



Cooling, conditioning, purifying.

REFRIGERATORI CHILLERS



ER 0702÷1402

MANUALE DI ISTRUZIONE E MANUTENZIONE
OPERATING AND MAINTENANCE MANUAL



CHAPTER 1

USER'S QUICK GUIDE

1.1 Unit start/stop

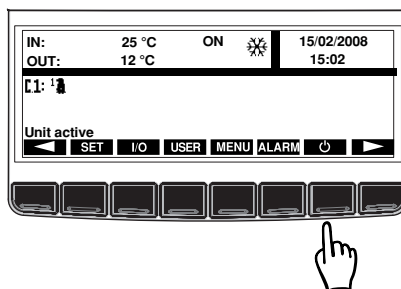
Power the unit.

The controller starts up and the main mask appears.

Check the status of the unit and presence of shut-down alarms.

Hold down button  for 2". The pump (if installed) starts immediately.

After a delay set on the electronic board the refrigerant compressor starts up.



To switch the unit off hold down button  again for 2". The controller remains active.

1.2 Buttons

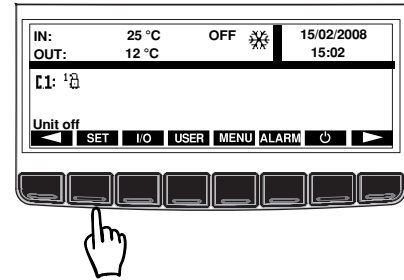
The meaning of the controller buttons depends on the active mask and function. A table summarising all the types of buttons present on the controller is given below.

Icons	Function
 	Buttons to scroll through stages and masks
 	Buttons to scroll through, select, increase or decrease the parameter values
 	Buttons to scroll through all alarm messages in stage Alarm
EXIT	Button to quit the field displayed and return to the higher level stage
ENTER	Enter a stage, activate and confirm the value
SET	Access the stage relative to the set-point values
I/O	Access the stage in which the values detected by the controller are displayed
USER	Access the free menu
MENU	Access the menu with password
ALARM	Enter the stage relative to the alarms
	Switch the unit on
I	Display values relative to circuit 1
II	Display values relative to circuit 2
RESALL	Reset all alarms
RESET	Reset one alarm at a time

1.3 Changing the set-point

The unit can be either on or off without affecting the procedure.

From the main mask press **SET**.



Once you have entered the Set stage, scroll through masks using **◀ ▶** until reaching mask St002.

Press **◀** to display the Summer Set-point.

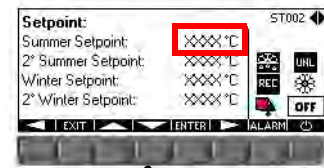
Press **ENTER**.

The parameter starts flashing.

Use **▲ ▼** to scroll through the values.

Press **ENTER** to confirm.

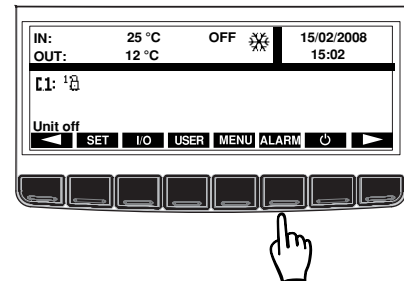
Press **EXIT** to quit the stage.



1.4 Alarms

The presence of active alarms is signalled by the icon

To access the Alarm stage from the main mask press **ALARM**.



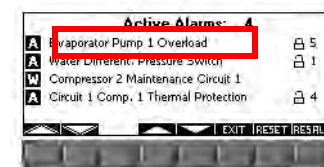
A list of active alarms is displayed in this stage. Use **◀ ▶** to scroll through the alarms.

Use **RESALL** **RESET** to reset the alarms.

Icon indicates that the alarm can be reset.

Press **RESET** to reset the alarm.

Press **EXIT** to quit the stage.



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CHAPTER 2

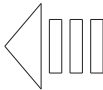
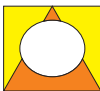
INSTALLATION

2.1 Foreword

This manual is addressed to personnel responsible for installing, using and servicing the unit. The unit described is designated WATER CHILLER or simply CHILLER. The expression “pressure” is used to indicate relative pressure.

2.2 Symbols

Symbols present on the unit and also in the dimensional drawings and refrigerant circuit diagrams.

	Unit water inlet		Unit water outlet
	Heat recovery exchanger or desuperheater water inlet (models with heat recovery exchanger or desuperheater only)		Heat recovery exchanger or desuperheater water outlet (models with heat recovery exchanger or desuperheater only)
	Indication of the axis of reference for lifting operations		Unit drain point
	Electric shock hazard		Flow of cooling air
	Direction of flow of refrigerant fluid		Rotation direction of pump (if present) and fans
	Risk of injury due to sharp edges		Risk of burns from contact with high-temperature surfaces
			Opening to use to insert bars for unit lifting purposes

2.3 Installation

ATTENTION

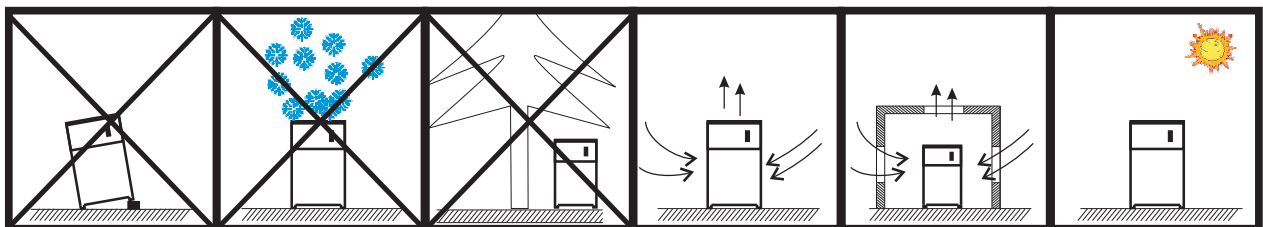
Before installing or operating these units, read the chapter concerning “ Safety”.

2.3.1 Inspection

As soon as the unit has been unpacked check it carefully for damage.

2.3.2 Location

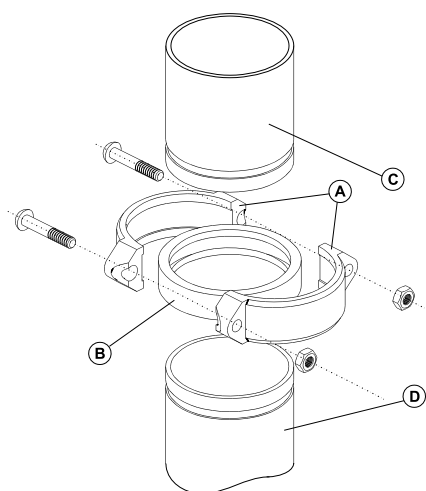
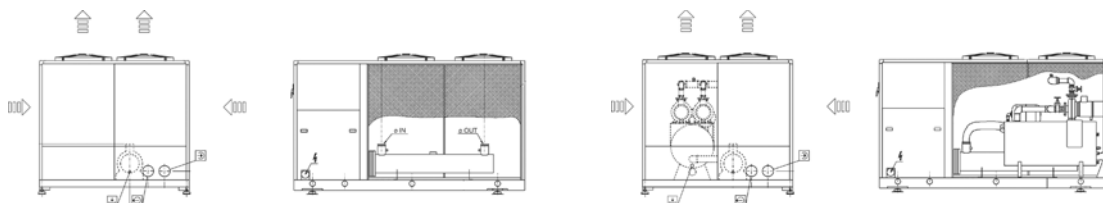
1. The unit can be installed outdoors or indoors.
2. If the unit is installed indoors the place of installation must be well ventilated. In certain cases it may be necessary to install ventilation fans or extractor fans in order to reduce room temperature.
3. The interior air must be clean and free from inflammable gases or solvent vapours.
4. The minimum and maximum ambient temperatures are specified on the unit's nameplate. In extreme temperature conditions the protection devices may trip.
5. The unit can be positioned on any flat surface that is adequately sized to support its weight.
6. Leave free clearance of approximately 1 metre around the unit for access during service interventions (see Attachments).
7. Never obstruct or disturb the thermal exchange air flow over the condenser. The air flow enters the unit through the condenser finned coils and is expelled to the exterior by the fans. Position the unit in such a way that the thermal exchange air cannot recirculate to the intake grilles. Make sure no warm air flows from other cooling systems is aspirated.
8. Do not install the plant in sites exposed to strong winds; if unavoidable, install suitable windscreens.



2.3.3 Hydraulic Connections

The unit is equipped with threaded or “Victaulic” connections (see diagram below).

1. Connect the unit to the water pipes as shown in the diagram below.
2. Provide two valves (one at the inlet, one at the outlet) to isolate the unit in the case of maintenance work without having to empty the user water circuit.
3. If the unit is not equipped with a hydraulic unit as standard, ensure that the suction line of the pump installed subsequently by the user is connected directly to the unit in order to avoid excessively high pressure on the condenser side.



- A clamping half collars
- B seal
- C weld-on stub pipe
- D evaporator stub pipe

“VICTAULIC” CONNECTION

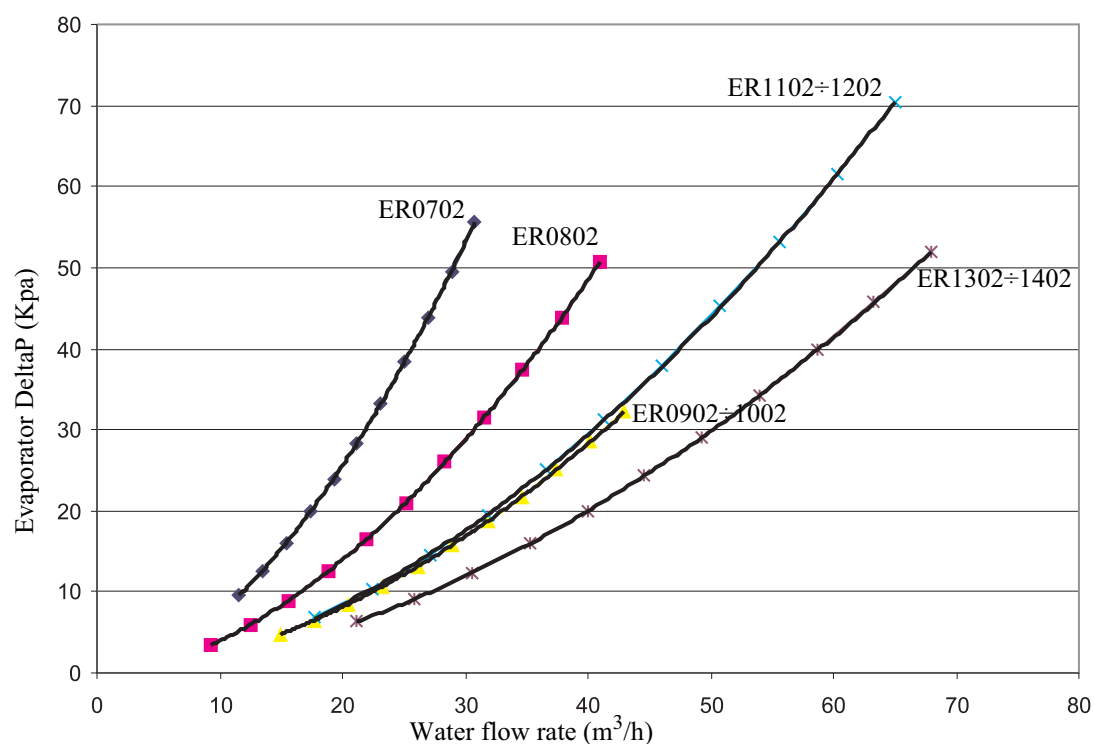
NOTE

For correct operation of the unit install a filter to intercept debris in the water inlet pipe. Failure to observe this prescription can result in irreparable damage to the evaporator.

The hydraulic circuit must be sized in such a way as to comply with the pressure limit value specified on the data plate and ensure the flow rate shown in the following table is not exceeded:

	SHELL AND TUBE EVAPORATOR Maximum flow rate [m ³ /h]	SHELL AND TUBE EVAPORATOR Minimum flow rate [m ³ /h]
ER 0702	30.0	13.9
ER 0802	41.0	9.3
ER 0902	43.0	17.9
ER 1002	43.0	18.8
ER 1102	65.0	21.2
ER 1202	65.0	22.9
ER 1302	68.0	25.5
ER 1402	68.0	27.3

Evaporator pressure drops



2.3.4 Freeze protection

Even if the minimum working ambient temperature is higher than 0 °C, during shutdown periods in the winter season the unit may be subject to temperatures that are lower than 0 °C. In such cases if the water circuit is not drained, to avoid ice formation ethylene glycol antifreeze should be added to the water in the following percentages:

Ambient temperature up to [°C]	Ethylene Glycol [% in weight]
0	0
-5	15
-10	25
-15	30
-20	40

Depending on the cooled water outlet temperature, antifreeze (ethylene glycol) must be added in the following percentages to prevent the formation of ice:

Water outlet temperature up to [°C]	Ethylene Glycol [% in weight]
4	0
0	19
-5	27
-10	34
-15	39
-20	44
-15	35
-19.9	40

2.3.5 Electrical connections

The unit's connection to the power supply must be made in compliance with laws and prescriptions in force in the place of installation.

The voltage, frequency and number of phases must comply with the data on the unit's nameplate. The power supply voltage must not be outside the tolerances shown on the electrical diagram, even in terms of transients.

Unless otherwise specified, the frequency tolerance is +/-1% of the nominal value (+/-2% for short periods).

With a three-phase power supply the voltage must be symmetrical (the effective values of phase to phase voltages and consecutive phase angles must be identical). In particular, unless otherwise indicated, the maximum permissible phase imbalance is 2%, calculated according to the formula

$$\frac{\text{Max. difference of phase voltage with respect to } V_{\text{avg}}}{V_{\text{avg}}} \times 100$$

V_{avg} = average phase voltage

The line conductor and neutral conductor are not interchangeable and their positions cannot be switched.

For the electrical power supply:

1.  Connect the unit (PE terminal in the electrical cabinet) to the electrical earthing system of the building.
2.  ensure automatic interruption of the power supply in the event of an insulation fault (protection against indirect contact in compliance with the prescriptions of IEC 60364) by means of a **residual current device** (the nominal trip current of which should normally be set to 0.03 A).
3. make sure the level of protection against indirect contact at the source of the power feeding cable is equivalent at least to IP2X or IPXXB (refer to CEI EN 60529).
4. at the start of the power cable install a device that protects it from current surges (short-circuits) (refer to the indications given in the electrical diagram).
5. use conductors rated to carry the maximum current required at the maximum operating ambient temperature, according to the chosen installation type (IEC 5-60364-523) (see the indications on the electrical diagram).

Indications on the electrical diagram:

- maximum permissible size of the fuse type gG.
In general, fuses can be replaced by an automatic circuit breaker set in relation to the unit's maximum current input (consult the manufacturer if necessary)
- section and type of power cable (if not already supplied):
Installation: insulated conductors or multicore cable in an overhead or wall-mounted cable duct (type C in compliance with IEC 5-523-60364 1983) without any other cables in contact
operating temperature: maximum working ambient temperature for the unit
cable type: copper conductors, 70 °C PVC insulation (unless otherwise specified) or 90 °C EPR insulation

CHAPTER 3

SAFETY

This plant is designed for safety in its intended use, provided it is installed, commissioned, and serviced in compliance with the instructions given in the present manual.

ATTENTION

All persons who interact with the plant must be informed of the indications, regulations and prescriptions given in this manual.

Pay special attention when working on the unit: the unit contains electrical components that operate at mains voltage and also moving parts such as fan units.

To avoid the risk of accidents, disconnect the unit from the power supply before working inside it.

Any maintenance operations other than normal tasks must be executed by skilled and suitably qualified personnel.

Keep unauthorized persons (e.g. children) away from the place of installation of the unit.

3.1 General

When handling or servicing the unit, personnel must work safely and comply with the prescriptions concerning health and safety in the installation site.

ATTENTION

Numerous accidents that occur during operation and maintenance of the units are caused by failure to comply with basic safety rules or precautions.

Frequently accidents can be avoided by early identification of potentially hazardous situations.

The user must ensure that all personnel involved in operating and servicing the unit **have read and understood** all the warnings, precautions, prohibitions and notes given in this manual and affixed to the unit.

Improper operation or maintenance of the unit and auxiliary equipment can be dangerous and can cause serious or fatal accidents.

It is not possible to cover all possible circumstances that could feasibly give rise to potential hazards for persons. Therefore the notes concerning safety in this manual cannot be considered to be exhaustive.

If the user adopts operational procedures or uses tools or working procedures that are not specifically recommended, care must be taken to ensure that the unit and the auxiliary equipment are not damaged or made unsafe and that no risks emerge in relation to persons or property.

ATTENTION

Use exclusively suitable methods that offer the maximum environmental respect in daily operation, routine or supplementary maintenance, and at the time of decommissioning of the plant.

Any improper conduct or incorrect use of the unit by the user automatically releases the manufacturer from all liability for possible damage, injury and/or accidents affecting persons or property.

Arbitrary modifications made to the unit will automatically invalidate all forms of guarantee provided by the manufacturer.

3.2 General precautions

3.2.1 Precautions during lifting and transport

Check that all chains, hooks, shackles and slings are in good condition and of suitable capacity.

Lifting accessories must be tested and approved in compliance with statutory safety regulations in force in the place of installation.

Cables, chains or ropes must never be attached directly to lifting eyebolts.

Always use a correctly positioned intermediate shackle or hook.

Ensure that lifting cables do not describe excessively tight bends.

Use a spreader bar to avoid lateral loading of hooks and eyebolts.

ATTENTION

When a load is lifted from the ground keep well clear of the area beneath the load and the immediately surrounding area.

Keep lifting acceleration and speed well within safety limits and never leave a suspended load attached to a hoist any longer than strictly necessary

3.2.2 Precautions to be adopted during operation

The unit must be operated by competent personnel under the guidance of a qualified supervisor.

All connections of the refrigerant circuit, electrical system and control unit wiring must be easily identifiable, painted or marked clearly in compliance with local safety prescriptions in force in the place of installation.

ATTENTION

Do not remove or tamper with safety devices, protections, or the insulating materials installed in the unit or in the auxiliary equipment.

All electrical connections must comply with local prescriptions in force in the installation site.

The unit and its auxiliary equipment must be connected to earth and protected against short circuits and overloads.

When the main power switch is closed the voltage in the electrical circuit assumes potentially lethal values.

The maximum precautions must be adopted if work is to be carried out on the electrical circuit.

3.2.3 Precautions for maintenance and repair

ATTENTION

When it is necessary to discharge waste material do not pollute water pipelines, groundwater or watercourses. Avoid the combustion of materials that could cause atmospheric pollution. Use exclusively suitable storage methods that offer the maximum environmental respect.

Keep a written record of all work carried out on the unit and the auxiliary equipment. The frequency and nature of the work required of the unit must not cause abnormal operating conditions.

ATTENTION

Use exclusively the refrigerant specified on the unit's data plate.

Make sure that all the instructions concerning operation and maintenance are followed scrupulously and that the entire unit and all the accessories and safety devices are maintained in proper working order. The accuracy of temperature and pressure measuring devices must be checked regularly. Such devices must be replaced when the permitted tolerance values are exceeded.

ATTENTION

Do not weld or perform work that generates heat close to a system that contains oil or inflammable liquids. Systems that may contain oil or inflammable liquids must be completely drained and cleaned, for example with steam, before performing any such operations.

To prevent an increase in working temperature and pressure values clean the heat exchange surfaces (e.g. the fins of condensers) regularly. For all units establish a suitable time interval for cleaning procedures.

ATTENTION

DO NOT damage the pressure relief valves and other pressure limiting devices.

Do not clog these devices with paint, oil, or accumulated dirt.

Use exclusively original spare parts.

Never use an open flame as a light source to inspect parts of the unit.

When a repair has been completed make sure that no tools or detached parts are left in the unit.

ATTENTION

Check the direction of rotation of the motors when starting the unit for the first time and after work has been performed on the electrical connections or on the power supply sectioning device.

All the protections must be refitted following maintenance or repair work.

Do not use inflammable liquids to clean components while the unit is running.

If non-inflammable hydrocarbons containing chloride are used all the relevant safety precautions must be adopted to protect against the toxic fumes that may be given off.

ATTENTION

Before removing any panels or dismantling any parts of the unit perform the following steps:

- *Isolate the unit from the electrical power supply by disconnecting the supply upstream of the power feeding line.*
- *Lock out the disconnect switch on the "OFF" position by fitting a padlock.*
- *Place a sign on the disconnect switch handle stating "WORK IN PROGRESS - DO NOT CONNECT POWER".*
- *Do not set the electrical power switch to ON or attempt to start the unit if the warning sign is displayed.*



3.3 Refrigerants

ATTENTION

See the refrigerants safety datasheet in the manual appendix.

These units may be charged exclusively with R407C.

Do not replace the refrigerant with a different type or mix two different types of refrigerant.

To clean a refrigerant circuit that has been seriously contaminated, e.g. following a compressor burn-out, the relative work must be carried out by an expert refrigeration engineer.

The use and storage of cylinders containing refrigerants must be in compliance with the prescriptions of the manufacturers of the cylinders and in compliance with the applicable safety laws and prescriptions in force in the place of installation.

CHAPTER 4

GENERAL INFORMATION

These units are designed to cool a liquid (WATER in the majority of applications).

The term “WATER” is used for the sake of simplicity to identify the liquid to be cooled, even if the liquid involved is not water (e.g. a water and ethylene glycol solution).

The liquid to be cooled must be compatible with the materials used.

This analysis must be carried out when installing the unit.

ATTENTION

Requests for spare parts and any information must be addressed to the local dealer or service centre, specifying the MODEL and SERIAL NUMBER shown on the unit's nameplate and on the first page of this manual.

4.1 How to interpret the model

MODEL	DESCRIPTION
ER ♦♦♦♦/♦♦♦	
→	Unit version (N, SN, H or SSN)
→	Nominal power of compressor expressed in HP
→	Hercules

4.2 How to interpret the codes

/N	Low noise operation value: standard. Compressors compartment only partially acoustically insulated.
/SN	Low noise operation value: medium. Acoustically insulated compressors compartment. Low speed fans.
/SSN	Low noise operation value: high. Compressors compartment with high efficiency acoustic insulation.
/H	High ambient air temperature units.

4.3 Data plate

The data plate affixed to the unit shows the main technical data.

MODEL and CODE	Identify the size of the unit (see chap. “General Information”) and the type of construction.
MANUAL	Code number of this manual.
SERIAL NUMBER	Unit serial number or manufacturing number.
YEAR OF CONSTRUCTION	Year of unit's final testing.
VOLTAGE/PHASES/ FREQUENCY	Power supply specifications.
MAX CURRENT INPUT I_{MAX}	Unit current input in limit working conditions

INSTALLED POWER P_{MAX}	Unit power input in limit working conditions
PROTECTION RATING	Protection rating of the entire unit, according to European standard EN 60529.
REFRIGERANT	Type of refrigerant charge with which the unit is filled.
REFRIGERANT CHARGE	Quantity of refrigerant supplied to the circuit.
MAX. REFRIGERANT PRESS. HP SIDE	Refrigerant circuit design pressure (high pressure side).
MAX. REFRIGERANT PRESS. LP SIDE	Refrigerant circuit design pressure (low pressure side).
USER CIRC. FLUID	Fluid cooled or heated by the unit (usually: water).
MAX. WORKING PRESSURE	User circuit maximum design pressure.
MAX TEMPERATURE	User circuit maximum design temperature - not to be confused with the maximum working temperature, which is specified at the time of the offer.
SOUND PRESSURE LEVEL	Free field sound pressure level in hemispherical radiation conditions (open field) at a distance of 1 m from the condenser side of the unit and a height of 1.2 m from the ground.
AMBIENT TEMPERATURE	Thermal exchange air minimum and maximum temperature values.
WEIGHT	Approximate weight of the unit without packaging.

4.4 Performance data

The performance of the chiller depends mainly on the flow rate and temperature of chilled water and ambient temperature.

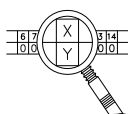
Performance values are defined at the time of the contract, refer to the offer data if necessary.

4.5 How to interpret the alphanumeric string

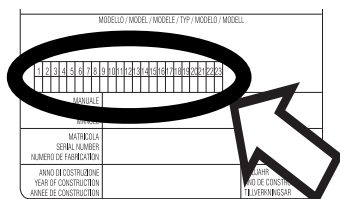
ATTENTION

See the table concerning the alphanumeric string in the appendix.

The alphanumeric string is shown on the metal data plate on the cover page of this manual.



This symbol shown alongside appears in some refrigerant circuit diagrams and electrical diagrams. This symbol refers to the alphanumeric string reported in the manual. The upper box (X) identifies the position of the string, the lower box (Y) identifies the assigned value.



The empty alphanumeric string is circled in the adjacent figure; each position in the upper row is associated with an alphanumeric value in the lower row (0, 1, 2, A, B, etc.) and each character is associated with a specific feature of the unit.

CHAPTER 5

DESCRIPTION

5.1 Operating principle

The unit is equipped with two separate and independent refrigerant circuits. A shell and tube evaporator allows heat exchange between the refrigerant and the process fluid.

Suitable compressors are utilised to compress freon in order to achieve a change from the gaseous to the liquid phase. In this stage the refrigerant gas releases energy in the form of heat.

The liquid refrigerant enters the evaporator where it expands and returns to its initial gaseous state. As it returns to the gaseous state the refrigerant absorbs energy in the form of heat. In compliance with the first principle of thermodynamics, the heat is released by the process fluid that flows over the surfaces of the evaporator at a temperature that is higher than that of the refrigerant fluid.

The following parameters are managed by an electronic control unit:

- evaporator water inlet temperature to keep it within the preset limits;
- the evaporator water outlet temperature and the pressure difference between evaporator inlet and outlet water to avoid the risk of freezing in low or zero flow conditions.

5.2 Components

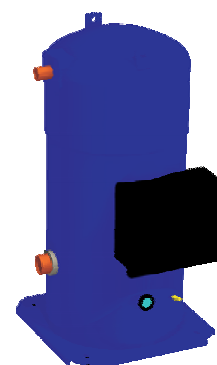
5.2.1 Compressors

The compressors are of the SCROLL type and are quipped with built-in overtemperature protection in the motor windings, check valve on the discharge line and by-pass between suction and discharge lines.

Shut-off valves on the suction and discharge lines can be supplied on request.

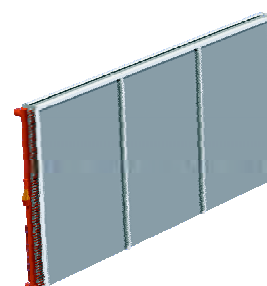
Each circuit of the units is equipped with an oil equalisation line between the compressors.

The compressors are installed on rubber antivibration mounts and housed in a compartment that is acoustically insulated by means of sound-absorbing matting in low noise versions (SN and SSN).



5.2.2 Condensers

The condensers are heat exchangers of the finned core type, cooled by a flow of air supplied by the fans, and equipped with copper tubes, aluminium fins, and galvanized carbon steel shoulders. Each refrigerant circuit includes a condensing coil and an associated row of fans.

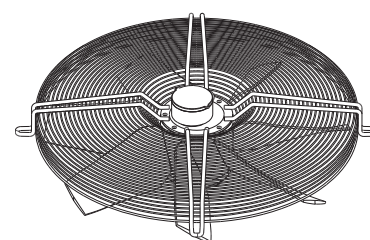


5.2.3 Fans

The fans are of the axial type, comprising a diecast aluminium fan wheel with sickle shaped blades.

The fan protection rating is IP54. All fans feature insulation class F to ensure they are compatible with outdoor operation in all climates.

Fan assembly is completed by an aerodynamically profiled port made of galvanized sheet steel and safety grilles downstream and upstream of the air flow.



5.2.4 Evaporator

Shell and tube type:

The evaporator is composed of an “U”-type shell and tube exchanger in which the refrigerant from the refrigerant circuit evaporates, simultaneously absorbing heat from the water to be chilled that is flowing through the shellside.

The evaporator shell, tube and headers are made of carbon steel, the tubes are copper and the diaphragms are brass.

The connections are threaded or of the Victaulic type.

The evaporator is equipped with a drain cock for easy emptying of the water contents when the plant is to be drained (see chapter “[Operation and Maintenance](#)”).

5.3 Hydraulic system (optional)

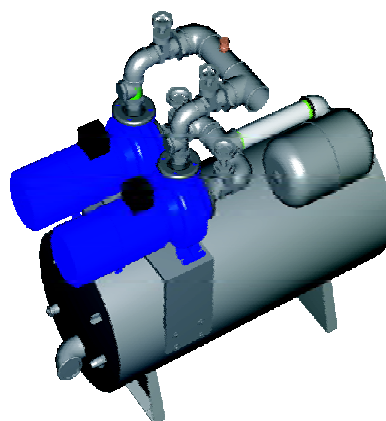
The units can be equipped with a hydraulic system on request. The system, which is installed on board the unit, is composed of centrifugal pump and storage tank and supplied with the following accessories:

- expansion vessel
- water pressure relief valve
- automatic air bleed valve
- discharge valve
- water pressure gauge at pump outlet
- electric heaters (optional).

Units can be equipped with a medium pressure head pump on request.

Pump installation is envisaged in the following configurations:

- single pump
- double pump (one in stand-by)
- pump and tank assembly
- double pump (one in stand-by) and tank unit.



5.3.1 Cabinet

The cabinet is made of galvanized panels with polyester powder coating.

5.3.2 Protection rating

The protection rating of the entire unit is **IP54** with insulation class F to ensure it is compatible with outdoor operation in all climates.

5.4 Electrical circuit

The electrical circuit schematic is given in the annexed diagrams.

5.5 Overall dimensions

See attachments

CHAPTER 6

FUNCTIONS AND COMPONENTS OF THE UNIT

This chapter provides an overview of the unit main functions. Some functions may be inactive or not present in the unit for specific requirements. Refer to the definitive offer data.

6.1 Automatic restart

This function serves to restore unit status in the event of sudden power loss. The unit will restart in ON mode if it was active ON at the time of power loss, and remain OFF if it was OFF at the time of power loss.

6.2 Set-point management

The set-point is the temperature value of the user water in relation to the control probe setting. The controller can manage different set-point modes:

- fixed set-point;
- compensated set-point;
- dual set-point;
- time band variable set-point;
- set-point from analog input (inactive).

6.2.1 Fixed set-point

Set-point and differential values relative to water temperature control do not change in relation to external actions or conditions. To change the set-point edit the parameter value manually, entering a new value.

6.2.2 Compensated set-point

The compensated set-point serves to adapt the set-point to a value measured on the basis of the ambient temperature reading.

The following diagram shows the set-point curve on the basis of the various parameter settings:

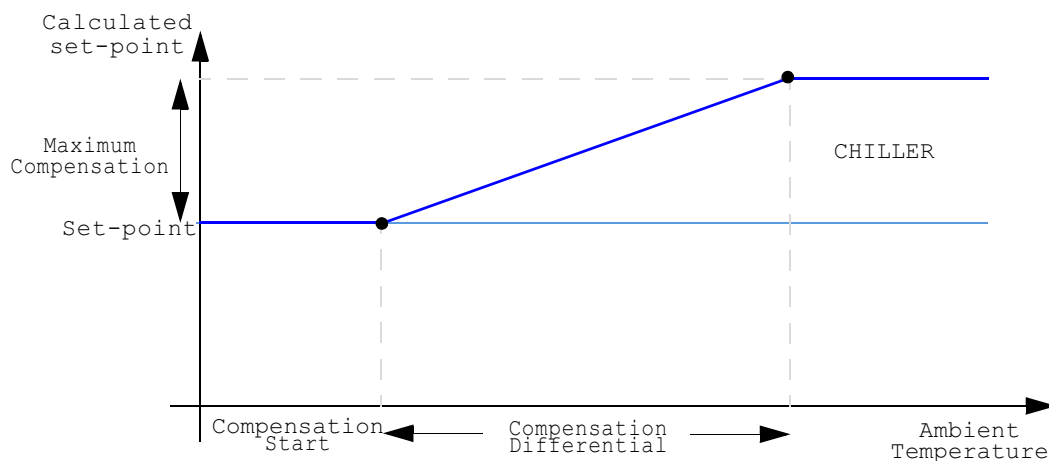
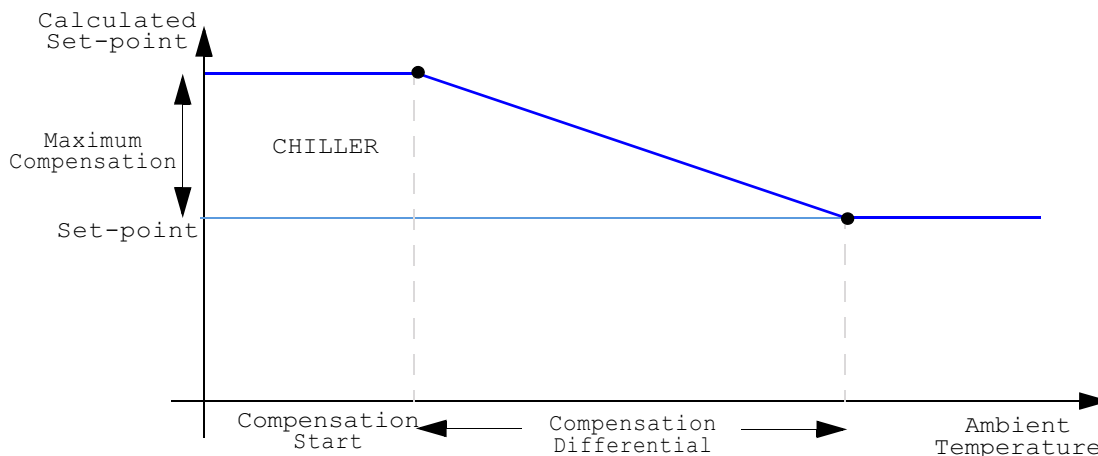


Diagram with negative “Compensation Differential”;



6.2.3 Dual set-point

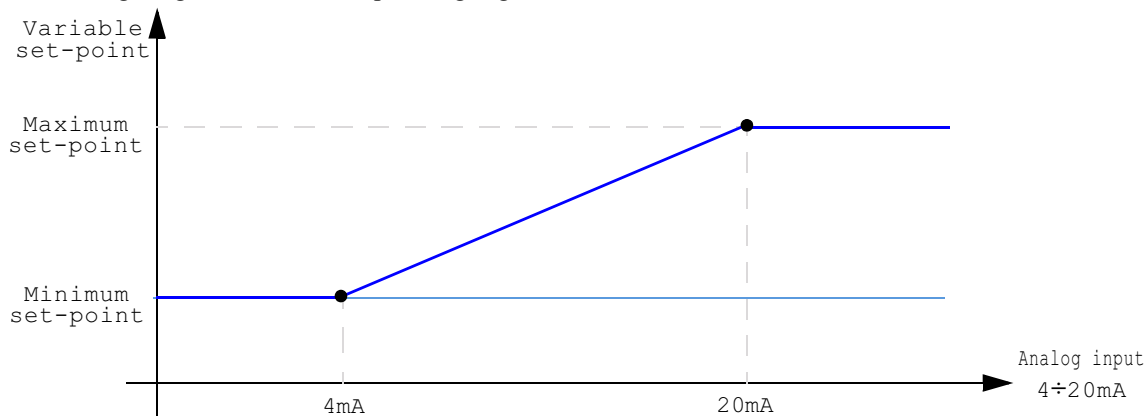
A second working set-point can be programmed. The set-point to be utilised is discriminated by means of a control unit digital input.

6.2.4 Time band variable set-point

With time-band variable set-point operation four time-bands can be programmed with different set-points. Once the programmed time has been reached, the controller changes the unit set-point according to the value programmed for the time-band in question.

6.2.5 Variable set-point from digital input (Multifunction)

The set-point is variable in accordance with the temperature value constantly detected by the specified probe. The following diagram shows the operating logic:



6.3 Temperature control

The temperature control strategy adjusts the unit in relation to the user water temperature value. There are two main factors involved: temperature and time. There are two types of control system: P.I.D. and Neutral Zone.

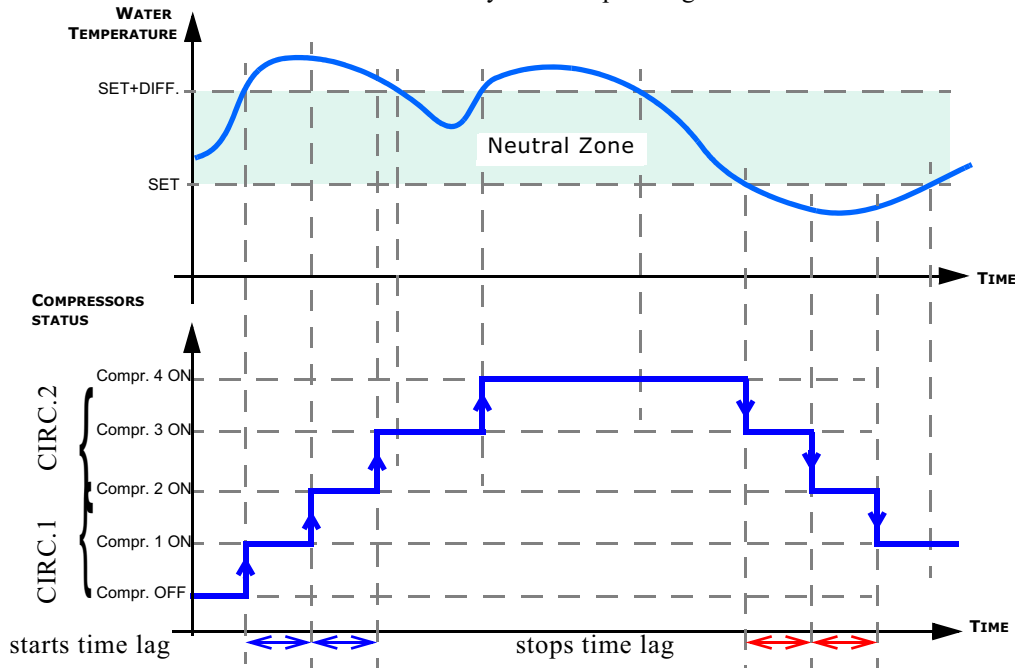
PID mode

P+I+D temperature control takes account of:

- the instantaneous deviation value with respect to the SET to which a Proportional Value P is assigned;
- the time during which the temperature value remains stable by means of the Integral Error I;
- the rate of change of the user water temperature by means of the Derivative value D.

Neutral Zone

When the water temperature value is lower than the set-point value (hence below the Neutral Zone), one or more compressors will be stopped (consecutive compressor stops will occur with a preset delay interval) until the measured temperature value returns to within the Neutral Zone. When the temperature value measured by the probe is higher than the set-point + differential value (hence above the Neutral Zone), one or more compressors will be started (consecutive compressor starts occur in accordance with a preset time lag) until the measured temperature value returns to within the Neutral Zone. The Neutral Zone Logic diagram illustrates explains how an increase or reduction in cooling demand causes, respectively, compressor starts or stops, with variable start and stop times on the basis of the zone in which the system is operating.



6.4 Compressors management

“Rotation” refers to the function that serves to optimise starts, stops and number of working hours of all the unit's compressors. With the aim of improving distribution of work loads it is also possible to implement rotation of circuits. The controller stores the operating hours and number of starts of each compressor and the unit. Setting an operating hours threshold value results in the generation of **an alarm** when the preset threshold is reached. The alarm signals the need to carry out routine maintenance.

The alarm message does not shut down the unit.

The functions involved in compressors management are:

- Proportional Integral Derivative control (PID) and Neutral Zone control
- The Pump-down function controls stops and starts to prevent them drawing in liquid refrigerant.
- Compressors rotation
- Circuits rotation

6.4.1 Unloading procedure

The unloading procedure serves to halve the capacity of the circuit by switching off a compressor. This function is activated when the heating demand is higher than the unit capacity. The unloading procedure serves to protect the system from pointless and potentially harmful stress.

6.4.2 Compressor protection

The compressor protection prevents incorrect rotation of the compressor scrolls and the emergence of motor windings overheating phenomena.

6.5 Fans management

High pressure transducers are connected to the controller and provide the facility to manage the fans in two ways:

- by **Step Control**
- by stepless **Speed Control**

6.5.1 Step Control

The controller activates step control of the fans on the basis of the pressure values measured by the high pressure transducers on the refrigerant circuit pipes. The activation of one fans step corresponds to starting of one subgroup composed of several fans. Fig.1 describes the operating logic of 2-step control.

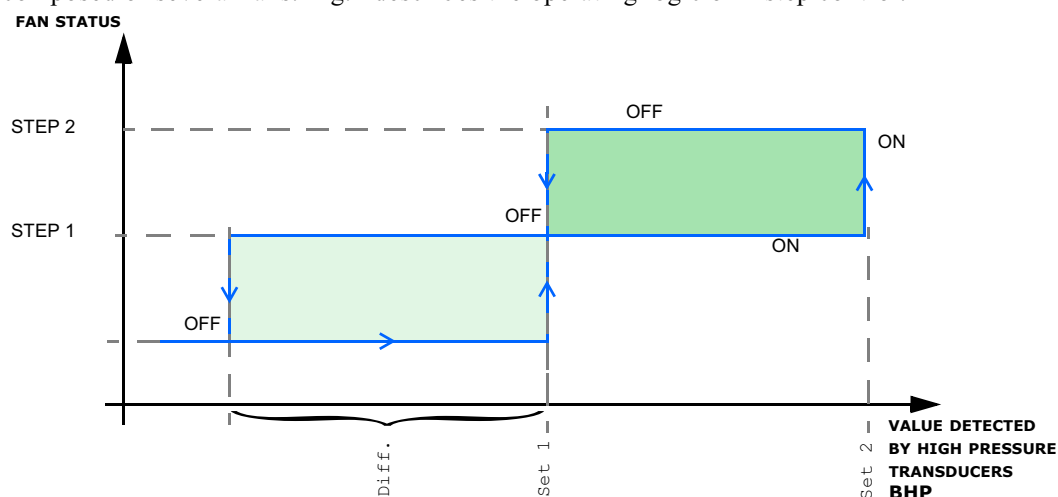


Fig. 1 FANS STEP ACTIVATION LOGIC

circuit 1 Elec. Panel 1 2 1 1 2 1 circuit 2	circuit 1 1 2 1 2 circuit 2	The fans are combined in groups. No.1 fans start. Next step: no. 2 fans start.
--	--	---

6.5.2 Variable speed control

The electronic fan speed control system is of the phase cut-off type. The system features one speed controller for each refrigerant circuit.

On the units each group of fans can run at a different speed depending on the pressure value detected by the corresponding pressure transducer (-BHP transducers).

In normal operation the fans are stopped when pressure read by the high pressure transducers (-BHP) is lower than the set-point value, or when the last compressor is stopped.

Fig.2 describes the operating logic of the fan speed control system.

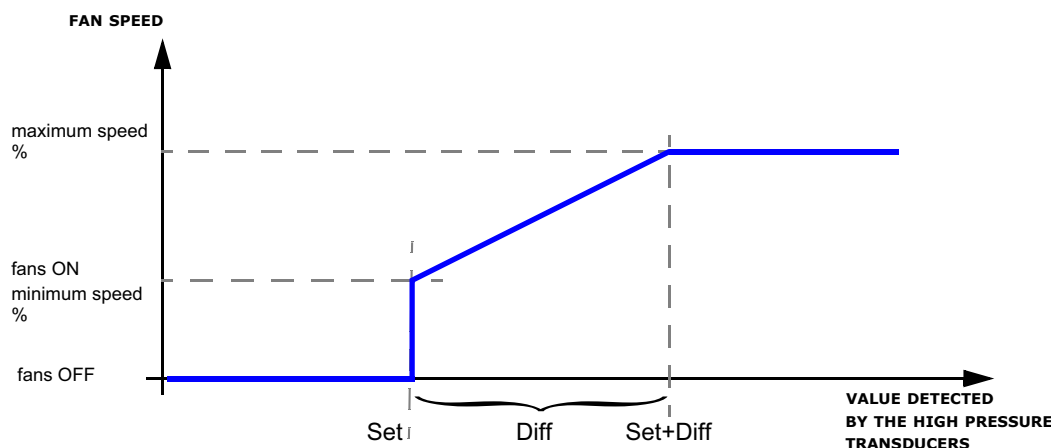


Fig. 2 FANS ACTIVATION LOGIC WITH SPEED CONTROL

6.6 Water pump management

Water pumps can be installed on all units on request only.

Installation of a pump is possible with different configurations as described in chapter 5.3 “Hydraulic system (optional)”.

On starting the unit by pressing  the pump (if installed) starts.

Once the unit has stopped by pressing  the pump continues to run for a programmed delay time. The pump stops only in presence of shut-down alarms.

Pump antifreeze function

The controller envisages the use of the pumps as a measure against icing up of the evaporator.

It is therefore possible to enable the pumps for start-up in accordance with the antifreeze strategy.

6.6.1 Automatic/Manual rotation

With two pumps installed, one pump runs while the second is in stand-by. If the working pump breaks down, the second pump automatically takes over. Other rotation modes of pumping units are:

- Start
- Manual
- Hours
- Start+hours

Start

Alternatively, the pump that was previously idle during the previous start session is utilised.

Manual

Start of one pump is forced by the controller.

Hours

The pumps change over after a programmed interval.

Hours+start

At each new start command the pump that was previously stopped is started, but if the maximum number of consecutive running hours is reached the pumps are switched over.

ATTENTION

Note that in “hours” rotation mode the hour counter function is reset when the unit is stopped. Selection of the rotation type therefore depends on the type of use of the machine.

6.7 Supervision System

The controller can manage the following supervision protocols:

- MODBUS
- GSM
- LONWORKS

6.8 High pressure switches (HP)

High pressure switches provide an additional electromechanical protection with respect to the protection offered by the high pressure transducers installed in the unit.

HP switches are installed on the refrigerant compressor discharge line to prevent the arrival at pressure levels that are potentially hazardous for proper operation of the unit and for personal safety.

- ER0802÷1402

All refrigerant circuits are equipped with an automatic reset pressure switch on the high pressure side. Tripping of this pressure switch opens the compressor power supply circuit (see electrical diagram). When pressure decreases and falls below the reset point, the pressure switch resets automatically and the unit can be restarted by pressing the electronic controller ALARM button.

- ER0802÷1402

All refrigerant circuits are equipped also with a pressure switch with manual reset on the high pressure side of each circuit. Tripping of this pressure switch opens the compressor power supply circuit (see electrical diagram). When pressure decreases and falls below the reset point, the pressure switch must be reset manually, after which the unit can be restarted by pressing the ALARM button on the electronic controller.

The high pressure switches are connected to the refrigerant circuit pipes by means of SCHRAEDER valves (with needle) so there is no risk of refrigerant escaping if the pressure switches are to be replaced.

For correct operation of the unit the pressure switch trip and reset values must not differ from those shown in the following table:

COMPONENT	REFRIGERANT	TRIP			RESET		
		bar	°C	°F	bar	°C	°F
High pressure switch with manual reset	R407C	26.7	62.6	144.7	22.7	55.7	132.3
High pressure switch with automatic reset (manual calibration type)	R407C	26.3	61.9	143.4	20.3	51.1	123.9

6.9 Temperature and pressure transducers

The unit is equipped with two types of transducers:

- pressure transducers, powered directly by the controller;
- temperature transducers.

6.9.1 Pressure transducers

Each refrigerant circuit is equipped with a low pressure transducer and a high pressure transducer.

These sensors detect compressor suction and discharge pressure values and adjust operation of the unit on the basis of the programmed set-points.

By reading the parameters the following functions can be controlled for each circuit:

- high pressure alarm;
- low pressure alarm;
- unloading for high pressure;
- low pressure pump-down (not enabled);
- fans control;
- measurement of high and low pressure values.

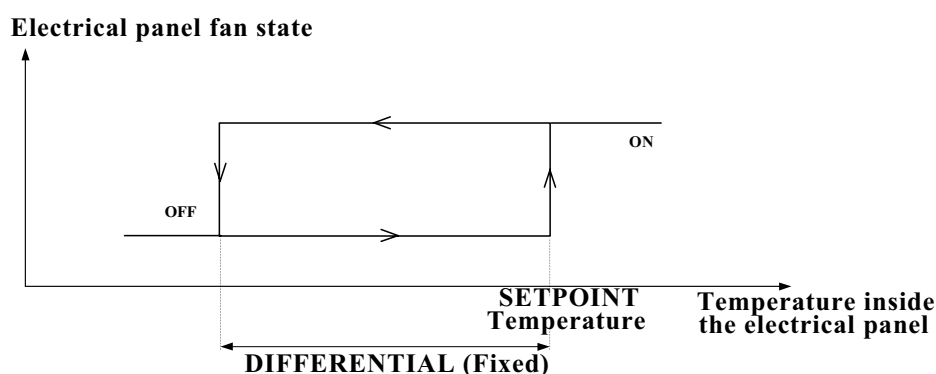
Therefore, if pressure in one circuit increases or decreases with respect to the preset limit values, an alarm signal can be tripped to stop the unit, start or stop the fans, and stop one or more compressors after a programmable time interval.

6.10 Water differential pressure switch

The unit is equipped with a differential pressure switch that detects the water pressure difference between the evaporator inlet and outlet pipes. When the pressure switch detects a Δp lower than 50 mbar (500 mmWg), an alarm signal shuts down the unit once the preset time lag has elapsed. When Δp returns to above 50 mbar, the unit can be restarted by pressing the ALARM button. This type of event should occur rarely and be of short duration.

6.11 Forced ventilation of the electrical board

The circulation fan is controlled by a thermostat positioned inside the electrical panel. It starts when the temperature inside the electrical panel exceeds the thermostat's set point.



The setpoint value is 40°C.

The differential value, 4°C, is fixed.

6.12 -20 function (optional)

This option is present only if the fan electronic regulation, the compressor carter resistance and the electrical panel resistances are present. Antifreeze resistance kits are option furnished, in alternative to the glycol. They protect the water circuit from ice formation with ambient temperatures until -20°C .

6.13 Antifreeze control

Antifreeze control actions depend on the temperature measured at the evaporator outlet.

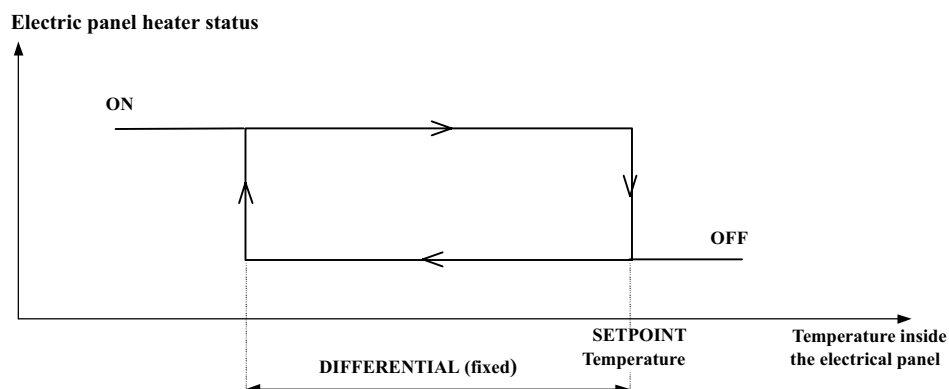
When the temperature falls below the previously set antifreeze threshold value the controller generates an alarm that shuts down the unit.

This alarm will remain active until the temperature returns to a value above the set-point + differential.

6.14 Electric panel heater (optional)

The electric panel of the units designed to work until -20°C is fitted with a fan-assisted heater which heats the electrical components in order to protect them from low temperatures.

This heater is controlled by a thermostat inside the electric panel which activates it when the temperature inside the panel falls below the set point less the differential.



The setpoint value is 5°C .

The differential value, 4°C , is fixed.

6.15 Antifreeze heater and tank heater (optional)

For further information refer to the electrical diagrams.

The antifreeze heater is installed only on request (optional).

Make sure the evaporator, pump (if installed), and storage tank (if installed) are protected against the risk of freezing in installations subject to particularly severe ambient temperatures.

Different configurations are available:

- hot wire heating element wrapped around the evaporator;
- hot wire heating element wrapped around the evaporator and pump (if installed);
- hot wire heating element wrapped around the evaporator and pump (if installed) and immersion heater in the storage tank (if installed).

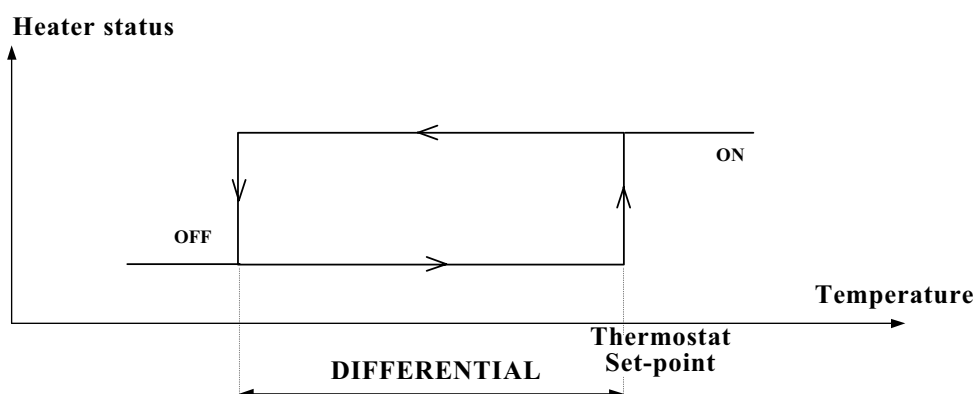
Activation of the hot wire heating elements is managed by the controller by means of an ambient temperature probe located in the fans compartment behind the electrical cabinet.

	SET-POINT	DIFFERENTIAL
hot wire heating elements	3 °C	3 °C

Activation of the immersion heater (storage tank) is managed by the thermostat with bulb located inside the tank.

	SET-POINT	DIFFERENTIAL
immersion heater	3 °C	3 °C

The activation logic of the heaters is described below.



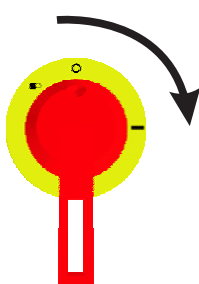
CHAPTER 7

START-UP

ATTENTION

Before starting this type of unit, ensure that all personnel involved have read and understood the “ Safety” chapter in this manual.

1. The unit shut-off valves must be open.
2. With a “closed” type hydraulic circuit ensure that a suitably sized expansion vessel has been installed.
3. Check that the ambient temperature is within the range indicated on the unit's data plate.
4. Check that the main switch is in the OFF position (“O”).
5. Check that the unit power supply voltage is correct.
6. Power the unit by means of the line protection device.



7. Turn the unit main switch to the ON position (“I”).

When the unit is powered the control unit display switches on. Check on the display for:

- unit alarm
- Time bands Off
- Supervision Off
- “External On/Off” Off

8. Models without pump:

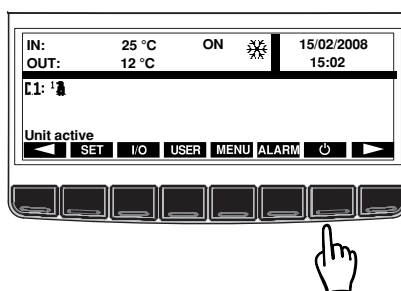
before switching the unit on make sure the water pump is running and water is flowing through the evaporator.

9. Models with discharge valves on compressors:

Check that the compressor discharge valves are open.

10. Press button for 2" to start the unit. The pump (if installed) starts immediately.

After a delay set on the electronic board the refrigerant compressor starts.



Press button  again for 2" to stop the unit. The controller remains active.

11. Compressors, pump and fans have only one correct direction of rotation.

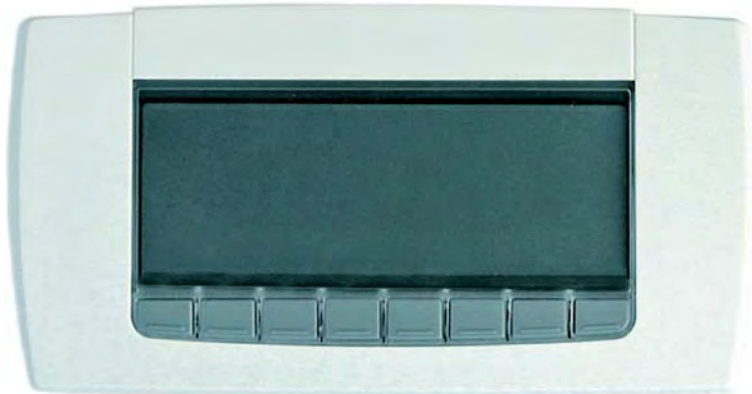
If a SCROLL compressor does not rotate in the correct direction it will be very noisy and will be unable to compress the refrigerant gas.

Check the direction of rotation of all components at first start and after every maintenance operation. In the event of incorrect rotation direction of all components, invert two phase wires at the main terminals of the electrical cabinet. In contrast, if it is found that only certain specific components are rotating in the incorrect direction, the power feeding wires must be inverted on the individual terminals of the corresponding contactor(s) (see attached wiring diagram).

- 12.If, at the time of the first start of the unit** the ambient temperature is high and the temperature of water in the hydraulic circuit is significantly higher than the working value (**e.g. 25-30 °C**) this means that the unit is starting in overload conditions so the protections may trip. To reduce the overload, partially and progressively close **a valve at the unit outlet to reduce the flow rate of water passing through the evaporator**. The valve can be opened fully when the water temperature in the hydraulic circuit approaches the working value.

CHAPTER 8

ELECTRONIC CONTROLLER



The application installed in the central unit is sufficiently powerful and flexible to allow the maximum exploitation of the hardware, obtaining accurate and reliable management of the unit. Interaction with the controller is performed by using a terminal composed of a display and navigation buttons. Data displayed on the terminal can be simply information concerning unit status, in which case the values in question are read-only, or preset parameters that can be edited using the terminal buttons.

8.1 Interface

The controller program is provided with a graphic interface with icons and texts. The display is divided into areas, the relative significance of which varies during navigation. However several recurring elements can be identified.

1 Main Display Area, in which all information concerning parameters and enabled or active functions is displayed.	4 The appearance of a horizontal line further divides the display area. Unit status and activation mode are displayed in the main mask, in addition to the programmed set-point.	3 The appearance of a vertical line defines a further subdivision of the display area. Makes it possible to monitor the situation of active functions and alarms constantly.
	2 Lower display area The functions assigned to the buttons are shown by means of graphic symbols.	

The following symbols may appear in the lower part (2) of the display relative to the assignment of button functions:

Button	Function
 	Buttons to scroll through stages and masks
 	Buttons to scroll through, select, increase or decrease parameter values
 	Buttons to scroll through all alarm messages in the Alarm stage
EXIT	Button to quit the field displayed and return to the higher level stage
ENTER	To enter a stage, activate and confirm the value
SET	To access the stage relative to set-point values
I/O	To access the stage in which the values detected by the controller are displayed
USER	To access the free menu
MENU	To access the menu with password
ALARM	To enter the stage relative to the alarms
	To switch the unit on
I	To display values relative to circuit 1
II	To display values relative to circuit 2
RESALL	Reset all alarms
RESET	Reset one alarm at a time

8.1.1 Graphic conventions

	When the icon is displayed on a white background the relative function is enabled but not active.
	Icon on black background: function enabled and active.
Set-point: 7	Parameters on a white background are not selected.
Set-point: 	Parameters on a black background are selected.
Set-point:  Set-point: 7 Set-point: 	When parameters are flashing they can be edited with buttons   .

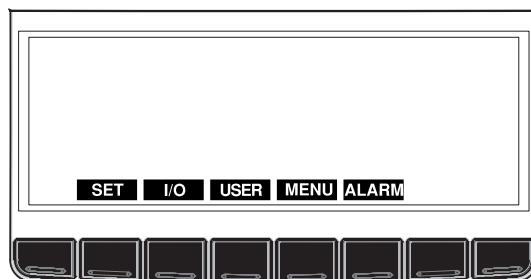
8.2 Navigation

The unit management program is structured in such a way as to provide access to programming in accordance with different levels (user-service). The software architecture breaks down the implementable functions of the unit through the use of stages.

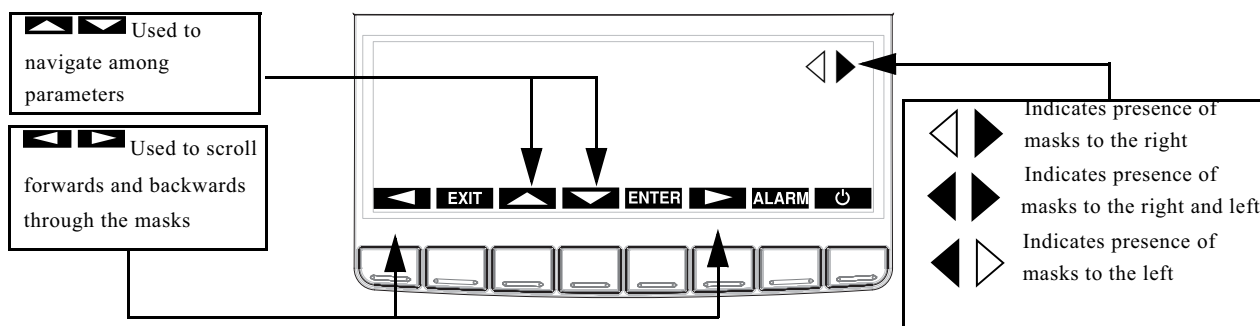
A stage, or loop, is a collection of functions-parameters referred to a specific category. Each stage can contain further stages.

The basic software has 5 stages that can be accessed from the main mask.

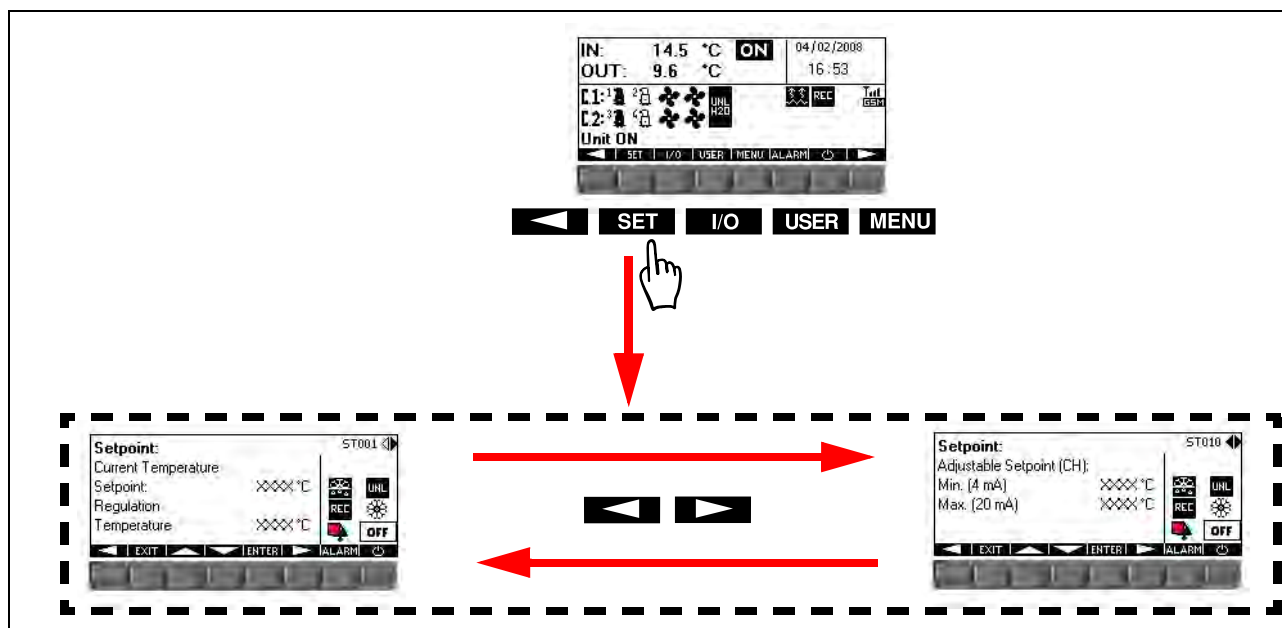
Main stages



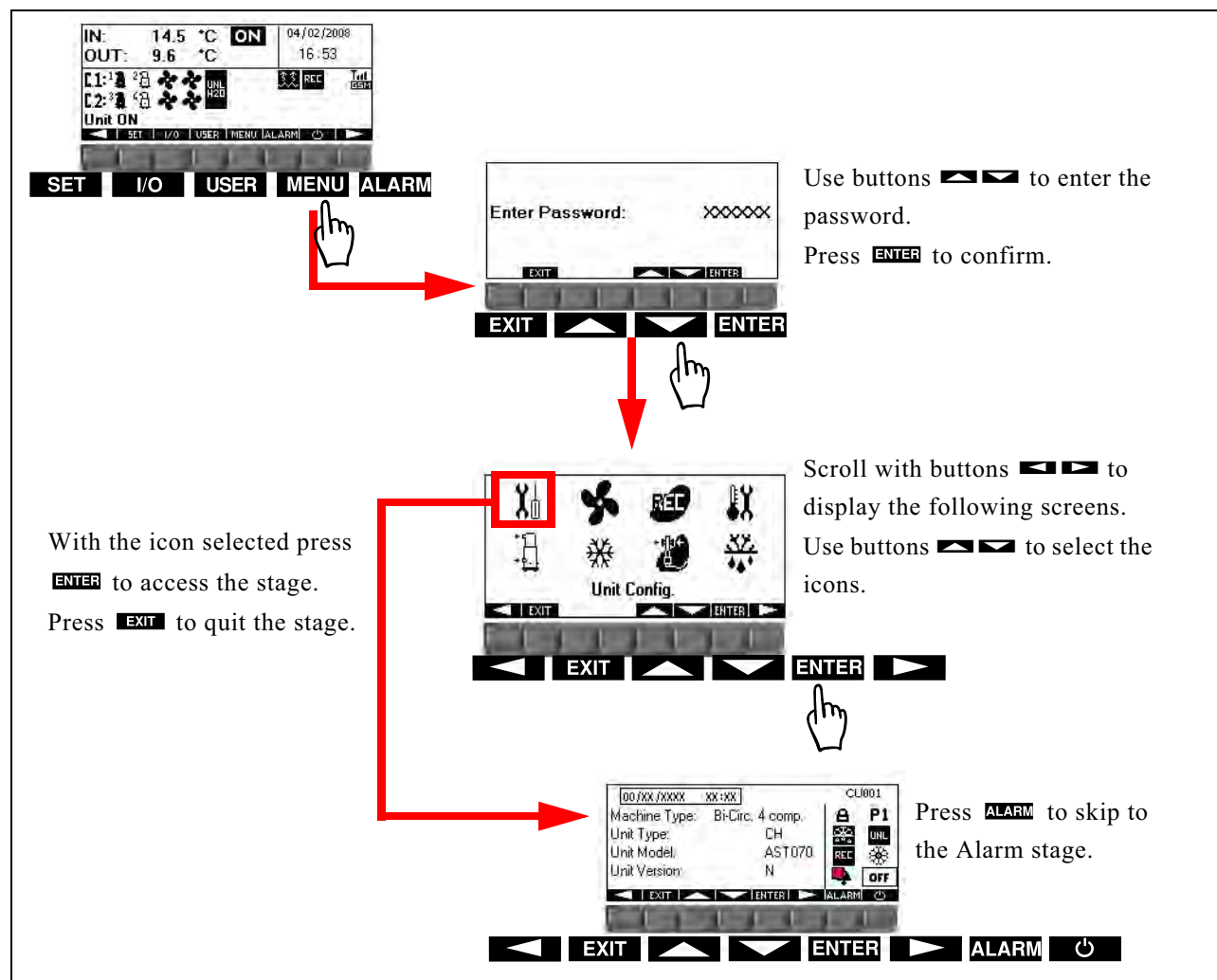
Inside the stage



Example: SET stage

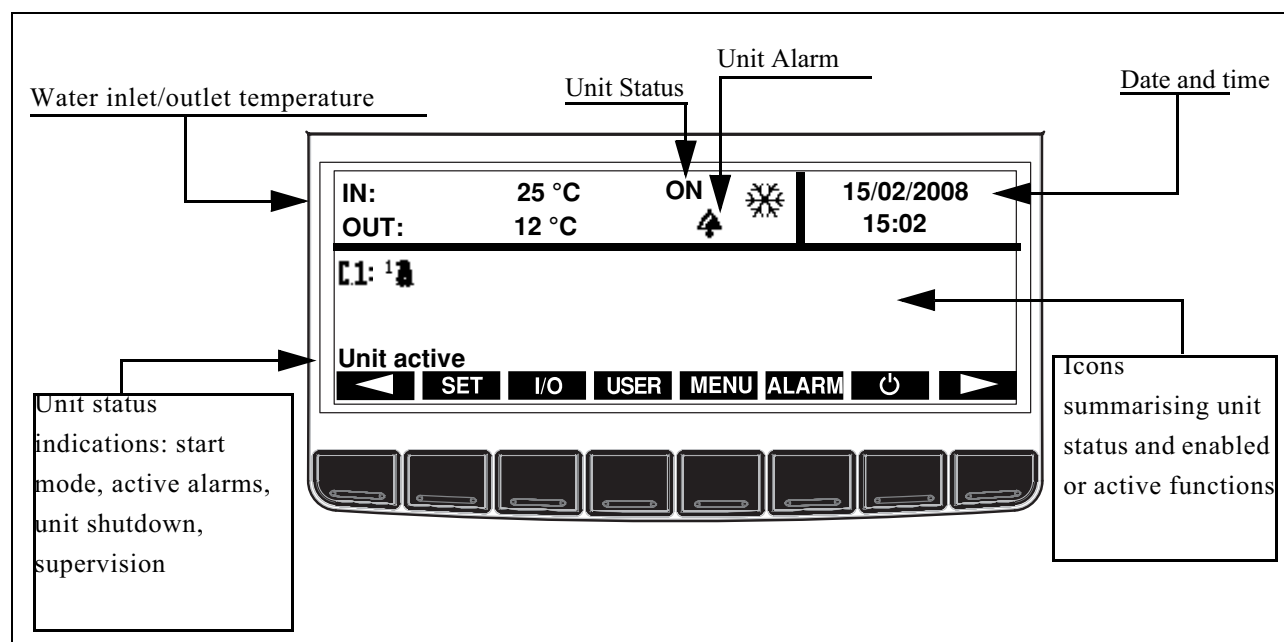


Example: MENU stage



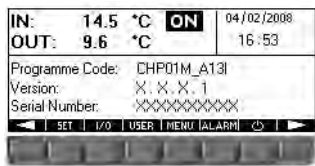
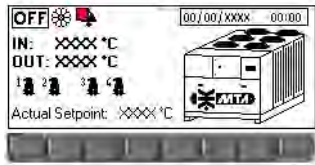
8.3 Main mask

The start mask is displayed when the controller is powered on. Once the starting phase has been completed, the controller is operational and the main mask appears. In normal working conditions the following parameters are displayed:



8.3.1 Other masks

Other display masks can be accessed starting from the main mask.

Version mask 	Accessed by scrolling with buttons   from the main mask. Information relative to the program.
Start mask 	Displayed only when the controller starts.
Screen saver 	The screen saver appears after a programmed time.

8.4 Icons

8.4.1 Main icons

The meaning of the icons that can be displayed in the opening screens is given below. The meaning is unique and remains identical also when the icons appear in other stages during navigation.

Icon	Meaning	Icon	Meaning
	Indicates the refrigerant circuit. Strikethrough means inactive. The number identifies the circuit		Recovery function
	Shows compressor starting/stopping - the number identifies the circuit		Airbatic function
	Identifies the fan		Modularity function
	Fan speed control with speed indication		Control relay function
	Unloading function		Modem function
	Unit maintenance function		Remote control function
	Night time operation function		Unit on
	Defrost function		Unit off
	Freecooling function		Operating modes: chiller
	Antifreeze heaters function		Sms transmission

Icon	Meaning	Icon	Meaning
	Low temperature function		Active alarm
	Uneditable parameter or non-resettable alarm		Editable parameter Resettable alarm
	Active alarm		Maintenance alarm warning
P1	Identifies the level, USER in this case		

8.4.2 Menu stage icons

These icons are located in the Menu stage. They identify a group of functions that can be displayed or edited.

Icon	Meaning	Icon	Meaning
	Unit configuration		History
	Compressors control		Pump management
	Fans management		Clock setting and adjustment
	Antifreeze		Modularity
	Recovery		Supervision
	Electronic thermostatic valve		Unloading
	Temperature control setting		Free cooling
	Defrosting		Other settings
	Operating hours		Alarms setting
	Manual operation		

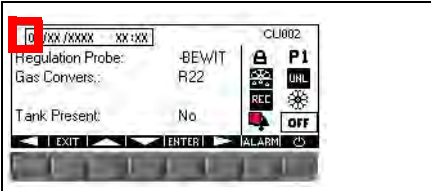
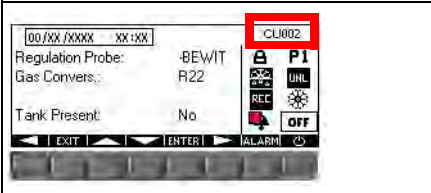
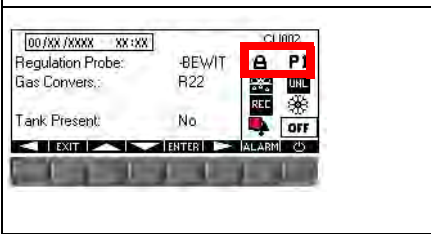
8.5 Using stages and masks

Below we have provide a series of examples relative to modification of the main functions. The interaction method is the same from one stage to another, and is applicable, in terms of approach, to all the cases that may be encountered with the unit running.

ATTENTION

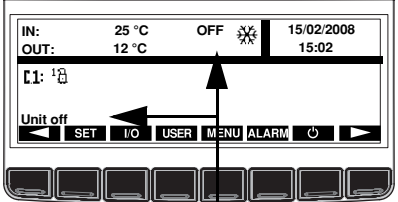
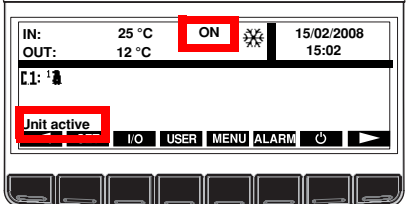
To avoid potential hazards or malfunctions of the unit, modifications of control parameters should be made exclusively with the unit powered off.

Recurring elements in the masks.

	When navigating between values a cursor is displayed showing the currently active zone. The cursor HOME position is in the top left corner of the display.
	Each mask, excluding the main mask, screen saver and alarm mask, is identified by an acronym composed of the abbreviation of the stage name and a sequential number. CU002 CU refers to Unit Configuration 002 Identifies the mask sequential number
	The presence of the icons   and P1 is possible in all masks.   Indicate if the mask is editable: Unlocked - editable / Locked - not editable. P1 Indicate the access mode.

8.5.1 Switching on and off the unit

ATTENTION
Switching on the unit is separate from activation of the controller.

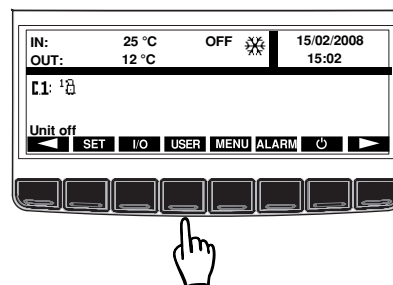
After having powered the unit the controller starts and displays first the start mask and then the main mask.	
The controller is active but the unit is switched off. ATTENTION <i>Perform parameter modifications and reconfigurations in this period, this avoiding possible hazards or malfunctions of the unit. For example, changing the operation mode from chiller to heat pump.</i>	 <u>Areas to check</u>
Before switching the unit on make sure that none of the following alarms are active: • Unit alarm • Time bands Off • Supervision Off • “External On/Off” Off	
With no active alarms press button  for 2". The display shows On simultaneously with Unit active. The icons on the display change appearance in relation to the requests of the unit. To switch the unit off press button  again for 2".	 

8.5.2 Setting the language

Power on the unit. Wait until the main mask appears.

The unit can be either on or off without affecting the procedure.

From the main mask press **USER**.



Once you have entered the User stage, mask Us001 allows you to change the language.

Press **ENTER** to show the parameter of the “Language utilised” row.

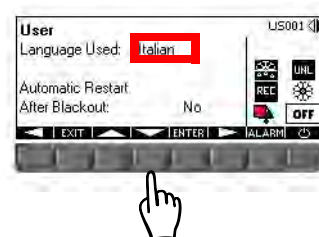
Press **ENTER**.

The parameter starts flashing.

Press buttons **▲** **▼** to scroll through the values.

Press **ENTER** or wait for the programmed time to elapse to confirm the new value.

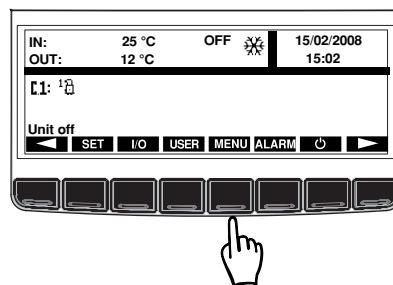
Press **EXIT** to quit the stage.



8.5.3 Setting date and time

The controller must be active, the unit can be either on or off without affecting the procedure.

From the main mask press **MENU**.



The password is required to access the stage.

Press **▲** **▼** to enter the parameter.

Press **ENTER** to confirm.

If the password is incorrect the relative mask will show the error.

Repeat the procedure entering the correct value.



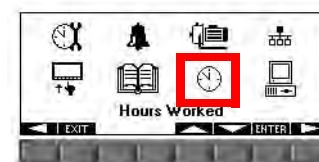
Once you have entered the Menu stage, several icons show the functions available (for the meaning see 8.4.2 “Menu stage icons”).

Scroll through the masks with **◀** **▶** until the appearance of

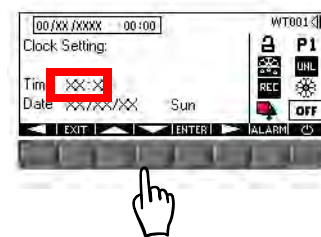
icon .

Press buttons **▲** **▼** to select the icon.

Press **ENTER** to access the masks of the stage.

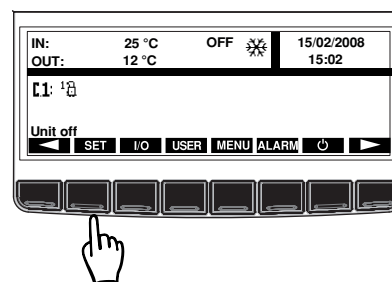


In the Clock stage.
Press **ENTER** to display the time.
Press **ENTER**.
The parameter starts flashing.
Use **▲** **▼** to enter the values.
Press **ENTER** to confirm.
The cursor will flash on the next value.
Repeat steps to set minutes and date.
Press **EXIT** to quit the stage.

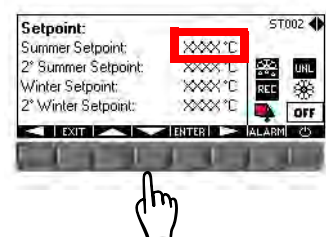


8.5.4 Changing the set-point

The unit can be either on or off without affecting the procedure.
From the main mask press **SET**.

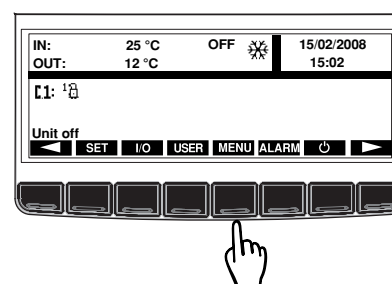


Once you have entered the Set stage, scroll through masks with **▲** **▼** up to mask St002.
Press **ENTER** to select Summer Set-point.
Press **ENTER**.
The parameter starts flashing.
Press **▲** **▼** to scroll through the values.
Press **ENTER** or wait for the programmed time to elapse to confirm the new value.
Press **EXIT** to quit the stage.

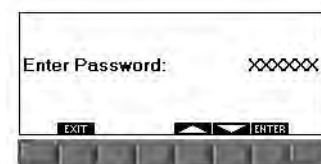


8.5.5 Changing the differential

The unit can be either on or off without affecting the procedure.
From the main mask press **MENU**.



The password is required to access the stage.
Press **▲** **▼** to enter the parameter.
Press **ENTER** to confirm.
If the password is incorrect the relative mask will show the error.
Repeat the procedure entering the correct value.



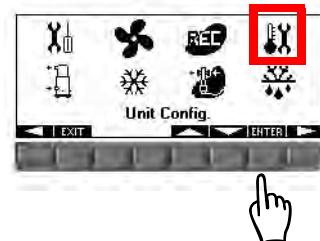
Once you have entered the Menu stage, several icons show the functions available (for the meaning see 8.4.2 “Menu stage icons”).

Scroll through the masks with until the appearance of

icon .

Select the icon with .

Press **ENTER** to access Control stage masks.



The mask on which to set the differential depends on the selected control mode “Neutral zone or PID”.

“Neutral zone” control

The differential parameter is in mask Rg001.

Press to show the differential (control band).

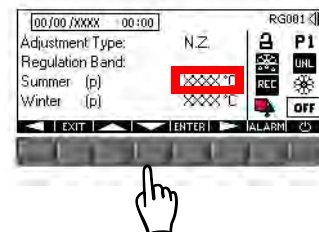
Press **ENTER**.

The parameter starts flashing.

Use to scroll through the values.

Press **ENTER** or wait for the programmed time to elapse to confirm the new value.

Press **EXIT** to quit the stage.



“PID” control

The differential parameter is in mask Rg002.

Scroll through masks with up to mask Rg002.

Press to show the differential.

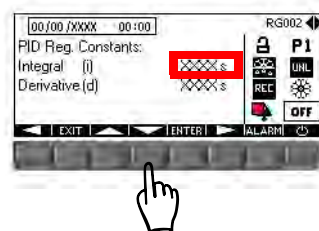
Press **ENTER**.

The parameter starts flashing.

Use to scroll through the values.

Press **ENTER** or wait for the programmed time to elapse to confirm the new value.

Press **EXIT** to quit the stage.



MASKS

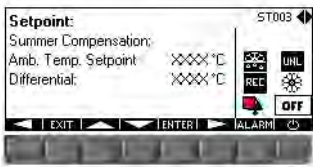
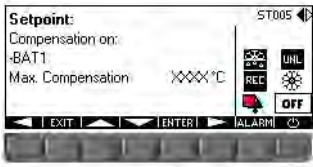
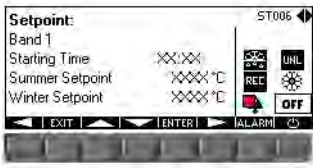
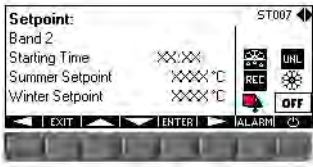
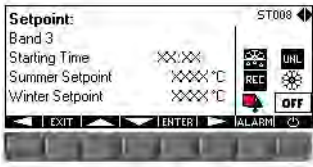
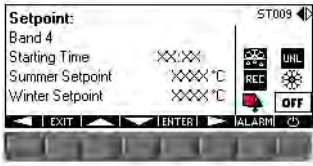
The following section shows the masks that can be edited in user mode, together with the relative explanations.

ATTENTION

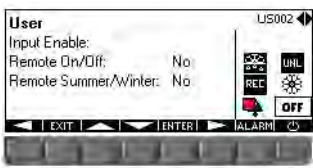
The default values are shown in the appendix to this manual.

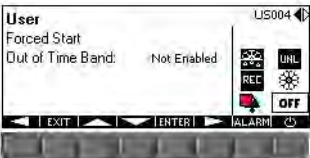
8.6 Set-point stage

Mask	Range	Indications
		This mask serves to display the current temperature set-point. It also shows the temperature value measured by the control probe.
	4÷20 °C 4÷20 °C 25÷55 °C 25÷55 °C	This mask serves to set the summer/winter working set-point (for heat pump units). It is also possible to program a second working set-point, selectable by a digital input.

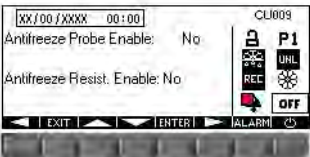
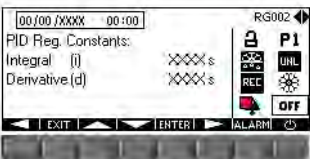
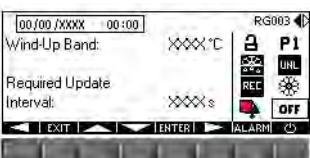
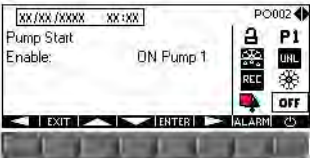
Mask	Range	Indications
	$4 \div 20\text{ }^{\circ}\text{C}$ $0 \div 100\text{ }^{\circ}\text{C}$ $\text{Bat1} \div \text{Bat2} \div \text{Average}$ $\text{between Bat1 and Bat2} \div \text{Lower between Bat1 and Bat2} \div \text{Higher between Bat1 and Bat2}$	This mask serves to set a variable set-point in relation to the ambient temperature. A reference value must be provided from which temperature control is to start, and also a temperature differential. Also the reference probe must be set. The reference probe can vary on the basis: of the maximum or minimum value measured between the ambient probes, on a mean value between the probes, or always selecting one reference probe.
	$0 \div 23\text{ h}$ $0 \div 59\text{ minutes}$ $4 \div 20\text{ }^{\circ}\text{C}$ $25 \div 55\text{ }^{\circ}\text{C}$	Use this mask to set the first time band start time when using a time band control system. Set the hour and a dedicated set-point.
	$0 \div 23\text{ h}$ $0 \div 59\text{ minutes}$ $4 \div 20\text{ }^{\circ}\text{C}$ $25 \div 55\text{ }^{\circ}\text{C}$	Use this mask to set the second time band start time when using a time band control system. Set the hour and a dedicated set-point.
	$0 \div 23\text{ h}$ $0 \div 59\text{ minutes}$ $4 \div 20\text{ }^{\circ}\text{C}$ $25 \div 55\text{ }^{\circ}\text{C}$	Use this mask to set the third time band start time when using a time band control system. Set the hour and a dedicated set-point.
	$0 \div 23\text{ h}$ $0 \div 59\text{ minutes}$ $4 \div 20\text{ }^{\circ}\text{C}$ $25 \div 55\text{ }^{\circ}\text{C}$	Use this mask to set the fourth time band start time when using a time band control system. Set the hour and a dedicated set-point.
	$4 \div 20\text{ }^{\circ}\text{C}$ $4 \div 20\text{ }^{\circ}\text{C}$	This mask serves to control set-point changes on the basis of a value provided by an analog input. The limit values are entered within which the set-point varies in a linear manner.

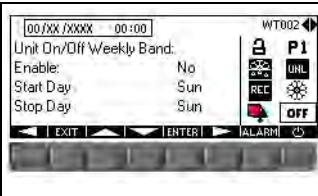
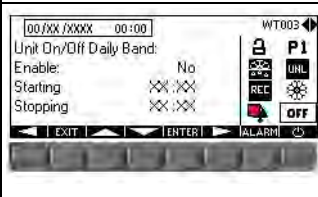
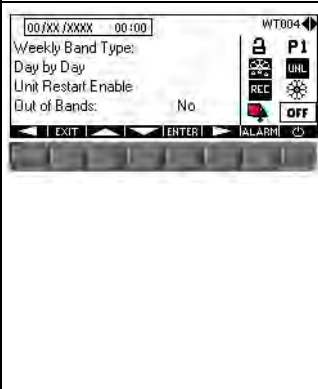
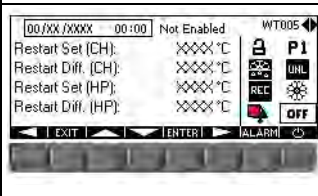
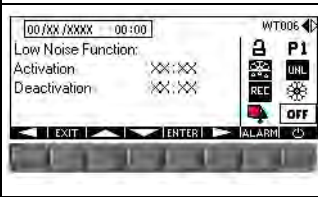
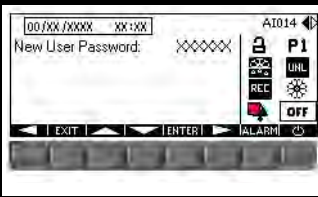
8.7 User stage

Mask	Range	Indications
	Italian/English/ German/French/ Spanish $\text{No} \div \text{Yes}$	Use this page to change the language and enable automatic restarting. Automatic restarting is possible only if the unit was already ON at the time of the power loss.
	$\text{No} \div \text{Yes}$ $\text{No} \div \text{Yes}$	Use this mask to enable controller remote ON/OFF (digital input no. 1).

Mask	Range	Indications
	No÷Yes	Use this mask when the time band system has been set. This mask is used to enable unit start outside the preset operating time bands.

8.8 Menu Stage

Unit configuration 		
	Yes÷No Yes÷No Unit ON Unit OFF	Serves to enable the pump and heaters in antifreeze mode. Allows operating mode of antifreeze heaters to be selected: No= never active Yes= always active Unit On= active only when unit is on OFF comp. = active only when compressors are stopped
Temperature control setting 		
	N.Z.÷PID 0÷100 °C 0÷100 °C	Serves to set the type of logic to follow for temperature control. The control modes can be PID or NEUTRAL Zone. The values of control time bands in chiller and heat pump mode are also present.
	0÷32000s 0÷32000s	Values to set for the three constants in PID control mode. To cancel the constant enter a value of 0. This will result in control of exclusively P, P+I, P+I+D.
	0÷100 °C 1÷32000s	Serves to set the zone in which temperature control is not executed. In addition the refresh rate of the temperature control values calculation can be set.
Pumps 		
	Pump 1 - ON Pump 1 - ON	Pump activation.
Clock 		
	0÷23h 0÷59minutes Sun÷Mon÷Tue÷ Wen÷Thu÷Fri÷ Sat	Setting of the hour month day year.

	Yes÷No Sun÷Mon÷Tue÷ Wen÷Thu÷Fri÷ Sat	Enable and set the start/stop weekly time band.
	Yes÷No 0÷23h 0÷59minutes	Enable and set the start/stop daily time band.
	Day by Day÷From Day to Day Yes÷No	Active when using the weekly and daily time band mode simultaneously: <u>Day by Day</u> unit start set on the basis of the working hours for each programmed day. <u>From day to day</u> the period corresponding to the weekly time band in which the unit is always on. The first day the unit starts in relation to the time band programmed and stops on the last day at the time set in the time band. Start up outside band indicates the facility to start the machine in observance of the activation set-points.
	4÷20 °C 0÷100 °C 25÷55 °C 0÷100 °C	This mask is active only if the relative line of the higher level mask is enabled. It contains the unit start and stop set-points in chiller and heat pump mode when these values are arrived at outside the preset hourly and weekly time bands.
	0÷23h 0÷59 minutes 0÷23h 0÷59 minutes	Low-noise function activation/deactivation time. The value must be within the hourly and daily bands. The unit must be active.
Other settings 		
	0÷9999	This page allows you to change the access password.

8.9 Alarm stage

The status of alarms and warnings is monitored in this stage. If the signal (bell icon) is not active when **ALARM** is pressed the stage will appear as follows:



Due to the importance of the alarm function the relative signal is active in all stages of the program, and pressing **ALARM** allows the user to skip to the alarm stage from any other stage.

Warning

A warning is an indication shown on the display to alert the user to a specific aspect of the unit. Warnings are typically utilised in the management of pump maintenance. By setting a total number of pump running hours, once the preset number of hours has been reached a maintenance warning can be caused to appear in the alarm stage.

A warning does not shut down the unit or impair its operation in any way.

Alarm

An alarm indicates a malfunction situation and shuts down the unit partially or totally. When an alarm appears action must be taken to remedy the situation.

Alarms and warnings can have two different types of reset: automatic or manual.

Automatic

When the condition that caused the alarm ceases, the alarm warning resets automatically.

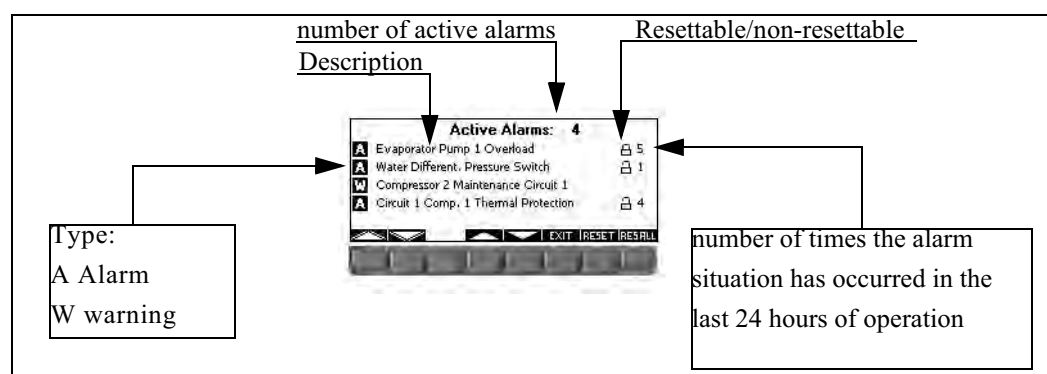
Manual

When the condition that tripped the alarm ceases the warning persists because it must be reset manually by entering the alarm stage and using the buttons **RESALL** **RESET**.

The presence of the symbols   indicates respectively:

 the situation that caused the alarm persists. The cause of the alarm must be remedied before it can be reset.

 the situation that caused the alarm has ceased. The alarm can be reset.



NOTE

For a complete list of all alarm messages, consult the table given in chapter 10.1 "Alarm signals".

CHAPTER 9

OPERATION AND MAINTENANCE

9.1 Operation

ATTENTION

Never stop the water pump before stopping the unit.

The unit is designed for stand-alone operation and switches off once the preset temperature is reached.

ATTENTION

Never exceed the flow values shown in the table in heading “2.3.3 Hydraulic Connections”.

9.2 Maintenance

ATTENTION

Before installing or operating this unit, ensure that all personnel involved have read and understood the chapter concerning “Safety” in this manual.

ATTENTION

These units will give many years of trouble-free service if they are properly maintained and serviced.

9.2.1 Access to the unit's internal compartments

(See Attached Drawings)

ATTENTION

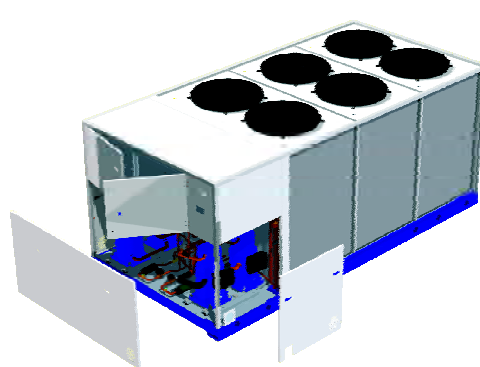
The unit electrical cabinet can be opened exclusively when the unit is powered off.

To access the refrigerant circuit components remove the front lower panel.

To remove the front panel, use a screwdriver to undo the screws fixing it to the lateral uprights.

To access the electrical cabinet components turn the main switch/breaker to the OFF position “O” and open the doors of the electrical cabinet by unlocking them with the key supplied with the unit.

To access the rear compartment, remove the rear panel.



ATTENTION

Given the presence of sharp corners and live edges in the rear compartment, service personnel must protect themselves from accidental contact during work inside the compartment.

Caution must also be used in relation to the floor of the compartment as it may be wet and slippery.

9.2.2 Planning of checks and maintenance operations

OPERATION	1 Day	1 Month	6 Months	1 Year
Check to ensure there are no alarm signals.	◇			
Check that water outlet temperature is within the programmed interval.	◇			
Check that user water inlet temperature is commensurate with the unit capacity.		◇		
Check that the difference between the pump (if present) discharge pressure and suction pressure (measured on the pressure gauge with pump stopped) is within the prescribed range and not lower than the pump maximum flow rate value.		◇		
Check that the liquid sight glass is always full or shows a minimum passage of bubbles when the compressor is running.			◇	
Check that the unit's current absorption is within the data plate values.			◇	
Make a visual inspection of the refrigerant circuit to make sure the piping has not deteriorated and there are no traces of oil, which may indicate a leak of refrigerant.			◇	
Check the condition and soundness of piping connections.			◇	
Check the condition and soundness of the electrical connections.			◇	
Check that ambient air temperature is commensurate with the unit's capacity. Check that the area in which the unit is installed is well-ventilated.		◇		
Check that fans are automatically controlled by the electronic control unit. Check for any unusual noises. Clean the condenser fins with a soft sponge or a jet of clean compressed air. Make sure the grilles are free from dirt and any other obstructions.			◇	
Clean the condenser fins with mild detergent.				◇

ATTENTION

*The above maintenance schedule is based on average operating conditions.
In some cases it may be necessary to increase maintenance frequency.*

CHAPTER 10

TROUBLESHOOTING

PROBLEM	SYMPTOM	CAUSE/REMEDY
A Unit fails to start	Unit is powered and yet fails to start.	Presence of shut-down alarms Check for the presence of alarms that prevent the unit from starting. Unit programmed to run by time band The unit is set to start only within the programmed time bands. Activate start mode outside the time bands in the User stage. Supervision active Check that supervision is not enabled on the unit. Enter the supervision stage and disable supervision function. Remote control active Disable remote mode to start the unit.
B Water outlet temperature higher than set-point.	- Unit is operational but water temperature is higher than the set-point value. - BTOWT temperature higher than prescribed value. - High water outlet temperature alarm trip. - Low evaporation pressure. - Presence of a large number of air bubbles in the liquid sight glass. - Excessively noisy operation of compressors.	Water flow rate too high Increase hydraulic circuit pressure drop (for example: by partially closing a pump discharge valve). Thermal load too high Restore thermal load to within prescribed limits. Ambient temperature too high Increase air recirculation. Condenser fins fouled Clean the condenser fins. Front surface of the condenser blocked Remove the obstruction from the front surface of the condenser. Incorrect direction of fan rotation Invert the position of two of the three phase wires of the power supply. Circuit has insufficient refrigerant charge Call in a qualified refrigeration engineer to check for leaks and eliminate them. Have the circuit charged by a qualified refrigeration engineer. Incorrect compressors rotation Invert the position of two phase wires of the compressors power supply (see chap. "Start-up").
C Insufficient pressure head (water pressure) at the outlet of the pump (if present).	- Rise of water outlet temperature. - With pump installed: pressure difference (read on the unit pressure gauge) with pump running and pump stopped is too low. - Increase in the pressure drop due to the presence of ice. - High temperature difference between water inlet and outlet.	Water flow rate too high Restore flow rate to within prescribed limits, for example by partially closing a pump delivery cock. Presence of ice in the evaporator Stop the unit, leave the pump running, edit the set-point value and add ethylene glycol to the water. Evaporator blocked Supply a high flow rate of water in countercurrent conditions. Install a filter upline from the unit.
D The unit is blocked and water does not flow.	- No water flow. - Water differential pressure switch alarm trip. - Low pressure alarm trip. - Suction pressure too low.	Set-point value too low Increase the SET-POINT value or add ethylene glycol (antifreeze) in adequate percentage (see heading "2.3.4 Freeze protection"). The formation of ice can severely damage the unit.
E High pressure	- High pressure switch trip. - Refrigerant compressor stops.  icon illuminates. - General alarm relay trip. - Fans stopped or reverse rotation direction. - Water outlet temperature too high.	Fans stopped or incorrect rotation Repair or renew the fan. Invert the position of two phase wires of the fan power supply. Warm air recirculation Change the position of the unit or the position of any nearby obstructions in order to prevent recirculation. Coil fouled Clean the condenser fins. Thermal load too high Restore thermal load to within prescribed limits.
F Low pressure	- Refrigerant compressor stops.  icon illuminates. - General alarm relay trip.	Circuit has insufficient refrigerant charge Call in a qualified refrigeration engineer to check for leaks and eliminate them. Have the circuit charged by a qualified refrigeration engineer.
G Compressor internal protection trip	 icon illuminates. - General alarm relay trip. - Refrigerant compressor stops.	Thermal load too high Check that user water temperature and ambient air temperature are within rated limits. Restore thermal load to within prescribed limits. Wait a few minutes before starting the unit again. Circuit has insufficient refrigerant charge Call in a qualified refrigeration engineer to check for leaks and eliminate them. Have the circuit charged by a qualified refrigeration engineer.
H Display off.	Despite the presence of voltage on the board terminals the display remains blank.	Control board fuse has blown Change the fuse. Eliminate disturbance on the power feeding line.

PROBLEM	SYMPTOM	CAUSE/REMEDY
I Pressure transducer faulty or disconnected	General alarm relay trip.	Transducer disconnected or short-circuited Check that the transducer is correctly connected to the control board terminals and the cable is undamaged. If necessary, replace the transducer with a genuine original replacement part.
J Fans overload	- Fans stopped. - General alarm relay trip. - Refrigerant compressor stops.  icon illuminates. - One of the fans is running noisily.	Check the status of fans, electrical connections, and power supply.
K Pump overload	- Pump not working. - General alarm relay trip. - Refrigerant compressor and pump stop.  icon illuminates. - Pressure difference (read on the unit pressure gauge) with pump running and pump stopped is lower than the available pressure head.	Reset thermal cutout. Increase hydraulic circuit pressure drop by partially closing, for example, a pump outlet cock. Check for the presence of electrical power.
L Water differential pressure switch alarm trip	 icon illuminates. - General alarm relay trip. - Refrigerant compressor and pump stop.	Check condition of pump. Water circuit is blocked externally to the unit.
M Heat recovery/desuperheater enabled but water is cold	Heat recovery/desuperheater water cold.	Check operating mode (chiller only).

10.1 Alarm signals

In the alarm stage when an alarm is active a warning message appears. The table shows the messages that may appear in the stage. For details of how to work in the alarm stage and the complete meaning of the icons in this stage, refer to chapter 8.9 “Alarm stage”

ALARM SIGNAL TEXT	ACTION	TRIP	RESET	ENABLED WITH UNIT OFF	NOTES
Water differential pressure switch	Unit complete stop (including pump)	(2)Start:delay runn.:delay	Man/Inst	No	Insufficient water flow through the evaporator
Tank level	Unit complete stop (including pump)	delay	Man/Del.	No	Insufficient water level in the tank
Three-phase power supply fault	Unit complete stop (including pump)	Instantaneous	(3) Auto-Man/ Del.	No	Controller fault.
Pump 1 overload	Pump 2 starts If enabled Or Unit complete stop	Instantaneous	Man/Inst	No	
Pump 2 overload	Pump 1 starts If enabled Or Unit complete stop	Instantaneous	Man/Inst	No	
Compressor 1 thermal protection Circuit 1	Circuit 1 Stop	Instantaneous	Man/Inst	No	
Compressor 2 thermal protection Circuit 1	Circuit 1 Stop	Instantaneous	Man/Inst	No	
Group 1 fan unit overload	Circuit 1 Stop	Instantaneous	Man/Inst	No	
Circuit 1 High pressure switch	Circuit 1 Stop	Instantaneous	Man/Inst	Yes	The pressure value of circuit 1 is equal to or higher than the alarm threshold
Circuit 1 High pressure	Circuit 1 Stop	Instantaneous	Man/Inst	Yes	The pressure value of circuit 1 is equal to or higher than the alarm threshold
Circuit 1 Low pressure	Circuit 1 Stop	(2) Start:delay runn.:delay	Man/Inst	(4)No	The pressure value of circuit 1 is equal to or lower than the alarm threshold
-BHP1 pressure transducer faulty or disconnected	Circuit 1 Stop	Instantaneous	Man/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BLP1 pressure transducer faulty or disconnected	Circuit 1 Stop	Delayed	Man/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
Compressor 1 thermal protection Circuit 2	Circuit 2 Stop	Instantaneous	Man/Inst	No	
Compressor 2 thermal protection Circuit 2	Circuit 2 Stop	Instantaneous	Man/Inst	No	

ALARM SIGNAL TEXT	ACTION	TRIP	RESET	ENABLED WITH UNIT OFF	NOTES
Circuit 2 Fan Overload.	Circuit 2 Stop	Instantaneous	Man/Inst	No	
Circuit 2 High pressure switch	Circuit 2 Stop	Instantaneous	Man/Inst	Yes	The pressure value of circuit 2 is equal to or higher than the alarm threshold
Circuit 2 High pressure	Circuit 2 Stop	Instantaneous	Man/Inst	Yes	The pressure value of circuit 2 is equal to or higher than the alarm threshold
Circuit 2 Low pressure	Circuit 2 Stop	(2) Start:delay runn.:delay	Man/Inst	(4)No	The pressure value of circuit 2 is equal to or lower than the alarm threshold
-BHP2 pressure transducer faulty or disconnected	Circuit 2 Stop	Instantaneous	Man/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BLP2 pressure transducer faulty or disconnected	Circuit 2 Stop	Delayed	Man/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
Evaporator water inlet high temperature	(1)Indication Warning/ Unit Stop Excluding Pump/Unit Complete Stop	Delayed	Man/Inst	No	The temperature value measured at the evaporator inlet is equal to or higher than the alarm threshold.
Evaporator water inlet low temperature	Indication Warning	Delayed	Auto/Inst	No	The temperature value measured at the evaporator inlet is equal to or lower than the minimum value
Evaporator Water Outlet High Temperature	(1)Indication Warning/ Unit Stop Excluding Pump/Unit Complete Stop	Delayed	Auto/Inst	No	The evaporator water outlet temperature is equal to or higher than the alarm threshold.
Evaporator Water Outlet Low Temperature	Unit Stop Excluding Pump	Instantaneous	Auto/Inst	No	The temperature value measured at the evaporator outlet is equal to or lower than the minimum value
Tank water outlet high temperature	(1)Indication Warning/ Unit Stop Excluding Pump/Unit Complete Stop	Delayed	Auto/Inst	No	The tank water outlet temperature is equal to or higher than the alarm threshold.
Tank Water Outlet Low Temperature	Unit Stop Excluding Pump	Delayed	Auto/Inst	No	The tank water outlet temperature is equal to or lower than the alarm threshold.
-BEWIT probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BEWOT probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BTWOT Probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BRWIT Probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BRWOT Probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BAT1 Probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
-BAT2 Probe Faulty or Disconnected	Unit stop Excluding the Pump	Delayed	Auto/Inst	Yes	The probe measures an off range value: may be damaged or disconnected.
Unit Maintenance	Indication Warning	Instantaneous	Aut./Inst	No	
Compressor 1 Maintenance Circuit 1	Indication Warning	Instantaneous	Aut./Inst	No	
Compressor 2 Maintenance Circuit 1	Indication Warning	Instantaneous	Auto/Inst	No	
Compressor 1 Maintenance Circuit 2	Indication Warning	Instantaneous	Auto/Inst	No	
Compressor 2 Maintenance Circuit 2	Indication Warning	Instantaneous	Auto/Inst	No	
Evaporator Pump 1 Maintenance	Indication Warning	Instantaneous	Auto/Inst	No	
Evaporator Pump 2 Maintenance	Indication Warning	Instantaneous	Auto/Inst	No	
Selected Control Probe Disabled	Indication Warning	Instantaneous	Auto/Inst	Yes	The probe selected for temperature control is not enabled
Compensated Set-point Probe Disabled	Indication Warning	Instantaneous	Auto/Inst	Yes	The probe selected for control of the compensated set-point is not enabled
Heat Recovery Probe Disabled	Indication Warning	Instantaneous	Auto/Inst	Yes	The probe selected for control of heat recovery is not enabled

ALARM SIGNAL TEXT	ACTION	TRIP	RESET	ENABLED WITH UNIT OFF	NOTES
Selected Antifreeze Probe Disabled	Indication Warning	Instantaneous	Auto/Inst	Yes	The probe selected for antifreeze management is disabled
Circuit 1 Incorrect Start Pump-Down	Indication Warning	Instantaneous	Auto/Inst	No	
Circuit 2 Incorrect Start Pump-Down	Indication Warning	Instantaneous	Auto/Inst	No	
Circuit 1 Incorrect Stop Pump-Down	Indication Warning	Instantaneous	Auto/Inst	No	
Circuit 2 Incorrect Stop Pump-Down	Indication Warning	Instantaneous	Auto/Inst	No	

APPENDIX

PARAMETERS

Access to, and, if necessary, editing of parameters is performed in accordance with 3 levels: user (**P1**), service (**P2**), and manufacturer (**P3**). Parameters that are editable at the user level are also editable in the 2 higher levels (service and manufacturer). Parameters editable at the service level can also be edited at the manufacturer level but are read-only at the user level. Manufacturer parameters can be edited only at the manufacturer level.

The table below shows:

- text of the parameter displayed in the mask
- standard value
- unit of measurement
- name of the stage to which they belong and mask number.

Ref.	Text	Mask no.	Level	Value	U.M.
UNIT CONFIG.					
01	Unit Type:	CU001	P3	CH	/
02	Unit Model:	CU001	P3	See Table 1	/
03	Regulation Probe:	CU002	P2	See Table 3	/
04	Gas Convers.:	CU002	P3	R407c	/
05	Tank Present:	CU002	P2	See Table 3	/
06	Manual Procedure Enable:	CU003	P2	No	/
07	Heat Recovery Enable:	CU004	P3	See Table 5	/
08	Freecooling Enable:	CU004	P3	No	/
09	Modular Operation Enable:	CU005	P2	No	/
10	Electronic Thermostatic Valves Driver Enable:	CU005	P2	No	/
11	Supervision System Enabling:	CU006	P2	No	/
12	Special Functions Enabling:	CU006	P2	No	/
13	Pump-Down at Starting:	CU007	P2	Disabled	/
14	Pump-Down at Stopping:	CU007	P2	Digitanl input only Chiller	/
15	Fan Regulation:	CU008	P3	See Table 6	/
16	Fan Adjustment Type:	CU008	P3	Normal	/
17	Antifreeze probe enable:	CU009	P1	No	/
18	Antifreeze resistance enable:	CU009	P1	See Table 7	/
COMPRESSORS					
19	Compressor Start Delay When Unit Starts:	CO001	P2	10	sec.
20	Min. Compressor Stop Time:	CO002	P3	180	sec.
21	Min. Compressor Start Time:	CO002	P3	120	sec.
22	Time between Starts Same Compr.:	CO003	P3	300	sec.
23	Time between Starts Different Comp.:	CO003	P3	10	sec.
24	Time between stopping Different Comp.:	CO004	P2	10	sec.
25	Circuit rotation:	CO004	P2	Balancing	/
26	Compressor Rotation:	CO005	P2	Balancing	/
27	Balance type:	CO005	P2	by power absorption Peaks	/
28	Comp. 1 Circuit 1 type:	CO006	P3	See Table 1	/
29	Comp. 2 Circuit 1 type:	CO006	P3	See Table 1	/
30	Comp. 1 Circuit 2 type:	CO006	P3	See Table 1	/
31	Comp. 2 Circuit 2 type:	CO006	P3	See Table 1	/
32	Operation Disable: Circuit 1	CO007	P2	No	/

APPENDIX

Ref.	Text	Mask no.	Level	Value	U.M.
033	Operation Disable: Circuit 2	CO007	P2	No	/
034	Pump-Down (CH) Pressure Set:	CO009	P2	1.5	bar / PSI
035	Pump-Down Time at Start:	CO010	P2	50	sec.
036	Pump-Down Time at Stop:	CO010	P2	50	sec.
037	Capacity Type:	CO011	P3	Standard	/
038	M11:	CO011	P3	1	/
039	Q11:	CO011	P3	0	/
040	M21:	CO011	P3	1	/
041	Q21:	CO011	P3	0	/
042	M12:	CO011	P3	1	/
043	Q12:	CO011	P3	0	/
044	M22:	CO011	P3	1	/
045	Q22:	CO011	P3	0	/
046	Beta Calc. Type:	CO012	P3	Standard	/
047	K1:	CO012	P3	1	/
048	P1:	CO012	P3	0	/
049	Q1:	CO012	P3	0	/
050	R1:	CO012	P3	0	/
051	K2:	CO012	P3	1	/
052	P2:	CO012	P3	0	/
053	Q2:	CO012	P3	0	/
054	R2:	CO012	P3	0	/
FANS					
055	Low Noise Function Enable:	VT001	P2	No	/
056	Step 1 (Circuit 1)	VT002	P3	13,5	bar / PSI
057	Step 2 (Circuit 1)	VT002	P3	18,5	bar / PSI
058	2° Step 1 (Circuit 1)	VT002	P3	13,5	bar / PSI
059	2° Step 2 (Circuit 1)	VT002	P3	20,5	bar / PSI
060	Diff. (Circuit 1)	VT003	P3	1,5	bar / PSI
061	2° Diff. (Circuit 1)	VT003	P3	1,5	bar / PSI
062	Step 1 (Circuit 2)	VT004	P3	13,5	bar / PSI
063	Step 2 (Circuit 2)	VT004	P3	18,5	bar / PSI
064	2° Step 1 (Circuit 2)	VT004	P3	13,5	bar / PSI
065	2° Step 2 (Circuit 2)	VT004	P3	20,5	bar / PSI
066	Diff. (Circuit 2)	VT005	P3	1,5	bar / PSI
067	2° Diff. (Circuit 2)	VT005	P3	1,5	bar / PSI
068	Speed-Up Time (Regulated Fans)	VT006	P3	3	sec.
069	Speed-Up Speed in Percent (Regulated Fans)	VT006	P3	See Table 2	%
070	Set 1 (Circuit 1 Fans)	VT007	P3	13,5	bar / PSI
071	Set 2 (Circuit 1 Fans)	VT007	P3	18,5	bar / PSI
072	2° Set 2 (Circuit 1 Fans)	VT007	P3	20,5	bar / PSI
073	Diff. 1 (Circuit 1 Fans)	VT008	P3	0,7	bar / PSI
074	Diff. 2 (Circuit 1 Fans)	VT008	P3	4,4	bar / PSI
075	Diff. 3 (Circuit 1 Fans)	VT008	P3	0,4	bar / PSI
076	Set 1 (Circuit 2 Fans)	VT009	P3	13,5	bar / PSI
077	Set 2 (Circuit 2 Fans)	VT009	P3	18,5	bar / PSI
078	2° Set 2 (Circuit 2 Fans)	VT009	P3	20,5	bar / PSI
079	Diff. 1 (Circuit 2 Fans)	VT010	P3	0,7	bar / PSI
080	Diff. 2 (Circuit 2 Fans)	VT010	P3	4,4	bar / PSI
081	Diff. 3 (Circuit 2 Fans)	VT010	P3	0,4	bar / PSI
082	Speed 1 (Circuits 1-2):	VT011	P3	See Table 2	%

Ref.	Text	Mask no.	Level	Value	U.M.
083	Speed 2 (Circuits 1-2):	VT011	P3	80	%
084	2° Speed 2 (Circuits 1-2):	VT011	P3	90	%
085	Speed 3 (Circuits 1-2):	VT011	P3	100	%
ANTIFREEZE					
086	Evap. Pump Regulation:	AN001	P2	Lower between Bat1 and Bat2	/
087	Evap. Resistance Regulation:	AN001	P2	Lower between Bat1 and Bat2	/
088	Evaporator Pump Operation With Antifreeze Function: Setpoint	AN002	P2	3	°C / °F
089	Evaporator Pump Operation With Antifreeze Function: Differential	AN002	P2	3	°C / °F
090	Evaporator Antifreeze Heater Operation: Setpoint	AN003	P2	3	°C / °F
091	Evaporator Antifreeze Heater Operation: Differential	AN003	P2	3	°C / °F
RECOVERY					
DRIVER EEV					
REGULATION					
092	Adjustment Type:	RG001	P1	N.Z.	/
093	Regulation Band: Summer	RG001	P1	2	°C / °F
094	Regulation Band: Winter	RG001	P1	2	°C / °F
095	PID Reg. Constants: Integral	RG002	P1	0	sec.
096	PID Reg. Constants: Derivative	RG002	P1	0	sec.
097	Wind-Up Band:	RG003	P1	0,5	°C / °F
098	Required Update Interval:	RG003	P1	1000	ms
099	Delay Between Starts Out of Neutral Zone:	RG004	P2	30	sec.
0100	Delay Between Stops Out of Neutral Zone:	RG004	P2	30	sec.
0101	Delay Between Starts in Neutral Zone:	RG005	P2	30	min.
HOURS WORKED					
0102	Working Hour Threshold: Unit	OL013	P2	32000	hours
0103	Working Hour Threshold: Compressor 1 C.1	OL013	P2	32000	hours
0104	Working Hour Threshold: Compressor 2 C.1	OL013	P2	32000	hours
0105	Working Hour Threshold: Compressor 1 C.2	OL014	P2	32000	hours
0106	Working Hour Threshold: Compressor 2 C.2	OL014	P2	32000	hours
0107	Working Hour Threshold: Pump	OL015	P2	32000	hours
ALARMS					
0108	-BEWIT Probe Temp. Alarms: Min.	AL001	P2	3	°C / °F
0109	-BEWIT Probe Temp. Alarms: Max.	AL001	P2	30	°C / °F
0110	Low Temperature Alarm Delay -BEWIT Probe: Delay Time	AL003	P2	240	sec.
0111	High Temperature Alarm Delay -BEWIT Probe: Action	AL004	P2	Warning	/
0112	High Temperature Alarm Delay -BEWIT Probe: Delay Time	AL004	P2	240	sec.
0113	-BEWOT Probe Temp. Alarms: Min.	AL005	P2	3	°C / °F
0114	-BEWOT Probe Temp. Alarms: Max.	AL005	P2	35	°C / °F
0115	Reset Differential -BEWOT Min. Alarm:	AL006	P2	3	°C / °F
0116	High Temperature Alarm Delay -BEWOT Probe: Action	AL007	P2	Warning	/
0117	High Temperature Alarm Delay -BEWOT Probe: Delay Time	AL007	P2	0	sec.
0118	-BTWOT Probe Temp. Alarms: Min.	AL008	P2	-20	°C / °F
0119	-BTWOT Probe Temp. Alarms: Max.	AL008	P2	60	°C / °F
0120	Low Temperature Alarm Delay -BTWOT Probe: Delay Time	AL010	P2	0	sec.
0121	High Temperature Alarm Delay -BTWOT Probe: Action	AL011	P2	Warning	/
0122	High Temperature Alarm Delay -BTWOT Probe: Delay Time	AL011	P2	0	sec.
0123	Low Pressure Alarm: Threshold	AL012	P3	1,5	bar / PSI
0124	Low Pressure Alarm: Differential	AL012	P3	1,5	bar / PSI

APPENDIX

Ref.	Text	Mask no.	Level	Value	U.M.
0125	Low Pressure Alarm Delays: Comp. Starting	AL013	P2	120	sec.
0126	Low Pressure Alarm Delays: Signalling	AL013	P2	60	sec.
0127	High Pressure Alarm: Threshold	AL014	P3	26,5	bar / PSI
0128	High Pressure Alarm: Differential	AL014	P3	7,3	bar / PSI
0129	Alarm Disabling Low Pressure During Defrosting:	AL016	P3	No	/
0130	Water Loss Alarm Delays: Pump Starting	AL017	P2	120	sec.
0131	Water Loss Alarm Delays: Pump Operation	AL017	P2	0	sec.
0132	Tank Level Alarm Enable:	AL018	P2	See Table 3	/
0133	Alarm Delay (Tank Level)	AL018	P2	5	sec.
0134	Reset Delay (Tank Level)	AL018	P2	0	sec.
0135	Supply Alarm Enable:	AL019	P2	Yes	/
0136	Reset Delay (Supply Alarm)	AL019	P2	30	sec.
0137	Reset Type (Supply Alarm)	AL019	P2	Auto	/
0138	Wrong Pump-Down Reset Type at Starting:	AL020	P2	automatic reset	/
0139	Wrong Pump-Down Reset Type at Stopping:	AL020	P2	automatic reset	/
PUMPS					
0140	Pump Stop Delay when Unit Stops:	PO001	P2	120	sec.
0141	Pump Rotation Type:	PO001	P2	See Table 4	/
0142	Pump Start Enable:	PO002	P1	Pump 1 On	/
0143	Simultaneous Oper. Frequency:	PO003	P3	2	sec.
0144	Rotation Pump Frequency:	PO004	P2	200	hours
CLOCK					
0145	Unit On/Off Weekly Band: Enable	WT002	P1	No	/
0146	Unit On/Off Weekly Band: Start Day	WT002	P1	1	/
0147	Unit On/Off Weekly Band: Stop Day	WT002	P1	5	/
0148	Unit On/Off Daily Band: Enable	WT003	P1	No	/
0149	Unit On/Off Daily Band: Starting (Hour)	WT003	P1	0	/
0150	Unit On/Off Daily Band: Starting (Minute)	WT003	P1	0	/
0151	Unit On/Off Daily Band: Stopping (Hour)	WT003	P1	12	/
0152	Unit On/Off Daily Band: Stopping (Minute)	WT003	P1	0	/
0153	Weekly Band Type:	WT004	P1	From Day to Day	/
0154	Unit Restart Enable Out of Bands:	WT004	P1	No	/
0155	Restart Set (CH):	WT005	P1	9	°C / °F
0156	Restart Diff. (CH):	WT005	P1	2	°C / °F
MODULARITY					
SUPERVISOR					
0157	Baud Rate:	SU001	P2	19200	bps
0158	Parity Bit:	SU001	P2	N	/
0159	Stop Bit:	SU001	P2	1	/
0160	Date Bit:	SU001	P2	7	/
0161	Modbus Address:	SU001	P2	1	/
0162	IP1:	SU001	P2	1	/
0163	IP2:	SU001	P2	9	/
0164	IP3:	SU001	P2	2	/
0165	IP4:	SU001	P2	1	/
0166	IP5:	SU001	P2	6	/
0167	IP6:	SU001	P2	8	/
0168	IP7:	SU001	P2	0	/
0169	IP8:	SU001	P2	0	/

Ref.	Text	Mask no.	Level	Value	U.M.
0170	IP9:	SU001	P2	1	/
0171	IP10:	SU001	P2	0	/
0172	IP11:	SU001	P2	5	/
0173	IP12:	SU001	P2	5	/
0174	Net Mask1:	SU001	P2	2	/
0175	Net Mask2:	SU001	P2	5	/
0176	Net Mask3:	SU001	P2	5	/
0177	Net Mask4:	SU001	P2	2	/
0178	Net Mask5:	SU001	P2	5	/
0179	Net Mask6:	SU001	P2	5	/
0180	Net Mask7:	SU001	P2	0	/
0181	Net Mask8:	SU001	P2	0	/
0182	Net Mask9:	SU001	P2	0	/
0183	Net Mask10:	SU001	P2	0	/
0184	Net Mask11:	SU001	P2	0	/
0185	Net Mask12:	SU001	P2	0	/
0186	Network1:	SU002	P2	1	/
0187	Network2:	SU002	P2	9	/
0188	Network3:	SU002	P2	2	/
0189	Network4:	SU002	P2	1	/
0190	Network5:	SU002	P2	6	/
0191	Network6:	SU002	P2	8	/
0192	Network7:	SU002	P2	0	/
0193	Network8:	SU002	P2	0	/
0194	Network9:	SU002	P2	1	/
0195	Network10:	SU002	P2	0	/
0196	Network11:	SU002	P2	0	/
0197	Network12:	SU002	P2	1	/
0198	Gateway1:	SU002	P2	1	/
0199	Gateway2:	SU002	P2	9	/
0200	Gateway3:	SU002	P2	2	/
0201	Gateway4:	SU002	P2	1	/
0202	Gateway5:	SU002	P2	6	/
0203	Gateway6:	SU002	P2	8	/
0204	Gateway7:	SU002	P2	0	/
0205	Gateway8:	SU002	P2	0	/
0206	Gateway9:	SU002	P2	1	/
0207	Gateway10:	SU002	P2	0	/
0208	Gateway11:	SU002	P2	5	/
0209	Gateway12:	SU002	P2	0	/
0210	DNS1:	SU002	P2	0	/
0211	DNS2:	SU002	P2	1	/
0212	DNS3:	SU002	P2	0	/
0213	DNS4:	SU002	P2	0	/
0214	DNS5:	SU002	P2	0	/
0215	DNS6:	SU002	P2	0	/
0216	DNS7:	SU002	P2	0	/
0217	DNS8:	SU002	P2	1	/
0218	DNS9:	SU002	P2	0	/
0219	DNS10:	SU002	P2	0	/
0220	DNS11:	SU002	P2	5	/

APPENDIX

Ref.	Text	Mask no.	Level	Value	U.M.
0221	DNS12:	SU002	P2	7	/
UNLOADING					
0222	Unloading Enable Temperature	UN001	P2	Yes	/
0223	Act. Thresh.:	UN001	P2	25	°C / °F
0224	Differential:	UN001	P2	5	°C / °F
0225	Activation Delay:	UN002	P2	10	sec.
0226	Max.Time:	UN002	P2	300	sec.
0227	Unl. HP Act. Thresh.:	UN003	P3	25,7	bar / PSI
0228	Unl. HP Different.:	UN003	P3	7	bar / PSI
0229	Max. Duration Of High Pressure Probe Unloading (HP):	UN004	P2	300	sec.
SPECIAL FUNCTIONS					
FREECOOLING					
OTHER SETTINGS					
0230	Setpoint Management Mode:	AI001	P2	Fixed	/
0231	Sum. Setpoint Low. Limit:	AI002	P2	4	°C / °F
0232	Sum. Setpoint Upp. Limit:	AI002	P2	20	°C / °F
0233	Temperature Probes Enable: IN Water (-BEWIT)	AI003	P2	Yes	/
0234	Temperature Probes Enable: OUT Water (-BEWOT)	AI003	P2	Yes	/
0235	Temperature Probes Enable: Tank OUT Water (-BTWOT)	AI003	P2	See Table 3	/
0236	Temperature Probes Enable: Ambient 1 (-BAT1)	AI004	P2	Yes	/
0237	Temperature Probes Enable: Ambient 2 (-BAT2)	AI004	P2	Yes	/
0238	Temperature Probes Enable: Rec. IN (-BRWIT)	AI005	P2	No	/
0239	Temperature Probes Enable: Rec. OUT (-BRWOT)	AI005	P2	See Table 5	/
0240	High Pressure Probe (-BHP1):: Probe Type	AI006	P3	0-5 V	/
0241	High Pressure Probe (-BHP1):: Min. Press.	AI006	P3	0	bar / PSI
0242	High Pressure Probe (-BHP1):: Max. Press.	AI006	P3		bar / PSI
0243	High Pressure Probe (-BHP2):: Probe Type	AI007	P3	0-5 V	/
0244	High Pressure Probe (-BHP2):: Min. Press.	AI007	P3	0	bar / PSI
0245	High Pressure Probe (-BHP2):: Max. Press.	AI007	P3	34	bar / PSI
0246	Low Pressure Probe (-BLP1): Probe Type	AI008	P3	0-5 V	/
0247	Low Pressure Probe (-BLP1): Min. Press.	AI008	P3	0	bar / PSI
0248	Low Pressure Probe (-BLP1): Max. Press.	AI008	P3	34	bar / PSI
0249	Low Pressure Probe (-BLP2): Probe Type	AI009	P3	0-5 V	/
0250	Low Pressure Probe (-BLP2): Min. Press.	AI009	P3	0	bar / PSI
0251	Low Pressure Probe (-BLP2): Max. Press.	AI009	P3	34	bar / PSI
0252	Probe Offset -BEWIT:	AI010	P3	0	°C / °F
0253	Probe Offset -BEWOT:	AI010	P3	0	°C / °F
0254	Probe Offset -BTWOT:	AI010	P3	0	°C / °F
0255	Probe Offset -BAT1:	AI011	P3	0	°C / °F
0256	Probe Offset -BAT2:	AI011	P3	0	°C / °F
0257	Probe Offset -BRWIT:	AI011	P3	0	°C / °F
0258	Probe Offset -BRWOT:	AI011	P3	0	°C / °F
0259	Probe Offset -BHP1:	AI013	P3	0	bar / PSI
0260	Probe Offset -BHP2:	AI013	P3	0	bar / PSI
0261	Probe Offset -BLP1:	AI013	P3	0	bar / PSI
0262	Probe Offset -BLP2:	AI013	P3	0	bar / PSI
0263	New User Password:	AI014	P1	805	/
SETPOINT:					
0264	Summer Setpoint:	ST002	0	7	°C / °F
0265	2° Summer Setpoint:	ST002	0	10	°C / °F
0266	Summer Compensation: Amb. Temp. Setpoint	ST003	0	30	°C / °F
0267	Summer Compensation: Differential:	ST003	0	6	°C / °F

Ref.	Text	Mask no.	Level	Value	U.M.
0268	Compensation on:	ST005	0	Average between Bat1 and Bat2	/
0269	Max. Compensation	ST005	0	3	°C / °F
0270	Adjustable Setpoint (CH): Min. (4 mA)	ST010	0	7	°C / °F
0271	Adjustable Setpoint (CH): Max. (20 mA)	ST010	0	10	°C / °F
USER					
0272	Language Used:	US001	P1	English	/
0273	Automatic Restart After Blackout:	US001	P1	Yes	/
0274	Input Enable: Remote On/Off:	US002	P1	See Table 8	/
0275	Unit Working:	US003	P1	Chiller	/
0276	Forced Start Out of Time Band:	US004	P1	No	/

SETTINGS RELATED TO THE ALPHANUMERIC STRING

NOTE

Consult chapter “HOW TO INTERPRET THE ALPHANUMERIC STRING” and the table “ALPHANUMERIC STRING”.

	ER0702	ER0802	ER0902	ER1002	ER1102	ER1202	ER1302	ER1402
Comp.1 Cir.1 Type	SZ185-R407c	SZ240-R407c	SZ240-R407c	SZ240-R407c	SZ300-R407c	SZ300-R407c	SZ380-R407c	SZ380-R407c
Comp.2 Cir.1 Type	SZ185-R407c	SZ185-R407c	SZ240-R407c	SZ240-R407c	SZ240-R407c	SZ300-R407c	SZ300-R407c	SZ380-R407c
Comp.1 Cir.2 Type	SH185-R407c	SH240-R407c	SH240-R407c	SZ240-R407c	SZ300-R407c	SZ300-R407c	SZ380-R407c	SZ380-R407c
Comp.2 Cir.2 Type	SH185-R407c	SH185-R407c	SH185-R407c	SZ240-R407c	SZ240-R407c	SZ300-R407c	SZ300-R407c	SZ380-R407c

Tabella 1: UNIT MODEL AND COMPR. TYPE

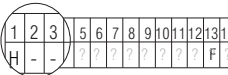
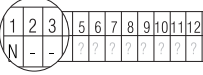
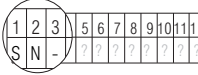
				
Speed-Up Speed in Percent (Regulated Fans)	45	45	60	60
Speed 1 (Circuits 1-2)	25	25	45	45

Tabella 2 SETTINGS RELATED TO THE UNIT VERSION

	12345678910111213141516 ? ? ? ? ? ? 0 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 1 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 2 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 6 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 7 ? ? ? ? ? ? ? ?	12345678910111213141516 ? ? ? ? ? ? 3 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 4 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 8 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 9 ? ? ? ? ? ? ? ?
Regulation Probe	BEWOT	BTWOT
Tank Present	No	Yes
Tank Level Alarm Enable	No	Yes
Temperature Probes Enable: Tank OUT Water (-BTWOT)	No	Yes

Tabella 3 SETTINGS RELATED TO THE HYDRAULIC UNIT

	12345678910111213141516 ? ? ? ? ? ? 0 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 1 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 3 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 6 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 8 ? ? ? ? ? ? ? ?	12345678910111213141516 ? ? ? ? ? ? 2 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 4 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 7 ? ? ? ? ? ? ? ? 12345678910111213141516 ? ? ? ? ? ? 9 ? ? ? ? ? ? ? ?
Pump Rotation Type	1 Pump ÷ No Rotation	2 Pumps - Rotation by Starts and Hours

Tabella 4 PUMP ROTATION TYPE

	12345678910111213141516 ? ? ? ? ? ? ? ? 0 ? ? ? ? ? ?	
Heat Recovery Enable	No	

Table 5 SETTINGS RELATED TO THE HEAT RECOVERY

	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr><tr><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>0</td><td>?</td><td>?</td><td>?</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	?	?	?	?	?	?	?	?	?	?	?	?	0	?	?	?	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr><tr><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>1</td><td>?</td><td>?</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	?	?	?	?	?	?	?	?	?	?	?	?	?	1	?	?
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Fan Regulation	Step	Regulated																																																																

Table 6 FAN REGULATION:

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Antifreeze resistance enable	No	Comp.OFF																																																														

Table 7 ANTIFREEZE RESISTANCE ENABLE

	<table><tr><td>1</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr><tr><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>B</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr></table>	1	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	?	?	?	?	?	?	?	?	?	?	?	B	?	?	?	?	?	?	<table><tr><td>1</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr><tr><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>C</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr></table>	1	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	?	?	?	?	?	?	?	?	?	?	?	C	?	?	?	?	?	?
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?	?	?	?	?	?	?	?	?	?	?	C	?	?	?	?	?	?																																																									
Input Enable: Remote On/Off	No	Yes																																																																								

Table 8 SETTINGS RELATED TO THE REMOTE CONTROL

APPENDIX

ALPHANUMERIC STRING

	POS.	VALUE	DESCRIPTION
VERSION	1-2-3	H	H
		N	N
		SN	SN
		SSN	SSN
REFRIGERANT	4	1	R407C
MINIMUM AMBIENT TEMPERATURE	5	0	STANDARD
		1	-20 °C
EVAPORATOR	6	B	SHELL AND TUBE EVAPORATOR
ELECTRONIC THERMOSTATIC VALVE	7	0	NO
		1	YES
HYDRAULIC UNIT	8	0	NONE
		1	P2
		2	P2+P2
		3	STORAGE + P2
		4	STORAGE + P2+P2
		6	P3
		7	P3+P3
		8	STORAGE + P3
		9	STORAGE + P3+P3
FREEZE PROTECTION	9	0	NO
		1	YES
COMPRESSOR SHUT-OFF VALVES	10	1	YES
HEAT RECOVERY	11	0	NO
PREPAINTED CONDENSING COILS	12	0	NO
		1	YES
CONDENSING COILS PROTECTION	13	1	YES
FAN CONTROL	14	0	STEP CONTROL
		1	ELECTRONIC SPEED CONTROL
POWER FACTOR CORRECTION CAPACITORS	15	0	NO
		1	YES
PHASE MONITOR	16	A	YES
		B	NO
REMOTE CONTROL	17	B	NO
		C	SIMPLE
COMPRESSOR CRANKCASE HEATER	18	0	NO
		1	YES
PERSONALISATION	19-20	CC	INDUSTRY

PROBES

Probe-Transducer	Description	Function
-BHP1	High pressure transducer 1	P
-BHP2	High pressure transducer 2	P
-BLP1	Low pressure transducer 1	P
-BLP2	Low pressure transducer 2	P
-BEWIT	Evaporator water inlet temperature	T
-BEWOT	Evaporator water outlet temperature	T
-BTWOT	Tank water outlet temperature	T
-BAT1	Ambient Temperature 1	T
-BAT2	Ambient Temperature 2	T
-BRWOT	Heat recovery water outlet temperature	T
-BRWIT	Heat recovery water inlet temperature	T

REFRIGERANTS SAFETY DATASHEET

R407C	
Denomination:	23% Difluoromethane (R32); 25% Pentafluoroethane (R125); 52% R134a
INDICATION OF THE DANGERS	
Major dangers:	Asphyxia.
Specific dangers:	Rapid evaporation can cause freezing.
FIRST AID MEASURES	
General information:	Do not give anything to unconscious persons.
Inhalation:	Take the person outdoors. Use oxygen or artificial respiration if necessary. Do not administer adrenaline or similar substances.
Contact with the eyes:	Thoroughly wash with plenty of water for at least 15 minutes and call a doctor.
Contact with the skin:	Wash immediately with plenty of water. Remove contaminated clothing immediately.
FIRE-FIGHTING MEASURES	
Means of extinction:	Any means.
Specific dangers:	Pressure increase.
Specific methods:	Cool the containers with water sprays.
MEASURES IN THE EVENT OF ACCIDENTAL LEAKAGE	
Individual precautions:	Evacuate personnel to safe areas. Provide adequate ventilation. Use means of personal protection.
Environmental precautions:	Evaporates.
Cleaning methods:	Evaporates.
HANDLING AND STORAGE	
Handling technical measures/ precautions:	Ensure sufficient air change and/or extraction in the work areas.
recommendations for safe use:	Do not inhale vapours or aerosols.
Storage	Close properly and store in a cool, dry well-ventilated place. Store in its original containers. Incompatible products: explosives, flammable materials, organic peroxide.
CONTROL OF EXPOSURE/INDIVIDUAL PROTECTION	
Control parameters:	AEL (8-h e 12-h TWA) = 1000 ml/m ³ for each of the three components.
Respiratory protection:	For rescue and maintenance work in tanks, use autonomous breathing apparatus. The vapours are heavier than air and can cause suffocation, reducing the oxygen available for breathing.
Protection of the eyes:	Safety goggles.
Protection of the hands:	Rubber gloves.
Hygiene measures:	Do not smoke.
PHYSICAL AND CHEMICAL PROPERTIES	
Colour:	Colourless.
Odour:	Similar to ether.
Boiling point:	-43.9°C at atm. press.
Flammability point:	Non flammable.
Relative density:	1.138 kg/l at 25°C.
Solubility in water:	Negligible.
STABILITY AND REACTIVITY	

APPENDIX

Stability:	No reactivity if used with the relative instructions.
Materials to avoid:	Alkaline metal, earthy alkaline metals, granulated metals salts, Al, Zn, Be, etc. in powder.
Hazardous decomposition products:	Halogen acids, traces of carbonyl halides.

TOXICOLOGICAL INFORMATION

Acute toxicity:	(R32) LC50/inhalation/4 hours/lab. rats >760 ml/l (R125) LC50/inhalation/4 hours/lab. rats >3480 mg/l (R134a) ALC/inhalation/4 hours/lab. rats = 567 ml/l.
Local effects:	Concentrations substantially above the TLV can cause narcotic effects. Inhalation of products in decomposition can lead to respiratory difficulty (pulmonary oedema).
Long-term toxicity:	Has not shown any cancerogenic, teratogenic or mutagenic effects in experiments on animals.

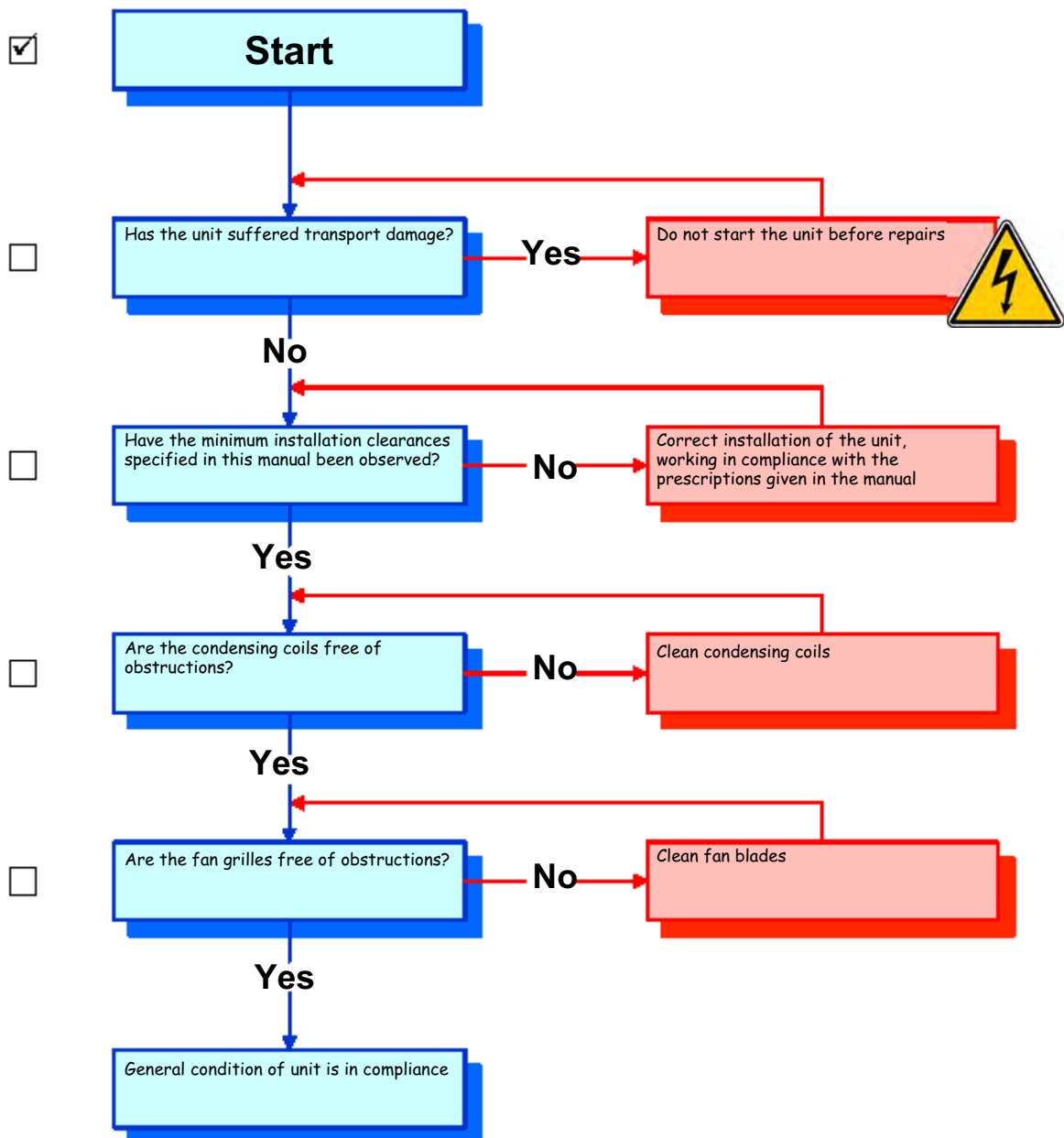
ECOLOGICAL INFORMATION

Global warming potential HGWP (R11=1):	R125: 0.84 - R134a: 0.28
Ozone depletion potential ODP (R11=1):	0

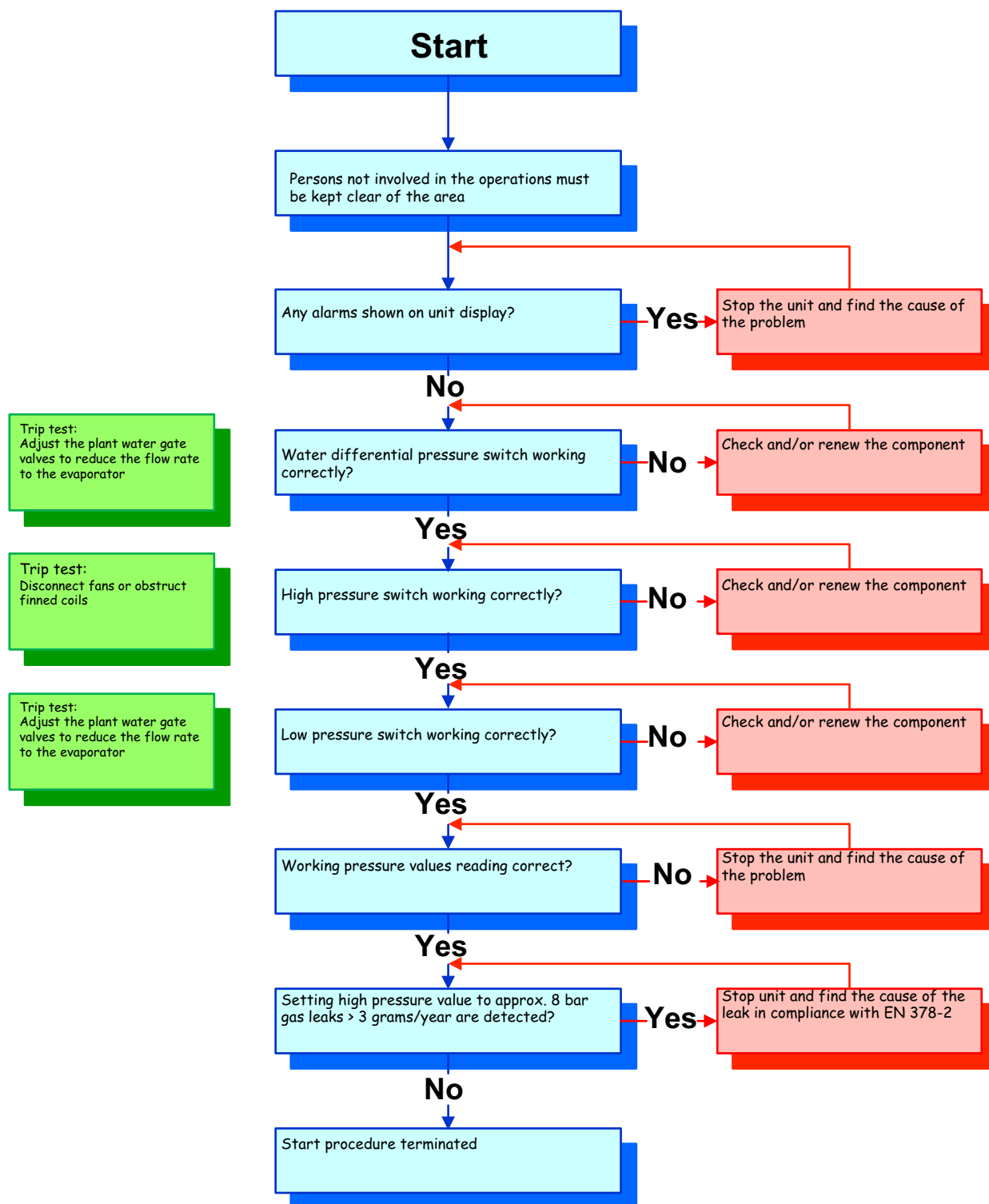
CONSIDERATIONS ON DISPOSAL

Usable with reconditioning.

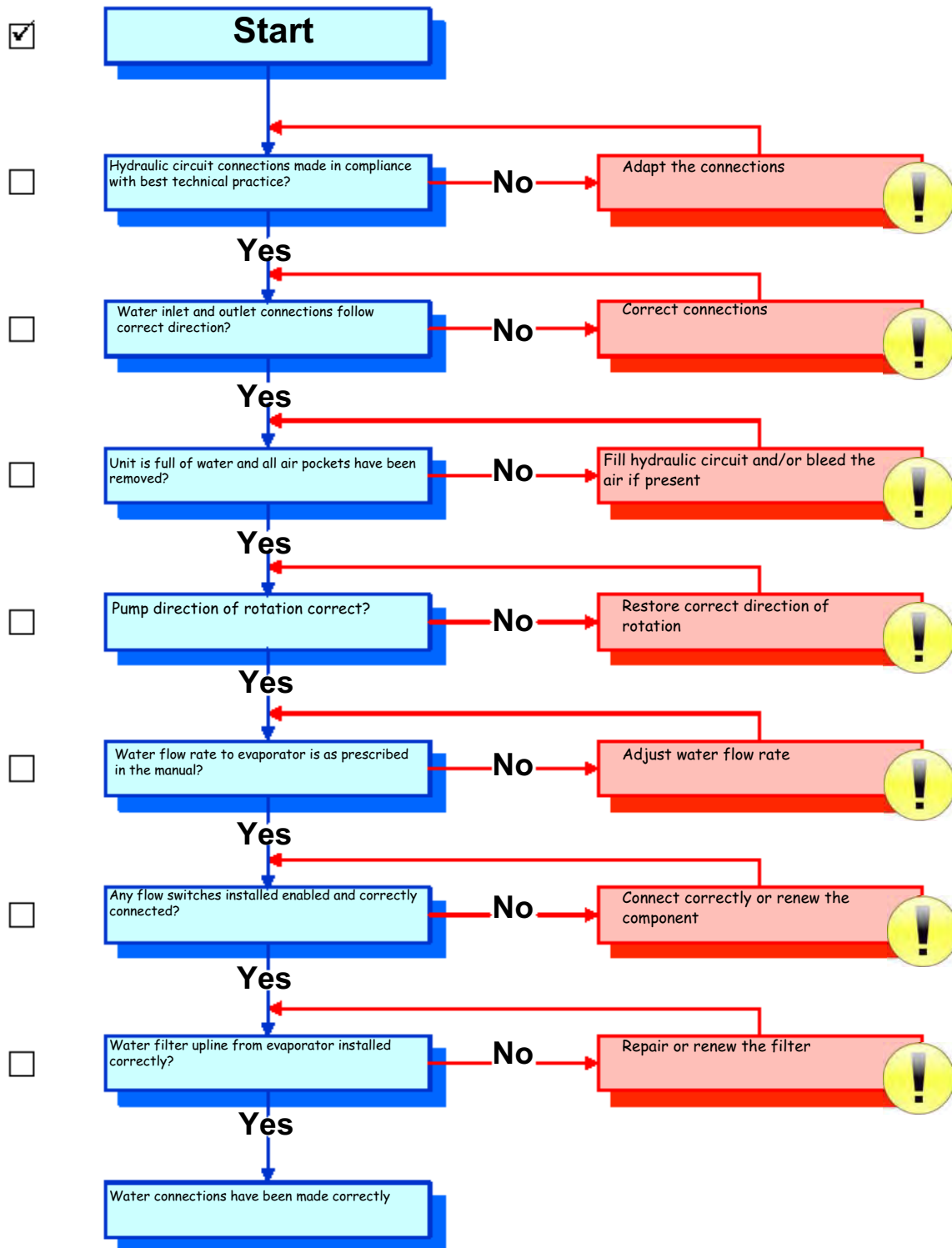
GENERAL CONDITIONS CHECKLIST



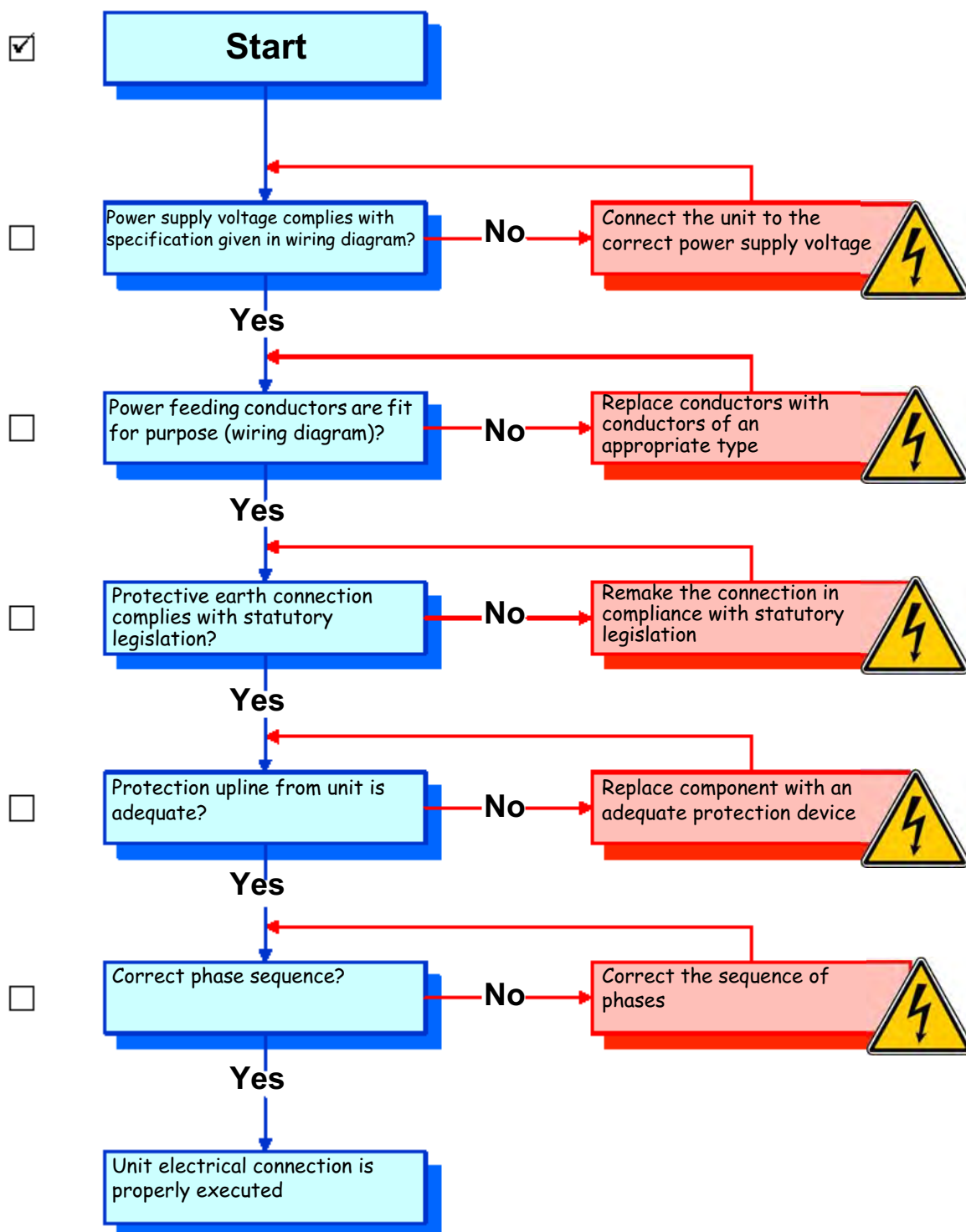
FIRST START CHECKLIST



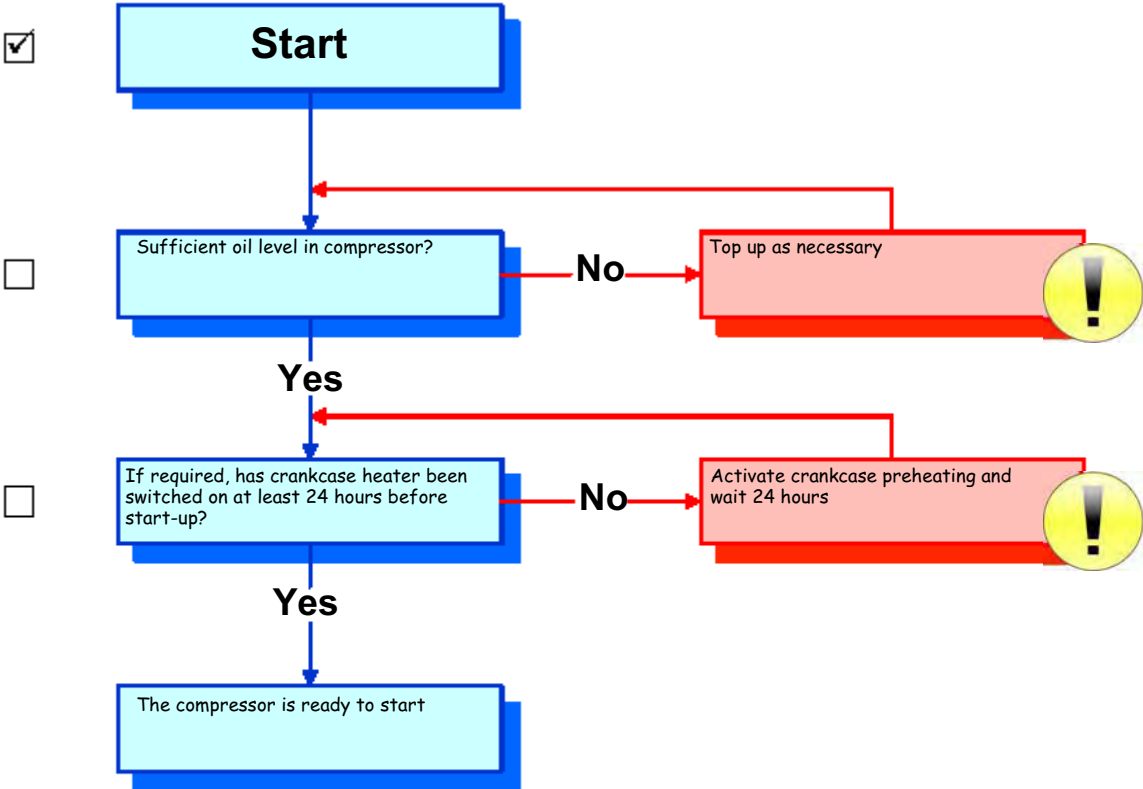
HYDRAULIC CIRCUIT CHECK LIST



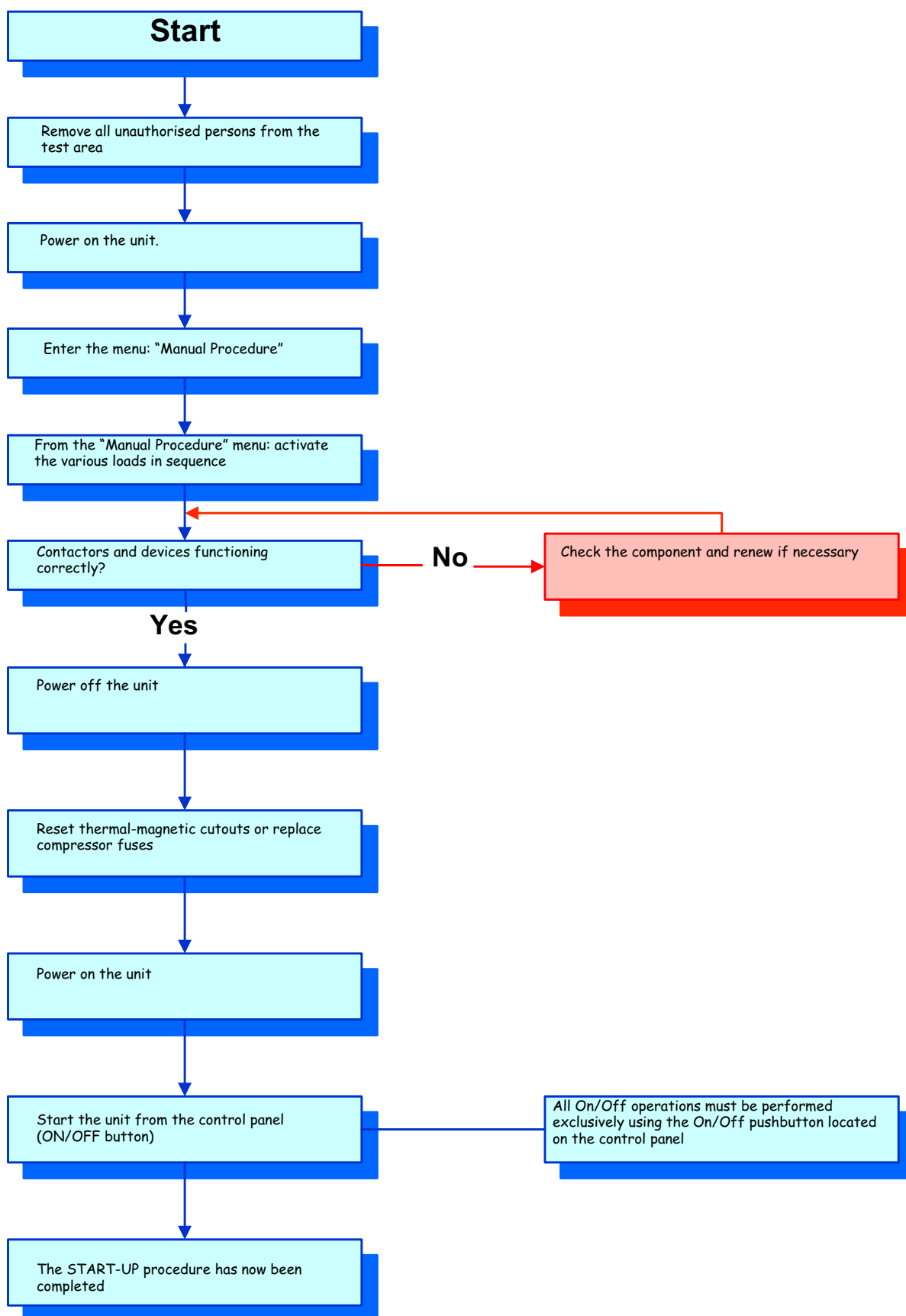
CONTROLLER CHECK

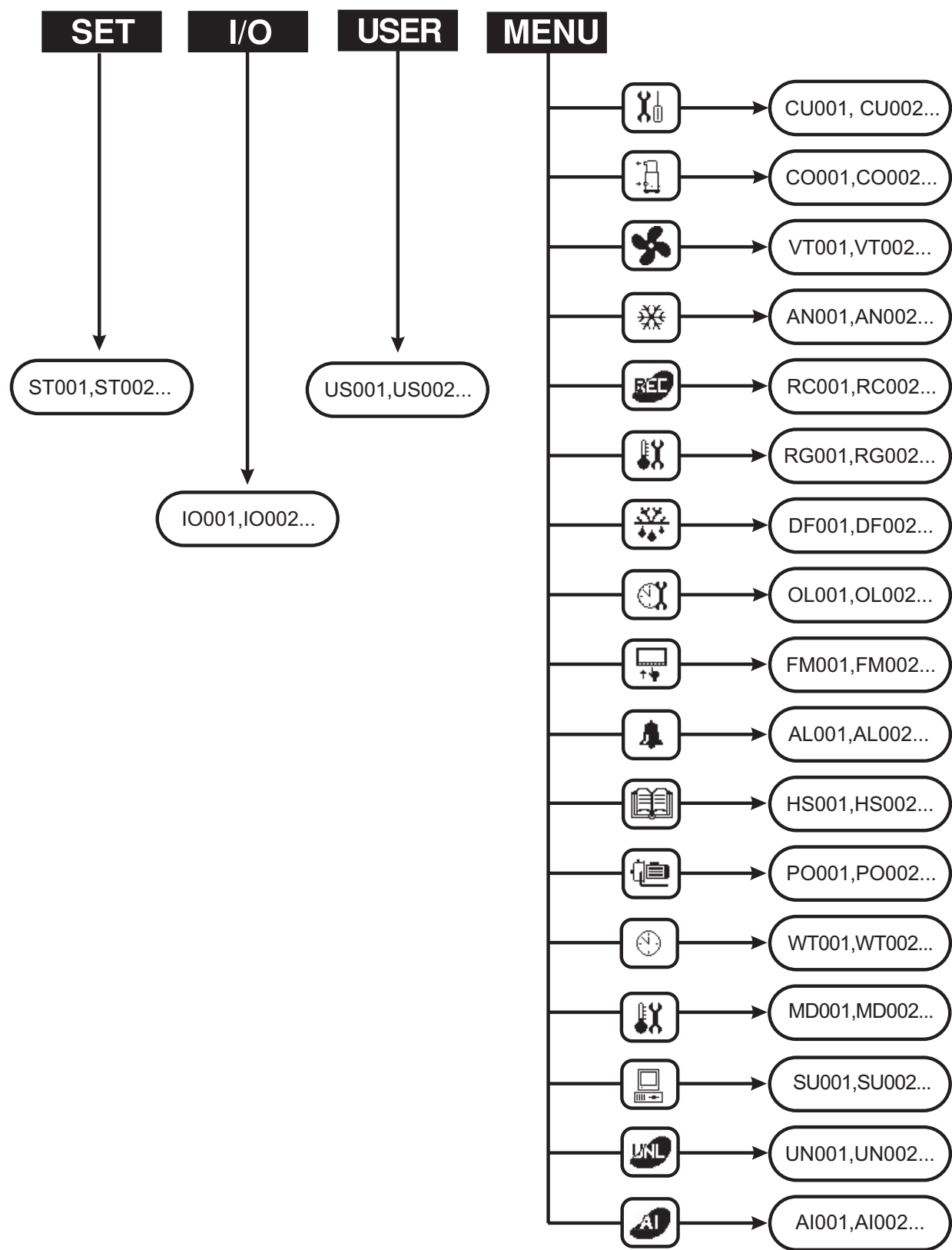


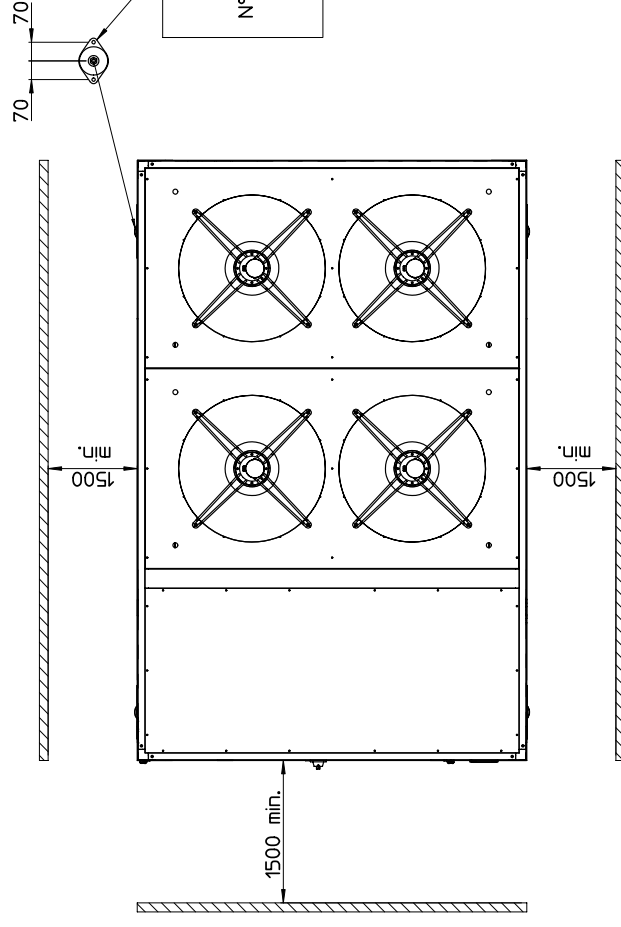
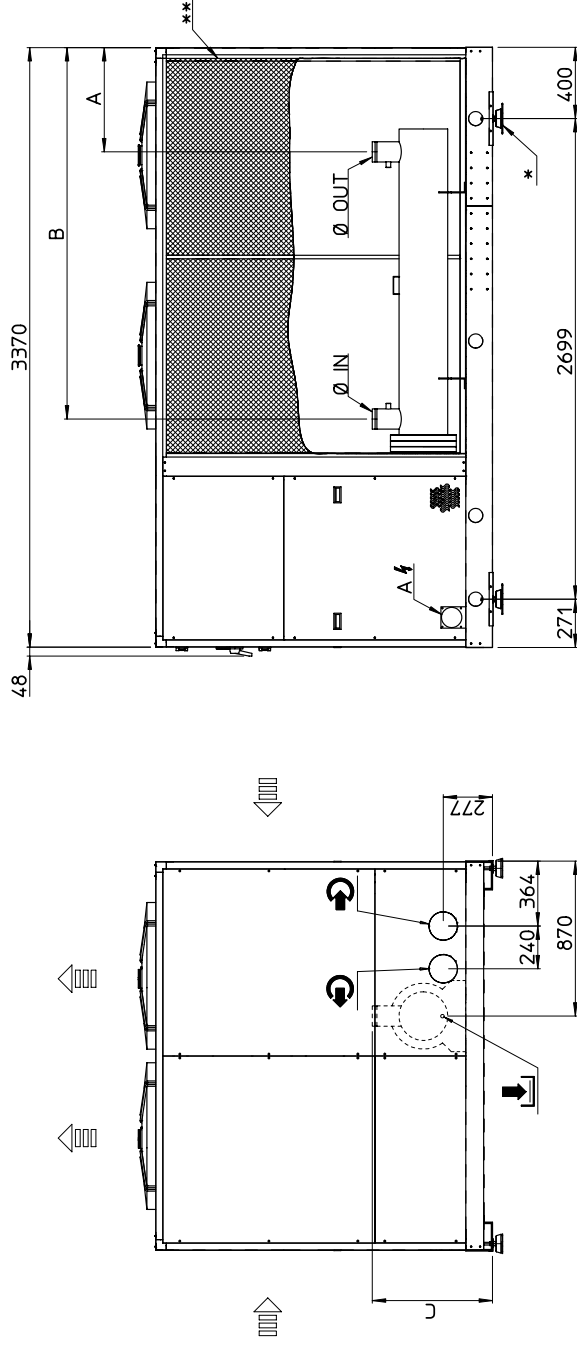
OIL CHECKLIST



UNIT RUNNING CHECKLIST







A	ALIMENTAZIONE ELETTRICA POWER SUPPLY ALIMENTATION ELECTRIQUE ELEKTROANSCHLUB ALIMENTACION ELECTRICA
	НАПЯЖЕНИЕ ПИТАНИЯ

ØIN	INGRESSO ACQUA
	WATER INLET
	ENTREE D'EAU
	WASSEREINTRITT
	ENTRADA DEL AGUA
	ВХОД ВОДЫ

øOUT	USCITA ACQUA
	WATER OUTLET
	SORTIE D'EAU
	WASSERAUSSTRITT
	SALIDA DEL AGUA
	RIXOVI RO/IN

	SCARICO ACQUA
	WATER DISCHARGE
	PURGE D'EAU
	ELEKTROANSCHLUB
	ALIMENTACION ELECTRICA
	СЛИВ ВОДЫ

	FILTRI OPTIONAL
	FILTERS OPTIONAL
	FILTRES OPTIONAL
**	FILTERS OPTIONAL
	FILTRI OPTIONAL
	ФИЛЬТРЫ

	ANTIVIBRANTI OPTIONAL
	VIBRATION-DAMPING OPTIONAL
	AMMORISSENT DE VIBRATION OPTIONAL
	SCHWINGUNGSDAMPFERS OPTIONAL
	ANTIVIVRADORES OPTIONAL
	ANTIVIBRANTI

IN	R	INSERITO NORMATIVA DI RIFERIMENTO FILETTATURA
----	---	---

REVISIONE INDEX	B _	INSERITO NORMATIVA DI RIFERIMENTO FILETTATURA	DATA	30/06/2008
	A _	PRIMA EMISSIONE		14/02/07

ER 0702-0802	N-SN-SSN-H ER 0902-1002	N-SN-H
	DENOMINAZIONE DENOMINATION DIMENSIONI INGOMBRO- OVERALL DIMENSIONS DIMENSIONS ENCREMBREMENT ABMESSUNGEN DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ	

	DATA	30/06/2008
	DATE	14/02/07

DISEGNATORE DRAFTSMAN
 ZUIN F.
 VISTO DA CHECKED BY
L. Ruozzi

SIGNATURE	GREGGIO I.	
	ZUIN F.	

DATA DATE	14/02/07	MTA s.p.a. PADOVA ITALY
SCALE SCALE	1:30	
DISEGNO DRAWING	CRD00025	REV. INDEX
		B 1 / 1

		ER0702	ER0802	ER9002	ER1002
		N S N S S N S N H N S N H	N S N S S N S N H N S N H	N S N S S N S N H N S N H	N S N S S N S N H N S N H
A mm	165	175	175	587	587
B mm	2195	2195	2195	2087	2087
C mm	536	601	601	675	675
Atacchi evaporatore Evap. connet. Ø OUT, Ø IN	R 3"	DN 100	DN 100	DN 100	DN 100

**СОЕДИНЕНИЯ
ДЛЯ ИСПЫТАТЕЛЯ**

N°2+2	FORI	Ø30
	HOLES	
	TROUS	
	LOCHES	
	AGUJEROS	
OTB.		

Nº2	FORI	Ø13
	HOLES	
	TROUS	
	LOCHES	
	AGUJEROS	
OTB.		

UNI EN10226-1

SCOSTAMENTI LIMITE AMMESSI PER FORI CIRCOLARI E QUADRATI

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OLTR E 800

SC0

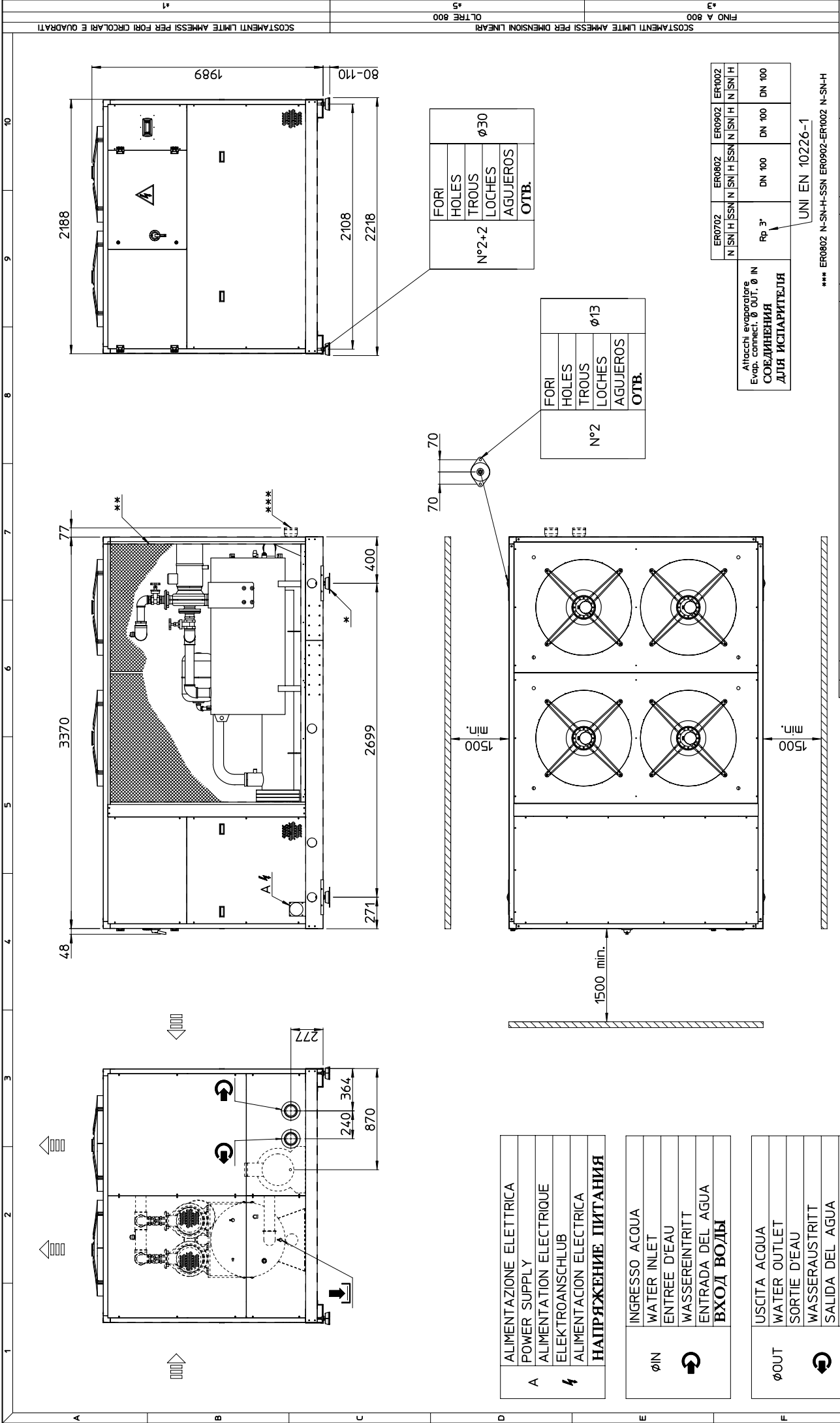
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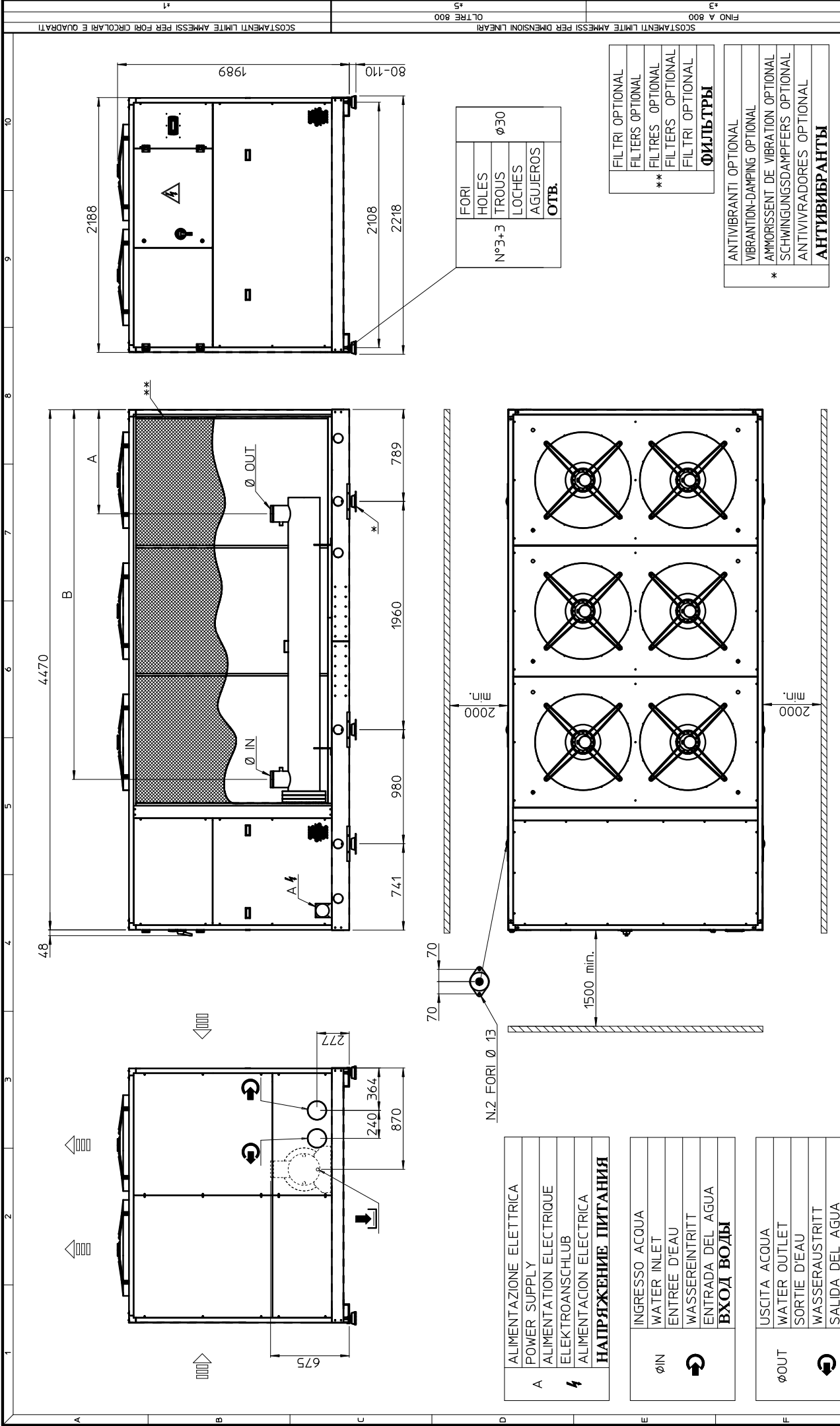
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SC0

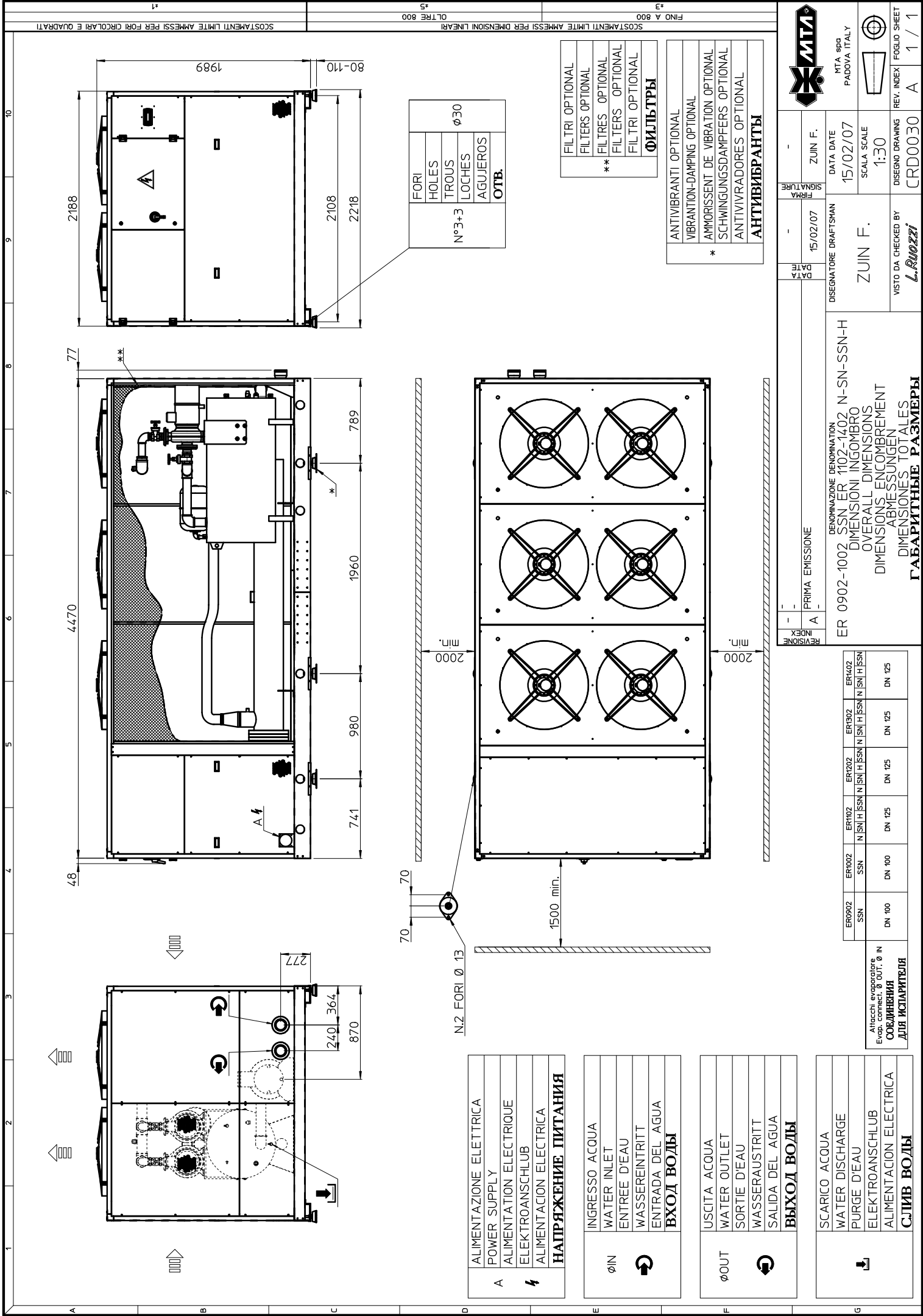
Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge



ANTIVIBRANTI OPTIONAL VIBRATION-DAMPING OPTIONAL		FILTRI OPTIONAL FILTERS OPTIONAL		REVISIONE INDEX		PRIMA EMISSIONE A		30/06/2008 B		FIRMA SIGNATURE		GREGGIO I.		MTA	
* AMMORISSENT DE VIBRATION OPTIONAL SCHWINGUNGSDAMPERS OPTIONAL		** FILTERS OPTIONAL FILTTRI OPTIONAL		DISEGNATORE DRAFTSMAN ZUIN F.		15/02/07 ZUIN F.		15/02/07 ZUIN F.		DATA DATE		MTA spa PADOVA ITALY		REV. INDEX	
ANTIVIVRADORES OPTIONAL АНТИВИБРАНТЫ		FILTRIS OPTIONAL ФИЛЬТРЫ		DISEGNO DRAWTING CRD0027		1:30 SCALE SCALE		1:30 SCALE SCALE		1:30 SCALE SCALE		FOLIO SHEET 1 / 1		B	
ALIMENTAZIONE ELETTRICA POWER SUPPLY		INGRESSO ACQUA WATER INLET		USCITA ACQUA WATER OUTLET		SCARICO ACQUA WATER DISCHARGE		ER 0702-0802 N-SN-H ER 0902-1002 N-SN-H		DENOMINAZIONE N-SN-H		DISEGNO DRAWTING CRD0027		FOLIO SHEET 1 / 1	
ELEKTROANSCHLUB ELECTROANSCHLUB		WASSEREINTRIIT WATER INLET		WASSERAUSSTRIIT WATER OUTLET		ELEKTROANSCHLUB ELECTROANSCHLUB		UNI EN 10226-1		N-SN-H		DISEGNO DRAWTING CRD0027		FOLIO SHEET 1 / 1	
НАПРЯЖЕНИЕ ПИТАНИЯ		ВХОД ВОДЫ		ВЫХОД ВОДЫ		АНТИВИБРАНТЫ		ER 0702-0802 N-SN-H ER 0902-1002 N-SN-H		N-SN-H		DISEGNO DRAWTING CRD0027		FOLIO SHEET 1 / 1	
ALIMENTAZIONE ELETTRICA POWER SUPPLY		INGRESSO ACQUA WATER INLET		USCITA ACQUA WATER OUTLET		ANTIVIBRANTI OPTIONAL VIBRATION-DAMPING OPTIONAL		ER 0702-0802 N-SN-H ER 0902-1002 N-SN-H		N-SN-H		DISEGNO DRAWTING CRD0027		FOLIO SHEET 1 / 1	
ELEKTROANSCHLUB ELECTROANSCHLUB		WASSEREINTRIIT WATER INLET		WASSERAUSSTRIIT WATER OUTLET		FILTRES OPTIONAL FILTERS OPTIONAL		ER 0702-0802 N-SN-H ER 0902-1002 N-SN-H		N-SN-H		DISEGNO DRAWTING CRD0027		FOLIO SHEET 1 / 1	
НАПРЯЖЕНИЕ ПИТАНИЯ		ВХОД ВОДЫ		ВЫХОД ВОДЫ		FILTRIS OPTIONAL ФИЛЬТРЫ		ER 0702-0802 N-SN-H ER 0902-1002 N-SN-H		N-SN-H		DISEGNO DRAWTING CRD0027		FOLIO SHEET 1 / 1	



ВЫХОД ВОДЫ		REVISIONE INDEX		PRIMA EMISSIONE INDEX		SIGNATURE		ZUIN F.		DATA DATE		MTA srl PADOVA ITALY		REV. INDEX		FOLGIO SHEET	
		A		A		15/02/07		ZUIN F.		15/02/07		SCALA SCALE 1:30		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DENOMINAZIONE DENOMINATION		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONI INGOMBRO OVERALL DIMENSIONS		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONS ENCOMBREMENT ABMESSUNGEN		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
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		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
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		ER 0902-1002 SSN ER 1002-1402 N-SN-SSN-H		DIMENSIONES TOTALES ГАБАРИТНЫЕ РАЗМЕРЫ		DISEGNATORE DRAFTSMAN		VISTO DA CHECKED BY L. Ruoizzi		15/02/07		15/02/07		DESIGN DRAWING		CRD0028	
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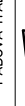
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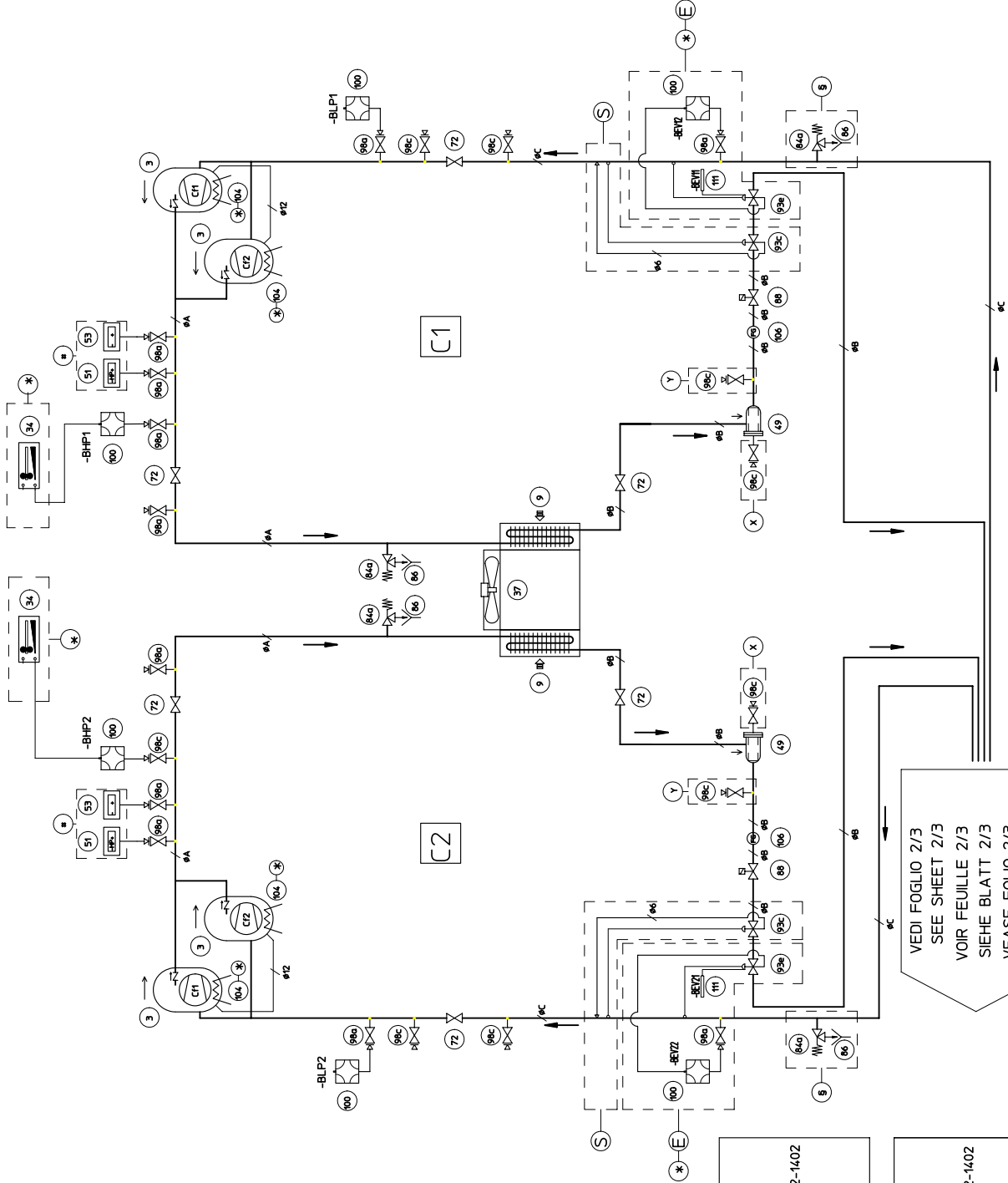
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	ELEKTROANSCHLUB
	ALIMENTACION ELECTRICA
	СЛИВ ВОДЫ

FILTRI OPTIONAL
FILTERS OPTIONAL
FILTRES OPTIONAL
FILTERS OPTIONAL
FILTRI OPTIONAL
ФИЛЬТРЫ

ANTIVIBRANTI OPTIONAL
VIBRATION-DAMPING OPTIONAL
AMORTISSEMENT DE VIBRATION OPTIONAL
SCHWINGUNGSDAMPFERS OPTIONAL
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ОТВ.	Ø30

REVISIONE INDEX		PRIMA EMISSIONE		SIGNATURE		ZUIN F.	
-	-	-		15/02/07		-	
A	-						
DENOMINAZIONE DENOMINATION							
ER 0902-1002 SSN ER 1102-1402 N-SN-SSN-H							
DIMENSIONI INGOMBRO							
OVERALL DIMENSIONS							
DIMENSIONS ENCOMBREMENT							
ABMESSUNGEN							
DIMENSIONES TOTALES							
ГАБАРИТНЫЕ РАЗМЕРЫ							
VISTO DA CHECKED BY				DESIGNO DRAWING		REV. INDEX	
L. Rizzozi				CRD0030		FOLGIO SHEET	
						A 1 / 1	
				ZUIN F.		SCALA SCALE	
				15/02/07		1:30	
				DISEGNATORE DRAFTSMAN		DATA DATE	
						MTA spa	
						PADOVA ITALY	
							
							



STANDARD

* OPTIONAL

#				
SOLO PER				
ONLY FOR				
UNIQUEMENT POUR				
NUR FÜR				
SOLO PAR				
ТОЛЬКО ДЛЯ				
ER0802-1402				

S				
SOLO CON EVAPORATORE				
ONLY FOR				
UNIQUEMENT POUR				
NUR FÜR				
SOLO PAR				
ТОЛЬКО ДЛЯ				
ER1102-1402				

VEDI FOGLIO 2/3
SEE SHEET 2/3
VOIR FEUILLE 2/3
SIEHE BLATT 2/3
VEASE FOLIO 2/3
СМ.СТР. 2/3

E	SOLO PER VALVOLA TERMOSTATICA ELETTRONICA
	ONLY FOR ELECTRONIC THERMOSTATIC VALVE
	UNIQUEMENT POUR VANNE THERMOSTATIQUE ELECTRONIQUE
	NUR FÜR ELEKTRONISCHE THERMOSTATVENTIL
	SOLO PAR VALVULA TERMOSTATICA ELECTRONICA
	ТОЛЬКО ДЛЯ ЭЛЕКТРОННОГО ТРВ

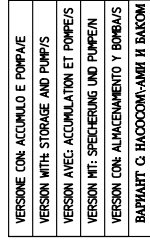
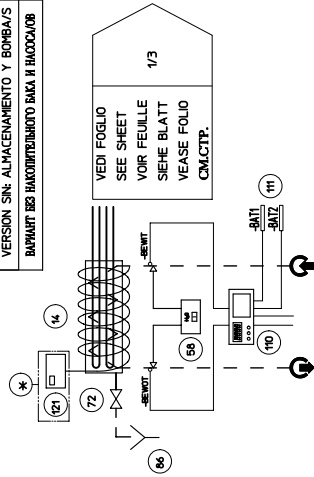
DENOMINAZIONE-DENOMINATION		DISEGNATORE DRAFTSMAN		DATA DATE	
HERCULES (ER0702-1402)		ZUIN F.		13/02/07	
SCHEMA FRIGO				SCALA SCALE	
REFRIGERATOR DIAGRAM					
SCHEMA FRIGO					
KALTESCHEMA					
ESQUEMA FRIGO					
СХЕМА ХОЛОДИЛЬНИКА					
		VISTO DA CHECKED BY		DISEGNO DRAWING	
		RUOZZI L.		CRF0007	
				REV. INDEX	
				A	
				FOLIO SHEET	
				1/3	



MTA spa
PADOVA ITALY



REV. INDEX
FOLIO SHEET
A
1/3



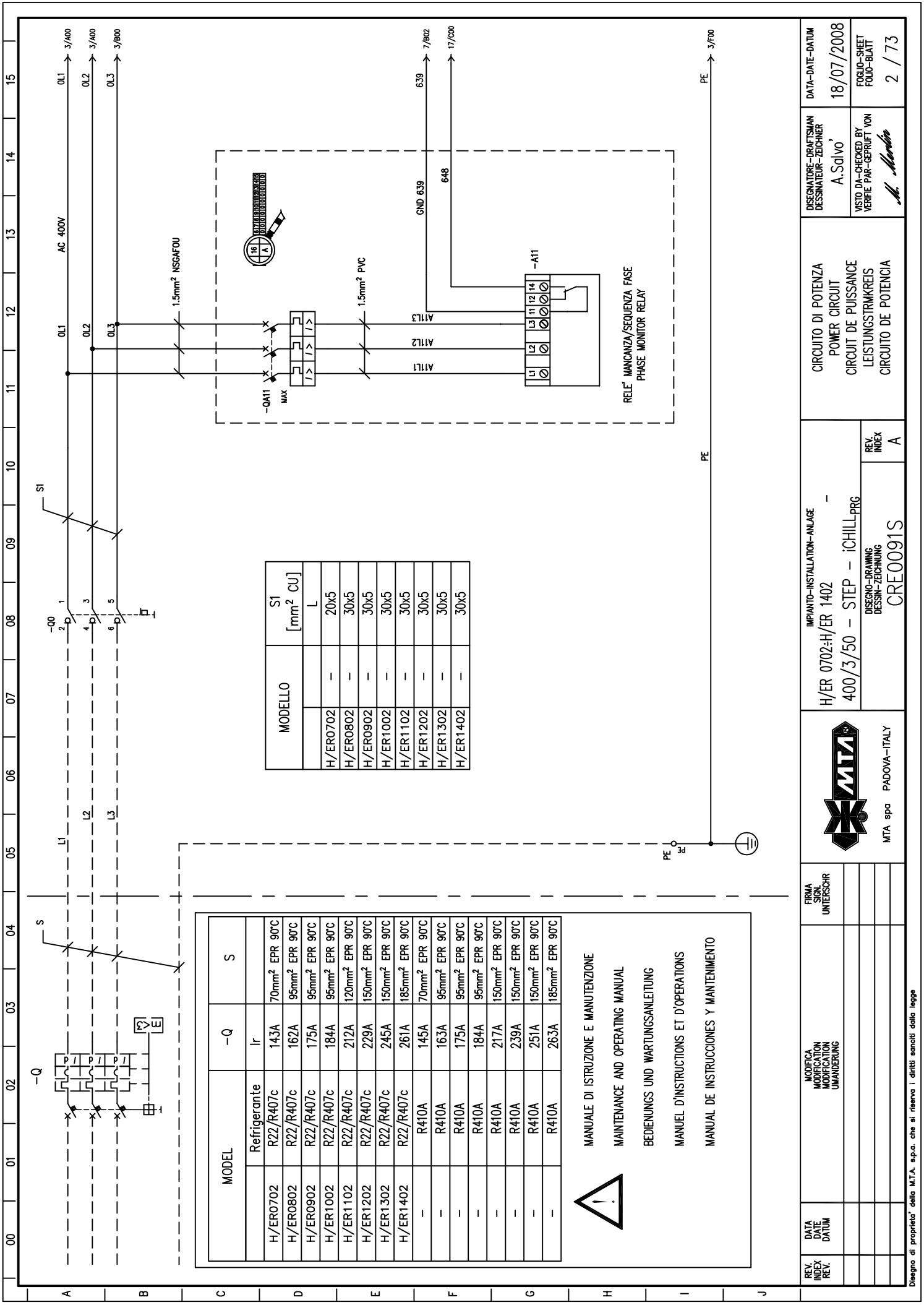
MODELLO МОДЕЛЬ	CIRC.	COMPR.		φA	φB	φC	X	Y
		Cf1	Cf2					
ER 0702	C1	●	●	35	22	42	-	●
	C2	●	●	35	22	42	-	●
ER 0802	C1	●	●	35	22	42	-	●
	C2	●	●	35	22	42	-	●
ER 0902	C1	●	●	35	22	54	-	●
	C2	●	●	35	22	54	-	●
ER 1002	C1	●	●	35	22	54	-	●
	C2	●	●	35	22	54	-	●
ER 1102	C1	●	●	35	22	54	●	-
	C2	●	●	35	22	54	●	-
ER 1202	C1	●	●	35	22	54	●	-
	C2	●	●	35	22	54	●	-
ER 1302	C1	●	●	42	28	54	●	-
	C2	●	●	42	28	54	●	-
ER 1402	C1	●	●	42	28	54	●	-
	C2	●	●	42	28	54	●	-

●	PRESENTE
	PRESENT
	PRESENT
	ANWESEND
	EXISTENTE
	ПРИСУТСТВУЮЩИЙ

	NON PRESENTE
	NO PRESENT
	PAS PRESENT
	NICHT ANWESEND
	NO EXISTENTE
	OTC/CTBYET

	OPTIONAL
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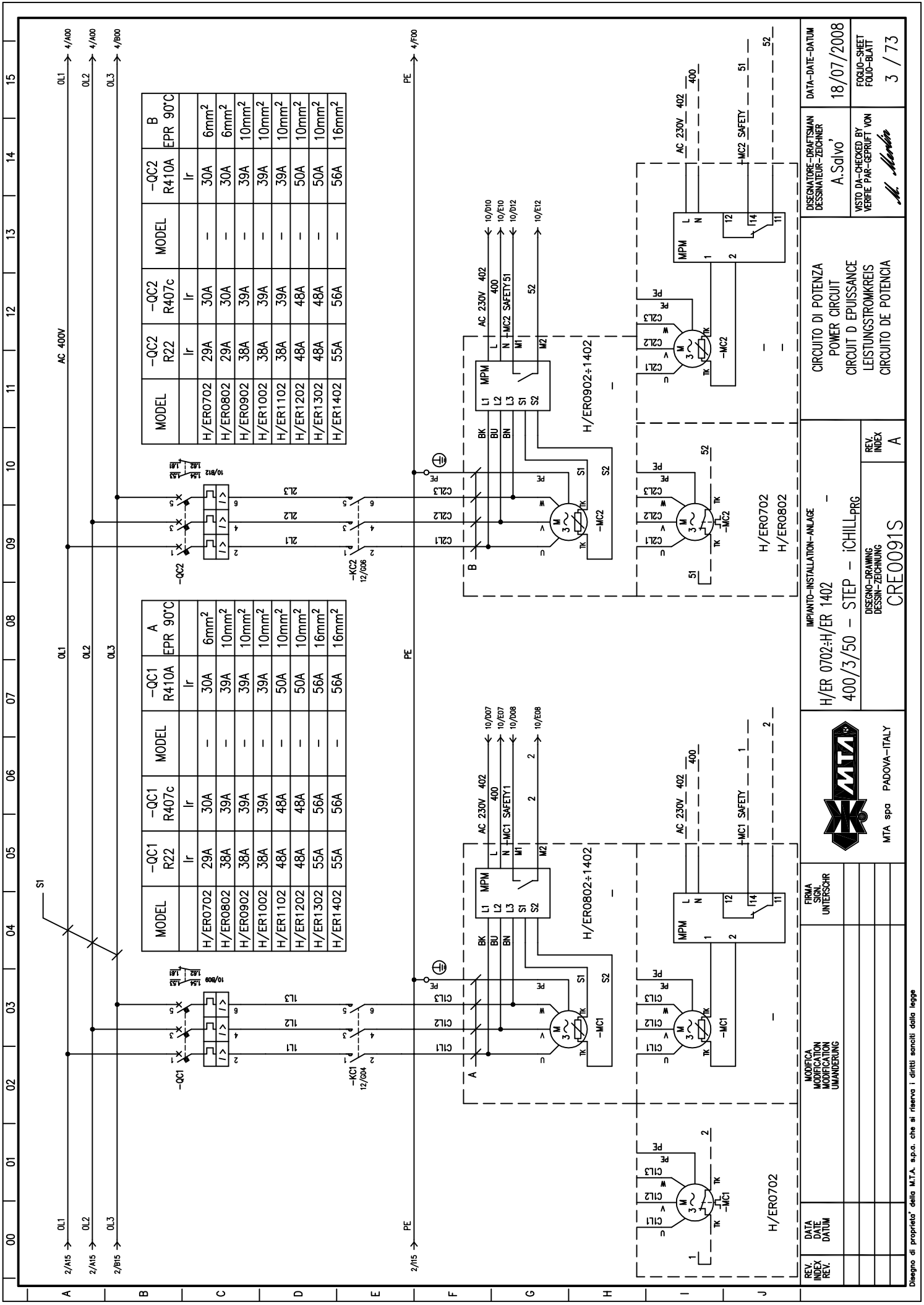


MODELLO		S1 [mm² CU]
H/ER0702	-	20x5
H/ER0802	-	30x5
H/ER0902	-	30x5
H/ER1002	-	30x5
H/ER1102	-	30x5
H/ER1202	-	30x5
H/ER1302	-	30x5
H/ER1402	-	30x5

MODEL	-Q	S
Refrigerante		
H/ER0702	R22/R407c	143A 70mm² EPR 90°C
H/ER0802	R22/R407c	162A 95mm² EPR 90°C
H/ER0902	R22/R407c	175A 95mm² EPR 90°C
H/ER1002	R22/R407c	184A 95mm² EPR 90°C
H/ER1102	R22/R407c	212A 120mm² EPR 90°C
H/ER1202	R22/R407c	229A 150mm² EPR 90°C
H/ER1302	R22/R407c	245A 150mm² EPR 90°C
H/ER1402	R22/R407c	261A 185mm² EPR 90°C
-	R410A	145A 70mm² EPR 90°C
-	R410A	163A 95mm² EPR 90°C
-	R410A	175A 95mm² EPR 90°C
-	R410A	184A 95mm² EPR 90°C
-	R410A	217A 150mm² EPR 90°C
-	R410A	239A 150mm² EPR 90°C
-	R410A	251A 150mm² EPR 90°C
-	R410A	263A 185mm² EPR 90°C

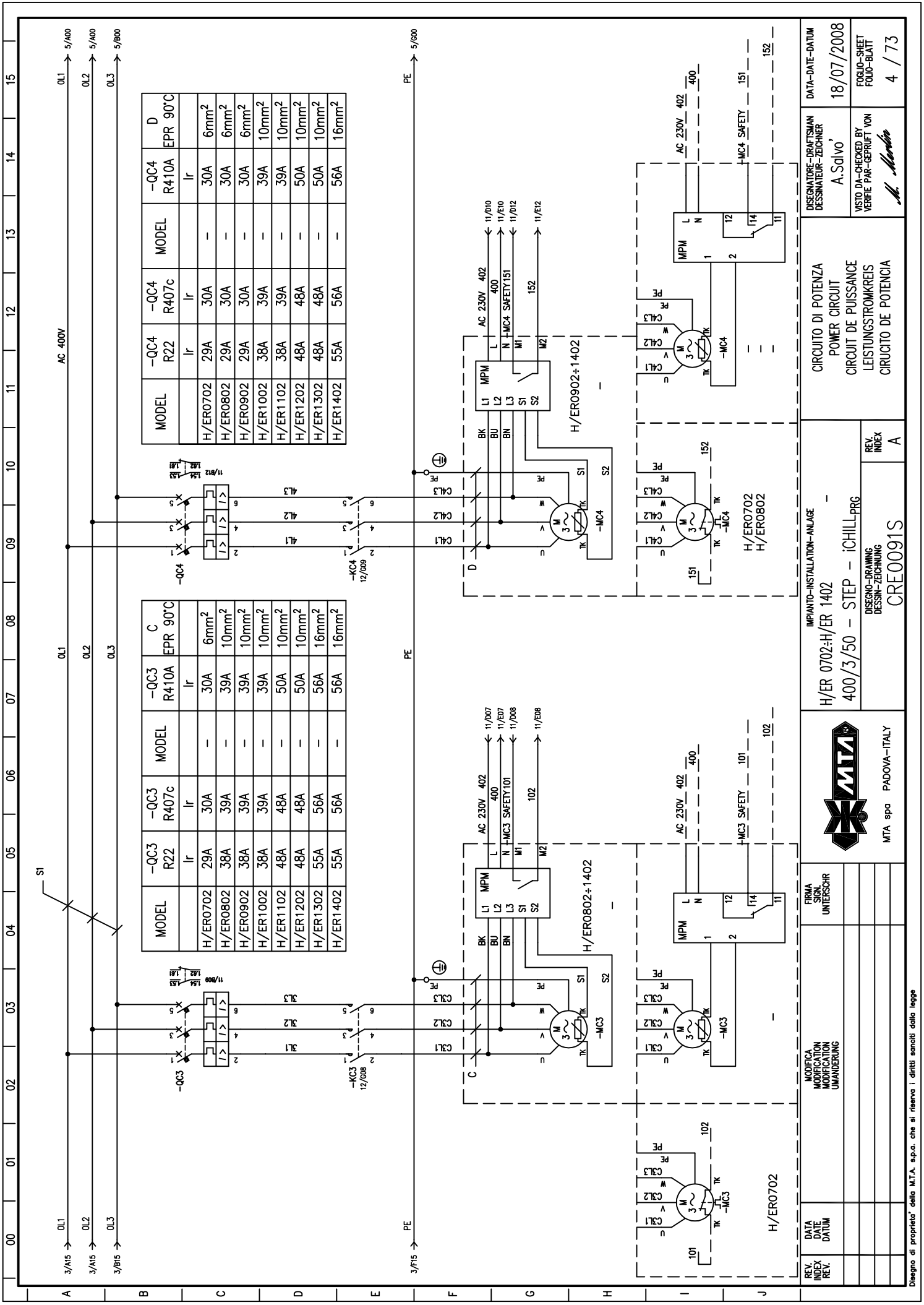
MANUALE DI ISTRUZIONE E MANUTENZIONE
MAINTENANCE AND OPERATING MANUAL
BEDIENUNGS UND WARTUNGSANLEITUNG
MANUEL D'INSTRUCTIONS ET D'OPERATIONS
MANUAL DE INSTRUCCIONES Y MANTENIMIENTO

REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMWANDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702-H/ER 1402 400/3/50 - STEP - iCHILL-PRG DESIGNO-DRAWING DESSIN-ZEICHUNG CRE0091S		CIRCUITO DI POTENZA POWER CIRCUIT CIRCUIT DE PUISSANCE LEISTUNGSTRMKREIS CIRCUITO DE POTENCIA	DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A. Solvo' VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Martin	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 2 / 73
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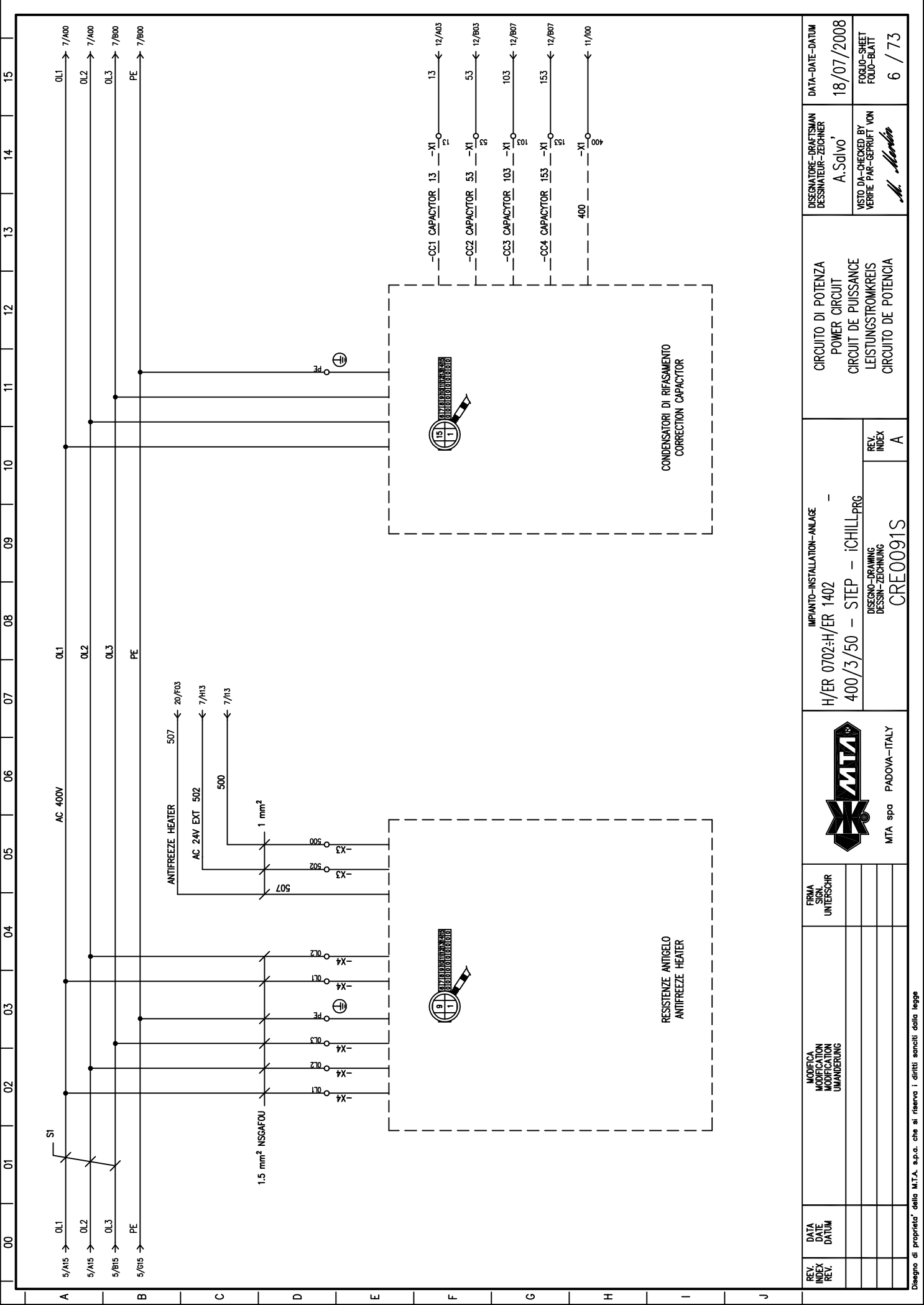


MTA spa PADOVA-ITALY

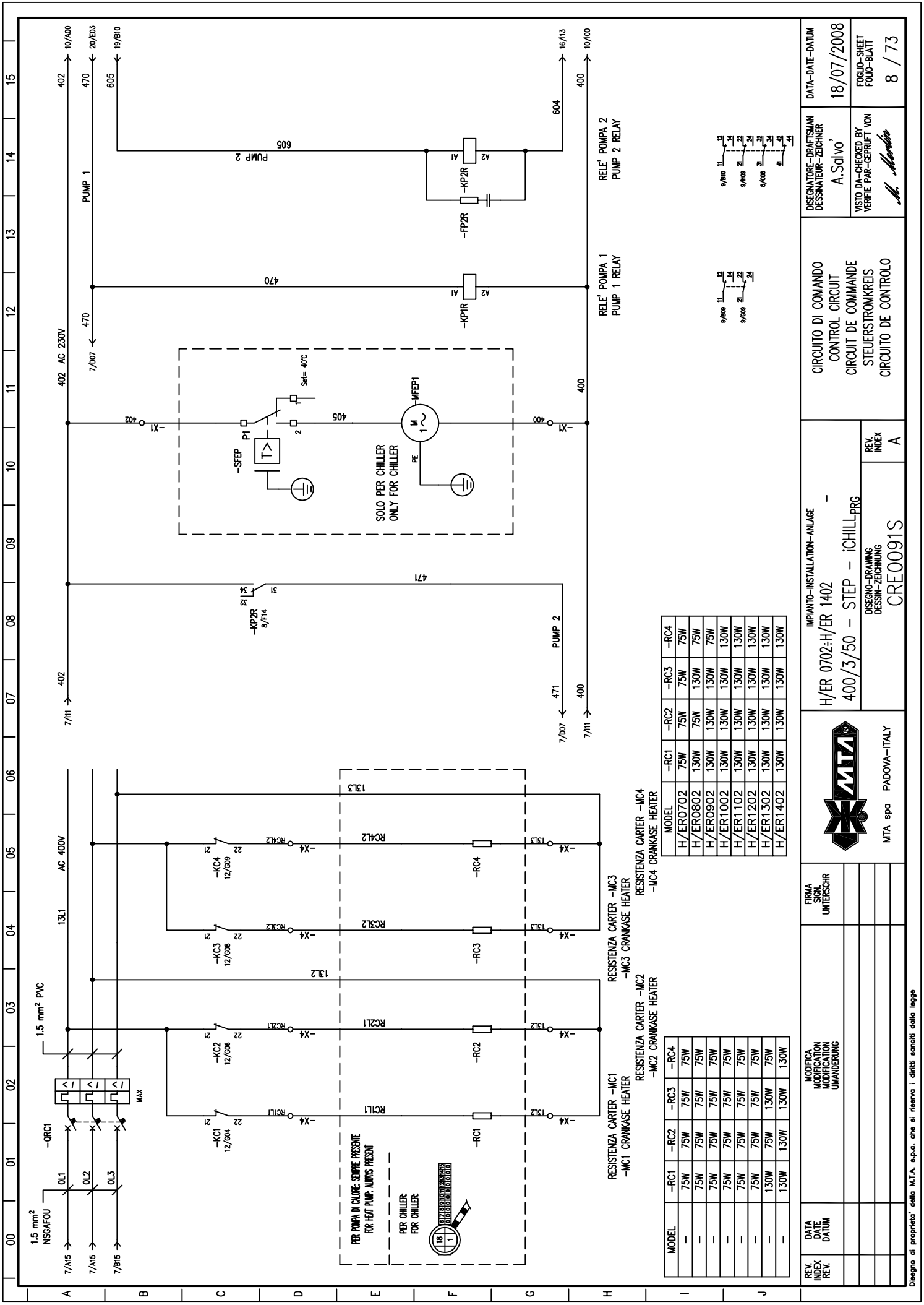
REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMWANDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE	H/ER 0702-H/ER 1402	CIRCUITO DI POTENZA POWER CIRCUIT CIRCUIT D'EPUISSANCE LEISTUNGSTROMKREIS CIRCUITO DE POTENCIA	DESIGNA-TORE-DRAFTSMAN DESSINATEUR-ZEICHNER	DATA-DATE-DATUM
					400/3/50 - STEP - iCHILL-PRG		A. Solvo'	18/07/2008
					DESIGNO-DRAWING DESSIN-ZEICHNUNG		VISTO DA-CHECKED BY VERIFIE PAR-GEPRUEFT VON	FOLIO-SHEET FOLIO-BLATT
					CRE0091S		M. Martin	3 / 73



REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMWANDERUNG	FIRMA SIGN UNTERSCHR	MTA spa PADOVA-ITALY	MTA	H/ER 0702÷H/ER 1402 400/3/50 - STEP - iCHILL-PRG	IMPIANTO-INSTALLATION-ANLAGE	CIRCUITO DI POTENZA POWER CIRCUIT CIRCUIT DE PUISSANCE LEISTUNGSTROMKREIS CIRCUITO DE POTENCIA	DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A. Solvo'	DATA-DATE-DATUM 18/07/2008
									VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Martin	FOLIO-SHEET FOLIO-BLATT 4 / 73



REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMWANDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702-H/ER 1402 400/3/50 - STEP - iCHILL-PRG	DESIGNO-DRAWING DESSIN-ZEICHNUNG CRE0091S	CIRCUITO DI POTENZA POWER CIRCUIT CIRCUIT DE PUISSANCE LEISTUNGSTROMKREIS CIRCUITO DE POTENCIA	DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A. Solvo'	DATA-DATE-DATUM 18/07/2008
							VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Martin	FOLIO-SHEET FOLIO-BLATT 6 / 73



MODEL	-RC1	-RC2	-RC3	-RC4
H/ER0702	75W	75W	75W	75W
H/ER0802	130W	75W	130W	75W
H/ER0902	130W	130W	130W	75W
H/ER1002	130W	130W	130W	130W
H/ER1102	130W	130W	130W	130W
H/ER1202	130W	130W	130W	130W
H/ER1302	130W	130W	130W	130W
H/ER1402	130W	130W	130W	130W

MODEL	-RC1	-RC2	-RC3	-RC4
-	75W	75W	75W	75W
-	75W	75W	75W	75W
-	75W	75W	75W	75W
-	75W	75W	75W	75W
-	75W	75W	75W	75W
-	130W	75W	130W	75W
-	130W	130W	130W	130W

REV. INDEX
REV. INDEX

DATA DATE
DATA DATE

MODIFICA
MODIFICATION
MODIFICATION
UMÄNDERUNG

FIRMA
SIGN
UNTERSCHR

IMPIANTO-INSTALLATION-ANLAGE
H/ER 0702:H/ER 1402
400/3/50 - STEP - iCHILL-PRG

DESIGNO-DRAWING
DESSIN-ZEICHNUNG
CRE0091S

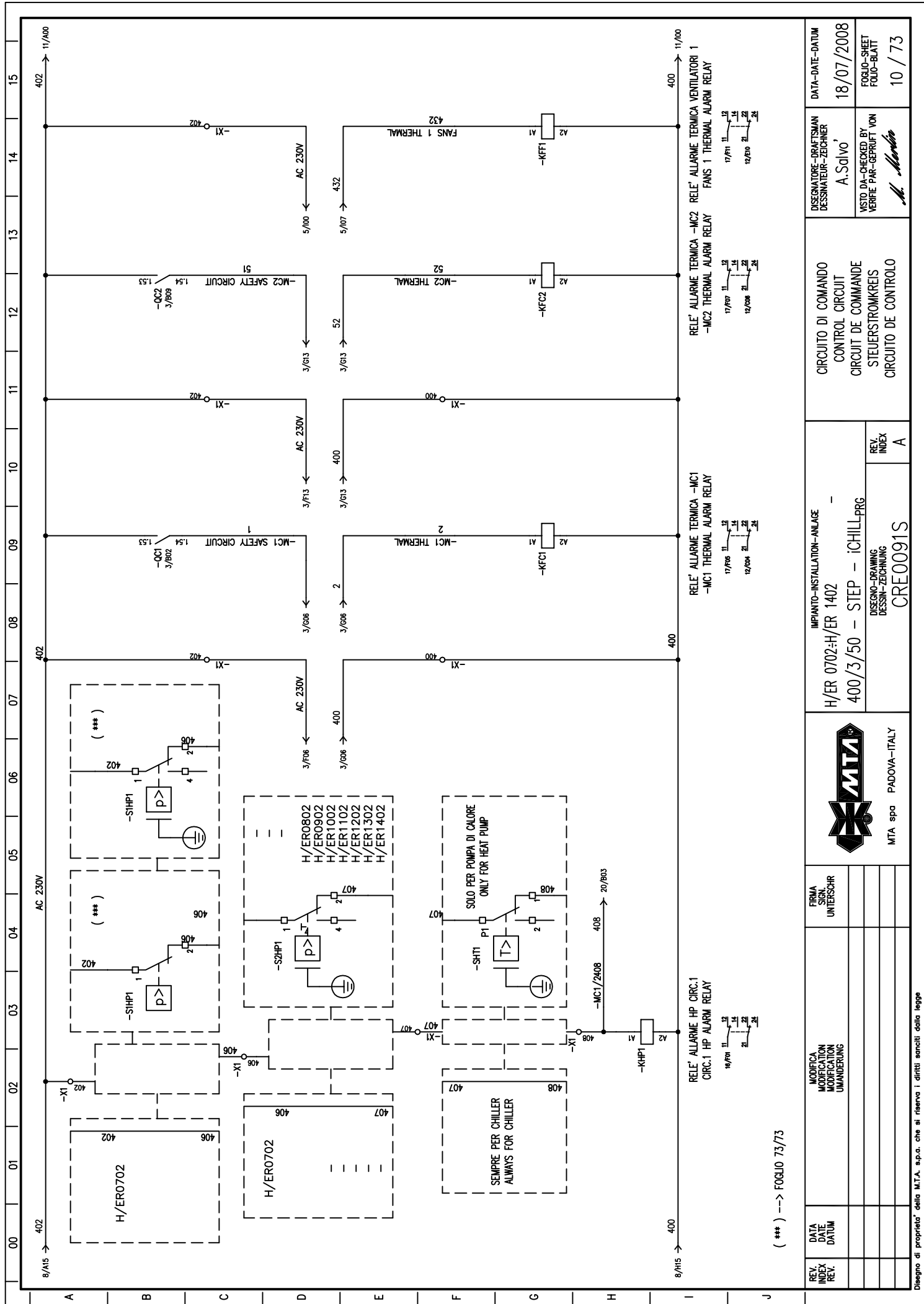
CIRCUITO DI COMANDO
CONTROL CIRCUIT
CIRCUIT DE COMMANDE
STEUERSTROMKREIS
CIRCUITO DE CONTROLLO

DESIGNATORE-DRAFTSMAN
DESSINATEUR-ZEICHNER
A. Solvo'

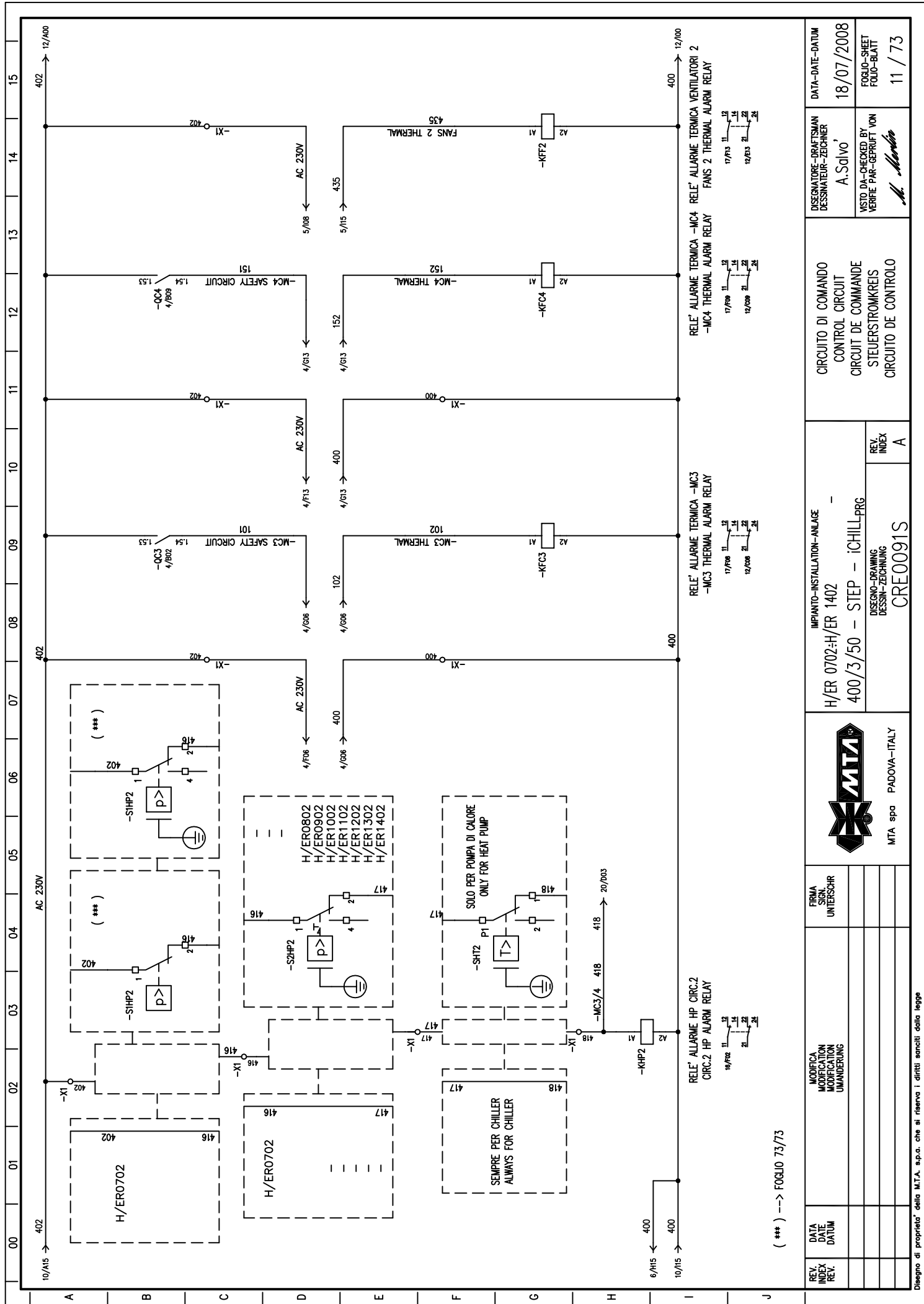
VISTO DA-CHECKED BY
VERIFIE PAR-GEPRÜFT VON
M. Martin

DATA-DATE-DATUM
18/07/2008

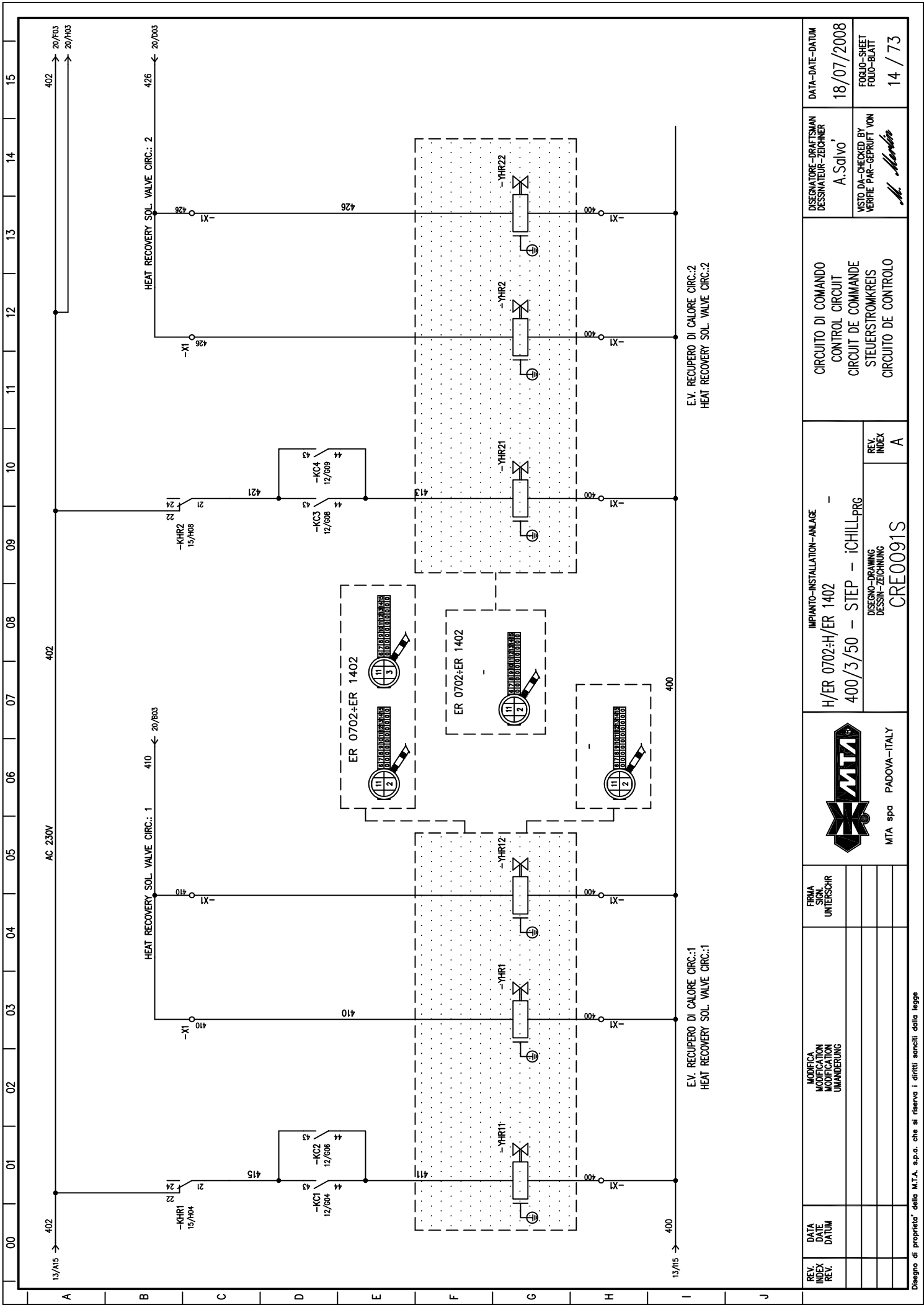
FOLIO-SHEET
FOLIO-BLATT
8 / 73



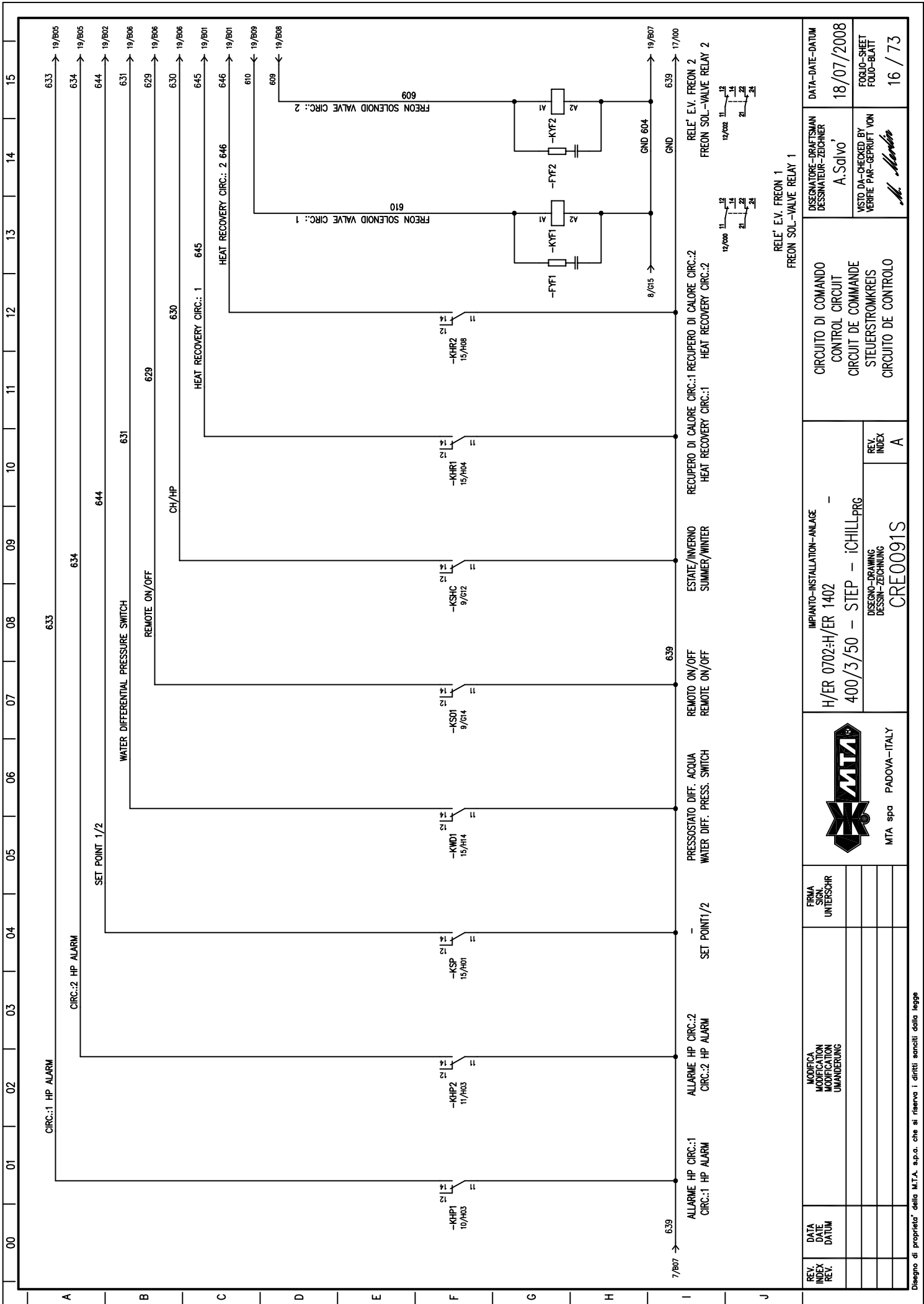
REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMWANDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE	CIRCUITO DI COMANDO CONTROL CIRCUIT CIRCUIT DE COMMANDE STEUERSTROMKREIS CIRCUITO DE CONTROLLO		DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER	DATA-DATE-DATUM
				H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILL-PRG			A.Solvo'	18/07/2008
				DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S			VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON	FOGLIO-SHEET FOLIO-BLATT
							M. Martin	10 / 73

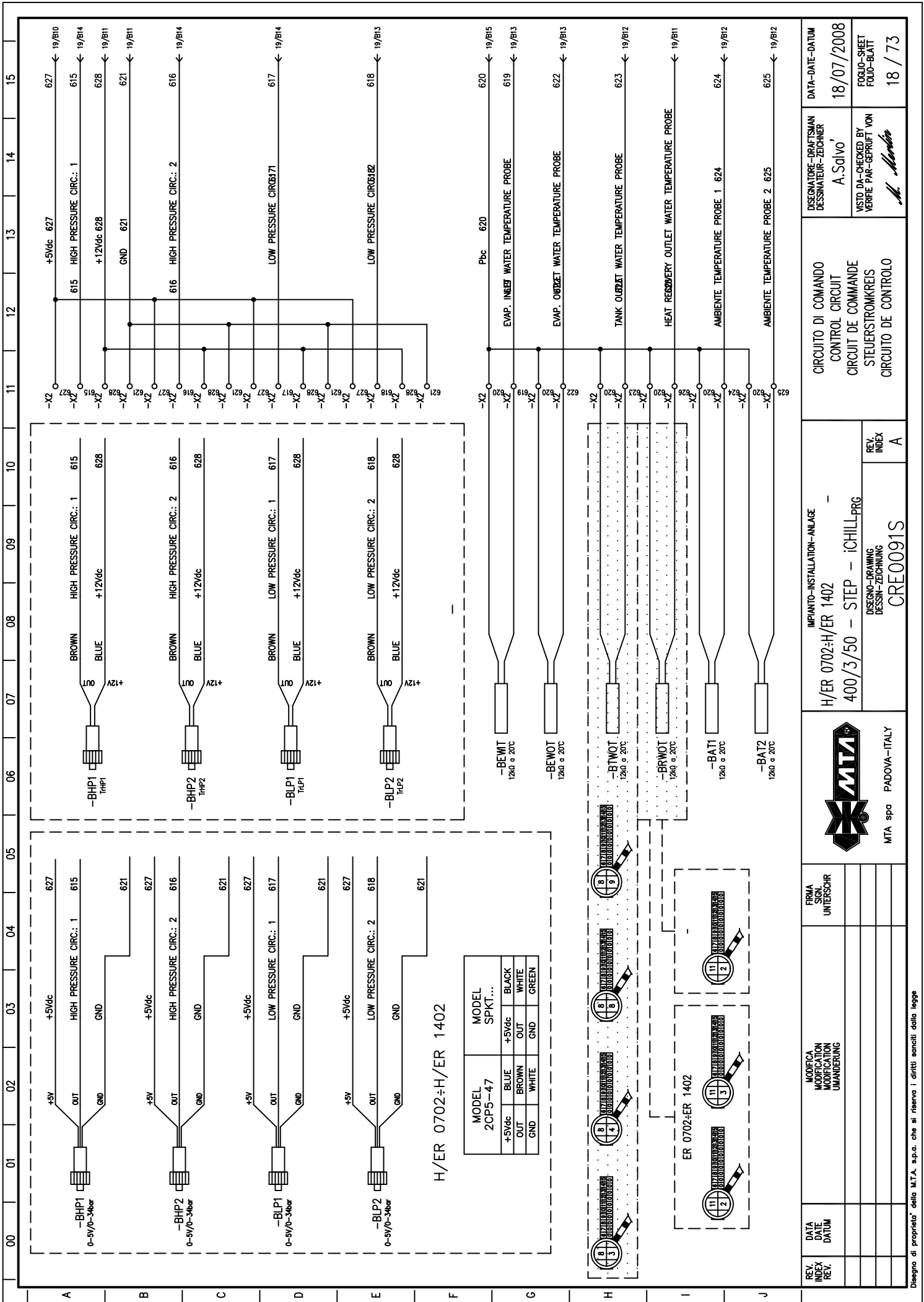


REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION UMWANDERUNG	FIRMA SIGN. UNTERSCHR.	IMPIANTO-INSTALLATION-ANLAGE	CIRCUITO DI COMANDO CONTROL CIRCUIT CIRCUIT DE COMMANDE STEUERSTROMKREIS CIRCUITO DE CONTROLLO		DISEGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER	DATA-DATE-DATUM
				H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILL-PRG			A. Solvo'	18/07/2008
				DISEGNO-DRAWING DESSIN-ZEICHNUNG CRE0091S			VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON	FOGLIO-SHEET FOLIO-BLATT
							M. Martin	11 / 73



REV. INDEX	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMWANDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE	CIRCUITO DI COMANDO CONTROL CIRCUIT CIRCUIT DE COMMANDE STEUERSTROMKREIS CIRCUITO DE CONTROLLO		DESIGNA-TORE-DRAFTSMAN DESSINATEUR-ZEICHNER	DATA-DATE-DATUM
				H/ER 0702÷H/ER 1402	-		A. Solvo'	18/07/2008
				400/3/50 - STEP - iCHILL-PRG	REV. INDEX		VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON	FOLIO-SHEET FOLIO-BLATT
				CRE0091S	A		M. Martin	14 / 73





15	7/G15	602	Z09 AC 24V	Z09	X2	609	G	POWER SUPPLY (+24Vac)	-A1 INPUT
	7/H15	600	009	009	X2	601	G0	POWER SUPPLY REFERENCE (0)	
	18/F15	620	Pbc	029			PbC	COMMON Pb1 + Pb10	
	18/A15	615	HIGH PRESSURE CIRC.:1	519			Pb1	HIGH PRESSURE CIRC.:1	
	18/B15	616	HIGH PRESSURE CIRC.:2	919			Pb2	HIGH PRESSURE CIRC.:2	
	18/D15	617	LOW PRESSURE CIRC.:1	119			Pb3	LOW PRESSURE CIRC.:1	
	18/E15	618	LOW PRESSURE CIRC.:2	819			Pb4	LOW PRESSURE CIRC.:2	
	18/G15	619	EVAP. INLET WATER TEMPERATURE PROBE	619			Pb5	EVAP. INLET WATER TEMPERATURE PROBE	
	18/G15	622	EVAP. OUTLET WATER TEMPERATURE PROBE	229			Pb6	EVAP. OUTLET WATER TEMPERATURE PROBE	
	18/H15	623	TANK OUTLET WATER TEMPERATURE PROBE	529			Pb7	TANK OUTLET WATER TEMPERATURE PROBE	
	18/J15	624	AMBIENT 1 TEMPERATURE PROBE	429			Pb8	AMBIENT TEMPERATURE 1 PROBE	
	18/J15	625	AMBIENT 2 TEMPERATURE PROBE	929			Pb9	AMBIENT TEMPERATURE 2 PROBE	
	18/I15	626	HEAT RECOVERY OUTLET WATER TEMPERATURE PROBE	929			Pb10	HEAT RECOVERY OUTLET WATER TEMP. PROBE	
	18/B15	621	GND	129			GND	GND	
	18/B15	628	829 +12Vdc	829	X2		+12V	+12V	
	18/A15	627	+5Vdc	129			+5V	+5V	
	8/B15	605	PUMP 2	509			Out1	PUMP 2	
				613	X2		Out2	INVERTER PUMP	
				612	X2		Out3	FANS SPEED REGULATOR CIRC.:1	
				611	X2		Out4	FANS SPEED REGULATOR CIRC.:2	
	16/C15	610	019 FREON SOLENOID VALVE 1	019	X2		Out5	MULTIFUNCTION OUTLET 1	
	16/D15	609	609 FREON SOLENOID VALVE 2	609	X2		Out6	MULTIFUNCTION OUTLET 2	
				608	X2		TF1	-	
				607	X2		TF2	-	
				606	X2		+12V	+12V	
	16/I15	604	GND	604			GND	GND	
	17/I15	639	GND	639	X2		GND	GND	
	16/B15	629	REMOTE ON/OFF	629			ID1	START/STOP	
	16/B15	630	CH/HP	039			ID2	SUMMER/WINTER	
	16/B15		WATER DIFFERENTIAL PRESSURE SWITCH	159			ID3	WATER DIFF. PRESSURE SWITCH	
	7/C07		TANK LEVEL	239			ID4	TANK LEVEL	
	16/A15	633	CIRC.:1 HP ALARM	539			ID5	HIGH PRESSURE SWITCH CIRC.:1	
	16/A15	634	CIRC.:2 HP ALARM	439			ID6	HIGH PRESSURE SWITCH CIRC.:2	
	17/B15	635	FANS 1 ALARM	539			ID7	CIRC.:1 FANS OVERLOAD	
	17/C15	636	FANS 2 ALARM	939			ID8	CIRC.:2 FANS OVERLOAD	
	7/C07	637	PUMP 1 OVERLOAD	139			ID9	PUMP 1 OVERLOAD	
	7/C07	638	PUMP 2 OVERLOAD	839			ID10	PUMP 2 OVERLOAD	
	17/A15	640	COMPRESSOR -MC1 ALARM	049			ID11	COMPRESSOR -MC1 OVERLOAD	
	17/B15	641	COMPRESSOR -MC2 ALARM	149			ID12	COMPRESSOR -MC2 OVERLOAD	
	17/B15	642	COMPRESSOR -MC3 ALARM	249			ID13	COMPRESSOR -MC3 OVERLOAD	
	17/B15	643	COMPRESSOR -MC4 ALARM	549			ID14	COMPRESSOR -MC4 OVERLOAD	
	16/B15	644	SET POINT 1/2	449			ID15	SET POINT 1/SET POINT 2	
	16/C15	645	HEAT RECOVERY CIRC.:1	549			ID16	HEAT RECOVERY CIRC.: 1	
	16/C15	646	HEAT RECOVERY CIRC.:2	949			ID17	HEAT RECOVERY CIRC.: 2	
				647	X2		ID18	-	
	17/A15	648	ELECTRICAL SUPPLY FAILURE	648			ID19	ELECTRICAL SUPPLY FAILURE	
				649	X2		ID20	PUMP 3 OVERLOAD	
				639	X2		GND	GND	
14									
13									
12									
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09									
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06									
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A	B	C	D	E	F	G	H	I	J

DATA-DATE-DATUM	18/07/2008	FOGLIO-SHEET FOLIO-BLATT	19 / 73
DISEGNAIORE-DRAFTSMAN DESSINATEUR-ZEICHNER	A. Salvo	VISTO DA-CHECKED BY VERIFIE PAR-GEPRUEFT VON	M. Martin
CIRCUITO DI COMANDO CONTROL CIRCUIT CIRCUIT DE COMMANDE STEUERSTROMKREIS CIRCUITO DE CONTROL			
IMPIANTO-INSTALLATION-ANLAGE	H/ER 0702:H/ER 1402	REV. INDEX	A
400/3/50 - STEP - iCHILL-PRG			
DISEGNO-DRAWING DESSIN-ZEICHNUNG	CRE0091S		
MTA	PADOVA-ITALY		
MTA spa			
FIRMA SIGN UNTERSCHR			
MODIFICA MODIFICATION UMÄNDERUNG			
DATA DATE DATUM			
REV. INDEX REV.			

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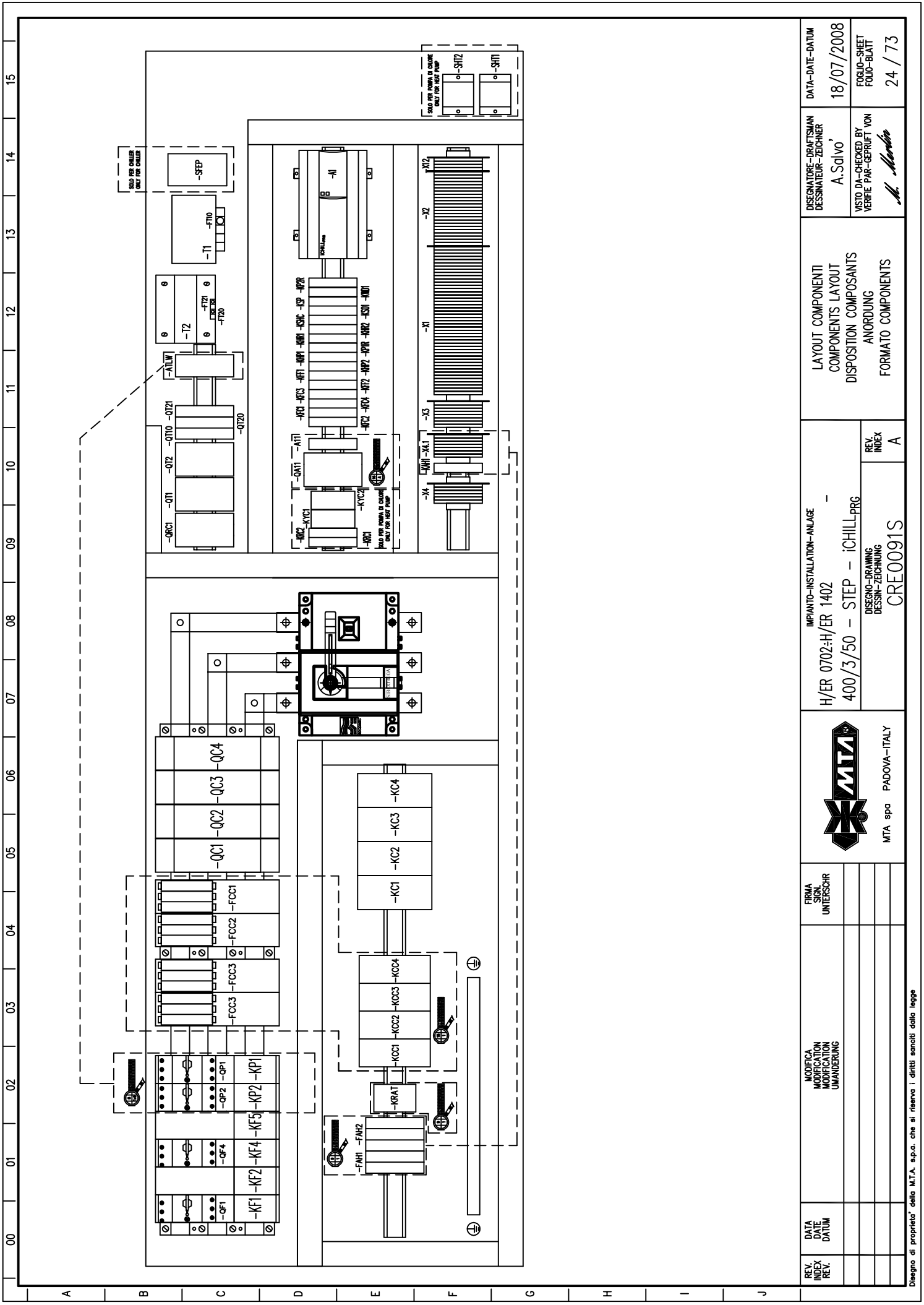
REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION ÄNDERUNG	FIRMA SIGN. UNTERSCHR.	 MTA spa PADOVA-ITALY	IMPianto-INSTALLATION-ANLAGE H/ER 0702-H/ER 1402 400/3/50 - STEP - ICHILL PRG	MORSETTIERA TERMINAL BLOCKS BORNE ANSCHLUBKASTEN BLOQUEO DE TERMINALES	DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER	DATA-DATE-DATUM
							A.Salvo	18/07/2008
							VISTO DA-CHECKED BY VERIFIÉ PAR-GEPRÜFT VON	FOLIO-SHEET FOLIO-BLATT
							<i>A. Salvo</i>	21 / 73

[illegible]

REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION ÄNDERUNG	FRMA SIGN. UNTERSCHR	 MTA spa PADOVA-ITALY	IMPianto-INSTALLATION--ANLAGE H/ER 0702:H/ER 1402 400/3/50 -- STEP -- iCHILL PRG	MORSETTIERA TERMINAL BLOCKS BORNE ANSCHLUßKASTEN BLOQUEO DE TERMINALES	DESIGNATORE--DRAFTSMAN DESSINATEUR--ZEICHNER	DATA--DATE--DATUM
							A.Salvo	18/07/2008
							VISTO DA--CHECKED BY VERKE PAR--GEPRÜFT VON	FOLIO--SHEET FOLIO--BLATT
							<i>M. Morin</i>	22 / 73

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REV. INDEX REV.	DATA DATE DATUM	MODIFICA SIGNIFICATION MODIFICATION UMÄNDERUNG	FIRMA SIGNATURE UNTERSCHRIFT	 MTA spa PADOVA-ITALY	IMPianto-INSTALLATION--ANLAGE H/ER 0702:H/ER 1402 - 400/3/50 - STEP - iCHILLPRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S REV. INDEX A	MORSETTIERA TERMINAL BLOCKS BORNE ANSCHLUßKASTEN BLOQUEO DE TERMINALES	DESIGNATORE--DRAFTSMAN DESSINAUTEUR--ZEICHNER A.Salvo'	DATA--DATE--DATUM 18/07/2008
							VISTO DA-CHECKED BY VERFUE PAR-GEPRÜFT VON <i>M. Morbin</i>	FOGLIO-SHEET FOLIO-BLAATT 23 / 73



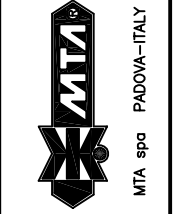
DATA-DATE-DATUM
18/07/2008
FOLIO-SHEET
24 / 73

DESIGN-TITLE-DRAFTSMAN
A. Solvo
VERIFIED BY
M. Martin

LAYOUT COMPONENTS
COMPONENTS LAYOUT
DISPOSITION COMPOSANTS
ANORDNUNG
FORMATO COMPONENTS

IMPIANTO-INSTALLATION-ANLAGE
H/ER 0702-H/ER 1402
400/3/50 - STEP - iCHILL-PRG
DESIGN-DRAWING
DESSIN-ZEICHNUNG
CRE0091S

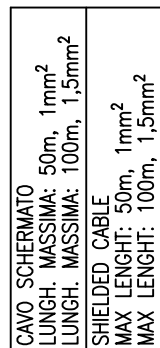
REV. INDEX
A



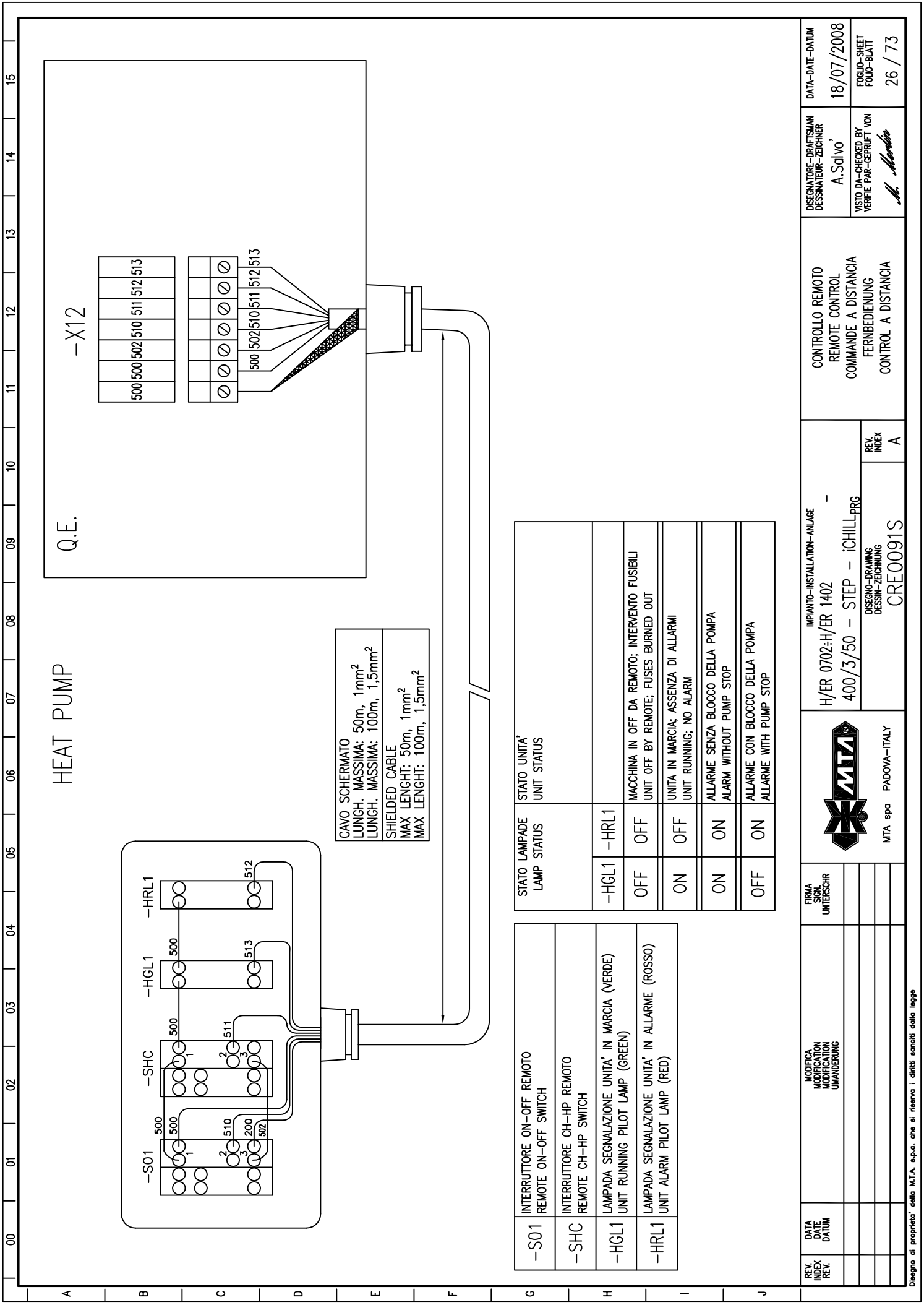
FIRMA
SIGN
UNTERSCHR

MODIFICA
MODIFICATION
MODIFICATION
UMÄNDERUNG

DATA
DATE
DATUM



STATO LAMPADINE LAMP STATUS	STATO UNITA' UNIT STATUS
—HGL1 —HRL1	
OFF	MACCHINA IN OFF DA REMOTO; INTERVENTO FUSIBILI UNIT OFF BY REMOTE; FUSES BURNED OUT
ON	UNITA IN MARCIA; ASSENZA DI ALLARMI UNIT RUNNING; NO ALARM
ON	ALLARME SENZA BLOCCO DELLA POMPA ALARM WITHOUT PUMP STOP
OFF	ALLARME CON BLOCCO DELLA POMPA ALLARME WITH PUMP STOP



	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15										
A	(1 *)	VERSIONE N/H N/H VERSION VERSION N/H N/H VERSION VERSION N/H DFHBFYN N/H				COLLEGAMENTO A TRIANGOLO DELTA CONNECTION COMMUTATION TRIANGLE △ SCHALTUNG CONEXION TRIANGULO GJLRK > XYBT NBGF \$NTEUJ KMYBR\$				VERSIONE SN/SSN SN/SSN VERSION VERSION SN/SSN SN/SSN VERSION VERSION SN/SSN DFHBFYN SN/SSN				COLLEGAMENTO A STELLA STAR CONNECTION COMMUTATION ETOILE Y-SCHALTUNG CONEXION ESTREILA GJLRK > XYBT NBGF \$PDTPLF\$				TK	W2	U2	V2	⊕	L1	L2	L3	PE
B																		TK	W1	V1	W1	⊕	L1	L2	L3	PE
C	(3 *)	COMANDO ESTERNO A CURA CLIENTE -- UTILIZZARE CAVO SCHERMATO MAX 50 METRI 1mm ² / MAX 100 METRI 1,5mm ² EXTERNAL COMMAND BY CUSTOMER -- TO UTILIZE SHIELED CABLE - MAX 50 METERS 1mm ² / MAX 100 METERS 1,5mm ²																								
D	(5 *)	SOLO PER POMPA DI CALORE ONLY FOR HEAT PUMP																								
E	-	NJ KMJR J LKZ NTGKCJD { YFCJCJD																								
F	-																									
G	-																									
H	-																									
I	-																									
J	-																									

REV. INDEX	DATA DATE	MODIFICA MODIFICATION UMÄNDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILLPRG	NOTE NOTES NOTE NOTE NOTAS	DISEGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Salvo'	DATA-DATE-DATUM 18/07/2008
				DISEGNO-DRAWING DESSIN-ZEICHNUNG CRE0091S		VISTO DA-CHECKED BY VERFE PAR-GEPRÜFT VON <i>M. Merlo</i>	FOLIO-SHEET FOLIO-BLAIT 27 / 73

Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

00		01		02		03		04		05		06		07		08		09		10		11		12		13		14		15	
SIGLA		POSIZIONE		DENOMINAZIONE		DENOMINAZIONE		SIGLA		POSIZIONE		DENOMINAZIONE		SIGLA		POSIZIONE		DENOMINAZIONE		SIGLA		POSIZIONE		DENOMINAZIONE		SIGLA		POSIZIONE		DENOMINAZIONE	
-A1		19/G15		SCHEDA ELETTRONICA																											
-A11		2/G11		RELE' MANCANZA/SEQUENZA FASE																											
-BAT1		18/I08		SONDA TEMPERATURA AMBIENTE																											
-BAT2		18/I08		SONDA TEMPERATURA AMBIENTE																											
-BEWIT		18/F08		SONDA TEMPERATURA ACQUA INGRESSO EVAPORATORE																											
-BEWOT		18/G08		SONDA TEMPERATURA ACQUA USCITA EVAPORATORE																											
-BHP1		18/A07		TRASDUTTORE ALTA PRESSIONE																											
-BHP2		18/B07		TRASDUTTORE ALTA PRESSIONE																											
-BLP1		18/D07		TRASDUTTORE BASSA PRESSIONE																											
-BLP2		18/E07		TRASDUTTORE BASSA PRESSIONE																											
-BRWOT		18/I08		SONDA TEMPERATURA USCITA ACQUA RECUPERATORE																											
-BTWOT		18/H08		SONDA TEMPERATURA ACQUA USCITA SERBATOIO																											
-FP2R		8/F13		FILTRO RC																											
-HGL1		9/G03		LAMPADA DI SEGNALEZIONE																											
-HRL1		9/F03		LAMPADA DI SEGNALEZIONE																											
-KC1		12/G04		CONTATTORE COMPRESSORE																											
-KC2		12/G06		CONTATTORE COMPRESSORE																											
-KC3		12/G08		CONTATTORE COMPRESSORE																											
-KC4		12/G09		CONTATTORE COMPRESSORE																											
-KF1		12/G10		CONTATTORE VENTILATORE																											
-KF2		12/G12		CONTATTORE VENTILATORE																											
-KF4		12/G13		CONTATTORE VENTILATORE																											
-KF5		12/G15		CONTATTORE VENTILATORE																											
-KFC1		10/G09		RELE' PROTEZIONE TERMICA COMPRESSORE																											
-KFC2		10/G12		RELE' PROTEZIONE TERMICA COMPRESSORE																											
-KFC3		11/G09		RELE' PROTEZIONE TERMICA COMPRESSORE																											
-KFC4		11/G12		RELE' PROTEZIONE TERMICA COMPRESSORE																											
-KFF1		10/G14		RELE' ALLARME VENTILATORI																											

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
	INITIALS	POSITION	DENOMINATION													
A	-A1	19/G15	ELECTRONIC BOARD													
	-A11	2/G11	PHASE MONITOR RELAY													
	-BAT1	18/J08	AMBIENT TEMPERATURE PROBE													
B	-BAT2	18/J08	AMBIENT TEMPERATURE PROBE													
	-BEWIT	18/F08	EVAPORATOR INTLET WATER TEMPERATURE PROBE													
	-BHP1	18/A07	HIGH PRESSURE TRANSDUCER													
	-BHP2	18/B07	HIGH PRESSURE TRANSDUCER													
	-BLP1	18/D07	LOW PRESSURE TRANSDUCER													
	-BLP2	18/E07	LOW PRESSURE TRANSDUCER													
	-BRWOT	18/I08	RECOVERY OUTLET WATER TEMPERATURE PROBE													
C	-BTWOT	18/H08	TANK OUTLET WATER TEMPERATURE PROBE													
	-FP2R	8/F13	RC FILTER													
D	-HGL1	9/G03	INDICATING LAMP													
	-HRL1	9/F03	INDICATING LAMP													
	-KC1	12/G04	COMPRESSOR CONTACTOR													
	-K2	12/G06	COMPRESSOR CONTACTOR													
	-KC3	12/G08	COMPRESSOR CONTACTOR													
	-K4	12/G09	COMPRESSOR CONTACTOR													
	-KF1	12/G10	FAN CONTACTOR													
E	-KF2	12/G12	FAN CONTACTOR													
	-KF4	12/G13	FAN CONTACTOR													
F	-KF5	12/G15	FAN CONTACTOR													
	-KFC1	10/G09	COMPRESSOR OVERLOAD PROTECTION RELAY													
G	-KFC2	10/G12	COMPRESSOR OVERLOAD PROTECTION RELAY													
	-KFC3	11/G09	COMPRESSOR OVERLOAD PROTECTION RELAY													
	-KFC4	11/G12	COMPRESSOR OVERLOAD PROTECTION RELAY													
	-KFF1	10/G14	FANS ALARM RELAY													
	-KFF2	11/G14	FANS ALARM RELAY													
	-KHP1	10/H03	HIGH PRESSURE RELAY													
	-KHP2	11/H03	HIGH PRESSURE RELAY													
H	-KHR1	15/H04	HEAT RECOVERY RELAY													
	-KHR2	15/H08	HEAT RECOVERY RELAY													
I	-KP1R	8/F12	PUMP RELAY													
	-KP2R	8/F14	PUMP RELAY													
J	-KRC1/-KRC2	13/E09-13/E14	REVERSE CYCLE SOLENOID VALVE RELAY													
	-KS01	9/G14	ON/OFF RELAY													
	-KSHC	9/G12	CH/HP RELAY													
	-KSP	15/H01	SET POINT1/SET POINT2 RELAY													
	-KWD1	15/H14	WATER DIFFERENTIAL RELAY													
	-KYC1/-KYC2	13/G04-13/G10	TIMER													
	-KYF1/-FYF1	16/G13-16/G12	FREON SOLENOID VALVE RELAY													
K	-KYF2/-FYF2	16/G15-16/G14	FREON SOLENOID VALVE RELAY													
	-MC1	3/G02	COMPRESSOR													
	-MC2	3/G09	COMPRESSOR													
	-MC3	4/G02	COMPRESSOR													
	-MC4	4/G09	COMPRESSOR													
	-MF1	5/H01	FAN													
	-MF2	5/H05	FAN													
L	-MF3	5/H03	FAN													
IMPianto - INSTALLATION - ANLAGE																
H/ER 0702-H/ER 1402																
400 /3/50 – STEP – iCHILL PPG																
DESIGNO-DRAWING																
DESSIN-ZEICHNUNG																
CRE0091S																
REV. INDEX																
A																
NOMENCLATURA																
LEGENDA																
NOMENCLATURE																
NOMENKLATUR																
NOMENCLOSURE																
DESIGNATEUR-DRAFTSMAN																
DESSINATEUR-ZEICHNER																
A.Solvo'																
VISTO DA-CHECKED BY																
VERIFÉ PAR-GEPRÜFT VON																
M. Merino																
DATA-DATE-DATUM																
18/07/2008																
FOGLO-SHEET																
FOLIO-BLAATT																
30 / 73																

00		01		02		03		04		05		06		07		08		09		10		11		12		13		14		15	
SIGLE		POSITION		DENOMINACION		DENOMINACION		SIGLE		POSITION		DENOMINACION		SIGLE		POSITION		DENOMINACION		SIGLE		POSITION		DENOMINACION		SIGLE		POSITION		DENOMINACION	
-A1		19/G15		CARTÉ ELECTRONIQUE		-		-A11		2/G11		-		-MF4		5/H09		VENTILATEUR		-MF5		5/H13		VENTILATEUR		-MF6		5/H11		VENTILATEUR	
-BAT1		18/J08		SONDE TEMPERATURE AMBIANTE		-		-BAT2		18/J08		SONDE TEMPERATURE AMBIANTE		-MFEP1		8/E11		VENTILATEUR PANNEAU ELECTRIQUE		-Q0		2/A08		SECTIONNEUR		-QC1		3/B02		INTERRUPTEUR AUTOMATIQUE COMPRESSEUR	
-BEWIT		18/F08		SONDE TEMPERATURE ENTREE EAU EVAPORATEUR		-		-BHP1		18/A07		TRANSDUCTEUR DE PRESSION HAUTE		-QC2		3/B09		INTERRUPTEUR AUTOMATIQUE COMPRESSEUR		-QC3		4/B02		INTERRUPTEUR AUTOMATIQUE COMPRESSEUR		-QC4		4/B09		INTERRUPTEUR AUTOMATIQUE COMPRESSEUR	
-BHP2		18/B07		TRANSDUCTEUR DE PRESSION HAUTE		-		-BLP1		18/D07		TRANSDUCTEUR DE PRESSION BASSE		-QF1		5/B01		DISJONCTEUR H.P.C. VENTILATEUR		-BLP2		18/E07		TRANSDUCTEUR DE PRESSION BASSE		-QF4		5/B09		DISJONCTEUR H.P.C. VENTILATEUR	
-BRWOT		18/I08		SONDE TEMPERATURE SORTIE EAU DU RECUPERATEUR		-		-BTWOT		18/H08		SONDE TEMPERATURE SORTIE EAU RESERVOIRE		-QA11		2/C11		DISJONCTEUR H.P.C.		-BRWOT		18/I08		SONDE TEMPERATURE SORTIE EAU DU RECUPERATEUR		-QRC1		8/A02		DISJONCTEUR H.P.C.	
-FP2R		8/F13		FILTRE RC		-		-HGL1		9/G03		LAMPE DE SIGNALISATION		-QT1		7/B08		DISJONCTEUR H.P.C.		-HGL1		9/G03		LAMPE DE SIGNALISATION		-QT10		7/E09		DISJONCTEUR H.P.C.	
-HRL1		9/F03		LAMPE DE SIGNALISATION		-		-KC1		12/G04		CONTACTEUR COMPRESSEUR		-QT2		7/B12		DISJONCTEUR H.P.C.		-HRL1		9/F03		LAMPE DE SIGNALISATION		-QT20		7/E12		DISJONCTEUR H.P.C.	
-KC2		12/G06		CONTACTEUR COMPRESSEUR		-		-KC3		12/G08		CONTACTEUR COMPRESSEUR		-QT21		7/E13		DISJONCTEUR H.P.C.		-KC3		12/G08		CONTACTEUR COMPRESSEUR		-RC1		8/F02		-	
-KC4		12/G09		CONTACTEUR COMPRESSEUR		-		-KF1		12/G10		CONTACTEUR VENTILATEUR		-RC2		8/F03		-		-KF2		12/G12		CONTACTEUR VENTILATEUR		-RC3		8/F04		-	
-KF2		12/G12		CONTACTEUR VENTILATEUR		-		-KF4		12/G13		CONTACTEUR VENTILATEUR		-RC4		8/F05		-		-KF4		12/G13		CONTACTEUR VENTILATEUR		-S01		9/B03		COMMUTEUR	
-KF5		12/G15		CONTACTEUR VENTILATEUR		-		-KFC1		10/G09		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-S1HP1		10/A04		PRESSOSTAT HAUTE PRESSION		-KFC1		10/G09		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-S1HP2		11/A04		PRESSOSTAT HAUTE PRESSION	
-KFC2		10/G12		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-		-KFC3		11/G09		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-S2HP1		10/C04		PRESSOSTAT HAUTE PRESSION		-KFC3		11/G09		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-S2HP2		11/D04		PRESSOSTAT HAUTE PRESSION	
-KFC4		11/G12		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-		-KFF1		10/G14		RELAIS ALARME VENTILATEURS		-SFEP		8/C11		THERMOSTAT DU TABLEAU		-KFC4		11/G12		RELAIS PROTECTION THERMIQUE COMPRESSEUR		-SFEF		8/C11		THERMOSTAT DU TABLEAU	
-KFF1		10/G14		RELAIS ALARME VENTILATEURS		-		-KFF2		11/G14		RELAIS ALARME VENTILATEURS		-SFS1		15/E12		FLUXOSTAT		-KFF2		11/G14		RELAIS ALARME VENTILATEURS		-SHC		9/D03		COMMUTEUR	
-KHP1		10/H03		RELAIS HAUTE PRESSION		-		-KHP2		11/H03		RELAIS HAUTE PRESSION		-SHT1		10/F04		THERMOSTAT TEMPERATURE DEBIT COMPRESSEUR		-KHP1		10/H03		RELAIS HAUTE PRESSION		-SHT2		11/F04		THERMOSTAT TEMPERATURE DEBIT COMPRESSEUR	
-KHR1		15/H04		RELAIS RECUPERATION DE CHALEUR		-		-KHR2		15/H08		RELAIS RECUPERATION DE CHALEUR		-SWD1		15/B14		PRESSOSTAT DIFFERENTIEL EAU		-KHR1		15/H04		RELAIS RECUPERATION DE CHALEUR		-T1		7/D08		TRANSFORMATEUR	
-KP1R		8/F12		RELAIS POMPE		-		-KP2R		8/F14		RELAIS POMPE		-X1÷-X12		7/D12		TRANSFORMATEUR		-KP1R		8/F12		RELAIS POMPE		-T2		7/D12		TRANSFORMATEUR	
-KRC1/-KRC2		13/E09-13/E14		RELAIS ELECTROVANNE INVERSION DU CYCLE		-		-KRC1/-KRC2		13/E09-13/E14		RELAIS ELECTROVANNE INVERSION DU CYCLE		-YC1		13/G05		ELECTROVANNE DE VIDAGE DU RESERVOIR		-KRC1/-KRC2		13/E09-13/E14		RELAIS ELECTROVANNE INVERSION DU CYCLE		-YC2		13/G11		ELECTROVANNE DE VIDAGE DU RESERVOIR	
-KS01		9/G14		RELAIS ON/OFF		-		-KS01		9/G14		RELAIS ON/OFF		-YF1		12/G00		ELECTRO-VANNE FREON		-KS01		9/G14		RELAIS ON/OFF		-YF2		12/G02		ELECTRO-VANNE FREON	
-KSHC		9/G12		-		-		-KSHC		9/G12		-		-YF11/-YF21		13/G01-13/G02		ELECTROVANNE FREON LIQUIDE		-KSHC		9/G12		-		-YHR1		14/G03		ELECTROVANNE	
-KSP		15/H01		-		-		-KSP		15/H01		-		-YHR11		14/G01		ELECTROVANNE		-KSP		15/H01		-		-YHR12		14/G04		ELECTROVANNE	
-KWD1		15/H14		RELAIS DIFFERENTIEL EAU		-		-KWD1		15/H14		RELAIS DIFFERENTIEL EAU		-YHR2		14/G12		ELECTROVANNE		-KWD1		15/H14		RELAIS DIFFERENTIEL EAU		-YHR21		14/G10		ELECTROVANNE	
-KYC1/-KYC2		13/G04-13/G10		TEMPORISEUR		-		-KYC1/-KYC2		13/G04-13/G10		TEMPORISEUR		-YHR22		14/G13		ELECTROVANNE		-KYC1/-KYC2		13/G04-13/G10		TEMPORISEUR		-YRC1		13/F09		ELECTRO-VANNE INVERSION CYCLE	
-KYF1/-KYF1		16/G13-16/G12		RELAIS ELECTROVANNE FREON		-		-KYF1/-KYF1		16/G13-16/G12		RELAIS ELECTROVANNE FREON		-YRC2		13/F13		BORNE DE TERRE		-KYF1/-KYF1		16/G13-16/G12		RELAIS ELECTROVANNE FREON		-YRC2		13/F13		BORNE DE TERRE	
-KYF2/-KYF2		16/G15-16/G14		RELAIS ELECTROVANNE FREON		-		-KYF2/-KYF2		16/G15-16/G14		RELAIS ELECTROVANNE FREON		PE						-		-		-		-		-		-	
-MC1		3/G02		COMPRESSEUR		-		-MC1		3/G02		COMPRESSEUR								-		-		-		-		-		-	
-MC2		3/G09		COMPRESSEUR		-		-MC2		3/G09		COMPRESSEUR								-		-		-		-		-		-	
-MC3		4/G02		COMPRESSEUR		-		-MC3		4/G02		COMPRESSEUR								-		-		-		-		-		-	
-MC4		4/G09		COMPRESSEUR		-		-MC4		4/G09		COMPRESSEUR								-		-		-		-		-		-	
-MF1		5/H01		VENTILATEUR		-		-MF1		5/H01		VENTILATEUR								-		-		-		-		-		-	
-MF2		5/H05		VENTILATEUR		-		-MF2		5/H05		VENTILATEUR								-		-		-		-		-		-	
-MF3		5/H03		VENTILATEUR		-		-MF3		5/H03		VENTILATEUR								-		-		-		-		-		-	

REV. INDEX REV.		DATA DATE DATUM		MODIFICA MODIFICATION MODIFICATION		FIRMA SIGNATURE UNTERSCHR		IMPANTO-INSTALLATION-ANLAGE		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DESSIN-ZEICHNUNG		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNO-DRAWING DE	
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SIEGEL		STELLUNG		BEZEICHNUNG																											
-A1		19/G15		ELEKTRONISCHES PLATINE																											
-A11		2/G11		PHASE MONITOR RELAIS																											
-BAT1		18/J08		UMGEBUNGSTEMPERATUR SONDE																											
-BAT2		18/J08		UMGEBUNGSTEMPERATUR SONDE																											
-BEWIT		18/F08		VERDAMPFER EINGANG-FUEHLER																											
-BEWOT		18/G08		VERDAMPFER AUSGANGSONDE																											
-BHP1		18/A07		HOCHDRUCKMESSGER?T																											
-BHP2		18/B07		HOCHDRUCKMESSGER?T																											
-BLP1		18/D07		NIEDERDRUCKMESSGER?T																											
-BLP2		18/E07		NIEDERDRUCKMESSGER?T																											
-BRWOT		18/J08		TEMPERATURSONDE DES RECUPERATORAUSLASSWASSER																											
-BTWOT		18/H08		-																											
-FP2R		8/F13		FILTER RC																											
-HGL1		9/G03		SIGNALLAMPE																											
-HRL1		9/F03		SIGNALLAMPE																											
-KC1		12/G04		VERDICHTER MOTORSCHUTZ																											
-KC2		12/G06		VERDICHTER MOTORSCHUTZ																											
-KC3		12/G08		VERDICHTER MOTORSCHUTZ																											
-KC4		12/G09		VERDICHTER MOTORSCHUTZ																											
-KF1		12/G10		VENTILATORSCHALTER																											
-KF2		12/G12		VENTILATORSCHALTER																											
-KF4		12/G13		VENTILATORSCHALTER																											
-KF5		12/G15		VENTILATORSCHALTER																											
-KFC1		10/G09		KOMPRESSORW?RMESCHUTZRELAIS																											
-KFC2		10/G12		KOMPRESSORW?RMESCHUTZRELAIS																											
-KFC3		11/G09		KOMPRESSORW?RMESCHUTZRELAIS																											
-KFC4		11/G12		KOMPRESSORW?RMESCHUTZRELAIS																											
-KFF1		10/G14		-																											
-KFF2		11/G14		-																											
-KHP1		10/H03		HOCHDRUCKRELAIS																											
-KHP2		11/H03		HOCHDRUCKRELAIS																											
-KHR1		15/H04		RELAIS W?RMER?CKGEWINNUNG																											
-KHR2		15/H08		RELAIS W?RMER?CKGEWINNUNG																											
-KP1R		8/F12		PUMPE RELAIS																											
-KP2R		8/F14		PUMPE RELAIS																											
-KRC1/-KRC2		13/E09-13/E14		MAGNETVENTIL RELAIS W?RMEPUMPENSCHALTUNG																											
-KS01		9/G14		RELAIS ON/OFF																											
-KSHC		9/G12		CH/HP RELAIS																											
-KSP		15/H01		-																											
-KWD1		15/H14		RELAIS WASSERDIFFERENTIAL																											
-KYC1/-KYC2		13/G04-13/G10		ZEITGEBER																											
-KYF1/-FYF1		16/G13-16/G12		FREONMAGNETVENTIL RELAIS																											
-KYF2/-FYF2		16/G15-16/G14		FREONMAGNETVENTIL RELAIS																											
-MC1		3/G02		KOMPRESSOR																											
-MC2		3/G09		KOMPRESSOR																											
-MC3		4/G02		KOMPRESSOR																											
-MC4		4/G09		KOMPRESSOR																											
-MF1		5/H01		VENTILATOR																											
-MF2		5/H05		VENTILATOR																											
-MF3		5/H03		VENTILATOR																											

REV. INDEX		DATA DATE		MODIFICA MODIFICATION		FIRMA SIGNATURE		IMPianto-INSTALLATION-ANLAGE		NOMENCLATURA		DESIGNATORE-DRAFTSMAN		DATA-DATE-DATUM	
								H/ER 0702-H/ER 1402		LEGENDA		A.Solvo'		18/07/2008	
								400/3/50 - STEP - iCHILL-PPG		NOMENCLATURE		VISTO DA-CHECKED BY		FOLIO-SHEET	
								DESIGNO-DRAWING		NOMENKLATUR		VERIFIE PAR-GEPRÜFT VON		32 / 73	
								CRE0091S		NOMENKLATURE		M. Merino			

Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

A		B		C		D		E		F		G		H		I		J																																																																																																																																																																																																																																																																																																																																																																																																																																							
-MF4		5/H09		5/H13		5/H11		SCHALTAFELVENTILATOR		TRENNSCHALTER		AUTOMASTICHE SCHUTZSCHALTER KOMPRESSOR		AUTOMASTICHE SCHUTZSCHALTER KOMPRESSOR		AUTOMASTICHE SCHUTZSCHALTER KOMPRESSOR		AUTOMASTICHE SCHUTZSCHALTER KOMPRESSOR		SELBSTSCHALTER VENTILATOR		SELBSTSCHALTER VENTILATOR		SELBSTSCHALTER		SELBSTSCHALTER		SELBSTSCHALTER		SELBSTSCHALTER		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-</	

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SIGLA		POSICION		DENOMINACION												SIGLA		POSICION		DENOMINACION											
-A1		19/G15		TARJETA ELECTRONICA												-MF4		5/H09		VENTILADOR											
-A11		2/G11		-												-MF5		5/H13		VENTILADOR											
-BAT1		18/J08		SONDA TEMPERATURA AMBIENTAL												-MF6		5/H11		VENTILADOR											
-BAT2		18/J08		SONDA TEMPERATURA AMBIENTAL												-MFEP1		8/E11		VENTILADOR CUADRO ELECTRICO											
-BEWOT		18/F08		SONDA TEMPERATURA ENTRADA AGUA EVAPORADOR												-Q0		2/A08		SECCIONADOR											
-BHP1		18/A07		SONDA TEMPERATURA SALIDA AGUA EVAPORADOR												-QC1		3/B02		INTERRUPTOR AUTOMATICO COMPRESOR											
-BHP2		18/B07		TRANSDUCTOR DE PRESION ALTA												-QC2		3/B09		INTERRUPTOR AUTOMATICO COMPRESOR											
-BLP1		18/D07		TRANSDUCTOR DE PRESION BAJA												-QC3		4/B02		INTERRUPTOR AUTOMATICO COMPRESOR											
-BLP2		18/E07		TRANSDUCTOR DE PRESION BAJA												-QC4		4/B09		INTERRUPTOR AUTOMATICO COMPRESOR											
-BRWOT		18/J08		SONDA TEMPERATURA SALIDA AGUA RECUPERADOR												-QF1		5/B01		INTERRUPTOR AUTOMATICO VENTILADOR											
-BTWOT		18/H08		SONDA TEMPERATURA SALIDA AGUA TANQUE												-QF4		5/B09		INTERRUPTOR AUTOMATICO VENTILADOR											
-FP2R		8/F13		FILTRO RC												-QA11		2/C11		INTERRUPTOR AUTOMATICO											
-HGL1		9/G03		LAMPARA DE SE?ALIZACION												-QRC1		8/A02		INTERRUPTOR AUTOMATICO											
-HRL1		9/F03		LAMPARA DE SE?ALIZACION												-QT1		7/B08		INTERRUPTOR AUTOMATICO											
-KC1		12/G04		CONTACTOR COMPRESOR												-QT10		7/E09		INTERRUPTOR AUTOMATICO											
-KC2		12/G06		CONTACTOR COMPRESOR												-QT2		7/B12		INTERRUPTOR AUTOMATICO											
-KC3		12/G08		CONTACTOR COMPRESOR												-QT20		7/E12		INTERRUPTOR AUTOMATICO											
-KC4		12/G09		CONTACTOR COMPRESOR												-QT21		7/E13		INTERRUPTOR AUTOMATICO											
-KF1		12/G10		CONTACTOR VENTILADOR												-RC1		8/F02		-											
-KF2		12/G12		CONTACTOR VENTILADOR												-RC2		8/F03		-											
-KF4		12/G13		CONTACTOR VENTILADOR												-RC3		8/F04		-											
-KF5		12/G15		CONTACTOR VENTILADOR												-RC4		8/F05		-											
-KFC1		10/G09		RELE? PROTECCION TERMICA DE COMPRESOR												-S01		9/B03		DEVATORE											
-KFC2		10/G12		RELE? PROTECCION TERMICA DE COMPRESOR												-SIHP1		10/A04		PRESOSTATO DE ALTA PRESION											
-KFC3		11/G09		RELE? PROTECCION TERMICA DE COMPRESOR												-SIHP2		11/A04		PRESOSTATO DE ALTA PRESION											
-KFC4		11/G12		RELE? PROTECCION TERMICA DE COMPRESOR												-S2HP1		10/C04		PRESOSTATO DE ALTA PRESION											
-KFF1		10/G14		-												-S2HP2		11/D04		PRESOSTATO DE ALTA PRESION											
-KFF2		11/G14		-												-SFEP		8/C11		TERMOSTATO											
-KHP1		10/H03		RELE? DE ALTA PRESION												-SFS1		15/E12		FLUJOSTATO											
-KHP2		11/H03		RELE? DE ALTA PRESION												-SHC		9/D03		DEVATORE											
-KHR1		15/H04		RELE? RECUPERACION DE CALOR												-SHT1		10/F04		TERMOSTATO TEMPERATURA ALIMENTACION COMPRESSOR											
-KHR2		15/H08		RELE? RECUPERACION DE CALOR												-SHT2		11/F04		TERMOSTATO TEMPERATURA ALIMENTACION COMPRESSOR											
-KP1R		8/F12		RELE? BOMBA												-SWD1		15/B14		PRESOSTATO DIFERENCIAL AGUA											
-KP2R		8/F14		RELE? BOMBA												-T1		7/D08		TRANSFORMADOR											
-KRC1/-KRC2		13/E09-13/E14		RELE? ELECTROVALVULA INVERSION DE CICLO												-T2		7/D12		TRANSFORMADOR											
-KS01		9/G14		RELE? ON/OFF												-X1÷-X12		13/G05		-											
-KSHC		9/G12		-												-YC1		13/G11		-											
-KSP		15/H01		-												-YC2		12/G00		ELECTROVALVULA FREON											
-KWD1		15/H14		RELE? DE DIFERENCIAL DE L'AGUA												-YF1		12/G02		ELECTROVALVULA FREON											
-KYC1/-KYC2		13/G04-13/G10		TEMPORIZADOR												-YF2		13/G01-13/G02		ELECTROVALVULA FREON LIQUIDO											
-KYF1/-FYF1		16/G13-16/G12		RELE ELECTROVALVULA FREON												-YHR1		14/G03		ELECTROVALVULA DE RECUPERATION DE CALOR											
-KYF2/-FYF2		16/G15-16/G14		RELE ELECTROVALVULA FREON												-YHR11		14/G01		ELECTROVALVULA DE RECUPERATION DE CALOR											
-MC1		3/G02		COMPRESOR												-YHR12		14/G04		ELECTROVALVULA DE RECUPERATION DE CALOR											
-MC2		3/G09		COMPRESOR												-YHR2		14/G12		ELECTROVALVULA DE RECUPERATION DE CALOR											
-MC3		4/G02		COMPRESOR												-YHR21		14/G10		ELECTROVALVULA DE RECUPERATION DE CALOR											
-MC4		4/G09		COMPRESOR												-YHR22		14/G13		ELECTROVALVULA DE RECUPERATION DE CALOR											
-MF1		5/H01		VENTILADOR												-YRC1		13/F09		ELECTROVALVULA DE INVERSION DEL CICLO											
-MF2		5/H05		VENTILADOR												-YRC2		13/F13		ELECTROVALVULA DE INVERSION DEL CICLO											
-MF3		5/H03		VENTILADOR												PE				BORNE DE TIERRA											

REV. INDEX		DATA DATE		MODIFICA MODIFICATION UMWANDUNG		FIRMA SIGNATURE UNTERSCHR		IMPANTO-INSTALLATION-ANLAGE		NOMENCLATURA LEGENDA		DESIGNO-DRAWING DESSIN-ZEICHNUNG		REV. INDEX		DESIGNATEUR-DRAFTSMAN ZEICHNER		DATA-DATE-DATUM	
								H/ER 0702-H/ER 1402		-		-		A		A.Solvo'		18/07/2008	
								400/3/50 - STEP - iCHILL-PPG		NOMENCLATURE		NOMENKLATUR				VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON		FOLIO-SHEET FOLIO-BLATT	
								CRE0091S		NOMENCLATURE		NOMENKLATUR				<i>M. Merino</i>		33 / 73	

Disegno di proprietà? della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

00		01		02		03		04		05		06		07		08		09		10		11		12		13		14		15	
CJRHFOITYBT		GJKJ : TYBT		YFPDFYBT												CJRHFOITYBT		GJKJ : TYBT		DTYNBKZNJH		YFPDFYBT									
-A1		19/G15														-MF4		5/H09		DTYNBKZNJH											
-A11		2/G11		"KTRNHJC(TVF												-MF5		5/H13		DTYNBKZNJH											
-BAT1		18/I08		LFXNBR NTVGHS JRH CHTLS												-MF6		5/H11		DTYNBKZNJH											
-BAT2		18/J08		LFXNBR NTVGHS JRH CHTLS												-MFE1		8/E11		DTYNBKZNJH "KTRNHJ OBNF											
-BEWIT		18/F08		LFXNBR NTVGHS JRH CHTLS												-Q0		2/A08		HE<BKMYBR											
-BEWOT		18/G08		LFXNBR NTVGHS DJLS YF DS(JLT BP BCGFHBNTKZ												-QC1		3/B02		FONJVFNBXTCRBQ GHTHSDENTKM GBNFYBZ RJVGHTCCJHF											
-BHP1		18/A07		HUEKZNJH DSCJRJJUJ LFDKTYBZ												-QC2		3/B09		FONJVFNBXTCRBQ GHTHSDENTKM GBNFYBZ RJVGHTCCJHF											
-BHP2		18/B07		HUEKZNJH DSCJRJJUJ LFDKTYBZ												-QC3		4/B02		FONJVFNBXTCRBQ GHTHSDENTKM GBNFYBZ RJVGHTCCJHF											
-BLP1		18/D07		HUEKZNJH YBPRJJUJ LFDKTYBZ												-QC4		4/B09		FONJVFNBXTCRBQ GHTHSDENTKM GBNFYBZ RJVGHTCCJHF											
-BLP2		18/E07		HUEKZNJH YBPRJJUJ LFDKTYBZ												-QF1		5/B01		FONJVFNBXTCRBQ GHTHSDENTKM GBNFYBZ DTYNBKZNJH											
-BRWOT		18/I08		LFXNBR NTVGHS DJLS YF DS(JLT BP HTRGTHFNJHF												-QF4		5/B09		FONJVFNBXTCRBQ GHTHSDENTKM GBNFYBZ DTYNBKZNJH											
-BTWOT		18/H08		LFXNBR NTVGHS DJLS YF DS(JLT BP <FRF												-QA11		2/C11		FONJVFNBXTCRBQ GHTHSDENTKM											
-FP2R		8/F13		ABKM RC												-QRC1		8/A02		FONJVFNBXTCRBQ GHTHSDENTKM											
-HGL1		9/G03		CBUYFKMYFZ KFGVJXRF												-Q11		7/B08		FONJVFNBXTCRBQ GHTHSDENTKM											
-HRL1		9/F03		CBUYFKMYFZ KFGVJXRF												-QT10		7/E09		FONJVFNBXTCRBQ GHTHSDENTKM											
-KC1		12/G04		RJYNFRNJH RJVGHTCCJHF												-QT2		7/B12		FONJVFNBXTCRBQ GHTHSDENTKM											
-KC2		12/G06		RJYNFRNJH RJVGHTCCJHF												-QT20		7/E12		FONJVFNBXTCRBQ GHTHSDENTKM											
-KC3		12/G08		RJYNFRNJH RJVGHTCCJHF												-QT21		7/E13		FONJVFNBXTCRBQ GHTHSDENTKM											
-KC4		12/G09		RJYNFRNJH RJVGHTCCJHF												-RC1		8/F02		YFUHTDENTKM REHNTHF											
-KF1		12/G10		RJYNFRNJH YF EGHEDKTYBT DTYNBKZNJHJV												-RC2		8/F03		YFUHTDENTKM REHNTHF											
-KF2		12/G12		RJYNFRNJH YF EGHEDKTYBT DTYNBKZNJHJV												-RC3		8/F04		YFUHTDENTKM REHNTHF											
-KF4		12/G13		RJYNFRNJH YF EGHEDKTYBT DTYNBKZNJHJV												-RC4		8/F05		YFUHTDENTKM REHNTHF											
-KF5		12/G15		RJYNFRNJH YF EGHEDKTYBT DTYNBKZNJHJV																											

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A		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ER1202																	
		N			SN			SSN			H						
B	CARICHI ELETTRICI ELECTRIC LOADS CHARGE BELASTUNG CARGAS ELECTRICAS	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	
C	-MC1 - R410A	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	
	-MC1 - R22	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	
	-MC1 - R407c	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	
D	-MC2 - R410A	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	
	-MC1 - R22	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	
E	-MC2 - R407c	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	
	-MC3 - R410A	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	
	-MC1 - R22	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	
F	-MC3 - R407c	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	
	-MC4 - R410A	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	
G	-MC1 - R22	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	
	-MC4 - R407c	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	
	-MF1	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14	2	4	14	
	-MF2	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14	2	4	14	
H	-MF3	-	-	-	-	-	-	0.7	1.15	2.1	2	4	14	2	4	14	
	-MF4	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14	2	4	14	
I	-MF5	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14	2	4	14	
	-MF6	-	-	-	-	-	-	0.7	1.15	2.1	2	4	14	2	4	14	
	-MP1/-MP2 (P2)	6.18	10.4	107.12	6.18	10.4	107.12	6.18	10.4	107.12	6.18	10.4	107.12	6.18	10.4	107.12	
J	-MP1/-MP2 (P3)	10	16.7	168.67	10	16.7	168.67	10	16.7	168.67	10	16.7	168.67	10	16.7	168.67	
REV		DATA	MODIFICA		IMPIANTO-INSTALLATION-ANLAGE			DATI ELETTRICI		DISGNATORE-DRAFTSMAN		DATA-DATE-DATUM					
INDEX	DATE	MODIFICATION		H/ER 0702:H/ER 1402			ELECTRICAL DATA		DESIGNATEUR-ZEICHNER		18/07/2008						
REV.		UMÄNDERUNG		400/3/50 - STEP - iCHILLPRG			DONNEES ELECTRIQUE		A.Salvo'		FOLIO-SHEET						
				DESIGN-DRAWING			ELEKTRISCH DATEN		VERIFIE PAR-GERÜFT VON		52 / 73						
				CRE0091S			DATOS ELECTRICOS		M. Merlo								
Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge																	

ER1302														
N			SN			SSN			H					
	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)	P _{MAX} (kW)	I _{MAX} (A)	I _{LR} (A)		
CARICHI ELETTRICI ELECTRIC LOADS CHARGE BELASTUNG CARGAS ELECTRICAS														
-MC1 - R410A	33.741	55.640	320	33.741	55.640	320	33.741	55.640	320	33.741	55.640	320		
-MC1 - R22	34.08	54.68	320	34.08	54.68	320	34.08	54.68	320	34.08	54.68	320		
-MC1 - R407c	34.965	55.01	320	34.965	55.01	320	34.965	55.01	320	34.965	55.01	320		
-MC2 - R410A	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260		
-MC2 - R22	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270		
-MC2 - R407c	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270		
-MC3 - R410A	33.741	55.640	320	33.741	55.640	320	33.741	55.640	320	33.741	55.640	320		
-MC3 - R22	34.08	54.68	320	34.08	54.68	320	34.08	54.68	320	34.08	54.68	320		
-MC3 - R407c	34.965	55.01	320	34.965	55.01	320	34.965	55.01	320	34.965	55.01	320		
-MC4 - R410A	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260	28.854	49.580	260		
-MC4 - R22	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270	28.82	47.23	270		
-MC4 - R407c	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270	29.039	47.06	270		
-MF1	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14		
-MF2	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14		
-MF3	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14		
-MF4	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14		
-MF5	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14		
-MF6	2	4	14	1.25	2.3	4.7	0.7	1.15	2.1	2	4	14		
-MP1/-MP2 (P2)	6.18	10.4	107.12	6.18	10.4	107.12	6.18	10.4	107.12	6.18	10.4	107.12		
-MP1/-MP2 (P3)	10	16.7	168.67	10	16.7	168.67	10	16.7	168.67	10	16.7	168.67		

REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION UMÄNDERUNG	FIRMA SIGN. UNTERSCHR.	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702-H/ER 1402 400/3/50 - STEP - iCHILL-PRG DISEGNO-DRAWING DESSIN-ZEICHNUNG CRE0091S	DATI ELETTRICI ELECTRICAL DATA DONNEES ELECTRIQUE ELEKTRISCH DATEN DATOS ELECTRICOS	DISEGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo' VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Merlo	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 53 / 73

Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

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DISPOSITIVI COMUNI A TUTTI I MODELLI – DEVICES FOR ALL MODELS																		
A	SIGLA INITIALS SIGLE KENNZEICH SIGLA	POSIZIONE POSITION POSITION ORTEN POSICION	-- MARCA / MODELLO --			-- MARKE / TYP --			-- BRAND / MODEL --			-- MODELO --			-- MARQUE / MODELE --		N°	
			-- STANDARD --			-- ALTERNAT. 1 --			-- ALTERNAT. 2 --			-- ALTERNAT. 2 --						
B	-KFC1	10/G09	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KFC2	10/G12	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KFC3	11/G09	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KFC4	11/G12	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
C	-KEF1	10/G14	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KEF2	11/G14	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KHP1	10/H03	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KHP2	11/H03	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
D	-KHR1	15/H04	SCHRACK	RX424.524(24vac)+RT78.726+PTML0.524+RT17.016+RT17.040			-			-			-			-		1
	-KHR2	15/H08	SCHRACK	RX424.524(24vac)+RT78.726+PTML0.524+RT17.016+RT17.040			-			-			-			-		1
	-KPI1	8/F12	SCHRACK	RX424.730(230vac)+RT78.726+PTML0.730+RT17.016+RT17.040			-			-			-			-		1
	-KPI2	8/F14-8/F13	SCHRACK	PT570.006(6vac)+PT78.740+PT28.800+PTML0.024			-			-			-			-		1
E	-KS01	9/G14	SCHRACK	RX424.524(24vac)+RT78.726+PTML0.524+RT17.016+RT17.040			-			-			-			-		1
	-KSHC	9/G12	SCHRACK	RX424.524(24vac)+RT78.726+PTML0.524+RT17.016+RT17.040			-			-			-			-		1
	-KSP	15/H01	SCHRACK	RX424.524(24vac)+RT78.726+PTML0.524+RT17.016+RT17.040			-			-			-			-		1
	-KWD1	15/H14	SCHRACK	RX424.524(24vac)+RT78.726+PTML0.524+RT17.016+RT17.040			-			-			-			-		1
F	-KFI1/-FFI1	16/G13-16/G12	SCHRACK	RX424.012(12vac)+RT78.726+PTML0.024+RT17.016+RT17.040			-			-			-			-		1
	-KFI2/-FFI2	16/G15-16/G14	SCHRACK	RX424.012(12vac)+RT78.726+PTML0.024+RT17.016+RT17.040			-			-			-			-		1
	-QRC1	8/A02	MOELLER	PKZMO-2.5			-			-			-			-		1
	-QT1	7/B08	MOELLER	PKZMO-1-T			-			-			-			-		1
G	-QT10	7/E09	MOELLER	FAZ-C1/1			-			-			-			-		1
	-QT2	7/B12	MOELLER	PKZMO-1-T			-			-			-			-		1
	-QT20	7/E12	MOELLER	FAZ-C6/1			-			-			-			-		1
	-QT21	7/E13	MOELLER	FAZ-C6/1			-			-			-			-		1
H	-T1	7/D08	BOTTER	P=200VA Pri=400Vac Vsec.: 230Vac			-			-			-			-		1
				TRASFORMATORE DI ISOLAMENTO EN 60742			-			-			-			-		-
	-T2	7/D12	BOTTER	P=200VA Pri=400V			-			-			-			-		1
				Vsec.1=24V P=100VA/Vsec.2=24V P=100VA			-			-			-			-		-
I	-X1+-X12		PHOENIX	TRASFORMATORE DI ISOLAMENTO EN 60742			-			-			-			-		-
				SITBS2.5			-			-			-			-		-
J																		
	REV. INDEX REV.	DATA DATE DATUM	MODIFICA DATE MODIFICATION UMÄNDERUNG	FIRMA SIGN. UNTERSCHR			IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILL-PRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S			REV. INDEX A			DISPOSITIVI ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STEUERKLISTE DISPOSITIVO ELECTRICOS			DESIGNATURE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo' VISTO DA-CHECKED BY VERFIE PAR-GEPRÜFT VON <i>M. Martin</i>		DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 63 / 73

Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

H/ER0702															
SIGLA INITIALS SIGLE POSITION KENNZEICH ORTEN SIGLA		POSIZIONE POSITION POSITION POSITION		- MARCA / MODELLO -		- MARKE / TYP -		- BRAND / MODEL -		- MODELO -		- MARQUE / MODELE -		N°	
				- STANDARD -				- ALTERNAT. 1 -				- ALTERNAT. 2 -			
-KC1	12/G04	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1
		-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2
-KC2	12/G06	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1
		-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2
-KC3	12/G08	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1
		-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2
-KC4	12/G09	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1
		-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2
-KF1	12/G10	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1
-KF2	12/G12	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1
-KF4	12/G13	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1
-KF5	12/G15	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1
-Q0	2/A08	SOCOME	SIRCO 3x250A cod.: 26003026	-	-	-	-	-	-	-	-	-	-	-	1
		SOCOME	MANIGLIA GIALLO/ROSSA cod.: 14242111	-	-	-	-	-	-	-	-	-	-	-	1
		SOCOME	PROLUNGA ASSE 320mm cod.: 14001032	-	-	-	-	-	-	-	-	-	-	-	1
		SOCOME	COPRIMORSETTI A VALLE cod.: 26943021	-	-	-	-	-	-	-	-	-	-	-	1
-QC1	3/B02	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1
-QC2	3/B09	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1
-QC3	4/B02	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1
-QC4	4/B09	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1
-QF1	5/B01	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	-	2
-QF4	5/B09	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	-	2

REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION UMÄNDERUNG	FIRMA SIGN. UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILL-PRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S	DISPOSITIVI ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STEUERKLISTE DISPOSITIVO ELECTRICOS	DISEGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo', VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Marini	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 64 / 73

Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
H/ER0802																
SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION ORTEN POSITION	- MARCA / MODELLO -			- MARKE / TYP -			- BRAND / MODEL -			- MARQUE / MODELE -			N°	
			- STANDARD -						- ALTERNAT. 1 -			- ALTERNAT. 2 -				
-KC1	12/G04	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2	
-KC2	12/G06	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1	
		-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2	
-KC3	12/G08	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2	
-KC4	12/G09	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	1	
		-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	2	
-KF1	12/G10	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1	
-KF2	12/G12	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1	
-KF4	12/G13	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1	
-KF5	12/G15	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	1	
-Q0	2/A08	SOCOME	SIRCO 3x250A cod.: 26003026	-	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	MANIGLIA GIALLO/ROSSA cod.: 14242111	-	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	PROLUNGA ASSE 320mm cod.: 14001032	-	-	-	-	-	-	-	-	-	-	-	1	
-QC1	3/B02	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1	
-QC2	3/B09	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1	
-QC3	4/B02	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1	
-QC4	4/B09	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	1	
-QF1	5/B01	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	-	2	
-QF4	5/B09	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	-	2	

REV INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMÄNDERUNG	FIRMA SIGN UNTERSCHR	 MTA spa PADOVA-ITALY		IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILLPRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S	REV. INDEX	A	DISPOSITIV ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STEUCKLISTE DISPOSITIVO ELECTRICOS	DESIGNATURE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo' VISTO DA-CHECKED BY VERIFÉ PAR-GÉPRÜFT VON 	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 65 / 73
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Disegno di proprietà* della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

H/ER0902

A	SIGLA INITIALS SIGLE KENNZEICH SIGLA	POSIZIONE POSITION POSITION POSITION	-- MARCA / MODELLO --		-- MARKE / TYP --		-- BRAND / MODEL --		-- MARQUE / MODELE --		N°
			-- STANDARD --				-- ALTERNAT. 1 --		-- ALTERNAT. 2 --		
B	-KC1	12/G04	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	1
			MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	1
			MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	2
	-KC2	12/G06	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	1
C			MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	1
			MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	2
	-KC3	12/G08	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	1
			MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	1
			MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	2
	-KC4	12/G09	MOELLER	DILM32-10 (230V 50/60Hz) art.: 277268	SIEMENS	3RT10 34-1AL20	-	-	-	-	1
			MOELLER	DILM32-XHI22 art.: 277377	SIEMENS	3RH19 21-1HA31	-	-	-	-	1
			-	-	SIEMENS	3RT19 36-4EA2	-	-	-	-	2
D	-KF1	12/G10	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	1
	-KF2	12/G12	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	1
	-KF4	12/G13	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	1
	-KF5	12/G15	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	1
E	-Q0	2/A08	SOCOMEC	SIRCO 3x250A cod.: 26003026	-	-	-	-	-	-	1
			SOCOMEC	MANIGLIA GIALLO/ROSSA cod.: 14242111	-	-	-	-	-	-	1
			SOCOMEC	PROLUNGA ASSE 320mm cod.: 14001032	-	-	-	-	-	-	1
			SOCOMEC	COPRIMORSETTI A VALLE cod.: 26943021	-	-	-	-	-	-	1
F	-QC1	3/B02	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	1
			MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	1
			WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	1
	-QC2	3/B09	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	1
G			MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	1
			WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	1
	-QC3	4/B02	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	1
			MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	1
			WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	1
	-QC4	4/B09	MOELLER	PKZM0-32 (25÷32A) art.: 278489	SIEMENS	3RV10 31-4EA10 (22÷32A)	-	-	-	-	1
			MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	1
			WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	1
H	-QF1	5/B01	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	1
			WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	2
	-QF4	5/B09	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	1
			WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	2

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	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
H/ER1002																
SIGLA INITIALS SIGLE POSITION KENNZEICH ORTEN SIGLA	POSIZIONE POSITION POSITION			- MARCA / MODELLO -			- BRAND / MODEL -			- MODELO -			- MARQUE / MODELE -			N°
	- STANDARD -			- ALTERNAT. 1 -			- ALTERNAT. 2 -			- ALTERNAT. 2 -						
-KC1	12/G04	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	-	2
-KC2	12/G06	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	-	2
-KC3	12/G08	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	-	2
-KC4	12/G09	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	-	-	2
-KF1	12/G10	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	-	1
-KF2	12/G12	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	-	1
-KF4	12/G13	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	-	1
-KF5	12/G15	MOELLER	DILM9-10 (230V 50/60Hz) art.: 276698	SIEMENS	3RT10 16-1AP01	-	-	-	-	-	-	-	-	-	-	1
-Q0	2/A08	SOCOME	SIRCO 3x250A cod.: 26003026	-	-	-	-	-	-	-	-	-	-	-	-	1
		SOCOME	MANIGLIA GIALLO/ROSSA cod.: 14242111	-	-	-	-	-	-	-	-	-	-	-	-	1
		SOCOME	PROLUNGA ASSE 320mm cod.: 14001032	-	-	-	-	-	-	-	-	-	-	-	-	1
		SOCOME	COPRIMORSETTI A VALLE cod.: 26943021	-	-	-	-	-	-	-	-	-	-	-	-	1
-QC1	3/B02	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	-	1
-QC2	3/B09	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	-	1
-QC3	4/B02	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	-	1
-QC4	4/B09	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	-	-	1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	-	-	1
-QF1	5/B01	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	-	-	2
-QF4	5/B09	MOELLER	PKZM0-10 (6.3÷10A) art.: 072739	SIEMENS	3RV10 11-1JA10 (7÷10A)	-	-	-	-	-	-	-	-	-	-	1
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	-	-	2

REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION UMÄNDERUNG	FIRMA SIGN. UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILL-PRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S	DISPOSITIV ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STEUERKLISTE DISPOSITIVO ELECTRICOS	DISEGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo' VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Marini	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 67 / 73
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Disegno di proprietà' della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

H/ER1102															
SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION POSITION ORTEN POSICION	- MARCA / MODELLO -			- MARKE / TYP -			- BRAND / MODEL -			- MARQUE / MODELE -			N°
			- STANDARD -						- ALTERNAT. 1 -			- ALTERNAT. 2 -			
-KC1	12/G04	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	2	
-KC2	12/G06	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	2	
-KC3	12/G08	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	2	
-KC4	12/G09	MOELLER	DILM40 (230V 50/60Hz) art.: 277774	SIEMENS	3RT10 35-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	2	
-KF1	12/G10	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20 + 3RH19 21-1FA11	-	-	-	-	-	-	-	-	1	
-KF2	12/G12	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20	-	-	-	-	-	-	-	-	1	
-KF4	12/G13	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20 + 3RH19 21-1FA11	-	-	-	-	-	-	-	-	1	
-KF5	12/G15	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20	-	-	-	-	-	-	-	-	1	
-Q0	2/A08	SOCOME	SIRCO 3x315A cod.: 26003032	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	MANIGLIA GIALLO/ROSSA cod.: 14242111	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	PROLUNGA ASSE 320mm cod.: 14001032	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	COPRIMORSETTI A VALLE cod.: 26943051	-	-	-	-	-	-	-	-	-	-	1	
-QC1	3/B02	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QC2	3/B09	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QC3	4/B02	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QC4	4/B09	MOELLER	PKZM4-40 (32÷40A) art.: 222354	SIEMENS	3RV10 31-4FA10 (28÷40A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QF1	5/B01	MOELLER	PKZM0-16 (10÷16A) art.: 046938	SIEMENS	3RV10 21-1KA10 (9÷12.5A)	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	2	
-QF4	5/B09	MOELLER	PKZM0-16 (10÷16A) art.: 046938	SIEMENS	3RV10 21-1KA10 (9÷12.5A)	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	2	

REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMÄNDERUNG	FIRMA SIGN. UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILLPRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S	REV. INDEX	DISPOSITIV ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STUECKLISTE DISPOSITIVO ELECTRICOS	DESIGNATEUR-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo'	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 68 / 73
					A		VISTO DA-CHECKED BY VERIFIE PAR-GEPRÜFT VON M. Mander	

Disegno di proprietà della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
H/ER1202															
SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION ORTEN POSITION	- MARCA / MODELLO -			- MARKE / TYP -			- BRAND / MODEL -			- MARQUE / MODELE -			N°
			- STANDARD -						- ALTERNAT. 1 -			- ALTERNAT. 2 -			
-KC1	12/G04	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20										1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31										1
		MOELLER	DILM65-XIP2X art.: 277838	SIEMENS	3RT10 36-4EA2										2
-KC2	12/G06	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20										1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31										1
		MOELLER	DILM65-XIP2X art.: 277838	SIEMENS	3RT10 36-4EA2										2
-KC3	12/G08	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20										1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31										1
		MOELLER	DILM65-XIP2X art.: 277838	SIEMENS	3RT10 36-4EA2										2
-KC4	12/G09	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20										1
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31										1
		MOELLER	DILM65-XIP2X art.: 277838	SIEMENS	3RT10 36-4EA2										2
-KF1	12/G10	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20 + 3RH19 21-1FA11										1
-KF2	12/G12	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20										1
-KF4	12/G13	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20 + 3RH19 21-1FA11										1
-KF5	12/G15	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20										1
-Q0	2/A08	SOCOME	SIRCO 3x400A cod.: 26003041												1
		SOCOME	MANIGLIA GIALLO/ROSSA cod.: 14242111												1
		SOCOME	PROLUNGA ASSE 320mm cod.: 14001032												1
		SOCOME	COPRIMORSETTI A VALLE cod.: 26943051												1
-QC1	3/B02	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)										1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E										1
		WOHNER	ADATTATORE PER SBARRA art.: 32454												1
-QC2	3/B09	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)										1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E										1
		WOHNER	ADATTATORE PER SBARRA art.: 32454												1
-QC3	4/B02	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)										1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E										1
		WOHNER	ADATTATORE PER SBARRA art.: 32454												1
-QC4	4/B09	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)										1
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E										1
		WOHNER	ADATTATORE PER SBARRA art.: 32454												1
-QF1	5/B01	MOELLER	PKZM0-16 (10÷16A) art.: 046938	SIEMENS	3RV10 21-1KA10 (9÷12.5A)										1
		WOHNER	ADATTATORE PER SBARRA art.: 32432												2
-QF4	5/B09	MOELLER	PKZM0-16 (10÷16A) art.: 046938	SIEMENS	3RV10 21-1KA10 (9÷12.5A)										1
		WOHNER	ADATTATORE PER SBARRA art.: 32432												2

REV INDEX REV	MODIFICA MODIFICATION MODIFICATION UMÄNDERUNG	FIRMA SIGN UNTERSCHR	IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILLPRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S	REV INDEX A	DISPOSITIV ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STEUCKLISTE DISPOSITIVO ELECTRICOS	DESIGNATURE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo' VISTO DA-CHECKED BY VERFGE PAR-GEPRÜFT VON M. Merino	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 69 / 73
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Disegno di proprietà* della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

H/ER1302															
SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION POSITION ORTEN POSITION	- MARCA / MODELLO -			- MARKE / TYP -			- BRAND / MODEL -			- MARQUE / MODELE -			N°
			- STANDARD -			- ALTERNAT. 1 -			- ALTERNAT. 2 -						
-KC1	12/G04	MOELLER	DILM65 (230V 50/60Hz) art.: 277902	SIEMENS	3RT10 44-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 46-4EA2	-	-	-	-	-	-	-	-	2	
-KC2	12/G06	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	2	
-KC3	12/G08	MOELLER	DILM65 (230V 50/60Hz) art.: 277902	SIEMENS	3RT10 44-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 46-4EA2	-	-	-	-	-	-	-	-	2	
-KC4	12/G09	MOELLER	DILM50 (230V 50/60Hz) art.: 277838	SIEMENS	3RT10 36-1AL20	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM150-XHI31 art.: 277949	SIEMENS	3RH19 21-1HA31	-	-	-	-	-	-	-	-	1	
		MOELLER	DILM65-XIP2X art.:106491 (Q.TA': 6)	SIEMENS	3RT19 36-4EA2	-	-	-	-	-	-	-	-	2	
-KF1	12/G10	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20 + 3RH19 21-1FA11	-	-	-	-	-	-	-	-	1	
-KF2	12/G12	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20	-	-	-	-	-	-	-	-	1	
-KF4	12/G13	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20 + 3RH19 21-1FA11	-	-	-	-	-	-	-	-	1	
-KF5	12/G15	MOELLER	DILM17-10 (230V 50/60Hz) art.: 277012	SIEMENS	3RT10 26-1AL20	-	-	-	-	-	-	-	-	1	
-Q0	2/A08	SOCOME	SIRCO 3x400A cod.: 26003041	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	MANIGLIA GIALLO/ROSSA cod.: 14242111	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	PROLUNGA ASSE 320mm cod.: 14001032	-	-	-	-	-	-	-	-	-	-	1	
		SOCOME	COPRIMORSETTI A VALLE cod.: 26943051	-	-	-	-	-	-	-	-	-	-	1	
-QC1	3/B02	MOELLER	PKZM4-63 (50÷63A) art.: 222413	SIEMENS	3RV10 41-4JA10 (45÷63A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QC2	3/B09	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QC3	4/B02	MOELLER	PKZM4-63 (50÷63A) art.: 222413	SIEMENS	3RV10 41-4JA10 (45÷63A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QC4	4/B09	MOELLER	PKZM4-50 (40÷50A) art.: 222355	SIEMENS	3RV10 31-4HA10 (40÷50A)	-	-	-	-	-	-	-	-	1	
		MOELLER	NHI-E-11-PKZ0 art.: 082882	SIEMENS	3RV19 01-1E	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32454	-	-	-	-	-	-	-	-	-	-	1	
-QF1	5/B01	MOELLER	PKZM0-16 (10÷16A) art.: 046938	SIEMENS	3RV10 21-1KA10 (9÷12.5A)	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	2	
-QF4	5/B09	MOELLER	PKZM0-16 (10÷16A) art.: 046938	SIEMENS	3RV10 21-1KA10 (9÷12.5A)	-	-	-	-	-	-	-	-	1	
		WOHNER	ADATTATORE PER SBARRA art.: 32432	-	-	-	-	-	-	-	-	-	-	2	

REV INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION MODIFICATION UMÄNDERUNG	FIRMA SIGN UNTERSCHR	 MTA spa PADOVA-ITALY	H/ER 0702:H/ER 1402 400/3/50 - STEP - iCHILLPRG DESIGN-DRAWING DESSIN-ZEICHNUNG CRE0091S	DISPOSITIVI ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STUECKLISTE DISPOSITIVO ELECTRICOS	DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Salvo' VISTO DA-CHECKED BY VERPFE PAR-GEPRÜFT VON 	DATA-DATE-DATUM 18/07/2008 FOLIO-SHEET FOLIO-BLATT 70 / 73
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Disegno di proprietà* della M.T.A. s.p.a. che si riserva i diritti sanciti dalla legge

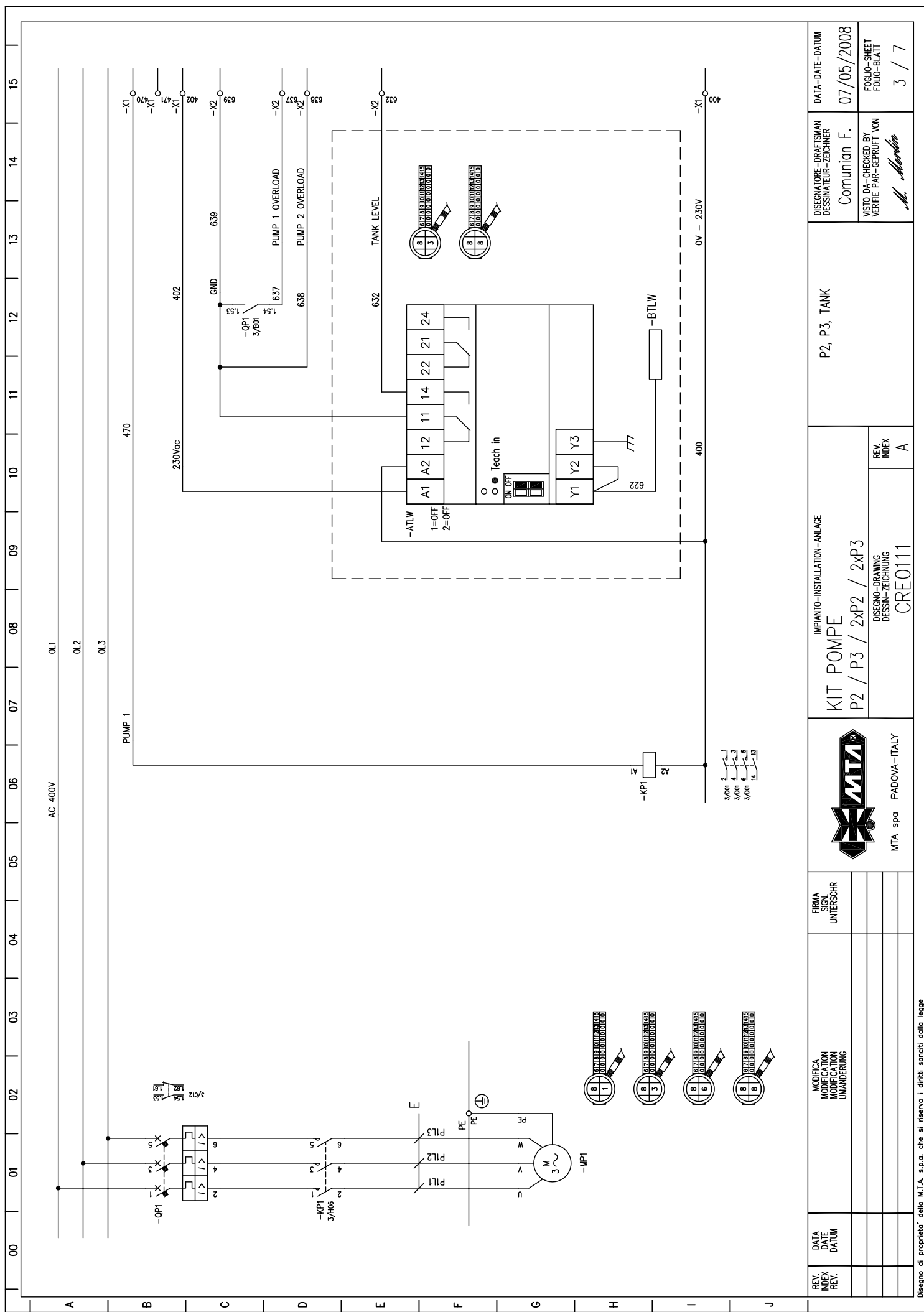
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SOLO PER POMPA DI CALORE / ONLY HEAT PUMP																
A	SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION POSITION ORTEN POSITION		- MARCA / MODELLO -		- MARKE / TYP -		- BRAND / MODEL -		- MODELO -		- MARQUE / MODELE -		N°	
	-KRC1		13/F07		SCHRACK		RX424.730(230Voc)+RT78.726+PTML0.730+RT17.016+RT17.040		- ALTERNAT. 1 -				- ALTERNAT. 2 -		1	
B	-KRC2		13/F14		SCHRACK		RX424.730(230Voc)+RT78.726+PTML0.730+RT17.016+RT17.040								1	
	-KYC1		13/G01		SCHRACK		TR4N-230AC-12-M								1	
	-KYC2		13/G09		SCHRACK		TR4N-230AC-12-M								1	
	-SHT1		10/FO4		CAEM		TU-V T.F. SET=130°C diff=5°C								1	
	-SHT2		11/FO4		CAEM		TU-V T.F. SET=130°C diff=5°C								1	
C	COMPONENTI AGGIUNTIVI PER IMPIANTO CON DIGIT: ADDITIONAL PARTS FOR INSTALLATION WITH DIGIT: - -															
D	SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION POSITION ORTEN POSITION		- MARCA / MODELLO -		- MARKE / TYP -		- BRAND / MODEL -		- MODELO -		- MARQUE / MODELE -		N°	
	-A11		2/G11		GAVAZZI		DPA53CM48B005		- ALTERNAT. 1 -				- ALTERNAT. 2 -		1	
	-FA11		2/C11		MOELLER		PKZMO-1								3	
					MOELLER		Z-SH/3 art.: 263879								1	
CHILLER																
F	SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION POSITION ORTEN POSITION		- MARCA / MODELLO -		- MARKE / TYP -		- BRAND / MODEL -		- MODELO -		- MARQUE / MODELE -		N°	
	-HGL1		9/G03		GEWISS		SPIA DI SEGNALE VERDE cod. GW 20 604		- ALTERNAT. 1 -				- ALTERNAT. 2 -		1	
					GEWISS		LAMPADA A SIL. S6X31mm 24V cod. GW 20 905								1	
	-HRL1		9/F03		GEWISS		SPIA DI SEGNALE ROSSA cod. GW 20 603								1	
					GEWISS		LAMPADA A SIL. S6X31mm 24V cod. GW 20 905								1	
	-S01		9/B03		GEWISS		DEVIATORE MODULARE cod. GW 20 506								1	
HEAT PUMP																
I	SIGLA INITIALS SIGLE KENNZEICH SIGLA		POSIZIONE POSITION POSITION ORTEN POSITION		- MARCA / MODELLO -		- MARKE / TYP -		- BRAND / MODEL -		- MODELO -		- MARQUE / MODELE -		N°	
	-HGL1		9/G03		GEWISS		SPIA DI SEGNALE VERDE cod. GW 20 604		- ALTERNAT. 1 -				- ALTERNAT. 2 -		1	
					GEWISS		LAMPADA A SIL. S6X31mm 24V cod. GW 20 905								1	
	-HRL1		9/F03		GEWISS		SPIA DI SEGNALE ROSSA cod. GW 20 603								1	
					GEWISS		LAMPADA A SIL. S6X31mm 24V cod. GW 20 905								1	
	-S01		9/B03		GEWISS		DEVIATORE MODULARE cod. GW 20 506								1	
	-SHC		9/D03		GEWISS		DEVIATORE MODULARE cod. GW 20 506								1	
J	REV. INDEX REV.	DATA DATE DATUM	MODIFICA MODIFICATION UMÄNDERUNG		FIRMA SIGN UNTERSCHR				IMPIANTO-INSTALLATION-ANLAGE H/ER 0702:H/ER 1402		DISPOSITIVI ELETTRICI ELECTRICAL DEVICES DISPOSITIF ELECTRIQUE STEUERKLISTE DISPOSITIVO ELECTRICOS		DESIGNATORE-DRAFTSMAN DESSINATEUR-ZEICHNER A.Solvo'		DATA-DATE-DATUM 18/07/2008	
							MTA spa PADOVA-ITALY		400/3/50 - STEP - iCHILL-PRG		REV. INDEX A		VERIFIED BY VERIFIE PAR-GEPRÜFT VON M. Martin		FOLIO-SHEET FOLIO-BLATT 72 / 73	

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B	<table><tr><th>SIGLA INITIALS SIGLE KENNZEICH SIGLA</th><th>POSIZIONE POSITION ORTEN POSICION</th><th colspan="2">- MARCA / MODELLO -</th><th colspan="2">- BRAND / MODEL -</th><th colspan="2">- MARQUE / MODELE -</th><th colspan="2">- ALTERNAT. 1 -</th><th colspan="2">- ALTERNAT. 2 -</th><th>N°</th></tr><tr><td>-A1</td><td>19/G15</td><td>DIXELL</td><td colspan="2">SCHEDA ELETTRONICA iCHILL^{PRG}</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BAT1</td><td>18/I08</td><td></td><td colspan="2">SONDA NTC** IP68</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BAT2</td><td>18/J08</td><td></td><td colspan="2">SONDA NTC** IP68</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BEWIT</td><td>18/F08</td><td></td><td colspan="2">SONDA NTC** IP68</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BEWOT</td><td>18/E08</td><td></td><td colspan="2">SONDA NTC** IP68</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BRWOT</td><td>18/I08</td><td></td><td colspan="2">SONDA NTC** IP68</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BTWOT</td><td>18/H08</td><td></td><td colspan="2">SONDA NTC** IP68</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BHP1</td><td>18/A07</td><td>TEXAS</td><td colspan="2">2CP5-47 (0...34,5 bar)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BHP2</td><td>18/B07</td><td>TEXAS</td><td colspan="2">2CP5-47 (0...34,5 bar)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BLP1</td><td>18/E07</td><td>TEXAS</td><td colspan="2">2CP5-47 (0...34,5 bar)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-BLP2</td><td>18/C07</td><td>TEXAS</td><td colspan="2">2CP5-47 (0...34,5 bar)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-S1HP1</td><td>10/A04</td><td>DANFOSS</td><td colspan="2">KP7W -- SOLO PER/ONLY FOR: H/ER0802÷1402</td><td colspan="2">RANCO</td><td colspan="2">26.3 - 20.3 BARG</td><td colspan="2">-- SOLO PER/ONLY FOR: H/ER0802÷1402</td><td colspan="2">1</td></tr><tr><td>-S1HP2</td><td>11/A04</td><td>DANFOSS</td><td colspan="2">KP7W -- SOLO PER/ONLY FOR: H/ER0802÷1402</td><td colspan="2">RANCO</td><td colspan="2">26.3 - 20.3 BARG</td><td colspan="2">-- SOLO PER/ONLY FOR: H/ER0802÷1402</td><td colspan="2">1</td></tr><tr><td>-S2HP1</td><td>10/C04</td><td>DANFOSS</td><td colspan="2">KP7S -- SOLO PER/ONLY FOR: H/ER0802÷1402</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-S2HP2</td><td>11/D04</td><td>DANFOSS</td><td colspan="2">KP7S -- SOLO PER/ONLY FOR: H/ER0802÷1402</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr><tr><td>-SWD1</td><td>15/B04</td><td>TOVO</td><td colspan="2">SFS</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">1</td></tr></table>																SIGLA INITIALS SIGLE KENNZEICH SIGLA	POSIZIONE POSITION ORTEN POSICION	- MARCA / MODELLO -		- BRAND / MODEL -		- MARQUE / MODELE -		- ALTERNAT. 1 -		- ALTERNAT. 2 -		N°	-A1	19/G15	DIXELL	SCHEDA ELETTRONICA iCHILL ^{PRG}								1		-BAT1	18/I08		SONDA NTC** IP68								1		-BAT2	18/J08		SONDA NTC** IP68								1		-BEWIT	18/F08		SONDA NTC** IP68								1		-BEWOT	18/E08		SONDA NTC** IP68								1		-BRWOT	18/I08		SONDA NTC** IP68								1		-BTWOT	18/H08		SONDA NTC** IP68								1		-BHP1	18/A07	TEXAS	2CP5-47 (0...34,5 bar)								1		-BHP2	18/B07	TEXAS	2CP5-47 (0...34,5 bar)								1		-BLP1	18/E07	TEXAS	2CP5-47 (0...34,5 bar)								1		-BLP2	18/C07	TEXAS	2CP5-47 (0...34,5 bar)								1		-S1HP1	10/A04	DANFOSS	KP7W -- SOLO PER/ONLY FOR: H/ER0802÷1402		RANCO		26.3 - 20.3 BARG		-- SOLO PER/ONLY FOR: H/ER0802÷1402		1		-S1HP2	11/A04	DANFOSS	KP7W -- SOLO PER/ONLY FOR: H/ER0802÷1402		RANCO		26.3 - 20.3 BARG		-- SOLO PER/ONLY FOR: H/ER0802÷1402		1		-S2HP1	10/C04	DANFOSS	KP7S -- SOLO PER/ONLY FOR: H/ER0802÷1402								1		-S2HP2	11/D04	DANFOSS	KP7S -- SOLO PER/ONLY FOR: H/ER0802÷1402								1		-SWD1	15/B04	TOVO	SFS								1	
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