

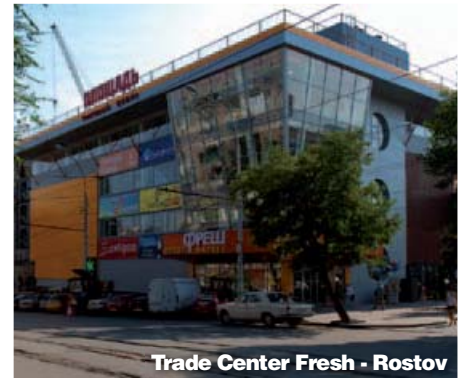
>>> INDUSTRIAL AIR-CONDITIONING <<<



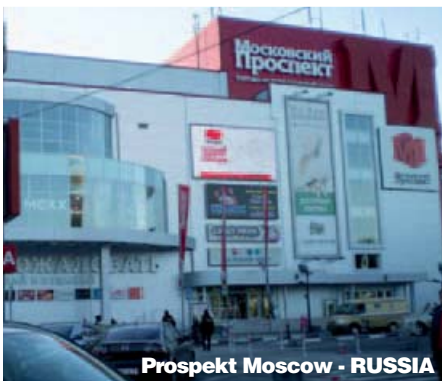
Armada Mall - Moscow



Felizina - RUSSIA



Trade Center Fresh - Rostov



Prospekt Moscow - RUSSIA



Motor Show "KIA Motors" - Moscow



"SBERBANK" - Moscow



Bank "URALSIB" - Moscow



"KUBA" Commercial Center - Chelyabinsk



Centre of the positron-issue tomography - Chelyabinsk



"LUKOIL" the educational training center - Astrakhan



Sandwiches-panel Factory - Shahty



Sandwiches-panel Factory - Shahty

> Ferrol's Turkey references

TURKEY - TÜRKÇE

> TURCHIA

Turkmenistan Projeleri - Turkmenistan,

RHV + RGA + RLA + RHA + FAN COIL + RFA

Aksoy plaza - Izmir,

RLA + TCX

Ticaret Odasi - Kocaeli,

RGA

EAGLE Burgmann - Kocaeli,

RXA + RMA

BS Press - Izmit,

RHV + TOP FAN

Tekirdag Trade Center - Tekirdağ,

FCS + TCX

Tekirdag Accounting center - Tekirdağ,

RMA + FCS

Işviçre Hospital - Istanbul,

RGA + TOP FAN

Lady Diana Hotel - Istanbul,

RHA + TOP FAN + UT REC DP F

Aslan Hotel - Küthya

RGA + AHU

Panorama Otelcilik - Kayseri

RHA

Eyüpoğlu Hotel - Istanbul,

RGA

Lidersan - Gaziantep,

RFA

Cemdag Plastik - Izmir,

RHA

Plasko Plastik - Tekirda

RLA + RGA + TCX

Yildiz Plastik - Istanbul,

RGA

Cemdağ Aydınlatma Plastik - Izmir,

RHA

Özbek Plastik - Istanbul,

RGA

Önder Plastik - Gebze

RXA + RGA

AUDI Showroom - Gaziantep,

RGA + FAN COIL

Mitsubishi Servis & Showroom - Istanbul,

RGA

Namlıoğlu Restaurant - Istanbul,

RGA

Sultançiftliği Aışveriş Merkezi - Istanbul,

RGA + RHA

Izmit Skoda Plaza - Kocaeli,

RGA + FAN COIL

Mitsubishi Servis & Showroom - Istanbul,

RGA

Van Hastanesi - Van,

RGA

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RHA + TOP FAN

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RGA

Ege Üniversitesi Ziraat Fakül

RMA

Izmit Ticaret Odasi - Izmit,

RHA

Metal Dizayn Tesisleri - Istanbul,

RLA

Izmit Karşıyaka Kültür Merkezi - Kocaeli,

RHA

Uğur Teneke Tesisleri Aydınlat - Kocaeli,

RHA + RLA + RMA

>>> INDUSTRIAL AIR-CONDITIONING <<<



Projeleri (Türkmenistan)



Projeleri (Türkmenistan)



Lady Diana Hotel



Plasko Plastik

> Ferrolì's Poland references

INDUSTRIES / PLANT

HOTELE - RESTAURACJE / HOTELS - CATERING

SCHOOLS / SZKOLY

SZPITAL CENTRUM MEDYCZNE MEDYCZNE / HOSPITAL AUTHORITIES

> INDUSTRIES

**Budynki Biurowe BLACHOTRAPEZ
Warszawa - Sękocin**

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Budynek biurowy ARCUS Gliwice

CMA + FCP and TOP FAN

**Budynki Biurowe METALKOP Młyny k
Buska Zdroju**

CMA + FCS

Budynki Biurowe POLYNT - Niepołomice

RMA + TOP FAN

Budynki biurowe STACO - Niepołomice

RMA + TOP FAN

Budynek Biurowy ASSECO - Rzeszów

RGA + FCP

**Linia technologiczna w Zakładach Produkcji
Grzejników Stalowych BRUGMANN
Legnicy**

RGA

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CMA + FCP + UT-REC

Budynki Biurowe GTM - Mysłowice

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Wylęgarnia Drobiu - Sierpc

CMA

Budynek Biurowy SOLAR-BIN - Rzeszów

RGA + TOP FAN + TCX

FIAT AUTO POLAND Bielsko - Biała

RLA

Drukarnia CGS - Poznań

RGA + roof-top RFA + TOP FAN + FCS + UT-REC + FCS

> HOTELE RESTAURACJE

Hotel ADAM - Szczyrk

FCS

**Restauracja z hotelem Karczma
Górska” - Wałbrzych**

CMA + TOP FAN

Dworek Kościuszko - Krakow

RMA + TOP FAN

> SZKOLY

**Sala Sportowa przy Szkole Podstawowej
w Porębie k - Zawiercia**

rooftop RFA

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Zawodowa w - Krośno**

CMA + FCS

**Magistrat Urzędu Miasta i Gminy
Niepołomice**

RGA + RVL + TOP FAN + SOFFIO

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Szpital Wojewódzki Bielsko - Biała

RLA

**Wojewódzka Stacja Weterynaryjna w
Legnicy**

RGA + TOP FAN

Medical Center SILESIA-MED. - Katowice

RGA + TOP FAN + FCS + UT-REC

Medical Center MEDICOR - Wrocław

RMA + FCP

>>> INDUSTRIAL AIR-CONDITIONING <<<



Drukarnia CGS Poznań



Biura (uffici/office) Inżynierska Łódź



FIAT AUTO POLAND Bielsko (Biała)



Biura Arcus Gliwice

> Ferroli's Balkan references

SRBIJA
CROATIA
BULGARIA
BIH

> SRBIJA

Dedinje 3 objekta - Beograd

RXA + TOP FAN

Shopping center New Nork - Novi Sad

RLA + FCS + UT REC DP

> CROATIA

Mrksina - Zagreb

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RMC + TOP FAN

Dugopolje - Split

RGA + TOP FAN

AUTO CENTAR ŠKODA - Zagreb

RGA + TOP FAN

AUTO CENTAR CITREN - Zagreb

RGA + TOP FAN

MOTEL ZIR, Auto put A1

RMA + TOP FAN

Zgrada Gradske Uprave Belišće

RGA + TOP FAN

Upravna zgrada Miagro d.o.o. Našice

RGA + TOP FAN

Vinkovci, regionalni prodajni centri - Bosso

RGA + TOP FAN

> BULGARIA

Kamchia resort

RHA + RLA + TOP FAN

> BIH

FC - franšizni centar - Vitez

RGA + TOP FAN + FCS

FIS - Vitez

RGA + TOP FAN

Pivovara Sarajevo - Sarajevo

RGA

Hotel Central - Vitez

TOP FAN + FCS

Hotel Tilija - Gračanica

TOP FAN + FCS

Airport Dubrave - Tuzla

WATER CHILLERS

Jafa-Jase factory - Špionica

WATER CHILLERS + FAN COIL

Interex Shopping centers CDEB Sarajevo

WATER CHILLERS + FAN COIL + MERCURY

International building Kendi - Tuzla

TOP FAN

Trocal - Tuzla

TOP FAN

Hotel SAX - Vlačić

TOP FAN

MBI Development Malaysia Central Sarajevo

WATER CHILLERS + FAN COIL

Edo Slad ETNA - Gračanica

WATER CHILLERS + FAN COIL

BINGO d.o.o - Tuzla

WATER CHILLERS + FAN COIL + MERCURY

BINGO d.o.o - Brčko

WATER CHILLERS + FAN COIL + MERCURY

BINGO d.o.o - Gradačnica

WATER CHILLERS + FAN COIL + MERCURY

OMEGA d.o.o. - Tuzla

RLA + FAN COIL + MERCURY

Kopex Sarajlić - Sarajevo

WATER CHILLERS + FAN COIL

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> Ferroli's Albania references

> ALBANIA

Drejtoria e policise - Tirane

RHA + TOP FAN

TEC - VLORE

RGA + FTP + TOP FAN

Center shqipetare

RLA + TOP FAN + TCX

Dieoqeza e rrethit mirdite

RGA + TOP FAN

American hospital - Tirana

RGA + TOP FAN + TCX + FTP

Drejtoria e policise - Durres

RGA + TOP FAN

Karburant - Alpet

RGA + TOP FAN

Bkt (banka kombetare tregetare) - Korçe

TOP FAN

Hotel Tomorri - Berat

RGA + TOP FAN

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>>> INDUSTRIAL AIR-CONDITIONING <<<



DREJTORIA E POLICISE



TEC - VLORE



Center Shqiptare

> Ferrolì's Syria references

> SYRIA

Ghandour Factory - Damascus

RHV

Matouk's office - Damascus

RGA ST + TOP FAN

Semiramis Hotel - Palmira

AHU + TOP FAN

Massa Plaza (Malki Mall) - Damascus

FCS

Kalde Factory - Damascus

RLA

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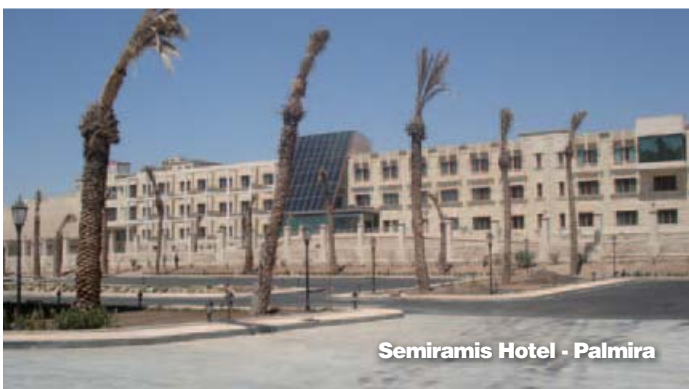
Kalde Factory - Damascus



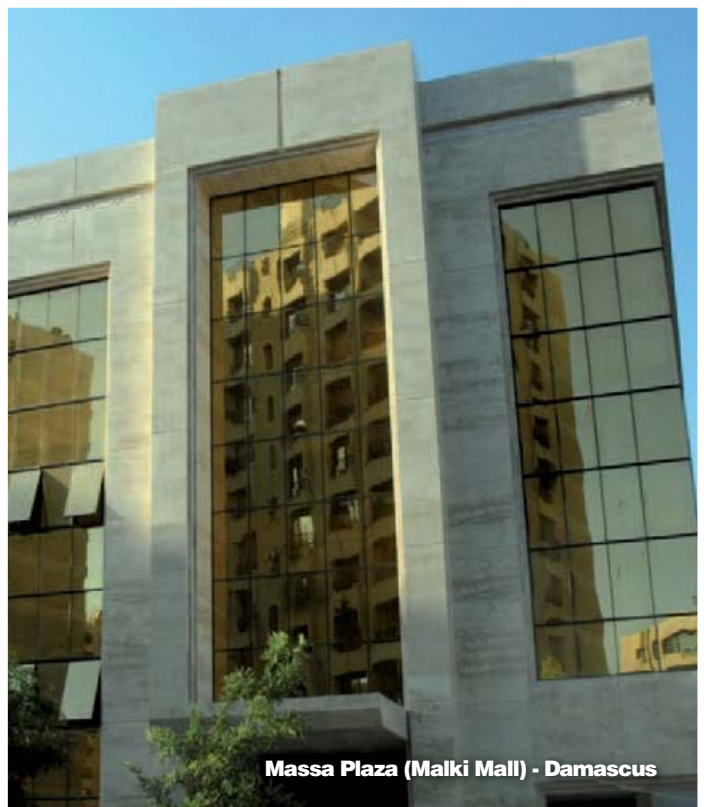
Ghandour Factory - Damascus



Matouk's Office - Damascus.



Semiramis Hotel - Palmira



Massa Plaza (Malki Mall) - Damascus

> Ferrol's Syria references

> SYRIA

Alkalamoon University Hospital - Deir Atiah

RLA + AIR Handling Units

Julia Dumna Palace - Aleppo

RGA + TOP FAN

Gandar Power Plant - Gandar

RGA + TOP FAN

Nestle Factory - Damascus

TOP FAN

Iraq Ambassador Resident - Damascus

RGA + TOP FAN

Almandine Hospital - Damascus

TOP FAN

Dr. Maatouk Villa Yaafour- Damascus

RGA + TOP FAN

Residential Projects- Damascus

TOP FAN

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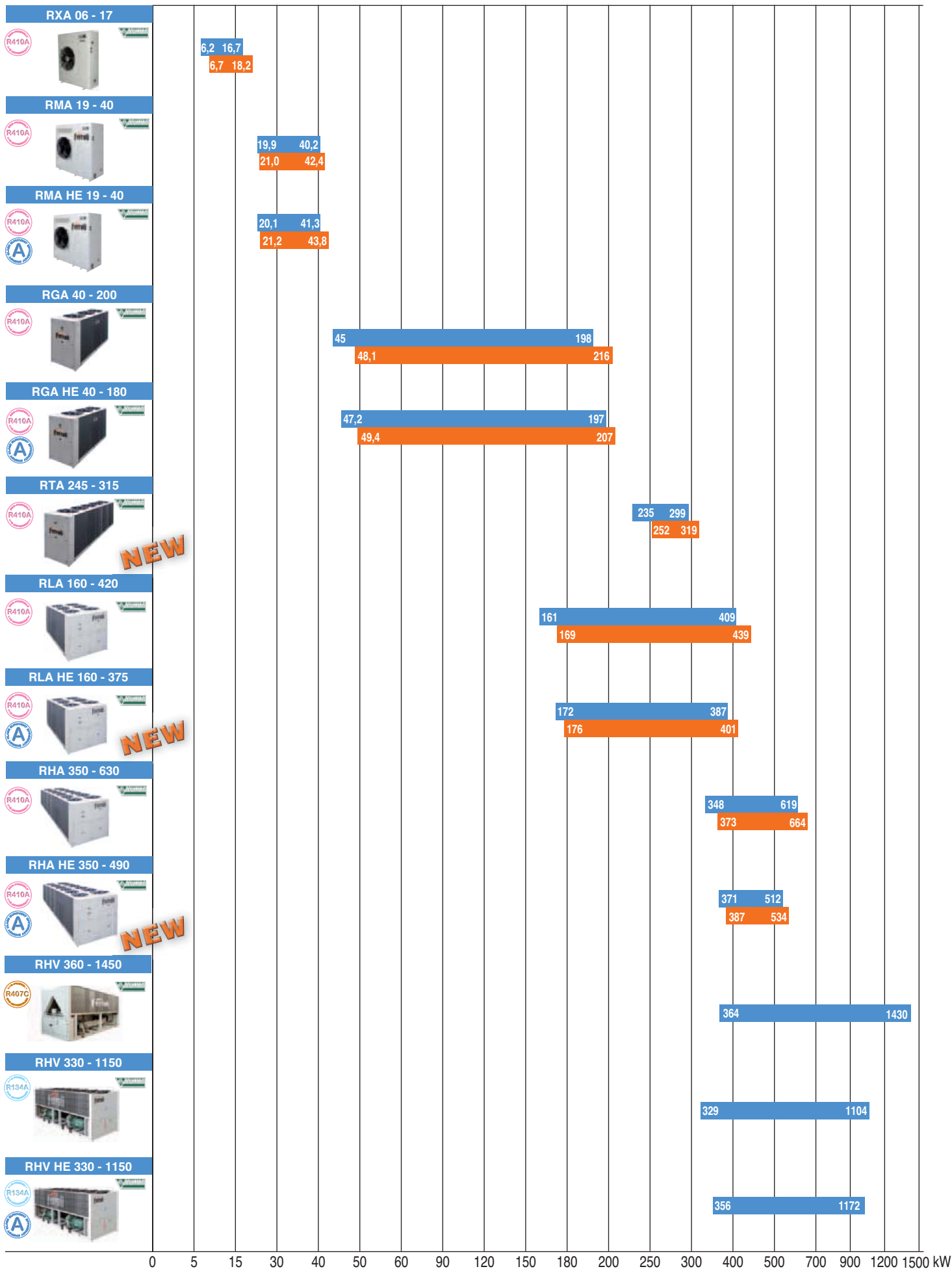
Alkalamoon University Hospital - Deir Atiah



Nestle Factory - Damascus

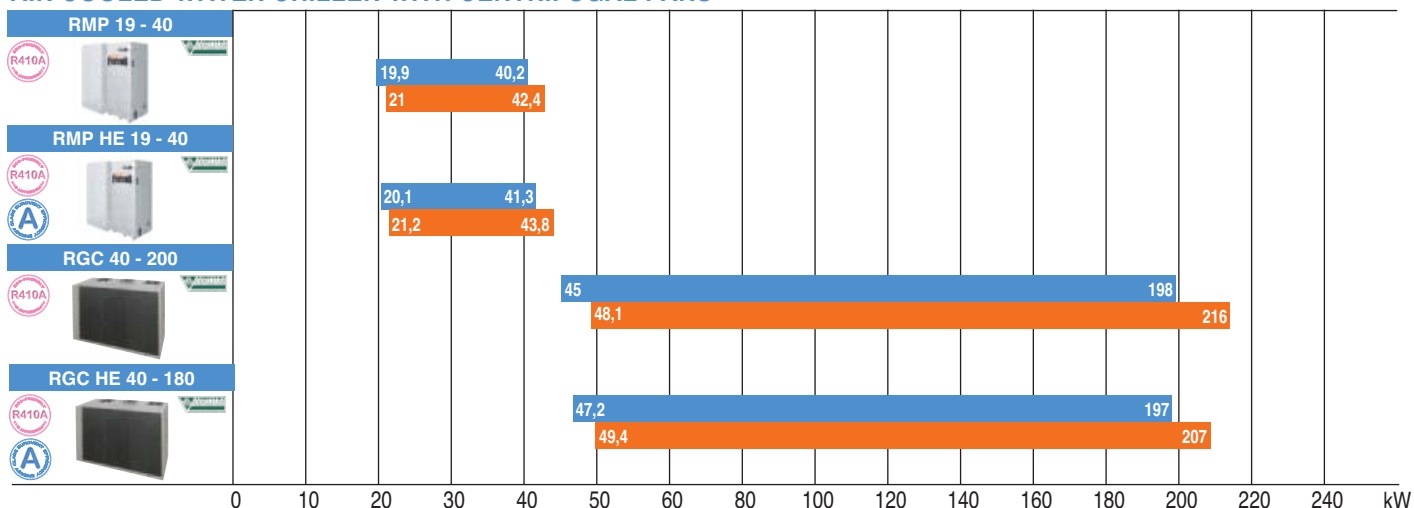
Ferroli product range

AIR COOLED WATER CHILLER WITH AXIAL FANS

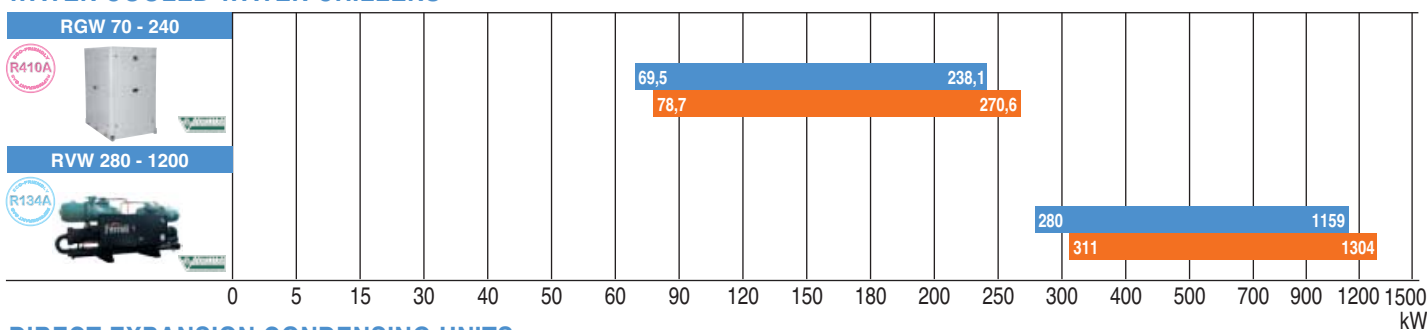


Ferroli product range

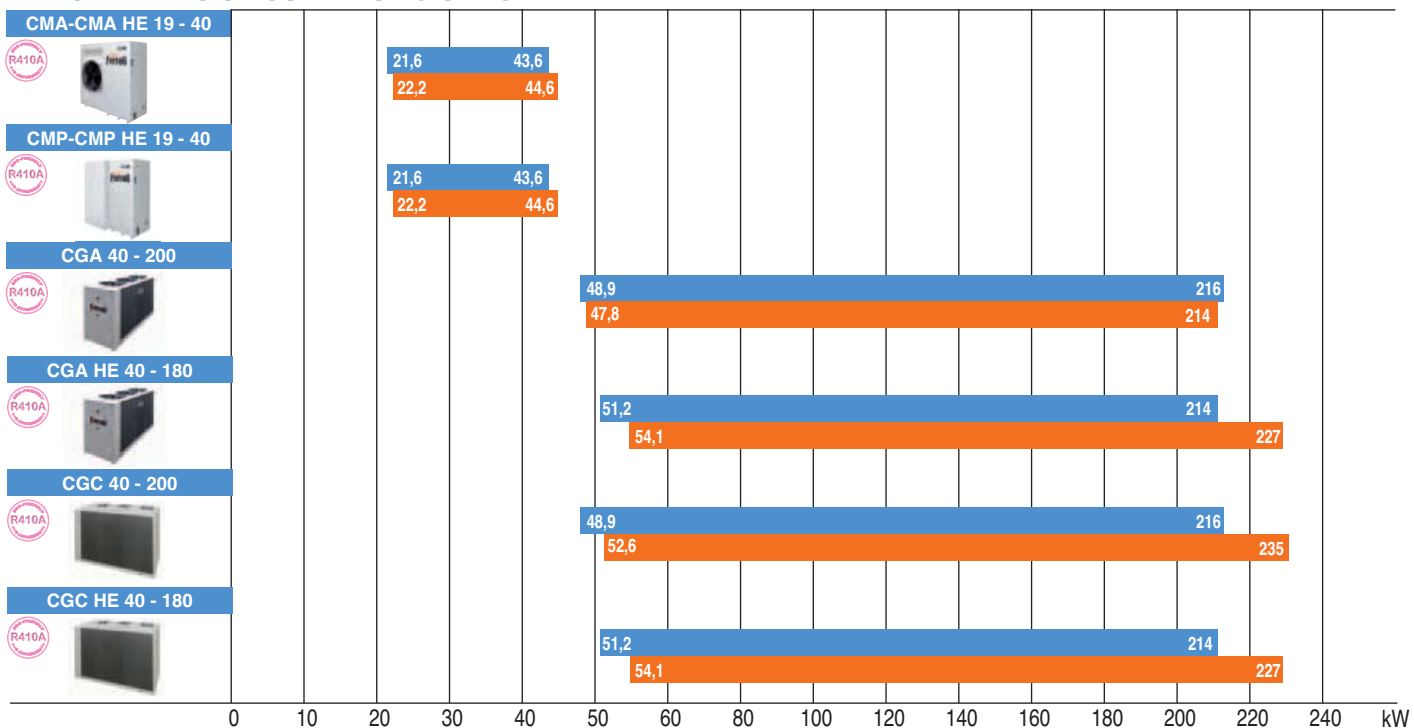
AIR COOLED WATER CHILLER WITH CENTRIFUGAL FANS



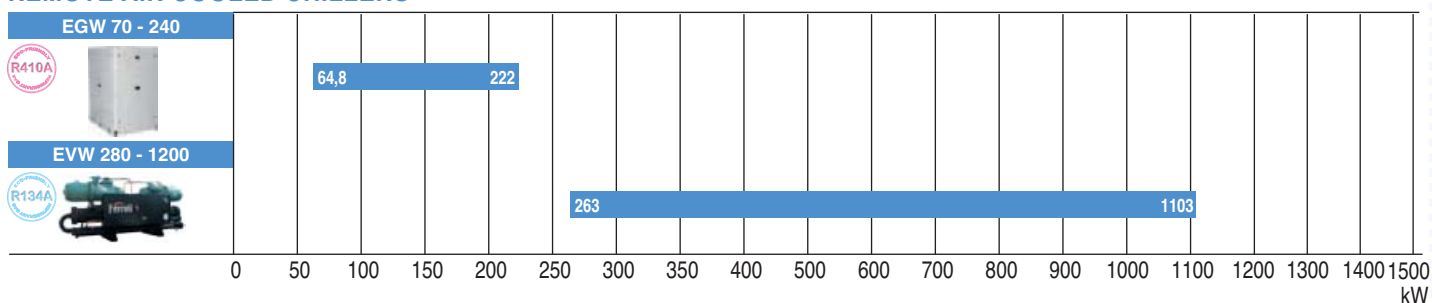
WATER COOLED WATER CHILLERS



DIRECT EXPANSION CONDENSING UNITS



REMOTE AIR COOLED CHILLERS



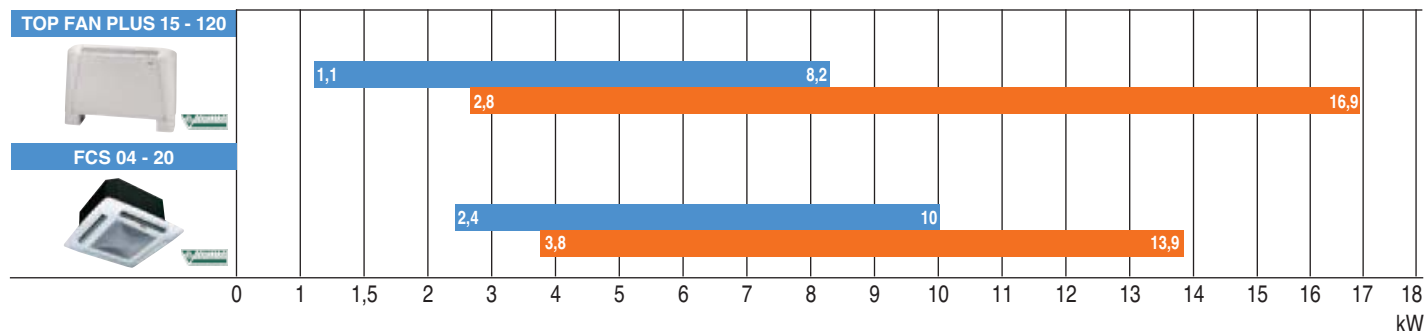
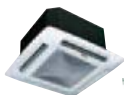
Ferroli product range

FAN COIL UNIT

TOP FAN PLUS 15 - 120



FCS 04 - 20

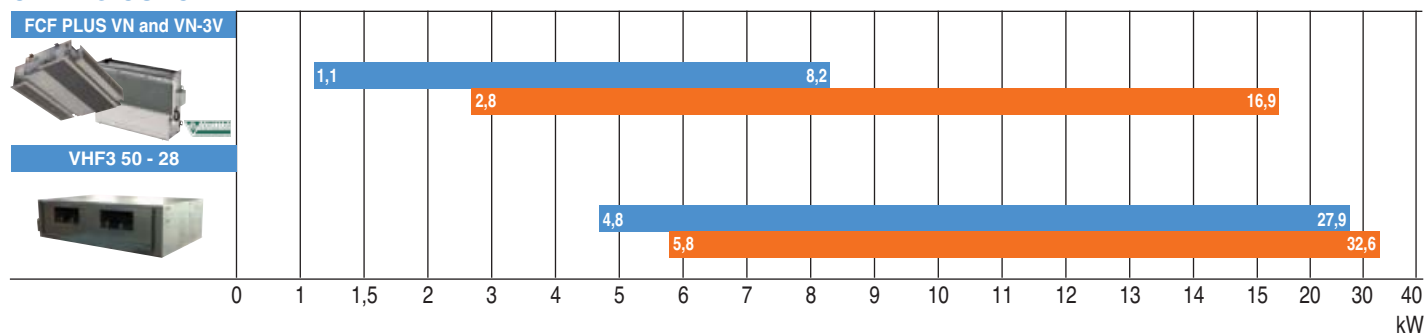


CEILING CONCEALED

FCF PLUS VN and VN-3V



VHF3 50 - 28



DUCTED FAN COIL

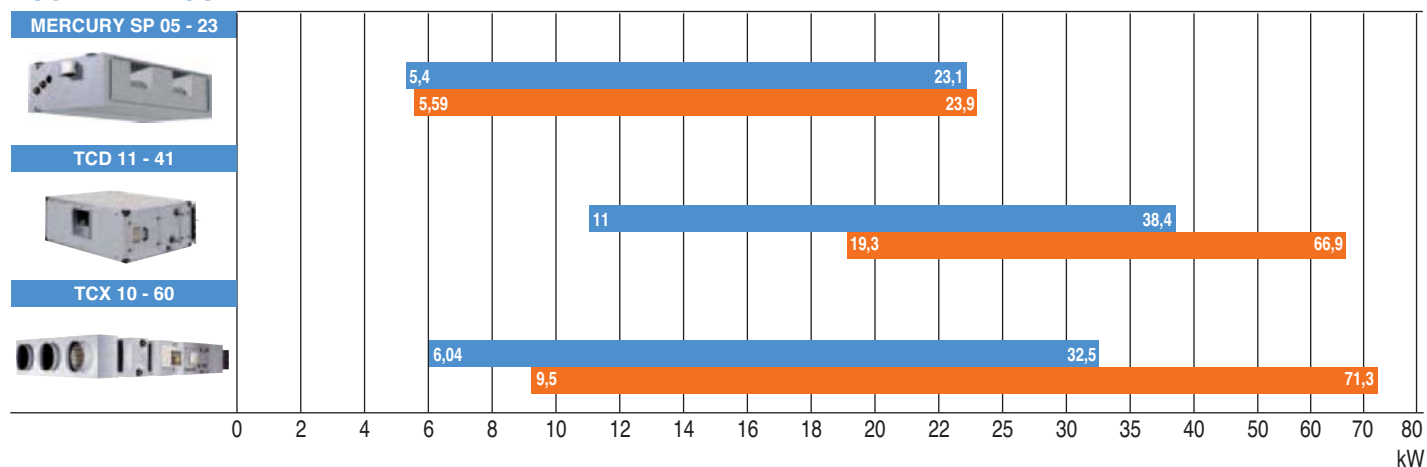
MERCURY SP 05 - 23



TCD 11 - 41

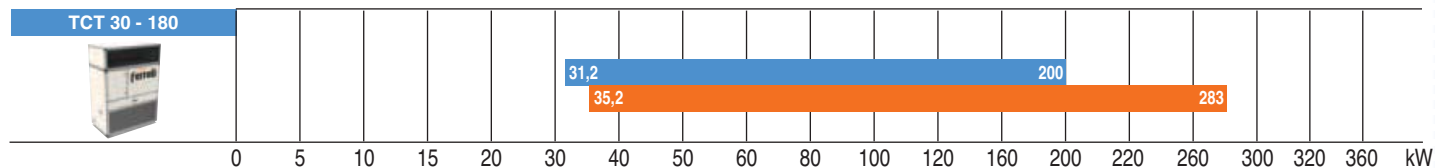


TCX 10 - 60

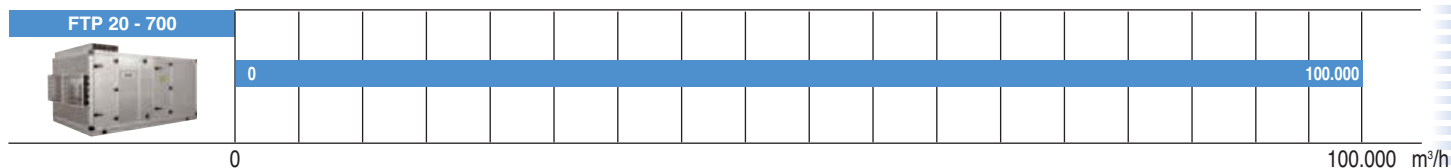


Ferroli product range

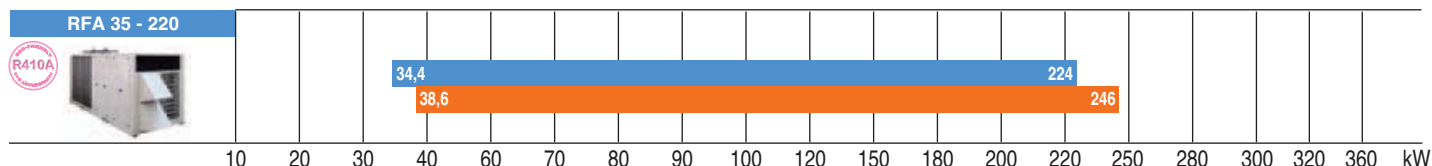
LARGE CAPACITY FAN COIL



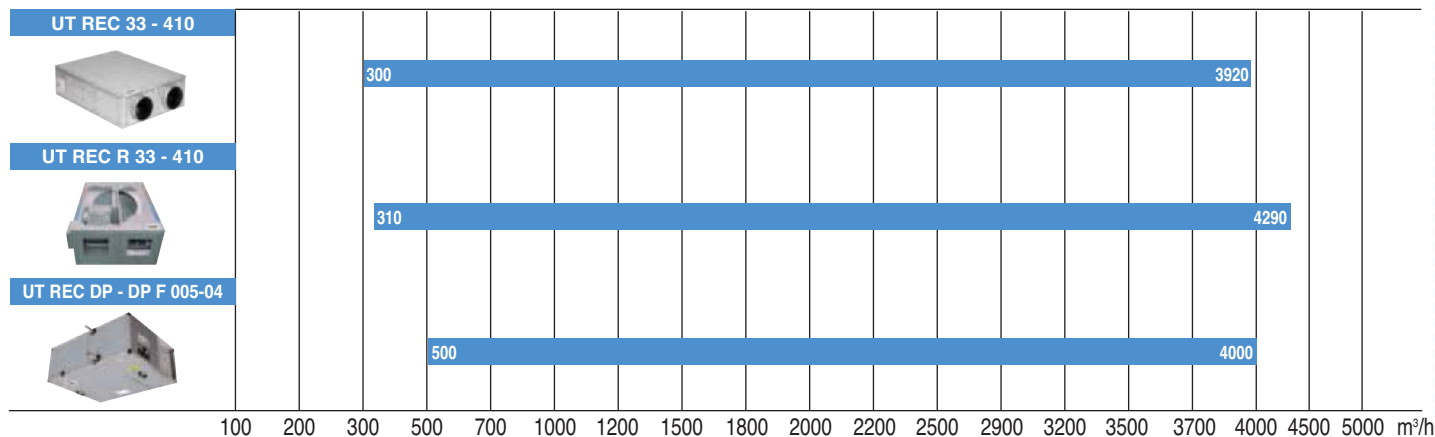
AIR HANDLING UNITS



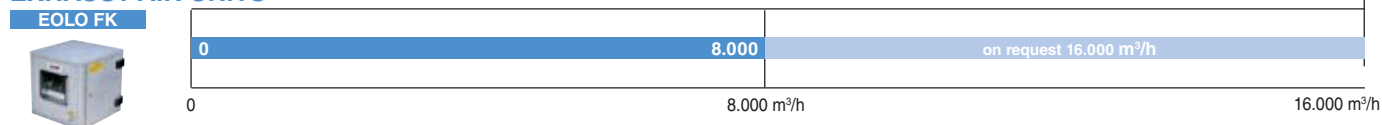
PACKAGED ROOF TOP AIR CONDITIONER



HEAT RECOVERY UNITS



EXHAUST AIR UNITS



> News 2012

CHILLERS

> RTA

AIR-WATER CHILLERS AND HEAT PUMPS
FOR OUTDOOR INSTALLATION

Unit type

- IR Chiller
- IP Heat pump
(reversible on the refrigerant side)
- BR Chiller Brine
- BP Heat pump Brine
(reversible on the refrigerant side)

Version

- VB Base version
- VD Desuperheater version
- VR Total recovery version

Acoustic setting up

- AB Base setting up
- AS Low noise setting up
- AX eXtra low noise setting up

Source temperature level

- M Medium temperature level
- A High temperature level



> RLA HE

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WWW



> RHA HE

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> Main characteristics water chillers

TECHNICAL SOLUTION
NOISE CONFIGURATION
HYDRAULIC SYSTEM ON THE UNIT
SETTINGS FOR PUMPING MODULES SAFETY



> TECHNICAL SOLUTIONS

TYPE OF INSTALLATION

- I** for installation in hydronic systems
- B** for installation in hydronic systems with Brine solution (process application)

OPERATION

- R** chiller
- P** reversible chiller
- W** water side reversible chiller

VERSIONS

Basic Version VB

cooling only IR or heat pump IP

De-superheated Version VD

heat recovery only in de-superheating phases for cooling only units **IR** or heat pump units **IP**

Total Recovery Version VR

total heat recovery where all the thermal energy extracted by the fans is recovered by a condenser sized for the type of application

> SOUND CONFIGURATION

Basic Configuration AB

Low noise Configuration AS

Reduction in the number of fan speed with compressor insulation and a housing compartment with sound-absorbing material (fig. a).

Extra Low noise Configuration AX

A further reduction in the speed number due to larger exchangers.

New-concept fans with plastic blades and lower noise, in addition new **sound-absorbing materials** for covering the compressor and housing compartment has created a considerable noise reduction during operation (fig. b).





fig. a



fig. b



fig. c

> HYDRAULIC SYSTEM ON THE UNIT

The following accessories are available to allow the unit to be configured according to the system needs:

Storage Tank

Large capacity completely insulated and with air-vent, safety valves and drain.

Pumping module

- available with single pump or with backup pump,
- available **with variable-flow pump**;
- up to three levels of useful static pressure are available to adapt to any system design need,
- with a storage tank fitted, this allows configuration of the tank on the system delivery or primary circuit only.

Pumping-storage tank module

for installation next to the unit, the module is supplied complete with tank and pump or with twin pump version.

All the pumping accessories are complete with shut-off and safety valves, air vent, drain, expansion tank, one-way valves (only in case of twin pump), filter and pressure gauge for complete installation and easy service access (fig. c).



> SETTINGS FOR PUMPING MODULES SAFETY

The research and development of advanced electronics controls has enhanced the development of regulation logics. This ensures correct operation of the pumping systems. Therefore:

Unit with twin pump

The control system provides pump rotation to balance the hours of operation.

Unit with twin pump

If one pump shuts down, the second pump starts automatically and the UNIT CONTROL signals the fault.

Protection

If the unit remains on standby for long periods, the pump is started periodically to ensure correct and continuous operation.

Anti-freeze function

With the unit in standby, the setting starts the pump if the water probe detects a temperature below a certain threshold.

NB: please refer to each series solutions.



> Main characteristics water chillers

SETTING
EUROVENT
HIGH ESEER

> SETTING

Qualified Ferroli internal personnel have designed, developed and inspected the control logics for management of the unit, to ensure continuous operation and always with a view to energy-saving.

Settings for the technical use of the product are designed for residential, commercial or industrial units; refer to each unit the specific settings.

CLIMATE CONTROL FUNCTION (SLIDING TEMPERATURE)

(this function is only available in presence of outside air probe);
in the heating mode, the Set point is adjusted according to the climatic conditions, optimising operation.

It is also available in cooling mode, after modifying the regulator parameters,

DYNAMIC DEFROST

(this function is only available in presence of outside air probe);
with harsh outside temperatures, the efficiency of the system is optimised, avoiding unnecessary defrosts.

TIME PROGRAMMING

Modifies the Set point to adapt unit operation to energy-saving.

ECONOMY MODE

Modify the Set point to move the unit operation into energy saving mode.

DOUBLE SET POINT

In cooling or heat pump mode the Set Point can be changed to a second value controlled by keyboard.

ADVANCED TEMPERATURE CONTROL (ATC)

In cooling mode, with outside temperatures above the limits, ATC prevents unit shut down by modulating the compressor steps, keeping the system active to ensure its continuous operation.

DEMAND LIMIT

Enables capacity control of the unit's maximum power absorption.

HEATING INTEGRATIVE

In the heat pump mode a heat generator (a conventional or condensing boiler) can be activated, for integration.

NOISE CONTROL

For multi-circuit Extra low noise units (AX), one of the circuits is saturated to minimise fan noise. The control system provides for a regulation logic enabling this system to be Low noise as much as possible.

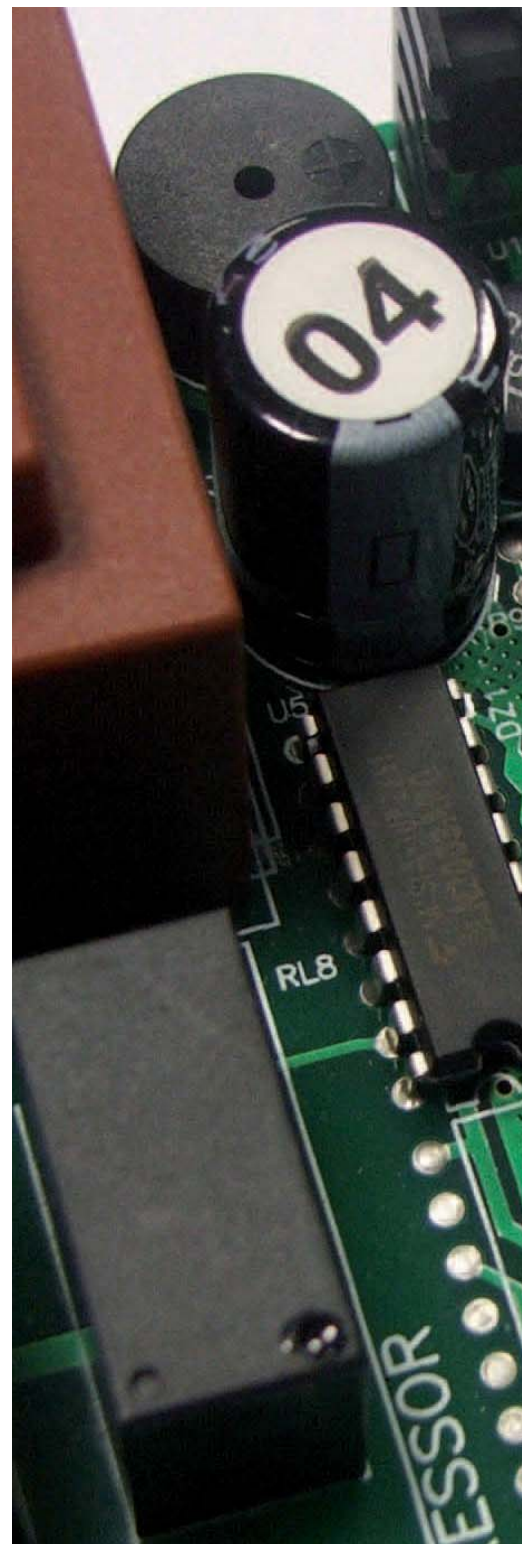
> EUROVENT

Ferroli is associated with formula
CERTIFY ALL



Products and certification rules are present on the site:

www.eurovent-certification.com





> HIGH ESEER

ESEER is calculated as follows:

$$\text{ESEER} = A \times \text{EER} 100\% + B \times \text{EER} 75\% + C \times \text{EER} 50\% + D \times \text{EER} 25\%$$

With the following weighting coefficients:

- A = 0,03 EER 100% amb. air 35°C
- B = 0,33 EER 75% amb. air 30°C
- C = 0,41 EER 50% amb. air 25°C
- D = 0,23 EER 25% amb. air 20°C

These coefficients indicate the significance and importance of the EER value according to the load and outside temperature.

Based on EUROVENT conditions, in a normal work cycle the units work at full load (35°C) for only 3% of the time.

A better capacity control of power delivered or absorbed at partial loads involves higher seasonal efficiencies.

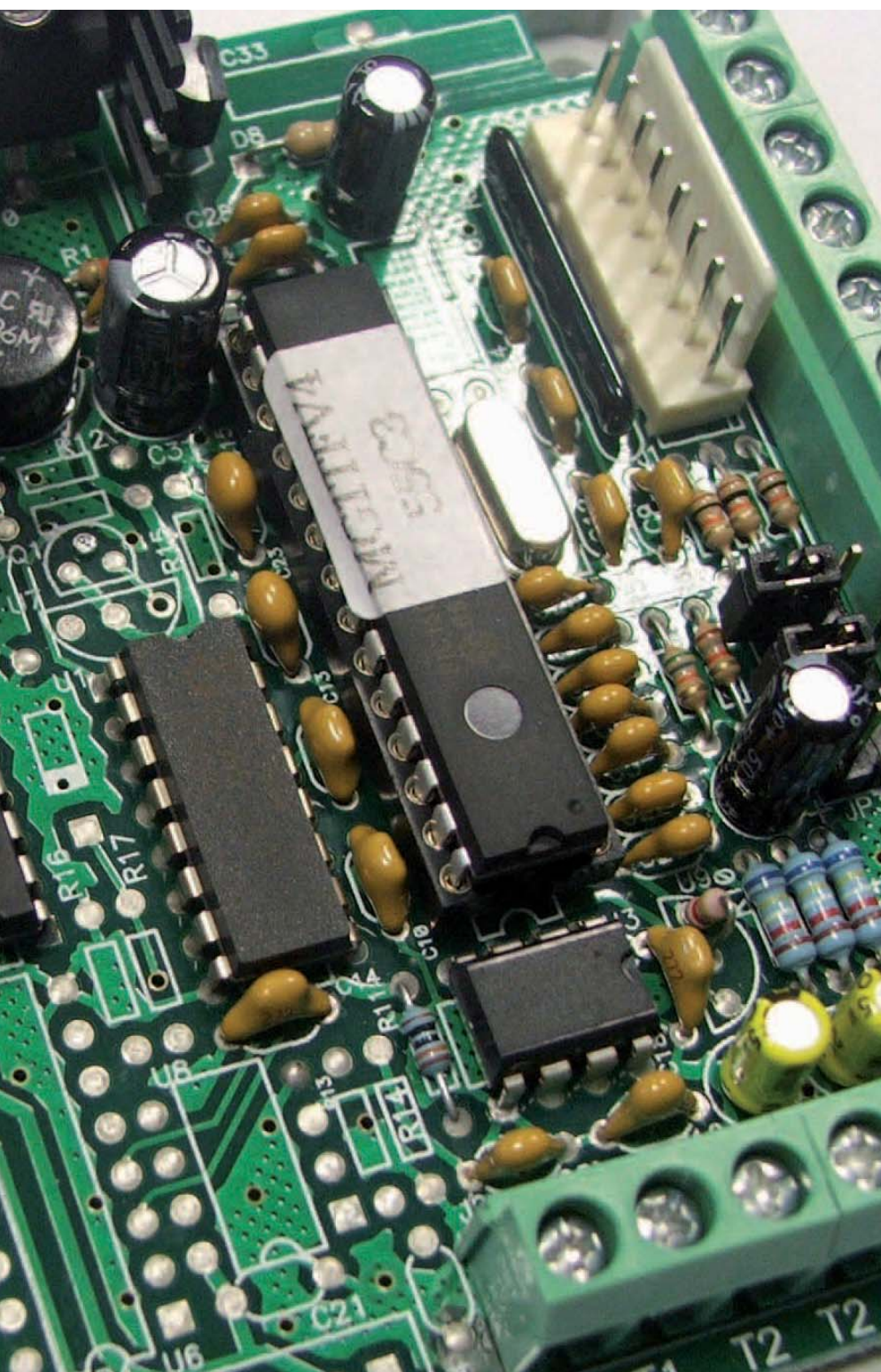
Choice of unit should also take into account the ESEER value because it reflects the overall unit operation.

FERROLI follows this philosophy with Multiscroll solutions and Twin-screw compressors.

Single-circuit Double compressor units with multi stages have higher ESEER values than similar units Dual circuit type. For screw type double compressors units, the saturation of circuits occurs in parallel.

Everything converts into high efficiency at partial loads and therefore significant ESEER values are achieved.

NB: please refer to each series-specific adjustments.



> Main characteristics water chillers

SAFETY
RELIABILITY
CAREFUL DETAILS
RESPECTING THE ENVIRONMENT
AQUASEL

> SAFETY

The units as standard are complete with:

- differential pressure switch on the plate-type exchanger,
- antifreeze heater on the plate-type exchanger,
- compressor high temperature protection,
- PED safety valve

Available as accessories:

- condensation control (standard on some units),
- water flowswitch
- voltage monitor and sequence meter

> RELIABILITY

The design components chosen are highly reliable and the suppliers are all certified according to the current quality systems.

> CAREFUL DETAILS

Particular attention to the arrangement of the main components in the design stage, careful and scheduled testing, and the important stage of final production, ensure system that are easy serviceable and guarantee a lasting high performance package.





Use of ecological refrigerant gases (ODP equal to 0) for obtaining optimum performance and **DO NOT** harm the ozone.



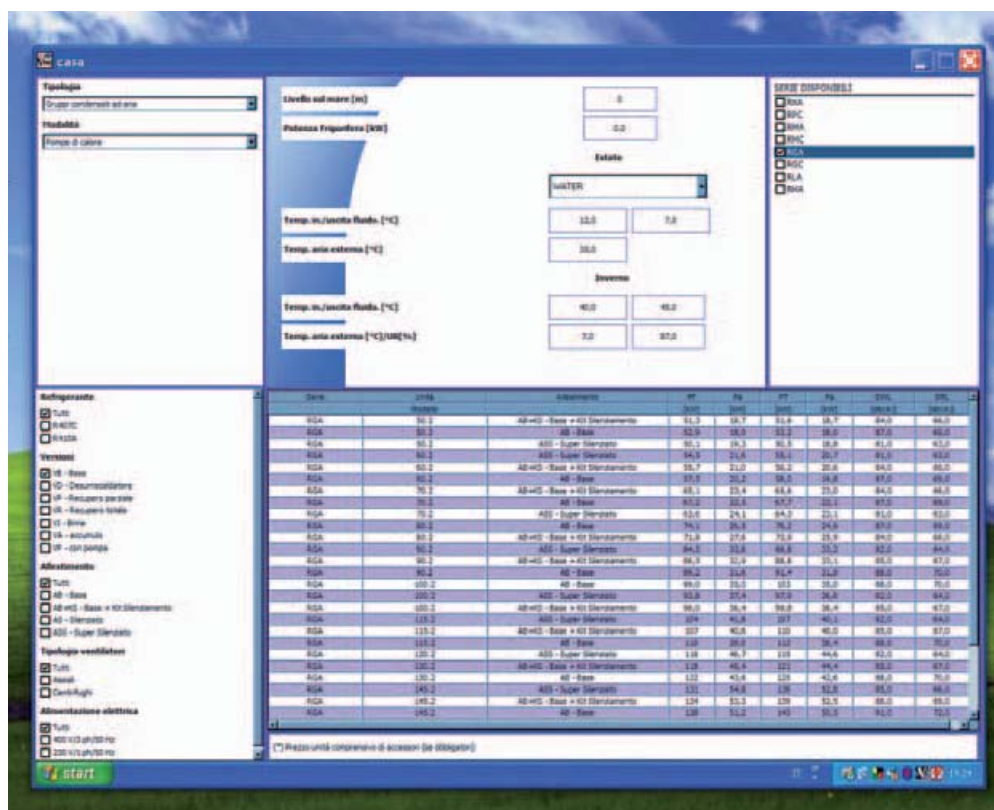
The Ferroli design staff have developed software for choosing the right unit for your system needs, calculating the performance values according to the air and water temperature, depending on the model or acoustic version.

There is also the selected choice of accessories the printing of the description of the unit's specifications and a complete technical data sheet.

At the end of selection the customer can have a list price or net price with discounts of all the selected units.

A sales tool much appreciated by professionals for its easy use and prompt answers.

For more information contact Ferroli Air conditioning Industrial department



> Main characteristics water chillers

CHILLERS SEQUENCER

Capacity control of system become a major point of discussion both in the design stage and that of production.

The Ferroli design team, has developed a logic control that allows you to manage and monitor the operation of more chiller to serve a single plant.

> CHILLERS SEQUENCER

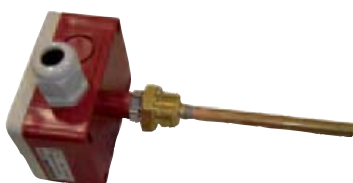
The controller, suitable for internal installation within a heating plant, as standard feature such as an electrical panel, (housed in a sheet metal enclosure) and complete with a main disconnecting switch, LEDs for displaying alarms and operation status (ON/OFF), manual summer/winter selector (provided for units with heat pump) and manual ON/OFF selector plus a large display for unit programming. A terminal block is fitted on a metal plate inside the panel to facilitate unit connections. The system comes standard complete with a telescopic-type water probe (picture below), IP65 protection rating, to facilitate reading the delivery temperature of the water inside the header or the hydraulic separator.

NTC-type sensitive element.

The sensor element is of the NTC.

System programming is designed to be clear and easy. Various menus can be accessed by buttons on the display for setting and programming management of the control system and units. Through the LCD display the following is possible:

- programming operation times,
- selecting the date and time,
- programming a holiday period,
- monitoring and modification of temperatures,
- monitoring and modification of control outputs,
- monitoring and modification of set-point,
- monitoring system status.



■ MANAGEMENT OF SEVERAL UNITS WITH PRIMARY PUMP

For correct system management the 3GFC and 6GFC controllers can control one pump (only 3GFC) or one twin pump (only 6GFC) serving the primary circuit if the units do not have them, as indicated in the example in figure A.

In this case the units are type **RMA VB AB OM5** configured with just the pipe kit and connected in parallel. They are fed by a single pump. The choice of delivery pump is to the installer or designer. Pump electrical protection and power supply installation are the installer's responsibility.

■ MANAGEMENT OF UNITS WITH DOUBLE PRIMARY PUMP

Fig. A-1 implies the use of a 6GFC type panel enabling management of a twin pump serving the primary circuit.

NB: All the pumping accessories are complete with shut-off and safety valves, air vent, drain, expansion tank, one-way valves (only in case of twin pump), filter and pressure gauge for complete installation and easy service access.

All these components are the installer's responsibility.

The pumps electrical protection and power supply installation are the installer's responsibility.

Suggested connection diagram

Fig. A

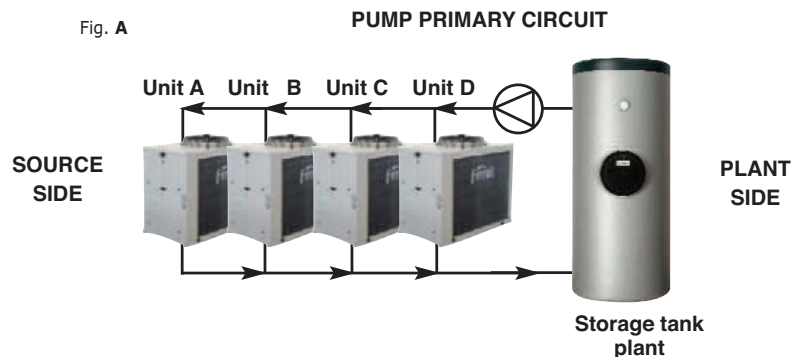
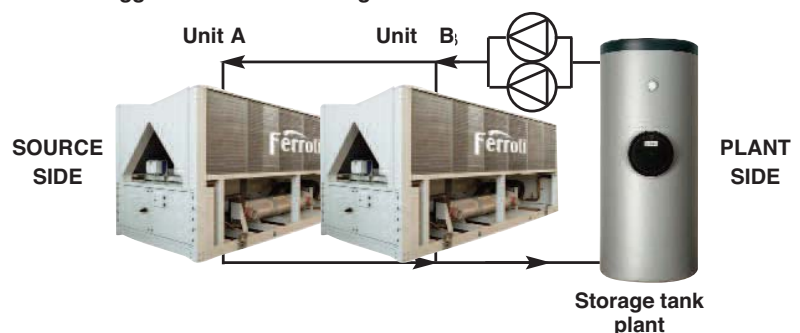


Fig. A-1

Suggested connection diagram



Connecting several units in cascade involves the calculation of a pumping system that correctly feeds each exchanger with the correct water flow-rate value given in the technical data of the units.

Qualified Ferroli personnel are available upon request to provide the delivery and pressure loss data of the units.



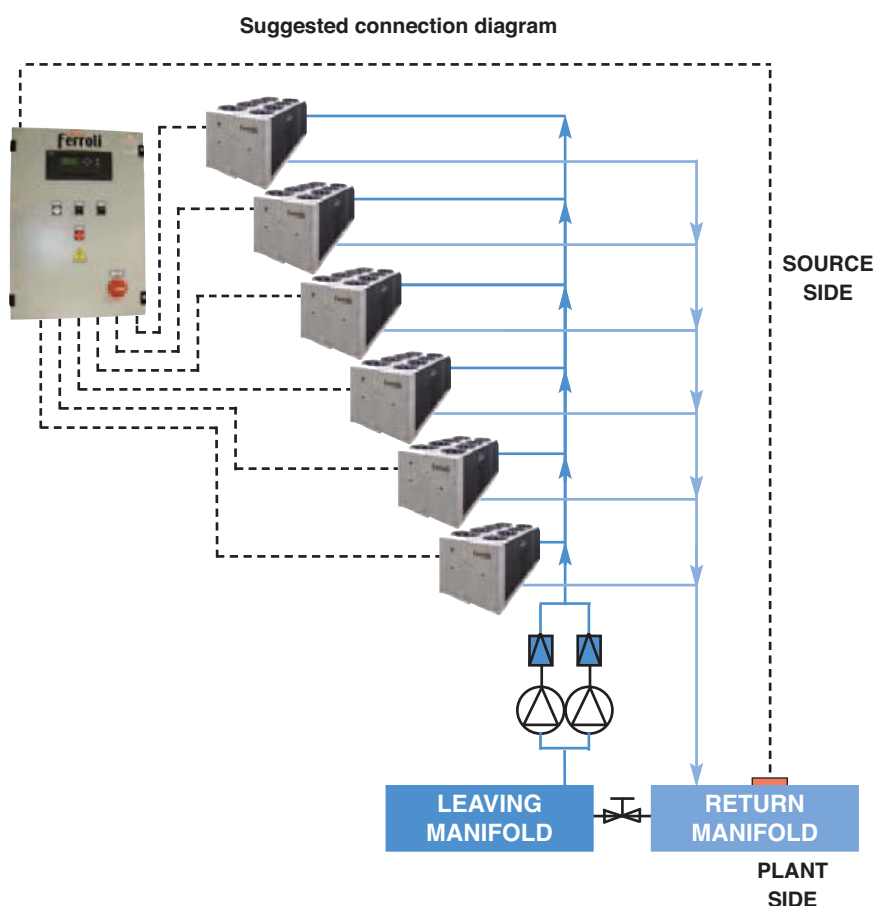
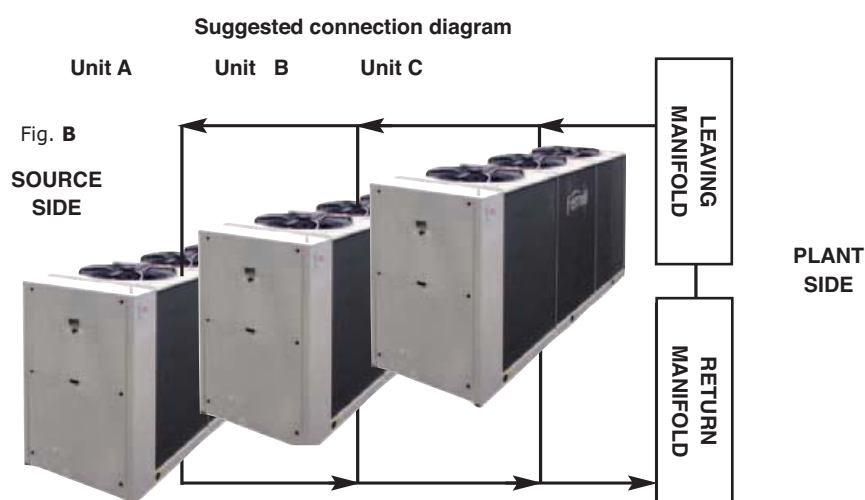
■ MANAGEMENT OF UNITS WITH PUMP FITTED INSIDE (ACCESSORY)

The Ferroli range encompasses (as an accessory when available), a range of pumping modules with tank, serving only the primary circuit (consisting of tank-pump-plate type exchanger) controlled directly by the micro-processor control.

This solution, as indicated in the example in figure B, enables the correct distribution of water even in the case of several units. The tank-pump (accessory) system is installed and tested at the factory.

NB: In specific cases, for correct operation and maintenance of the hydronic circuit all the components are fitted standard inside the unit (refer to the item "pumping modules" in the guide).

The installer only has to ensure the hydraulic connection of the units and the various electrical connections.



■ MANAGEMENT OF UNITS WITH PUMP FITTED INSIDE (ACCESSORY)

In the case opposite, six RLA units configured with just the Pipe Kit are connected to a 6GFC system.

The electrical panel controls the six units and the single or twin pump.

The pumps electrical protection and power supply installation are the installer's responsibility. The pumping system must be provided with a one-way valve (in case of twin pump), mesh filter, system calibration valves, expansion tank, safety valve and anything else necessary to make the system operational and easily serviced.

■ UNIT CONSENT MANAGEMENT

All the electrical connections for activation consent and for management of the units must be taken to the electrical panel and an NTC probe, supplied standard, and must be connected for the system water temperature reading.

> RXA

AIR-WATER CHILLERS AND HEAT PUMPS FOR OUTDOOR INSTALLATION



Available range

Unit type

IR	Chiller
IP	Heat pump (reversible on the refrigerant side)

Versions

VB	Base Version
VP	Pump version
VA	Tank version

Acoustic setting up

AB	Base setting up
----	-----------------

Unit description

This series of air-water chillers and heat pumps satisfies the cooling and heating requirements of residential plants of small and medium size.

All the units are suitable for outdoor installation and can be applied to fan coil plants, radiant floor plants and high efficiency radiators plants.

The refrigerant circuit, contained in a compartment protected from the air flow to simplify the maintenance operations, is equipped with rotary or scroll compressor (according to the model) mounted on damper supports, brazed plate heat exchanger, thermostatic expansion

valve, reverse cycle valve, axial fans with safety protection grilles, finned coil made of copper pipes and aluminium louvered fins. The circuit is protected by high and low pressure switches and differential pressure switch on the plate heat exchanger.

The plate heat exchanger and all the hydraulic pipes are thermally insulated in order to avoid condensate generation and to reduce thermal losses.

All the units are equipped with variable speed fans control that allows the units to operate with low outdoor temperatures in cooling and high outdoor temperature in heating and permits to reduce noise emissions in such operating conditions.

All the units are supplied with an outdoor temperature sensor, already installed on the unit, in order to realize the climatic control.

All three-phase power supply units are provided with a phase presence and correct sequence controller device.

All the units are accurately built and individually tested in the factory. Only electric and hydraulic connections are required for installation.

Options

Storing and pumping module

- not present (VB - base version)
- standard, high head or modulating pump (VP - pump version)
- tank and standard, high head or modulating pump (VA - tank version)

Integrative electrical heaters

- standard in the flow (only VB and VP versions)
- standard in the tank (only VA version)
- upsized in the tank (only VA version)

Compressor starting

- standard (contactors)
- soft starter

Accessories

Rubber vibration dampers

Coil protection grille

Tank antifreeze electrical heater

Remote control

Modbus serial interface on RS485

Programmer clock

Phase sequence and voltage controller

NET NOMINAL performances - Standard plants - EUROVENT certified data

IR	Base setting up (AB)	6.1	7.1	9.1	11.1	14.1	17.1	
A35W7	Cooling capacity	6,24	7,24	9,12	10,6	14,1	16,7	kW
	Power input	2,31	2,81	3,52	4,16	5,25	6,49	kW
	EER	2,70	2,58	2,59	2,55	2,69	2,57	W/W
	ESEER	3,23	2,92	2,83	2,93	3,02	2,92	W/W
	Water flow rate	0,30	0,35	0,44	0,51	0,68	0,80	l/s
	Pressure drops	17	21	31	40	43	39	kPa
IP	Base setting up (AB)	6.1	7.1	9.1	11.1	14.1	17.1	
A35W7	Cooling capacity	6,12	7,10	8,95	10,4	13,8	16,4	kW
	Power input	2,31	2,81	3,51	4,15	5,24	6,49	kW
	EER	2,65	2,53	2,55	2,51	2,63	2,53	W/W
	ESEER	3,11	2,79	2,76	2,88	2,98	2,89	W/W
	Water flow rate	0,29	0,34	0,43	0,50	0,66	0,79	l/s
	Pressure drops	16	20	30	39	42	38	kPa
A7W45	Heating capacity	6,78	7,87	9,95	11,7	15,4	18,2	kW
	Power input	2,22	2,71	3,38	4,01	5,06	6,25	kW
	COP	3,05	2,90	2,94	2,92	3,04	2,91	W/W
	Water flow rate	0,32	0,37	0,47	0,55	0,73	0,86	l/s
	Pressure drops	18	24	35	45	48	43	kPa

NET NOMINAL performances - Radiant plants

IR	Base setting up (AB)	6.1	7.1	9.1	11.1	14.1	17.1	
A35W18	Cooling capacity	7,48	8,67	10,9	12,7	16,8	20,0	kW
	Power input	2,39	2,91	3,64	4,32	5,46	6,75	kW
	EER	3,13	2,98	2,99	2,94	3,08	2,96	W/W
	Water flow rate	0,36	0,42	0,52	0,61	0,81	0,96	l/s
	Pressure drops	22	29	42	53	58	53	kPa
IP	Base setting up (AB)	6.1	7.1	9.1	11.1	14.1	17.1	
A35W18	Cooling capacity	7,34	8,50	10,7	12,5	16,6	19,6	kW
	Power input	2,39	2,91	3,64	4,31	5,45	6,74	kW
	EER	3,07	2,92	2,94	2,90	3,05	2,91	W/W
	Water flow rate	0,35	0,41	0,52	0,60	0,80	0,94	l/s
	Pressure drops	22	28	41	52	56	51	kPa
A7W35	Heating capacity	6,92	8,03	10,2	11,9	15,7	18,6	kW
	Power input	1,87	2,28	2,86	3,39	4,27	5,28	kW
	COP	3,70	3,52	3,57	3,51	3,68	3,52	W/W
	Water flow rate	0,33	0,38	0,48	0,56	0,74	0,88	l/s
	Pressure drops	19	25	36	47	50	46	kPa

Data declared according to **EN 14511**. The values are referred to units without options and accessories.

EER (Energy Efficiency Ratio) = ratio of the total cooling capacity to the effective power input of the unit

COP (Coefficient Of Performance) = ratio of the total heating capacity to the effective power input of the unit

ESEER (European Seasonal Energy Efficiency Ratio)

= Unit in **A CLASS**.

A35W7 = source : air in 35°C d.b. / plant : water in 12°C out 7°C

A35W18 = source : air in 35°C d.b. / plant : water in 23°C out 18°C

A7W45 = source : air in 7°C d.b. 6°C w.b. / plant : water in 40°C out 45°C

A7W35 = source : air in 7°C d.b. 6°C w.b. / plant : water in 30°C out 35°C

Acoustic performances

Base setting up (AB)	6.1	7.1	9.1	11.1	14.1	17.1	
Sound power level ^(E)	69	69	72	72	74	74	dB(A)
Sound pressure level at 1 meter	55	55	57	57	59	59	dB(A)
Sound pressure level at 5 meters	44	44	46	46	48	48	dB(A)
Sound pressure level at 10 meters	38	38	41	41	43	43	dB(A)

(E): EUROVENT certified data

The acoustic performances are referred to units operating in cooling mode at nominal conditions A35W7.

Unit placed in free field on reflecting surface (directional factor equal to 2).

The sound power level is measured according to ISO 9614 standard.

The sound pressure level is calculated according to ISO 3744 and is referred to a distance of 1/5/10 metres from the external surface of the unit.

Technical data

Unit	6.1	7.1	9.1	11.1	14.1	17.1	
Power supply	230 - 1 - 50		230 - 1 - 50 400 - 3N - 50		400 - 3N - 50		V-ph-Hz
Compressor type	rotative		scroll				-
N° compressors / N° refrigerant circuits	1 / 1						n°
Plant side heat exchanger type	stainless steel brazed plates						-
Source side heat exchanger type	finned coil						-
Fans type	axial						-
N° fans	1						n°
Tank volume	33		50		71		l
Hydraulic fittings	1" M						-

Electrical data

Standard unit	6.1	7.1	9.1	11.1	14.1	17.1	
Power supply	230 - 1 - 50	230 - 1 - 50	230 - 1 - 50 / 400 - 3N - 50	230 - 1 - 50 / 400 - 3N - 50	400 - 3N - 50	400 - 3N - 50	V-ph-Hz
FLA - Full load current at maximum tolerated conditions	13,4	17,1	22,0 / 8,1	24,8 / 9,0	11,1	13,9	A
FLI - Full load power input at maximum tolerated conditions	2,9	3,7	4,7 / 4,7	5,3 / 5,3	6,2	8,0	kW
MIC - Maximum instantaneous current of the unit	82	112	141 / 54	174 / 69	87	106	A
MIC SS - Maximum instantaneous current of the unit with soft starter options	41	43	49 / 33	59 / 40	48	55	A
Unit with high head modulating pump	6.1	7.1	9.1	11.1	14.1	17.1	
Power supply	230 - 1 - 50	230 - 1 - 50	230 - 1 - 50 / 400 - 3N - 50	230 - 1 - 50 / 400 - 3N - 50	400 - 3N - 50	400 - 3N - 50	V-ph-Hz
FLA - Full load current at maximum tolerated conditions	14.4	18.1	23.3 / 9.4	26.1 / 10.3	12.9	15.7	A
FLI - Full load power input at maximum tolerated conditions	3.1	3.9	4.95 / 4.95	5.55 / 5.55	6.55	8.35	kW
MIC - Maximum instantaneous current of the unit	83	113	142.3 / 55.3	175.3 / 70.3	88.8	107.8	A
MIC SS - Maximum instantaneous current of the unit with soft starter options	42	44	50.3 / 34.3	60.3 / 41.3	49.8	56.8	A

Operative range

Temperature	Unit type	Cooling		Heating		
		min	max	min	max	
Outdoor air inlet temperature	IR, IP	-10	48	-15	42	°C
Water outlet temperature	IR, IP	5	25	30	55	°C

CONTROL SYSTEM

The unit is managed by a microprocessor controller to which, through a wiring board, all the electrical loads and the control devices are connected. The user interface is realized by a display and four buttons that allow to view and, if necessary, modify all the operating parameters of the unit. It's available, as an accessory, a remote control that reports all the functionalities of the user interface placed on the unit.

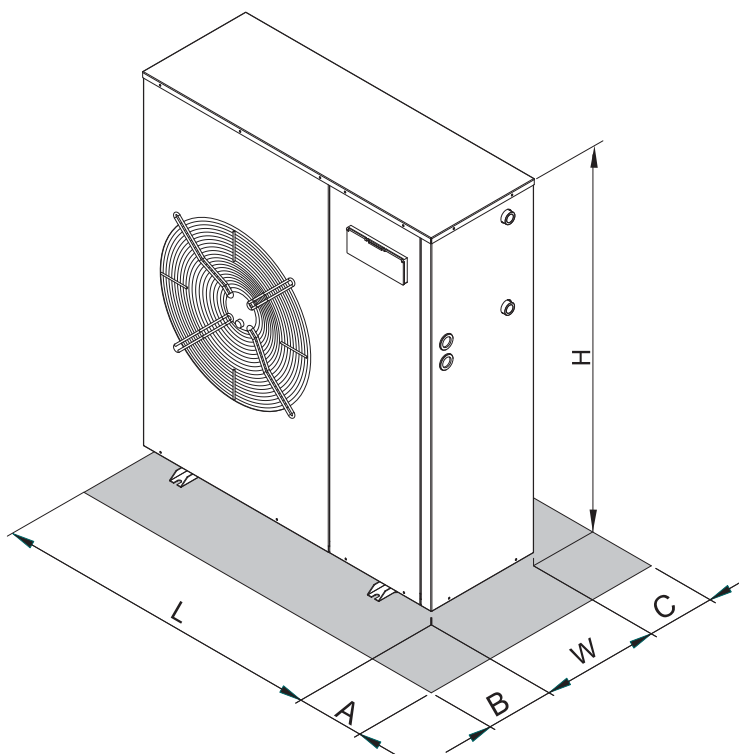
The main functions available are :

- water temperature management (through set point adjustment)
- climatic control in heating and in cooling mode (automatic set point adjustment according to outdoor air temperature)
- dynamic defrost cycle management according to outdoor air temperature
- alarm memory management and diagnostic

- fans management by means of continuous rotational speed control
- pump management
- integrative electrical heaters management in heating mode (2 step logic)
- compressor and pump operating hours recording
- serial communication through Modbus protocol
- remote stand by
- remote cooling-heating
- general alarm digital output



DIMENSIONS AND MINIMUM OPERATING AREA



	Version	6.1	7.1	9.1	11.1	14.1	17.1	
L	VB - VP	994	994	994	994	994	994	mm
	VA	1329	1329	1329	1329	1329	1329	mm
W	-	356	356	356	356	356	356	mm
H	-	903	903	1153	1153	1453	1453	mm
A	-	400	400	400	400	400	400	mm
B	-	600	600	600	600	600	600	mm
C	-	200	200	200	200	200	200	mm
Operating maximum weight*	VA	164	171	220	238	285	294	kg