



pure energy



HydroThrift

evo

Air-cooled liquid chillers

(Cooling capacity 1,5 to 39 Tons, scroll and reciprocating compressors)

R407C 60Hz



Cooling your industry,
optimising your process.

evo

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1. General

The evo range of chillers are packaged units optimum for industrial applications, they're equipped with hermetic reciprocating compressors (mod. 015-051) or Scroll compressors (mod. 081-602), with one refrigerant circuit (mod. 015 -351) or two refrigerant circuits (mod.402-602).

All models are equipped with an internal water storage tank to assure optimum precision in the water temperature control even in presence of highly variable thermal loads. They can be supplied with or without a pump.

A broad range of options available both as configurations and accessories kits completes the already generous standard equipment and allows these units to meet the majority of requirements of industrial applications.

Management of the evo chillers is provided by parametric microprocessor controllers, type iCHILL 121C for single refrigerant circuit units and type iCHILL 281L for dual refrigerant circuits units. These two controllers administrate all the main functions including adjustments, alarms and external interface.

evo chillers feature protection rating IP54 - NEMA 1 makes them suitable for outdoor installation.

evo are designed with the environmentally safe R-407C refrigerant and the power supply available is 460/3/60 Hz UL listed.

The use of two compressors per circuit (models 201-351) and two refrigerant circuits with two compressors each (model 402-602) makes it possible to reach high EER values at partial loads and also allows unloading operation (see "MICROPROCESSOR CONTROLLER BOARD" section).

The chillers are designed, built and checked in compliance with ISO9001:2000 and they ensure the highest efficiency and reliability levels thanks to the use of components sourced from premium manufacturers as: hermetic reciprocating and scroll compressors, oversized heat exchangers and controllers able to manage the units in the optimal manner.

2. Versions

evo chillers are available in the following versions:

Basic Version

The water tank is made of carbon steel and contains the evaporator coil it is suitable for all industrial processes with closed or opened hydraulic circuits. The materials in contact with the process fluids are:

- carbon Steel, copper, aluminium, brass, rubber (piping).

No Ferrous Version

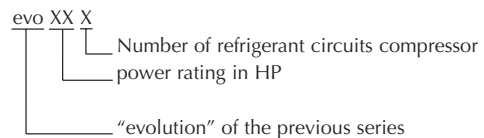
Suitable for operation with process fluids that react with carbon steel. The materials in contact with process water are:

- AISI 304 stainless steel storage tank, copper, brass, rubber (piping).

Fine regulation of temperature – type LASER (evo 015-351)

A hot gas solenoid valve controlled by a PID controller keeps the outlet water temperature constant and accurate (precision ± 0.5 °F \div ± 0.9 °F), injecting hot gas into the evaporator.

3. Nameplate



4. Advantages derived from the use of a storage tank

In a refrigeration system designed for industrial process the thermal load may present significant and sudden variations or they can be very different from nominal conditions for long periods. Consequently the chiller is frequently required to operate at maximum capacity (in the proximity of its operating limits) or alternatively subjected to frequent ON - OFF cycles. This type of working is detrimental to the lifetime of compressors and often results in significant fluctuations of the outler water temperature – clearly undesirable both from the energy efficiency standpoint and also in relation to the requirements of the process. The benefits deriving from the use of the storage tank present on all evo chillers can be summarised as follows:

- a reservoir of water at the preset temperature: this allows the cooling energy stored in the tank to compensate for imbalances caused by continuous and sudden changes in thermal load demanded from the user;
- operation of compressors in highly stable conditions: in this case the chiller can run with almost unvarying inlet temperature. Together with a constant water flow rate, this is a primary condition in order to ensure the maximum lifetime of the compressors;
- reduction of the frequency of peak starting loads and guarantee of sufficient duration of compressor run and stopped times.

5. Testing

All chillers are tested in large size test booths where they are run in full load conditions so that the correct operation of all components can be assessed. The main checks performed are as follows:

- correct installation of all components and the absence of refrigerant leaks;
- electrical safety tests as prescribed by EN60204-1;
- correct operation of the control unit and correct values of all operating parameters;
- temperature probes and pressure transducers;
- with the unit running in nominal conditions the following checks are performed: correct refrigerant charge, thermostatic valve calibration, evaporation and condensing temperatures, superheating and subcooling, cooling duty.

At the time of installation the units require exclusively electrical and hydraulic connections, thus maximising reliability levels. It is always advisable to install a water filter on the unit inlet.

6. Available configurations and kits

By combining the configurations described below with the accessories available as sales kits the units can be customised to meet a very broad range of plant requirements.

WARNING: when configuring the unit it should be remembered that not all combinations are possible. Always consult the PERFORMANCE AND TECHNICAL DATA section for the model in question or contact us.

POWER SUPPLY:

- 460V-3-60Hz UL approved

FINE ADJUSTMENT OF TEMPERATURE - LASER:

- ABSENT (standard)
- PRESENT (mod. 015-351)

PUMP:

- SP (without pump)
- P3
- P5

TANK AND HYDRAULIC CIRCUIT MATERIAL:

- standard
- Non Ferrous version (mod. 015-351)

FANS:

- Axial (standard)

CONDENSING COILS PROTECTION:

- ABSENT (standard)
- Pre-painted fins

EVAPORATOR FROST PROTECTION:

- ABSENT (standard)
- PRESENT (mod.031-602)

COMPRESSOR CRANKCASE HEATER:

- ABSENT (standard)
- PRESENT

HYDRAULIC CIRCUIT MANUAL FILLING CONTAINER KIT:

- ABSENT (standard)
- PRESENT (mod. 031-602)

6.1 Available Kits:

To complete the configuration of the units of the evo series same, "sales kits" can be supplied separately and independently packed or packed together with the unit.

Available kits:

- condensing coil protection metal filters kit;
- manual filling kit with plastic tank;
- automatic filling kit;
- glycol filling kit;
- remote ON/OFF kit;
- remote control kit;
- supervision kit.

7. Description of main components

7.1 Refrigerant circuit

COMPRESSORS

evo chillers are equipped with hermetic reciprocating compressors (mod. 015-051) and scroll from model 081 to 602.

Scroll compressors have two identical spirals or scrolls inserted together, the center of the orbiting scroll traces a circular path around the center of the fixed scroll. This movement creates symmetrical compression pockets between the two scroll elements. Low pressure suction gas is trapped within each crescent-shaped pocket as it gets formed; continuous motion of the orbiting scroll serves to seal the pocket, which decreases in volume as the pocket moves towards the center of the scroll set increasing the gas pressure. At this point, the gas, now compressed to a high pressure, is discharged to the condenser. These compressors, thanks to the low weight of rotating components and the absence of suction and discharge valves bring a series of benefits:

- higher energy efficiency;
- reduced pressure drops on the suction side thanks to the absence of valves;
- appreciable reduction of sound pressure level;
- reduced vibration on the discharge side;

- high resistance to possible liquid pressure shocks;
- long working life with zero maintenance requirements.

The 2-pole electric motor is protected from overloads by means of an internal protection device or a thermostat installed inside the compressor to protect against overheating of windings due to anomalous operation. External protection is provided in the form of thermal-magnetic circuit breakers Scroll compressors are equipped with a check valve on the discharge side in order to prevent backward rotation when the compressor stops.

The compressors are installed on rubber antivibration mounts and housed in a compartment enclosed by easily removable panels for maintenance operations.

In models 201 – 351 (single circuit) and in models 402-602 (dual circuit) two compressors are connected in parallel (tandem) for each refrigerant circuit.

The compressors can be equipped with a crankcase heater (optional) that is powered automatically when the unit is shut down (as long as the chiller is not disconnected from the power supply).

Product configuration options:

- crankcase heater.

EVAPORATOR

All evo chillers are equipped with finned type evaporators with copper tubes and aluminium fins, they are installed inside the water storage tank; the water flows over the finned surface and exchanges heat with the refrigerant fluid which evaporates inside the tubes.

This particular evaporator configuration allows to:

- operate with high water flow rates and reduced temperature differentials between water inlet and outlet temperature;
- guarantee low pressure drops on the water side.

The antifreeze function incorporated in the electronic controller manages the water outlet temperature and protects the evaporator from the risk of freezing potentially caused by low evaporation temperatures; a level sensor located inside the tank warns low process water level conditions. All evaporators installed on evo chillers can work with antifreeze solutions and, generally, all other liquids that are compatible with the materials utilised in the hydraulic circuit (refer to the list of materials in contact with process fluids).

Product configuration options:

- No Ferrous Configuration: the evaporator is entirely made of copper, the tank is made of stainless steel while the fittings are made of stainless steel and/or brass and/or plastic material; this configuration is particularly suitable when aggressive water is used.
- Evaporator frost protection (mod. 031-602): for ambient temperatures below 32 °F the evaporator must be protected from freezing by wrapping a wire type heater around the tank and the pump (if present). These heaters are powered on and off by the microprocessor controller on the basis of the reading of an ambient temperature probe. However, if negative environment/water temperatures are to be reached, a water+glycol mixture must be used (HydroThrift suggests the use of antifreeze solutions already with output water temperatures below + 41 °F).

Special designs:

- water flow switch: this device protects the evaporator from the absence of water flow.

CONDENSING COILS

Air cooled condensers are finned condensing coils with copper tubes, corrugated aluminium fins and galvanized sheet metal shoulders. Copper tubes are mechanically expanded into aluminium fins for maximum efficiency of heat transfer between the circulating refrigerant and air. The fins have full self-spacing collars which completely cover each tube. The staggered tube design improves the thermal efficiency of the coil. The return bends, headers and nipples are all copper, sized for minimum pressure drop, brazed with inert gas in the tubes and tested after fabrication.

These coils are sized and designed utilising the latest computerised design technology, making it possible to achieve very high final EER



values. The condenser coils are protected (as standard from mod.031) by removable metal filters to facilitate cleaning procedures.

Benefits:

- condensing coils positioned on just one side of the unit: make it possible to install the units also in confined spaces (e.g. next to a wall);
- metal mesh protection filters provided as standard (mod. 031-602).

Product configuration options:

- coils with pre-painted fins suitable for use in aggressive environments: suitable for use in marine environments or in the presence of aluminium-aggressive agents. The pre-painting treatment consists of an epoxy primer and a polyurethane top coat that together provide corrosion resistance in salt spray of at least 1500 hours (ASTM B 117). The shoulders are made of galvanised sheet steel or aluminium, the headers and curved pipes are painted.

Special designs:

- copper-copper coils: with copper tubes and fins and brass shoulders;
- finguard treatment: consisting of a passivating primer and a polyurethane-based top coat.

EXPANSION DEVICES

The evo 015-020 standard models are provided with capillary tubes, while a thermostatic expansion valve is used in 015-020 with the "Fine adjustment of temperature-laser" version.

Thermostatic expansion valves with external equalisation are used for all the remaining models (mod. 031-602) and they are installed on the evaporator inlet where they regulate the gas flow to the evaporator in accordance with the thermal load. These valves optimise compressor performance ensuring sufficient superheating of the gas on the compressors suction side in all operating conditions.

REFRIGERANT FILTER-DRYER

The filter-dryer is installed on the liquid line and is mechanical type with hygroscopic molecular sieves. This component is designed to intercept foreign material and any moisture in the refrigerant circuit.

REFRIGERANT LIQUID FLOW SIGHT GLASS

The sight glasses are installed on the liquid line and can be used to check the right refrigerant charge (presence or absence of bubbles) and for any moisture in the refrigerant circuit.

It is available for evo 015-020 in the "Fine adjustment of temperature-laser version" and in all versions from mod. 031 to 602.

REFRIGERANT PRESSURE GAUGES

High and low pressure refrigerant pressure gauges are available starting from model 031 and are installed on a dedicated front panel.

HOT GAS BY-PASS SOLENOID VALVE

Fine regulation of temperature – type LASER when thermal load decreases the hot gas by pass valve opens by-passing part of the refrigerating fluid from high pressure side to the evaporator inlet and adjusting the evaporating pressure.

It is controlled by a microprocessor with PID logic in such a way as to reduce and continuously modulate the cooling capacity of the unit according to the thermal load variations.

7.2 Hydraulic components

STORAGE TANK

The evo chillers are provided as standard with a cylindrical storage tank with external insulating and anti-condensation cladding (the tank contains the evaporator coil) and a circulation pump. It is sized to operate in closed hydraulic circuits up to maximum 6 barg pressure but it can also be used in open hydraulic circuits using the manual filling kit with plastic tank (see kit descriptions).

The standard storage tank is made of carbon steel while in the NON FERROUS version it is made of AISI 304 stainless steel.

The tank is equipped with a drain valve so that it can be emptied and a bleed valve to vent air during the process of filling the hydraulic circuit.

A level sensor inside the tank stops working of the unit in the absence of process water.

All evo models are equipped with an internal by-pass between the water delivery and return connections; if the water inlet and outlet connections are inadvertently closed, the anti-freezing function can protect the evaporator. The unit stops due to tripping of the antifreeze alarm and it is necessary to reopen the shut-off valves before switch on the chiller.

Warning: the bypass is designed exclusively to protect the unit in case of erroneous closing of the shut-off valves. In this case the bypass guarantees the circulation of a minimum water flow that protects the pump and allows the antifreeze alarm to trip in chiller mode operation. It is strongly recommended to avoid by-pass operation with continuous cycles and for prolonged periods.

Product configuration options:

No Ferrous Version (mod. 015-351).

- Storage tank made of AISI 304; the evaporator heat exchanger coils consist of tubes and fins made of copper and shoulders/crankcase made of brass; fittings are made of non ferrous material (stainless steel and/or brass and/or plastic material).

PUMPS

evo chillers have centrifugal pumps with seals made of ceramic/treated carbon/EPDM material and they are available in two different configurations: pump P3 with nominal head pressure 43 psig and pump P5 with nominal head pressure 72 psig; it is however possible to configure the units without pumps on board.

Pump materials in contact with process water are:

- pump P3: stainless steel throughout up to model 251; for the remaining models the pump body is made of cast iron.
- pump P5: stainless steel throughout up to model 161; for the remaining models the pump body is made of cast iron.
- pump P3 and pump P5 for versions NoFe (see "Non Ferrous Versions").

MANUAL BLEED VALVE

Installed on the top of the tank, the manual bleed valve is used to vent any air pockets in the tank.

WATER PRESSURE GAUGE

All models are equipped with a water pressure gauge on the unit's rear panel indicating water pressure at the unit outlet and plant filling pressure (with pump stopped).

Available Kits:

- Manual filling kit with plastic tank.

This kit ensures filling of the tank and hydraulic circuit when the latter is not pressurised and is composed of:

- plastic tank for filling the circuit and displaying the water level;
- galvanized and painted sheet steel supporting frame/casing;
- connecting fittings with tank.

The manual filling tank kit can be installed directly on the unit at the factory (mod. 031-602) but is also available in "sales kit" version (for all the evo).

- Automatic filling kit

The automatic filling kit provides automatic water filling of pressurised circuits (closed hydraulic circuits). Kit composition is:

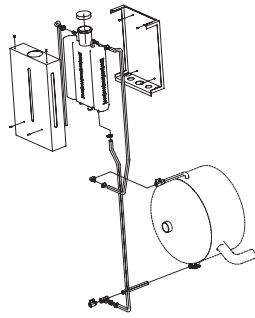
- automatic filling unit with pressure reducer;
- pressure gauge to monitor tank pressure;
- automatic bleed valve;
- pressure relief valve;
- expansion vessel;
- preassembled connecting fittings.

- Glycol filling kit

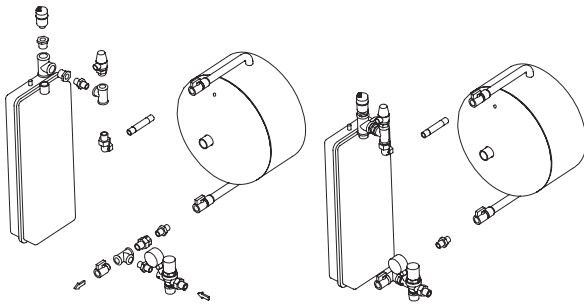
This kit is used to add antifreeze liquids. The glycol filling kit must always be purchased in conjunction with the automatic filling kit.

Kit composition:

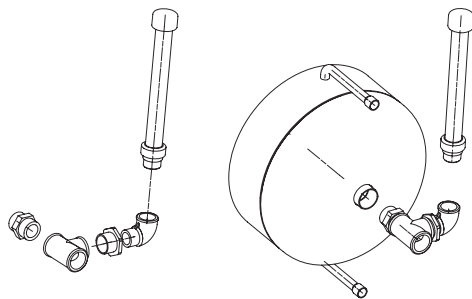
- polyethylene filling pipe with hermetic plug;
- brass fittings.



Manual filling kit



Automatic filling kit



Glycol filling kit

7.3 Frame and outer panelling

The compressors compartment is always separated from the storage tank, from the condensing coil compartment and from the electrical cabinet. Model 015-161 are equipped with a fully enclosed cabinet with structural panels and pump installed in the compressors compartment. Model 201-602 are equipped with a fully enclosed cabinet, plinth composed of longitudinal beams and cross-members and uprights to support the outer panelling.

The plinth uprights and all outer panels and/or enclosure panels are made of galvanized carbon steel sheet and assembled by means of galvanized steel rivets or stainless steel metric screws to facilitate removal.

All panels undergo a phosphor degreasing phase followed by epoxy polyester power coating.

Benefits:

- Removable panels assure easy access to the main components of the refrigerant and hydraulic circuits, thus facilitating maintenance operations.
- The compressors are always separate from the condensers/hydraulic compartment so maintenance can be carried out even when the chiller is ON.

7.4 Aeraulic section

The evo range have axial fans featuring die-cast aluminium fan wheel with sickle-shaped blades, an external rotor electric motor with life lubrication, IP54 protection rating and insulation class F. The fans are statically and dynamically balanced, equipped with external safety grilles and installed on antivibration mounts to reduce vibration propagation.

The motors used have 4 or 6 poles, external rotor to maximize the energy efficiency and are protected with a chain of thermistors. Standard fan control is ON/OFF type managed by pressure switches.

7.5 Electrical cabinets

ELECTRICAL CABINET

The electrical cabinet is designed and wired in compliance with the Directive UL508 A.

The electrical cabinet is composed by enclosure accommodating all the components secured to a mounting plate with an hinged door having a perimeter seal mounted to the cabinet structure.

The unit's controller is mounted on the door and protected by a transparent polycarbonate cover; the door is also equipped with the main disconnect switch with safety door lock (door cannot be opened until the electrical cabinet power has been disconnected) The electrical cabinet utilises components produced by premium manufacturers and ensures a protection rate IP54-NEMA1 right for outdoor installation.

The power section includes automatic thermal-magnetic cut-outs for short-circuit protection and a series of contactors; the control section includes the transformer feeding the control circuits and microprocessor circuit boards.

Product configuration options:

- 460/3/60 power supply without UL approval;
- 400/3/50 power supply (see separate documentations).

7.6 Control and safety devices

PRESSURE TRANSDUCERS

evo 402-602 are equipped with a high pressure transducer for each refrigerant circuit.

The pressure transducers measures the compressor discharge pressure and this signal is utilised by the electronic controller for the following functions:

- high pressure measurement and alarms;
- unloading for high pressure;
- fans STEP regulation;

TEMPERATURE PROBES

These probes are installed on the hydraulic circuit where they measure the temperature values of:

- evaporator outlet water: (antifreeze function);
- storage tank outlet water: (temperature control function);
- ambient temperature: antifreeze function.

HIGH AND LOW PRESSURE SWITCHES

The high and low pressure switches with automatic reset are installed on the refrigerant circuit HP/LP pressure sides; they stop the compressor if anomalous working pressures are detected.

FANS PRESSURE SWITCH

The pressure switch is used for ON/OFF fans control.

LEVEL SENSOR

The level sensor is installed in the tank in order to shut down the unit if an insufficient water level is detected. It is necessary to modify the sensor calibration turning the sensor trimmer when antifreeze solutions are used (see instruction manual).

ANTI-FREEZING HEATERS

These heaters are available for model 031-602 and they are wire elements wrapped around the cylindrical tank and pump (if installed). The electronic controller lets heating wire elements to work if the ambient temperature reaches the ambient set point. Ambient temperature is supervised by a temperature probe.

7.7 Microprocessor control board

evo units are controlled and managed by the DIXELL IC121 (mod.015-351) and IC281 (mod.402-602) electronic controllers, they are characterized by a dual display with icon-based identification of functions. These user friendly microprocessor controllers allow even inexperienced users to display and modify the main operating parameters of the system.



IC121 DIXELL controller (evo 015-351)



IC281 DIXELL controller (evo 402-602)

The controllers manage the following functions:

- compressor start/stop cycles and automatic rotation of compressors to achieve equalisation of run times;
- measurement and read-out on the display of the evaporator water outlet temperature values (antifreeze function) and the tank outlet value for temperature control;
- Measurement and display of the condensation pressure (mod. 402-602);
- Measurement and display of the environment temperature for handling the anti-freezing heating elements;
- unloading function for chillers with two refrigerant circuits (mod. 402-602). This function makes it possible to start and operate the unit even in conditions that are far more adverse than the nominal conditions;
- Alarms history display;
- TTL type serial interface (RS485 conversion KIT available)
- management of alarm messages, including:
 - high condensing pressure alarm;
 - low evaporation pressure alarm;
 - freeze alarm on water at evaporator outlet;
 - compressor fault alarm (models 101-121-161);
 - pump thermal trip alarm;
 - storage tank level alarm;
 - operating hours storing both of the chiller and individual compressors (with signalling when the programmed maintenance hours are exceeded).

Product configuration options:

Version with Fine adjustment of temperature – LASER (evo 015-351)
The electronic control handles the hot gas solenoid valve with PID logic; it keeps constant the output temperature of the process water (precision ± 0.5 °F \div ± 0.9 °F) by injecting hot gas into the evaporator. A voltage-free contact is provided to remote a general alarm signal.

AVAILABLE KITS:

- SIMPLE REMOTE ON/OFF KIT

This kit makes it possible to remote the unit's ON/OFF up to a maximum

distance of 150 m and consists of a plastic box with a transparent lid. It contains an ON/OFF switch and two LEDs: a green one to indicate chiller ON and red one to indicate chiller OFF status.

- REPLICATED REMOTE CONTROL KIT

This kit makes it possible to remote all functions of the unit's on-board electronic controller up to a maximum distance of 150 m (shielded cable required - not supplied).

Models 015-351 can be remote controlled by means of terminal model VI610 while model VI820 is utilised for 402-602 units. These display terminals also perform the remote ON/OFF function.



VI610 remote terminal



VI820 remote terminal

KITS FOR BMS SUPERVISION SYSTEMS

XWEB300 SUPERVISION KIT

XWEB 300 is one of the most advanced monitoring, control and supervision systems currently available on the market, utilising cutting-edge technology compatible with the world of the Internet. Kit composition:

- XWEB 300 server.
- quick connection guide.
- CD ROM with manuals and software.

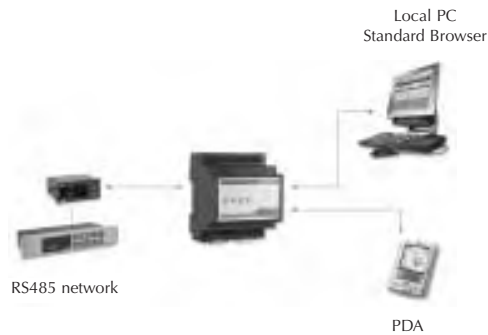
XWEB 300 is a small server with a μ -Linux operating system, capable of transmitting information to a client PC complying with the following minimum specification:

- Windows 98® or higher
- Pentium II 300MHz with at least 64 Mb RAM;
- Java Virtual Machine
- Explorer 5.5 or higher / Netscape®.

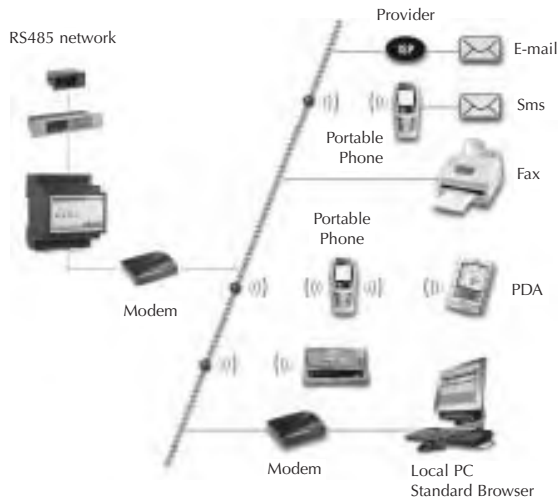
The server reads, stores, and checks all the information arriving from the Dixell controllers connected to it and connected to the serial line by means of the Modbus-Rtu communication protocol.

The server provides access to the following functions both by means of a local connection (by means of a serial cable - not supplied) and using a remote connection (in this case a modem must be ordered separately) in Web page format:

- Graphic and table management of the parameters recorded during operation.
- Monitoring, filing and management of alarms;
- Remote management of commands (alarms reset or parameter editing).



Local connection



Remote connection

- XWEB300 SUPERVISION KIT + GMS MODEM:

this accessory uses a GSM modem to send SMS text messages to mobile phones for the notification of alarms, and to receive mobile network SMS text messages for modification of variables. The kit, which allows remote connection to the XWEB300 server when there is no telephone landline available, includes: XWEB300, GSM modem, power supply unit, antenna with relative cable and GSM modem - XWEB300 interface cable.



- RS 485 SUPERVISION KIT

This accessory allows the unit to be connected to BMS supervision systems with RS485 electrical standard and MODBUS protocol. It is composed of a serial cable and an optically coupled serial interface, which is necessary in order to convert the 5-wire TTL signal (at the output of electronic controllers IC121 and IC281) into an RS485 signal.



Optically coupled interface RS485

8. Handling

All units are shipped anchored to pallets on which they can be handled by means of forklift trucks and pallet trucks. The units can also be moved even when not standing on a pallet thanks to the fork channels in the plinth.

Models 201-602 can be handled also by inserting lifting bars into the plinth and utilising lifting straps.

SELECTION GUIDE

Selection of a chiller is performed by means of the tables given in the "Selection guide" and by means of the Data Tables relative to each model.

For correct selection of a chiller it is necessary:

- 1) To ensure that the operating limits specified in the "Operating limits" table are complied with.
- 2) To ensure that the flow rate of water to be cooled is between the values specified in the "General Data" table of each unit; excessively low flow rates will result in laminar flow and consequently a risk of freezing and poor temperature control; on the contrary excessively high flow rates lead to excessive pressure drops and possible bursting of water piping.
- 3) To add ethylene glycol or other antifreeze liquids when using the chiller at water outlet temperatures below 41 °F. Consult the "Water and ethylene glycol solutions" table to find the quantity of ethylene glycol required and to verify the reduction in cooling duty; the increase in compressor power input, and the increase in evaporator pressure drops due to the presence of ethylene glycol.
- 4) If evo models are installed at altitudes higher than 1640 ft , it is necessary to calculate the reduction of cooling duty and the increase in compressor power absorbed by means of the coefficients given in the "Condenser corrective coefficients" table.
- 5) If the temperature difference between the evaporator water inlet and outlet is different from 10 °F it is necessary to correct the cooling capacity and power input utilising the "ΔT corrective coefficients ≠ 10 °F" tables.

PERFORMANCE DATA CHILLER MODE

evo	COOLING CAPACITY (Tons)							t max ⁽¹⁾ (°F)	Pf ⁽²⁾ (Tons)
	External air temperature (°F)								
	70	75	85	90	95	100	105		
evo 015	1.9	1.8	1.7	1.6	1.5	1.5	1.4	115	1.2
evo 020	2.5	2.4	2.2	2.1	2.0	2.0	1.9	117	1.6
evo 031	3.7	3.6	3.3	3.2	3.1	2.9	2.8	112	2.6
evo 051	5.4	5.2	4.8	4.6	4.4	4.2	4.0	115	3.5
evo 081	8.1	7.9	7.4	7.2	6.9	6.6	6.3	111	6.0
evo 101	11.5	11.2	10.6	10.2	9.8	9.5	9.1	109	8.8
evo 121	14.4	14.0	13.2	12.8	12.4	11.9	11.5	109	11.1
evo 161	16.2	15.7	14.8	14.3	13.8	13.2	12.7	109	12.2
evo 201	18.7	18.1	17.0	16.5	15.9	15.3	14.7	109	14.1
evo 251	22.2	21.7	20.4	19.7	19.0	18.3	17.5	111	16.6
evo 301	24.5	23.9	22.5	21.8	21.1	20.3	19.5	113	18.2
evo 351	28.2	27.4	25.7	24.8	23.9	23.0	22.0	109	21.2
evo 402	33.4	32.5	30.4	29.3	28.2	27.1	25.9	111	24.5
evo 502	37.9	36.7	34.3	33.0	31.6	30.2	28.8	113	26.4
evo 602	45.7	44.4	41.8	40.4	38.9	37.4	35.8	109	34.6

(1): Maximum external air, refer to outlet water temperature of 45 °F.

(2): Cooling capacity referred to the maximum external air temperature.

To select the chiller evo model you must choose the column that indicates the maximum external air temperature in which the chiller will be installed and the line with the capacity requested. The capacities shown in the table refer to the following conditions: cooled water inlet 55 °F and cooled water outlet 45 °F. For other conditions and other unit specifications, consult the internal tables relative to the model selected. When the external air temperature is higher than the t max the chiller doesn't stop but the "unloading" system capacity control is activated (only for two circuits models).

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