55	5,55	5,57	5,72	5,74	5,59	5,70	5,67	5,71	5,58

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Calculation performed with FIXED water flow rate.

12 GENERAL TECHNICAL DATA

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Compressor																			
Type	°A,E,L,N,U	type																	
Compressor regulation	°A,E,L,N,U	Type																	
Number	°A,E,L,N,U	no.	4	4	4	4	4	4	5	6	6	6	5	6	6	6	6	6	6
Circuits	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Partialisation of the unit with mechanical thermostatic valve	°A,E,L,N,U	%	25%	25%	25%	25%	25%	25%	25%	17%	17%	17%	20%	17%	17%	17%	17%	17%	17%
Partialisation of the unit with electronic thermostatic expansion valve	°A,E,L,N,U	%	25%	25%	25%	25%	25%	25%	25%	17%	17%	17%	20%	17%	17%	17%	17%	17%	17%
Refrigerant	°A,E,L,N,U	type	R410A																
	°	kg	14,0	14,5	15,0	16,0	20,5	21,0	21,0	26,0	26,0	26,0	31,0	30,0	41,0	45,0	41,0	48,0	48,0
Refrigerant load circuit 1 (1)	A,L	kg	15,0	16,0	20,0	22,0	21,0	22,5	23,5	25,0	30,0	31,0	32,5	42,0	49,0	59,0	65,0	56,0	52,0
	E,U	kg	20,5	20,0	21,5	26,0	25,0	26,0	30,0	32,0	36,0	44,5	56,0	62,0	53,0	70,0	78,0	78,0	78,0
	N	kg	25,0	26,5	26,5	29,0	28,0	35,0	42,0	38,0	43,0	62,0	42,0	67,0	55,0	76,0	84,0	84,0	84,0
	°	kg	14,0	14,5	15,0	16,0	20,5	21,0	21,0	29,0	29,0	29,0	34,0	40,0	48,0	50,0	41,0	55,0	55,0
Refrigerant load circuit 2 (1)	A,L	kg	15,0	16,0	20,0	22,0	21,0	22,5	25,5	30,0	34,0	34,0	37,5	54,0	59,0	65,0	66,0	64,0	
	E,U	kg	20,5	20,0	21,5	27,0	28,0	27,0	32,0	37,0	39,0	45,5	56,0	62,0	63,0	70,0	78,0	78,0	78,0
	N	kg	25,0	26,5	26,5	30,0	31,0	35,0	42,0	42,0	47,0	62,0	49,0	67,0	67,0	76,0	84,0	84,0	84,0
	°	kg	14,0	14,5	15,0	16,0	20,5	21,0	21,0	29,0	29,0	29,0	34,0	40,0	48,0	50,0	41,0	55,0	55,0
Potential global heating	°A,E,L,N,U	GWP	2088kgCO ₂ eq																
Oil charge circuit 1	°A,E,L,N,U	kg	9,3	11,5	13,6	13,1	12,6	12,6	16,6	24,9	24,9	12,6	18,6	27,9	27,9	27,9	27,9	27,9	27,9
Oil charge circuit 2	°A,E,L,N,U	kg	9,3	11,5	13,6	13,1	12,6	12,6	24,9	24,9	24,9	24,9	24,9	27,9	27,9	27,9	27,9	27,9	27,9
System side heat exchanger																			
Type	°A,E,L,N,U	type	Braze plate																
Number	°A,E,L,N,U	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	°	l/h	19080	21060	23275	25810	30400	34860	37800	44005	48290	51500	58175	62120	67725	71485	75750	81395	85900
Minimum water flow rate	A	l/h	19300	21720	24430	28070	31095	35435	39790	44685	49580	54505	60050	65190	69345	74605	79925	84405	88365
	E	l/h	18875	21385	23680	27665	30875	34710	39165	44280	48975	54835	59225	63780	68360	73830	78460	83060	87730
	L	l/h	18680	20470	23480	26495	29600	33660	37730	42880	47800	52355	57345	62585	66265	71785	76295	81980	86410
	N	l/h	19605	22420	24515	28215	31650	35490	40120	44895	49840	55565	60460	64495	69255	74565	79750	83780	88635
	U	l/h	19595	22180	24675	28375	31835	35690	40185	45550	51125	56370	61695	65880	70165	75645	80975	86035	90320
Maximum water flow rate	°	l/h	63600	70200	77583	86033	101333	116200	126000	146683	160967	171667	193917	207067	225750	238283	252500	271317	286333
	A	l/h	64333	72400	81433	93567	103650	118117	132633	148950	165267	181683	200167	217300	231150	248683	266417	281350	294550
	E	l/h	62917	71283	78933	92217	102917	115700	130550	147600	163250	182783	197417	212600	227867	246100	261533	276867	292433
	L	l/h	62267	68233	78267	88317	98667	112200	125767	142933	159333	174517	191150	208617	220883	239283	254317	273267	288033
	N	l/h	65350	74733	81717	94050	105500	118300	133733	149650	166133	185217	201533	214983	230850	248550	265833	279267	295450
U	l/h	65317	73933	82250	94583	106117	118967	133950	151833	170417	187900	205650	219600	233883	252150	269917	286783	301067	
Hydraulic connections																			
Connections (in/out)	°A,E,L,N,U	Type	Grooved joints																
Hydraulic connections without hydronic kit																			
Sizes (in/out)	°A,E,L,N,U	Ø	3"	3"	3"	3"	3"	3"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	5"
Hydraulic connections with hydronic kit																			
Sizes (in/out)	°A,E,L,N,U	Ø	3"	3"	3"	3"	3"	3"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	5"
Sound data calculated in cooling mode (2)																			
Sound power level	°	dB(A)	87,8	87,8	87,8	87,8	90,0	90,0	90,0	92,0	92,5	93,0	94,7	94,7	95,6	95,6	95,6	96,5	96,5
	A	dB(A)	87,8	87,8	90,0	90,0	90,0	90,0	91,5	92,0	93,7	94,2	95,6	96,5	96,5	96,5	97,2	97,2	97,2
	E	dB(A)	84,8	84,8	84,8	86,3	86,3	86,3	87,5	89,0	89,5	90,8	91,3	92,0	92,0	92,6	93,2	93,2	93,2
	L	dB(A)	82,7	82,7	84,8	84,8	84,8	85,6	86,3	87,7	88,5	89,8	90,5	91,3	91,3	92,1	92,0	92,8	92,8
	N	dB(A)	86,3	86,3	86,3	87,5	87,5	87,5	88,5	89,8	90,3	91,5	92,0	92,6	92,6	93,2	93,7	93,7	93,7
Sound pressure level (10 m)	U	dB(A)	90,0	90,0	90,0	91,5	91,5	91,5	92,7	94,2	94,7	96,0	96,5	97,2	97,2	97,8	98,4	98,4	98,4
	°	dB(A)	55,7	55,7	55,7	57,7	57,7	57,7	57,7	59,6	60,1	60,6	62,1	62,2	63,0	63,0	63,0	63,7	63,7
	A	dB(A)	55,7	55,7	57,7	57,7	57,7	57,7	59,1	59,6	61,1	61,6	63,0	63,7	63,7	64,3	64,3	64,3	64,3
	E	dB(A)	52,5	52,5	52,5	54,0	54,0	54,0	55,0	56,3	56,8	58,0	58,5	59,1	59,1	59,6	60,0	60,0	60,0
	L	dB(A)	50,6	50,6	52,5	52,5	52,5	53,4	54,0	55,3	56,0	57,3	57,8	58,5	58,5	59,4	59,1	59,9	59,9
Sound pressure level (1 m)	N	dB(A)	54,0	54,0	54,0	55,0	55,0	55,0	55,8	57,0	57,5	58,6	59,1	59,6	59,6	60,0	60,4	60,4	60,4
	U	dB(A)	57,7	57,7	57,7	59,2	59,2	59,2	60,3	61,6	62,1	63,3	63,8	64,4	64,4	64,9	65,4	65,4	65,4
	°	dB(A)	68,7	68,7	68,7	70,2	70,2	70,2	70,2	71,6	72,1	72,6	73,8	74,0	74,5	74,5	74,5	74,9	74,9
	A	dB(A)	68,7	68,7	70,2	70,2	70,2	70,2	71,3	71,6	72,8	73,3	74,5	74,9	74,9	74,9	75,2	75,2	75,2
	E	dB(A)	65,0	65,0	65,0	66,2	66,2	66,2	66,8	67,8	68,3	69,2	69,7	70,0	70,0	70,3	70,5	70,5	70,5
L	dB(A)	63,5	63,5	65,0	65,0	65,0	65,8	66,2	67,3	67,7	69,0	69,3	69,7	69,7	70,5	70,0	70,9	70,9	
N	dB(A)	66,2	66,2	66,2	66,8	66,8	66,8	67,3	68,2	68,7	69,5	70,0	70,3	70,3	70,5	70,7	70,7	70,7	
U	dB(A)	70,2	70,2	70,2	71,3	71,3	71,3	72,0	73,0	73,5	74,4	74,9	75,2	75,2	75,5	75,7	75,7	75,7	

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

(2) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

In the versions without a hydronic kit, the water filter is supplied with a connection point for making the connection. In the versions with a hydronic kit, it is supplied ready-mounted.

FANS DATA

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
FANS: °																			
Fan																			
Type	°A,E,L,N,U	type																	
Fan motor	°A,U	type																	
	E,L,N	type																	
	°	no.																	
	A,L	no.																	
	E,U	no.																	
	N	no.																	
	°	m ³ /h																	
	A	m ³ /h																	
	E	m ³ /h																	
	L	m ³ /h																	
	N	m ³ /h																	
	U	m ³ /h																	
	°	A																	
	A,L	A																	
	E,U	A																	
	N	A																	
	°	kW																	
	A	kW																	
	E	kW																	
	L	kW																	
	N	kW																	
	U	kW																	
	°A,E,L,N,U	Pa																	
	A	Pa																	
	E,N	Pa																	
	L	Pa																	
	U	Pa																	
FANS: J																			
Fan																			
Type	°A,E,L,N,U	type																	
Fan motor	°A,E,L,N,U	type																	
	°	no.																	
	A,L	no.																	
	E,U	no.																	
	N	no.																	
	°	m ³ /h																	
	A	m ³ /h																	
	E	m ³ /h																	
	L	m ³ /h																	
	N	m ³ /h																	
	U	m ³ /h																	
	°	A																	
	A	A																	
	E	A																	
	L	A																	
	N	A																	
	U	A																	
	°	kW																	
	A	kW																	
	E	kW																	
	L	kW																	
	N	kW																	
	U	kW																	
	°	Pa																	
	A	Pa																	
	E,N	Pa																	
	L	Pa																	
	U	Pa																	

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
FANS: M																			
Fan																			
Type	° ,A,E,L,N,U	type	Axial																
Fan motor	° ,A,U	type	Asynchronous																
	E,L,N	type	Asynchronous with phase cut																
Number	°	no.	4	4	4	4	6	6	6	8	8	8	10	10	12	12	12	14	14
	A,L	no.	4	4	6	6	6	8	8	10	10	12	14	14	16	16	16	16	16
	E,U	no.	6	6	6	8	8	8	10	12	12	14	14	16	16	18	18	20	20
	N	no.	8	8	8	10	10	10	12	14	14	16	16	18	18	20	22	22	22
	°	m ³ /h	64000	64000	64000	64000	96000	96000	96000	128000	128000	128000	160000	160000	192000	192000	192000	224000	224000
Air flow rate	A	m ³ /h	64000	64000	96000	96000	96000	128000	128000	160000	160000	192000	224000	224000	224000	256000	256000	288000	
	E	m ³ /h	69000	69000	69000	92000	92000	92000	115000	138000	138000	161000	161000	184000	184000	207000	230000	230000	
	L	m ³ /h	46000	46000	69000	69000	69000	92000	92000	115000	115000	138000	161000	161000	161000	184000	184000	208000	
	N	m ³ /h	92000	92000	92000	115000	115000	115000	138000	161000	161000	184000	184000	207000	207000	230000	253000	253000	
	U	m ³ /h	96000	96000	96000	128000	128000	128000	160000	192000	192000	224000	224000	256000	256000	288000	320000	320000	
Total fan input current	°	A	14,8	14,8	14,8	14,8	22,2	22,2	22,2	29,6	29,6	29,6	37,0	37,0	44,4	44,4	44,4	51,8	51,8
	A	A	14,8	14,8	22,2	22,2	22,2	22,2	29,6	29,6	37,0	37,0	44,4	51,8	51,8	51,8	59,2	59,2	59,2
	E	A	24,0	24,0	24,0	32,0	32,0	32,0	40,0	48,0	48,0	56,0	56,0	64,0	64,0	72,0	80,0	80,0	80,0
	L	A	16,0	16,0	24,0	24,0	24,0	24,0	32,0	32,0	40,0	40,0	48,0	56,0	56,0	56,0	64,0	64,0	64,0
	N	A	32,0	32,0	32,0	40,0	40,0	40,0	48,0	56,0	56,0	64,0	64,0	72,0	72,0	80,0	88,0	88,0	88,0
Total fan input power	U	A	22,2	22,2	22,2	29,6	29,6	29,6	37,0	44,4	44,4	51,8	51,8	59,2	59,2	66,6	74,0	74,0	74,0
	°	kW	7,2	7,2	7,2	7,2	10,8	10,8	10,8	14,4	14,4	14,4	18,0	18,0	21,6	21,6	21,6	25,2	25,2
	A	kW	7,2	7,2	10,8	10,8	10,8	10,8	14,4	14,4	18,0	18,0	21,6	25,2	25,2	25,2	28,8	28,8	28,8
	E	kW	12,0	12,0	12,0	16,0	16,0	16,0	20,0	24,0	24,0	28,0	28,0	32,0	32,0	36,0	40,0	40,0	40,0
	L	kW	8,0	8,0	12,0	12,0	12,0	12,0	16,0	16,0	20,0	20,0	24,0	28,0	28,0	28,0	32,0	32,0	32,0
High static pressure	° ,A,U	Pa	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	- maximum	E,L,N	Pa	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120

The units are shipped with a high static pressure of 0. Changing this value increases the noise and power consumption.

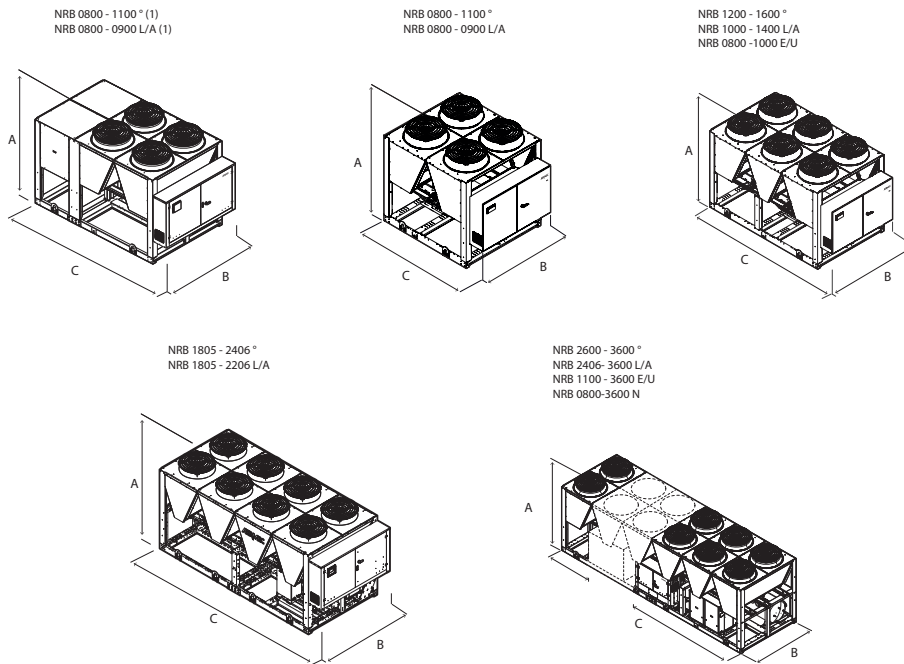
ELECTRIC DATA

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Electric data																			
Maximum current (FLA)	°	A	164,3	180,7	197,0	226,4	262,1	291,1	320,1	371,3	416,0	445,0	480,4	529,4	568,6	609,5	650,4	697,7	738,6
	A,L	A	177,1	193,4	222,5	251,8	281,2	310,2	351,9	396,7	454,2	483,2	530,8	592,5	625,4	666,3	719,9	760,8	801,8
	E,U	A	189,8	206,1	222,5	264,5	293,9	322,9	364,6	428,0	472,8	514,5	543,5	605,2	638,1	691,7	745,4	786,3	827,2
Peak current (LRA)	N	A	202,5	218,8	235,2	277,3	306,6	335,6	383,2	440,7	485,5	527,2	556,2	617,9	650,8	704,4	758,1	799,0	839,9
	°	A	352,9	408,1	424,4	477,1	512,8	625,3	654,3	705,5	750,3	779,3	814,6	798,7	837,9	878,8	919,7	967,0	1007,9
	A,L	A	365,6	420,8	449,9	502,5	531,9	644,4	686,1	730,9	788,4	817,4	865,0	861,8	894,6	935,6	989,2	1030,1	1071,0
	E,U	A	378,3	433,5	449,9	515,3	544,6	657,1	698,8	762,2	807,0	848,7	877,7	874,5	907,4	961,0	1014,6	1055,6	1096,5
	N	A	391,1	446,2	462,6	528,0	557,3	669,8	717,4	774,9	819,7	861,4	890,4	887,2	920,1	973,7	1027,4	1068,3	1109,2

Data calculated without hydronic kit and accessories.

Add the pump consumption (see chapter: Single hydronic kits' data p. 61) to the consumption of the standard version without the hydronic kit. For further details refer to the selection program.

DIMENSIONS



(1) Additional module needed to contain the hydronic kit with "accumulation" option in sizes:
0800°, 0900°, 1000°, 1100°
0800L, 0900L
0800A, 0900A

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Dimensions and weights																			
A	°A,E,L,N,U	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450
B	°A,E,L,N,U	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
	°	mm	2780	2780	2780	2780	3970	3970	3970	5160	5160	5160	6350	5950	7140	7140	7140	8330	8330
C	A,L	mm	2780	2780	3970	3970	3970	4760	5160	6350	6350	7140	8330	8330	8330	9520	9520	9520	9520
	E,U	mm	3970	3970	3970	4760	4760	4760	5950	7140	7140	8330	8330	9520	9520	10710	11900	11900	11900
	N	mm	4760	4760	4760	5950	5950	5950	7140	8330	8330	9520	9520	10710	10710	11900	13090	13090	13090

■ The units 0800°, 0900°, 1000°, 1100°; 0800L, 0900L; and 0800A, 0900A with the "storage tank" option, are 3970mm long.

WEIGHTS

⚠ To obtain the working weight, add the unloaded weight to the water content of the corresponding hydronic kit.

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: 00																			
Weights																			
Empty weight	°	kg	2240	2280	2350	2390	2880	2930	2960	3660	3830	3870	4360	4500	5150	5390	5470	6000	6150
	A,L	kg	2260	2320	2800	2870	2910	2970	3490	3710	4280	4360	4780	5510	5760	5910	6390	6520	6600
	E,U	kg	2720	2760	2840	3370	3440	3460	3940	4490	4700	5350	5390	5910	6160	6700	7140	7220	7300
	N	kg	3220	3270	3340	3770	3840	3870	4290	4940	5160	5750	5790	6310	6560	7010	7540	7620	7700
Hydronic kit																			
Water content	°	l	20	20	30	30	30	40	40	50	50	50	60	60	80	120	120	120	140
	A,L	l	30	30	30	40	40	50	50	60	60	80	80	120	120	140	140	150	150
	E,U	l	30	30	40	40	50	50	60	60	80	120	120	120	120	140	150	150	150
	N	l	30	30	40	40	50	50	60	60	80	120	120	120	120	140	150	150	150
INTEGRATED HYDRONIC KIT: AA																			
Weights																			
Empty weight	°	kg	2860	2900	2970	3010	3130	3190	3230	3930	4120	4160	4660	4830	5580	5850	5930	6470	6610
	A,L	kg	2880	2940	3060	3120	3170	3220	3760	3970	4570	4660	5180	5970	6220	6370	6860	6980	7060
	E,U	kg	2970	3010	3090	3620	3700	3720	4210	4860	5100	5780	5820	6370	6620	7170	7630	7710	7790
	N	kg	3470	3520	3590	4030	4100	4120	4670	5320	5550	6180	6220	6770	7020	7500	8030	8110	8190
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	680	700	720	1330	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: AB																			
Weights																			
Empty weight	°	kg	2880	2930	2990	3030	3160	3210	3250	3950	4140	4180	4680	4850	5610	5870	5950	6490	6640
	A,L	kg	2910	2960	3080	3150	3190	3240	3780	4000	4600	4680	5210	6000	6250	6390	6880	7000	7090
	E,U	kg	2990	3040	3110	3640	3720	3740	4230	4890	5120	5800	5840	6400	6650	7200	7650	7730	7810
	N	kg	3500	3540	3620	4050	4130	4150	4690	5340	5570	6210	6250	6800	7050	7520	8050	8130	8210
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: AC																			
Weights																			
Empty weight	°	kg	2890	2930	2990	3040	3160	3210	3250	3960	4150	4190	4680	4850	5610	5880	5960	6490	6640
	A,L	kg	2910	2960	3080	3150	3190	3250	3780	4000	4600	4690	5210	6000	6250	6400	6880	7010	7090
	E,U	kg	3000	3040	3120	3650	3720	3740	4240	4890	5130	5810	5850	6400	6650	7200	7660	7740	7820
	N	kg	3500	3540	3620	4060	4130	4150	4700	5340	5580	6210	6250	6800	7050	7530	8060	8140	8220
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: AD, AG																			
Weights																			
Empty weight	°	kg	2900	2940	3000	3040	3170	3220	3260	3970	4160	4200	4690	4860	5620	5880	5970	6500	6650
	A,L	kg	2920	2970	3090	3160	3200	3250	3790	4010	4610	4700	5220	6010	6260	6410	6890	7020	7100
	E,U	kg	3010	3050	3120	3660	3730	3750	4240	4900	5130	5820	5860	6410	6660	7210	7660	7740	7820
	N	kg	3510	3550	3630	4060	4140	4160	4700	5350	5590	6220	6260	6810	7060	7540	8060	8140	8230
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: AE																			
Weights																			
Empty weight	°	kg	2910	2950	3020	3060	3180	3240	3280	3980	4170	4210	4710	4880	5630	5900	5980	6520	6670
	A,L	kg	2930	2990	3110	3180	3220	3270	3810	4030	4630	4710	5230	6030	6270	6420	6910	7030	7110
	E,U	kg	3020	3060	3140	3670	3750	3770	4260	4910	5150	5830	5870	6430	6670	7220	7680	7760	7840
	N	kg	3530	3570	3640	4080	4160	4180	4720	5370	5600	6230	6270	6830	7070	7550	8080	8160	8240
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: AF																			
Weights																			
Empty weight	°	kg	2950	2990	3050	3100	3220	3270	3310	4020	4210	4250	4740	4910	5670	5940	6020	6550	6700
	A,L	kg	2970	3020	3140	3210	3250	3310	3840	4060	4660	4750	5270	6060	6310	6460	6940	7070	7150
	E,U	kg	3060	3100	3180	3710	3780	3800	4300	4950	5190	5870	5910	6460	6710	7260	7710	7800	7880
	N	kg	3560	3600	3680	4120	4190	4210	4760	5400	5640	6270	6310	6860	7110	7590	8120	8200	8280
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: AH																			
Weights																			
Empty weight	°	kg	2950	3000	3060	3100	3230	3280	3320	4020	4210	4260	4750	4920	5680	5940	6020	6560	6710
	A,L	kg	2980	3030	3150	3220	3260	3310	3850	4070	4670	4750	5280	6070	6320	6460	6950	7080	7160
	E,U	kg	3060	3110	3180	3710	3790	3810	4300	4960	5190	5870	5920	6470	6720	7270	7720	7800	7880
	N	kg	3570	3610	3690	4120	4200	4220	4760	5410	5650	6280	6320	6870	7120	7590	8120	8200	8280
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: AI																			
Weights																			
Empty weight	°	kg	3010	3050	3120	3160	3280	3330	3370	4080	4270	4310	4800	4970	5730	6000	6080	6610	6760
	A,L	kg	3030	3080	3200	3270	3310	3370	3900	4120	4720	4810	5330	6120	6370	6520	7000	7130	7210
	E,U	kg	3120	3160	3240	3770	3840	3860	4360	5010	5250	5930	5970	6520	6770	7320	7780	7860	7940
	N	kg	3620	3660	3740	4180	4250	4270	4820	5460	5700	6330	6370	6920	7170	7650	8180	8260	8340
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1390	
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																			
Weights																			
Empty weight	°,A,E,L,N,U	kg	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory
Hydronic kit																			
Water content	°,A,E,L,N,U	l	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory	Contact the factory
INTEGRATED HYDRONIC KIT: BA																			
Weights																			
Empty weight	°	kg	2890	2940	3000	3040	3160	3220	3260	3960	4150	4190	4690	4860	5610	5880	5960	6500	6650
	A,L	kg	2910	2970	3090	3160	3200	3250	3790	4010	4610	4690	5220	6010	6250	6400	6890	7010	7090
	E,N,U	kg	3000	3040	3120	3650	3730	3750	4240	4890	5130	5810	5850	6410	6650	7200	7660	7740	7820
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1390	
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: BB																			
Weights																			
Empty weight	°	kg	2940	2990	3050	3090	3220	3270	3310	4010	4200	4240	4740	4910	5660	5930	6010	6550	6700
	A,L	kg	2960	3020	3140	3210	3250	3300	3840	4060	4660	4740	5270	6060	6310	6450	6940	7060	7140
	E,U	kg	3050	3100	3170	3700	3780	3800	4290	4950	5180	5860	5900	6460	6710	7250	7710	7790	7870
	N	kg	3560	3600	3670	4110	4190	4210	4750	5400	5630	6260	6310	6860	7100	7580	8110	8190	8270
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1390	
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: BC																			
Weights																			
Empty weight	°	kg	2950	2990	3060	3100	3220	3280	3320	4020	4210	4250	4750	4920	5670	5940	6020	6560	6700
	A,L	kg	2970	3030	3150	3210	3260	3310	3850	4060	4670	4750	5270	6060	6310	6460	6950	7070	7150
	E,U	kg	3060	3100	3180	3710	3790	3810	4300	4950	5190	5870	5910	6470	6710	7260	7720	7800	7880
	N	kg	3570	3610	3680	4120	4190	4210	4760	5410	5640	6270	6310	6860	7110	7590	8120	8200	8280
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1390	
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: BD, BG																			
Weights																			
Empty weight	°	kg	2970	3010	3070	3120	3240	3290	3330	4040	4230	4270	4760	4930	5690	5960	6040	6570	6720
	A,L	kg	2990	3040	3160	3230	3270	3330	3860	4080	4680	4770	5290	6080	6330	6480	6960	7090	7170
	E,U	kg	3080	3120	3190	3730	3800	3820	4320	4970	5210	5890	5930	6480	6730	7280	7730	7820	7900
	N	kg	3580	3620	3700	4140	4210	4230	4780	5420	5660	6290	6330	6880	7130	7610	8140	8220	8300
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1390	
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: BE																			
Weights																			
Empty weight	°	kg	3000	3040	3110	3150	3270	3320	3360	4070	4260	4300	4800	4970	5720	5990	6070	6610	6750
	A,L	kg	3020	3080	3200	3260	3300	3360	3900	4110	4710	4800	5320	6110	6360	6510	6990	7120	7200
	E,U	kg	3110	3150	3230	3760	3830	3850	4350	5000	5240	5920	5960	6510	6760	7310	7770	7850	7930
	N	kg	3610	3660	3730	4170	4240	4260	4810	5450	5690	6320	6360	6910	7160	7640	8170	8250	8330
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1390	
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: BF																			
Weights																			
Empty weight	°	kg	3060	3100	3170	3210	3330	3390	3430	4130	4320	4360	4860	5030	5780	6050	6130	6670	6820
	A,L	kg	3080	3140	3260	3330	3370	3420	3960	4180	4780	4860	5380	6180	6420	6570	7060	7180	7260
	E,U	kg	3170	3210	3290	3820	3900	3920	4410	5060	5300	5980	6020	6580	6820	7370	7830	7910	7990
	N	kg	3680	3720	3790	4230	4310	4330	4870	5520	5750	6380	6420	6980	7220	7700	8230	8310	8390
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: BH																			
Weights																			
Empty weight	°	kg	3080	3130	3190	3230	3360	3410	3450	4150	4340	4380	4880	5050	5800	6070	6150	6690	6840
	A,L	kg	3110	3160	3280	3350	3390	3440	3980	4200	4800	4880	5410	6200	6450	6590	7080	7200	7280
	E,U	kg	3190	3240	3310	3840	3920	3940	4430	5090	5320	6000	6040	6600	6850	7390	7850	7930	8010
	N	kg	3700	3740	3810	4250	4330	4350	4890	5540	5770	6410	6450	7000	7240	7720	8250	8330	8410
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: BI																			
Weights																			
Empty weight	°	kg	3200	3240	3300	3340	3470	3520	3560	4260	4460	4500	4990	5160	5920	6180	6270	6800	6950
	A,L	kg	3220	3270	3390	3460	3500	3550	4090	4310	4910	5000	5520	6310	6560	6710	7190	7320	7400
	E,U	kg	3310	3350	3420	3960	4030	4050	4540	5200	5430	6120	6160	6710	6960	7510	7960	8040	8120
	N	kg	3810	3850	3930	4360	4440	4460	5000	5650	5890	6520	6560	7110	7360	7830	8360	8440	8530
Hydronic kit																			
Water content	°	l	640	640	640	640	650	650	670	680	680	700	720	1330	1370	1370	1370	1370	1390
	A,L	l	640	650	650	650	650	670	680	690	700	720	1320	1370	1370	1390	1390	1400	1400
	E,U	l	650	650	650	650	670	670	700	1300	1320	1360	1360	1370	1370	1400	1430	1430	1430
	N	l	650	650	650	660	680	680	1300	1300	1320	1360	1360	1380	1380	1420	1430	1430	1430
INTEGRATED HYDRONIC KIT: DA																			
Weights																			
Empty weight	°	kg	2380	2420	2490	2530	3020	3070	3110	3820	4010	4050	4550	4720	5370	5630	5710	6240	6390
	A,L	kg	2400	2460	2950	3010	3050	3110	3650	3860	4460	4550	4970	5750	6000	6150	6630	6760	6840
	E,U	kg	2860	2900	2980	3510	3580	3600	4100	4650	4880	5560	5600	6150	6400	6950	7400	7480	7570
	N	kg	3360	3410	3480	3920	3990	4010	4450	5100	5340	5960	6000	6550	6800	7280	7810	7890	7970
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: DB																			
Weights																			
Empty weight	°	kg	2430	2470	2540	2580	3070	3120	3160	3870	4060	4100	4600	4770	5420	5680	5760	6290	6440
	A,L	kg	2450	2510	3000	3060	3100	3160	3700	3910	4510	4600	5020	5800	6050	6200	6680	6810	6890
	E,U	kg	2910	2950	3030	3560	3630	3650	4150	4700	4930	5610	5650	6200	6450	7000	7450	7540	7620
	N	kg	3410	3460	3530	3970	4040	4060	4500	5150	5390	6010	6050	6600	6850	7330	7860	7940	8020
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: DC																			
Weights																			
Empty weight	°	kg	2440	2480	2550	2590	3080	3130	3170	3880	4070	4110	4600	4770	5430	5680	5770	6300	6450
	A,L	kg	2460	2520	3000	3070	3110	3170	3700	3920	4520	4610	5030	5810	6060	6210	6690	6820	6900
	E,U	kg	2920	2960	3040	3570	3640	3660	4160	4710	4940	5620	5660	6210	6460	7010	7460	7540	7620
	N	kg	3420	3460	3540	3980	4050	4070	4510	5160	5390	6020	6060	6610	6860	7330	7860	7940	8030
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: DD, DG																			
Weights																			
Empty weight	°	kg	2460	2500	2560	2600	3100	3150	3190	3890	4080	4120	4620	4790	5440	5700	5780	6320	6470
	A,L	kg	2480	2530	3020	3090	3130	3180	3720	3940	4540	4620	5040	5830	6070	6220	6710	6830	6910
	E,U	kg	2930	2980	3050	3580	3660	3680	4170	4720	4960	5630	5670	6230	6470	7020	7480	7560	7640
	N	kg	3440	3480	3560	3990	4070	4090	4530	5180	5410	6030	6070	6620	6870	7350	7880	7960	8040
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: DE																			
Weights																			
Empty weight	°	kg	2490	2530	2600	2640	3130	3180	3220	3930	4120	4160	4650	4820	5470	5730	5810	6350	6500
	A,L	kg	2510	2560	3050	3120	3160	3210	3750	3970	4570	4660	5070	5860	6110	6250	6740	6860	6950
	E,U	kg	2970	3010	3080	3620	3690	3710	4200	4750	4990	5660	5700	6260	6510	7060	7510	7590	7670
	N	kg	3470	3510	3590	4020	4100	4120	4560	5210	5440	6070	6110	6660	6910	7380	7910	7990	8070
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: DF																			
Weights																			
Empty weight	°	kg	2550	2590	2660	2700	3190	3240	3280	3990	4180	4220	4720	4880	5540	5800	5880	6410	6560
	A,L	kg	2570	2630	3120	3180	3220	3280	3820	4030	4630	4720	5140	5920	6170	6320	6800	6930	7010
	E,U	kg	3030	3070	3150	3680	3750	3770	4270	4820	5050	5730	5770	6320	6570	7120	7570	7650	7740
	N	kg	3530	3580	3650	4090	4160	4180	4620	5270	5510	6130	6170	6720	6970	7450	7970	8060	8140
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: DH																			
Weights																			
Empty weight	°	kg	2570	2610	2680	2720	3210	3270	3300	4010	4200	4240	4740	4910	5560	5820	5900	6430	6580
	A,L	kg	2590	2650	3140	3200	3240	3300	3840	4050	4650	4740	5160	5940	6190	6340	6820	6950	7030
	E,U	kg	3050	3090	3170	3700	3770	3790	4290	4840	5070	5750	5790	6340	6590	7140	7600	7680	7760
	N	kg	3550	3600	3670	4110	4180	4200	4640	5290	5530	6150	6190	6740	6990	7470	8000	8080	8160
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: DI																			
Weights																			
Empty weight	°	kg	2680	2730	2790	2830	3320	3380	3420	4120	4310	4350	4850	5020	5670	5930	6010	6550	6690
	A,L	kg	2710	2760	3250	3320	3360	3410	3950	4160	4770	4850	5270	6050	6300	6450	6930	7060	7140
	E,U	kg	3160	3200	3280	3810	3890	3910	4400	4950	5190	5860	5900	6450	6700	7250	7710	7790	7870
	N	kg	3670	3710	3780	4220	4300	4320	4760	5400	5640	6260	6300	6850	7100	7580	8110	8190	8270
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: PA																			
Weights																			
Empty weight	°	kg	2350	2390	2460	2500	2990	3040	3080	3790	3980	4020	4510	4680	5330	5590	5670	6210	6360
	A,L	kg	2370	2430	2910	2980	3020	3080	3610	3830	4430	4520	4940	5720	5970	6120	6600	6730	6810
	E,U	kg	2830	2870	2940	3480	3550	3570	4070	4620	4850	5530	5570	6120	6370	6920	7370	7450	7530
	N	kg	3330	3370	3450	3890	3960	3980	4420	5070	5300	5930	5970	6520	6770	7240	7770	7850	7930
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: PB																			
Weights																			
Empty weight	°	kg	2370	2420	2480	2520	3010	3070	3110	3810	4000	4040	4540	4710	5360	5620	5700	6230	6380
	A,L	kg	2390	2450	2940	3000	3050	3100	3640	3850	4450	4540	4960	5740	5990	6140	6620	6750	6830
	E,U	kg	2850	2890	2970	3500	3580	3600	4090	4640	4870	5550	5590	6140	6390	6940	7400	7480	7560
	N	kg	3350	3400	3470	3910	3980	4000	4450	5090	5330	5950	5990	6540	6790	7270	7800	7880	7960
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: PC																			
Weights																			
Empty weight	°	kg	2380	2420	2480	2530	3020	3070	3110	3810	4000	4050	4540	4710	5360	5620	5700	6240	6390
	A,L	kg	2400	2450	2940	3010	3050	3100	3640	3860	4460	4540	4960	5750	5990	6140	6630	6750	6830
	E,U	kg	2850	2900	2970	3500	3580	3600	4090	4640	4880	5550	5590	6150	6390	6940	7400	7480	7560
	N	kg	3360	3400	3480	3910	3990	4010	4450	5100	5330	5950	5990	6550	6790	7270	7800	7880	7960
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: PD																			
Weights																			
Empty weight	°	kg	2390	2430	2490	2530	3020	3080	3120	3820	4010	4050	4550	4720	5370	5630	5710	6250	6390
	A,L	kg	2410	2460	2950	3020	3060	3110	3650	3870	4470	4550	4970	5750	6000	6150	6640	6760	6840
	E	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	N	kg	3370	3410	3480	3920	4000	4020	4460	5100	5340	5960	6000	6550	6800	7280	7810	7890	7970
	U	kg	2860	2910	2980	3510	3590	3610	4100	4650	4890	5560	5600	6150	6400	6950	7410	7490	7570
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: PE																			
Weights																			
Empty weight	°	kg	2400	2440	2510	2550	3040	3090	3130	3840	4030	4070	4570	4730	5390	5650	5730	6260	6410
	A,L	kg	2420	2480	2970	3030	3070	3130	3670	3880	4480	4570	4990	5770	6020	6170	6650	6780	6860
	E,U	kg	2880	2920	3000	3530	3600	3620	4120	4670	4900	5580	5620	6170	6420	6970	7420	7500	7590
	N	kg	3380	3430	3500	3940	4010	4030	4470	5120	5360	5980	6020	6570	6820	7300	7820	7910	7990
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: PF																			
Weights																			
Empty weight	°	kg	2440	2480	2540	2580	3080	3130	3170	3870	4060	4100	4600	4770	5420	5680	5760	6300	6450
	A,L	kg	2460	2510	3000	3070	3110	3160	3700	3920	4520	4600	5020	5810	6050	6200	6690	6810	6890
	E,U	kg	2910	2960	3030	3560	3640	3660	4150	4700	4940	5610	5650	6210	6450	7000	7460	7540	7620
	N	kg	3420	3460	3540	3970	4050	4070	4510	5160	5390	6010	6050	6610	6850	7330	7860	7940	8020
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230
INTEGRATED HYDRONIC KIT: PG																			
Weights																			
Empty weight	°	kg	2390	2430	2490	2530	3020	3080	3120	3820	4010	4050	4550	4720	5370	5630	5710	6250	6390
	A,L	kg	2410	2460	2950	3020	3060	3110	3650	3870	4470	4550	4970	5750	6000	6150	6640	6760	6840
	E,U	kg	2860	2910	2980	3510	3590	3610	4100	4650	4890	5560	5600	6150	6400	6950	7410	7490	7570
	N	kg	3370	3410	3480	3920	4000	4020	4460	5100	5340	5960	6000	6550	6800	7280	7810	7890	7970
Hydronic kit																			
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230

Size			0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
INTEGRATED HYDRONIC KIT: PH																				
Weights																				
Empty weight	°	kg	2440	2490	2550	2590	3080	3140	3180	3880	4070	4110	4610	4780	5430	5690	5770	6300	6450	
	A,L	kg	2470	2520	3010	3070	3120	3170	3710	3920	4530	4610	5030	5810	6060	6210	6690	6820	6900	
	E,U	kg	2920	2960	3040	3570	3650	3670	4160	4710	4950	5620	5660	6210	6460	7010	7470	7550	7630	
	N	kg	3430	3470	3540	3980	4050	4070	4520	5160	5400	6020	6060	6610	6860	7340	7870	7950	8030	
Hydronic kit																				
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190	
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200	
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230	
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230	
INTEGRATED HYDRONIC KIT: PI																				
Weights																				
Empty weight	°	kg	2500	2540	2600	2650	3140	3190	3230	3930	4120	4170	4660	4830	5480	5740	5820	6360	6510	
	A,L	kg	2520	2570	3060	3130	3170	3220	3760	3980	4580	4660	5080	5870	6110	6260	6750	6870	6950	
	E,U	kg	2970	3020	3090	3620	3700	3720	4210	4760	5000	5670	5710	6270	6510	7060	7520	7600	7680	
	N	kg	3480	3520	3600	4030	4110	4130	4570	5220	5450	6070	6120	6670	6910	7390	7920	8000	8080	
Hydronic kit																				
Water content	°	l	40	40	40	40	50	50	70	80	80	80	100	120	130	170	170	170	190	
	A,L	l	40	50	50	50	50	70	80	90	100	120	120	170	170	190	190	200	200	
	E,U	l	50	50	50	50	70	70	100	100	120	160	160	170	170	200	230	230	230	
	N	l	50	50	50	60	80	80	100	100	120	160	160	180	180	220	230	230	230	

13 WEIGHTS

DESUPERHEATER WEIGHT

! The data in the table indicate the total weights to be added to the standard unit.

Size			0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
Desuperheater																			
Empty weight	°A,E,L,N,U	kg	70	70	90	90	90	90	90	90	90	100	100	130	130	130	130	130	130
Water content	°A,E,L,N,U	l	10	10	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20

■ For the total recovery option "T", please contact our HQ.

COIL WEIGHT

! The data in the table indicate the total weights to be added to the standard unit.

Size			0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
COILS: °																			
Heat exchanger coil																			
Weight	°A,E,L,N,U	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COILS: I, V																			
Heat exchanger coil																			
Weight	°	kg	116	116	116	116	174	174	174	232	232	232	290	290	348	348	348	406	406
	A,L	kg	116	116	174	174	174	174	232	232	290	290	348	406	406	406	464	464	464
	E,U	kg	174	174	174	232	232	232	290	348	348	406	406	464	464	522	580	580	580
	N	kg	232	232	232	290	290	290	348	406	406	464	464	522	522	580	638	638	638
COILS: O																			
Heat exchanger coil																			
Weight	°A,E,L,N,U	kg	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)
COILS: R, S																			
Heat exchanger coil																			
Weight	°	kg	416	416	416	416	624	624	624	832	832	832	1040	1040	1248	1248	1248	1456	1456
	A,L	kg	416	416	624	624	624	624	832	832	1040	1040	1248	1456	1456	1456	1664	1664	1664
	E,U	kg	624	624	624	832	832	832	1040	1248	1248	1456	1456	1664	1664	1872	2080	2080	2080
	N	kg	832	832	832	1040	1040	1040	1248	1456	1456	1664	1664	1872	1872	2080	2288	2288	2288

(1) No variation compared with the weight of the standard unit

FANS WEIGHTS

! The data in the table indicate the total weights to be added to the standard unit.

Size			0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
FANS: °																			
Fan																			
Weight	°A,E,L,N,U	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FANS: J																			
Fan																			
Weight	°	kg	40	40	40	40	60	60	60	80	80	80	100	100	120	120	120	140	140
	A,L	kg	40	40	60	60	60	60	80	80	100	100	120	140	140	140	160	160	160
	E,U	kg	60	60	60	80	80	80	100	120	120	140	140	160	160	180	200	200	200
	N	kg	80	80	80	100	100	100	120	140	140	160	160	180	180	200	220	220	220
FANS: M																			
Fan																			
Weight	°A,E,L,N,U	kg	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)	0 (1)

(1) No variation compared with the weight of the standard unit

14 MINIMUM TECHNICAL SPACES

For all units, it is fundamental to respect the minimum distances in order to guarantee optimal ventilation to the finned heat exchanger coils to avoid the following:

- The generation of hazardous atmospheres in the case of refrigerant gas leaks;
- Return of hot air;
- Insufficient air flow to the finned heat exchanger coils.

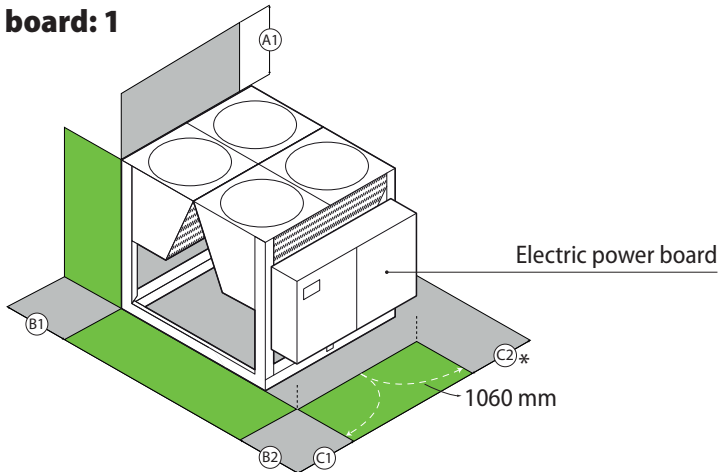
⚠ Each side of the unit must have space to allow all routine and extraordinary maintenance to be performed.

⚠ The air suction inlet and the vertical air exhaust must not be obstructed.

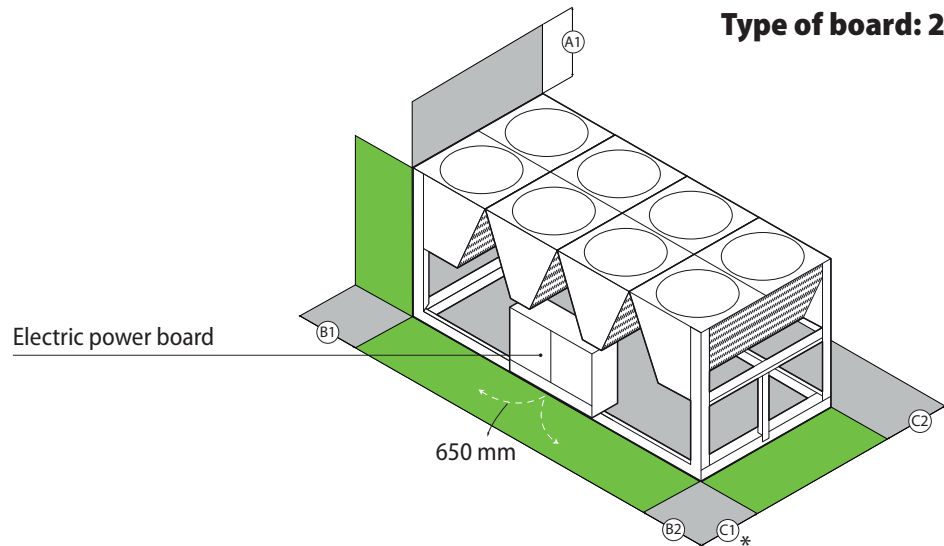
The following images indicate the minimum required space:

SINGLE INSTALLATION

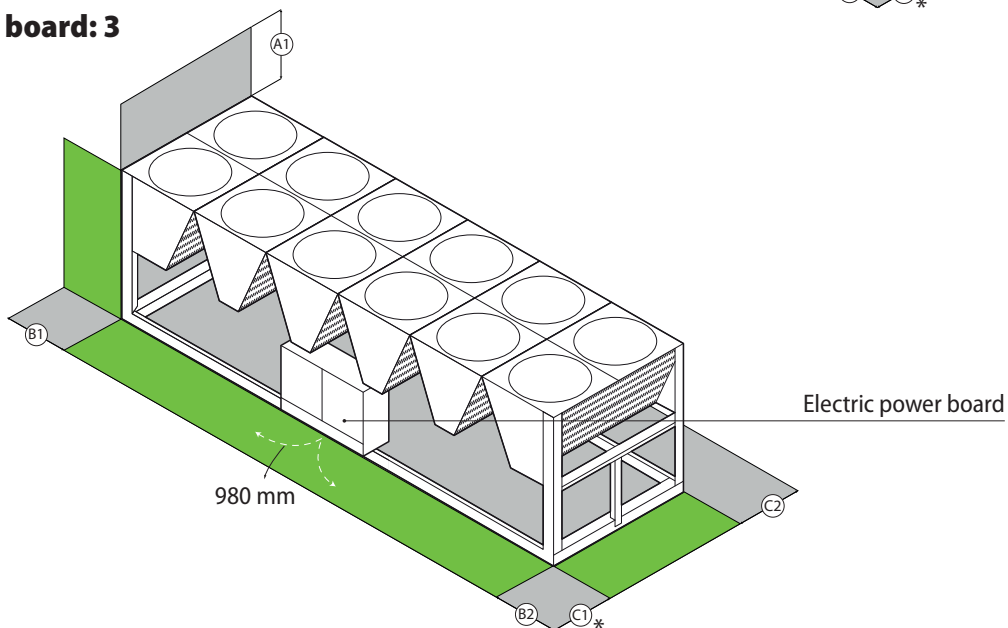
Type of board: 1



Type of board: 2

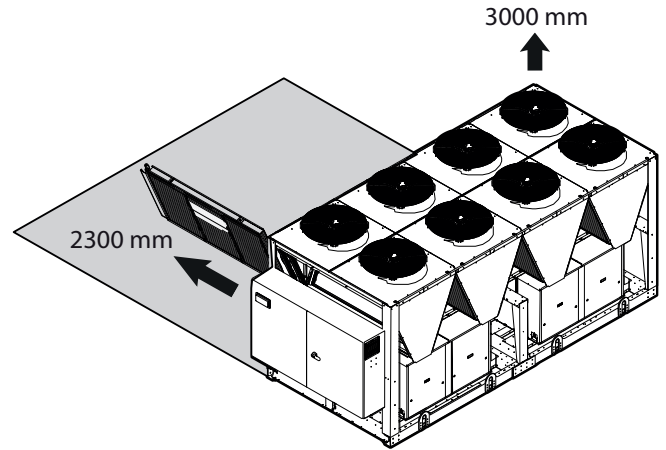
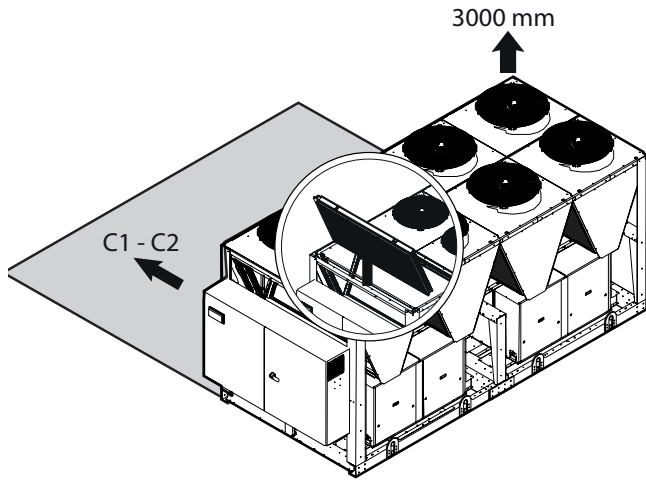


Type of board: 3



* Minimum technical space, to be ensured in order for the chiller to work properly and for possible maintenance.

ATTENTION with this space, the condenser coil can only be pulled out from above; to pull it out from the side you must leave at least 2300 mm.



■ The drawings are provided solely as examples.

VERSION °

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum technical spaces																			
Type of board		1	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	3	
Fan																			
V-block	no.	2	2	2	2	3	3	3	4	4	4	5	5	6	6	6	7	7	
Minimum technical spaces																			
A1	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
B2	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	800	800	800	800	800	800	
C1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1150	1480	1480	1480	1480	1480	
C2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

VERSION L

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum technical spaces																			
Type of board		1	1	1	1	1	1	2	1	1	1	2	2	3	3	3	3	3	
Fan																			
V-block	no.	2	2	3	3	3	3	4	4	5	5	6	7	7	7	8	8	8	
Minimum technical spaces																			
A1	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
B2	mm	1100	1100	1100	1100	1100	1100	800	1100	1100	1100	800	800	800	800	800	800	800	
C1	mm	1000	1000	1000	1000	1000	1000	1150	1000	1000	1000	1150	1150	1480	1480	1480	1480	1480	
C2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

VERSION A

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum technical spaces																			
Type of board		1	1	1	1	1	1	2	1	1	1	2	2	3	3	3	3	3	
Fan																			
V-block	no.	2	2	3	3	3	3	4	4	5	5	6	7	7	7	8	8	8	
Minimum technical spaces																			
A1	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
B2	mm	1100	1100	1100	1100	1100	1100	800	1100	1100	1100	800	800	800	800	800	800	800	
C1	mm	1000	1000	1000	1000	1000	1000	1150	1000	1000	1000	1150	1150	1480	1480	1480	1480	1480	
C2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

VERSION E

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum technical spaces																			
Type of board		1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	3	
Fan																			
V-block	no.	3	3	3	4	4	4	5	6	6	7	7	8	8	9	10	10	10	
Minimum technical spaces																			
A1	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
B2	mm	1100	1100	1100	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
C1	mm	1000	1000	1000	1150	1150	1150	1150	1150	1150	1150	1150	1150	1480	1480	1480	1480	1480	
C2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

VERSION U

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum technical spaces																			
Type of board		1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	3	
Fan																			
V-block	no.	3	3	3	4	4	4	5	6	6	7	7	8	8	9	10	10	10	
Minimum technical spaces																			
A1	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
B2	mm	1100	1100	1100	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
C1	mm	1000	1000	1000	1150	1150	1150	1150	1150	1150	1150	1150	1150	1480	1480	1480	1480	1480	
C2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

VERSION N

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum technical spaces																			
Type of board		2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	
Fan																			
V-block	no.	4	4	4	5	5	5	6	7	7	8	8	9	9	10	11	11	11	
Minimum technical spaces																			
A1	mm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
B2	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	
C1	mm	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1480	1480	1480	1480	1480	
C2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

MULTIPLE INSTALLATION

The minimum distances indicated above guarantee unit operation in the majority of applications. There are however specific situations that involve the installation of multiple units:



15 OPERATING LIMITS

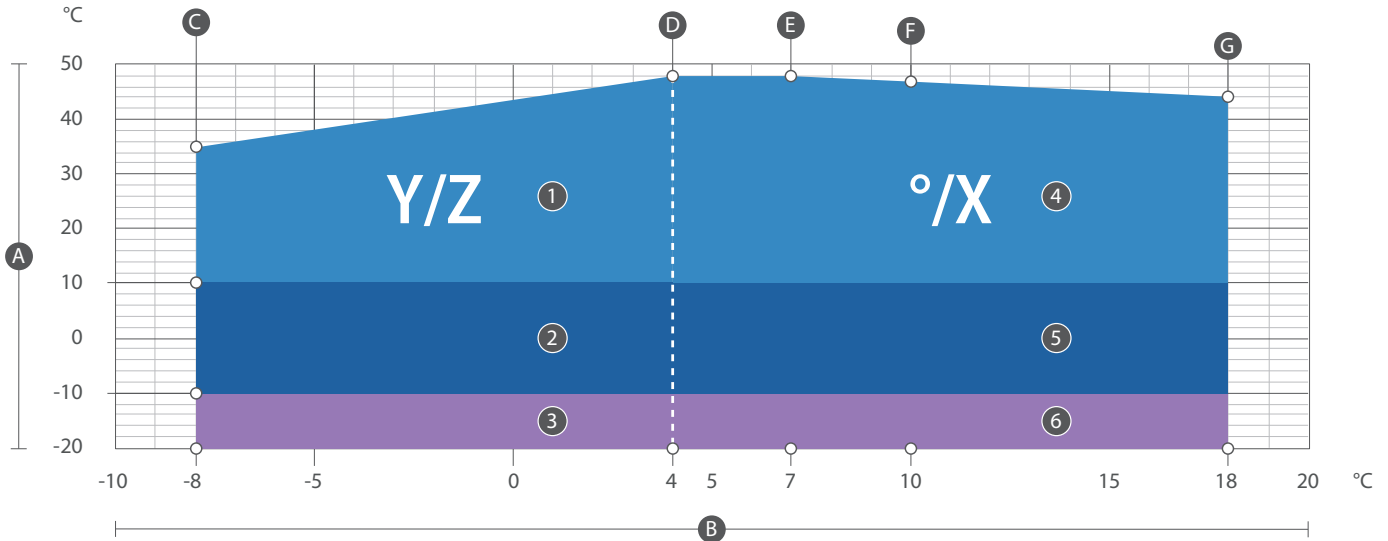
In their standard configuration, the units are not suitable for installation in salty environments.

The values indicated in the table refer to the min. and max. limits of the unit.

If the unit operates beyond the operational limits, we recommend you first contact our technical-sales service.

■ Note: If the unit is installed in particularly windy areas, it is mandatory to have windbreak barriers to prevent unit malfunctions. It should be installed if wind speed is above 2,5 m/s.

VERSION °



Key

A Outdoor air temperature (°C)

B Water produced (°C)

1 Operation with glycol-water solution

2 Operation with DCPX and glycol-water solution

3 Operation with XLA and glycol-water solution

4 Standard mode

5 DCPX Functioning

6 XLA Functioning

DCPX Accessory

XLA accessory (fan J is mandatory)

ATTENTION: The external temperature values marked in the graphs by a letter are specified in detail for each size and version in the following table.

Size	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
OPERATING FIELD: Z																		
External air temperature																		
C	°C	35,0	33,0	31,0	29,0	33,0	31,0	29,0	31,0	31,0	27,0	31,0	29,0	31,0	29,0	29,0	29,0	29,0
D	°C	48,0	46,0	44,0	42,0	46,0	44,0	42,0	44,0	44,0	40,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0

Size	0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
OPERATING FIELD: X																		
External air temperature																		
D	°C	48,0	46,0	44,0	42,0	46,0	44,0	42,0	44,0	44,0	40,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0
E	°C	48,0	46,0	44,0	42,0	46,0	44,0	42,0	44,0	44,0	40,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0
F	°C	47,0	45,0	43,0	41,0	45,0	43,0	41,0	43,0	43,0	39,0	43,0	41,0	43,0	41,0	41,0	41,0	41,0
G	°C	44,0	42,0	40,0	38,0	42,0	40,0	38,0	40,0	36,0	40,0	38,0	40,0	38,0	38,0	38,0	38,0	38,0

■ The outside air temperature values with valve Z correspond to those with valve Y.

■ The outside air temperature values with valve X correspond to those with valve °.

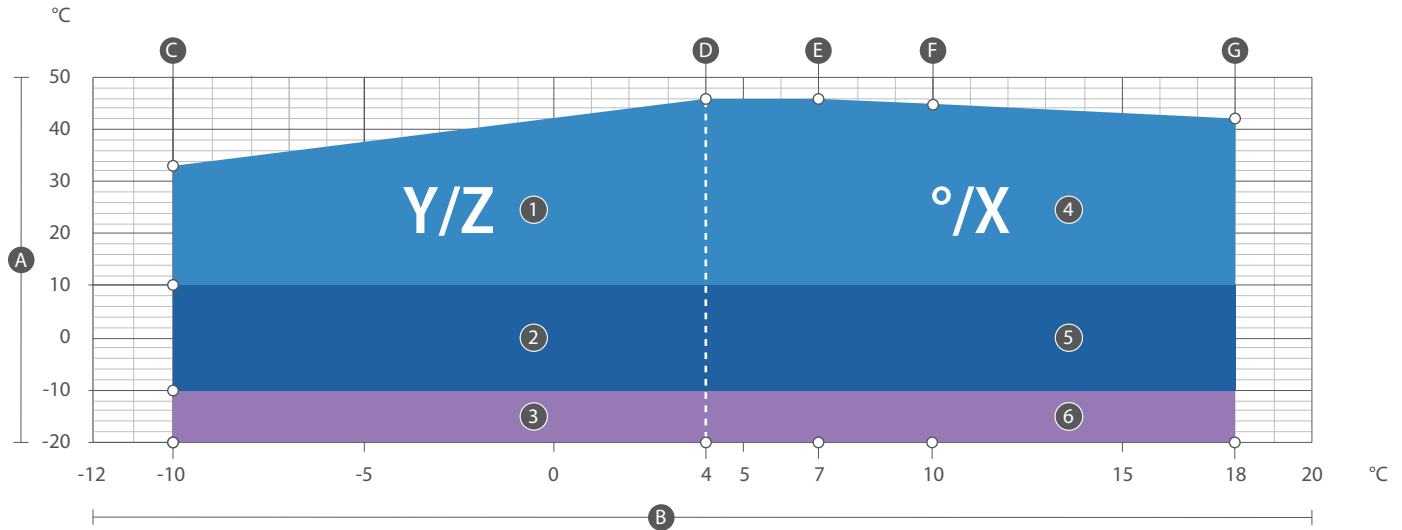


Sizes from 1805 ÷ 3600 come standard with the electronic thermostatic valve (X).

XLA Accessory compatibility

Maximum Outdoor Air Temperature with XLA ACCESSORY (TA) (°C)																		
Version		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
°	°C	-	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
L	°C	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
A	°C	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
E	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
U	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
N	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20

VERSIONS A - U



Key

A Outdoor air temperature (°C)

B Water produced (°C)

1 Operation with glycol-water solution

2 Operation with DCPX and glycol-water solution

3 Operation with XLA and glycol-water solution

4 Standard mode

5 DCPX Functioning

6 XLA Functioning

DCPX Accessory

XLA accessory (fan J is mandatory)

ATTENTION: The external temperature values marked in the graphs by a letter are specified in detail for each size and version in the following table.

VERSION A

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
OPERATING FIELD: Z																			
External air temperature																			
C	°C	33,0	31,0	35,0	35,0	33,0	31,0	33,0	31,0	33,0	31,0	33,0	33,0	33,0	31,0	33,0	31,0	31,0	31,0
D	°C	46,0	44,0	48,0	48,0	46,0	44,0	46,0	44,0	46,0	44,0	46,0	46,0	46,0	44,0	46,0	44,0	44,0	44,0
OPERATING FIELD: X																			
External air temperature																			
D	°C	46,0	44,0	48,0	48,0	46,0	44,0	46,0	44,0	46,0	44,0	46,0	46,0	46,0	44,0	46,0	44,0	44,0	44,0
E	°C	46,0	44,0	48,0	48,0	46,0	44,0	46,0	44,0	46,0	44,0	46,0	46,0	46,0	44,0	46,0	44,0	44,0	44,0
F	°C	45,0	43,0	47,0	47,0	45,0	43,0	45,0	43,0	45,0	43,0	45,0	45,0	45,0	43,0	45,0	43,0	43,0	43,0
G	°C	42,0	40,0	44,0	44,0	42,0	40,0	42,0	40,0	42,0	40,0	42,0	42,0	42,0	40,0	42,0	40,0	40,0	40,0

VERSION U

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
OPERATING FIELD: Z																			
External air temperature																			
C	°C	37,0	37,0	35,0	37,0	37,0	35,0	37,0	35,0	35,0	33,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0
D	°C	50,0	50,0	48,0	50,0	50,0	48,0	50,0	48,0	48,0	46,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
OPERATING FIELD: X																			
External air temperature																			
D	°C	50,0	50,0	48,0	50,0	50,0	48,0	50,0	48,0	48,0	46,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
E	°C	50,0	50,0	48,0	50,0	50,0	48,0	50,0	48,0	48,0	46,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
F	°C	49,0	49,0	47,0	49,0	49,0	47,0	49,0	47,0	47,0	45,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0
G	°C	46,0	46,0	44,0	46,0	46,0	44,0	46,0	44,0	44,0	42,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0

■ The outside air temperature values with valve Z correspond to those with valve Y.

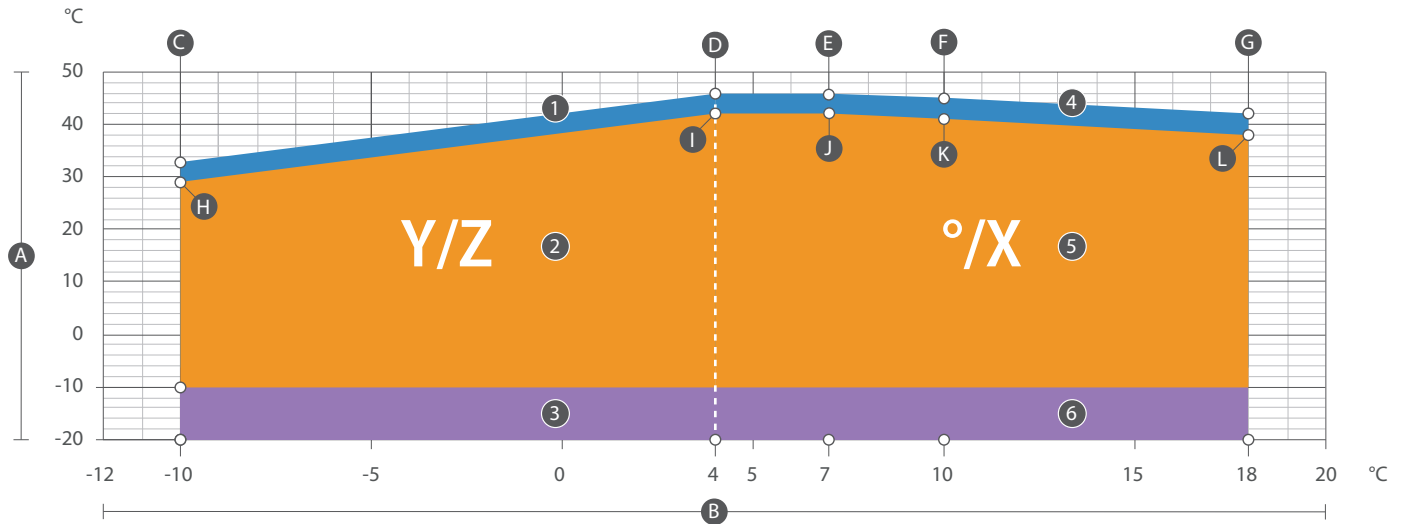
■ The outside air temperature values with valve X correspond to those with valve °.

⚠ Sizes from 1805 ÷ 3600 come standard with the electronic thermostatic valve (X).

⚠ Contact the office for the double thermostatic valve (from -10 to +18, available only in versions A - E - U - N).

Maximum Outdoor Air Temperature with XLA ACCESSORY (TA) (°C)		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
°	°C	-	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
L	°C	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
A	°C	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
E	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
U	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
N	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20

VERSIONS E - N



- Key**
- A Outdoor air temperature (°C)
 - B Water produced (°C)
 - 1 Not silenced operation: with glycol
 - 2 Silenced operation: with glycol
 - 3 Operation with XLA and glycol-water solution
 - 4 Not silenced operation: standard
 - 5 Silenced operation: standard
 - 6 XLA Functioning
- DCPX as standard**
XLA accessory (fan J is mandatory)

ATTENTION: The external temperature values marked in the graphs by a letter are specified in detail for each size and version in the following table.

VERSION E

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
OPERATING FIELD: Z																			
External air temperature (not silenced operation)																			
C	°C	37,0	37,0	35,0	37,0	37,0	35,0	37,0	35,0	35,0	33,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0
D	°C	50,0	50,0	48,0	50,0	50,0	48,0	50,0	48,0	48,0	46,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
OPERATING FIELD: X																			
External air temperature (not silenced operation)																			
D	°C	50,0	50,0	48,0	50,0	50,0	48,0	50,0	48,0	48,0	46,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
E	°C	50,0	50,0	48,0	50,0	50,0	48,0	50,0	48,0	48,0	46,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
F	°C	49,0	49,0	47,0	49,0	49,0	47,0	49,0	47,0	47,0	45,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0
G	°C	46,0	46,0	44,0	46,0	46,0	44,0	46,0	44,0	44,0	42,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0
OPERATING FIELD: Z																			
External air temperature (silenced operation)																			
H	°C	33,0	33,0	31,0	33,0	31,0	29,0	31,0	31,0	31,0	31,0	29,0	29,0	29,0	29,0	29,0	31,0	29,0	29,0
I	°C	46,0	46,0	44,0	46,0	44,0	42,0	44,0	44,0	44,0	44,0	42,0	42,0	42,0	42,0	42,0	44,0	42,0	42,0
OPERATING FIELD: X																			
External air temperature (silenced operation)																			
I	°C	46,0	46,0	44,0	46,0	44,0	42,0	44,0	44,0	44,0	44,0	42,0	42,0	42,0	42,0	42,0	44,0	42,0	42,0
J	°C	46,0	46,0	44,0	46,0	44,0	42,0	44,0	44,0	44,0	44,0	42,0	42,0	42,0	42,0	42,0	44,0	42,0	42,0
K	°C	45,0	45,0	43,0	45,0	43,0	41,0	43,0	43,0	43,0	41,0	41,0	41,0	41,0	41,0	41,0	43,0	41,0	41,0
L	°C	42,0	42,0	40,0	42,0	40,0	38,0	40,0	40,0	40,0	38,0	38,0	38,0	38,0	38,0	38,0	40,0	38,0	38,0

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
OPERATING FIELD: Z																		
External air temperature (not silenced operation)																		
C	°C	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0	37,0
D	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0
OPERATING FIELD: X																		
External air temperature (not silenced operation)																		
D	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0
E	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0
F	°C	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0
G	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
OPERATING FIELD: Z																		
External air temperature (silenced operation)																		
H	°C	37,0	35,0	35,0	35,0	35,0	33,0	33,0	33,0	33,0	31,0	31,0	31,0	31,0	31,0	33,0	31,0	31,0
I	°C	50,0	48,0	48,0	48,0	48,0	46,0	46,0	46,0	46,0	44,0	44,0	44,0	44,0	44,0	46,0	44,0	44,0
OPERATING FIELD: X																		
External air temperature (silenced operation)																		
I	°C	50,0	48,0	48,0	48,0	48,0	46,0	46,0	46,0	46,0	44,0	44,0	44,0	44,0	44,0	46,0	44,0	44,0
J	°C	50,0	48,0	48,0	48,0	48,0	46,0	46,0	46,0	46,0	44,0	44,0	44,0	44,0	44,0	46,0	44,0	44,0
K	°C	49,0	47,0	47,0	47,0	47,0	45,0	45,0	45,0	45,0	43,0	43,0	43,0	43,0	43,0	45,0	43,0	43,0
L	°C	46,0	44,0	44,0	44,0	44,0	42,0	42,0	42,0	42,0	40,0	40,0	40,0	40,0	40,0	42,0	40,0	40,0

■ The outside air temperature values with valve Z correspond to those with valve Y.

■ The outside air temperature values with valve X correspond to those with valve °.

! Sizes from 1805 ÷ 3600 come standard with the electronic thermostatic valve (X).

! Contact the office for the double thermostatic valve (from -10 to +18, available only in versions A - E - U - N).

XLA Accessory compatibility

Maximum Outdoor Air Temperature with XLA ACCESSORY (TA) (°C)																		
Version		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
°	°C	-	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
L	°C	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
A	°C	-	-	-	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
E	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
U	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
N	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20

16 PRESSURE DROPS

SERVICE SIDE - WITHOUT HYDRONIC KIT (00) - HEAT EXCHANGER ONLY

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)

Pc Cooling capacity (kW)

ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)

Coefficient for the various sizes and versions

Q Water flow rate (l/h)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006
Pressure drops coefficient										
	°	3,1690E-08	3,1144E-08	1,7365E-08	1,7056E-08	1,2062E-08	8,0315E-09	8,0408E-09	5,1683E-09	5,0540E-09
	A	1,7959E-08	1,1700E-08	1,2488E-08	8,5435E-09	8,3752E-09	5,0319E-09	5,3366E-09	3,8103E-09	4,0125E-09
Pressure drops coefficient without hydronic kit	E	1,3284E-08	1,2671E-08	8,7453E-09	8,9201E-09	5,6364E-09	5,5583E-09	4,2437E-09	4,1883E-09	3,4356E-09
	L	1,7959E-08	1,1700E-08	1,2489E-08	8,5435E-09	8,3753E-09	5,0318E-09	5,3366E-09	3,8104E-09	4,0125E-09
	N	1,3285E-08	1,2671E-08	8,7452E-09	8,9201E-09	5,6364E-09	5,5582E-09	4,2436E-09	4,1883E-09	3,4356E-09
	U	1,3285E-08	1,2672E-08	8,7453E-09	8,9201E-09	5,6363E-09	5,5581E-09	4,2436E-09	4,1883E-09	3,4356E-09

Size		2206	2406	2600	2800	3000	3200	3400	3600
Pressure drops coefficient									
	°	5,0511E-09	3,8450E-09	3,7390E-09	3,2605E-09	1,7442E-09	1,7102E-09	1,7328E-09	1,4520E-09
	A	3,2813E-09	3,3201E-09	1,7925E-09	1,7767E-09	1,4604E-09	1,4784E-09	1,4525E-09	1,4511E-09
Pressure drops coefficient without hydronic kit	E,U	1,8322E-09	1,7792E-09	1,8315E-09	1,8121E-09	1,5380E-09	1,5345E-09	1,5020E-09	1,4982E-09
	L	3,2820E-09	3,3201E-09	1,7925E-09	1,7768E-09	1,4604E-09	1,4784E-09	1,4525E-09	1,4511E-09
	N	1,8322E-09	1,7792E-09	1,8315E-09	1,8121E-09	1,5379E-09	1,5345E-09	1,5020E-09	1,4982E-09

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
System side heat exchanger																			
Minimum water flow rate	°	l/h	19080	21060	23275	25810	30400	34860	37800	44005	48290	51500	58175	62120	67725	71485	75750	81395	85900
	A	l/h	19300	21720	24430	28070	31095	35435	39790	44685	49580	54505	60050	65190	69345	74605	79925	84405	88365
	E	l/h	18875	21385	23680	27665	30875	34710	39165	44280	48975	54835	59225	63780	68360	73830	78460	83060	87730
	L	l/h	18680	20470	23480	26495	29600	33660	37730	42880	47800	52355	57345	62585	66265	71785	76295	81980	86410
	N	l/h	19605	22420	24515	28215	31650	35490	40120	44895	49840	55565	60460	64495	69255	74565	79750	83780	88635
	U	l/h	19595	22180	24675	28375	31835	35690	40185	45550	51125	56370	61695	65880	70165	75645	80975	86035	90320
Maximum water flow rate	°	l/h	63600	70200	77583	86033	101333	116200	126000	146683	160967	171667	193917	207067	225750	238283	252500	271317	286333
	A	l/h	64333	72400	81433	93567	103650	118117	132633	148950	165267	181683	200167	217300	231150	248683	266417	281350	294550
	E	l/h	62917	71283	78933	92217	102917	115700	130550	147600	163250	182783	197417	212600	227867	246100	261533	276867	292433
	L	l/h	62267	68233	78267	88317	98667	112200	125767	142933	159333	174517	191150	208617	220883	239283	254317	273267	288033
	N	l/h	65350	74733	81717	94050	105500	118300	133733	149650	166133	185217	201533	214983	230850	248550	265833	279267	295450
	U	l/h	65317	73933	82250	94583	106117	118967	133950	151833	170417	187900	205650	219600	233883	252150	269917	286783	301067

Inlet water temperature 12 °C

Outlet water temperature 7 °C

External air temperature 35 °C

Average water temperature 10 °C

■ **ATTENTION:** For average water temperature different than 10 °C refer to the chapter "Corrective factors for average water temperatures different from nominal values"

SERVICE SIDE - WITHOUT HYDRONIC (00) - HEAT EXCHANGER WITH FILTER INSTALLED

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)

Pc Cooling capacity (kW)

ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)

Coefficient for the various sizes and versions

Q Water flow rate (l/h)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006
Pressure drops coefficient										
	°	3,8163E-08	3,7513E-08	2,3759E-08	2,3587E-08	1,8971E-08	1,4589E-08	1,0102E-08	7,2926E-09	7,1301E-09
	A	2,4578E-08	1,8155E-08	1,9366E-08	1,5442E-08	1,5158E-08	1,1589E-08	7,5101E-09	5,9363E-09	6,2363E-09
Pressure drop coefficient without the hydronic kit (with filter installed)	E	2,0697E-08	1,9680E-08	1,5625E-08	1,6088E-08	1,2809E-08	1,2488E-08	6,5259E-09	6,4741E-09	5,7054E-09
	L	2,4364E-08	1,8099E-08	1,9368E-08	1,5594E-08	1,5058E-08	1,1842E-08	7,5193E-09	5,9810E-09	6,1681E-09
	N	2,0617E-08	1,9540E-08	1,5753E-08	1,6207E-08	1,2924E-08	1,2716E-08	6,5427E-09	6,5135E-09	5,7432E-09
	U	2,0622E-08	1,9669E-08	1,5622E-08	1,6208E-08	1,2927E-08	1,2718E-08	6,5869E-09	6,5102E-09	5,6944E-09

Size		2206	2406	2600	2800	3000	3200	3400	3600
Pressure drops coefficient									
	°	7,1256E-09	5,9814E-09	4,6512E-09	4,2112E-09	2,7385E-09	2,6846E-09	2,7212E-09	2,4390E-09
	A	5,4594E-09	5,5265E-09	2,7890E-09	2,7632E-09	2,4515E-09	2,4837E-09	2,4550E-09	2,4524E-09
Pressure drop coefficient without the hydronic kit (with filter installed)	E	4,0912E-09	4,0113E-09	2,8298E-09	2,7822E-09	2,5474E-09	2,5773E-09	2,5239E-09	2,5000E-09
	L	5,5081E-09	5,4973E-09	2,7748E-09	2,7491E-09	2,4728E-09	2,4708E-09	2,4583E-09	2,4376E-09
	N	4,1272E-09	4,0239E-09	2,8471E-09	2,7995E-09	2,5649E-09	2,5755E-09	2,5414E-09	2,5169E-09
	U	4,1428E-09	4,0176E-09	2,8443E-09	2,8155E-09	2,5823E-09	2,5930E-09	2,5384E-09	2,5328E-09

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
System side heat exchanger																			
Minimum water flow rate	°	l/h	19080	21060	23275	25810	30400	34860	37800	44005	48290	51500	58175	62120	67725	71485	75750	81395	85900
	A	l/h	19300	21720	24430	28070	31095	35435	39790	44685	49580	54505	60050	65190	69345	74605	79925	84405	88365
	E	l/h	18875	21385	23680	27665	30875	34710	39165	44280	48975	54835	59225	63780	68360	73830	78460	83060	87730
	L	l/h	18680	20470	23480	26495	29600	33660	37730	42880	47800	52355	57345	62585	66265	71785	76295	81980	86410
	N	l/h	19605	22420	24515	28215	31650	35490	40120	44895	49840	55565	60460	64495	69255	74565	79750	83780	88635
	U	l/h	19595	22180	24675	28375	31835	35690	40185	45550	51125	56370	61695	65880	70165	75645	80975	86035	90320
Maximum water flow rate	°	l/h	63600	70200	77583	86033	101333	116200	126000	146683	160967	171667	193917	207067	225750	238283	252500	271317	286333
	A	l/h	64333	72400	81433	93567	103650	118117	132633	148950	165267	181683	200167	217300	231150	248683	266417	281350	294550
	E	l/h	62917	71283	78933	92217	102917	115700	130550	147600	163250	182783	197417	212600	227867	246100	261533	276867	292433
	L	l/h	62267	68233	78267	88317	98667	112200	125767	142933	159333	174517	191150	208617	220883	239283	254317	273267	288033
	N	l/h	65350	74733	81717	94050	105500	118300	133733	149650	166133	185217	201533	214983	230850	248550	265833	279267	295450
	U	l/h	65317	73933	82250	94583	106117	118967	133950	151833	170417	187900	205650	219600	233883	252150	269917	286783	301067

Inlet water temperature 12 °C

Outlet water temperature 7 °C

External air temperature 35 °C

Average water temperature 10 °C

■ **ATTENTION:** For average water temperature different than 10 °C refer to the chapter "Corrective factors for average water temperatures different from nominal values"

SERVICE SIDE - WITH HYDRONIC KIT PA-PJ - DA-DJ (HEAT EXCHANGER + FILTER + PIPES)

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)

Pc Cooling capacity (kW)

ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)

Coefficient for the various sizes and versions

Q Water flow rate (l/h)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006
Pressure drops coefficient										
	°	4,9290E-08	4,8440E-08	3,4667E-08	3,4299E-08	2,6651E-08	2,1866E-08	1,7769E-08	1,5156E-08	7,7511E-09
	A	3,5854E-08	2,9124E-08	3,1068E-08	2,6708E-08	2,2686E-08	1,8851E-08	1,5561E-08	1,3792E-08	6,8971E-09
Pressure drops coefficient of hydronic kit with pumps	E	3,3294E-08	3,1587E-08	2,7308E-08	2,7789E-08	2,0753E-08	2,0166E-08	1,4963E-08	1,4919E-08	6,3776E-09
	L	3,5276E-08	2,8988E-08	3,1072E-08	2,7111E-08	2,2469E-08	1,9383E-08	1,5596E-08	1,3998E-08	6,8079E-09
	N	3,3084E-08	3,1217E-08	2,7651E-08	2,8110E-08	2,0990E-08	2,0638E-08	1,5040E-08	1,5105E-08	6,4266E-09
	U	3,3083E-08	3,1574E-08	2,7294E-08	2,8106E-08	2,1002E-08	2,0644E-08	1,5242E-08	1,5088E-08	6,3634E-09

Size		2206	2406	2600	2800	3000	3200	3400	3600
Pressure drops coefficient									
	°	7,7459E-09	6,6157E-09	4,9060E-09	4,4744E-09	3,0026E-09	2,9435E-09	2,9839E-09	2,7004E-09
	A	6,1037E-09	6,1801E-09	3,0606E-09	3,0320E-09	2,7139E-09	2,7501E-09	2,7205E-09	2,7177E-09
Pressure drops coefficient of hydronic kit with pumps	E	4,7555E-09	4,6674E-09	3,1021E-09	3,0467E-09	2,8150E-09	2,8536E-09	2,7947E-09	2,7653E-09
	L	6,1682E-09	6,1420E-09	3,0428E-09	3,0143E-09	2,7411E-09	2,7336E-09	2,7247E-09	2,6988E-09
	N	4,8020E-09	4,6838E-09	3,1238E-09	3,0688E-09	2,8372E-09	2,8511E-09	2,8166E-09	2,7866E-09
	U	4,8221E-09	4,6762E-09	3,1203E-09	3,0888E-09	2,8588E-09	2,8734E-09	2,8130E-09	2,8067E-09

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
System side heat exchanger																			
Minimum water flow rate	°	l/h	19080	21060	23275	25810	30400	34860	37800	44005	48290	51500	58175	62120	67725	71485	75750	81395	85900
	A	l/h	19300	21720	24430	28070	31095	35435	39790	44685	49580	54505	60050	65190	69345	74605	79925	84405	88365
	E	l/h	18875	21385	23680	27665	30875	34710	39165	44280	48975	54835	59225	63780	68360	73830	78460	83060	87730
	L	l/h	18680	20470	23480	26495	29600	33660	37730	42880	47800	52355	57345	62585	66265	71785	76295	81980	86410
	N	l/h	19605	22420	24515	28215	31650	35490	40120	44895	49840	55565	60460	64495	69255	74565	79750	83780	88635
	U	l/h	19595	22180	24675	28375	31835	35690	40185	45550	51125	56370	61695	65880	70165	75645	80975	86035	90320
Maximum water flow rate	°	l/h	63600	70200	77583	86033	101333	116200	126000	146683	160967	171667	193917	207067	225750	238283	252500	271317	286333
	A	l/h	64333	72400	81433	93567	103650	118117	132633	148950	165267	181683	200167	217300	231150	248683	266417	281350	294550
	E	l/h	62917	71283	78933	92217	102917	115700	130550	147600	163250	182783	197417	212600	227867	246100	261533	276867	292433
	L	l/h	62267	68233	78267	88317	98667	112200	125767	142933	159333	174517	191150	208617	220883	239283	254317	273267	288033
	N	l/h	65350	74733	81717	94050	105500	118300	133733	149650	166133	185217	201533	214983	230850	248550	265833	279267	295450
	U	l/h	65317	73933	82250	94583	106117	118967	133950	151833	170417	187900	205650	219600	233883	252150	269917	286783	301067

Inlet water temperature 12 °C

Outlet water temperature 7 °C

External air temperature 35 °C

Average water temperature 10 °C

■ **ATTENTION:** For average water temperature different than 10 °C refer to the chapter "Corrective factors for average water temperatures different from nominal values"

SERVICE SIDE - WITH HYDRONIC KIT AA-AJ - BA-BJ (HEAT EXCHANGER + FILTER + PIPES + WATER ACCUMULATION)

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)

Pc Cooling capacity (kW)

ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)

Coefficient for the various sizes and versions

Q Water flow rate (l/h)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006
Pressure drops coefficient										
	°	5,3006E-08	5,2092E-08	3,8320E-08	3,7887E-08	3,0441E-08	2,5459E-08	1,9036E-08	1,6456E-08	9,0223E-09
	A	3,9632E-08	3,2803E-08	3,4990E-08	3,0488E-08	2,6402E-08	2,2440E-08	1,6892E-08	1,5092E-08	8,2567E-09
Pressure drops coefficient of hydronic kit with pumps and storage tank	E	3,7518E-08	3,5580E-08	3,1227E-08	3,1715E-08	2,4679E-08	2,3960E-08	1,6359E-08	1,6316E-08	7,7643E-09
	L	3,8932E-08	3,2638E-08	3,4995E-08	3,0975E-08	2,6129E-08	2,3111E-08	1,6932E-08	1,5325E-08	8,1255E-09
	N	3,7264E-08	3,5132E-08	3,1642E-08	3,2103E-08	2,4978E-08	2,4555E-08	1,6445E-08	1,6527E-08	7,8362E-09
	U	3,7263E-08	3,5564E-08	3,1209E-08	3,2098E-08	2,4992E-08	2,4562E-08	1,6674E-08	1,6507E-08	7,7433E-09

Size		2206	2406	2600	2800	3000	3200	3400	3600
Pressure drops coefficient									
	°	9,0161E-09	7,9215E-09	5,4612E-09	5,0520E-09	3,5893E-09	3,5185E-09	3,5672E-09	3,2824E-09
	A	7,4340E-09	7,5280E-09	3,6640E-09	3,6293E-09	3,2982E-09	3,3429E-09	3,3117E-09	3,3082E-09
Pressure drops coefficient of hydronic kit with pumps and storage tank	E	6,1333E-09	6,0286E-09	3,7068E-09	3,6342E-09	3,4104E-09	3,4686E-09	3,3973E-09	3,3560E-09
	L	7,5285E-09	7,4721E-09	3,6377E-09	3,6032E-09	3,3382E-09	3,3188E-09	3,3179E-09	3,2806E-09
	N	6,2016E-09	6,0528E-09	3,7387E-09	3,6668E-09	3,4429E-09	3,4649E-09	3,4295E-09	3,3873E-09
	U	6,2312E-09	6,0417E-09	3,7335E-09	3,6963E-09	3,4745E-09	3,4976E-09	3,4243E-09	3,4167E-09

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
System side heat exchanger																			
Minimum water flow rate	°	l/h	19080	21060	23275	25810	30400	34860	37800	44005	48290	51500	58175	62120	67725	71485	75750	81395	85900
	A	l/h	19300	21720	24430	28070	31095	35435	39790	44685	49580	54505	60050	65190	69345	74605	79925	84405	88365
	E	l/h	18875	21385	23680	27665	30875	34710	39165	44280	48975	54835	59225	63780	68360	73830	78460	83060	87730
	L	l/h	18680	20470	23480	26495	29600	33660	37730	42880	47800	52355	57345	62585	66265	71785	76295	81980	86410
	N	l/h	19605	22420	24515	28215	31650	35490	40120	44895	49840	55565	60460	64495	69255	74565	79750	83780	88635
	U	l/h	19595	22180	24675	28375	31835	35690	40185	45550	51125	56370	61695	65880	70165	75645	80975	86035	90320
Maximum water flow rate	°	l/h	63600	70200	77583	86033	101333	116200	126000	146683	160967	171667	193917	207067	225750	238283	252500	271317	286333
	A	l/h	64333	72400	81433	93567	103650	118117	132633	148950	165267	181683	200167	217300	231150	248683	266417	281350	294550
	E	l/h	62917	71283	78933	92217	102917	115700	130550	147600	163250	182783	197417	212600	227867	246100	261533	276867	292433
	L	l/h	62267	68233	78267	88317	98667	112200	125767	142933	159333	174517	191150	208617	220883	239283	254317	273267	288033
	N	l/h	65350	74733	81717	94050	105500	118300	133733	149650	166133	185217	201533	214983	230850	248550	265833	279267	295450
	U	l/h	65317	73933	82250	94583	106117	118967	133950	151833	170417	187900	205650	219600	233883	252150	269917	286783	301067

Inlet water temperature 12 °C

Outlet water temperature 7 °C

External air temperature 35 °C

Average water temperature 10 °C

■ **ATTENTION:** For average water temperature different than 10 °C refer to the chapter "Corrective factors for average water temperatures different from nominal values"

DESUPERHEATER

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)

Pc Cooling capacity (kW)

ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)

Coefficient for the various sizes and versions

Q Water flow rate (l/h)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006
Pressure drops coefficient										
	°	8,4092E-08	8,4040E-08	7,5733E-08	7,2322E-08	4,2978E-08	3,8778E-08	3,8767E-08	3,8237E-08	2,8943E-08
	A	8,4050E-08	8,4072E-08	7,5695E-08	7,2316E-08	4,2983E-08	3,8771E-08	3,8770E-08	3,8238E-08	2,8946E-08
Pressure drops coefficient of desuperheater	E	8,4040E-08	8,4085E-08	7,5731E-08	7,2328E-08	4,2982E-08	3,8779E-08	3,8769E-08	3,8234E-08	2,8943E-08
	L	8,4050E-08	8,4036E-08	7,5730E-08	7,2319E-08	4,2979E-08	3,8779E-08	3,8767E-08	3,8238E-08	2,8948E-08
	N	8,4054E-08	8,4046E-08	7,5725E-08	7,2309E-08	4,2986E-08	3,8775E-08	3,8777E-08	3,8233E-08	2,8945E-08
	U	8,4070E-08	8,4064E-08	7,5726E-08	7,2296E-08	4,2987E-08	3,8770E-08	3,8774E-08	3,8240E-08	2,8945E-08

Size		2206	2406	2600	2800	3000	3200	3400	3600
Pressure drops coefficient									
	°	2,9663E-08	2,9516E-08	2,1351E-08	1,9157E-08	1,7513E-08	1,6146E-08	1,5034E-08	1,4103E-08
	A	2,9664E-08	2,9517E-08	2,1352E-08	1,9156E-08	1,7513E-08	1,6146E-08	1,5035E-08	1,4103E-08
Pressure drops coefficient of desuperheater	E	2,9667E-08	2,9518E-08	2,1351E-08	1,9157E-08	1,7514E-08	1,6147E-08	1,5035E-08	1,4101E-08
	L	2,9663E-08	2,9516E-08	2,1351E-08	1,9156E-08	1,7513E-08	1,6147E-08	1,5034E-08	1,4103E-08
	N	2,9668E-08	2,9517E-08	2,1350E-08	1,9156E-08	1,7514E-08	1,6146E-08	1,5035E-08	1,4103E-08
	U	2,9663E-08	2,9518E-08	2,1350E-08	1,9158E-08	1,7513E-08	1,6147E-08	1,5035E-08	1,4103E-08

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Desuperheater																			
Minimum water flow rate	°	l/h	8493	9619	10939	12814	13646	15749	18026	20448	22549	25160	27468	29720	31350	34102	36663	38317	41354
	A	l/h	8214	9434	10498	12193	13426	15367	17177	19382	21338	23624	25931	28031	29878	32277	34577	36577	38409
	E	l/h	8119	9251	10328	11899	13402	15132	16849	19182	21311	23752	25834	27578	29764	32002	33827	36132	38110
	L	l/h	8502	10029	10712	12521	14297	16228	17703	20216	22317	24882	27200	28796	31504	33192	35848	37624	40490
	N	l/h	7986	9184	10066	11467	13052	14603	16365	18364	20481	22716	24835	26681	28726	30688	32885	35020	37105
	U	l/h	8025	9051	10116	11579	13026	14691	16417	18563	20819	23079	25101	26720	28970	30938	32833	35156	37105
Maximum water flow rate	°	l/h	28310	32063	36462	42712	45485	52495	60087	68160	75162	83865	91560	99065	104500	113672	122210	127722	137845
	A	l/h	27378	31447	34993	40643	44753	51223	57255	64607	71127	78745	86437	93435	99593	107590	115257	121923	128028
	E	l/h	27062	30837	34425	39662	44672	50440	56162	63938	71035	79172	86113	91925	99212	106672	112755	120438	127032
	L	l/h	28338	33428	35705	41737	47655	54093	59010	67385	74388	82938	90667	95985	105013	110638	119493	125413	134965
	N	l/h	26620	30613	33552	38222	43505	48677	54550	61212	68268	75718	82782	88937	95752	102293	109617	116732	123682
	U	l/h	26750	30170	33720	38597	43420	48970	54723	61875	69395	76928	83670	89065	96567	103125	109442	117185	123682

Inlet water temperature 40 °C

Outlet water temperature 45 °C

Average water temperature 43 °C

■ **ATTENTION:** For average water temperature different than 43 °C refer to the chapter "Corrective factors for average water temperatures different from nominal values"

TOTAL RECOVERY

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)

Pc Cooling capacity (kW)

ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)

Coefficient for the various sizes and versions

Q Water flow rate (l/h)

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006
Pressure drops coefficient										
Total recovery unit pressure drop coefficient	°	1,4062E-08	1,4062E-08	1,0098E-08	1,0098E-08	6,1799E-09	6,1800E-09	4,5851E-09	4,5847E-09	3,8346E-09
	A,L	1,4058E-08	1,4058E-08	1,0099E-08	1,0098E-08	6,1789E-09	6,1793E-09	4,5848E-09	4,5848E-09	3,8350E-09
	E,N,U	1,4063E-08	1,4061E-08	1,0097E-08	1,0098E-08	6,1794E-09	6,1793E-09	4,5846E-09	4,5850E-09	3,8347E-09

Size		2206	2406	2600	2800	3000	3200	3400	3600
Pressure drops coefficient									
Total recovery unit pressure drop coefficient	°	3,8349E-09	2,0220E-09	2,0221E-09	2,0222E-09	1,6966E-09	1,6967E-09	1,6704E-09	1,6704E-09
	A,L	3,8350E-09	2,0222E-09	2,0221E-09	2,0220E-09	1,6966E-09	1,6966E-09	1,6704E-09	1,6704E-09
	E,N,U	3,8350E-09	2,0220E-09	2,0221E-09	2,0221E-09	1,6966E-09	1,6967E-09	1,6703E-09	1,6704E-09

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Total recovery																			
Minimum water flow rate	°	l/h	22174	25048	27923	31990	36057	41018	45979	52003	58027	64052	70076	75546	81017	87041	93065	99090	105114
	A,L	l/h	22818	25759	28700	32890	37080	42207	47334	53483	59631	65779	71927	77612	83298	89446	95594	101742	107890
	E,N,U	l/h	23016	25974	28931	33172	37412	42556	47699	53921	60143	66365	72588	78290	83993	90215	96437	102659	108881
Maximum water flow rate	°	l/h	73912	83493	93075	106632	120188	136725	153262	173343	193423	213505	233587	251820	270055	290137	310217	330298	350380
	A,L	l/h	76060	85863	95665	109633	123600	140690	157780	178275	198768	219262	239757	258707	277658	298153	318647	339140	359633
	E,N,U	l/h	76720	86578	96435	110572	124707	141852	158997	179737	200477	221217	241958	260967	279977	300717	321457	342197	362937

Inlet water temperature 40 °C

Outlet water temperature 45 °C

Average water temperature 43 °C

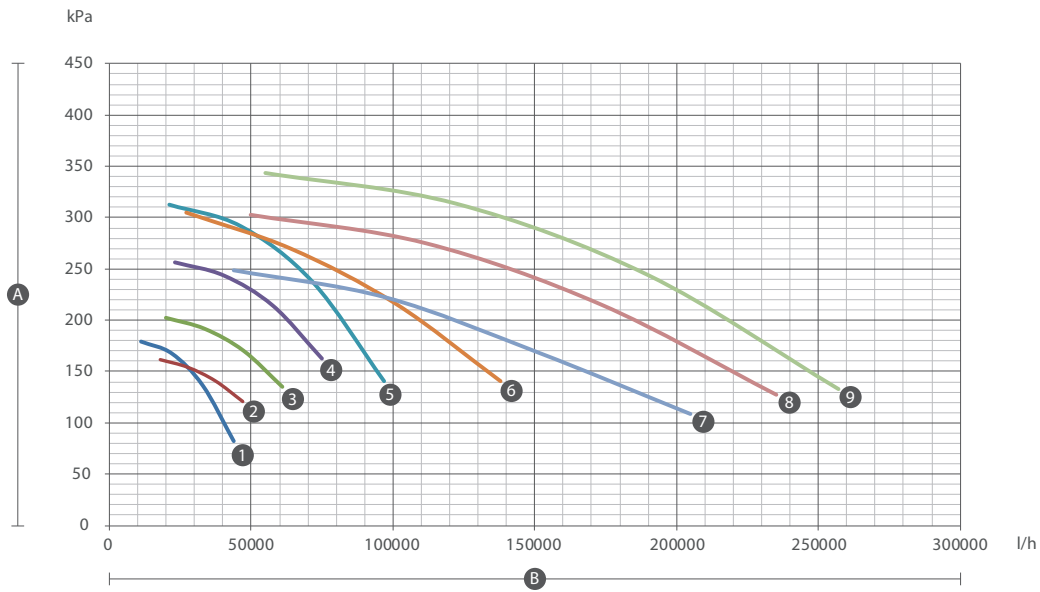
■ **ATTENTION:** For average water temperature different than 43 °C refer to the chapter "Corrective factors for average water temperatures different from nominal values"

17 PUMPS STATIC PRESSURE

PA÷PI / AA÷AI

The table shows the characteristic curves of the pumps, **and therefore they do not represent the useful static pressures of the system.**

The useful heads of the system must be calculated by subtracting the unit's pressure drops (Δp) from the useful head of the pump shown in this diagram (see chapter: 16 Pressure drops p. 54).

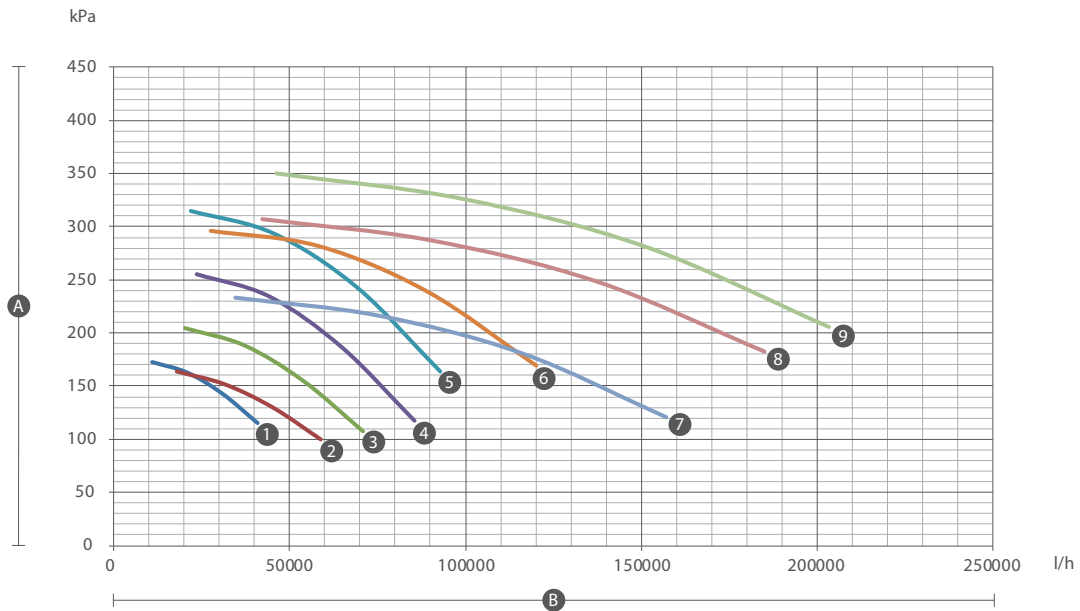


A	Pumps static pressure (kPa)	3	PC-AC	7	PG-AG
B	Water flow rate (l/h)	4	PD-AD	8	PH-AH
1	PA-AA	5	PE-AE	9	PI-AI
2	PB-AB	6	PF-AF		

DA÷DI / BA÷BI

The table shows the characteristic curves of the pumps, **and therefore they do not represent the useful static pressures of the system.**

The useful heads of the system must be calculated by subtracting the unit's pressure drops (Δp) from the useful head of the pump shown in this diagram (see chapter: 16 Pressure drops p. 54).



A	Pumps static pressure (kPa)	3	DC-BC	7	DG-BG
B	Water flow rate (l/h)	4	DD-BD	8	DH-BH
1	DA-BA	5	DE-BE	9	DI-BI
2	DB-BB	6	DF-BF		

SINGLE HYDRONIC KITS' DATA

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600		
Pumps																				
	00	no.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Nr. poles	AA,AB,AC,AD,AE,AF,AG,AH,AI,BA,BB,BC,BD,BE,BF,BG,BH,BI,DA,DB,DC,DD,DE,DF,DG,DH,DI,PA,PB,PC,PD,PE,PF,PG,PH,PI	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	AJ,BJ,DJ,PJ	no.	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	
	00	kW	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
	AA,PA	kW	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	
	AB,PB	kW	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	
	AC,PC	kW	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	
	AD,PD	kW	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	
	AE,PE	kW	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	
	AF,PF	kW	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	
	AG,PG	kW	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	
	AH,PH	kW	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	
	AI,PI	kW	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	
Maximum input power	AJ,BJ,DJ,PJ	kW	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	
	BA,DA	kW	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	BB,DB	kW	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	
	BC,DC	kW	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	
	BD,DD	kW	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	
	BE,DE	kW	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	
	BF,DF	kW	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	
	BG,DG	kW	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	
	BH,DH	kW	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	
	BI,DI	kW	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	
		00	A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		AA,BA,DA,PA	A	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56
		AB,BB,DB,PB	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33
		AC,BC,DC,PC	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62
		AD,BD,DD,PD	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50
	AE,BE,DE,PE	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	
	AF,BF,DF,PF	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	
	AG,BG,DG,PG	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	
	AH,BH,DH,PH	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	
	AI,BI,DI,PI	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	
	AJ,BJ,DJ,PJ	A	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	
	00	l/h	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Minimum water flow rate	AA,BA,DA,PA	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	
	AB,PB	l/h	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	AC,PC	l/h	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	
	AD,PD	l/h	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	
	AE,PE	l/h	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	
	AF,PF	l/h	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	
	AG,PG	l/h	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	
	AH,PH	l/h	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	
	AI,PI	l/h	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	
	AJ,BJ,DJ,PJ	l/h	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	
	BB,DB	l/h	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	
	BC,DC	l/h	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	
	BD,DD	l/h	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	
	BE,DE	l/h	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	
	BF,DF	l/h	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	
	BG,DG	l/h	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	
	BH,DH	l/h	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	
	BI,DI	l/h	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
	00	/h	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	AA,PA	/h	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000
	AB,PB	/h	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000
	AC,PC	/h	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000
	AD,PD	/h	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000
	AE,PE	/h	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000
	AF,PF	/h	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000
	AG,PG	/h	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000
	AH,PH	/h	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000
Maximum water flow rate	AI,PI	/h	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000
	AJ,BJ,DJ,PJ	/h	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)
	BA,DA	/h	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000
	BB,DB	/h	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000
	BC,DC	/h	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000
	BD,DD	/h	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500
	BE,DE	/h	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000
	BF,DF	/h	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000
	BG,DG	/h	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990
	BH,DH	/h	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000
	BI,DI	/h	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420

(1) contact the factory

18 SYSTEM WATER CONTENT

MINIMUM SYSTEM WATER CONTENT

For correct unit operation, there must be a suitable amount of water in the system. A sufficient quantity of water not only ensures machine stability, but also helps avoid a high number of hourly compressor start-ups.

To calculate it, use the formula: Unit rated cooling capacity (kW) x table value (l/kW) = Minimum system content (l).

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600	
Minimum system water content																			
Application for ambient comfort	°A,E,L,N,U	l/kW	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Process chiller application	°A,E,L,N,U	l/kW	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0

Note: the water content referred to in the tables corresponds to the amount of water effectively useful for inertial purposes; this value does not necessarily coincide with the entire system water content, and must be calculated on the basis of the system layout and operating modes.

A example is given below, but it does not cover a possible situation.

Example: for a chiller/heat pump equipped with a primary and a secondary circuit, and in which the zone pumps of the secondary circuit could (even occasionally) be turned off, only the water content of the primary circuit has value of useful water content for the counting purposes.

If you are in any doubt, please refer to the relevant technical documentation or contact the AERMEC Technical-Commercial Service.

ATTENTION It is recommended to design systems with high water content (minimum recommended values shown in tab), in order to limit:

- Number of peaks made by the compressors
- The reduction of water temperature during defrosting cycles in the winter period for heat pumps.

MAXIMUM SYSTEM WATER CONTENT

Units with the hydronic kit mounted come standard with the expansion vessel set at 1.5 bar, the pressure relief valve and the water filter mounted.

The maximum system water content depends on the capacity of the expansion vessel and on the calibration of the pressure relief valve.

Size			0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600
INTEGRATED HYDRONIC KIT: 00																			
Hydronic kit																			
Expansion vessel number	°A,E,L,N,U	no.	/																
Expansion vessel capacity	°A,E,L,N,U	l	/																
Storage tank number	°A,E,L,N,U	no.	/																
Storage tank capacity	°A,E,L,N,U	l	/																
Pressure relief valve	°A,E,L,N,U	n°/bar	/																
INTEGRATED HYDRONIC KIT: AA, AB, AC, AD, AE, AF, AG, AH, AI, BA, BB, BC, BD, BE, BF, BG, BH, BI																			
Hydronic kit																			
Expansion vessel number	°	no.	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	A,L	no.	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
	E,U	no.	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
	N	no.	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3
Expansion vessel capacity	°A,E,L,N,U	l	24																
Storage tank number	°A,E,L,N,U	no.	1																
Storage tank capacity	°	l	600	600	600	600	600	600	600	600	600	600	600	600	1200	1200	1200	1200	1200
	A,L	l	600	600	600	600	600	600	600	600	600	600	1200	1200	1200	1200	1200	1200	1200
	E,U	l	600	600	600	600	600	600	600	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
	N	l	600	600	600	600	600	600	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Pressure relief valve	°A,E,L,N,U	n°/bar	1/6 bar																
INTEGRATED HYDRONIC KIT: AJ, BJ																			
Hydronic kit																			
Expansion vessel number	°A,E,L,N,U	no.	Contact the factory																
Expansion vessel capacity	°A,E,L,N,U	l	Contact the factory																
Storage tank number	°A,E,L,N,U	no.	Contact the factory																
Storage tank capacity	°A,E,L,N,U	l	Contact the factory																
Pressure relief valve	°A,E,L,N,U	n°/bar	Contact the factory																
INTEGRATED HYDRONIC KIT: DA, DB, DC, DD, DE, DF, DG, DH, DI, PA, PB, PC, PD, PE, PF, PG, PH, PI																			
Hydronic kit																			
Expansion vessel number	°A,E,L,N,U	no.	2																
Expansion vessel capacity	°A,E,L,N,U	l	24																
Storage tank number	°A,E,L,N,U	no.	/																
Storage tank capacity	°A,E,L,N,U	l	/																
Pressure relief valve	°A,E,L,N,U	n°/bar	1/6 bar																
INTEGRATED HYDRONIC KIT: DJ, PJ																			
Hydronic kit																			
Expansion vessel number	°A,E,L,N,U	no.	Contact the factory																
Expansion vessel capacity	°A,E,L,N,U	l	Contact the factory																
Storage tank number	°A,E,L,N,U	no.	/																
Storage tank capacity	°A,E,L,N,U	l	/																
Pressure relief valve	°A,E,L,N,U	n°/bar	Contact the factory																

The table gives an example of the maximum water content calculated at the indicated operating conditions and only to protect the unit. If the volume of water in the system is higher, add another expansion vessel of the correct size.

System water temperature max/min	°C			40/4		
Hydraulic height	M	30	25	20	15	≤12,25
Expansion vessel pre-load	bar	3,2	2,8	2,3	1,8	1,5
Water content maximum	l	2174	2646	3118	3590	3852
System water temperature max/min	°C			60/4		
Expansion vessel pre-load	bar	3,2	2,8	2,3	1,8	1,5
Water content maximum	l	978	1190	1404	1616	1732

The data in the table refer to units with a 24 l expansion vessel.

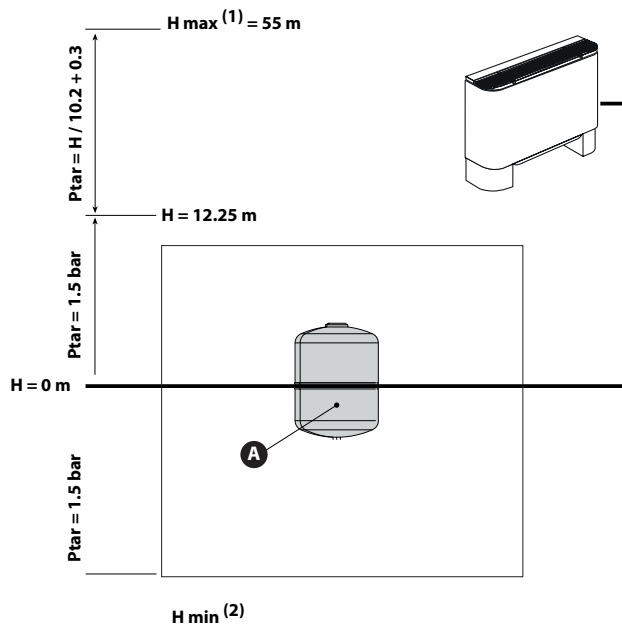
EXPANSION VESSEL SETTING

The expansion tank volume is 24l. The standard value of the expansion tank pre-charge pressure is 1.5 bar, but this can be calibrated up to a maximum of 6 bar.

The expansion tank pressure setting has to be adjusted based on the difference in height (H) of the installation (see figure) according to the formula: $p \text{ (rating) [bar]} = H \text{ [m]} / 10.2 + 0.3$.

For example, if the difference in height H is 20 m then the value of the expansion tank pressure setting is 2.3 bar.

If the calculated pressure setting value is less than 1.5 bar (when $H < 12.25$), maintain the standard pressure setting.



Key

- A Expansion vessel
- 1 Check that highest utility is not higher than 55 metres
- 2 Ensure that lowest utility can withstand global pressure in that position

19 CORRECTION FACTORS

CORRECTIVE FACTORS FOR AVERAGE WATER TEMPERATURES DIFFERENT FROM NOMINAL VALUES

The pressure drops are calculated with an average water temperature of 10 °C (Cooling mode), 43 °C (Heating or recovery mode)

		System side heat exchanger														
		Cooling mode							Heating mode or recovery							
Average water temperatures	°C	5	10	15	20	30	40	50	23	28	33	38	43	48	53	58
Correction factor		1,02	1,00	0,98	0,97	0,95	0,93	0,91	1,04	1,03	1,02	1,01	1,00	0,99	0,98	0,97

FOULING: DEPOSIT CORRECTIVE FACTORS $[K \cdot M^2]/[W]$

	0,0	0,00005	0,0001	0,0002
Corrective factor of cooling capacity	1,0	1	0,98	0,94
Corrective factor of input power	1,0	1	0,98	0,95

20 GLYCOL

ETHYLENE GLYCOL

Cooling mode

CORRECTION FACTOR WITH ETHYLENE GLYCOL - COOLING MODE											
Freezing point	°C	0	-3,63	-6,10	-8,93	-12,11	-15,74	-19,94	-24,79	-30,44	-37,10
Percent ethylene glycol	%	0	10	15	20	25	30	35	40	45	50
Q _{wc}	-	1,000	1,033	1,040	1,049	1,060	1,072	1,086	1,102	1,120	1,141
P _c	-	1,000	0,990	0,985	0,980	0,975	0,970	0,965	0,960	0,955	0,950
P _a	-	1,000	0,996	0,994	0,992	0,990	0,988	0,986	0,984	0,982	0,980
Δp	-	1,000	1,109	1,157	1,209	1,268	1,336	1,414	1,505	1,609	1,728

Heating mode range

CORRECTION FACTOR WITH ETHYLENE GLYCOL - HEATING MODE											
Freezing Point	°C	0	-3,63	-6,10	-8,93	-12,11	-15,74	-19,94	-24,79	-30,44	-37,10
Percent ethylene glycol	%	0	10	15	20	25	30	35	40	45	50
Q _{wh}	-	1,000	1,027	1,038	1,050	1,063	1,078	1,095	1,114	1,135	1,158
P _h	-	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
P _a	-	1,000	1,002	1,003	1,004	1,005	1,007	1,008	1,010	1,012	1,015
Δp	-	1,000	1,087	1,128	1,175	1,227	1,286	1,353	1,428	1,514	1,610

PROPYLENE GLYCOL

Cooling mode

CORRECTION FACTOR WITH PROPYLENE GLYCOL - COOLING MODE											
Freezing Point	°C	0	-3,43	-5,30	-7,44	-9,98	-13,08	-16,86	-21,47	-27,04	-33,72
Percent propylene glycol	%	0	10	15	20	25	30	35	40	45	50
Q _{wc}	-	1,000	1,007	1,006	1,007	1,010	1,015	1,022	1,032	1,044	1,058
P _c	-	1,000	0,985	0,978	0,970	0,963	0,955	0,947	0,939	0,932	0,924
P _a	-	1,000	0,996	0,994	0,992	0,990	0,988	0,986	0,984	0,982	0,980
Δp	-	1,000	1,082	1,102	1,143	1,201	1,271	1,351	1,435	1,520	1,602

Heating mode range

CORRECTION FACTOR WITH PROPYLENE GLYCOL - HEATING MODE											
Freezing Point	°C	0	-3,43	-5,30	-7,44	-9,98	-13,08	-16,86	-21,47	-27,04	-33,72
Percent propylene glycol	%	0	10	15	20	25	30	35	40	45	50
Q _{wh}	-	1,000	1,008	1,014	1,021	1,030	1,042	1,055	1,071	1,090	1,112
P _h	-	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
P _a	-	1,000	1,003	1,004	1,005	1,007	1,009	1,011	1,014	1,018	1,023
Δp	-	1,000	1,050	1,077	1,111	1,153	1,202	1,258	1,321	1,390	1,467

Q_{wc} Corrective factor of flow rates (middle water temperatur 9,5°C)
 Q_{wh} Corrective factor of flow rates (middle water temperatur 42,5°C)
 P_c Corrective factor of cooling Capacity
 P_h Corrective factor of heating Capacity
 P_a Correction factor input Power
 ΔP Correction factor Pressure drop

21 SOUND DATA

Size		0800	0900	1000	1100	1200	1400	1600	1805	2006	2206	2406	2600	2800	3000	3200	3400	3600		
Sound data calculated in cooling mode (1)																				
Sound power level	°	dB(A)	87,8	87,8	87,8	87,8	90,0	90,0	90,0	92,0	92,5	93,0	94,7	94,7	95,6	95,6	95,6	96,5	96,5	
	A	dB(A)	87,8	87,8	90,0	90,0	90,0	90,0	91,5	92,0	93,7	94,2	95,6	96,5	96,5	96,5	97,2	97,2	97,2	97,2
	E	dB(A)	84,8	84,8	84,8	86,3	86,3	86,3	87,5	89,0	89,5	90,8	91,3	92,0	92,0	92,6	93,2	93,2	93,2	93,2
	L	dB(A)	82,7	82,7	84,8	84,8	84,8	85,6	86,3	87,7	88,5	89,8	90,5	91,3	91,3	92,1	92,0	92,8	92,8	92,8
	N	dB(A)	86,3	86,3	86,3	87,5	87,5	87,5	88,5	89,8	90,3	91,5	92,0	92,6	92,6	93,2	93,7	93,7	93,7	93,7
	U	dB(A)	90,0	90,0	90,0	91,5	91,5	91,5	92,7	94,2	94,7	96,0	96,5	97,2	97,2	97,8	98,4	98,4	98,4	98,4
Sound pressure level (10 m)	°	dB(A)	55,7	55,7	55,7	57,7	57,7	57,7	59,1	59,6	60,1	60,6	62,1	62,2	63,0	63,0	63,0	63,7	63,7	
	A	dB(A)	55,7	55,7	57,7	57,7	57,7	59,1	59,6	61,1	61,6	63,0	63,7	63,7	63,7	63,7	64,3	64,3	64,3	64,3
	E	dB(A)	52,5	52,5	52,5	54,0	54,0	54,0	55,0	56,3	56,8	58,0	58,5	59,1	59,1	59,6	60,0	60,0	60,0	60,0
	L	dB(A)	50,6	50,6	52,5	52,5	52,5	53,4	54,0	55,3	56,0	57,3	57,8	58,5	58,5	59,4	59,1	59,9	59,9	59,9
	N	dB(A)	54,0	54,0	54,0	55,0	55,0	55,0	55,8	57,0	57,5	58,6	59,1	59,6	59,6	60,0	60,4	60,4	60,4	60,4
	U	dB(A)	57,7	57,7	57,7	59,2	59,2	59,2	60,3	61,6	62,1	63,3	63,8	64,4	64,4	64,9	65,4	65,4	65,4	65,4
Sound pressure level (1 m)	°	dB(A)	68,7	68,7	68,7	70,2	70,2	70,2	71,3	71,6	72,1	72,6	73,8	74,0	74,5	74,5	74,5	74,9	74,9	
	A	dB(A)	68,7	68,7	70,2	70,2	70,2	71,3	71,6	72,8	73,3	74,5	74,9	74,9	74,9	75,2	75,2	75,2	75,2	
	E	dB(A)	65,0	65,0	65,0	66,2	66,2	66,2	66,8	67,8	68,3	69,2	69,7	70,0	70,0	70,3	70,5	70,5	70,5	70,5
	L	dB(A)	63,5	63,5	65,0	65,0	65,0	65,8	66,2	67,3	67,7	69,0	69,3	69,7	69,7	70,5	70,0	70,9	70,9	70,9
	N	dB(A)	66,2	66,2	66,2	66,8	66,8	66,8	67,3	68,2	68,7	69,5	70,0	70,3	70,3	70,5	70,7	70,7	70,7	70,7
	U	dB(A)	70,2	70,2	70,2	71,3	71,3	71,3	72,0	73,0	73,5	74,4	74,9	75,2	75,2	75,5	75,7	75,7	75,7	75,7
Sound power by centre octave band dB(A)																				
125 Hz	°	dB(A)	76,7	76,1	75,5	75,3	78,2	77,1	76,2	79,1	79,7	79,4	81,2	81,1	82,3	82,2	82,0	83,1	83,0	
	A	dB(A)	76,7	76,1	78,6	78,4	78,2	77,1	78,5	79,1	81,4	81,3	82,7	83,8	83,6	83,4	84,3	84,2	84,0	
	E	dB(A)	68,4	67,2	66,2	68,5	68,2	66,4	67,1	69,4	70,0	71,0	70,6	72,0	71,5	72,4	73,2	73,1	72,9	
	L	dB(A)	64,9	63,6	66,2	65,9	65,6	64,5	65,1	66,5	68,4	68,7	69,2	70,8	70,3	71,0	71,2	71,9	71,8	
	N	dB(A)	70,9	69,7	68,8	70,5	70,2	68,4	68,8	70,8	71,4	72,2	71,9	73,0	72,6	73,4	74,1	73,9	73,8	
	U	dB(A)	79,6	79,0	78,6	80,5	80,4	79,3	80,3	82,3	82,8	83,9	83,9	84,9	84,6	85,4	86,1	86,0	85,8	
250 Hz	°	dB(A)	77,2	76,7	76,2	75,9	78,3	77,4	76,7	79,3	80,0	81,6	86,2	85,8	86,7	87,4	88,6	89,1		
	A	dB(A)	77,2	76,7	78,7	78,5	78,3	77,4	78,7	79,3	81,5	81,5	82,8	87,8	86,7	87,5	88,8	89,3		
	E	dB(A)	73,9	72,9	72,1	73,4	73,0	71,8	72,5	74,5	75,3	76,1	76,2	83,9	82,3	84,0	85,4	86,0		
	L	dB(A)	71,6	70,6	72,1	71,7	71,3	70,9	71,1	72,8	74,2	74,9	75,2	83,2	81,6	83,5	84,2	85,7		
	N	dB(A)	75,5	74,5	73,8	74,8	74,4	73,2	73,6	75,4	76,2	77,0	77,0	84,5	82,9	84,6	85,9	86,5		
	U	dB(A)	79,5	79,1	78,7	80,3	80,1	79,3	80,2	82,0	82,7	83,7	83,9	88,5	87,4	88,7	89,8	90,3		
500 Hz	°	dB(A)	82,2	81,7	81,3	81,6	83,9	83,3	82,8	85,2	86,0	86,1	87,5	88,9	89,4	89,7	90,0	91,0		
	A	dB(A)	82,2	81,7	83,3	83,6	83,9	83,3	84,3	85,2	87,2	87,3	88,5	90,6	90,2	90,5	91,4	91,7		
	E	dB(A)	80,4	79,5	78,8	80,8	81,1	80,0	80,5	82,5	83,4	84,2	84,3	86,8	86,2	87,2	88,1	88,3		
	L	dB(A)	78,4	77,4	78,8	79,2	79,6	79,3	79,3	81,1	82,5	83,2	83,5	86,1	85,5	86,7	86,9	88,0		
	N	dB(A)	81,9	81,0	80,3	81,9	82,3	81,2	81,5	83,3	84,3	84,9	85,0	87,4	86,8	87,7	88,6	88,8		
	U	dB(A)	84,1	83,7	83,3	85,1	85,3	84,8	85,5	87,3	88,1	89,1	89,3	91,3	90,8	91,7	92,5	92,8		
1000 Hz	°	dB(A)	83,1	83,5	83,7	83,9	86,2	86,5	86,7	88,6	89,0	89,7	91,4	90,1	91,7	91,3	90,9	91,5		
	A	dB(A)	83,1	83,5	86,0	86,1	86,2	86,5	88,2	88,6	90,2	90,8	92,4	92,0	92,5	92,2	92,6			
	E	dB(A)	78,5	79,7	80,3	82,1	82,3	82,9	84,3	85,6	85,9	87,5	88,1	86,9	87,7	87,8	87,9			
	L	dB(A)	76,2	77,5	80,3	80,6	80,8	82,2	83,2	84,3	85,0	86,5	87,3	86,2	87,0	87,3	86,7			
	N	dB(A)	80,1	81,2	81,8	83,3	83,5	84,1	85,3	86,4	86,7	88,1	88,8	87,5	88,4	88,4	88,4			
	U	dB(A)	85,5	85,8	86,0	87,7	87,8	88,1	89,4	90,7	91,1	92,6	93,2	92,8	93,2	93,6	93,9			
2000 Hz	°	dB(A)	80,5	80,8	81,0	80,5	81,8	82,6	83,1	84,7	85,0	85,9	87,7	86,5	88,0	87,7	87,4	87,9		
	A	dB(A)	80,5	80,8	82,8	82,3	81,8	82,6	84,4	84,7	86,1	86,9	88,6	88,2	88,7	88,4	88,8			
	E	dB(A)	78,9	79,0	79,1	79,8	79,1	79,8	81,2	82,5	82,8	84,4	85,0	84,3	84,9	85,1	85,3			
	L	dB(A)	76,9	77,0	79,1	78,4	77,6	79,2	80,1	81,2	81,8	83,5	84,2	83,6	84,2	84,7	84,1			
	N	dB(A)	80,3	80,4	80,5	80,9	80,2	80,9	82,2	83,3	83,6	85,0	85,7	84,9	85,5	85,7				
	U	dB(A)	82,2	82,5	82,8	83,6	83,2	84,0	85,4	86,6	86,9	88,5	89,3	88,8	89,3	89,6				
4000 Hz	°	dB(A)	72,6	73,6	74,1	73,8	75,4	75,4	75,3	77,3	78,0	78,4	80,0	80,9	81,5	81,7	82,0			
	A	dB(A)	72,6	73,6	75,9	75,7	75,4	75,4	76,7	77,3	79,0	79,5	80,9	82,5	82,2	82,5				
	E	dB(A)	70,5	71,6	72,1	73,1	72,7	72,3	73,3	74,9	75,6	76,7	77,1	78,8	78,5	79,3				
	L	dB(A)	68,4	69,5	72,1	71,7	71,2	71,7	72,2	73,7	74,6	75,8	76,3	78,2	77,8	78,9				
	N	dB(A)	71,9	73,0	73,6	74,2	73,8	73,5	74,3	75,7	76,4	77,4	77,8	79,4	79,1	79,9				
	U	dB(A)	74,6	75,4	75,9	77,0	76,7	77,8	79,3	79,9	81,1	81,6	83,1	82,9	83,6					
8000 Hz	°	dB(A)	61,7	64,3	65,6	64,7	65,7	65,0	64,5	66,9	67,8	67,8	69,2	71,5	71,6	72,2	72,6	73,7		
	A	dB(A)	61,7	64,3	67,3	66,5	65,7	65,0	66,0	66,9	68,9	69,0	70,1	73,0	72,4	72,9	73,9			
	E	dB(A)	58,1	62,3	63,7	64,0	62,8	61,6	62,0	64,0	65,1	65,7	65,8	69,3	68,5	69,7	70,7			
	L	dB(A)	55,9	60,3	63,7	62,6	61,4	60,9	60,8	62,8	64,1	64,8	65,0	68,7	67,8	69,2	69,6			
	N	dB(A)	59,7	63,7	65,1	65,1	63,9	62,7	63,0	64,8	65,9	66,4	66,5	69,9	69,1	70,2				
	U	dB(A)	64,0	66,1	67,3	67,8	67,1	66,4	67,2	69,0	69,8	70,7	71,0	73,7	73,0	74,1				

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

Data 14511:2018

System water temperature 12/7 °C (in/out)

Outside air temperature 35 °C

Standard fans

Note

For operating conditions different to those declared refer to the selection program Magellano, available on www.aermec.com



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