



DDS – Dehumidifier for small swimming pool, direct on wall installation

DCS – Dehumidifier for small swimming pool, ducted installation

DVS – Dehumidifier for small swimming pool, vertical installation

**INSTALLATION, USE AND
MAINTENANCE MANUAL**

COMPLETE UNIT DOCUMENTATION:

- ☒ USER MANUAL
- ☒ FUNCTIONAL DIAGRAM
- ☒ CONTROL MANUAL
- ☐ CONFORMITY DECLARATION
- ☐ WIRING DIAGRAM

Following the law no parts of this manual can be reproduced with electrical,
mechanical or other systems and/or spread without written permission of the producer, HiDew S.r.l.

DDS – DCS – DVS

Dehumidifier for small swimming pools



**AVVERTENZA
CAUTION**

BEFORE USING THIS UNIT, READ CAREFULLY THIS USER MANUAL

Dear Customer,

Thank you for having chosen one of our products.

We are glad to provide this User Manual to you, in order to allow an optimum usage of the unit, for a better comfort and a higher safety.

We strongly recommend a careful reading of the directions mentioned in the following pages and to let the present manual available to all the operators who will work for the management and the maintenance of the unit itself.

We remain at your disposal for any further information and explication you may need, whether in the first-starting phase and in every following moment.

For necessary ordinary or extraordinary maintenance operations, we remain at your disposal with our Technical support Service, to assist you and supply the spare parts.

For a quicker assistance, please contact us at the following references:

HIDEW s.r.l.

info@hidew.it - www.hidew.it

HiDew
Dehumidifiers

Operations:

Via dell'artigianato, 1 - 35020 - San Pietro Viminario (PD) - Italy
Tel +39 049/9588510

Legal Office:

Viale Spagna, 31/33 - 35020 - Tribano (PD) - Italy
Tel +39 049/9588511 - Fax +39 049/9588522

SUMMARY

1	INTRODUCTION.....	5
1.1	RESPONSABILITIES.....	6
1.2	SERVICE RULES.....	6
1.3	USES.....	7
1.4	RESIDUAL RISK AREAS.....	7
1.5	INTERVENTION AND MAINTENANCE.....	8
1.6	GENERAL SAFETY RULES.....	9
2	PRODUCT DESCRIPTION.....	10
2.1	COMPONENTS.....	10
2.2	SERIES.....	11
2.3	OPERATIONAL LIMITATIONS.....	12
2.4	DIMENSIONS.....	12
2.5	FUNCTIONS.....	13
2.6	OPTIONS.....	13
2.7	INSTALLATION.....	15
2.8	ELECTRICAL CIRCUITS.....	15
3	CONTROL.....	16
3.1	KEYS.....	16
3.2	MAIN SCREEN.....	17
3.3	USER MENU.....	17
3.4	ALARMS MENU.....	20
3.5	UNIT STATUS MENU.....	20
3.6	TIME-BANDS MENU.....	21
3.7	OTHER SCREENS.....	22
4	TECHNICAL DATA.....	23
4.1	TECHNICAL DATA TABLES.....	23
4.2	YIELD CURVES.....	30
4.3	FUNCTIONAL DIAGRAM.....	32
5	AFTER SALES.....	33
5.1	FAILURES.....	33
5.2	PERIODICAL MAINTENANCE.....	34
5.3	EXTRAORDINARY MAINTENANCE.....	34
6	DISMANTLING OF THE UNIT.....	36
6.1	ENVIRONMENTAL PROTECTION.....	36
7	INSTALLATION.....	37
7.1	INTRODUCTION.....	37
7.2	POSITIONING.....	38
7.3	HYDRAULIC AND ELECTRICAL CONNECTIONS.....	45
7.4	FIRST STARTING.....	49
8	ADDITIONAL NOTES.....	53

1 INTRODUCTION

The present User Manual indicates the uses of the unit and gives instructions for transport, installation, assembling and regulation of the machine. It gives directions about maintenance, spare parts request, residual risks presence and staff education.

The User Manual should be read and used in the following way:

- each operator and person concerned with the use and maintenance of the unit should read it carefully and follow the instructions given;
- the employer has to verify that the operator has the required attitudes to conduct the unit and that he has carefully read the manual; the employer is also supposed to inform the operator about the risks of accidents, mainly risks deriving from the noise, the individual protection devices and the rules preview according to the law, both at an international level and at the destination Country level;
- the manual should always be available for the user, the transport Company, the operators for the placement, the maintenance, the reparation and the dismantling of the unit;
- the manual should be protected from humidity and hot zones and considered as an integrant part of the unit for all its lifetime; it has to be delivered to the next owner of the unit;
- please make sure that every update is included in the manual;
- do not damage, remove, strip or re-write the manual, neither part of it; in case it is lost or damaged, please contact the manufacturer for the request of a new user manual and communicate the matriculation number of the unit (you find it on the data label).

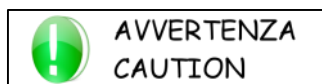
Please, take care of the following symbols. Their function is to underline the following information:



It makes reference to dangerous situations that can occur when using the machine, in order to grant people safety.



It makes reference to dangerous situations that can occur when using the machine, in order to avoid damages to the unit itself and to things around it.



It makes reference to suggestions or additional integration for a correct use of the unit.

The manufacturer has the right to update products and relative manuals, without being obliged to update previous versions, with exception of particular cases.

This manual refers to the current technologies adopted at the moment of the selling of the unit and can not be considered inadequate according to following updating due to technology evolutions.

To ask for eventual manual updating or for integration, please forward your request to the previously indicated references.

Please contact the manufacturer for further information or suggestions.

In case of re-selling of the unit, please inform the manufacturer about the new owner references, in order to facilitate the communication between the both of us.

1.1 RESPONSABILITIES

The unit is granted according to the contract clauses subscribed in the sales negotiation.

The manufacturer is not responsible for accidents that can occur because of:



**ATTENZIONE
WARNING**

- **the non-following of the instructions given in this manual about the correct use, maintenance and first-starting of the machine;**
- changes made in the unit or in the safety devices without a written authorization from the manufacturer;
- non-authorized attempts of repair;
- negligence in constant maintenance or use of non-original spare parts.

Anyhow, if the user accuses the manufacturer for any fault of the unit, he has to demonstrate that the damage occurred has been a direct consequence of the supposed fault.

1.2 SERVICE RULES

The service rules described in this manual have to be considered as integral part of the unit supplied.

Moreover, these rules are reserved to the operator, who has previously been instructed about the unit in object and they provide necessary information about safety and correct use of the machine.

Please, consider that incorrect and incomplete education about the units can cause accidents.

Read carefully the following suggestions:



**ATTENZIONE
WARNING**

- **the first-starting of the unit should be done only by a qualified and manufacturer-authorized operator;**

- when installing the unit or when an intervention is required, it is fundamental to follow the rules described in this manual and to pay attention to the directions given by the control of the machine;
- accidents can be avoided by following these technical instructions, with reference to the machine-directive CE/42/2006 and its following revisions; in every case, keep attention to the national safety rules;
- do not remove or damage protections, labels and writings, especially those imposed by the law; in case they are no more readable, please substitute them. .

The machine-directive CE/42/2006 gives the following definitions:

DANGEROUS ZONE: *every zone internal or in the nearby of a unit where the presence of men is a risk their safety or wealth;*
EXPOSED PERSON: *every person who stands within or nearby a danger zone;*
OPERATOR: *the person charged for the installation, the starting, the regulation, the maintenance, the cleaning, the reparation and the transport of the unit.*



**AVVERTENZA
CAUTION**

All the operators should follow the accidents prevention measures, both international and of the destination Country, in order to avoid accidents.

Please remember that the European Community has issued several directives concerning workers' safety and wealth, such as CEE/391/89, CEE/686/89, CEE/654/89, CEE/655/89, CEE/656/89, CEE/188/89, CEE/58/92 and CEE/57/92, that employers are supposed to follow and to make them followed.

The units have been realized in conformity with technical laws, dispositions and rules in force.

Used materials, equipment parts, production processes, quality warranty and control satisfy the required maximum safety standards. The lifetime of the unit and its correct functioning can be granted by using it for the supposed usages, by moving them carefully and by following accurately maintenance and revisions.

1.3 USES

DDS – DCS – DVS units are dehumidifiers for small swimming pools, thought for all the environments where the non-control of the humidity may cause damages to the structure.

Its use is recommended within the functioning limitations indicated in this manual.



Place the unit where there are not explosion or fire dangers, neither in vibrating areas or in presence of electro-magnetical fields. Furthermore, do not operate in ways which differ from those indicated and do not underestimate safety operations.



DDS-DCS-DVS units are projected for the use in swimming pools, that is to say in places with high concentration of chlorine and / or other corrosives. It is very important to leave the unit on as much as possible, in order to avoid the depositing of corrosives and, as consequences, the probable damaging of the unit itself.

- The unit in stand-by (with dehumidification and heating non-active) is set by default to grant the ventilation at its minimum; it is possible to change this set and make the ventilation stop when the unit is in stand-by. It is recommended not to change this set.
- The unit will be turned off necessarily for the ordinary and extra-ordinary maintenance; after the maintenance operations, it is recommended to turn the unit on again as soon as possible.
- Do not stop the unit during seasonal pauses.



All these information are useful in order to prevent the depositing of chlorine which could damage the unit.

1.4 RESIDUAL RISK AREAS



Due to the peculiar functionality of the unit, in some areas of it, there are residual risks which was not possible to elude during the project neither to reduce. Each operator should be aware of the residual risks in this unit, in order to avoid accidents.

Residual risk areas:

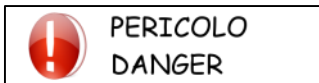
- Short circuit or fire caused by short circuit risk;
- Explosion danger because of the presence of under pressure circuits or pollution due to the refrigerant gas in the circuit;
- Burn danger because of high temperature pipes;
- Slash danger.

1.5 INTERVENTION AND MAINTENANCE

It is useful to remember that the manual can not substitute the suitable experience of the user; for some maintenance operations, the manual represents a reminder of the main activities for competent operators, who have attended, for instance, instructive courses promoted by the manufacturer.

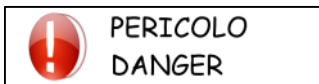
Please, read carefully the following suggestions:

- a preventive and constant maintenance grants the high safety standard. Do not postpone the required reparations and make sure they will be done by qualified staff and by using exclusively original spare parts;
- schedule carefully each intervention;
- operators workplace should be clean and free from objects which could limit their movements;
- operators should avoid inaccurate operations and positions, in order not to compromise their balance;
- operators should pay attention to risks of trapping or cloths/hair entangling in moving parts; the use of a cap is strongly recommended for people with long hair;
- necklaces, bracelets and rings could be dangerous;
- the place should be suitably lit up; an inadequate lighting can be dangerous;
- wait approximately half an hour after the turning off of the machine, before intervene for any maintenance, in order to avoid burns;



- ***do not repair high pressure damaged pipes with welding;***
- ***during installation and maintenance, fluids in the refrigerant circuit and electric parts, can generate dangerous situations;***

- reduce, as much as possible, the opening time of the refrigerant circuit: this because, even for a short time, the air exposition of oil causes the absorption of high humidity quantities and this leads to the creation of weak acids;
- each intervention on the unit should be made by qualified staff;
- before starting a maintenance intervention, make sure the power supply has been turned off;
- make sure the safety devices work correctly; if not, do not turn on the unit;
- use only equipment suggested by the manufacturer of the unit, in order to reduce the possibility of accidents due to low quality equipment;



- ***after the cleaning of the unit, the operator should verify that there are not damaged parts; in case he finds out something wrong, he should ask for the intervention of a maintenance technician;***

- the place should always be clean and properly tidied up, because smearing of oil or grease could cause sliding or fallings;
- the use of inflammable fluids during cleaning operations is forbidden.

During the cleaning operations, do not use gas oil, oil or solvent because while the first leaves an oily patina, which leads to dust attraction, the latter can damage the paint and leads to the creation of rust. If some water seeps into the electrical devices, it will produce oxidation, which can cause the dysfunction of the unit. You should not use water or steam spout on sensors, connectors and other electrical parts.

Please pay attention to the integrity of pipes and other devices, which could wear out. Check that there are not leaks of fluids and other dangerous substances. If something like this occurs, the operator should not turn on the unit before the reparation.

1.6 GENERAL SAFETY RULES

1.6.1 SAFETY CLOTHES

Operators should wear safety equipment such as gauntlet, helmet, safety glasses, safety footwear and cap for protection from the noise.



1.6.2 FIRE EXTINGUISHER AND FIRST AID

Place a first aid box and a fire extinguisher near the unit.
Check regularly that fire extinguishers are charge and that you have understood how to use them.
In case of fire use it according to the regulations in force and contact the fire-men.
Check regularly that the first aid box is fully equipped.
Verify to have nearby the useful emergency phone numbers.



The owner of the place where the unit is installed is responsible for the fire extinguisher and the first aid box.

1.6.3 SUGGESTIONS FOR ADVICES AND MAINTENACE

Put an “under maintenance” label on all sides of the unit.
Check carefully the unit by following the list of operations suggested in the present manual.



1.6.4 SAFETY LABELS



General danger



High voltage danger



Burn danger



Equipment in movement danger



Slash danger

2 PRODUCT DESCRIPTION

DDS, DCS and DVS series dehumidifiers are thought for the usage in small swimming pools, where a 24h/day functioning is required.

Even if their typical installation is for swimming pools, the technical characteristics of these units make them suitable also for other applications, such as museum, archives, libraries, churches, cellars, warehouses and, in general, for ambiances where condensate and humidity can damage the structure and / or the product, or create discomfort.

DDS, DCS and DVS dehumidifiers combine avant-garde technical solutions and a sober and fine looking, so they are easily adaptable also in design and prestigious ambiances.

The top-quality refrigeration, hydraulic, aeraulic and electrical components make DDS, DCS and DVS units the state of the art dehumidifiers in terms of efficiency, reliability and sound power emitted. Moreover, they have been designed to be easily inspected and maintained.



A long list of accessories allows meeting any type of requirement and, in the event that the standard range and available accessories are not enough to meet these demands, HiDew can offer specific solutions to the Customer.

DDS, DCS and DVS series is composed by 27 models according to the air flow rate (from 350 up to 1500 m³/h) and to the capacity of dehumidification (from 46 up to 226 L/day). Thanks to this wide and complete range and to the great looking, this line of products represents a reference on the market.

2.1 COMPONENTS

2.1.1 STRUCTURE

The unit is realized with an exclusive design that, when the machine is closed, grants the inaccessibility to all the components.

The removable frontal panel grants a complete accessibility to the unit, for a simple and quick maintenance.

Bolts and screws are non-oxidable, INOX or in carbon steel with passivation treatments.

The condensate collection tank is in inox steel.

Carpentries are completely varnished with polyester powders.

Heat exchanger realized with anti-corrosion treatment.

2.1.2 REFRIGERANT CIRCUITS

The refrigerant circuit is completely realized in our Factory, using only high-quality components.

Production operators are qualified staff.

Each DDS and DCS unit is assembled, welded, wired and tested within our Factory, ad a granted high-quality product.

DDS and DCS units respond to Direction 97/23/CE. All the unit are realized with the ecological gas R410A.

Refrigerant components:

- Compressors: rotative or scroll type of primary international brand. The engines are thermally protected by an internal protection which controls the temperature of windings and turns off the power supply if necessary.
- Dehydrater filter with molecular sieve
- Thermal expansion valve or rolling organ (according to the model)
- Liquid indicator
- High pressure switch
- Schrader valves for the control of working pressure and / or the maintenance of the refrigerant circuit
- Thermal exchange coils varnished and with anti-corrosion treatment

2.1.3 VENTILATION

For the ventilation, centrifugal at double suctions, 7-speeds (3-speeds for models 210 – 230) with plastic fan (excluded models 210 -230) for a major resistance to the corrosion and a sensible reduction of the sound level emitted, for a major comfort.

2.2 SERIES

There are 10 available models, classified according to the frame and he dehumidifying capacity:

2.2.1 DDS

40	50	60
70	90	100
160	190	
210	230	

2.2.2 DCS

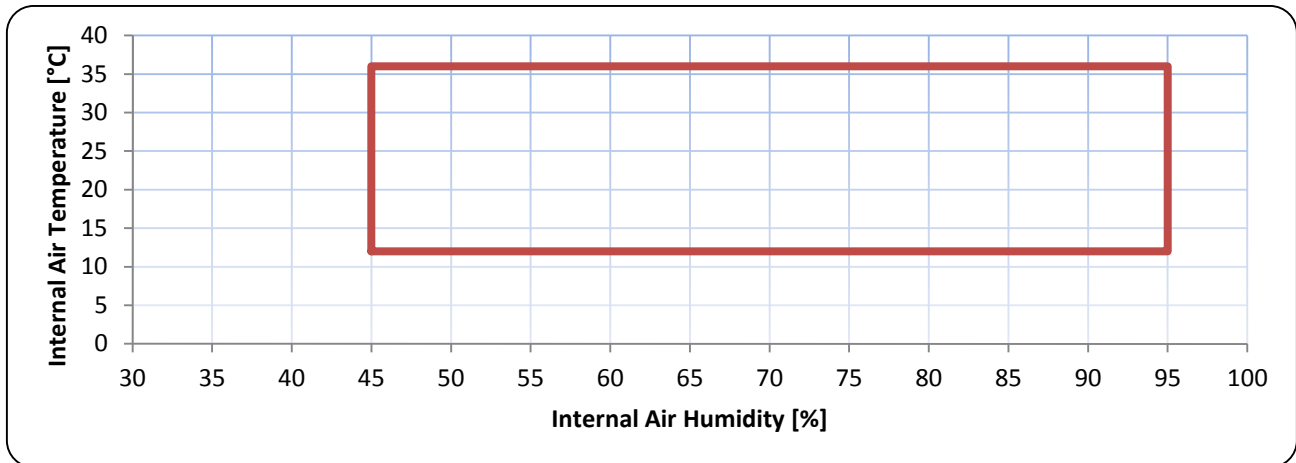
40	50	60
70	90	100
160	190	
210	230	

2.2.3 DVS

70	90	100
160	190	
210	230	

2.3 OPERATIONAL LIMITATIONS

The functioning of the unit is granted according to the limitations indicated in the diagram below.
Outside these limitations, it is not granted.



2.4 DIMENSIONS

		40	50	60	70	90	100	160	190	210	230
DDS	mm	850 x 780 x 280			1050 x 780 x 280			1350 x 850 x 330		1550 x 850 x 330	
DCS	mm	802 x 763 x 257			1002 x 763 x 257			1302 x 833 x 307		1502 x 833 x 307	
DVS	mm	-			550 x 1700 x 330			750 x 1700 x 330			

2.5 FUNCTIONS

DDS, DCS and DVS units are equipped with an high-performance control, complete with a graphic display and humidity and temperature probes on board: this leads to have a dehumidifier completely autonomuou in reading and managing temperature and humidity.

The control is composed by a programmable micro-processor plus a graphic display, allowing several functions and options easily managed thanks to a very simple and intuitive interface.

The software is completely developed in HiDew, by a professional team.

The display can be placed up to 20 mts from the unit and, thanks to the temperature and humidity probe on board, it can manage temperature, humidity and unit on/off from time bands.

Customized softwares are available under special request



Here below you find all the functions of the control:

- Display of unit functioning and/or alarms status
- Temperature and humidity probes on board
- Evaporation low-pressure protection probe
- Management of 3-speeds of ventilation during dehumidification, recirculation, heating
- On/off management by time bands
- Temperature management by time bands
- Humidity management by time bands
- Alarm history management
- Electrical heaters and hot water coil with 3-ways valve (exclusion of models 040-050-060) contemporaneity management
- Automatic defrost management
- Alarm signal on terminal board
- Retro-lighted graphic display
- Possibility to place the display at distance, up to 20 mts

2.6 OPTIONS

	DDS	DCS	DVS
Kit for display at distance (5, 10 or 20 mts)	•	•	•
Hot water coil	•	•	•
Hot water coil with 3-ways valve	•	•	•
Electrical heaters	•	•	•
Silent version	•	•	•
RS485 ModBus serial board	•	•	•
Supply and recovery air plenums (2 pz)	-	•	-
In wall plenums (2 pz)	-	•	-
Supply and recovery air grilles (2 pz)	-	•	-
Feet kit for floor installation	•	-	-
Hot gas defrost	•	•	•

- Option available
- Option NOT available

2.6.1 ADVANCED CONTROL

The Advanced control is composed by a card with a programmable micro-processor plus a graphic display which allows several functions / options easy to manage thanks to an intuitive and complete interface.

The management software is totally developed in HiDew by high-qualified technician. The display can be put at a distance up to 20 meters and, thanks to the temperature and humidity probe mounted on board, can manage temperature, humidity and time-bands on/off of the unit.

Customized software are available under specifications and will be treated as special executions.



2.6.2 HOT WATER RE-HEAT COIL

It is a reheat hot water coil which heats the supply air thanks to the hot water coming from a boiler or from a heat pump.

2.6.3 HOT WATER RE-HEAT COIL WITH 3-WAYS VALVE

In addition to the hot water coil, the DDS and DCS can be equipped with a 3-ways valve managed directly from the control of the unit. The contemporaneity of a 3-ways valve and electrical heaters is possible only if combined with the Advanced control (excluded models 040 – 050 – 060).

2.6.4 ELECTRICAL HEATER

Single-step electrical heaters allow the heating of supply air when there is no hot water available. The safety is granted by a thermostat that, in case of overheating, turns off the heaters and signals the alarm. The contemporaneity of the 3-ways valve and electrical heaters is possible only if combined with the Advanced control (excluded models 040 – 050 – 060).

2.6.5 SILENT VERSION

The silent version allows a reduction of the emitted sound level from the compressor, so the unit is more silent.

It consists of a sound absorbent insulation of the compressor area that reduces the noise and increases the comfort.

2.6.6 RS485 SERIAL BOARD

The Modbus RS485 connection is available with the Advanced control, to supervision of the unit at distance or from a domotic plant. For further information, please consult the technical manual.

2.6.7 SUPPLY AND RECOVERY AIR PLENUM

2.6.8 IN WALL PLENUMS

2.6.9 SUPPLY AND RECOVERY AIR GRILLES

These 3 options are available combined with DCS models, and they allow the installation of the unit on an adjacent wall. Supply and recovery air plenums have to be fixed on the unit and they give directions to air fluxes.

In wall plenums have to be cut during installation (they are though for walls up to 300 mm depth) and have to be inserted within the wall.

Supply and recovery air grilles have to be inserted at the end of in wall plenums; they are in anodized aluminium with fix fins and are characterized by a pleasant and sober design.

2.6.10 FEET KIT FOR FLOOR INSTALLATION

The feet kit for floor installation is available combined with DDS models and it allows the floor standing installation; this option is suggested when the wall can not support the weight of the unit.

2.7 INSTALLATION

DDS and DVS models are conceived for a direct installation in the ambience to dehumidify.

DCS models are conceived for a ducted installation in a technical adjacent room, thus are supplied without the front cover (see dimensional drawings). DCS are predisposed for the connection with supply and recover grilles (optional), or other alternative ducting to permit the suction and supply of the air into the room that needs to be dehumidified.

2.8 ELECTRICAL CIRCUITS

The electrical panel is realized and wired according to the direction EN 60204-1. The control circuit is protected by the apposite magneto-thermal switch.

All the drives at distance are realized with low-tension signals, supplied by an insulation transformer.



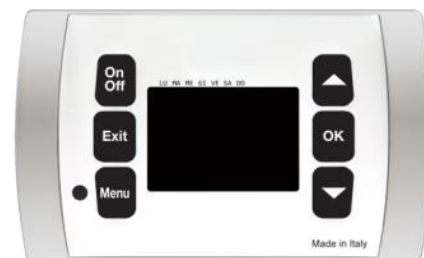
**ATTENZIONE
WARNING**

To stop the group, do not remove tension through the protection at the basis of the unit: this organ has to be used to section the whole unit during maintenance. To turn it off, use the user terminal.

3 CONTROL

The Advanced Control is composed by a power board and an elegant display which allows to command the unit and to modify all the different functions.

Here below there are the functions of the different keys and all the screens:



3.1 KEYS



ON-OFF KEY

- on the main screen it allows the turning off of the unit
- on the 'OFF' screen, it allows the turning on of the unit



EXIT KEY

- it allows the exit and the coming back to the main screen
- if you are modifying a value, it allows to exit from the modification
- on the main screen, pressing it for 4 seconds, it allows the display of the software version



MENU KEY

- on the main screen it allows to enter the first screen of the 'user menu'
- on the time-bands programming screens, it allows to modify the day you are programming



UP KEY

- it allows the running through the screens or to modify a value



OK KEY

- it allows the execution of what is indicated on the display



DOWN KEY

- it allows the running through the screens or to modify a value

3.2 MAIN SCREEN



**AVVERTENZA
CAUTION**

KEYS USE:

- With the OFF key, you turn off the unit
- Keeping pressed the EXIT key, you display the software version
- With the MENU key, you enter the user menu



- the rectangle on the left indicated the current day
- on the right is indicated the current time
- in the middle are indicated the current values of temperature and humidity
- the fan symbol on the left indicates that the fan is on and it is functioning at speed 2
- the drop symbol indicates that the compressor is on to dehumidify
- the sun symbol indicated that a heating device is active
- on the right, a clock symbol may appear if the time-bands are active or the connection symbol may appear if the unit is ruled by a modbus

3.3 USER MENU

The user menu is composed by 9 easy-to-use screens, for the basic configurations of the unit:

1. Unit driver: manual or by time-bands *
2. Desired humidity setting *
3. Desired temperature setting *
4. Alarms managementi *
5. Time-bands programming *
6. Language setting
7. Day and time setting
8. Unit status displaying
9. Password request

* screen not always present.

Each screen has a number on the right part, in order to simplify the use.

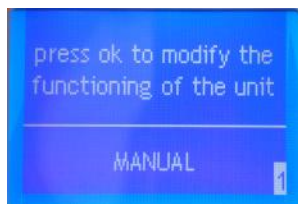


**AVVERTENZA
CAUTION**

KEYS USE:

- With UP and DOWN keys you can run through the screens (some of them are not always displayed)
- With EXIT key you exit and come back to the main screen
- With OK key you execute the function indicated on the screen

Now we see in detail the possible screens of the 'user menu':



On the left you find the screen 1 of the user menu, which allows to set the functioning of the unit: MANUAL or on TIME BANDS

(this screen does not appear if: the unit is managed from a serial modbus)

- press OK to enter in the modification phase
- press UP and DOWN to modify and with OK you confirm and exit from the modification phase
- press EXIT to exit and come back to the main screen
- press DOWN to shift to the following screen



On the left you find the screen 2 of the user menu, which allows to set the desired humidity

(this screen does not appear if: the unit is managed from a serial modbus or is set on time bands)

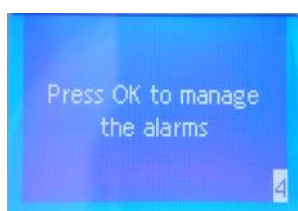
- press OK to enter the modification phase
- press UP and DOWN to modify and with OK you confirm and exit from the modification phase
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen
- press DOWN to go to the following screen



On the left you find the screen 3 of the user menu, which allows to set the desired temperature

(this screen does not appear if: the unit is managed from a serial modbus or is set on time bands or there are not options for the heating)

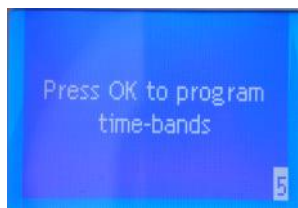
- press OK to enter the modification phase
- press UP and DOWN to modify and with OK you confirm and exit from the modification phase
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen
- press DOWN to go to the following screen



On the left you find the screen 4 of the user menu, which allows to manage the alarms

(this screen only appears if: there are alarms present)

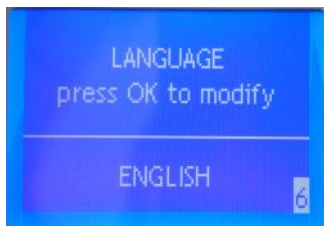
- press OK to enter the alarm menu
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen
- press DOWN to go to the following screen



On the left you find the screen 5 of the user menu, which allows to program the time-bands

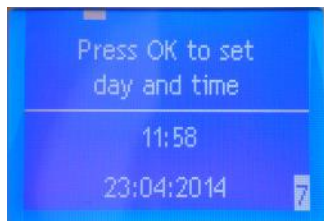
(this screen does not appear if: the unit is managed from a serial modbus or it is set in manual mode)

- press OK to enter the time-bands menu
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen
- press DOWN to go to the following screen



On the left you find the screen 6 of the user menu, which allows the setting of the language

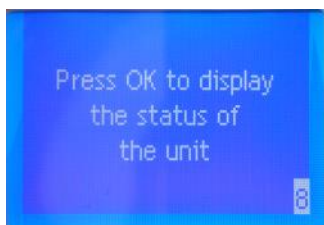
- press OK to enter the modification phase
- press UP and DOWN to modify and with OK you confirm and exit from the modification phase
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen
- press DOWN to go to the following screen



On the left you find the screen 7 of the user menu, which allows to set the time and date, necessary for the correct functioning of time-bands and other functions of the unit

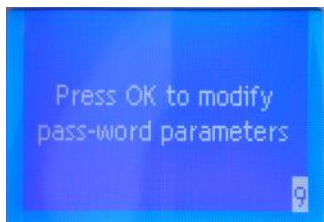
You will modify:

1. the day of the week
 2. the **hour**
 3. the minutes
 4. the day
 5. the month
 6. the year
- press OK to enter the modification phase
 - press UP and DOWN to modify the set
 - press OK to confirm and go to the following modification
 - arrived at the last modification, with OK you confirm and exit from the modification phase
 - press EXIT to exit and come back to the main screen
 - press UP to come back to the previous screen
 - press DOWN to go to the following screen



On the left you find the screen 8 of the user menu, which allows to display the status of the unit, that is to say what is turned on and what is turned off, plus the reading of the temperature and humidity probes

- press OK to enter the unit status menu
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen
- press DOWN to go the following screen

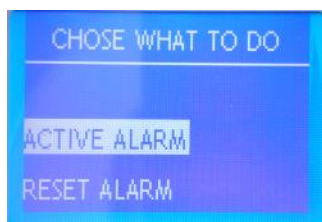


On the left you find the screen 9 of the user menu, which allows to modify the parameters covered by password

- press OK to enter the screen of password request
- press EXIT to exit and come back to the main screen
- press UP to come back to the previous screen

3.4 ALARMS MENU

This menu is accessible only if there is an alarm on the unit and it allows to display the active alarm and, if possible, to reset it.



On the left you see the screen which allows to choose whether to display the alarm or to reset it.

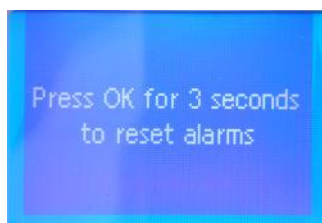
- press EXIT to exit and come back to the main screen
- press UP and DOWN to select what to do
- press OK to confirm the choice and to shift to the further screen



On the left you see an example of alarm display; in the lower part you see the equipment in alarm or the type of alarm; in this example, electrical heaters are in alarm.

This screen is compulsory for the assistance in case of alarms

- press EXIT to exit and come back to the main screen



On the left you see the screen for reset the alarms. Only some alarms can be inactivated and you can proceed by paying attention to the fact that the cause of the alarm has not been solved and the alarm could appear again.

- Pressing OK for 3 seconds the alarm is reset and you come back to the main screen
- Press EXIT to exit and come back to the alarm menu

3.5 UNIT STATUS MENU

This menu is always accessible and allows to display all the information regarding the unit status, specifically the following lines: fan, compressor, water valve, electrical heater, ambient temperature, ambient humidity, evaporation temperature, defrost temperature, water temperature, dehumidification request, heating request.

The water valve and the electrical heaters are options so they could also be absent: in this case, on the corresponding line, some strokes may appear.



On the left you see the unit status screen: in this case we see that the fan is functioning at the medium speed, the compressor is on, the water valve is present and is off, as it is for the electrical heaters.

- press UP and DOWN to see the other lines
- press EXIT to exit and come back to the main screen

3.6 TIME-BANDS MENU

You can access this menu only if the unit is set in time-bands and it allows to program the bands which manage the on/off, the humidity and the temperature.



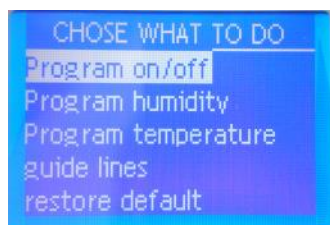
**AVVERTENZA
CAUTION**

It is fundamental to set the current date and time, go to the screen 7 of the User Menu (additional information in the previous chapters).

Default values are:

- Unit always turned on (24 h / day and 7 days / week)
- Desired humidity always to 60% (24 h / day and 7 days / week)
- Desired temperature set all the days:
 - o 28°C from 08:00 to 20:00
 - o 25°C from 20:00 to 08:00

You can set different parameters for each hour of the day and for each day of the week.



On the left you see the screen which allows to choose what to do:

- press EXIT to exit and come back to the main screen
- press UP and DOWN to select what to do
- press OK to confirm the choice and access to the dedicated screen indicated below

The temperature program is available only if you have bought the water coil with valve or the electrical heaters.

3.6.1 ON/OFF PROGRAM- HUMIDITY PROGRAM – TEMPERATURE PROGRAM

Selecting a program you access to the programming screen; here below you find how to program the humidity:



- once entered, the first bar will flash from 00.00 to 01.00; also the set value will flash on the right top
- on the left top you have the rectangle which indicates the day we are programming
- below the day rectangle, you find the indication of the topic you are programming: "HUMIDITY"
- below there is the bar indicating the 24 hours
- on the left there is the bar indicating the desired humidity that can be set



**AVVERTENZA
CAUTION**

KEYS USE:

- pressing OK you change the time to program
- pressing MENU you change the day to program
- pressing UP and DOWN you modify the programming of the flashing hour
- pressing EXIT you come back to the main screen
- keeping pressed OK and MENU, you copy the program of the active day to the following day

3.6.2 GUIDE

Selecting this guide, you have access to 5 screens which explain how to realize the time bands.



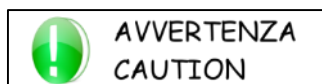
KEYS USE:

- Pressing UP and DOWN you move from a screen to another
- Pressing EXIT you come back to the main screen

3.6.3 DEFAULT RECOVERY

The first time you program the time bands, it may occur that you make something wrong or that you program the time bands but, after a while, you realize that the program is not the most suitable: in both these cases you have the possibility to delete the whole program and start again from the default values

Selecting Default Recovery you enter a screen which allows to re-set all the values of the time bands.



KEYS USE:

- Pressing for 3 seconds OK, you recover all the values
- Pressing EXIT, you come back to the main screen

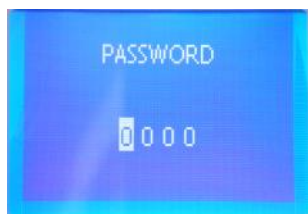
3.7 OTHER SCREENS

3.7.1 SOFTWARE VERSION



This screen allow to display the software version uploaded on the advanced control; you enter this screen only from the main one, by pressing for 3 seconds the EXIT key; the screen is displayed for few seconds and then it returns automatically to the main screen.

3.7.2 PASSWORD



This screen allows to insert the password to modify advanced parameters:

- press EXIT to exit and come back to the main screen
- press UP and DOWN to set each number of the password
- press OK to turn to the modification of the following value or you confirm

4 TECHNICAL DATA

4.1 TECHNICAL DATA TABLES

	Model	DDS-DCS 040	DDS-DCS 050	DDS-DCS 060
Dehumidifying capacity	L/day	46	52	62
Nominal air flow	m ³ /h	350	450	500
Available static pressure	Pa	40	40	40
Sound level	db(A)	43	45	46
Hot water coil capacity	kW	3.7	4.5	4.8
Load losses hot water coil without valve	kPa	8	11	12
Load losses hot water coil with valve	kPa	11	16	17
Electrical heaters capacity	Kw	1.5	1.5	1.5
Current electrical heaters	A	4,35	4,35	6,5
Power supply	V/ph/Hz	230 / 1 / 50		
Compressor nominal power	kW	0,8	0,8	0,9
Compressor nominal current	A	3,73	3,73	4,28
Unit nominal power	Kw	0,84	0,86	1
Unit maximum power	Kw	1,1	1,1	1,2
Unit nominal current	A	3,9	3,9	4,5
Unit maximum current	A	5,1	5,1	5,6
Inrush current	A	19	19	19
Unit maximum power with electrical heaters	kW	2,1	2,1	2,7
Unit maximum current with electrical heaters	A	9,4	9,4	12,1
Inrush current with electrical heaters	A	23,4	23,4	25,5
Weight	Kgs	46	46	46
Refrigerant gas		R410A		

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

	Model	DDS-DCS 070	DDS-DCS 090	DDS-DCS 100
Dehumidifying capacity	L/day	68	89	98
Nominal air flow	m ³ /h	600	700	800
Available static pressure	Pa	40	40	40
Sound level	db(A)	47	48	49
Hot water coil capacity	kW	6,1	6,8	7,5
Load losses hot water coil without valve	kPa	25	30	36
Load losses hot water coil with valve	kPa	35	42	50
Electrical heaters capacity	Kw	2	3,2	3,2
Current electrical heaters	A	8,7	13,9	13,9
Power supply	V/ph/Hz	230 / 1 / 50		
Compressor nominal power	kW	0,9	1,5	1,5
Compressor nominal current	A	4,3	7	7
Unit nominal power	Kw	1	1,5	1,5
Unit maximum power	Kw	1,2	1,9	1,9
Unit nominal current	A	4,5	7,3	7,4
Unit maximum current	A	5,7	9	9
Inrush current	A	19,1	37,4	37,4
Unit maximum power with electrical heaters	kW	3,2	5,1	5,1
Unit maximum current with electrical heaters	A	14,4	22,9	22,9
Inrush current with electrical heaters	A	27,8	51,3	51,3
Weight	Kgs	55	55	55
Refrigerant gas		R410A		

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

	Model	DDS-DCS 160	DDS-DCS 190
Dehumidifying capacity	L/day	165	186
Nominal air flow	m ³ /h	1000	1200
Available static pressure	Pa	40	40
Sound level	db(A)	51	53
Hot water coil capacity	kW	10.1	11.5
Load losses hot water coil without valve	kPa	14	18
Load losses hot water coil with valve	kPa	24	31
Electrical heaters capacity	Kw	4	4
Current electrical heaters	A	17,4	17,4
Power supply	V/ph/Hz	230 / 1 / 50	
Compressor nominal power	kW	2,3	2,5
Compressor nominal current	A	10,8	11,5
Unit nominal power	Kw	2,5	2,6
Unit maximum power	Kw	3,1	3,2
Unit nominal current	A	11,6	12,4
Unit maximum current	A	14,4	15
Inrush current	A	63	63
Unit maximum power with electrical heaters	kW	7,1	7,2
Unit maximum current with electrical heaters	A	31,8	32,4
Inrush current with electrical heaters	A	80,4	80,4
Weight	Kgs	88	88
Refrigerant gas		R410A	

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

	Model	DDS-DCS 210	DDS-DCS 230
Dehumidifying capacity	L/day	211	226
Nominal air flow	m ³ /h	1500	1500
Available static pressure	Pa	40	40
Sound level	db(A)	54	55
Hot water coil capacity	kW	14.5	14.5
Load losses hot water coil without valve	kPa	32	32
Load losses hot water coil with valve	kPa	52	52
Electrical heaters capacity	Kw	7.2	7.2
Current electrical heaters	A	13,9	13,9
Power supply	V/ph/Hz	400 / 3+N / 50	
Compressor nominal power	kW	3,7	3,8
Compressor nominal current	A	6,5	6,7
Unit nominal power	Kw	3,9	4
Unit maximum power	Kw	4,9	4,9
Unit nominal current	A	7,7	7,9
Unit maximum current	A	9,4	9,5
Inrush current	A	49,9	49,9
Unit maximum power with electrical heaters	kW	12,1	12,1
Unit maximum current with electrical heaters	A	23,3	23,4
Inrush current with electrical heaters	A	63,8	63,8
Weight	Kgs	100	100
Refrigerant gas		R410A	

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

	Model	DVS 070	DVS 090	DVS 100
Dehumidifying capacity	L/day	67	92	99
Nominal air flow	m ³ /h	600	700	800
Available static pressure	Pa	40	40	40
Sound level	db(A)	46	47	48
Hot water coil capacity	kW	6,1	6,8	7,5
Load losses hot water coil without valve	kPa	23	28	33
Load losses hot water coil with valve	kPa	33	40	47
Electrical heaters capacity	Kw	2	3	3
Current electrical heaters	A	8,7	13	13
Power supply	V/ph/Hz	230 / 1+N / 50		
Compressor nominal power	kW	0,9	1,5	1,5
Compressor nominal current	A	4,3	7	7
Unit nominal power	Kw	1	1,5	1,6
Unit maximum power	Kw	1,3	1,9	1,9
Unit nominal current	A	4,9	7,7	8
Unit maximum current	A	6,6	9,8	9,8
Inrush current	A	20	38,3	38,3
Unit maximum power with electrical heaters	kW	3,3	4,9	4,9
Unit maximum current with electrical heaters	A	15,3	22,9	22,9
Inrush current with electrical heaters	A	28,7	51,3	51,3
Weight	Kgs	80	80	80
Refrigerant gas		R410A		

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

	Model	DVS 160	DVS 190
Dehumidifying capacity	L/day	161	182
Nominal air flow	m ³ /h	1000	1200
Available static pressure	Pa	40	40
Sound level	db(A)	50	52
Hot water coil capacity	kW	10,4	11,9
Load losses hot water coil without valve	kPa	25	31
Load losses hot water coil with valve	kPa	34	44
Electrical heaters capacity	Kw	4	4
Current electrical heaters	A	17,4	17,4
Power supply	V/ph/Hz	230 / 1+N / 50	
Compressor nominal power	kW	2,3	2,5
Compressor nominal current	A	10,8	11,5
Unit nominal power	Kw	2,4	2,6
Unit maximum power	Kw	3,1	3,2
Unit nominal current	A	11,5	12,4
Unit maximum current	A	15,2	15,8
Inrush current	A	63,8	63,8
Unit maximum power with electrical heaters	kW	7,1	7,2
Unit maximum current with electrical heaters	A	32,6	33,2
Inrush current with electrical heaters	A	81,2	81,2
Weight	Kgs	140	140
Refrigerant gas		R410A	

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

	Model	DVS 210	DVS 230
Dehumidifying capacity	L/day	213	225
Nominal air flow	m ³ /h	1400	1400
Available static pressure	Pa	40	40
Sound level	db(A)	53	54
Hot water coil capacity	kW	13,3	13,3
Load losses hot water coil without valve	kPa	35	35
Load losses hot water coil with valve	kPa	55	55
Electrical heaters capacity	Kw	4	4
Current electrical heaters	A	8,7	8,7
Power supply	V/ph/Hz	400 / 3+N / 50	
Compressor nominal power	kW	3,7	3,8
Compressor nominal current	A	6,5	6,7
Unit nominal power	Kw	3,8	3,9
Unit maximum power	Kw	4,7	4,7
Unit nominal current	A	7,7	7,9
Unit maximum current	A	9,3	9,4
Inrush current	A	49,8	49,8
Unit maximum power with electrical heaters	kW	8,7	8,7
Unit maximum current with electrical heaters	A	17,9	18
Inrush current with electrical heaters	A	58,4	58,4
Weight	Kgs	160	160
Refrigerant gas		R410A	

Dehumidifying capacity declared at the following conditions: T 30°C/80%R.H.

Currents and powers declared at the nominal point: T 30°C/80%R.H.

Hot water coil capacity declared at the following conditions: ambient air T 30°C/water in 80°C/water out 70°C

Sound level declared at 1 m in free field

At different conditions, the values vary: the further from the nominal conditions, the more values will be different

4.2 YIELD CURVES

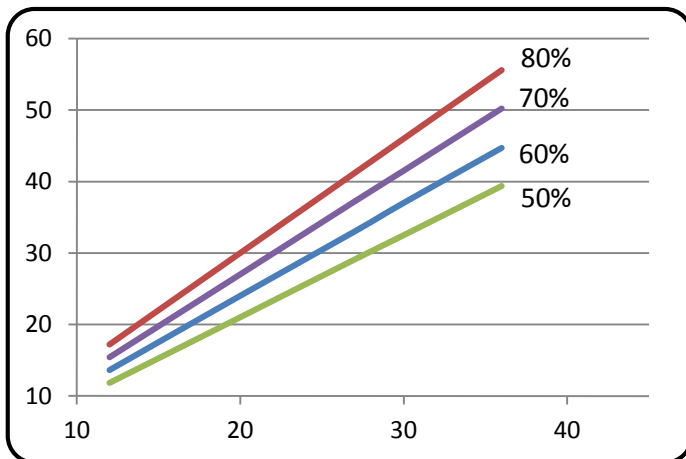
On the horizontal ax you see the temperature

On the vertical ax you see the dehumidifying capacity

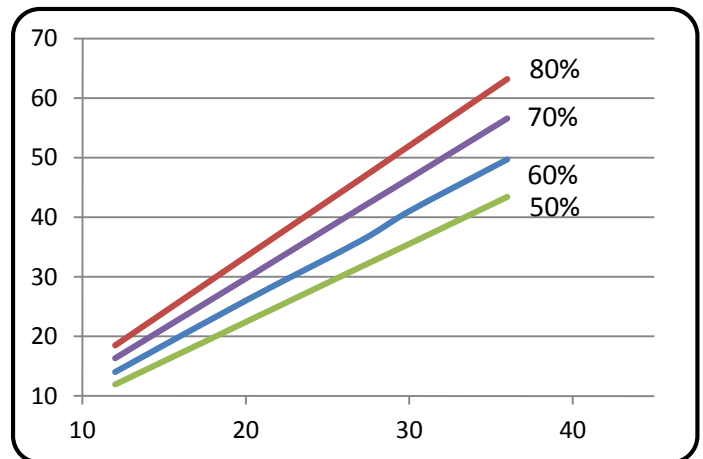
To calculate the capacity of dehumidification at specific conditions:

- Start from the horizontal ax (ambient temperature)
- Go up till you cross the curve of ambient humidity
- Move towards left and read the dehumidification capacity at that specific point

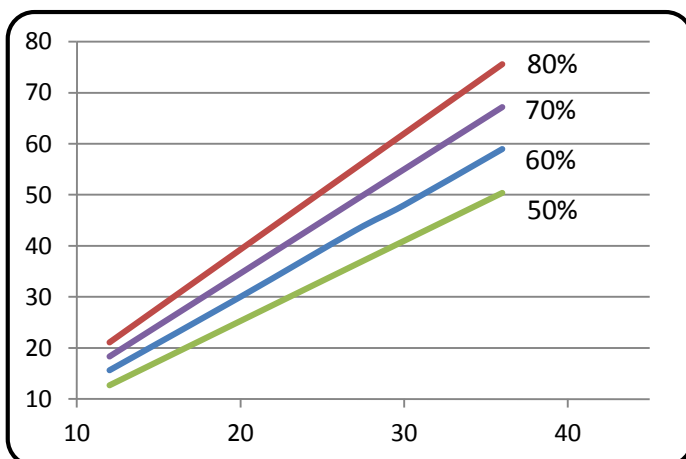
40



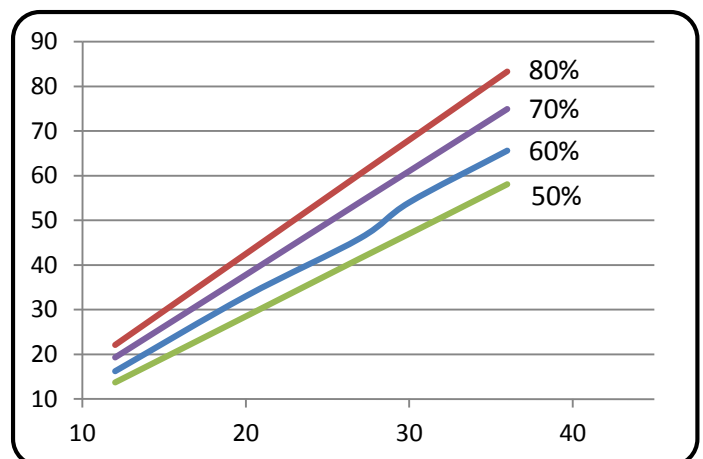
50



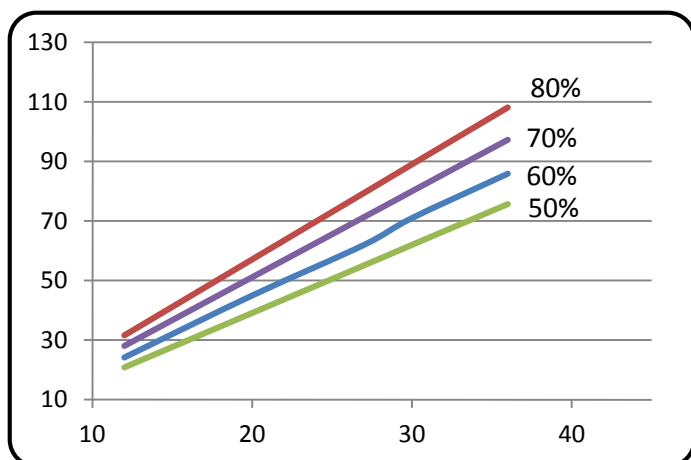
60



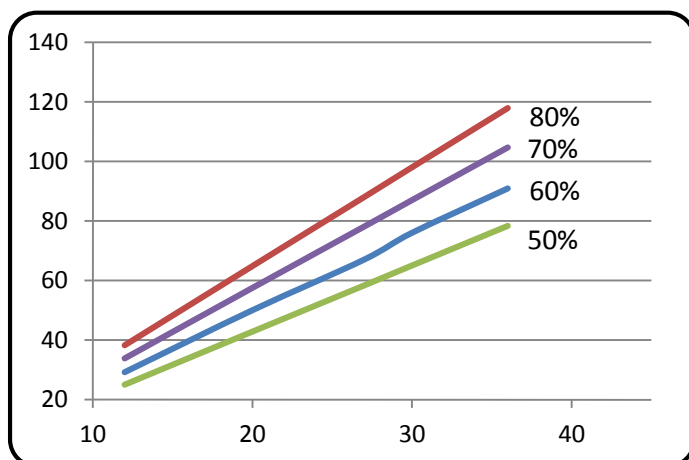
70



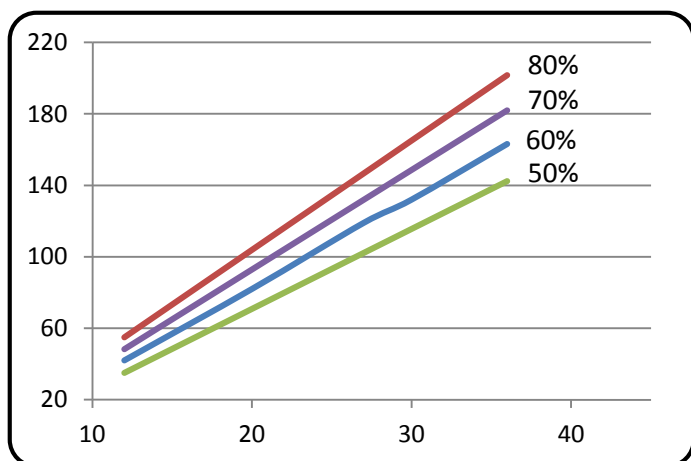
90



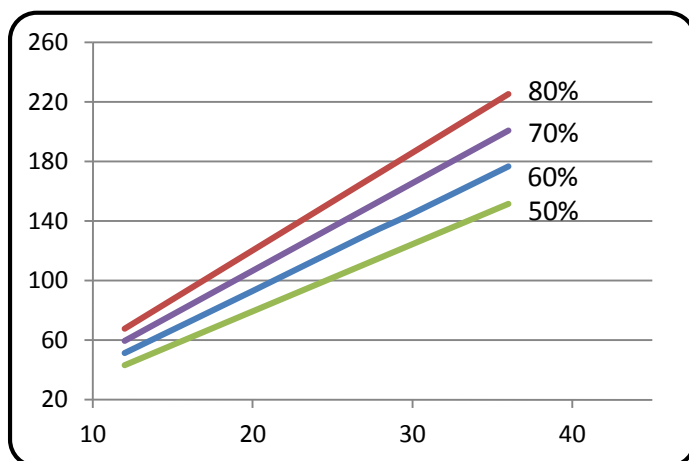
100



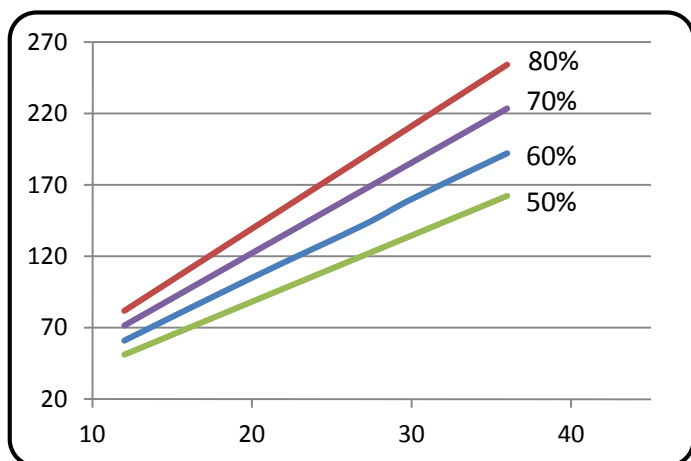
160



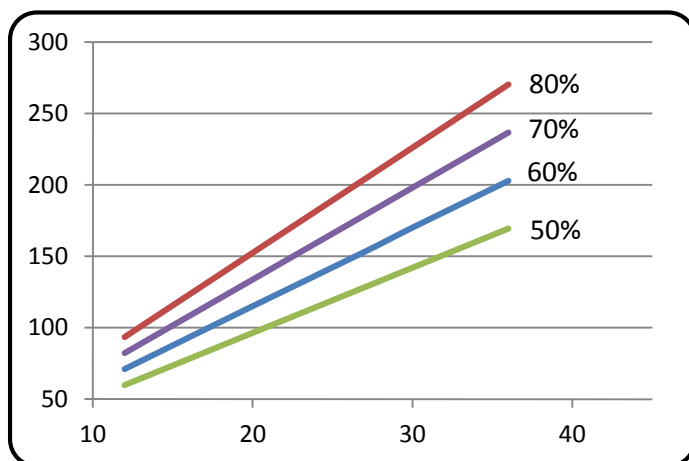
190



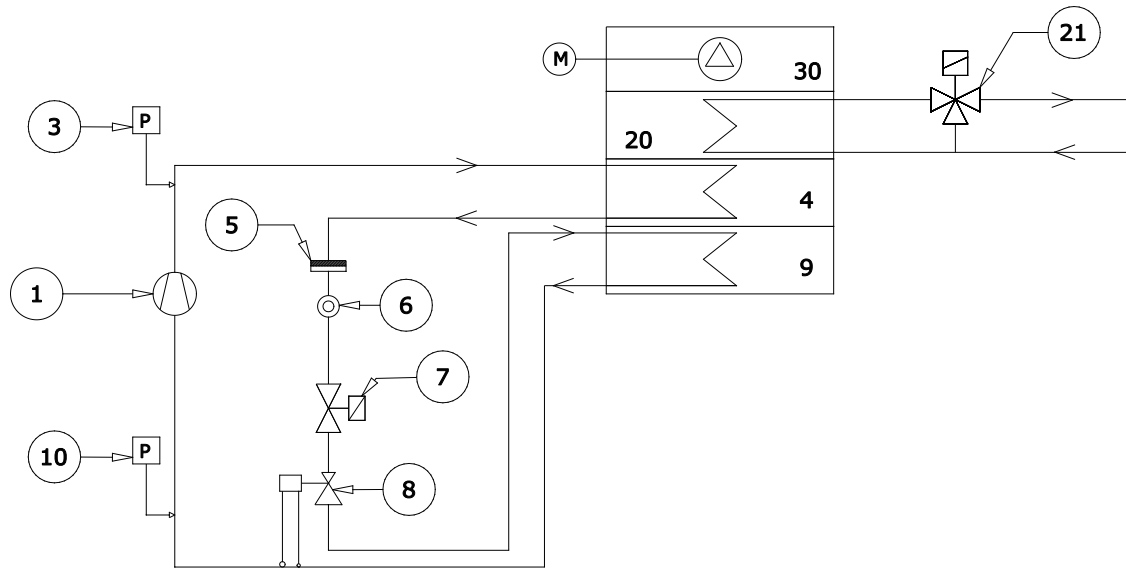
210



230



4.3 FUNCTIONAL DIAGRAM

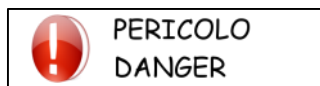


- 1 compressor
- 3 high pressure manostat
- 4 condensing coil
- 5 de-hydrator filter
- 6 flux light
- 7 electro-valve
- 8 thermal expansion valve (or similar)
- 9 evaporative coil
- 10 low pressure probe
- 20 post-heating water coil [optional]
- 21 3-ways water valve [optional]
- 30 fan

5 AFTER SALES

5.1 FAILURES

In the following pages you find the more frequent possible causes of block or dysfunction of the unit. The classification is made on easy-to-identify signs.



When executing the operations suggested to solve the problem, be careful: an excessive self-confidence can be dangerous. It is recommended to contact the manufacturer or a qualified technician, after having identified the failure.

NR	ANOMALY	POSSIBLE CAUSES	WHAT TO DO
1	The unit can not start	There is no power supply to the unit	See if there is power supply on the feeding clamps
		There is no supply to the electrical card	See if there is power supply on the card clamps
		There are some alarms on	See on the terminal the presence of alarms, remove the cause and make it start again
2	The compressor can not start	Intervention on the internal thermal protector	Turn the unit supplying off, wait for the compressor to be cooled, turn the supplying on again and see if the unit starts. Identify the cause of the intervention and remove it
		High pressure protection intervention on the refrigerant circuit	Make reference to the failure 3
		The humidity set values do not permit the turning on	Set different values
		Low ambient temperature	Set a different temperature set
3	High pressure faults	The air flow is not sufficient	See if all the fans are working correctly
			See if batteries and filters are clean
			See if the length and the curves of the channels are correct and, eventually, reduce them (only for DCS units)
		Other causes	Please call a qualified technician
4	Low pressure	There is some frost on the evaporation coil	If there is some frost on evaporation coil, turn the unit off and defrost
		Other causes	Please call a qualified technician
5	Over-heating of the electrical heaters	Air flow is insufficient	Check the correct rotation of the fans
			Check that coils and filters are clean
			Check the length and the curves of the ducts and if necessary, reduce them
		Other causes	Please call a qualified technician

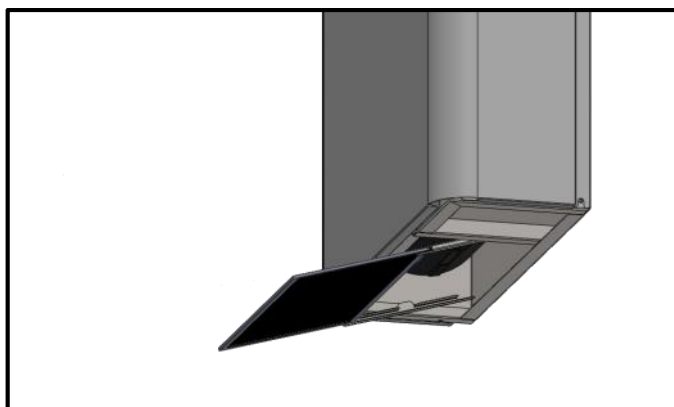
5.2 PERIODICAL MAINTENANCE

The manufacturer recommends that the periodical maintenance is done every three months.

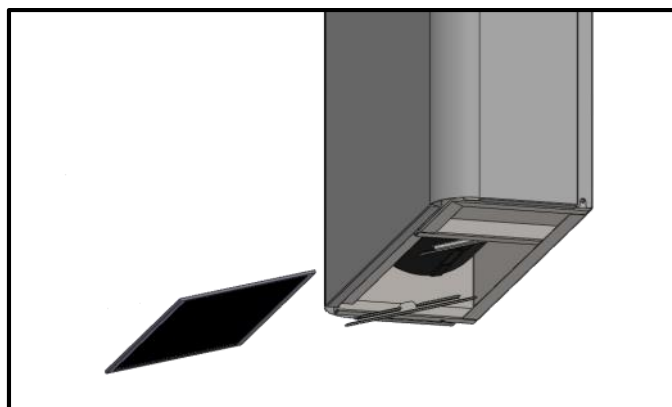
5.2.1 CLEANING / SUBSTITUTION OF THE AIR FILTER

Without removing any panel, incline the filter towards low, remove and wash it under current water; remove with hands eventual impurities without damaging it. A ruined, holed or damaged filter should be substituted.

FILTER REMOVAL



FILTER REMOVED



**ATTENZIONE
WARNING**

It is top important always to insert the suction filter on the unit. Their lack compromises the correct functioning of the unit.

5.3 EXTRAORDINARY MAINTENANCE

The manufacturer recommends that the periodical maintenance is done at least once a year.

5.3.1 DRAIN BOX AND DISCHARGE PIPE CLEANING

1. Unscrew completely the screws on the top and partially those on left and right sides, lift the chest and remove it
2. Unscrew the screws and remove the panel on the right (containing compressor and electrical connections)
3. Unscrew the screws and remove the panel on the left (containing thermal exchange batteries, fan and other)
4. Clean with a wet cloth the drain box and check that the discharge is not obstructed
5. Mount the unit again, by following this process on the contrary

5.3.2 MAINTENANCE TABLE

To grant the performance of the unit, it is strongly suggested to make reference to the following table for maintenance done and to be done.

YEAR _____	4° quarter														
	3° quarter														
	2° quarter														
	1° quarter														
YEAR _____	4° quarter														
	3° quarter														
	2° quarter														
	1° quarter														
YEAR _____	4° quarter														
	3° quarter														
	2° quarter														
	1° quarter														
YEAR _____	4° quarter														
	3° quarter														
	2° quarter														
	1° quarter														
YEAR _____	4° quarter														
	3° quarter														
	2° quarter														
	1° quarter														
MAINTENANCE		Control and safety equipment functioning	Compressor status	Sound level emitted	No oil losses from the	No refrigerant gas losses from the refrigerant circuit	No water losses from the hydraulic circuit	Clamps control on the electrical panel	Heat recover cleaning	Air filters cleaning /	Condense small basin collector cleaning	Thermal exchange coil cleaning			

6 DISMANTLING OF THE UNIT

When dismantling the unit, please take note of the following advices:

- the refrigerant gas should be recovered from qualified staff and sent to the proper collection centers;
- the compressors lubricating oil should be recovered and sent to the proper collection centers;
- the structure and the components, if no more usable, should be demolished and divided according to their material: this is particularly true for copper and aluminium.



Please follow the mentioned dispositions, in order to facilitate the collection, dismantling and recycling centers, and to reduce as much as possible the environmental impact required by these operations.



- *If the unit, or part of it, has been dismantled, its susceptible components should be made inoffensive, in order to avoid any danger.*

When substituting components subjected to differentiate dismantling, it is necessary to make reference to the current dispositions.

Please, remember that it is compulsory to register the charge and discharge of special wastes and toxic-dangerous ones.

The withdrawal of these wastes should be led by qualified and authorized Companies.

The dismantling of these wastes should be made by following the current directions and laws.

For the dismantling of the unit please follow the current directions.

Before the dismantling of the unit ask for the inspection to the apposite office and for the recording of the intervention.

Proceed with the dismantling, by following the national directions.



- *Dismantling operations should be led by qualified staff.*

6.1 ENVIRONMENTAL PROTECTION

The law concerning the directions [reg. CE 2037/00] about the use of ozone damaging substances and gases responsible of the greenhouse effect, affirms the prohibition of refrigerant gases dispersion in the environment: owners are obliged to recover and deliver them to the reseller or to the dedicated collecting centers.

The R410A refrigerant gas, even if not damaging the ozone, is mentioned within the substances responsible for the greenhouse effect; so, it has to follow these directions.



- **Please be careful during maintenance operations, in order to reduce, as much as possible, the risk of refrigerant leaks.**

7 INSTALLATION

7.1 INTRODUCTION

7.1.1 INSPECTION

When receiving the unit, please check it: the unit has left our factory after having been controlled; damages should be immediately protested to the forwarder and noted on the Delivery Paper before signing it.

The manufacturer or his agent should be informed as soon as possible about the entity of the damage.

The Customer is supposed to fulfill a written report for every relevant damage.

7.1.2 LIFTING AND TRANSPORT

Please be careful when moving the unit and avoid sudden or harsh working during the unloading and the placement of it.

Indoor transports should be carefully conducted and the components of the unit should never be used as point of support.



**When lifting the unit make sure you have well fixed it, in order to avoid overturning or accidents.
Do not use the removable panels as point of lift.**

7.1.3 DEPACKING

The package of the unit should be carefully removed, trying to avoid every possible damage to the machine; the package can be of wood, paper, nylon and other materials. It is a good habit to preserve the different packages and deliver them separately for both the draining or the recycling, in order to reduce the environmental impact.

7.1.4 IDENTIFICATION OF THE UNIT

Each unit is characterized by an identification label, placed on the internal side of the electrical panel space. Here you find all the necessary data for installation, maintenance and traceable of the unit.

Take note of the model, the matriculation number, the definitive refrigerant charge of the unit, as reported in the table.

Modello - Model	
Matricola - Serial number	
Data di produzione - Date of production	
Categoria PED/ CE 97/23 Category	
Procedura di valutazione conformità - Conformity module	
Max temp. di stoccaggio - Max storage temperature [°C]	
Max temp. funzionamento - Max ambient working temperature [°C]	
Min. temp. ambiente di funzionamento - Min. ambient working temp. [°C]	
Potenza frigorifera nominale - Nominal Cooling Capacity [kW]	
Potenza nominale in riscaldamento - Nominal Heating Capacity [kW]	
Refrigerante - Refrigerant [ASHRAE 15/1992]	
Carica refrigerante - Refrigerant charge [kg]	
Peso a vuoto - Empty weight [kg]	
Alimentazione - Power supply	
Potenza assorbita Nominale - Nominal power input [kW]	
Corrente nominale - Nominal absorbed current [A]	
Corrente massima - Full load ampere FLA [A]	
Corrente di spunto - Starting Current LRA [A]	
Schema elettrico - Wiring diagram	
Schema frigorifero - Refrigeration diagram	

7.2 POSITIONING



ATTENZIONE WARNING

All DDS - DCS models are projected and built for internal installation.

Do not install the unit external and make sure it is not exposed to atmospheric agents such as rain, hail, humidity and frost.

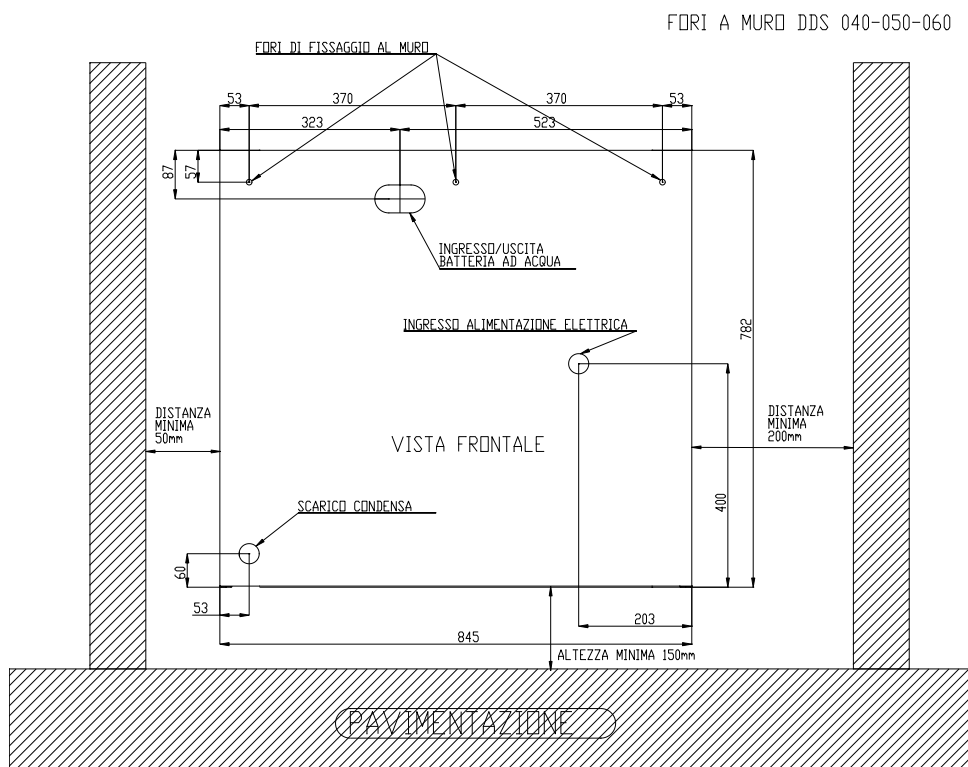
Please keep attention to the following advices when deciding the most suitable place for the installation of the unit and its connections:

- hydraulic pipes dimensions and origin;
- power supply placement;
- accessibility for maintenance or repair operations;
- point of support firmness.

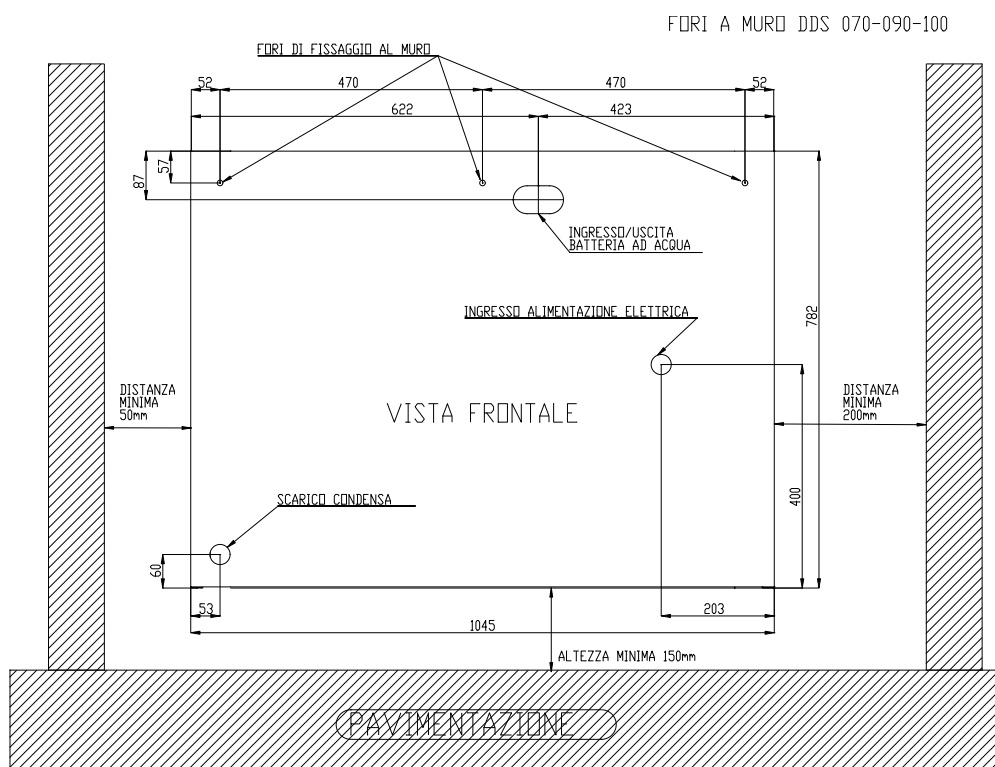
It is fundamental to grant the complete accessibility to the unit.

The installation of anti-vibration material for each point of support is strongly recommended in order to avoid the transmission of noise and vibrations.

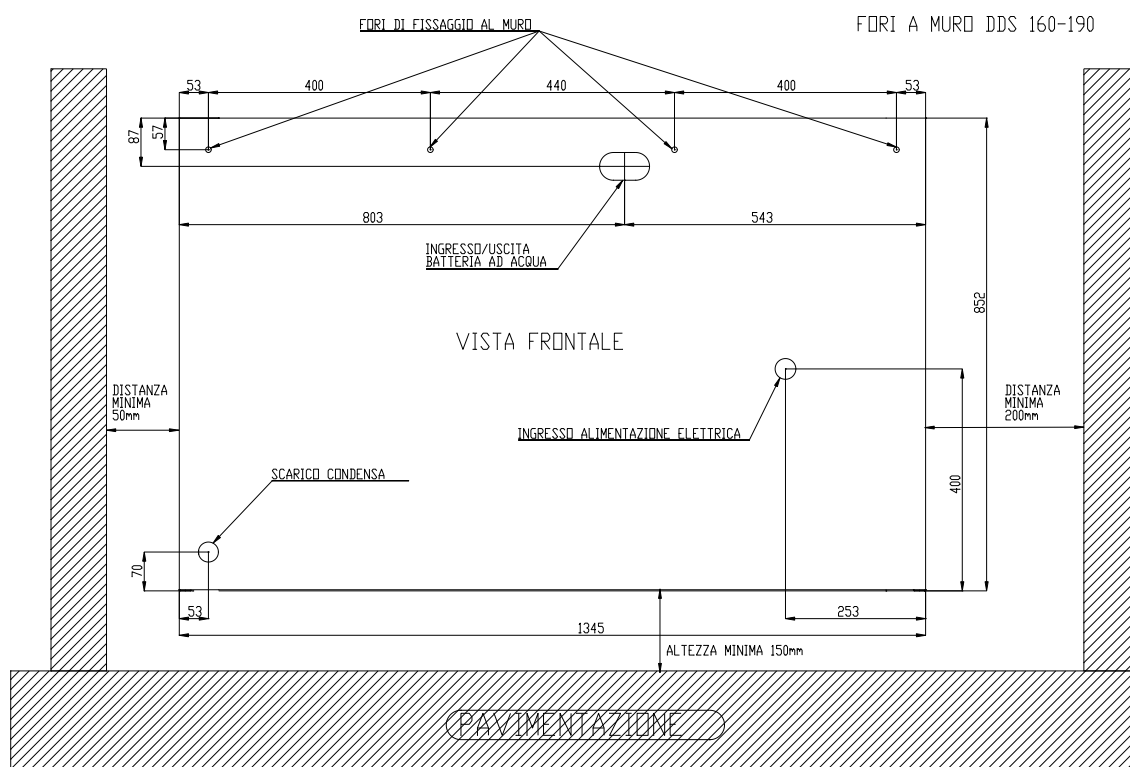
7.2.1 DIMENSIONS AND REQUIRED DISTANCE - DDS FRAME 1



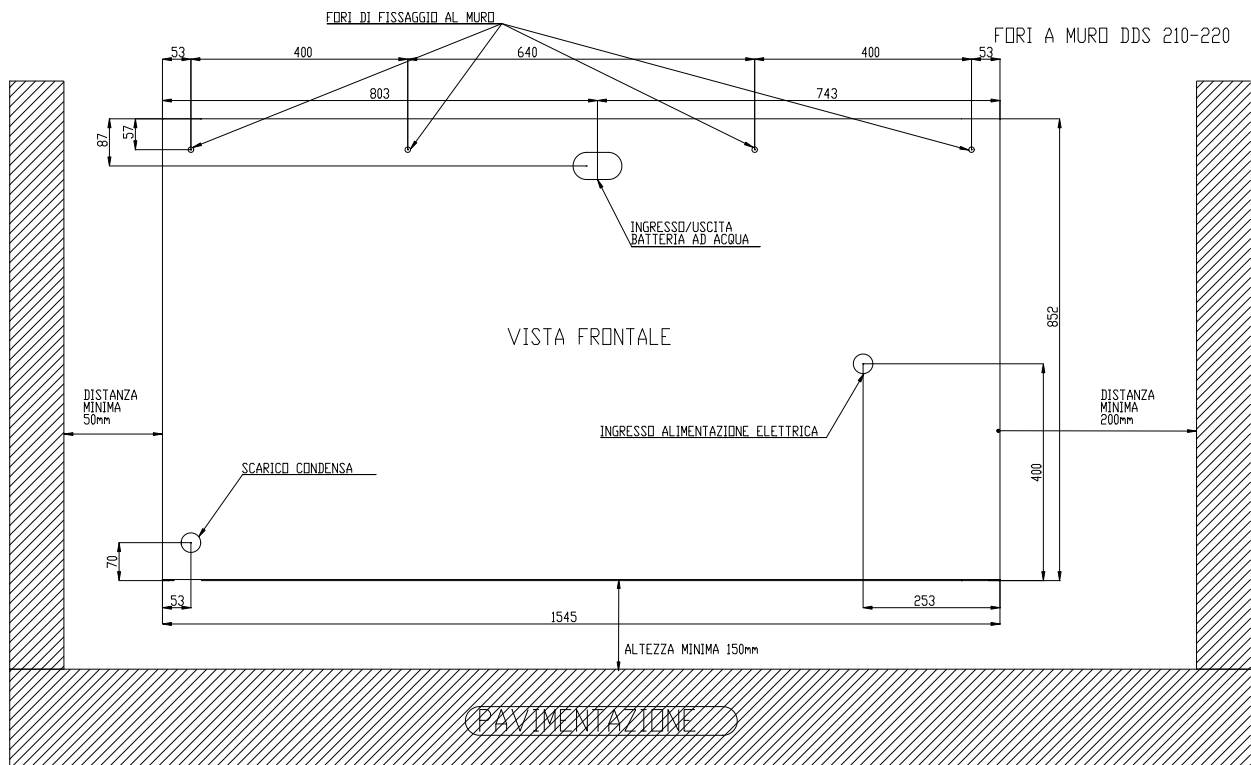
7.2.2 DIMENSIONS AND REQUIRED DISTANCE - DDS FRAME 2



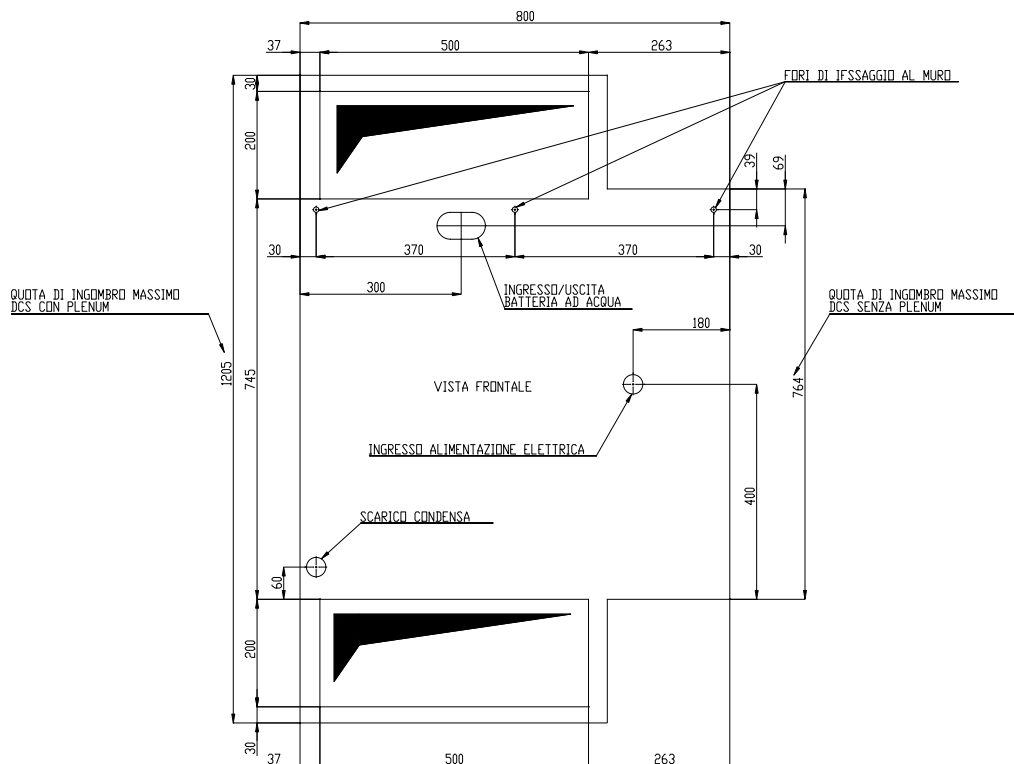
7.2.3 DIMENSIONS AND REQUIRED DISTANCE - DDS FRAME 3



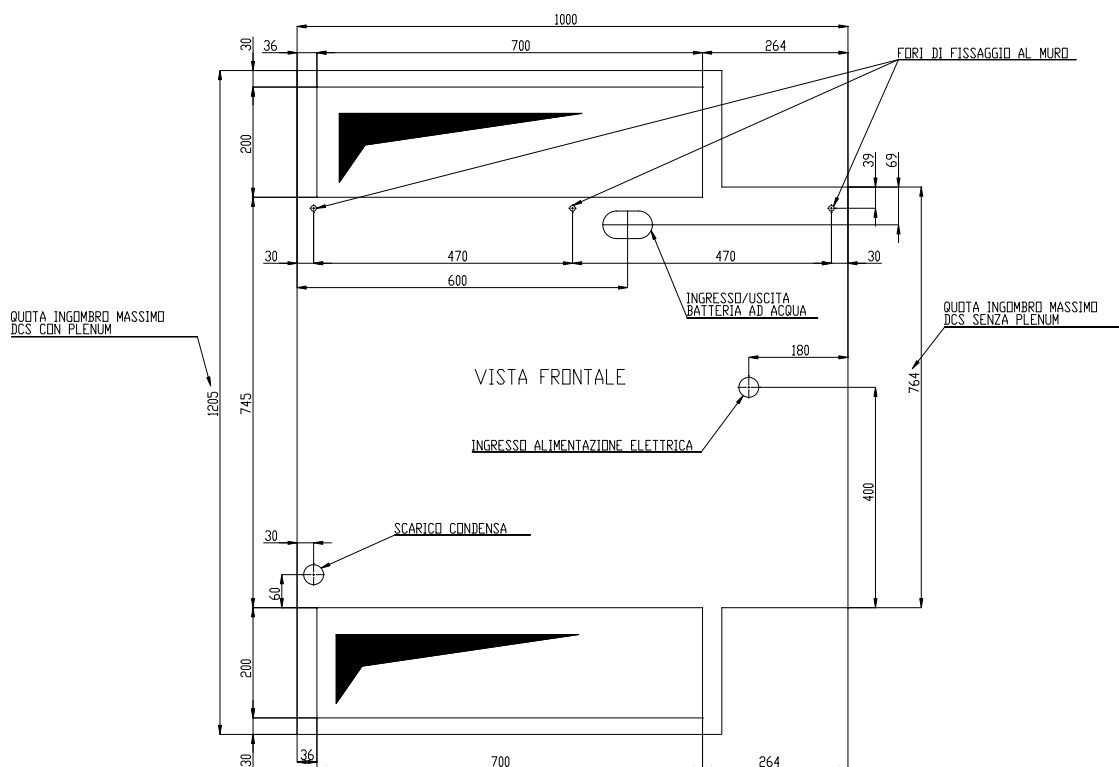
7.2.4 DIMENSIONS AND REQUIRED DISTANCE - DDS FRAME 4



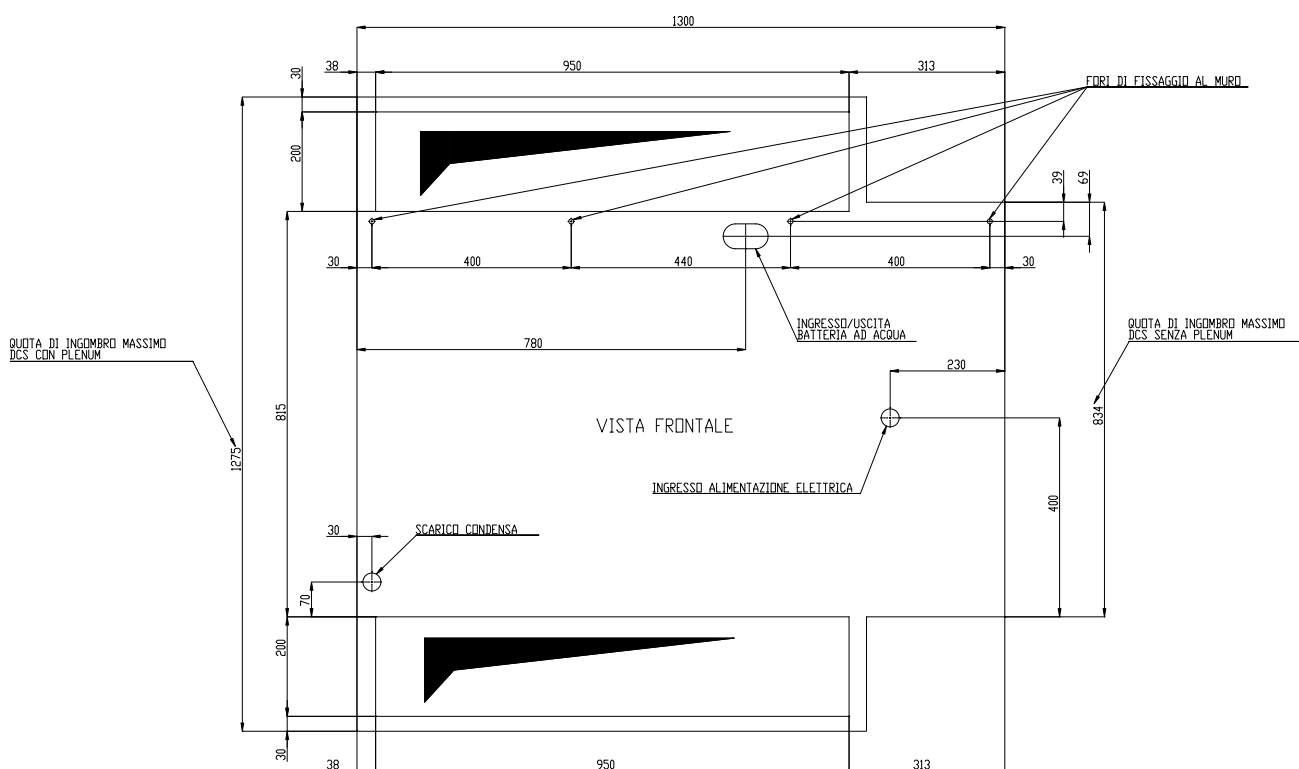
7.2.5 DIMENSIONS AND REQUIRED DISTANCE - DCS FRAME 1



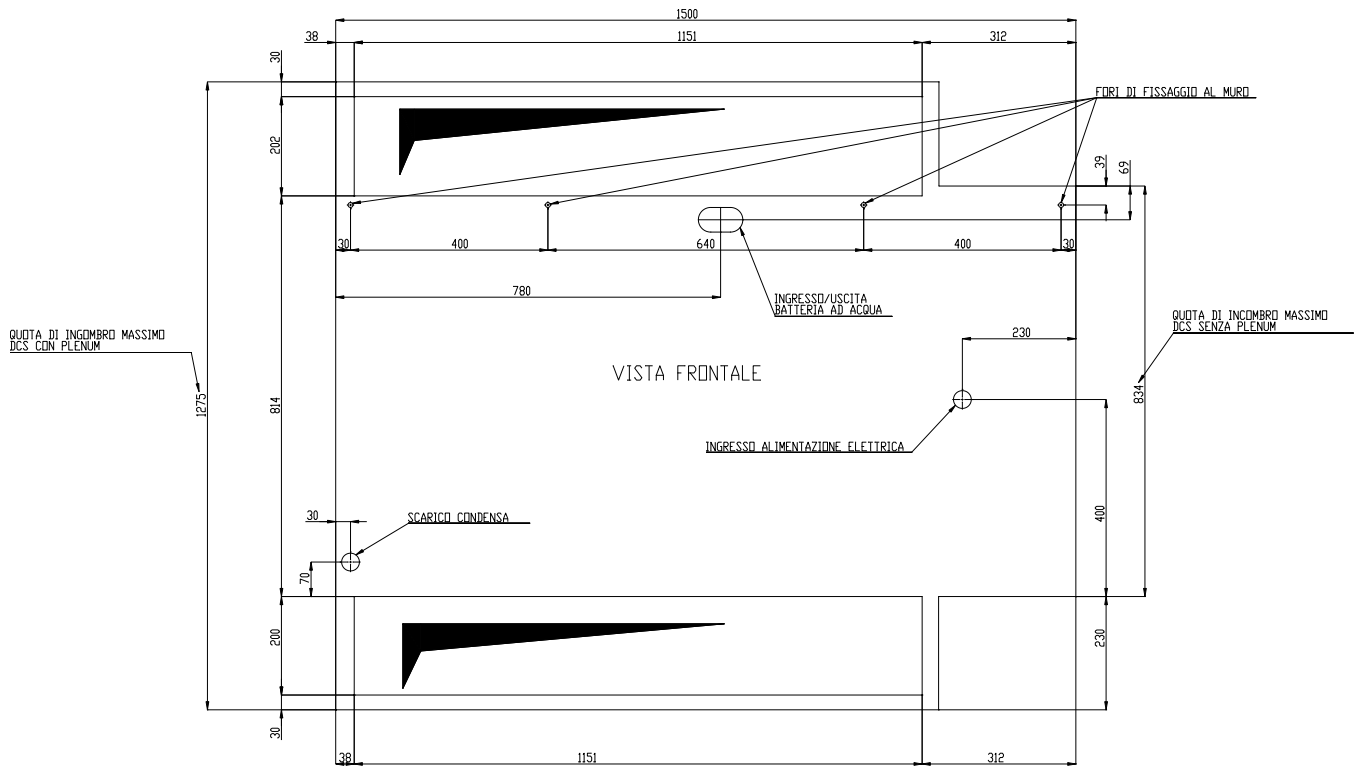
7.2.6 DIMENSIONS AND REQUIRED DISTANCE - DCS FRAME 2



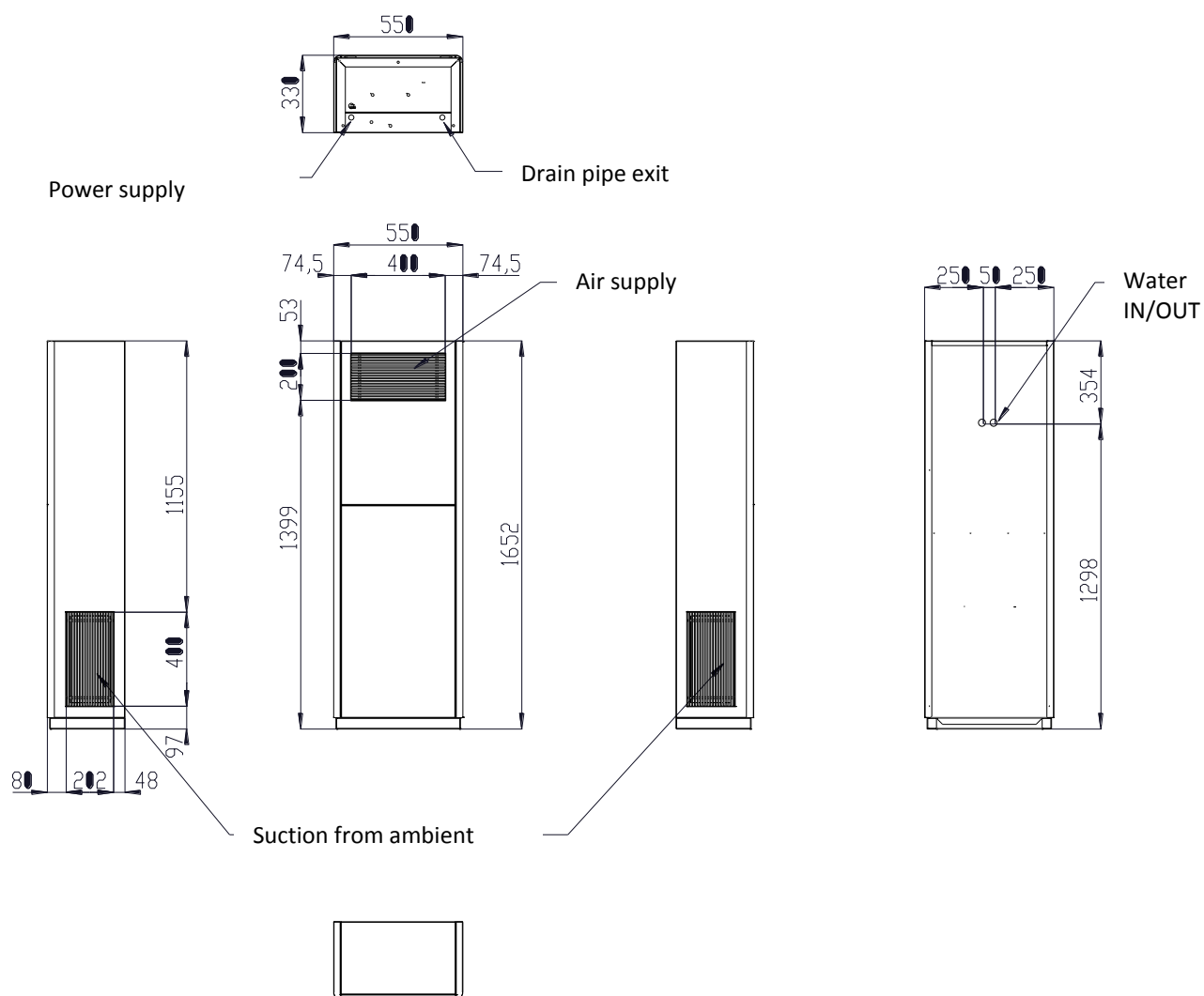
7.2.7 DIMENSIONS AND REQUIRED DISTANCE - DCS FRAME 3



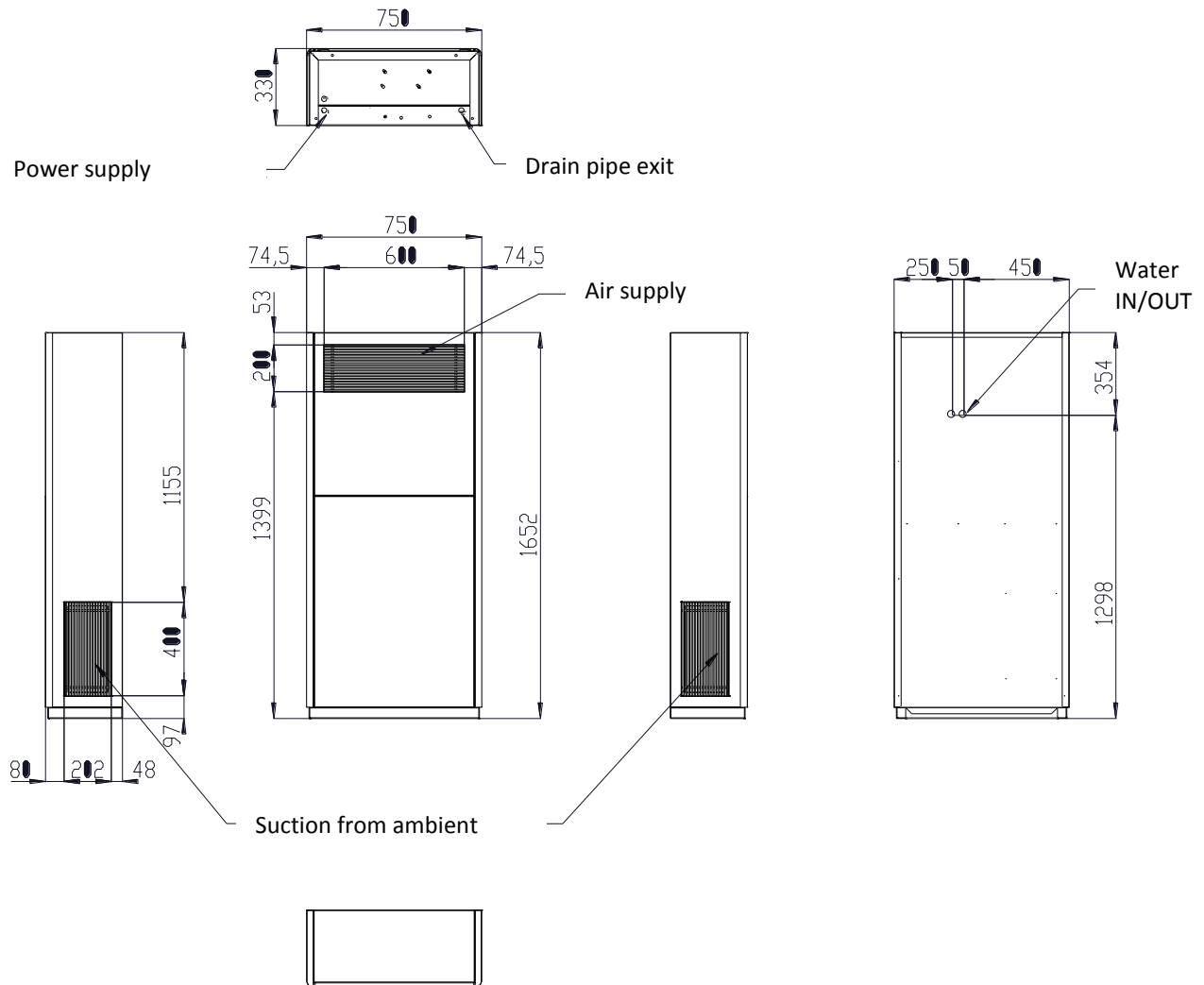
7.2.8 DIMENSIONS AND REQUIRED DISTANCE - DCS FRAME 4



7.2.1 DIMENSIONS AND REQUIRED DISTANCE - DVS 070 – 090 – 100



7.2.1 INGOMBRO DIMENSIONS AND REQUIRED DISTANCE - DVS 160 - 190 – 210 - 230



7.3 HYDRAULIC AND ELECTRICAL CONNECTIONS

7.3.1 HYDRAULIC CONNECTIONS

When preparing the hydraulic connection, it is compulsory to follow the indications below and to follow the National dispositions.



ATTENZIONE WARNING

Do not twist the unit connections. With a key, block the connection and, with another key, fix the connector.

Fix the pipes with flexible curves in order to avoid the transmission of vibrations and to compensate the thermal dilatations.

It is recommended to install the following components on the pipes:

- zone valve (if not required as options);
- temperature and pressure indicators for the ordinary maintenance and control of the group. The pressure control allow to evaluate the correct functioning of the expansion vase and to highlight in advance eventual water losses in the plant;
- interception valves to insulate the unit from the hydraulic circuit in case of maintenance;
- metal filter (incoming pipe) crossed with strict meshes (less than 1 mm) to protect the exchanger from the impurities of the pipes.

This phase is necessary overall for the first starting of the unit;

- escape valves, to place in the higher zones of the hydraulic circuit, in order to allow the purging of air. On the internal pipes there are manual escape valves for the purging on board; this operation should take place when the tension is off;
- discharge tap and, if necessary, drain tank to allow the empty of the plant during maintenance processes;
- in case of process applications, it is recommended to install an decoupling exchanger, in order to avoid the possible dirtying of the exchangers.



AVVERTENZA CAUTION

It is fundamental that the water income occurs where signalled by the label “water income”. If not, the counter-current circuit is not respected and the risk of disfunctioning, blockage or broken-up of the unit is real.

Dimensions and positioning of the hydraulic connections are indicated on the dimensional drawings.



ATTENZIONE WARNING

The hydraulic circuit should be realized in order to grant a constant water flow (+/-15%) in every functioning conditions.

7.3.2 DRAIN CONDENSATION CONNECTION

Use a flexible rubber with an internal diameter of 16 mm.

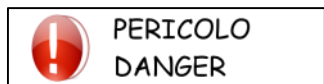


ATTENZIONE WARNING

The inclination of the drain pipe should permit the water down flow outside. If not, the bulb collection will fill up and there will be water loss.

7.3.3 ELECTRICAL CONNECTION

Open the electrical panel, introduce the supplying cable and the others according to the hole, connect them to the clamps and on the disconnecting switch, close the panel.



The grounding connection is compulsory. The installer should connect the ground cable with the suitable clamp situated within the electrical panel, with a yellow-green indication.

Make always reference to the wiring diagram.



No tension while wiring.

DEATH DANGER



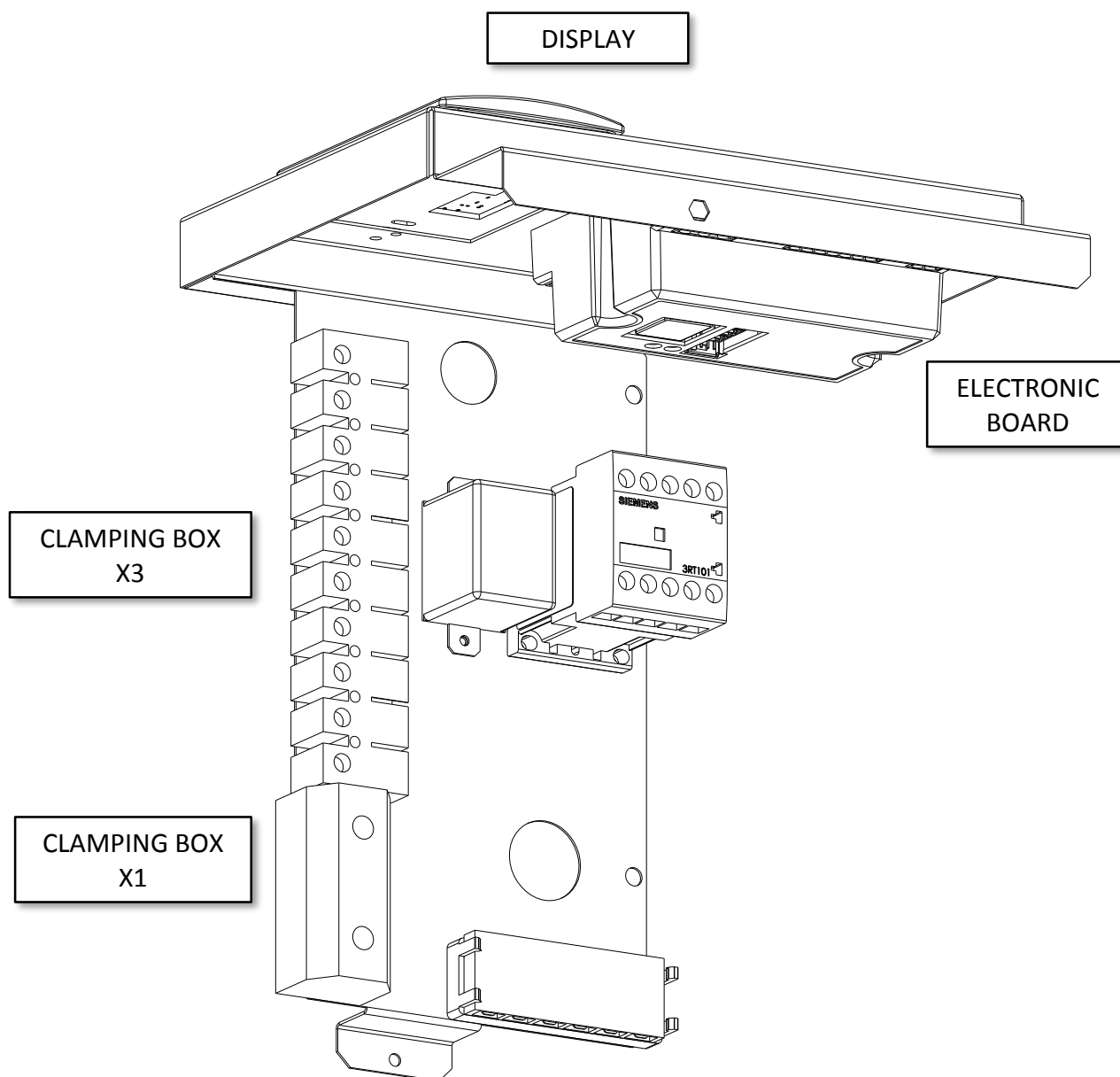
Electrical connection, feed cables and protections should be realized according to the attached wiring diagram and following local and international directions.

7.3.4 SUGGESTED PROTECTION

MODELS	40	50	60	70	90	100	160	190	210	230
WITHOUT ELECTRICAL HEATERS	10 A	10 A	10 A	20 A	20 A	20 A	32 A	32 A	20 A	20 A
WITH ELECTRICAL HEATERS	20 A	20 A	20 A	32 A	32 A	32 A	50 A	50 A	40 A	40 A
TYPE	SINGLE PHASE								THREE PHASES	

7.3.5 TERMINAL BOARD AND WIRING

DISPOSITION



CLAMPING BOX X1

This clamping box is for the power supply of the unit:

- models 040 / 050 / 060 / 070 / 090 / 100 / 160 / 160: connect phase, neutral and PE
- models 210 / 230: connect the 3-phases, neutral and PE .

CLAMPING BOX X3

Clamps 101 - 102 are for the signal of alarms in the unit; it is possible to connect a light or to connect a board for the management of the plant.

The drive is in 230V.

Clamps 103 - 104 are for the connection of a zone valve, a water valve or a water pump (max 1A) to manage the water supplying to the unit. For equipment with consumption over 1A, interpose a contactor or a power-relay.

The drive is in 230V.

Clamps 105 - 106 are for the on/off at distance; connect a contact from a switch or from a board for the management of the unit turning on at distance

Connect only a clean contact.

- Open contact -> unit off
- Closed contact -> unit on

Clamps 107 - 108 are for the dehumidification on/off; connect a contact from a switch or from a board for the management of the dehumidification at distance.

Connect only a clean contact.

- Open contact -> no request for dehumidification
- Closed contact -> request for dehumidification

Clamps 109 - 110 are for the heating on/off; connect a contact from a switch or from a board for the management of the dehumidification at distance.

The contact functions only if the option hot water coil with valve or electrical heaters has been bought.

Connect only a clean contact.

- Open contact -> no request for heating
- Closed contact -> request for heating



On/off contacts (at distance – dehumidification – heating) have to be set on the board during the first start; please make reference to the dedicated chapter.

ESAMPLES:

- **The user ask to turn on / turn off the unit from a on-wall switch:** I decide to use the on/off at distance, connect the 2 cables of the switch to the clamps 105 -106 and during the first start of the unit activate the on/off at distance.
- **I have a drive board from the thermo-regulation of the plant with a clean contact for the dehumidificaion and a clean contact for the heating:** I decide to use the dehumidification on/off contact and the heating on/off contact, connect the contact to the drive board for the activation of the heating on the clamps 109 – 110 and during the first start activate the contact for dehumidification an heating.

7.4 FIRST STARTING



**ATTENZIONE
WARNING**

**First starting, calibration and configuration of the unit should be done only by qualified staff.
DO NOT IMPROVISE, UNIT DISFUNCTION DANGER!**

Before proceeding with the start of the unit, check that all the closing panels are placed correctly and closed properly.
For the first start follow carefully these directions:



**PERICOLO
DANGER**

Check that all the connections (hydraulic, electric and aeraulic) are properly installed and that all the directions indicated on labels, user manual and electric drawing are followed.

Check that the refrigerant circuit taps, if present, are open and that the hydraulic plant is cracked, by eliminating any residual air, charging it gradually and opening the cracking devices on the top side.
Check that there is not any water loss.

The unit is delivered ready to function: supply the unit, if it is in OFF, press the ON/OFF button to turn it on.

For the basic setting (i.e. the humidity set point) make reference to the previous paragraph titled “advanced control”.

For the advanced setting (optional) make reference to the following paragraph.

7.4.1 INSTALLER'S PARAMETERS MODIFICATION

Installer's parameters allow the advanced setting of the unit.



**ATTENZIONE
WARNING**

**Some parameters regard important modifications to the unit.
MODIFY ONLY IF NECESSARY**

To enter the installer menu, follow this process:

- Go to the main screen pressing EXIT if necessary
- Press MENU to enter the first screen of the user menu
- Press DOWN up to the last screen (screen 9)
- Press OK
- The password is required, insert " 0010 " and confirm by pressing OK

This menu is composed by 10 screen:

1. Fan speed
2. Filter cleaning timer
3. Dehumidification differential
4. Heating differential *
5. On/off contact at distance *
6. On/off contact dehumidification *
7. On/off contact heating *
8. Serial modbus *
9. Alarm history
10. Recover default values

* screen not always present



**AVVERTENZA
CAUTION**

USE OF THE KEYS DURING THE SURFING WITHIN THE SCREENS:

- With UP and DOWN you pass from a screen to another (some screens are displayed only in some cases)
- With EXIT you exit and come back to the main screen
- With OK you enter in the modification mode

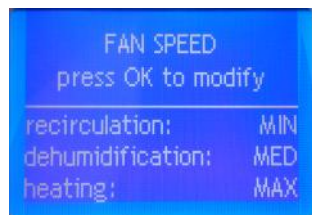


**AVVERTENZA
CAUTION**

USE OF THE KEYS DURING THE MODIFICATION:

- With UP and DOWN you modify the highlighted value
- With EXIT you exit from the modification
- With OK you confirm the highlighted value and, if there are some following values to modify, you pass to the next one, otherwise you exit from the modification

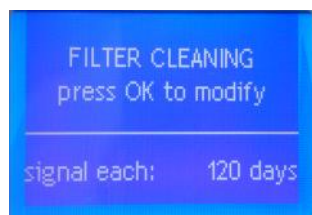
Now we see in detail the different screen of the installer menu:



On the left you see the screen 1 of installer menu, which allows to modify the fan speed in the functioning phases:

1. Recirculation: OFF, MIN, MEDIUM or MAX
2. Dehumidification: MEDIUM or MAX
3. Heating: (if present): MEDIUM or MAX, connected to the speed in dehumidification

It is recommended not to set the recirculation speed on OFF, because each time the unit goes in stand-by, it turns off the ventilation and the chlorine present in the swimming pool could damage the components of the unit .



The screen 2 of the installer menu allows to modify the timer which signals the filter cleaning.

By setting 120 days, each 4 months the unit will give the signal to clean the filters.
To remove the signal, press EXIT

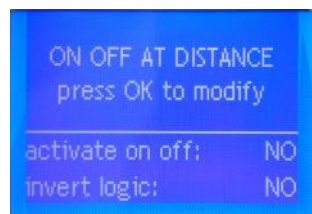


On the left you see the screen 3 of the installer menu, which allows to modify the differentials that manage the request for dehumidification.



On the left you see screen 4 of the installer menu, which allows to modify the differentials that manage the request for heating.

This screen is present only if the option hot water coil with valve or electrical heaters has been chosen.

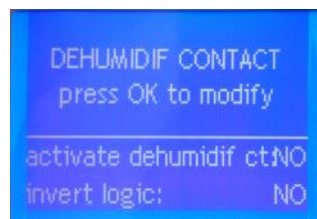


On the left you see the screen 5 of the installer menu, which allows the activation of the contact for the on/off at distance and, if necessary, it inverts the functioning logic.

This screen is present only if the modbus communication is not active.

Without inverting the logic:

- contact open → unit off
- contact closed → unit on

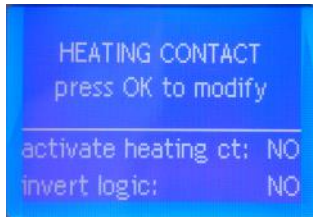


On the left you see the screen 6 of the installer menu, which allows to activate the contact on/off for dehumidification and, if necessary, to invert the functioning logic.

This screen is present only if the modbus communication is not active

Without inverting the logic:

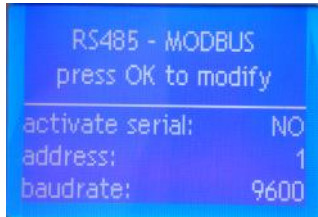
- contact open → request for dehumidification non-active
- contact closed → request for dehumidification active



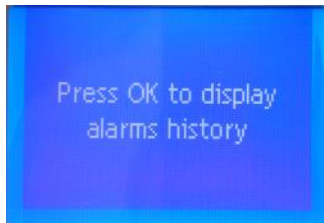
On the left you see the screen 7 of the installer menu, which allows to activate the contact for the on/off of the heating and, if necessary, to invert the functioning logic
This screen is present only if the modbus communication is not active and if the option hot water coil with valve or the option electrical heater has been bought.

Without inverting the logic:

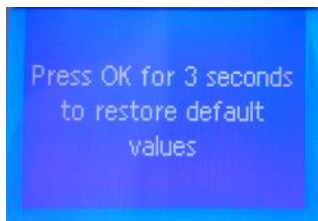
- contact open → request for heating non-active
- contact closed → request for heating active



On the left the screen 8 of the installer menu, which allows to activate and to modify the parameters connected with the modbus communication.
This screen is present only if the option modbus communication has been bought.



On the left the screen 9 of the installer menu, which allows to access to the alarm history and to display all the memorized alarms.



On the left you see the screen 10 of the installer menu, which allows to restore all the default values of installer menu and user menu.

During the modification of the parameters it may occur that some errors are made; in this case there is the possibility to restore the default values.

8 ADDITIONAL NOTES

[illegible]





HIDEW s.r.l.

info@hidew.it - www.hidew.it

Operations:

Via dell'artigianato 1 - 35020 - San Pietro Viminario (PD) – Italy
Tel +39 049/9588510

Legal Office:

Viale Spagna, 31/33 - 35020 - Tribano (PD) - Italy
Tel +39 049/9588511 - Fax +39 049/9588522