

VERSATEMP EQV-X

DIRECT EXPANSION HIGH EFFICIENCY
PACKAGED AIR CONDITIONER

EQV-X 3-21 SERIES
WATER-AIR HEAT PUMP

Nominal cooling capacity **from 1,4 to 4,1 kW**
Nominal heating capacity **from 1,9 to 5,1 kW**



VERSATEMP EQV-X is the high efficiency **packaged air-conditioner** that automatically heats or cools rooms throughout the whole year, using **water as source**.

Thanks to its rotating compressor, its electronic expansion valve, its plate exchanger and its multi-speed centrifugal fan, VERSATEMP EQV-X stands out due to its **high level of efficiency in all operating conditions** and its **great reliability**. Even installation is simplified by the **specific hydraulic pipe work arrangements** which are available for different applicative solutions, supplied already installed and tested built-in.

The VERSATEMP EQV-X **design** can be elegantly added to different settings both in its cased and in its uncased configuration, available for its maximum integration within furnishings. The operating **silence** is ensured by the particular sound-proofing of the compressor compartment, the accurate balancing of the fans and the anti-vibration devices provided for all moving parts.

TOTAL COMFORT IS NECESSARY ALL YEAR ROUND, EVEN IN DIFFICULT APPLICATIVE SITUATIONS

In applications such as **offices, shops, hotels** and **public buildings** it is necessary to maintain the **comfort all year round**, aside from external conditions or different room uses. Each zone requires its own temperature, humidity and air purification level, in the quickest and simplest way for the users.

The **cost for the comfort maintenance** depends on the choice of the air-conditioning system, both at purchasing and above all in its use and maintenance during its entire working life. The rationality of the chosen system and its energy-efficiency are therefore fundamental choice factors.

The air-conditioning system must, finally, be **perfectly integrated into the building**, in harmony with the structures and furnishings. In some cases, this is a very complex challenge, where, for instance, **external units cannot be installed**, not even air inlets, as occurs in some buildings or historical structures for aesthetic or regulatory reasons.



THE TECHNOLOGY OF THE REVERSIBLE ELECTRIC HEAT PUMP IS HIGHLY EFFICIENT AND RELIABLE

The **electric heat pumps** represent an efficient and advantageous choice for the room air-conditioning. These devices enable energy to be exchanged between outside, known as the source, and the served setting, using a particular refrigerant circuit which they are equipped with. This transfer only requires the use of electrical energy and takes place with a high level of efficiency, thus at low consumption.

Furthermore, **reversible** electric heat pumps simplify the system, since only one system can operate in heating and cooling throughout the entire annual cycle.

Thanks to their **energy efficiency**, the electric heat pumps guarantee the required comfort with reduced management costs and with a low environment impact. For this reason there are numerous initiatives to favour their installation by economic or fiscal **incentives**.

HEAT PUMP SYSTEMS WHICH USE WATER AS HEAT SOURCE ARE EVEN MORE EFFICIENT THAN TRADITIONAL SYSTEMS

In the face of an apparently contained cost, direct expansion systems, such as **split, multisplit** and **VRF/VRV** present **many limitations** in these applications. The ducts, which bring the **refrigerant** through the served rooms, are consequently subject to restrictions and use limitations. They must be of a **contained length** and insulated. Furthermore, **external units** may be totally **incompatible** with the building architectural and construction characteristics.

In contrast, **hydronic systems** are certainly more complete and versatile. Often, however, the **cost** of the system in small and medium scale plants is greater, because it is more articulated and subject to labour costs for installation, start up and setting. The complexity increases further in large-scale centralised systems with **four tube** distribution.

When, on the other hand, the system is equipped with its **own heat pump** which uses water as a heat source, there are only two supply ducts, saving space and costs for the installation and pump use. Furthermore, **they have no length limitations**, since they contain water and not refrigerant. The water temperature is generally neutral as regards the served setting and therefore the ducts **do not need to be insulated**. Using water as a heat source, **the energy efficiency of the heat pump further increases, even by 30%**.



VERSATEMP EQV-X IS THE COMPACT AND SILENT SOLUTION FOR THE HIGH EFFICIENCY YEAR ROUND AIR-CONDITIONING.

EQV-X brings together the **Clivet reversible heat pump technology** and the **VERSATEMP system reliability** in a design product, which is versatile as a fan coil.

A high efficient rotating compressor with ecological refrigerant R410A, electronic expansion valve, plate exchanger source side and multi-speed fan: are only some of the solutions available in this **completely automatic air-conditioner**.

Thanks to the numerous models available either for **uncased or cased** installation, VERSATEMP EQV-X integrates perfectly into the furnishings. Furthermore, it contains only a minimum quantity of ecological refrigerant (less than 3 kg), and is therefore not subject to restrictions on use. The two water supply ducts **do not have length limitations**, even, in many cases, they do not need to be insulated and result easy to install and maintain.

Purifies and conditions the air in any room

Uses Water as heat source

Contains the best reversible heat pump technology

THE ADVANTAGES

VERSATEMP EQV-X simplifies the system

Thanks to its **packaged** construction, the system parts and their installation are already contained within the unit. The heat or cooling energy generated by the unit is directly transferred into the served room. The feedwater can come from a Water Loop Heat Pump circuit at energy transfer, from a natural source such as a well or water sheet, or even from an aqueduct in those particular cases where architectural constrictions make any other system solution unusable.



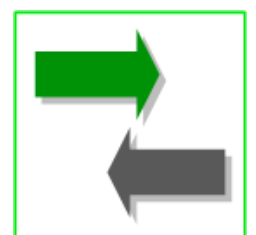
VERSATEMP EQV-X is silent and reduces management costs

Thanks to the numerous construction solutions which have been adopted and to its special automatic control, vibrations and sound emissions are undoubtedly reduced. The reversible heat pump technology at **high energy efficiency** maintains the required comfort only where and when it is needed, reducing the consumption and therefore the management costs over the entire annual cycle. In all the applications which allow it, the devices which limit water consumption reduce these expenses even further.



VERSATEMP EQV-X is the perfect solution for the system retrofit

The uncased and cased versions are compatible with VERSATEMP products of the EQV, VM, VV series as far as regards capacities, sizes and hydraulic connections. VERSATEMP EQV-X is therefore the ideal solution for the **retrofit of the existing systems** and their possible completion or enlargement.



HIGH VERSATILITY IN POSITIONING AND USE

VERSATEMP EQV-X offers the maximum flexibility in **positioning** and **integration** into various architectural contexts.

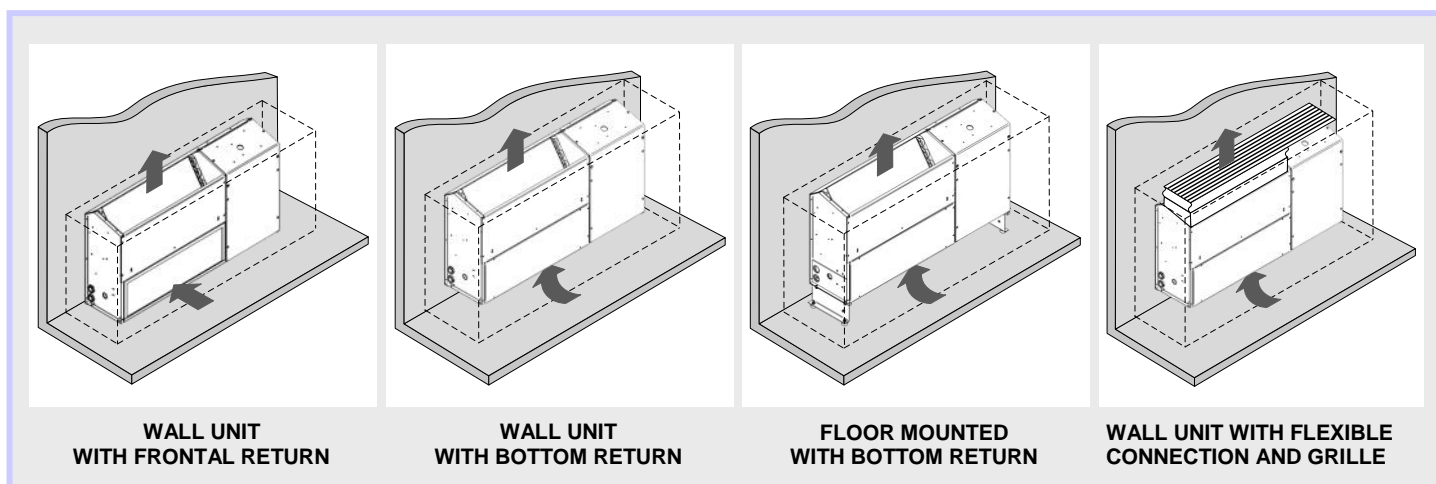
Indeed, it is available in two configurations:

- a **uncased configuration**, which disappears within the furnishings
- an **cased configuration**, complete with aesthetic fairing.



COMPLETE INTEGRATION INTO THE FURNISHINGS

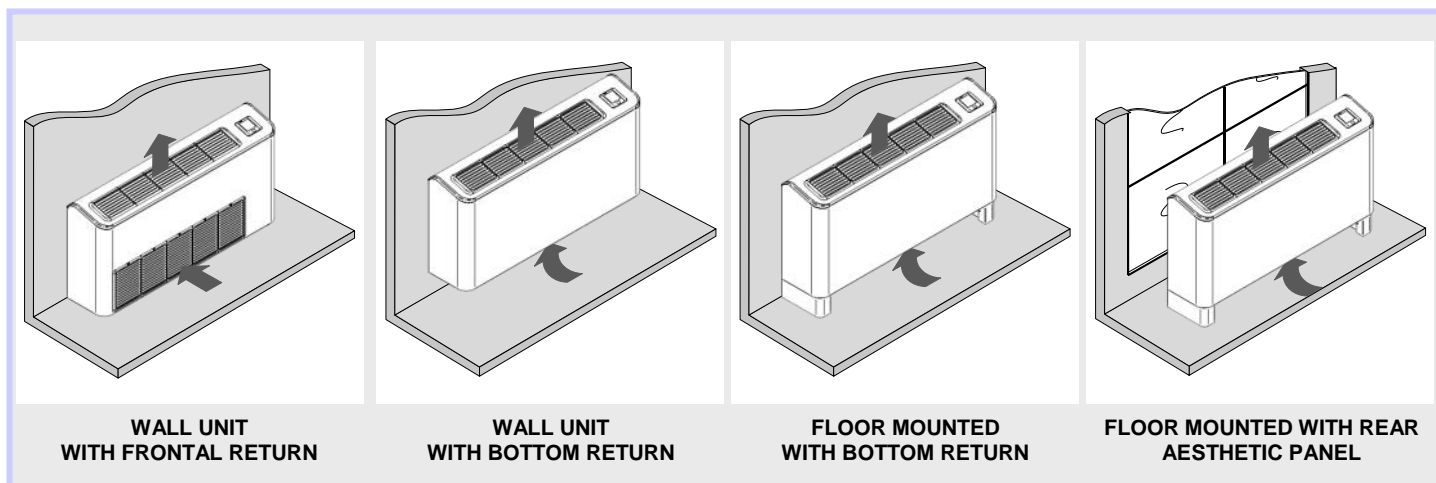
The uncased configuration (standard) can be requested with **frontal or bottom return**. The numerous accessories which are available, further simplify its installation within the furnishings, offering the **most appropriate combination** at all times.



The image represents only some of the numerous positioning solutions

FREE POSITIONING WITHIN THE ROOM

Versatile and pleasing to look as a fan coil, the unit in the cased configuration can be installed directly **in the served room** thanks to the cover fairing, to its **silence** during operating, to its various positioning solutions and to the model with a rear aesthetic panel suitable for installation **near glass walls**.



The image represents only some of the numerous positioning solutions.

HIGH ENERGY EFFICIENCY ALL YEAR ROUND

VERSATEMP EQV-X raises the overall efficiency of the system thanks to its technological solutions, all chosen for an efficient and long-lasting operation and guaranteed by strict quality checks during the assembly phase and rigorous operating tests on the final product.

HIGH EFFICIENCY ROTARY COMPRESSOR

With silent and reliable operation, it uses the ecological refrigerant R410A and it is contained within a special compartment which has been further sound-proofed.

ELECTRONIC EXPANSION VALVE

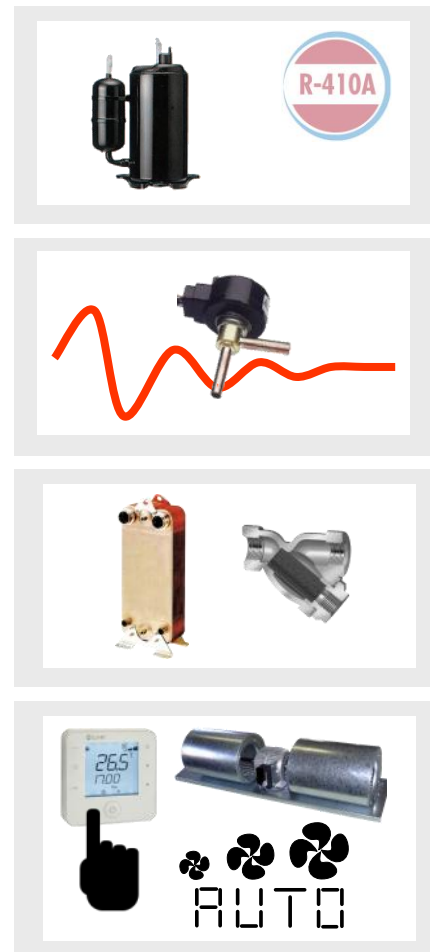
The electronic expansion valve (EEV) rapidly and precisely adapts to the effective load required. Furthermore, in the heat pump operation it ensures stability also with high water temperatures.

SOURCE SIDE PLATE EXCHANGER

Universally known for its heat exchange high efficiency, it is complete with control probes and safety devices and it is offered in combination with a mechanic steal-mesh filter which is able to ensure excellent performances over time.

MULTI-SPEED FAN

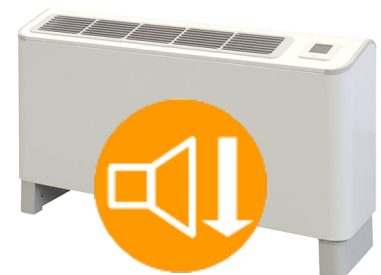
The EXTRAQUIET, QUIET and POWERFUL speeds allow to achieve always the best operating conditions in the different applications. In the AUTO mode, the unit automatically sets the most appropriate speed to quickly reach the comfort conditions, thanks to the automatic compensation depending on the distance between the effective temperature in the served room and the set-point.



THE SILENT COMFORT

The **compressor** is housed in a dedicated compartment, made of thick stainless steel and covered with sound-proofing material. It is equipped with a **double anti-vibration support system**, a **vibration sound absorber in the refrigerant circuit**, and also with a **metal closure hood** and finishing in the cased configuration.

At the end of the steady state phase, the **AUTO fan mode** activation maintains furthermore the minimum speed necessary to maintain the comfort, further increasing the acoustic comfort in the room.



RELIABILITY AND SAFETY

Among the numerous adopted solutions , are :

- The combination of **outlet water anti-freeze** sensor, **treated air anti-freeze** sensor, **inlet water temperature** sensor and **water flow-rate monitoring** device protects the unit from the ice formation and any malfunctioning which may derive from it.
- The **thermostatic valve with MOP** (Maximum Operating Pressure) **function** automatically controls the evaporating pressure to an optimal value for the efficient compressor operating, even upon changes of the heat exchange conditions with the water source.
- The electronic control of the thermostatic valve also uses dynamic algorithms, managing the **regularity** of the refrigerant flow in the circuit and ensuring a compressor **stable operating** and, therefore, an increase of its efficiency and operating life.



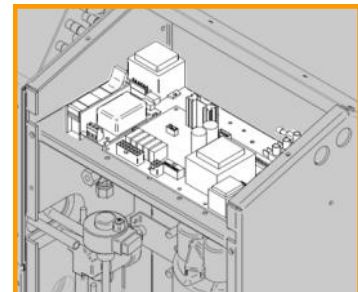
SIMPLE TO USE IN SMALL AND LARGE SCALE PLANTS

VERSATEMP EQV-X is extremely versatile and reliable even in solutions controlled by the User.

STANDARD AUTOMATIC FUNCTIONS

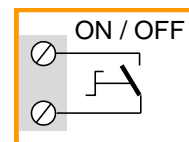
The standard VERSATEMP EQV-X version is equipped with a standard automatic control, complete with a **micro processor card** and **control and safety sensors** built-in. Given that it is without a user display, this version represents an efficient solution in all **applications open to the public** where the operating parameters could otherwise be inappropriately changed:

- it **detects** the room conditions and **compares** them with the user set point
- it can decide the operating mode **automatically** (heating or cooling)
- it decides the **activation of resources** and can automatically select the **fan speed** depending on the distance from the scheduled set point
- it can manage without further accessories a **mini local network of 15 units**, one of which is a *master* and the others *slaves* which replicate its operating.



USER INTERFACE BY FREE CONTACTS

The standard version is equipped with free contacts, that is without voltage, for the remote management of the following functions: Switching on and off, Changing of the operating mode (heating or cooling), Set point setting (standard or economic), Cumulative alarm.

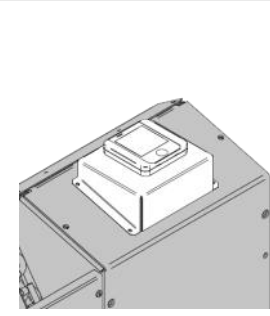

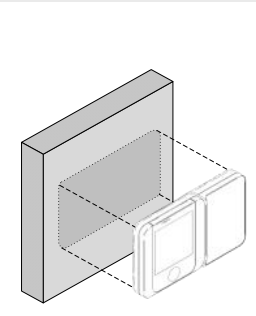
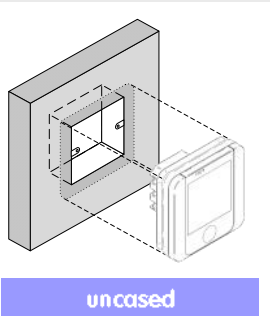


USER INTERFACE WITH BUILT-IN OR WALL DISPLAY

Both the uncased and the cased unit configuration can be equipped with an electronic room control with a display. **The control can be built-in supplied** or pre-set for **wall installation**. It has a modern aspect and is very **simple to use** even for non-specialised users. Furthermore, it has different access levels, password protected, available for managing the different unit functions.

Among the main functions, it detects the temperature using the temperature sensor in its interior, schedules the operating time bands, displays and manages the operating alarms and parameters, enables the manual management of the fan speed and operating mode (heating or cooling).



BUILT-IN INSTALLATION		REMOTE INSTALLATION	
			
on uncased unit	on cased unit	on wall	uncased

USER INTERFACE BY SERIAL CONNECTION

Thanks to the different available communication protocols, the unit is able to exchange information with the main supervision systems using serial connections.



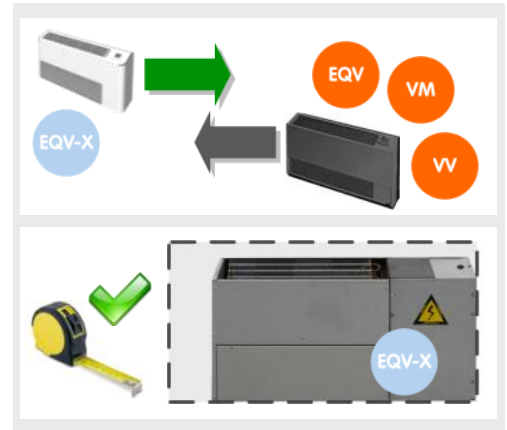
PERFECT FOR THE RETROFIT OF THE EXISTING VERSATEMP SYSTEMS

VERSATEMP EQV-X can be easily installed in the existing systems to **substitute** or **integrate** VERSATEMP units of the **EQV**, **VM**, and **VV** series thanks to:

- delivered capacity and water connection compatibility
- same or smaller sizes
- different protocols available for the supervision Systems.

The units have been set for two different types of intervention work:

- **Total** substitution (all the units in the system)
- **Partial** substitution (only some of the units in the system)

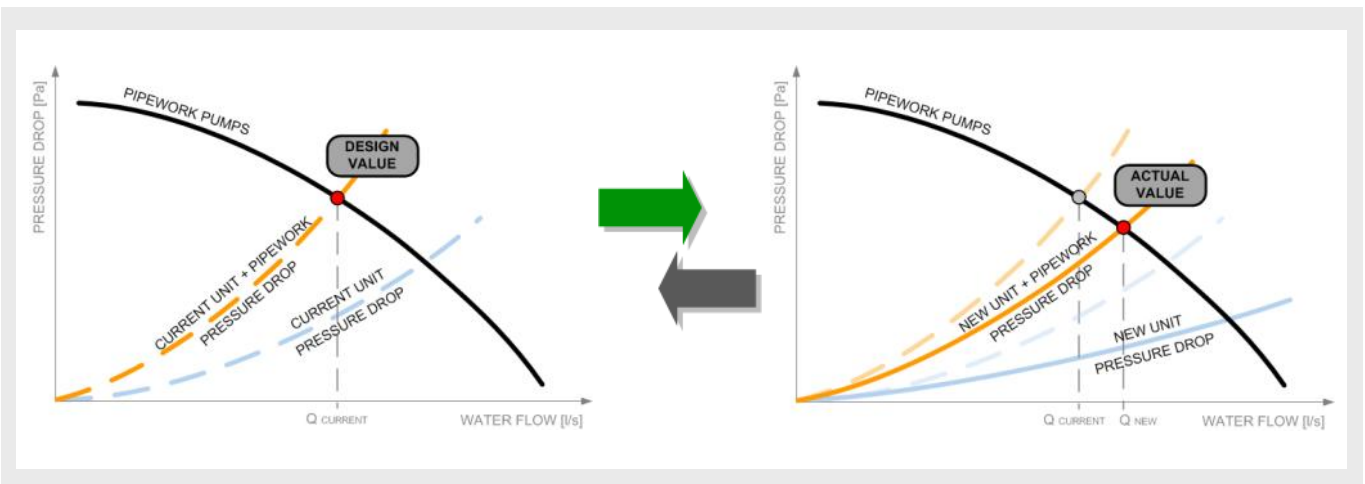
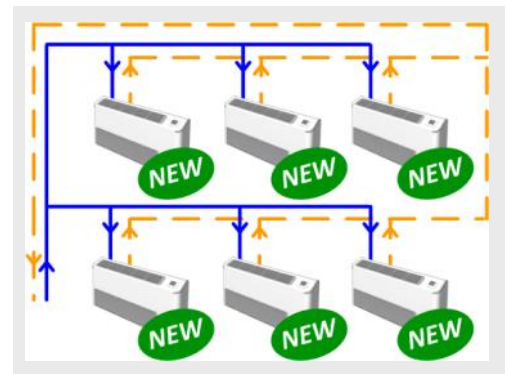


IN CASE OF TOTAL SUBSTITUTION

The total substitution of VERSATEMP EQV, VM and VV units can be carried out without any changes of the water components of the system (such as pumps, ducts, by-passes) and without balancing interventions.

Indeed, the new VERSATEMP EQV-X units are able to correctly operate even when they are powered with water flow-rates of the substituted units, which are typically lower than the nominal flow. Furthermore, they have lower pressure drops on the exchanger water side. A new hydraulic equilibrium is established in the system.

If the intention is to make the units operate with the same water flow-rate of the substituted units, even though it is not necessary, it is sufficient only to provide a flow controller on each unit and on the main system ducting.



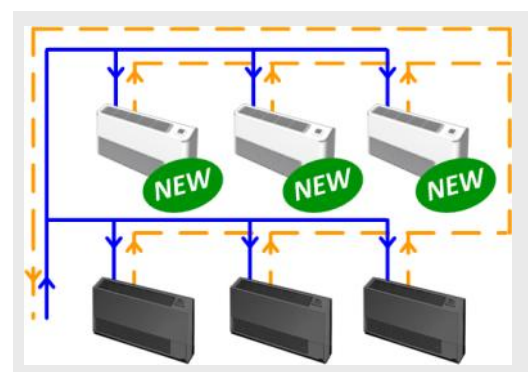
IN CASE OF PARTIAL SUBSTITUTION

If only some units are substituted on the existing VERSATEMP system, it is necessary to provide a flow controller which balances the branch where the new units are installed.

Indeed, due to the lower pressure drops of the EQV-X, the system can be unbalanced as follows

- Excessive reduction of the water flow-rate on branches that maintain the existing units
- Increase of the water flow-rate on branches equipped with new units.

It is therefore necessary to provide for a flow controller on each unit (available as an accessory), or on the whole branch involved with the substitution.



READY FOR THE CONNECTION TO THE WATER NETWORK

The system components for the VERSATEMP EQV-X connection to the water supply circuit are available **built-in**. Thanks to their easily accessible position, **installation and routine maintenance are notably simplified**. Furthermore, **reliability** is increased since the seal and functionality of the parts are tested at the end of the production process.

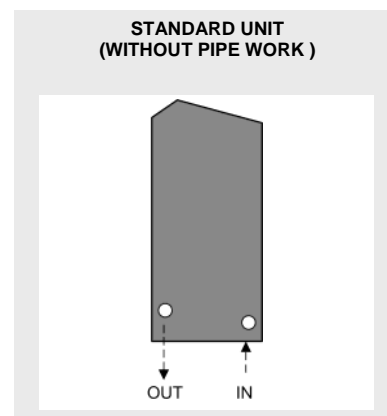
Thanks to the specific pipe work options are available, **the unit integrates perfectly within different types of water systems** whether loop systems or using aqueduct or disposable water. Each component has been accurately designed to guarantee the maximum operating efficiency and protect the high efficiency exchanger water side from fouling.

STANDARD VERSION FUNCTIONALITY

The unit without optional pipe work is complete with plate exchanger and control and safety devices, both in the uncased and in the cased version.

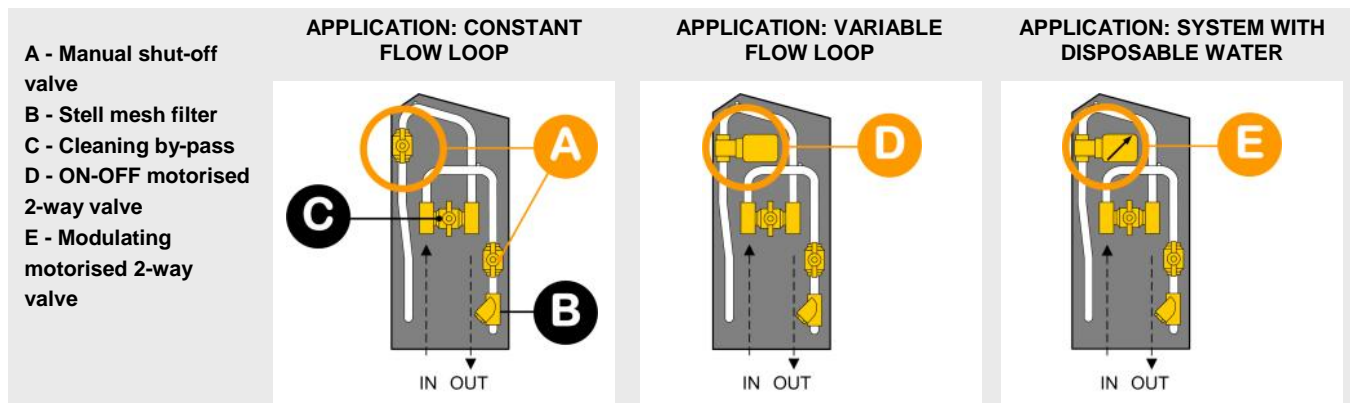
The other system components needed for the connection to the water supply are available as accessories, for installation by the Client:

- steel mesh filter
- manual shut-off valves
- manual by-pass valve for the system cleaning
- manual balancing valve
- flexible ducting for water supply and condensate discharge.



BUILT-IN PIPE WORK ENSURES GREATER RELIABILITY

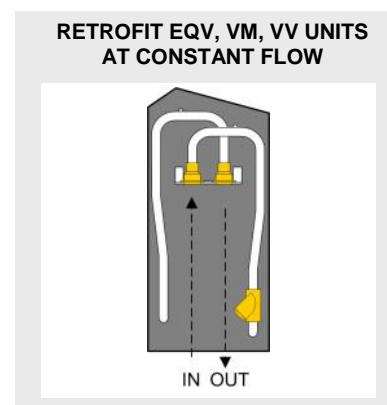
The unit can be supplied complete with pipe work arrangements built-in, with what is necessary for the correct start-up and use of the system in the different types of systems: constant flow loop, variable flow loop, aqueduct / disposable water system. Indeed, the pipe work arrangements enable the unit to be intercepted from the system, the system cleaning (fluxing), the water mechanical filtration during the ordinary operating to protect the exchanger from fouling and a reduction in water consumption where the system is pre-set for it.



THE VERSION COMPATIBILITY FOR THE SYSTEM RETROFIT

The unit can be set for the rapid replacement (retrofit) of VERSATEMP EQV, VM and VV units. For loop systems with constant water flow-rate. This execution includes:

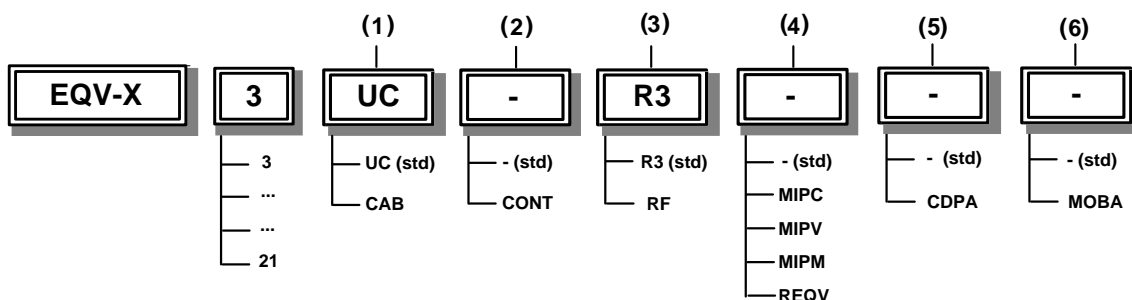
- Water inlet and outlet lines in the same position and of the same type of the units to substitute;
- Steel mesh filter, water side.



TECHNICAL SECTION INDEX

- ▶ STANDARD UNIT SPECIFICATIONS Pag. 10
- ▶ GENERAL TECHNICAL - ELECTRICAL DATA Pag. 11
- ▶ COOLING PERFORMANCES Pag. 12
- ▶ HEATING PERFORMANCES Pag. 13
- ▶ OPERATING FIELD Pag. 14
- ▶ PRESSURE DROPS OF THE STANDARD UNIT HYDRAULIC CIRCUIT Pag. 14
- ▶ FAN PERFORMANCES Pag. 15
- ▶ CORRECTION FACTORS OF PERFORMANCES ACCORDING TO THE HANDLING FAN SPEED Pag. 15
- ▶ SOUND LEVELS Pag. 16
- ▶ COMMON ACCESSORIES FOR UNCASSED AND CASSED UNIT CONFIGURATIONS Pag. 17-23
- ▶ UNCASSED UNIT ACCESSORIES Pag. 24-25
- ▶ CASSED UNIT ACCESSORIES Pag. 25-26
- ▶ OPTION COMPATIBILITY Pag. 27
- ▶ DIMENSIONAL Pag. 28-31

UNIT CONFIGURATIONS



1) CONSTRUCTIONAL CONFIGURATION

Uncased version (without furniture) (UC)
 standard unit
 Configuration with fairing for cased applications (CAB)

(2) AMBIENT THERMOSTAT

Electronic room thermostat: not required (-)
 standard unit
 Electronic room control with display, installed in visible position on the unit with fairing (CONT)

(3) RETURN

Floor air return (R3)
 standard unit
 Front air return (RF)

(4) HYDRAULIC MODULE

Plumbing assembly : not required (-)

Standard unit

Plumbing assembly for loop at constant flow with manual valves (MIPC)
 Plumbing assembly for loop at constant flow with ON-OFF valve (MIPV)
 Plumbing assembly for loop with disposable water system with modulating valve (MIPM)
 Water connections for the retrofit of EQV,VV,VM units at constant flow. (REQV)

(5) CONDENSATE DISCHARGE PUMP

Condensate discharge pump: not required (-)
 standard unit
 Condensate discharge pump, built-in (CDPA)

(6) REMOTE COMMUNICATION SERIAL PORT

Remote communication serial port: not required (-)
 standard unit
 RS485 serial port with MODBUS protocol, built-in (MOBA)

STANDARD UNIT SPECIFICATIONS

COMPRESSOR

Hermetic rotary compressor with gas compression in the crankcase, direct suction, no oil heater. It is mounted on antivibration rubber pads. Includes oil feed.

STRUCTURE

Structure made entirely of "aluzink" plate that guarantees excellent mechanical characteristics and high corrosion strength over time. The compressor area is made of thick metal plate and is completely insulated with soundproofing material to minimise noise output. The ventilating section is completely lined with anti-condensate and soundproofing material.

INTERNAL EXCHANGER

Direct expansion finned exchanger, made of copper pipes in staggered rows and mechanically expanded to the fin collars. The fins are made of aluminium with a corrugated surface and adequately distanced to ensure the maximum heat exchange efficiency.

EXTERNAL EXCHANGER—SOURCE SIDE (WATER)

Direct expansion heat exchanger, braze-welded AISI 316 stainless steel plates with large exchange surface and complete with external heat and anti-condensate insulation.

The exchanger is complete with:

- differential pressure switch, water side
- temperature sensor water inlet
- temperature sensor water outlet with antifreeze protection
- drain cock

FAN

Dual intake centrifugal fan with forward blades for maximum efficiency and low noise. Statically- and dynamically-balanced according to the ISO 1940 standards, section 6.3. The scroll, the rotor and the frame are made from galvanized steel plate (semdzimir). Directly coupled to the three speed electric motor.

REFRIGERANT CIRCUIT

The circuit is complete with:

- liquid receiver
- non-return valve
- 4-way reverse cycle valve
- high safety pressure switch
- electronic thermostatic valve
- inlet pressure transducer for electronic thermostatic valve
- Inlet temperature probe for electronic thermostatic valve

FILTRATION

Flat filter, made up of a galvanized plate frame with galvanized and electric-welded protective mesh and 100% regenerable polyester filtering media with PVC resin. G2 efficiency according to CEN-EN 779 standard (Eurovent class EU4/5 - average efficiency 79% ASHRAE 52-76 Atm). Self-extinguishing (resistance to fire class 1 - DIN 53438).

TRAY

Condensate collecting tray plate "Aluzink" welded, fitted with a discharge coupling and covered externally with anti-condensate insulation.

ELECTRICAL PANEL

The electrical panel, including the microprocessor controller, is positioned inside the units, with access through an easy-to-remove panel.

The Power Section includes:

- power input terminals
- main fuse

The control section includes:

- Microprocessor control
- self-diagnosis system
- daily, weekly programmer of temperature set-point and unit on/off
- clean contacts for remote ON-OFF, summer/winter mode
- ECO setting set-point, water flow-rate
- antifreeze protection on the air side
- antifreeze protection on the water side
- no water flow protection
- extract air temperature probe with temperature control function
- manual or automatic fan speed selection

- connector for the electronic thermostat connection, optional

CASING (CASED MODELS ONLY)

Removable fairing, made from 10/10 thick steel, power painted (RAL9003 colour, smooth texture). The top-side fittings allow easy access to the internal components.

ACCESSORIES

ACCESSORIES FOR CASED AND UNCASD CONFIGURATION

- Front intake
- Water manual balancing valve (separately supplied accessories)
- Steel mesh filter (separately supplied accessories)
- Discharge condensate pump, built-in
- Discharge condensate pump (separately supplied accessories)
- Water circuit connection ducts 200 mm + condensate drain duct (separately supplied accessories)
- Water circuit connection ducts 500 mm + condensate drain duct (separately supplied accessories)
- Couple of manual shut-off valves (separately supplied accessories)
- Plumbing assembly for loop with constant flow rate with manual valves
- Plumbing assembly for loop with variable flow rate with 2 way ON-OFF valve
- Plumbing assembly for loop with disposable water system with 2-way modulating valve
- Constant flow retrofit hydraulic connections for EQV, VV, VM units
- Electronic room control with display, for wall installation (separately supplied accessories)
- Electronic room control with display, for wall installation in cased box (separately supplied accessories)
- Serial port RS485 with MODBUS protocol
- Serial port RS485 with MODBUS protocol (separately supplied accessories)
- BACNET serial communication module (separately supplied accessories)
- LON WORKS serial communication module (separately supplied accessories)

ACCESSORIES FOR UNCASD CONFIGURATION

- Electronic room control with display, for installation on the cased unit (separately supplied accessories)
- Air discharge duct with flexible joint (separately supplied accessories)
- Air discharge grille with flexible joint (separately supplied accessories)
- Galvanized plinth for floor standing arrangement (separately supplied accessories)

ACCESSORIES FOR CASED CONFIGURATION

- Electronic room control with display, installed in a clear position on the unit with fairing
- Floor mounted painted feet kit (separately supplied accessories)
- Floor mounted painted feet kit with front grille (separately supplied accessories)
- Painted back panel for cased version

NOTE: The compatibility of the different options is shown in the table at the end of the "Accessory" section.

VERSATEMP GENERAL TECHNICAL SPECIFICATIONS (EQV-X SERIES)

SIZE			3	5	7	9	15	17	21
COOLING A 27/19 W 30									
Cooling capacity	1	kW	1.37	2.08	2.39	2.88	3.38	3.75	4.11
Sensible capacity	1	kW	0.99	1.47	1.69	2.12	2.55	2.64	3.05
Compressor power input	1	kW	0.34	0.43	0.56	0.61	0.71	0.77	0.84
Total power input	2	kW	0.37	0.49	0.62	0.67	0.81	0.87	0.96
EER (EN14511:2008)	2	-	3.58	4.19	3.78	4.20	4.09	4.22	4.20
HEATING A 20 W 20									
Heat output	3	kW	1.90	2.54	3.05	3.55	4.29	4.78	5.10
Compressor power input	3	kW	0.37	0.47	0.63	0.70	0.77	0.92	1.04
Total power input	4	kW	0.40	0.53	0.69	0.76	0.87	1.02	1.16
COP (EN14511:2008)	4	-	4.78	4.91	4.49	4.71	5.05	4.72	4.49
HEATING A 20 W 15									
Heat output	5	kW	1.68	2.33	2.73	3.10	3.82	4.17	4.68
Compressor power input	5	kW	0.36	0.46	0.60	0.65	0.75	0.89	1.01
Total power input	6	kW	0.39	0.52	0.66	0.71	0.85	0.99	1.13
COP (EN14511:2008)	6	-	4.34	4.60	4.21	4.41	4.62	4.30	4.24
COMPRESSOR									
Type of compressors	7	-	ROT	ROT	ROT	ROT	ROT	ROT	ROT
N°. of Compressors		Nr	1	1	1	1	1	1	1
AIR HANDLING SECTION FANS (OUTLET)									
Type of fans	8	-	CFG	CFG	CFG	CFG	CFG	CFG	CFG
Air flow		l/s	101	106	128	126	208	208	230
Air flow		m ³ /h	365	380	460	455	750	750	830
EXCHANGER - WATER SIDE									
Type of exchanger	9	-	BPHE	BPHE	BPHE	BPHE	BPHE	BPHE	BPHE
Water flow rate	10	l/s	0,08	0,12	0,14	0,17	0,19	0,21	0,24
Pressure drops	11	kPa	11	33	26	29	19	23	28
CONNECTIONS									
Water fittings	12	-	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Condensate discharge	13	mm	15	15	15	15	15	15	15
POWER SUPPLY									
Standard power supply		V	230/1~/50	230/1~/50	230/1~/50	230/1~/50	230/1~/50	230/1~/50	230/1~/50
SOUND LEVEL									
Sound pressure level (1m)		dB(A)	39	41	41	41	45	45	47

Performances referred to the standard speed fan (Quiet)
A 27/19 W 30 = Inlet air temperature 27°C D.B. / 19°C W.B. Inlet water temperature 30°C
A 20 W 20 = Inlet air temperature 20°C Inlet water temperature 20°C
A 20 W 15 = Inlet air temperature 20°C Inlet water temperature 15°C
 D.B. = Dry bulb, W.B. = Wet bulb

- (5) Ambient temperature 20°C D.B. Exchanger inlet water 15°C
 Exchanger outlet water temperature is set in relation to the water flow in cooling. Performances deducted the power fan absorption.
- (6) Ambient temperature 20°C D.B. Exchanger inlet water 15°C. Exchanger outlet water temperature is set in relation to the water flow in cooling. Values obtained in accordance to EN14511: 2008 and include the power fan motor and pump water absorption needed to overcome the internal pressure drops.
- (7) ROT = rotary compressor
- (8) CFG = centrifugal fan
- (9) BPHE = plate exchanger
- (10) Water flow calculated in relation to the performances in cooling
- (11) Total pressure drop of the standard unit (without optional hydraulic pipe works). To obtain the total drops with any additional hydraulic components see accessory section)
- (12) inlet / outlet
- (13) pipe outside diameter

- (1) Ambient temperature 27°C D.B./19°C W.B. Exchanger inlet water 30°C / 35°C.
 Performances deducted the power fan absorption
- (2) Ambient temperature 27°C D.B./19°C W.B. Exchanger inlet water 30°C / 35°C.
 Values obtained in accordance to EN14511: 2008 and include the power fan motor and pump water absorption needed to overcome the internal pressure drops.
- (3) Ambient temperature 20°C D.B. Exchanger inlet water 20°C. Exchanger outlet water temperature is set in relation to the water flow in cooling. Performance does not include the power fan absorption.
- (4) Ambient temperature 20°C D.B. Exchanger inlet water 20°C. Exchanger outlet water temperature is set in relation to the water flow in cooling. Values obtained in accordance to EN14511: 2008 and include the power fan motor and pump water absorption needed to overcome the internal pressure drops.

ELECTRICAL DATA

SIZE			3	5	7	9	15	17	21
F.L.A. - FULL LOAD CURRENT AT MAX ADMISSIBLE CONDITIONS									
F.L.A. - Compressor 1		A	2,2	2,82	3,5	3,9	4,55	5,13	5,86
F.L.A. - Single supply fan		A	0,35	0,35	0,66	0,66	0,74	0,74	0,74
F.L.A. - Total		A	2,55	3,17	4,16	4,56	5,29	5,87	6,6
F.L.I. FULL LOAD POWER INPUT AT MAX ADMISSIBLE CONDITION									
F.L.I. - Compressore 1		kW	0,47	0,65	0,75	0,85	1,02	1,12	1,25
F.L.I. - Single supply fan		kW	0,08	0,08	0,15	0,15	0,17	0,17	0,17
F.L.I. - Total		kW	0,55	0,73	0,9	1	1,19	1,29	1,42
M.I.C. MAXIMUM INRUSH CURRENT									
M.I.C. - Value		A	12,4	18,4	19,7	20,7	22,2	26	26,2

Data referred to standard units.
 Power supply 230/1/50 Hz +/-6%

COOLING PERFORMANCES

SIZE	Ta(°C) DB / WB	WATER TEMPERATURE INLET / OUTLET TO THE WATER EXCHANGER																							
		20 / 25				25 / 30				30 / 35				35 / 40				40 / 45				45 / 50			
		kWf	kWs	kWe	EER	kWf	kWs	kWe	EER	kWf	kWs	kWe	EER	kWf	kWs	kWe	EER	kWf	kWs	kWe	EER	kWf	kWs	kWe	EER
3	22 / 16	1,32	0,90	0,28	4,71	1,28	0,88	0,31	4,17	1,23	0,86	0,34	3,65	1,18	0,84	0,37	3,16	1,12	0,82	0,41	2,71	1,06	0,80	0,46	2,31
	24 / 17	1,37	0,94	0,28	4,88	1,33	0,93	0,31	4,33	1,28	0,91	0,34	3,79	1,22	0,89	0,37	3,28	1,16	0,87	0,41	2,80	1,09	0,85	0,46	2,37
	26 / 18	1,42	1,00	0,28	5,05	1,37	0,98	0,31	4,50	1,32	0,96	0,34	3,94	1,26	0,95	0,37	3,40	1,2	0,93	0,41	2,90	1,12	0,91	0,46	2,45
	27 / 19	1,47	1,03	0,28	5,24	1,42	1,01	0,30	4,67	1,37	0,99	0,34	4,09	1,31	0,97	0,37	3,53	1,24	0,95	0,41	3,01	1,16	0,93	0,46	2,53
	28 / 20	1,52	1,08	0,28	5,43	1,47	1,06	0,30	4,84	1,42	1,04	0,33	4,25	1,36	1,02	0,37	3,67	1,29	1,00	0,41	3,13	1,21	0,98	0,46	2,63
	30 / 22	1,62	1,28	0,28	5,83	1,57	1,26	0,30	5,21	1,52	1,24	0,33	4,58	1,46	1,21	0,37	3,96	1,39	1,19	0,41	3,39	1,32	1,17	0,46	2,87
5	22 / 16	1,93	1,31	0,36	5,40	1,92	1,31	0,39	4,92	1,88	1,30	0,44	4,29	1,79	1,30	0,50	3,60	1,67	1,30	0,57	2,92	1,50	1,29	0,66	2,29
	24 / 17	2,01	1,39	0,35	5,66	1,99	1,39	0,39	5,14	1,94	1,38	0,44	4,46	1,85	1,37	0,50	3,73	1,72	1,37	0,57	3,01	1,56	1,36	0,66	2,36
	26 / 18	2,09	1,48	0,35	5,95	2,07	1,47	0,39	5,36	2,01	1,46	0,43	4,63	1,91	1,45	0,50	3,86	1,78	1,44	0,57	3,11	1,61	1,43	0,66	2,44
	27 / 19	2,17	1,50	0,35	6,26	2,14	1,48	0,38	5,61	2,08	1,47	0,43	4,84	1,98	1,46	0,49	4,00	1,84	1,44	0,57	3,22	1,66	1,43	0,66	2,52
	28 / 20	2,26	1,53	0,34	6,58	2,22	1,51	0,38	5,87	2,15	1,50	0,43	5,02	2,04	1,48	0,49	4,15	1,90	1,46	0,57	3,33	1,72	1,44	0,66	2,60
	30 / 22	2,44	1,65	0,33	7,31	2,39	1,63	0,37	6,44	2,30	1,60	0,42	5,45	2,18	1,57	0,49	4,48	2,03	1,55	0,57	3,58	1,84	1,52	0,66	2,79
7	22 / 16	2,19	1,51	0,40	5,52	2,18	1,49	0,48	4,53	2,14	1,48	0,57	3,77	2,06	1,46	0,65	3,17	1,96	1,44	0,74	2,66	1,82	1,43	0,82	2,21
	24 / 17	2,30	1,59	0,39	5,89	2,27	1,57	0,48	4,77	2,22	1,55	0,56	3,94	2,13	1,53	0,65	3,29	2,02	1,51	0,74	2,75	1,88	1,49	0,82	2,29
	26 / 18	2,40	1,69	0,38	6,27	2,37	1,67	0,47	5,02	2,30	1,65	0,56	4,12	2,21	1,62	0,65	3,42	2,09	1,60	0,73	2,85	1,95	1,58	0,82	2,37
	27 / 19	2,51	1,74	0,38	6,69	2,46	1,72	0,47	5,29	2,39	1,69	0,56	4,27	2,29	1,66	0,64	3,55	2,16	1,64	0,73	2,95	2,01	1,61	0,82	2,45
	28 / 20	2,63	1,83	0,37	7,13	2,57	1,80	0,46	5,58	2,48	1,77	0,55	4,50	2,37	1,74	0,64	3,69	2,24	1,71	0,73	3,05	2,08	1,68	0,82	2,53
	30 / 22	2,87	2,15	0,35	8,10	2,78	2,12	0,45	6,22	2,67	2,09	0,54	4,94	2,54	2,06	0,64	4,01	2,39	2,03	0,73	3,28	2,22	1,99	0,82	2,69
9	22 / 16	2,62	1,87	0,54	4,83	2,62	1,87	0,57	4,62	2,57	1,87	0,62	4,17	2,48	1,87	0,69	3,58	2,35	1,86	0,79	2,95	2,16	1,86	0,92	2,35
	24 / 17	2,72	1,99	0,53	5,15	2,72	1,98	0,56	4,86	2,67	1,98	0,61	4,35	2,57	1,98	0,69	3,71	2,43	1,97	0,8	3,05	2,24	1,97	0,93	2,43
	26 / 18	2,83	2,11	0,52	5,49	2,83	2,11	0,55	5,13	2,77	2,10	0,61	4,54	2,67	2,10	0,69	3,85	2,52	2,09	0,8	3,16	2,33	2,09	0,93	2,51
	27 / 19	2,95	2,13	0,50	5,88	2,94	2,13	0,54	5,41	2,88	2,12	0,61	4,72	2,77	2,12	0,69	4,00	2,62	2,11	0,8	3,26	2,42	2,11	0,93	2,59
	28 / 20	3,07	2,18	0,49	6,30	3,05	2,17	0,53	5,72	2,99	2,17	0,60	4,96	2,88	2,16	0,69	4,15	2,72	2,16	0,8	3,38	2,50	2,15	0,94	2,67
	30 / 22	3,32	2,36	0,46	7,29	3,30	2,36	0,52	6,41	3,23	2,35	0,59	5,43	3,10	2,34	0,69	4,48	2,92	2,34	0,81	3,61	2,69	2,33	0,94	2,85
15	22 / 16	3,20	2,31	0,58	5,49	3,15	2,28	0,64	4,93	3,06	2,25	0,71	4,30	2,93	2,22	0,80	3,67	2,76	2,19	0,9	3,06	2,55	2,16	1,02	2,50
	24 / 17	3,32	2,49	0,58	5,72	3,26	2,46	0,64	5,12	3,16	2,43	0,71	4,46	3,03	2,40	0,80	3,80	2,86	2,37	0,9	3,16	2,64	2,33	1,02	2,58
	26 / 18	3,44	2,65	0,58	5,95	3,37	2,62	0,63	5,32	3,27	2,59	0,71	4,62	3,13	2,56	0,80	3,93	2,95	2,52	0,9	3,27	2,73	2,49	1,02	2,67
	27 / 19	3,56	2,61	0,58	6,18	3,49	2,58	0,63	5,52	3,38	2,55	0,71	4,76	3,24	2,52	0,80	4,07	3,05	2,49	0,9	3,38	2,83	2,46	1,03	2,75
	28 / 20	3,69	2,54	0,58	6,40	3,61	2,51	0,63	5,73	3,50	2,48	0,70	4,97	3,35	2,45	0,79	4,21	3,15	2,42	0,9	3,50	2,92	2,39	1,03	2,84
	30 / 22	3,95	2,27	0,58	6,83	3,87	2,24	0,63	6,15	3,74	2,22	0,70	5,36	3,57	2,19	0,79	4,53	3,36	2,16	0,9	3,74	3,10	2,14	1,03	3,02
17	22 / 16	3,74	2,52	0,73	5,11	3,57	2,44	0,74	4,83	3,39	2,36	0,77	4,38	3,20	2,27	0,83	3,84	3,00	2,19	0,92	3,26	2,79	2,10	1,03	2,70
	24 / 17	3,87	2,67	0,73	5,32	3,69	2,59	0,74	5,01	3,51	2,50	0,77	4,54	3,31	2,42	0,83	3,97	3,11	2,33	0,92	3,37	2,89	2,25	1,04	2,79
	26 / 18	4,01	2,82	0,72	5,53	3,82	2,73	0,74	5,19	3,63	2,64	0,77	4,69	3,43	2,56	0,84	4,10	3,21	2,47	0,92	3,48	2,99	2,39	1,04	2,89
	27 / 19	4,14	2,81	0,72	5,74	3,95	2,72	0,73	5,38	3,75	2,64	0,77	4,87	3,55	2,55	0,84	4,24	3,33	2,47	0,92	3,60	3,10	2,38	1,04	2,99
	28 / 20	4,28	2,81	0,72	5,95	4,09	2,72	0,73	5,57	3,89	2,64	0,77	5,03	3,67	2,55	0,84	4,39	3,44	2,47	0,92	3,73	3,2	2,39	1,04	3,09
	30 / 22	4,56	2,81	0,72	6,36	4,37	2,74	0,73	5,97	4,16	2,66	0,77	5,40	3,94	2,58	0,84	4,71	3,69	2,50	0,92	3,99	3,42	2,42	1,04	3,30
21	22 / 16	4,09	2,88	0,67	6,14	3,91	2,80	0,76	5,18	3,75	2,72	0,84	4,48	3,60	2,65	0,91	3,95	3,47	2,57	0,98	3,55	3,36	2,49	1,04	3,23
	24 / 17	4,22	3,08	0,67	6,30	4,03	3,00	0,76	5,33	3,87	2,92	0,84	4,61	3,72	2,84	0,91	4,07	3,58	2,76	0,98	3,66	3,47	2,68	1,04	3,33
	26 / 18	4,35	3,26	0,67	6,45	4,16	3,17	0,76	5,47	3,99	3,09	0,84	4,75	3,84	3,01	0,91	4,20	3,7	2,93	0,98	3,77	3,58	2,85	1,04	3,43
	27 / 19	4,48	3,22	0,68	6,59	4,29	3,14	0,76	5,62	4,11	3,05	0,84	4,89	3,96	2,97	0,91	4,33	3,82	2,88	0,98	3,89	3,69	2,80	1,04	3,54
	28 / 20	4,62	3,17	0,69	6,71	4,42	3,08	0,77	5,77	4,24	2,99	0,84	5,04	4,08	2,90	0,91	4,47	3,94	2,81	0,98	4,02	3,81	2,72	1,04	3,65
	30 / 22	4,91	2,98	0,71	6,94	4,70	2,87	0,78	6,06	4,52	2,77	0,84	5,35	4,34	2,66	0,91	4,77	4,19	2,56	0,98	4,29	4,05	2,45	1,04	3,89

Performances referred to the medium speed fan (Quiet)
 EER referred only to compressors
 Ta = handling coil inlet air temperature (°C)
 D.B. = Dry bulb, W.B. = Wet bulb
 kWf = Cooling capacity (kW)
 kWe = Power input absorbed by the compressors (kW)
 kWs = Sensible Cooling capacity (kW)

All cooling capacity do not take into account the heat dissipated by the fan motors.

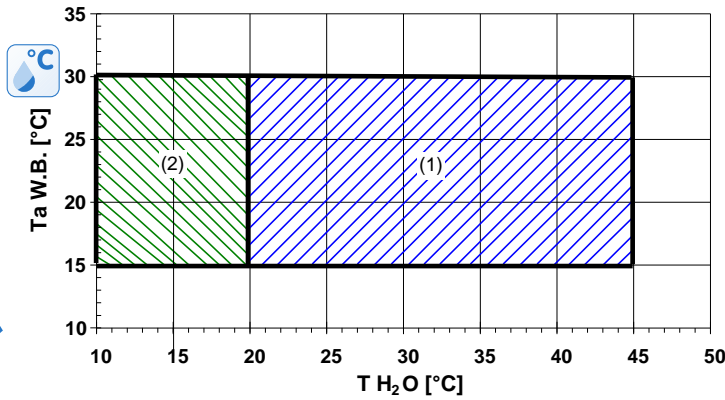
HEATING PERFORMANCES

SIZE	Ta (°C) DB	WATER TEMPERATURE INLET / OUTLET TO THE WATER EXCHANGER																	
		12 / 7			15 / 10			17 / 12			20 / 15			25 / 20			35 / 30		
		kWt	kWe	COP	kWt	kWe	COP	kWt	kWe	COP	kWt	kWe	COP	kWt	kWe	COP	kWt	kWe	COP
3	10	1,55	0,29	5,40	1,71	0,30	5,78	1,82	0,30	6,04	1,96	0,31	6,44	2,19	0,31	7,15	2,24	0,33	6,69
	15	1,52	0,32	4,82	1,67	0,32	5,16	1,77	0,33	5,39	1,91	0,33	5,72	2,13	0,34	6,27	2,19	0,37	5,93
	18	1,50	0,33	4,50	1,65	0,34	4,82	1,74	0,35	5,02	1,88	0,35	5,32	2,10	0,36	5,80	2,15	0,39	5,51
	20	1,49	0,35	4,30	1,63	0,36	4,60	1,73	0,36	4,78	1,86	0,37	5,06	2,07	0,38	5,49	2,12	0,41	5,24
	22	1,48	0,36	4,11	1,62	0,37	4,38	1,71	0,37	4,56	1,84	0,38	4,81	2,04	0,39	5,21	2,10	0,42	4,98
	25	1,46	0,38	3,83	1,59	0,39	4,08	1,68	0,40	4,24	1,81	0,41	4,46	2,00	0,42	4,80	2,05	0,45	4,61
5	10	2,08	0,37	5,59	2,31	0,38	6,14	2,46	0,38	6,48	2,66	0,38	6,95	2,98	0,39	7,65	3,05	0,41	7,36
	15	2,09	0,41	5,15	2,30	0,41	5,56	2,43	0,42	5,80	2,59	0,42	6,14	2,80	0,42	6,63	2,87	0,45	6,42
	18	2,09	0,43	4,88	2,29	0,44	5,21	2,40	0,44	5,41	2,54	0,45	5,69	2,71	0,45	6,09	2,78	0,47	5,92
	20	2,08	0,44	4,69	2,27	0,46	4,99	2,38	0,46	5,17	2,51	0,47	5,34	2,66	0,46	5,75	2,73	0,49	5,60
	22	2,07	0,46	4,50	2,25	0,47	4,76	2,36	0,48	4,92	2,48	0,48	5,13	2,62	0,48	5,44	2,69	0,51	5,31
	25	2,04	0,48	4,21	2,22	0,50	4,43	2,32	0,51	4,56	2,44	0,51	4,74	2,58	0,51	5,02	2,65	0,54	4,92
7	10	2,47	0,45	5,50	2,75	0,47	5,85	2,92	0,48	6,06	3,17	0,50	6,34	3,55	0,53	6,73	3,59	0,59	6,14
	15	2,48	0,52	4,80	2,72	0,54	5,06	2,87	0,55	5,21	3,08	0,57	5,43	3,41	0,59	5,77	3,45	0,65	5,32
	18	2,47	0,55	4,46	2,69	0,57	4,67	2,83	0,59	4,81	3,03	0,60	5,00	3,33	0,63	5,30	3,38	0,69	4,92
	20	2,46	0,58	4,25	2,66	0,60	4,45	2,80	0,61	4,59	2,99	0,63	4,75	3,29	0,65	5,04	3,33	0,71	4,69
	22	2,44	0,60	4,06	2,64	0,62	4,24	2,76	0,64	4,35	2,95	0,65	4,52	3,24	0,68	4,79	3,29	0,73	4,47
	25	2,40	0,63	3,79	2,59	0,66	3,95	2,71	0,67	4,05	2,89	0,69	4,21	3,18	0,71	4,47	3,23	0,77	4,19
9	10	2,32	0,68	3,40	2,50	0,71	3,53	2,61	0,72	3,62	2,80	0,74	3,77	3,07	0,77	4,00	3,12	0,83	3,78
	15	2,80	0,54	5,14	3,08	0,54	5,71	3,28	0,54	6,05	3,59	0,55	6,48	4,14	0,59	6,97	4,19	0,64	6,53
	18	2,79	0,57	4,86	3,06	0,58	5,23	3,24	0,60	5,43	3,53	0,62	5,68	4,02	0,68	5,92	4,07	0,73	5,60
	20	2,77	0,60	4,64	3,03	0,62	4,91	3,21	0,63	5,07	3,49	0,66	5,25	3,96	0,73	5,43	4,01	0,78	5,16
	22	2,75	0,62	4,47	3,01	0,64	4,70	3,19	0,66	4,83	3,46	0,69	5,01	3,92	0,76	5,15	3,97	0,81	4,91
	25	2,73	0,64	4,29	2,99	0,67	4,48	3,16	0,69	4,60	3,42	0,72	4,74	3,89	0,79	4,90	3,93	0,84	4,68
15	10	2,70	0,67	4,00	2,94	0,71	4,16	3,11	0,73	4,25	3,37	0,77	4,39	3,84	0,84	4,58	3,89	0,89	4,39
	15	2,63	0,75	3,52	2,85	0,79	3,63	3,01	0,81	3,72	3,28	0,85	3,86	3,78	0,91	4,13	3,82	0,96	3,98
	18	3,44	0,62	5,53	3,80	0,62	6,17	4,03	0,62	6,53	4,38	0,63	6,95	4,94	0,67	7,33	4,99	0,72	6,89
	20	3,41	0,67	5,09	3,76	0,68	5,57	3,99	0,68	5,85	4,30	0,69	6,20	4,77	0,72	6,60	4,82	0,77	6,24
	22	3,39	0,70	4,82	3,74	0,72	5,22	3,95	0,72	5,46	4,25	0,74	5,76	4,69	0,76	6,16	4,74	0,81	5,84
	25	3,37	0,73	4,63	3,71	0,74	4,99	3,92	0,75	5,23	4,21	0,77	5,47	4,63	0,79	5,86	4,68	0,84	5,58
17	10	3,34	0,75	4,44	3,68	0,77	4,76	3,89	0,78	4,96	4,18	0,80	5,22	4,58	0,82	5,58	4,63	0,87	5,31
	15	3,31	0,79	4,17	3,63	0,82	4,44	3,84	0,83	4,60	4,11	0,85	4,83	4,51	0,88	5,16	4,56	0,93	4,94
	18	3,24	0,87	3,72	3,54	0,90	3,92	3,73	0,92	4,05	4,00	0,95	4,23	4,42	0,98	4,52	4,47	1,03	4,35
	20	4,07	0,82	4,99	4,39	0,81	5,43	4,62	0,81	5,71	4,96	0,82	6,07	5,56	0,85	6,53	5,59	0,88	6,35
	22	3,89	0,83	4,67	4,22	0,84	5,05	4,44	0,84	5,29	4,80	0,85	5,63	5,45	0,89	6,12	5,48	0,92	5,96
	25	3,80	0,85	4,44	4,12	0,86	4,77	4,35	0,87	4,99	4,71	0,89	5,31	5,36	0,92	5,80	5,39	0,95	5,66
21	10	3,74	0,87	4,28	4,06	0,89	4,58	4,29	0,90	4,77	4,65	0,92	5,05	5,30	0,95	5,57	5,33	0,98	5,43
	15	3,69	0,90	4,11	4,00	0,92	4,37	4,23	0,93	4,56	4,58	0,95	4,84	5,23	0,98	5,32	5,26	1,01	5,19
	18	3,62	0,94	3,85	3,93	0,96	4,07	4,14	0,98	4,22	4,49	1,00	4,47	5,11	1,04	4,93	5,14	1,07	4,82
	20	3,53	1,03	3,43	3,81	1,07	3,57	4,01	1,09	3,68	4,33	1,12	3,87	4,88	1,15	4,26	4,90	1,17	4,18
	22	4,47	0,80	5,62	4,81	0,82	5,85	5,04	0,84	5,99	5,39	0,87	6,17	6,00	0,94	6,41	6,04	1,00	6,03
	25	4,35	0,88	4,94	4,70	0,91	5,16	4,91	0,93	5,30	5,20	0,95	5,48	5,63	0,98	5,72	5,67	1,05	5,40
21	18	4,28	0,93	4,58	4,62	0,96	4,80	4,83	0,98	4,93	5,10	1,00	5,10	5,46	1,02	5,33	5,50	1,09	5,05
	20	4,23	0,97	4,36	4,58	1,00	4,57	4,78	1,02	4,69	5,04	1,04	4,85	5,36	1,05	5,09	5,41	1,12	4,82
	22	4,18	1,01	4,16	4,53	1,04	4,36	4,73	1,06	4,47	4,98	1,08	4,63	5,29	1,09	4,85	5,33	1,16	4,61
	25	4,11	1,06	3,87	4,45	1,10	4,05	4,65	1,12	4,16	4,90	1,14	4,31	5,20	1,15	4,53	5,25	1,22	4,31
30	3,99	1,16	3,45	4,32	1,20	3,61	4,52	1,22	3,70	4,79	1,25	3,84	5,15	1,27	4,06	5,19	1,34	3,89	

Performances referred to the medium speed fan (Quiet)
 COP referred only to compressors
 Ta = handling coil inlet air temperature (°C)
 D.B. = Dry bulb
 kWt = Heating capacity (kW)
 kWe = Power input absorbed by the compressors (kW)

All heating capacity do not take into account the heat dissipated by the fan motors.

OPERATING FIELD (COOLING)



THE LIMITS ARE INDICATIVE AND CONSIDERED:
 - GENERAL AND NOT SPECIFIC SIZE,
 - STANDARD AIR FLOW RATE (MEDIUM FAN SPEED),
 - CORRECTLY INSTALLED AND MAINTAINED UNIT
 - OPERATION AT FULL LOAD
 - THERMAL GRADIENT ON WATER = 5°C

TA = AIR TEMPERATURE INLET TO THE HANDLING COIL
ATTENTION! TEMPERATURE MEASURED WITH WET BULB
 (W.B. = WET BULB)

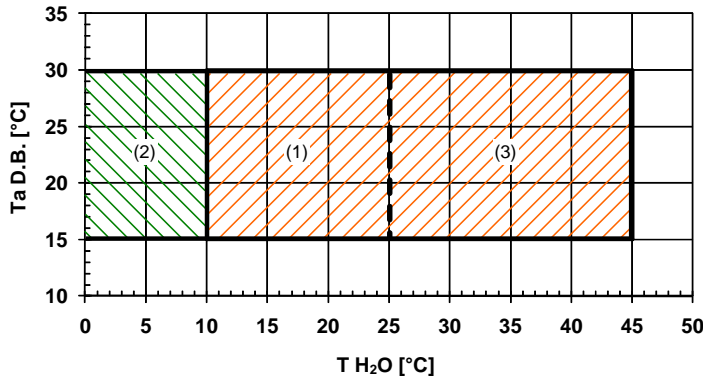
TH₂O = WATER TEMPERATURE INLET TO THE PLATE EXCHANGER (°C)

1 = STANDARD UNIT OPERATING FIELD
 2 = OPERATION FIELD OF THE UNIT FITTED WITH PIPE WORK FOR WATER TO WASTE APPLICATION, WITH 2WAY MODULATING VALVE (OPTIONAL)

WET BULB TEMPERATURE - EXAMPLE



OPERATING FIELD (HEATING)



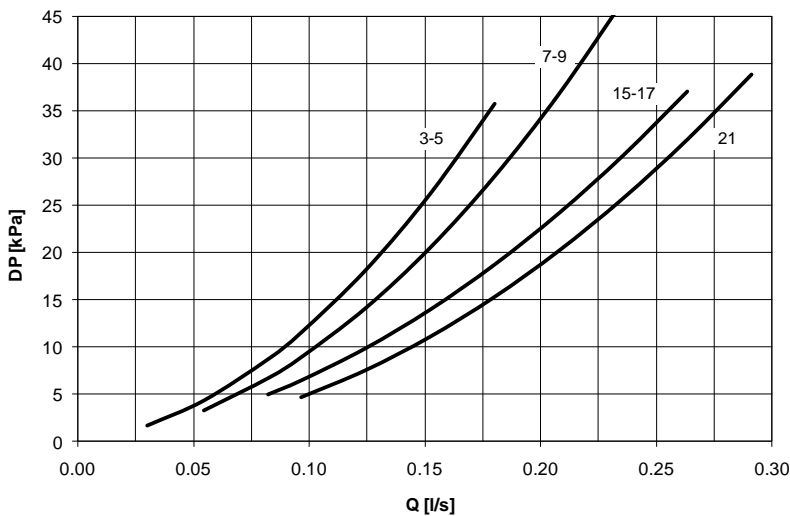
THE LIMITS ARE INDICATIVE AND CONSIDERED:
 - GENERAL AND NOT SPECIFIC SIZE,
 - STANDARD AIR FLOW RATE (MEDIUM FAN SPEED),
 - CORRECTLY INSTALLED AND MAINTAINED UNIT
 - OPERATION AT FULL LOAD
 - THERMAL GRADIENT ON WATER = 5°C

TA = AIR TEMPERATURE INLET TO THE HANDLING COIL
ATTENTION! TEMPERATURE MEASURED WITH DRY BULB
 (D.B. = DRY BULB)

TH₂O = WATER TEMPERATURE INLET TO THE PLATE EXCHANGER (°C)

1 = STANDARD UNIT OPERATING FIELD
 2 = OPERATING FIELD FOR WATER GLYCOL SYSTEM (TO PREVENT FROST)
 3 = STANDARD UNIT OPERATING FIELD.
 FOR AN EFFICIENT UNIT OPERATION ARE ADVISED TO PROVIDE FOR THE HYDRAULIC SYSTEM FOR WATER TO WASTE WITH A TWO-WAY MODULATING VALVE (OPTIONAL)

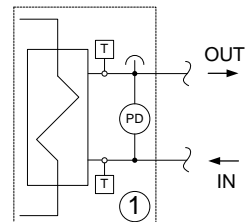
PRESSURE DROPS OF THE STANDARD UNIT HYDRAULIC CIRCUIT



Q = WATER FLOW RATE [l/s]
 DP = PRESSURE DROPS - WATER SIDE (kPa)



The standard unit includes the following components:
 1 - plate heat exchanger complete with differential water side pressure switch (to check for the presence of water flow) and water temperature control probe (for avoiding ice formation and to deactivate the compressor when the water temperature falls below a limit value)
 2 - bleed bibcock (to let air out of the system)
 It does not provide for other shut off or control devices.



FAN PERFORMANCES

SIZE		3	5	7	9	15	17	21
MINIMUM SPEED - EXTRAQUIET								
Air flow rate	l/s	82	93	114	113	172	172	208
Air flow rate	m ³ /h	295	335	410	405	620	620	750
Total input	kW	0.026	0.029	0.042	0.042	0.063	0.063	0.083
STANDARD SPEED - QUIET								
Air flow rate	l/s	101	106	128	126	208	208	230
Air flow rate	m ³ /h	365	380	460	455	750	750	830
Total input	kW	0.031	0.043	0.048	0.048	0.083	0.083	0.094
MAXIMUM SPEED - POWERFUL								
Air flow rate	l/s	117	114	183	182	230	230	258
Air flow rate	m ³ /h	420	410	660	655	830	830	930
Total input	kW	0.044	0.052	0.072	0.072	0.094	0.094	0.115

CORRECTION FACTORS OF PERFORMANCES ACCORDING TO THE HANDLING FAN SPEED

	MAXIMUM SPEED - EXTRAQUIET					STANDARD SPEED - QUIET					MAXIMUM SPEED - POWERFUL				
	Kf	Ks	Kt	Kef	Ket	Kf	Ks	Kt	Kef	Ket	Kf	Ks	Kt	Kef	Ket
3	0,93	0,91	0,98	1,00	1,08	1,00	1,00	1,00	1,00	1,00	1,03	1,08	1,02	1,00	0,97
5	0,88	0,81	0,95	1,02	1,03	1,00	1,00	1,00	1,00	1,00	1,02	1,04	1,01	1,00	0,97
7	0,94	0,94	0,99	1,01	1,02	1,00	1,00	1,00	1,00	1,00	1,06	1,18	1,03	1,01	0,94
9	0,96	0,94	0,98	1,02	1,03	1,00	1,00	1,00	1,00	1,00	1,06	1,21	1,04	1,00	0,92
15	0,93	0,83	0,94	1,01	1,14	1,00	1,00	1,00	1,00	1,00	1,01	1,06	1,01	1,00	0,97
17	0,97	0,78	0,93	1,01	1,11	1,00	1,00	1,00	1,00	1,00	1,02	1,06	1,02	1,00	0,96
21	0,98	0,95	0,99	1,00	1,06	1,00	1,00	1,00	1,00	1,00	1,02	1,06	1,02	1,00	0,96

The performances at the handling fan speeds are obtained by multiplying the standard flow unit (Quiet) by the correction factors in the table.
 Extra-quiet = Fan maximum speed
 Quiet (standard) = Fan medium speed
 Powerful = Fan maximum speed

Kf = cooling performance multiplication coefficient
 Ks = sensible output multiplication coefficient
 Kt = heating performance multiplication coefficient
 Kef = compressor power input multiplication coefficient in cooling operation
 Ket = compressor power input multiplication coefficient in heating operation

SOUND LEVELS

FAN MINIMUM SPEED: Extraquiet

SIZE	Sound Power Level (dB)								Sound pressure level	Sound power level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
3	52	50	51	46	45	39	36	33	38	49
5	54	62	51	46	46	41	37	35	40	51
7	55	59	47	48	44	39	34	35	38	50
9	55	59	51	49	44	40	35	34	38	50
15	59	59	54	51	46	41	40	37	41	52
17	59	60	53	51	45	41	41	37	41	52
21	61	57	57	55	51	46	42	38	45	56

FAN STANDARD SPEED: Quiet

SIZE	Sound Power Level (dB)								Sound pressure level	Sound power level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
3	52	54	52	47	45	43	36	35	39	50
5	56	62	54	49	45	44	37	36	41	52
7	63	58	52	51	47	43	37	35	41	52
9	63	59	52	51	47	43	39	36	41	52
15	59	58	56	56	50	45	39	37	45	56
17	60	59	58	56	51	46	40	36	45	56
21	62	59	59	57	53	49	41	35	47	58

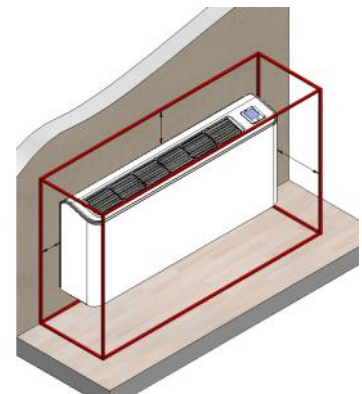
FAN MAXIMUM SPEED: Powerful

SIZE	Sound Power Level (dB)								Sound pressure level	Sound power level
	Octave band (Hz)									
	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
3	52	57	53	49	46	42	39	34	40	51
5	56	54	54	50	46	45	36	34	41	52
7	57	58	55	52	50	48	40	38	43	55
9	60	61	56	51	50	47	39	36	43	54
15	63	62	58	58	52	48	40	38	47	58
17	65	61	59	58	53	49	40	38	47	58
21	66	60	60	58	55	52	44	37	49	60

The sound levels are referred to units working at a full load in nominal conditions. The sound pressure level is referred at a distance of 1m. from the external unit surface, with fairing, fitted to a wall.

Please note that when the unit is installed in conditions other than nominal test conditions /for example near walls or obstacles in general) the sound levels may undergo substantial variation.

Measurements are made in accordance to the UNI EN ISO 9614-2, with units installed over two sound reflective surfaces (floor and wall).



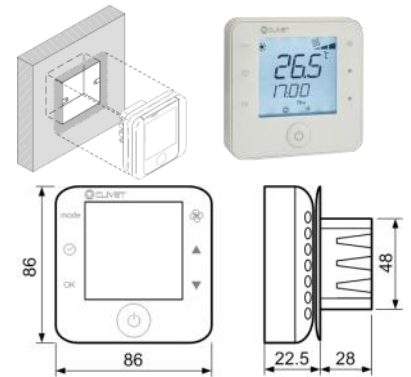
COMMON ACCESSORIES FOR UNCASED AND CASED UNIT CONFIGURATIONS

CIWMX - ELECTRONIC CONTROL WITH DISPLAY FOR WALL INSTALLATION WITH UNCASED BOX

An option which enables the unit to be remotely controlled. It can be easily installed in the main square or round uncased section boxes with 65 mm diameters and a depth of at least 31 mm.

The electronic control with display is very simple to use even for non-specialised users. Thanks to the icon menu which is complete with back-lighting, it allows different unit functions to be controlled, including:

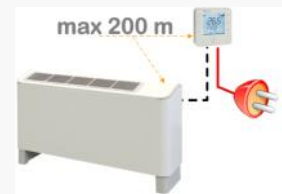
- switching the unit on and off
- reading the temperature using the probe in its interior
- displaying the working states and any alarms
- protection by password for access to the unit parameters
- manual change of operating mode (hot or cold) and/or set-point
- programming by daily and weekly timetabling the switching on and switching off times and the standard and economic set-point
- managing the working parameters
- managing the languages in the navigation menu
- manually, or automatically, managing the fan speed, depending on the distance from the set- point.



ELECTRICAL CONNECTION FOR DISTANCES LESS THAN 10 METERS



ELECTRICAL CONNECTION FOR DISTANCES EXCEEDING 10 METERS



The device is prepared for connection to a unit electrical panel (installation in charge of the Client) with the following modes:

- For a max distance of 10m only use the power supply cable and serial communication included in the pack. In this way electric power is supplied by the unit.
- For a max distance of 200m use a shielded twisted pair cable with a min 0.5 / max 1.5 mm² section. In this case the 230/1/50 electricity supply is by the Client (transformer integrated in the display).

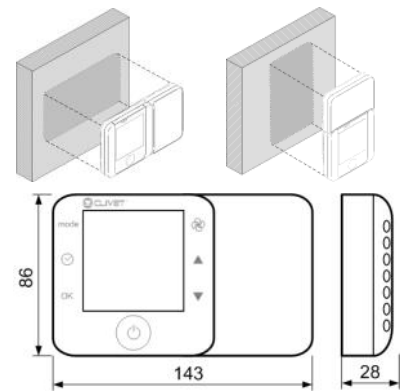
Accessories separately supplied

CWMX - ELECTRONIC CONTROL WITH DISPLAY FOR WALL INSTALLATION

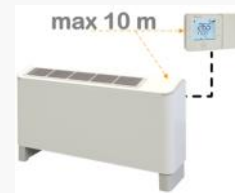
An option which enables the unit to be remotely controlled. It can be attached to a wall with the support in a horizontal or vertical position.

The electronic control with display is very simple to use even for non-specialised users. It enables all the unit functions to be controlled, including the main ones:

- reading the temperature directly on the thermostat using the probe in its interior;
- switching the unit on and off;
- protecting the machine parameters with a password;
- programming by daily and weekly timetabling the switching on and switching off times and the standard and economic set point;
- manual change of working mode (hot or cold) and/or set point;
- displaying alarms and machine states;
- managing the working parameters;
- managing the languages in the navigation menu;
- icon menu with back lighting;
- manually, or automatically, managing the fan speed, depending on the distance from the set point.



ELECTRICAL CONNECTION FOR DISTANCES LESS THAN 10 METERS



ELECTRICAL CONNECTION FOR DISTANCES EXCEEDING 10 METERS



The device is prepared for connection to a unit electrical panel (installation by the Client) with the following modes:

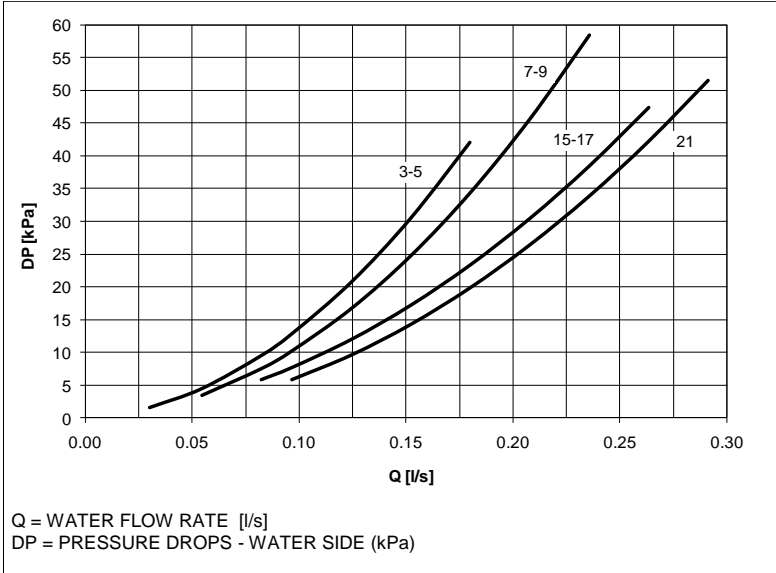
- For a max distance of 10m only use the power supply cable and serial communication included in the pack. In this way electric power is supplied by the unit.
- For a max distance of 200m use a shielded twisted pair cable with a min 0.5 / max 1.5 mm² section. In this case the 230/1/50 electricity supply is by the Client (transformer integrated in the display).

Accessories separately supplied

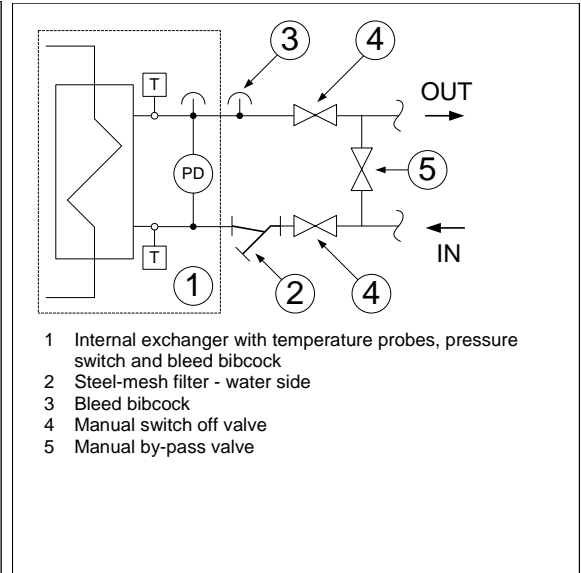
MIPC - HYDRAULIC PIPE WORK FOR CONSTANT FLOW LOOP WITH MANUALLY OPERATED VALVES

Option supplied built-in. It simplifies the design and the installation in closed loop applications at constant water flow. Complete with water steel-mesh filter, two 2-way shut-off valves with manual operation at the inlet and outlet to the water side exchanger, a 2-way valve with manual activation which works as a by-pass during hydraulic circuit cleaning, two bleed bibcocks.

PRESSURE DROPS OF THE UNIT WITH MIPC OPTION



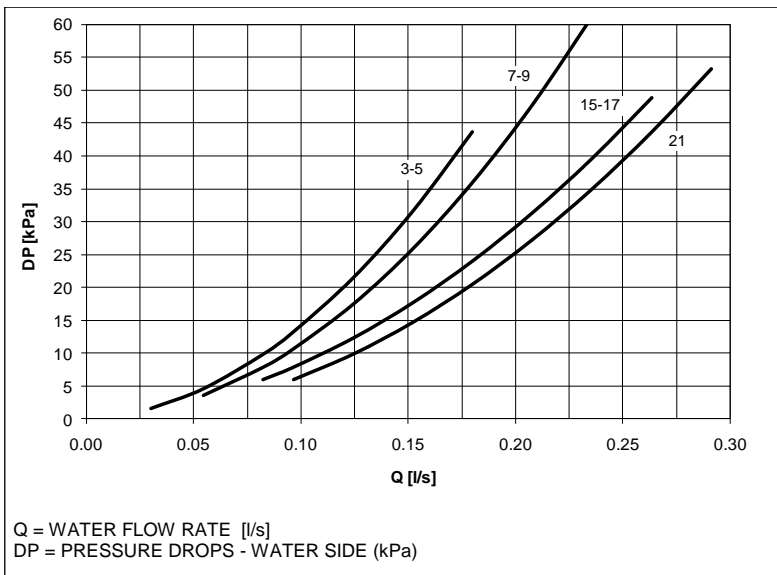
SCHEME MIPC OPTION



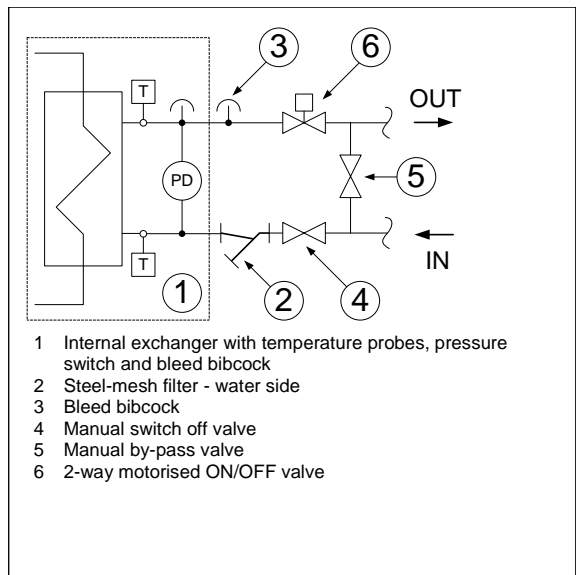
MIPV - PIPE WORK FOR VARIABLE FLOW LOOP WITH 2-WAY ON-OFF VALVE

Option supplied built-in. It simplifies the design and the installation in closed loop applications at variant water flow. Includes a 2-way motorised ON/OFF valve at the outlet of the water side exchanger, powered and controlled by the unit. Its function is coupled to that of the cooling circuit: with the stopped compressor, the valve stays closed, reducing water consumption. Furthermore, complete with steel-mesh filter, two 2-way shut off valves with manual activation at the inlet of the water side exchanger, a 2-way valve with manual activation which works as a by-pass during the hydraulic circuit cleaning, two bleed bibcocks.

PRESSURE DROPS OF THE UNIT WITH MIPV OPTION



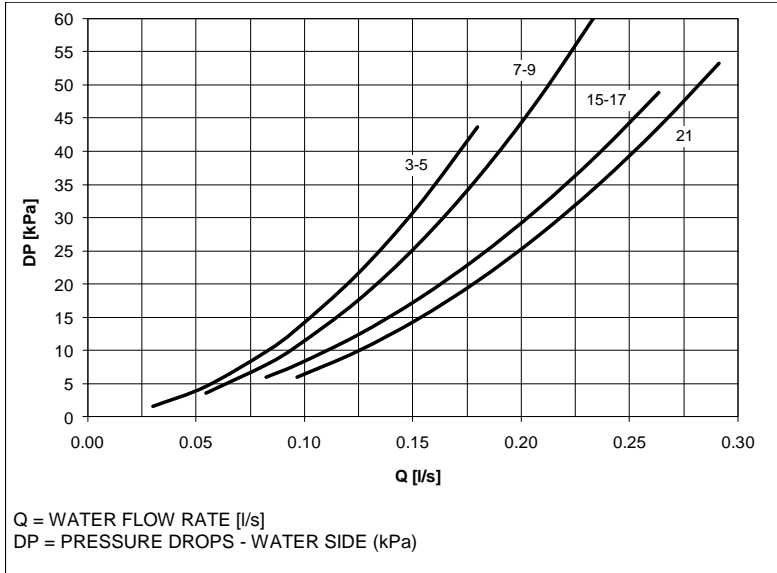
SCHEME MIPV OPTION



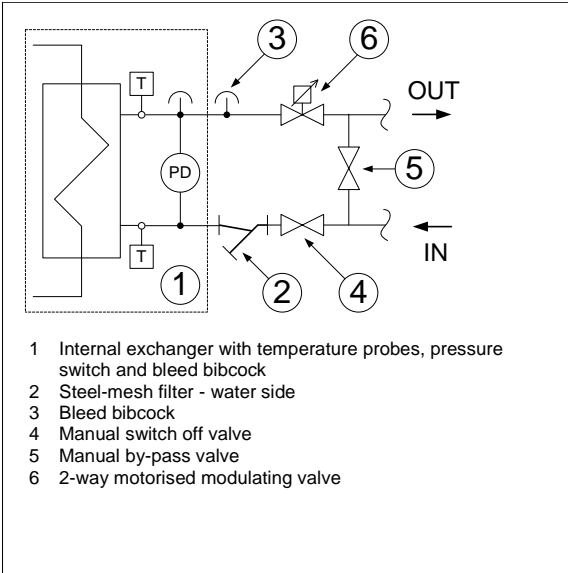
MIPM - WATER TO WASTE SYSTEM WITH 2-WAY MODULATING VALVES

Option supplied built-in. It simplifies design and installation in water to waste applications with relatively low temperatures (well, water sheet, aqueduct). Includes a 2-way motorised modulating valve at the outlet of the water side exchanger, powered and controlled by the unit. Its function is coupled to that of the cooling circuit: modulating via the 0-10V signal based on the refrigerant pressure in the source side exchanger reduces water consumption and keeps the unit in the set working field both in cooling and heating modes. Furthermore, complete with steel-mash filter, two 2-way shut-off valves with manual activation at the inlet of the water side exchanger, a 2-way valve with manual activation which works as a by-pass during the hydraulic circuit cleaning, two bleed bibcocks, two bleed bibcocks.

PRESSURE DROPS OF THE UNIT WITH MIPM OPTION



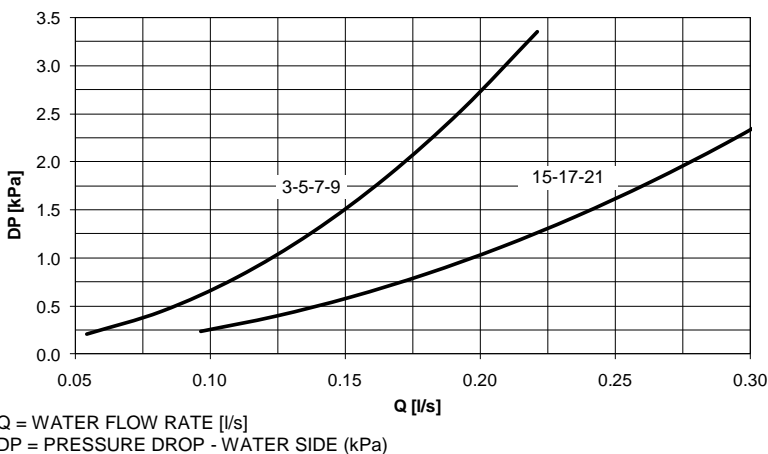
SCHEME MIPM OPTION



IFWX - WATER STEEL-MASH FILTER

The device protects the plate exchanger of any impurities in the hydraulic circuit. The mechanical steel-mesh filter should be placed on the water input line. It can be easily disassembled for routine maintenance and cleaning.

IFWX OPTION PRESSURE DROPS



IFWX OPTION TECHNICAL SPECIFICATIONS

SIZE	3-5-7-9	15-17-21
Filter diameter	1/2"	3/4"
Water fitting diameter	1/2"	1/2"
System side water fittings	FEMALE	FEMALE
Unit side water fittings	MALE	MALE
Filtering capacity	400 µm	400 µm



- Pressure drops with clean filter
- To carry out routine maintenance there should be appropriate shut-offs on the hydraulic line.
- Accessories separately supplied

CSVX - PAIR OF MANUAL SHUT-OFF VALVES

Shut-off device which enables the unit to be hydraulically closed for maintenance works and to prepare the system before connecting the unit. The two manual operated valves are located on the water lines at the inlet and outlet.



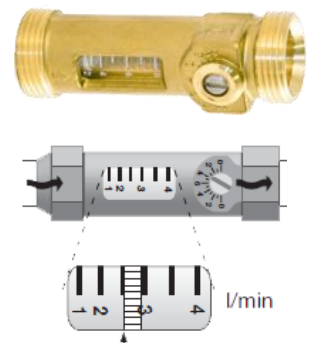
TECHNICAL SPECIFICATIONS OF THE MANUAL SHUT-OFF VALVES

SIZE	3-5-7-9-15-17-21
Fitting diameter	1/2"
System side fittings	FEMALE
Unit side fittings	FEMALE

Accessories separately supplied

FCVBX - MANUAL BALANCING VALVE

The device enables the water flow through the unit to be calibrated without measuring tables or devices. In this way it is possible to balance the water flow in the circuit. The special viewer enables instantaneous reading of the water flow (in litres / minute). The calibration can be easily carried out even by non-specialised operators, working on the special regulation screws. It includes adaptors for varying the diameter between the balancing valve and the water fittings.



TECHNICAL SPECIFICATIONS OF THE MANUAL BALANCING VALVES

SIZE	3-5-7-9	15-17-21
Balancing valve diameter	3/4"	1"
Water fitting diameter	1/2"	1/2"
System side fittings	MALE	MALE
Unit side fittings	MALE	MALE
Max. operating pressure	10 bar	10 bar
Field flow control	0.05 ÷ 0.2 l/s	0.13 ÷ 0.5 l/s
Flow rate coefficient (Kvs)	1.85	5.00

Accessories separately supplied

The water side pressure drop can be determined with the following formula:

$$Dp \text{ [bar]} = \left(\frac{3.6 \times Q \text{ [l/s]}}{Kvs} \right)^2$$

Q = water flow (l/s)
 Dp = pressure drops – water side (bar)
 Kvs = flow rate coefficient [m³/h]

CDPA - BUILT-IN CONDENSATION DISCHARGE PUMP

Device which enables condensation water to be discharged into the collection tray in case it cannot drain away due to gravity. It is necessary in installations where the external outlet is placed at a higher height than the condensate tray.

The integrated sensor activates the pump only when necessary. If the water level in the tray should be greater than the pre-set limit, the unit stops the compressor to avoid the tray overflowing, signalling the fault with an alarm.

The device is installed and wired built-in

TECHNICAL SPECIFICATIONS OF THE CONDENSATION DISCHARGE PUMP

SIZE	3-5-7-9-15-17-21
Flow rate	6 l/h
Available head	60 kPa

CDPAX - CONDENSATION DISCHARGE PUMP

Technical characteristics as for the CPDA accessory, but with the exception of installation and wiring.

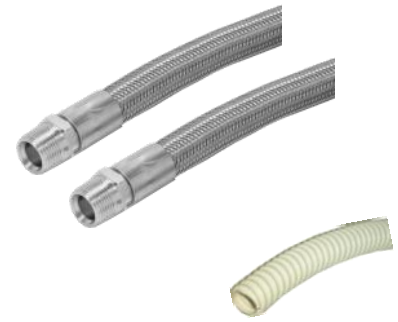
The device is prepared for installation inside the unit (to be fitted by Client). The pack includes a flexible condensation discharge tube, 1m in length and the the electricity power cable and the control.

Accessories separately supplied



PFHCX - 200 mm FLEXIBLE PIPING FOR WATER CONNECTION AND CONDENSATION DISCHARGE
PFHC1X - 500 mm FLEXIBLE PIPING FOR WATER CONNECTION AND CONDENSATION DISCHARGE

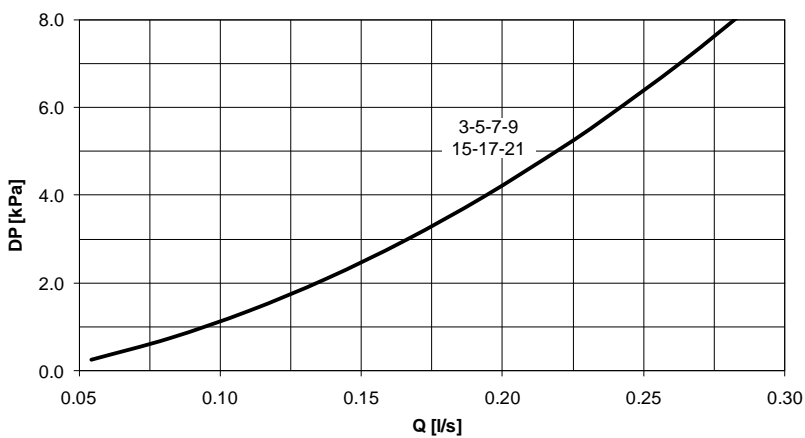
An option which simplifies the water connection and reduces any vibrations between the unit and the system. It includes two flexible pipes with stainless steel net covering and a reinforced plastic pipe for the connection of the tray to the external drain.



TECHNICAL SPECIFICATIONS OF THE FLEXIBLE PIPING FOR WATER CONNECTIONS

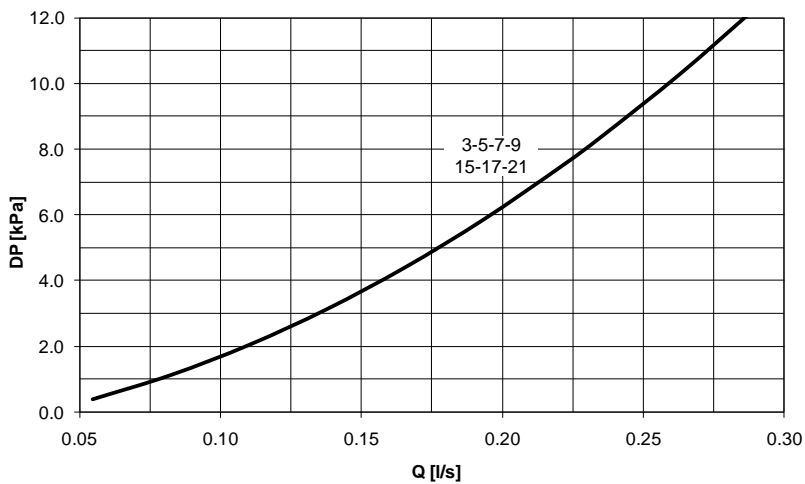
SIZE	3-5-7-9-15-17-21
Water fitting diameter	1/2"
System side fittings	FEMALE
Unit side fittings	MALE
Max. operating pressure	12 bar
Min. bending radius	45 mm

PRESSURE DROPS OF 200MM SINGLE FLEXIBLE PIPE



Q = WATER FLOW RATE (l/s)
 DP = WATER SIDE PRESSURE DROPS (kPa)

PRESSURE DROPS OF 500MM SINGLE FLEXIBLE PIPE



Q = WATER FLOW RATE (l/s)
 DP = WATER SIDE PRESSURE DROPS (kPa)

TECHNICAL SPECIFICATIONS OF THE FLEXIBLE PIPING FOR CONDENSATION DISCHARGE

SIZE	3-5-7-9-15-17-21
Pipe diameter	15 mm
Pipe length	1 m



The flexible pipe of the condensate discharge can be completed with a suitable trap to prevent the odour return in the room and connected to a suitable drain (installed by Customer).



Accessories separately supplied

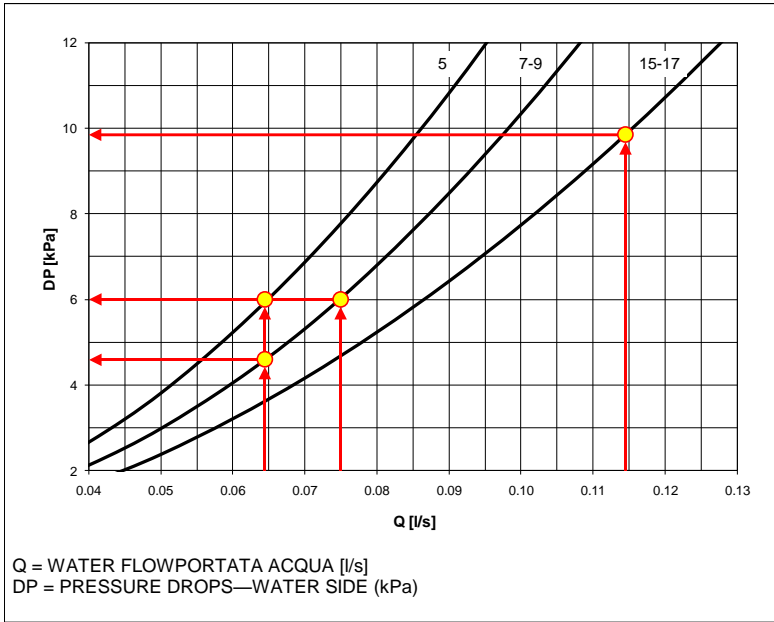
REQV - HYDRAULIC CONNECTIONS FOR RETROFIT OF EQV, VM AND VV UNITS WITH CONSTANT FLOW RATE

Option supplied built-in. This simplifies hydraulic connection of the VERSATEMP EQV, VM, VV series unit replacement, uncased and cased, since it keeps the same size fittings in the same places. Complete with steel-mash filter and safety valve.

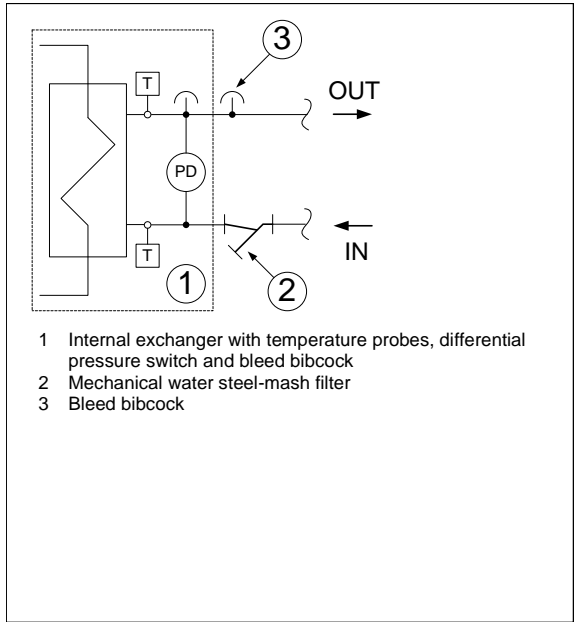


The device is installed built-in.

PRESSURE DROPS OF THE UNIT WITH REQV OPTION



SCHEME REQV OPTION



- The graph shows only the EQV-x sizes suitable replacement (retrofit) with the VERSATEMP unit, series EQV, VM, VV.
- The system side connections are female

EQV-X PERFORMANCE TABLE WITH RETROFIT SYSTEM

EQV-X SIZE			5	7	9	15	17
Water flow rate	1	l/s	0.064	0.064	0.075	0.114	0.114
Air flow	2	l/s	106	128	126	208	208
Air flow	2	m ³ /h	380	460	455	750	750
COOLING			A 27/19 W 30				
Cooling capacity		kW	1.99	2.25	2.71	3.26	3.59
Compressor power input		kW	0.48	0.64	0.70	0.77	0.85
HEATING			A 20 W 20				
Heating capacity		kW	2.33	2.68	3.12	3.98	4.34
Compressor power input		kW	0.46	0.61	0.68	0.76	0.90
OPERATION FIELD							
Min inlet water temperature in cooling		°C	20	20	20	20	20
Max inlet water temperature in cooling		°C	40	39	39	41	40
Min inlet water temperature in heating		°C	13	14	14	12	13
Max inlet water temperature in heating		°C	45	45	45	45	45

A 27/19 W 30 = Inlet air temperature 27°C D.B. / 19°C W.B. Inlet water temperature 30°C
 A 20 W 20 = Inlet air temperature 20°C Inlet water temperature 20°C
 D.B. = Dry bulb
 W.B. = Wet bulb

(1) EQV-X water flow rate = EQV, VM, VV water flow rate
 (2) EQV-X air flow rate, at the fan standard speed (Quiet)

Nota - The thermal gradient between the inlet and outlet water temperature can be calculated according to the water flow rate and the power supplied by the unit.

$$DT [^{\circ}C] = \frac{kWt}{4.186 \times Q [l/s]}$$

Q = WATER FLOW RATE (l/s)

DT = THERMAL GRADIENT BETWEEN THE INLET AND OUTLET WATER TEMPERATURE (°C)

kWt = BASED ON THE OPERATING MODE
 - kWt = Pf + Pe compressor (COOLING)
 - kWt = Pt - Pe compressor (HEATING)

MOBA - RS485 SERIAL PORT WITH MODBUS PROTOCOL, BUILT-IN

It allows the serial connection to supervision systems, using ModBus as the communication protocol. It allows the access to the complete list of operating variables, controls and alarms.

On the same serial line can be connected up to 32 units for a typical distance of 1000 m. The connection is made using a suitable cable to the RS485 network or formed by a twisted pair and shielded wires.

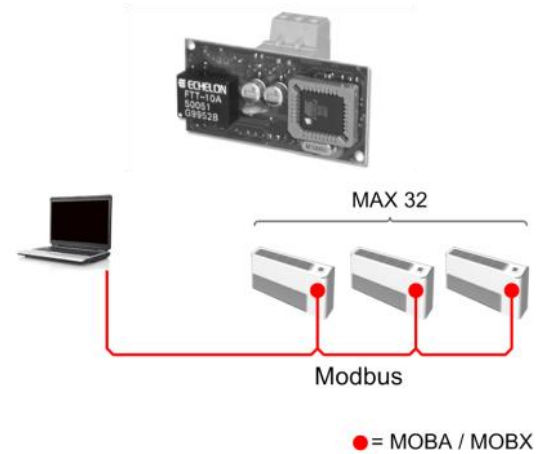
The device is installed and wired built-in.

MOBX - RS485 SERIAL PORT KIT WITH MODBUS PROTOCOL

This accessory has the same technical specifications of MOBA accessory, with the exception of the installation and wiring to be complet by customer.

The device is ready for connecting to the electrical panel (installed by the customer).

Accessories separately supplied



CMSLWX - LonWorks SERIAL CONVERTER KIT

This allows the serial connection to the supervision systems, using LonWorks as the communication protocol. It allows the access to a list of operating variables, controls and alarms compliant with the Echelon® standard.

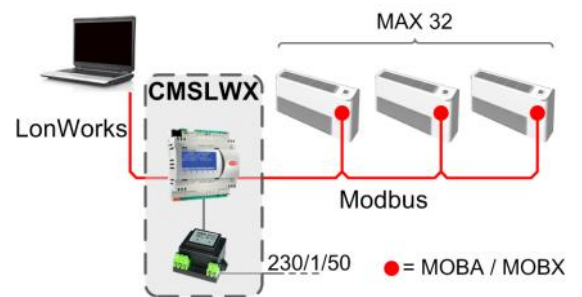
With this accessory, each unit can communicate with the main supervisor systems such as Trend, Johnson Controls, PlantVisor.

Accessories separately supplied

The device requires the coupling with the the RS485 option with Modbus protocol.

The package includes the transformer, which is powered by 230/1/50, and the Gateway of communication between the supervisor and the Modbus serial line. The configuration and management of the LonWorks network are the responsibility of the customer.

The device is prearranged to mounting in DIN rail, for external installation (7 DIN modules, installed by the customer)



BACX - BACNET SERIAL CONVERTER KIT

This allows the serial connection to supervision systems, using BACnet or SNMPv3.0 as the communication protocol. It allows the access to the complete list of operating variables, controls and alarms.

The device has two communication ports:

- 2 serial ports configurable as RS232 or RS485, are available for MODBUS and BACnet MSTP
- 1 Ethernet port RJ45 for BACnet IP, SNMPv3 and TCP/IP protocols.

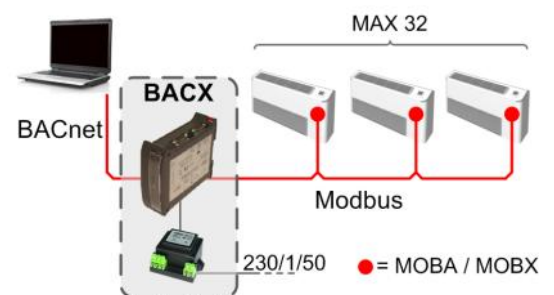
With this accessory, each unit can communicate with the main supervisor systems such as Trend, Johnson Controls, PlantVisor.

Accessories separately supplied

The device requires the coupling with the the RS485 option with Modbus protocol.

The package includes the transformer, which is powered by 230/1/50, and the Gateway of communication between the supervisor and the Modbus serial line. The configuration and management of the BACnet network are in the responsibility of the customer.

The device is prearranged to mounting in DIN rail, for external installation (7 DIN modules, installed by the customer)



MAIN VARIABLES OF SUPERVISION BY SERIAL (MODBUS / LonWorks / BACnet).

- | | |
|---|---|
| - Current room temperature | - ECONOMIC operating mode (using a pre-set ECO set point) |
| - Ideal temperature Set-Point | - Remote ON-OFF |
| - Maximum correction of the set-point temperature set by the user via electronic room control | - Heating temperature hysteresis |
| - Fan speed (Extraquiet, Quiet, Powerful, AUTO) | - Cooling temperature hysteresis |
| - Operating mode (Heating, Cooling, AUTO) | - Deadband |
| - Alarm reset | |

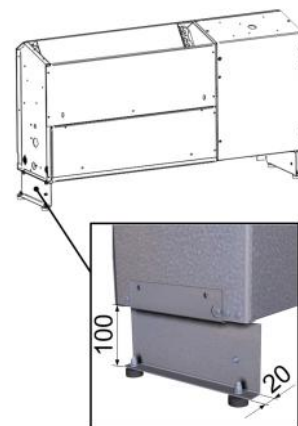
UNCASED UNIT ACCESSORIES

FXPFX - ZINC-COATED PLINTH FOR FLOOR STANDING ARRANGEMENT FOR UNCASED UNIT

The plinths are made of zinc-coated stainless steel and are supplied with adjustable rubber feet.

Option available only with uncased configuration unit

Accessories separately supplied



CONTX - ELECTRONIC ROOM CONTROL WITH DISPLAY, FOR INSTALLATION INTO THE UNCASED UNIT

An option which enables the electronic control to be assembled built-in, in a horizontal, visible position.

The electronic control with display is very simple to use even for non-specialised users. It enables all the unit functions to be controlled:

- switching the unit on and off;
- protecting the unit parameters with a password;
- programming by daily and weekly timetabling the switching on and switching off times and the standard and economic set point;
- manual change of working mode (hot or cold) and/or set point;
- displaying the alarms and unit states;
- managing the working parameters;
- managing the languages in the navigation menu;
- icon menu with back lighting;
- manually, or automatically, managing the fan speed, depending on the distance from the set point.



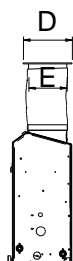
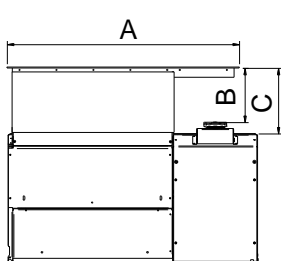
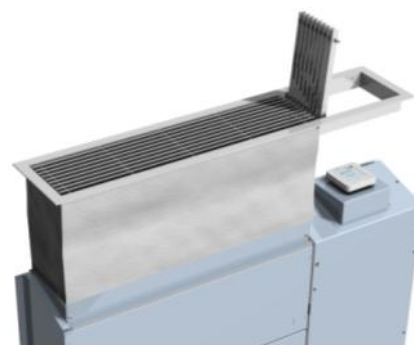
Package includes mounting screws and the power cable and serial communication (installed by customer)

Accessories separately supplied

GOJX - AIR SUPPLY GRILLE WITH FLEXIBLE JOINT AND GRILLE

The kit consists of:

- an aluminium grille for air diffusion. With a pleasing design, it is equipped with one single line of blades and integrated attachment flange for building into the furnishings. A portion of the grille opened for access to the "Electronic control with display" option (when present);
- a flexible PVC channel for connection with the unit air discharge. It enables a good level of freedom in positioning the air diffusion grille in relation to the unit.



SIZE	3-5	7-9	15-17-21
A	880	1030	1180
B	125+205	125+205	125+205
C	170+250	170+250	170+250
D	182	182	182
E	145	145	145

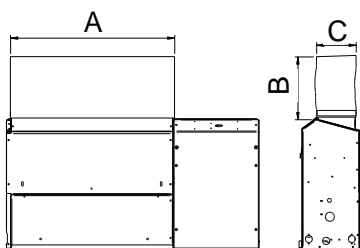
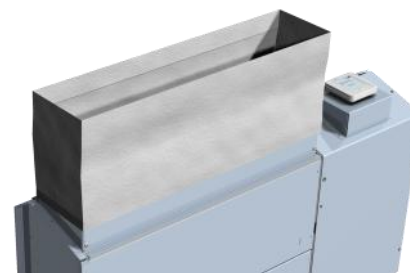


Option available only with uncased configuration unit

Accessories separately supplied

DAOJX - AIR SUPPLY DUCT WITH FLEXIBLE JOINT

The kit consists of a flexible PVC duct for connection with the unit air supply. It enables a good level of freedom in positioning the air diffusion grille in relation to the unit.



SIZE	3-5	7-9	15-17-21
A	605	750	860
B	150+230	150+230	150+230
C	145	145	145

Option available only with uncased configuration unit

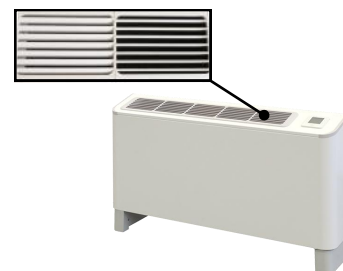
Accessories separately supplied

CASED UNIT ACCESSORIES

CAB - CONFIGURATION WITH FAIRING FOR CASED APPLICATIONS

With this aesthetic finishing option the unit can be installed directly in the room. The external fairing is made of zinc-coated stainless steel and powder-coated (colour RAL 9003), with finishing and grilles in robust RAL 7047 colour ABS plastic. "Aluzinc" assembly to the internal structure at 4 points which are hidden by the air supply grille. The air supply grilles and, if present, the frontal air grille are supplied with one single line of fixed fins. They can be easily extracted and rotated by 180° to obtain a different direction in the air flow.

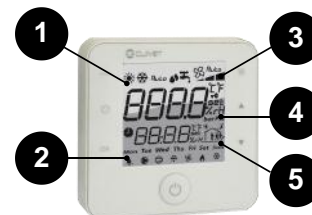
The joint between the fairing and the sides is made using ABS profiles (RAL 7047)



CONT - ELECTRONIC ROOM CONTROL WITH DISPLAY, FOR INSTALLATION INTO THE FAIRING OF CASED UNIT

The electronic control with display is electrically connected built-in, in an easily visible position and is simple to use even for non-specialised users. It enables all the unit functions to be controlled, includes:



- switching the unit on and off;
- protecting the machine parameters with a password;
- programming by daily and weekly timetabling the switching on and switching off times and the standard and economic set point;
- manual change of working mode (hot or cold) and/or set point;
- displaying the alarms and unit states;
- managing the working parameters;
- managing the languages in the navigation menu;
- icon menu with back lighting;
- manually, or automatically, managing the fan speed, depending on the distance from the set point.

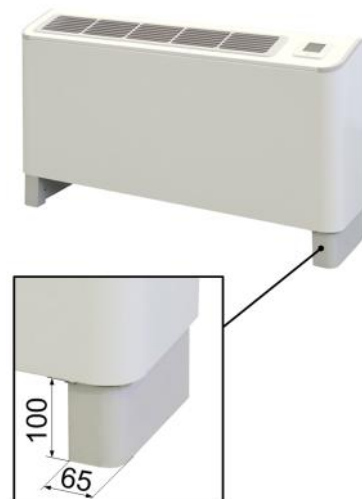


- Icons and status visible from the display:
1. Operation mode;
 2. Unit status;
 3. Fan: manual / automatic speed;
 4. Status variables, parameter, alarms
 5. Set-point, times, days of the week

FXVFX - PAINTED PLINTH FOR FLOOR STANDING ARRANGEMENT

Enables safe positioning even when the unit cannot be attached to a rear wall, as in the case of plasterboard walls or near to a glass wall. The plinths are made of galvanized steel and powder-coated with the same colour as the grilles (RAL 7047) and are supplied with rubber adjustable feet.




-  Option available only with cased configuration unit
-  Accessory supplied separately



FXVFHX - PAINTED PLINTH FOR FLOOR STANDING ARRANGEMENT WITH FRONT GRILLE

Enables safe positioning even when the unit cannot be attached to a rear wall, as in the case of plasterboard walls or near to a glass wall. Furthermore, enables any pipe work components to be hidden. It includes:

- two plinths made of zinc-coated stainless steel and supplied with rubber adjustable feet
- a covering panel made of galvanized steel and powder-coated with the same colour as the grilles (RAL 7047), complete with frontal air grille which is the same as the air delivery grille.


-  Option available only with cased configuration unit with fairing
-  The painted plinths of the FXVFHX and FXVFX options are of different heights
-  Accessory supplied separately



BACKV - REAR PAINTED PANEL FOR CASED UNIT

Option which enables the installation of a unit with a rear visible wall (for instance, in front of a glass wall). It includes a rear aesthetic panel in galvanized steel and powder-coated with the same colour of the hood (RAL 9003).

The device is installed built-in

-  Option available only with unit configuration with fairing for visible applications



OPTION COMPATIBILITY - EQV-X SERIES

REF.	DESCRIPTION	WITH FAIRING	UNCASED
Versions			
CAB	Configuration with fairing for cased application	●	-
UC	Uncased configuration (without cabinet)	-	●
Aeraulic circuit			
GOJX	Air supply grille with flexible joint	-	●
DAOJX	Air supply duct with flexible joint	-	●
RF	Front air inlet	○	○
Hydraulic circuit			
CDPX	Discharge condensate pump	●	●
CDPA	Discharge condensate pump, built-in	○	○
IFWX	See-mash filter - water side	●	●
FCVBX	Manual balancing valve	●	●
CSVX	Pair of manual shut-off valve	●	●
PFHCX	200 mm flexible piping for water connection and condensation discharge	●	●
PFHC1X	500 mm flexible piping for water connection and condensation discharge	●	●
MIPC	Hydraulic pipe work for constant flow loop with manually operated valves	○	○
MIPV	Hydraulic pipe work for variable flow loop with two way ON-OFF valve	○	○
MIPM	Water to waste systems with 2-way modulating valve	○	○
REQV	Hydraulic connections for retrofit of EQV, VM and VV units with constant flow rate	○	○
Electric Circuit			
MOBA	RS485 serial port with MODBUS protocol built-in	○	○
MOBX	RS485 serial port Kit with MODBUS protocol	●	●
CMSLWX	LonWorks serial converter Kit	● *	● *
BACX	BACNET serial converter Kit	● *	● *
CWMX	Electronic control with display for wall installation	●	●
CIWMX	Electronic control with display for wall installation with uncased box	●	●
CONT	Electronic control with display, installed into the fairing unit in a visible position	○	-
CONTX	Electronic control with display for installation into the uncased unit	-	●
Application			
BACKV	Rear painted panel for cased unit	○	-
FXVFX	Painted plinth for floor standing arrangement	●	-
FXVFHX	Painted plinth for floor standing arrangement with front grille	●	-
FXPFX	Zinc-coated plinth for floor standing arrangement for uncased unit	-	●

● Standard

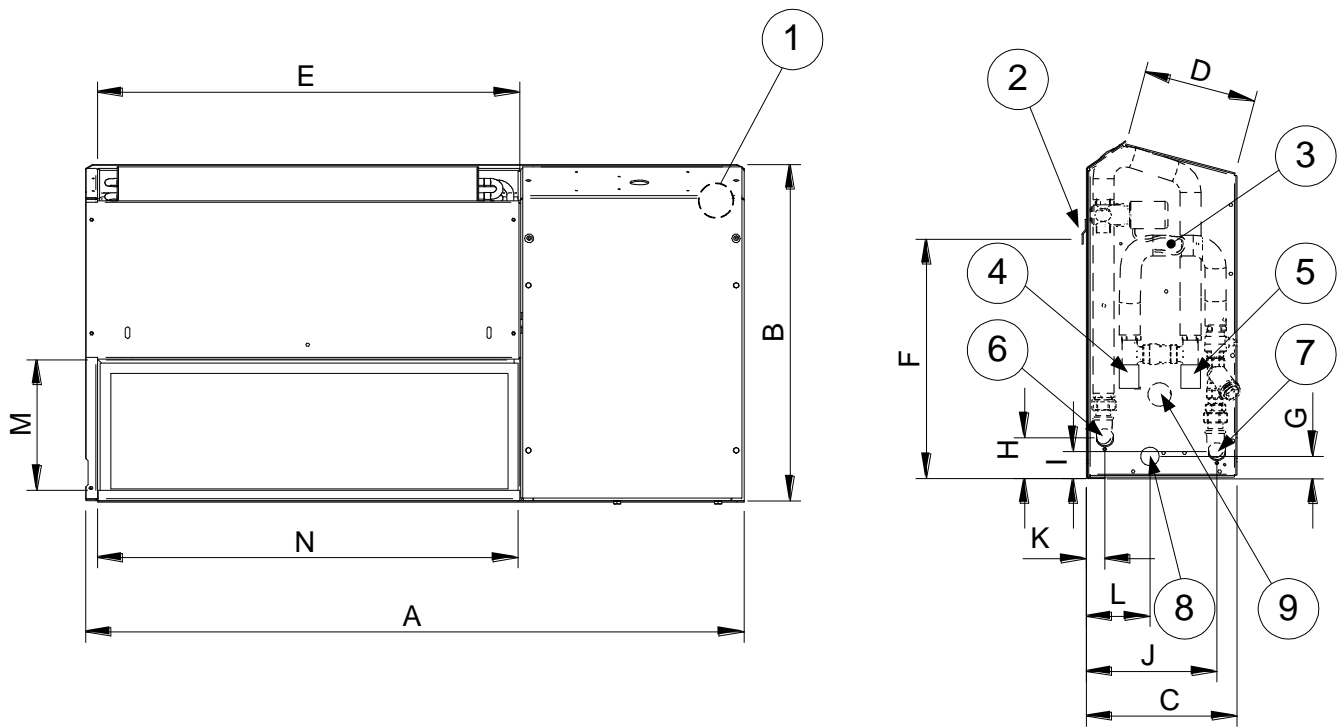
○ Optional

●* Accessories separately supplied (optional) and available only with: RS485 Serial port with MODBUS protocol (Clivet Ref. MOBA o MOBX)

● Accessories separately supplied (optional)

DIMENSIONAL DRAWING OF THE UNCASSED CONFIGURATION

SIZES 3-21



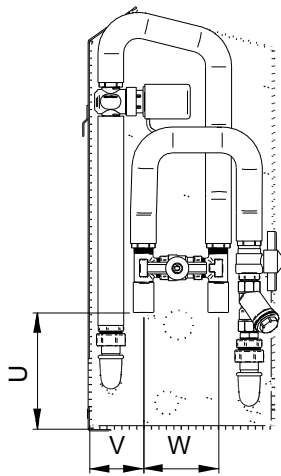
- (1) POWER SUPPLY INLET
- (2) BRACKET WALL UNIT
- (3) OPTIONAL HYDRAULIC MODULE
- (4) WATER INLET - OPTIONAL HYDRAULIC MODULE UNIT (FEMALE)
- (5) WATER OUTLET - OPTIONAL HYDRAULIC MODULE UNIT (FEMALE)

- (6) WATER OUTLET—STANDARD UNIT (FEMALE)
- (7) WATER INLET—STANDARD UNIT (FEMALE)
- (8) CONDENSING DRAIN Ø 15 mm
- (9) OUTLET OF THE DRAIN PIPE FROM THE DRAIN PUMP (OPTION)

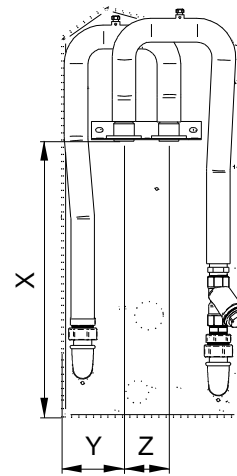
SIZE	3	5	7	9	15	17	21
A (Length)	945	945	1095	1095	1245	1245	1245
B (Height)	490	490	490	490	490	490	490
C (Depth)	225	225	225	225	225	225	225
D	160	160	160	160	160	160	160
E	605	605	755	755	875	875	875
F	348	348	348	348	348	348	348
G	32	32	32	32	32	32	32
H	60	60	60	60	60	60	60
I	40	40	40	40	40	40	40
J	188	188	188	188	188	188	188
K	26	26	26	26	26	26	26
L	90	90	90	90	90	90	90
M	605	605	750	750	870	870	870
N	190	190	190	190	190	190	190
Weight	53	55	61	61	64	64	68
Standard water fittings	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

DIMENSIONAL DRAWING OF THE HYDRAULIC PIPE WORK AND RETROFIT OPTIONS

HYDRAULIC PIPE WORK
 - FOR CONSTANT FLOW LOOP
 - FOR VARIABLE FLOW LOOP
 - FOR WATER TO WASTE SYSTEM

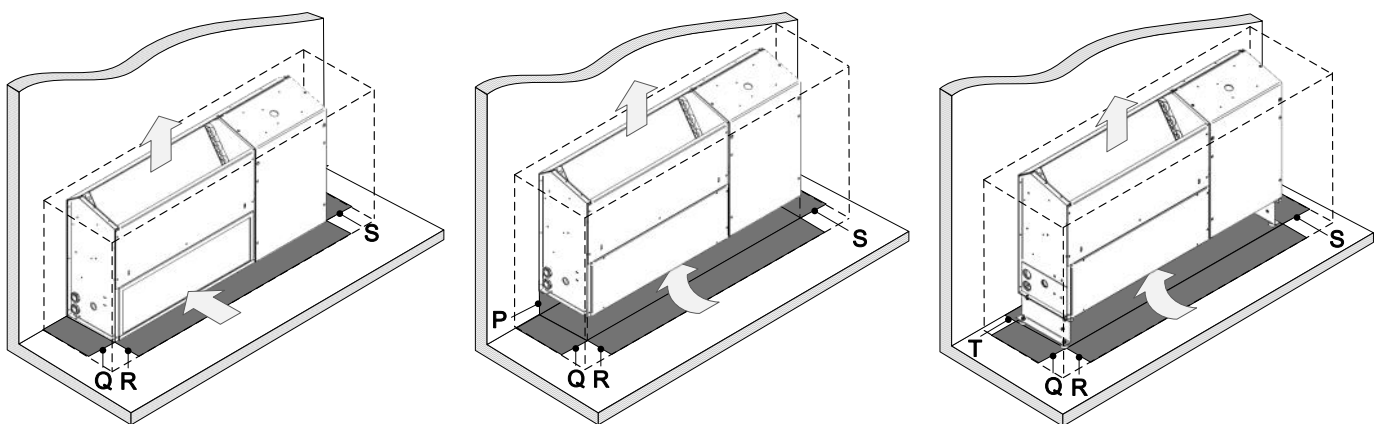


HYDRAULIC PIPE WORK
 - WITH RETROFIT SYSTEM



SIZE	3	5	7	9	15	17	21
U	135	135	135	135	135	135	135
V	65	65	65	65	65	65	65
W	90	90	90	90	90	90	90
X	320	320	320	320	320	320	320
Y	75	75	75	75	75	75	75
Z	55	55	55	55	55	55	55
Water fittings with hydraulic pipe work	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Water fittings with hydraulic connections for retrofit system	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

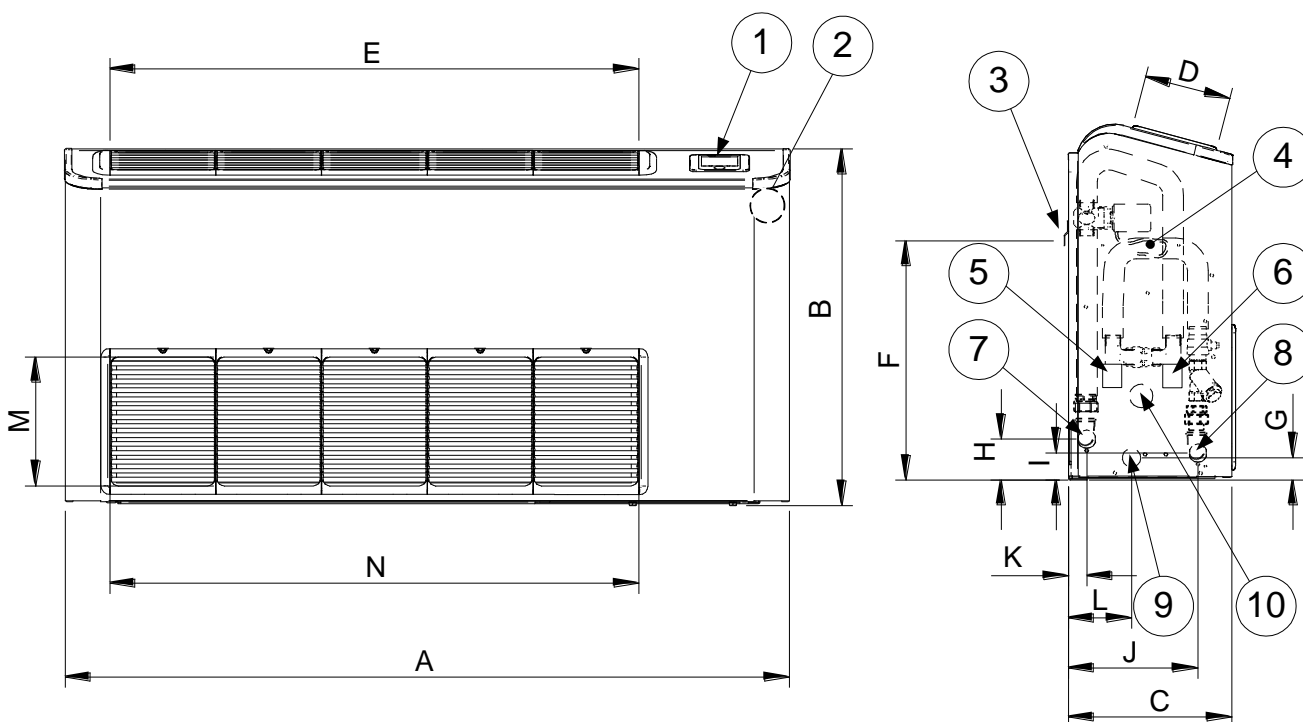
CLEARANCE ACCESS RECOMMENDED



SIZE	3	5	7	9	15	17	21
P (MIN)	100	100	100	100	100	100	100
Q	200	200	200	200	200	200	200
R	500	500	500	500	500	500	500
S	100	100	100	100	100	100	100
T (MIN)	0	0	0	0	0	0	0

DIMENSIONAL DRAWING OF THE CASED CONFIGURATION

SIZE 3-21

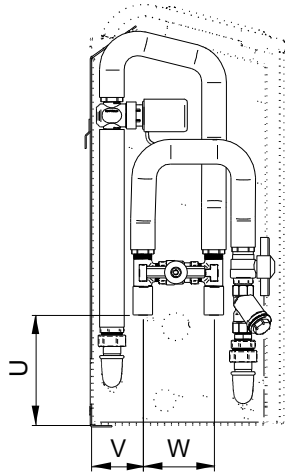


- (1) ELECTRONIC ROOM CONTROL WITH DISPLAY(OPTIONAL)
- (2) POWER SUPPLY INLET
- (3) BRACKET WALL UNIT
- (4) OPTIONAL HYDRAULIC MODULE
- (5) WATER INLET - OPTIONAL HYDRAULIC MODULE UNIT (FEMALE)
- (6) WATER OUTLET - OPTIONAL HYDRAULIC MODULE UNIT (FEMALE)
- (7) WATER OUTLET—STANDARD UNIT (FEMALE)
- (8) WATER INLET—STANDARD UNIT (FEMALE)
- (9) CONDENSING DRAIN Ø 15 mm
- (10) OUTLET OF THE DRAIN PIPE FROM THE DRAIN PUMP (OPTION)

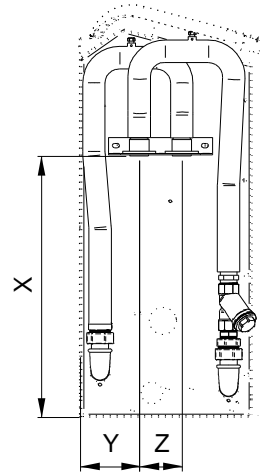
SIZE	3	5	7	9	15	17	21
A (Length)	1050	1050	1200	1200	1350	1350	1350
B (Height)	520	520	520	520	520	520	520
C (Depth)	240	240	240	240	240	240	240
D	125	125	125	125	125	125	125
E	765	765	920	920	1075	1075	1075
F	348	348	348	348	348	348	348
G	32	32	32	32	32	32	32
H	60	60	60	60	60	60	60
I	40	40	40	40	40	40	40
J	188	188	188	188	188	188	188
K	26	26	26	26	26	26	26
L	90	90	90	90	90	90	90
M	765	765	920	920	1070	1070	1070
N	210	210	210	210	210	210	210
Weight	61	63	70	70	73	73	77
Standard water fittings	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

DIMENSIONAL DRAWING OF THE HYDRAULIC PIPE WORK AND RETROFIT OPTIONS

HYDRAULIC PIPE WORK
 - FOR CONSTANT FLOW LOOP
 - FOR VARIABLE FLOW LOOP
 - FOR WATER TO WASTE SYSTEM

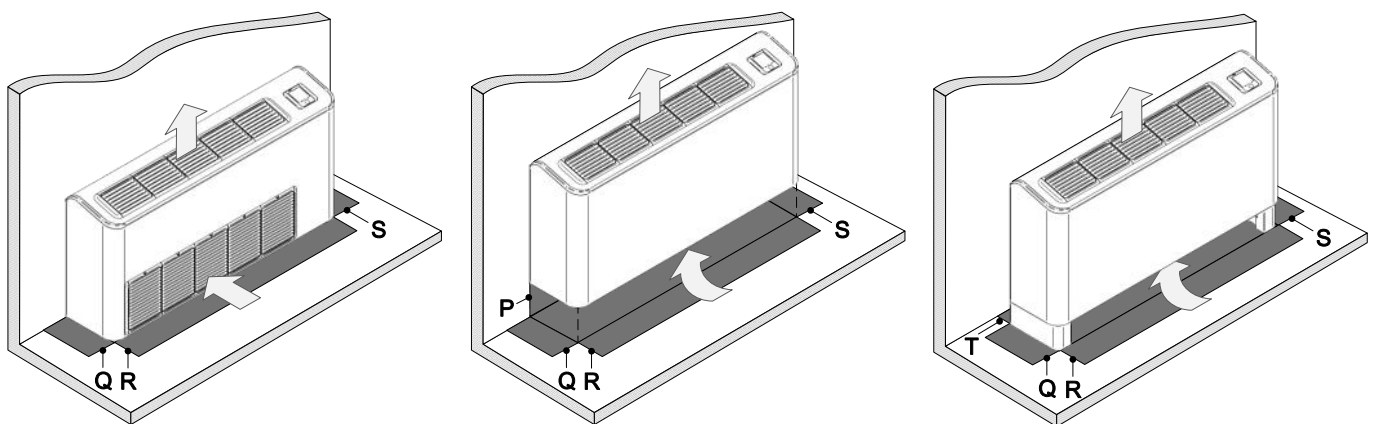


HYDRAULIC PIPE WORK
 - WITH RETROFIT SYSTEM



SIZE	3	5	7	9	15	17	21
U	135	135	135	135	135	135	135
V	65	65	65	65	65	65	65
W	90	90	90	90	90	90	90
X	325	325	325	325	325	325	325
Y	75	75	75	75	75	75	75
Z	55	55	55	55	55	55	55
Water fittings with optional hydraulic pipe work	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Water fittings with hydraulic connections for retrofit system	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

CLEARANCE ACCESS RECOMMENDED



SIZE	3	5	7	9	15	17	21
P (MIN)	100	100	100	100	100	100	100
Q	200	200	200	200	200	200	200
R	500	500	500	500	500	500	500
S	100	100	100	100	100	100	100
T (MIN)	0	0	0	0	0	0	0

**CLIVET SPA**

Via Camp Lonc 25, Z.I. Villapaiera - 32032 Feltre (BL) - Italy
Tel. + 39 0439 3131 - Fax + 39 0439 313300 - info@clivet.it

CLIVET UK LTD

4 Kingdom Close, Segensworth East - Fareham, Hampshire - PO15 5TJ - United Kingdom
Tel. + 44 (0) 1489 572238 - Fax + 44 (0) 1489 573033 - info@clivet-uk.co.uk

CLIVET SAS

ZAC des Godets 1, Impasse de la Noisette, Hall A6 - 91370 Verrières le Buisson - France
Tel. + 33 (0)1 69202575 - Fax + 33 (0)1 69206076 -info.fr@clivet.com

CLIVET ESPAÑA S.A.

Parque Empresarial Villapark, Avda. Quitapesares 50 - 28670, Villaviciosa de Odón, Madrid - España
Tel. + 34 91 6658280 - Fax + 34 91 6657806 - info@clivet.es

CLIVET GmbH

Hummelsbütteler Steindamm 84, 22851 Norderstedt - Germany
Tel. + 49 (0) 40 32 59 57-0 - Fax + 49 (0) 40 32 59 57-194 - info.de@clivet.com

CLIVET NEDERLAND B.V.

Siliciumweg 20a, 3812 SX Amersfoort - Netherlands
Tel. + 31 (0) 33 7503420 - Fax + 31 (0) 33 7503424 - info@clivet.nl

CLIVET RUSSIA

Elektrozavodskaya st. 24, office 509 - 107023, Moscow, Russia
Tel. + 74956462009 - Fax + 74956462009 - info.ru@clivet.com

CLIVET MIDEAST FZC

Rep Office: PO Box 28178 - Suite 24, Al Abbas Building 1-B - Khalid Bin Waleed Street - Bur Dubai - Dubai, UAE
Tel. + 97 14 3518501 - Fax + 97 14 3518502 - info@clivetme.com

CLIVET TF AIR SYSTEMS (P)LTD.

Plot No.222-224 and 229-232 - Kiadb Indl Area III PHSE MALUR - 563103 KOLAR DIST - Malur - India
Tel. + 91 8151232683/5 - Fax + 91 8151232684 - info@clivettfa.com