1. INTRODUCTION

1.1. PRESENTATION

dear Client,
Oscartek is pleased to number you among its customers and relies the bought machine will match your expectation. In order to get the best performance of the machine, we recommend you to follow all suggestions and instructions, which are included in this manual.

1.2. HOW TO USE THE MACHINE

- PERMITTED USES
  This refrigerated module has been manufactured for drink cold storage.
- NOT PERMITTED USES
  It is absolutely forbidden the use of the refrigerated display cabinet for pharmaceutical products.

1.3. RESPECTED NORMS

The refrigerated display cabinet has been manufactured in respect of the safety issues relevant to the following norm:

- Directive N° 2006/95/EC : Low tension
- Directive N° 89/336/EC : Electro-magnetic Compatibility
- Directive N° 97/23/EC (P.E.D.) : European Pressure Equipment
- Norm CEI 17-13/1 (EN 60499/1) : Realization of Electric Installations
- Norm CEI EN 60335-1 (CEI 61-150) : Safety of household and similar electrical appliances
- Norm CEI EN 60335-2-24 (CEI 61-56) : Special norms for refrigerators, freezers and ice machines

1.4. RESPONSIBILITY

Oscartek declines any responsibility relevant to damages on persons, animals and/or products in case of:

- No respect of in force norms
- Installation, which is not conform to the instructions manual
- No observance of all maintenance operations, which are suggested in this manual
- No previously agreed change operations with the manufacturer
- No proper use of the refrigerated display cabinet, for which the machine has been produced.

1.5. WARNING

Anytime Oscartek reserves the right to up-date the content of this manual and/or to modify the product in order to improve its quality and performance, without any previous notice and/or communication.

2. DISPLAY CASE DATA PLATE

2.1. DATA PLATE CONTENT

<table>
<thead>
<tr>
<th>Model</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial No.</td>
<td>2</td>
</tr>
<tr>
<td>Production Date</td>
<td>3</td>
</tr>
<tr>
<td>Voltage</td>
<td>4</td>
</tr>
<tr>
<td>Phase</td>
<td>5</td>
</tr>
<tr>
<td>Frequency</td>
<td>6</td>
</tr>
<tr>
<td>Compressor type</td>
<td>7</td>
</tr>
<tr>
<td>Number of compressor</td>
<td>8</td>
</tr>
<tr>
<td>Refrigerant type</td>
<td>9</td>
</tr>
</tbody>
</table>

| Gas No. | 10 |
| Kg CL | 11 |

| Pmax | 12 psig |
| Pmin | 13 psig |

SAMPLE

1. Commercial name of the unit
2. Identification number
3. Production date
4. Voltage
5. Phases
6. Frequency
7. Compressor type
8. Number of compressor
9. Refrigerant type
10. Refrigerant weight
12. Test pressure – system high pressure side
13. Nominal power absorbed during defrost
14. Test pressure – system low pressure side
15. Max. power absorbed during defrost
16. Nominal power absorbed by heating elements (only if higher than 100W)
17. Lighting nominal power
3. INSTALLATION

3.1. MACHINE HANDLING

- The wall showcase handling, from the truck to the final place, has to be made by any truck-lift, which is proper to its weight. The showcase shall be always balanced in order to ensure personnel integrity and machine functionality.
- The showcase can be shipped with or without wood packaging, in case wood crate will be used, will have a pallet base for an easy fork-lift handling. The pallet, however should be handle in the central position.
- During the shipment, it is necessary to avoid any crash or land shake of the wall showcase in order to not damage its frame, especially its glasses.
- Do not drag the wall showcase on the floor and do not push it on the upper glasses.
- In case the wall showcase has front or side room-glasses avoids its shipment by air.

3.2. STOCK OF THE SHOWCASE

- Whenever the showcase has to be stoked, follow carefully what suggested before.
- Environmental temperature during the showcase stock can have following range -15°C and + 55°C and humidity between 30% and 90%.
- The wall showcase has always to be protected by sunrays and raining.
- In case the wall showcase has to remain in stock quite long time before its use, keep it with its packaging in order to maintain its protection.

3.3. PACKAGING REMOVE

Before getting the wall showcase from the forwarding agent, check its conditions. In case it will be some damages, inform the driver and sign it on shipping documents. Eventual damages relevant to the shipment and/or to the wrong stock, have not to be ascribed to the manufacturer.

3.4. SHOWCASE POSITION

The refrigerated showcase needs particular environmental conditions in order to offer the right performance, so that the area where it will be used has to respect following indications

- Floor has to be levelled perfectly, on the contrary keep the wall showcase on the horizontal position in order to guarantee a perfect defrosting water drain and avoid boring compressor noises.
- The wall showcase has to not be under the sun-rays in order to have its better refrigeration performance, has to remain inside the local or to be sheltered by window curtain. If what described above is not observed, it can determinate an increase of temperature of displayed product and an increasing power consume.
- The wall showcase has not to be under air currents due to open doors or windows, or under roof ventilators or under air condition outlets. In case will be not respected the above suggestions it can arise an increasing of temperature of the displayed product and/or an increasing ice phenomena on the evaporator and internal fans, which compromise the correct cold air circulation and product consistence.
- The wall showcase has not to be placed close any heat source as heaters, ovens, etc
- The wall showcase has to have a sufficient place in order to ensure a correct custom service, to make an easy maintenance operation, to guarantee the right air flow necessary to make cold the condenser. Besides the warm air which flows out has to no have any obstacle or to invest other equipments in order to not reduce the correct functions.

3.5. REMOTE CONDENSING UNIT PLACING

- The remote condensing unit has to be checked by specialised technicians and according to the required refrigerating power and their position respect the showcase.
- The condensing unit has to be placed following these points:
  - The condensing unit has to be located at least 250 mm from any eventual wall (pic.5.5)
  - Air flow direction has to be from the eventual wall towards compressor.
  - The local, in case will be closed, has to be with enough air circulation.
  - By the condenser has to be guaranteed in any case as much as possible cold air.
  - In case will be necessary it has to be foreseen a forced air exchange by any fan according to the air flow of condenser.
  - The condensing units of display showcase have to be fixed properly.
  - The generated noise has not exceed the admitted noise levels relevant to the public places, especially in case of domestic buildings.
  - It is always necessary a sufficient place along the four sides of the wall showcase in order to make easy any type of check and maintenance operations.
  - When the condensing units are external will be necessary a frame holder that has to be fixed in a proper way and eventually added with amortising elements. Besides this frame has to be closet with no-water protection grid and sufficient opening holes for ventilation.
3.6. ELECTRICAL CONNECTION

- Before proceeding with electrical connection, be sure that the available electric power and tension are what is required on technical label of the wall showcase.
- The electric connection has to be made by qualified personnel and following manufacturer's instructions.
- The wall showcase has already a general switch, however it is necessary an omni polar switch, with a minimum distance among the contacts of 3mm.
- It is obligatory that the wall showcase will be connected properly with an efficient ground socket.

WARNING! A wrong connection may occur always to persons, animals and things, where the manufacturer cannot be considered as responsible.

WARNING!
The wall showcase has no main switch breaking both the phases.
Before any maintenance operation disconnect the electrical supply of the wall showcase. (pic.3.6).

pic.3.6

3.7. IDRAULIC CONNECTION - REMOTE CONDENSING UNIT

- In the case then wall showcase has a remote condensing unit, it is necessary make the connection of defrosting water outlet with the main water drain outlet.
4. ROUTINE MAINTENANCE AND PERIODIC CHECKS

➢ These kinds of operations are at client's expenses.
➢ In case some malfunctioning of the unit are observed, please make sure this is not due to non-maintenance reasons, before you apply to qualified assistance.
➢ The accurate and periodic cleaning of the unit will reduce the risk of damages to the unit itself and to the products stored within.
➢ See following tab for reference.

ATTENTION ! Before starting any maintenance and cleaning operation make sure you operate on the main switch in order to deactivate tension (pic. 4)

![Pic.4]

<table>
<thead>
<tr>
<th>OPERATION</th>
<th>DESCRIPTION</th>
<th>FREQUENCY</th>
</tr>
</thead>
</table>
| Surfaces’ cleaning      | • Wash exclusively with warm water and neutral soup; rinse abundantly and wipe off with a soft cloth.  
                          | • Do not use abrasive products                                               | weekly          |
| Plastic surfaces’ cleaning | • Wash exclusively with warm water and neutral soup; rinse abundantly and wipe off with a soft cloth.  
                           | • Do not use alcohol, acetone and any solvent that might spoil the look and structure of the material. | weekly          |
| Glass surfaces’ cleaning | • Use only specific products for glass cleaning                              | daily           |
|                          | • Using water alone might lead to calcareous deposits on the glass surfaces  |                 |
| Wooden surfaces’ cleaning | • Use exclusively a wet cloth.                                               | weekly          |
| Additional defrost       | • Under particular conditions of temperature and humidity, the frost that normally forms on the evaporator and fans might increase in volume, so leading to a faulty functioning the unit. 
                          | • If these conditions should last, the assistance of a qualified technician shall be needed. Waiting for this service, it is suggested to operate one or more defrost cycles (despite the damages this might cause to the stored product) | Waiting for qualified assistance |
| Periodic defrost         | • In order to obtain the best performance from the cooling system, we suggest to operate an extended defrost cycle. 
                          | • Before you do that, please remove displayed products from inside the cabinet; always operate an additional defrost cycle in order to remove from the evaporator the largest possible amount of frost or ice. Turn the main switch off for 5 hours (min.) 
                          | • Before re-starting the unit, make sure that frost has totally melted and wipe carefully. | max. 15 DAYS    |

ATTENTION! DO NOT CLEAN THE UNIT WITH WATER JETS

5. EXTRAORDINARY MAINTENANCE

This type of operation has to be made by qualified technician only.

ATTENTION! Before operating any maintenance, make sure the tension is deactivated. (pic.11).

➢ Lamps’ replacement: qualified technician needed.
➢ Air condenser cleaning: qualified technician needed. When the fan is switched off you can clean the condenser with a compressed air jet. Never use metallic brushes. Use protection gloves (pic.5).

![Pic.5]
<table>
<thead>
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<th>RES28</th>
<th>FRONT GLASS LOWER FRAME HEATING ELEMENT</th>
</tr>
</thead>
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<td>FRONT GLASSES COUPLING PROFILE HEATING ELEMENT</td>
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<tr>
<td>RES30</td>
<td>DOORS FRAME MIDDLE POST HEATING ELEMENT</td>
</tr>
<tr>
<td>RES31</td>
<td>GLASSES PERIMETRAL FRAME HEATING ELEMENT</td>
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<td>RES32</td>
<td>HEATED DOORS HEATING ELEMENTS</td>
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<tr>
<td>RES33</td>
<td>WATER DRAIN HEATING ELEMENT</td>
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</tr>
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<td>RES35</td>
<td>COMPRRESSOR CRANKCASE HEATING ELEMENT</td>
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<td>RES36</td>
<td>FRONT GLASS FRAME HEATING ELEMENT</td>
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<td>CABINET FRAME HEATING ELEMENT</td>
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<tr>
<td>RES38</td>
<td>HOT COMPARTMENT HEATING ELEMENT</td>
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<tr>
<td>REV</td>
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<td>CONDENSER FAN RELAY</td>
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<tr>
<td>RI</td>
<td>REFRIGERANT TAP</td>
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<tr>
<td>RIC</td>
<td>COMPRESSOR DELAYER</td>
</tr>
<tr>
<td>RICV</td>
<td>PHOTOCELL RECEIVER</td>
</tr>
<tr>
<td>RIS</td>
<td>RESERVE, ANTI-FOG HEATER ELEMENT</td>
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<tr>
<td>RL</td>
<td>LIQUID RECEIVER</td>
</tr>
<tr>
<td>RLA</td>
<td>WATER LEVEL ELECTRONIC CONTROL</td>
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<tr>
<td>RO</td>
<td>OIL HEATER ELEMENT</td>
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<tr>
<td>SAA</td>
<td>ABSENCE OF WATER LIGHT</td>
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<tr>
<td>SC</td>
<td>CONDENSER PROBE</td>
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<tr>
<td>SD</td>
<td>TERMINAL BOX</td>
</tr>
<tr>
<td>SDC</td>
<td>COMPRESSOR TERMINAL BOX</td>
</tr>
<tr>
<td>SE</td>
<td>PROXIMITY SENSOR</td>
</tr>
<tr>
<td>SEC</td>
<td>MAIN SWITCH</td>
</tr>
<tr>
<td>SECV</td>
<td>TANK BOTTOM HEATING COIL</td>
</tr>
<tr>
<td>SIDG</td>
<td>FLAVOURS DISPLAY DIGITAL SYSTEM</td>
</tr>
<tr>
<td>SL</td>
<td>LIQUID SEPARATOR</td>
</tr>
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<td>SLA</td>
<td>WATER LEVER PROBE</td>
</tr>
<tr>
<td>SPC</td>
<td>COMPRESSOR LIGHT</td>
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<tr>
<td>SPMC</td>
<td>WARM SHELF LIGHT</td>
</tr>
<tr>
<td>SPR</td>
<td>ELECTRIC SUPPLY LIGHT</td>
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<td>SPS</td>
<td>DEFROSTING LIGHT</td>
</tr>
<tr>
<td>SS</td>
<td>DEFROSTING PROBE</td>
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<tr>
<td>ST</td>
<td>TEMPERATURE PROBE</td>
</tr>
<tr>
<td>STR</td>
<td>LIGHTING STARTER</td>
</tr>
<tr>
<td>SU</td>
<td>HUMIDITY PROBE</td>
</tr>
<tr>
<td>T</td>
<td>TEMPERATURE CONTROL</td>
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<tr>
<td>TC</td>
<td>WINTER THERMOSTAT</td>
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<tr>
<td>TE</td>
<td>TIMERMETER</td>
</tr>
<tr>
<td>TER</td>
<td>THERMOMETER</td>
</tr>
<tr>
<td>TF</td>
<td>FUSIBLE PLUG</td>
</tr>
<tr>
<td>TMC</td>
<td>WARM SHELF THERMOMETER</td>
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<tr>
<td>TRA</td>
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<td>TMC</td>
<td>ELECTRONIC CONTROL TRANSFORMER</td>
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<td>TREV</td>
<td>WATER EVAPORATION HEATER ELEMENT THERMOSTAT</td>
</tr>
<tr>
<td>TS</td>
<td>SECURITY THERMOSTAT</td>
</tr>
<tr>
<td>TVC</td>
<td>CONDENSER FAN THERMOSTAT</td>
</tr>
<tr>
<td>V</td>
<td>COMPRESSOR FAN / GENERAL USE</td>
</tr>
<tr>
<td>VC</td>
<td>CONDENSER FAN</td>
</tr>
<tr>
<td>VEC</td>
<td>WATER EVAPORATION BIN</td>
</tr>
<tr>
<td>VES</td>
<td>EXPANSION VALVE</td>
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<td>VI</td>
<td>INTERNAL FAN</td>
</tr>
<tr>
<td>VPA</td>
<td>CONDENSING PRESSURE CONTROL WATER VALVE</td>
</tr>
<tr>
<td>VR</td>
<td>CHECK VALVE</td>
</tr>
<tr>
<td>VRA</td>
<td>SUCTION PRESSURE REGULATION VALVE</td>
</tr>
<tr>
<td>VRE</td>
<td>EVAPOTATING PRESSURE REGULATION VALVE</td>
</tr>
<tr>
<td>VS</td>
<td>GENERAL USE SOLENOID VALVE</td>
</tr>
<tr>
<td>VSA</td>
<td>SOLENOID WATER VALVE</td>
</tr>
<tr>
<td>VSA B</td>
<td>BY-PASS SOLENOID WATER VALVE</td>
</tr>
<tr>
<td>VSIC</td>
<td>REVERSING CYCLE SOLENOID VALVE</td>
</tr>
<tr>
<td>VSL</td>
<td>LIQUID SOLENOID VALVE</td>
</tr>
<tr>
<td>VSS</td>
<td>DEFROSTING SOLENOID VALVE</td>
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<tr>
<td>VT</td>
<td>POWER REGULATOR</td>
</tr>
<tr>
<td>VV</td>
<td>GLASS FAN</td>
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<tr>
<td>X1</td>
<td>CABINET CONNECTIONS</td>
</tr>
<tr>
<td>X2</td>
<td>EXTERNAL ELECTRIC PANEL CONNECTIONS</td>
</tr>
<tr>
<td>X3</td>
<td>CONDENSING UNIT CONNECTIONS</td>
</tr>
</tbody>
</table>
Digital controller for medium-low temperature refrigeration applications XW60L

1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.

1.2 SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation.
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to “Dixell S.p.A.” (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2. GENERAL DESCRIPTION

Model XW60L, format 38×185mm, is microprocessor based controller, suitable for applications on medium or low temperature ventilated refrigerating units. It has 4 relay outputs to control compressor, fan, defrost, which can be either electrical or reverse cycle (hot gas) and light (configurable). It could be provided with a Real Time Clock which allows programming of up to 6 daily defrost cycles, divided into holidays and workdays. A “Day and Night” function with two different set temperatures is fitted for energy saving. It is also provided with up to four RTC or RTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost termination temperature and to managed the fan. One of the 2 digital inputs can operate as third defrost probe. The fourth probe is used to signal the condenser temperature alarm or to display the temperature. The HOT KEY output allows to connect the unit, by means of the external module X485-CX, to a network line ModBUS-RTU compatible such as the dIXEL monitoring units of X-WEB family. It allows to program the controller by means the HOT KEY programming keyboard. The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

3. CONTROLLING LOADS

3.1 COMPRESSOR

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.

In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters “Con” and “COF”.

3.2 DEFROST

Two defrost modes are available through the “tdF” parameter: defrost through electrical heater (tdF = EL) and hot gas defrost (tdF = in). The defrost interval depends on the presence of the RTC (optional). If the RTC is present is activated by means of the "FSt" parameter: if FSt>0 the fans are switched ON and OFF with the compressor and not run during defrost; if FSt = 0, fans will run even if the compressor is off, and not run during defrost.

If the difference of temperature between the evaporator and the room probes is more than the value of the Fct parameter, the fans are switched on. With Fct=0 the function is disabled.

3.3.2 Cyclical activation of the fans with compressor off.

When Fnc = <0 or c-Y (fans in parallel to the compressor), by means of the Fon and Fof parameters the fans can carry on and off cycles even if the compressor is switched off. When the compressor is stopped the fans go on working for the Fon time. With Fon =0 the fans remain always on, when the compressor is off.

3.4 LIGHT RELAY CONFIGURATION

The functioning of the auxiliary relay (terminals: 1-3) can be set by the oA3 parameter, according to the kind of application. In the following paragraph the possible setting:

3.4.1 Auxiliary thermostat

IE: anti condensing heater) with the possibility of switching it on and off also by keyboard

Parameters involved:
- ACN: Kind of regulation for the auxiliary relay. Ht: heating; cl: cooling;
- SAA: Set point for auxiliary relay
- SHY: Differential for auxiliary relay
- AP: Probe for auxiliary relay
- SdA: Auxiliary output off during defrost

By means of these 5 parameters the functioning of the auxiliary relay can be set. The differential is given by the SHY parameter.

The auxiliary relay can be switched on in the next case on the button. In this case it remains on till it’s manually switched off.

NOTE: Set oA3 = AUS and AvP = nP (no probe for auxiliary output).

In this case the relay 1-3 can be activated only by digital input with I5S or I5F = AUS.

3.4.2 On/off relay – oA3 = onF

In this case the relay is activated when the controller is turned on and deactivated when the controller is turned off.

3.4.3 Neutral zone regulation

With oA3 = db the relay 1-3 can control a heater element to perform a neutral zone action.

3.4.4 Second compressor

With oA3 = CP2, the relay 1-3 operates as second compressor: it is activated in parallel with the relay of the first compressor, with a possible delay set in the ACl parameter. Both the compressors are switched off at the same time.

3.4.5 Alarm relay

With oA3 = AAL the relay 1-3 operates as alarm relay. It is activated every time an alarm happens. Its status depends on the taA parameter. If taA = y, the relay is silenced by pressing any key.

If taA = n, the alarm relay remains on until the alarm condition recovers.

3.4.6 Night blind management during energy saving cycles

With oA3 = HES, the relay 1-3 operates to manage the night blind. The relay is energized when the energy saving cycle is activated, by digital input, frontal button or RTC (optional)

4. FRONT PANEL COMMANDS

4.1 STANDARD FRONTAL PANEL

4.2 STEEL FINISHING

- SET: To display target set point; in programming mode it selects a parameter or confirms an operation.
- (DEF): To start a manual defrost
- (UP): To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value.
- (DOWN): To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.
- (ONF): To switch the instrument off, if onF = oFF.
- (off): To switch the light, if oA3 = Lig.

KEY COMBINATIONS:

To lock & unlock the keyboard.
6.6.1 HOW TO ENTER THE HIDDEN MENU
1. Enter the Programming mode by pressing the Set+... keys for 3s (the "C" or "F" LED starts blinking).
2. Released the keys, then push again the Set+... keys for more than 7s. The Pr2 label will be displayed immediately followed from the HY parameter.

NOW YOU ARE IN THE HIDDEN MENU.
3. Select the required parameter.
4. Press the "SET" key to display its value
5. Use ▲ or ▼ to change its value.
6. Press "SET" to store the new value and move to the following parameter.

NOTE1: if none parameter is present in Pr1, after 3s the "NoP" message is displayed. Keep the keys pushed till the Pr2 message is displayed.

NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.6.2 HOW TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.
Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing "SET +...".
In HIDDEN MENU when a parameter is present in First Level the decimal point is on.

6.7 HOW TO LOCK THE KEYBOARD
1. Keep pressed for more than 3s the UP + DOWN keys.
2. The "POF" message will be displayed and the keyboard will be locked. At this point it will be possible only to see the set point or the MAX o Min temperature stored
3. If a key is pressed more than 3s the "POF" message will be displayed.

6.8 TO UNLOCK THE KEYBOARD
Keep pressed together for more than 3s the ▲ and ▼ keys, till the "Pon" message will be displayed.

6.9 THE CONTINUOUS CYCLE
When defrost is not in progress, it can be activated by holding the "▲" key pressed for about 3 seconds. The compressor operates to maintain the "ccS" set point for the time set through the "COn" parameter. The cycle can be terminated before the end of the set time using the same activation key "▲" for 3 seconds.

6.10 THE ON/OFF FUNCTION
With "onF = oFF", pushing the ON/OFF key, the instrument is switched off. The "off" message is displayed. In this configuration, the regulation is disabled.
To switch the instrument on, push again the ON/OFF key.

WARNING: Loads connected to the normally closed contacts of the relays are always supplied and under voltage, even if the instrument is in stand by mode.

7. PARAMETERS

7.1 HY Differential
(0.1÷2.5°C / 1÷25°F) Intervention differential for set point. Compressor Cut IN is Set Point + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.

7.2 LS Minimum set point;
(-50°C÷SET÷50°F) SETs the minimum value for the set point.

7.3 US Maximum set point;
[SET÷10°C÷SET÷20°F] Set the maximum value for set point.

7.4 OT Thermostat probe calibration;
(0÷250°C÷240°F) Adjusts to allow possible offset of the thermostat probe.

7.5 CCt Third probe calibration;
(0÷25°C÷0÷25°F) Adjusts to allow possible offset of the third probe.

7.6 CF Temperature measurement unit;
°C=Celsius; °F=Farhenheit. WARNING: When the measurement unit is changed the set point and the values of the parameters Hy, LS, US, OT, ALU and ALL have to be checked and modified if necessary.

rES Resolution for °C (r = 1°C; e = 0.1 °C) allows decimal point display.
CondenSer temperatUre alarM

AP2 Probe selection for temperature alarm of condenser: nP = no probe; P1 = thermostat probe; P2 = evaporator probe; P3 = configurable probe; P4 = Probe on Hot Key plug.

A2 Low temperature alarm of condenser: (-35 ÷ 10°C) when this temperature is reached the H2 alarm is signalled, possibly after the AD delay.

Au2 High temperature alarm of condenser: (-55 ÷ 110°C) when this temperature is reached the H2 alarm is signalled, possibly after the AD2 delay.

AD2 Differential for temperature alarm/ fan recovery: (0.1 ÷ 25°C; 1 ÷ 45°F) when this temperature is reached the fan is switched off to a neutral zone; ES not set it; HES: night blind.

A2 Compressor off with temperature alarm of condenser: nP = no compressor keeps on working; y = yes, compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.

AUXIARY Ralay PoSiting

AlA Alarm relay silencing (with oA3=3AL): 
- s = silencing disabled, alarm relay stays on till alarm condition lasts, y = silencing enabled, alarm relay is switched off by pressing a key during an alarm

ao3 Fourth relay configuration (1-3): IFN, FAN: do not select it. ALr. alarm; Lig. light; AuS Auxiliary relay, onF always on with instrument on; dEF: neutral zone; P2P = second compressor; dEF: do not select it; HES: night blind.

ApA Alarm relay polarity: It sets if the alarm relay is open or closed when an alarm happens. CL = terminals 1-3 closed during an alarm; oP = terminals 1-3 open during an alarm.

DIGItaL INpuTS

I1P Digital input port (13-14): oP: the digital input is activated by opening the contact; CL: the digital input is activated by closing the contact.

IF2 Digital input configuration (13-14): EAL= external alarm: “CA” message is displayed; bAL: serious alarm “CA” message is displayed. P4 = alarm speaker is activated; P4 = pressure switch alarm, “CA” message is displayed; dEF: door switch function; dEF: activation of a defrost cycle; AUS=not enabled; Htr: kind of action inversion (cooling = heating); FAN: not set it; ES: Energy saving; Hf: Holiday defrost (enabled only with RTC); CL: Neutral zone; dEF: do not select it. PA: do not select it.

d22 (0 ÷ 255 min) with IF2= EAL or IF2= BAL digital input alarm (13-14): delay between the detection of the external alarm condition and its signalling.

with IF2= P4: door open signalling delay with IF2= P4: PAL: time for pressure switch function: time interval to calculate the number of the pressure switch activation.

3P 2nd digital input port (13-19): IF2: the digital input is opened by activating the contact; CL: the digital input is opened by closing the contact.

i2F 2nd digital input configuration (13-19): EAL= external alarm: “CA” message is displayed; bAL: serious alarm “CA” message is displayed. P4 = alarm speaker is activated; P4 = pressure switch alarm, “CA” message is displayed; dEF: door switch function; dEF: activation of a defrost cycle; AUS=not enabled; Htr: kind of action inversion (cooling = heating); FAN: not set it; ES: Energy saving; Hf: Holiday defrost (enabled only with RTC); CL: Neutral zone; dEF: do not select it.

dd2 (0 ÷ 255 min) with IF2= EAL or IF2= BAL 2nd digital input alarm (13-19): delay between the detection of the external alarm condition and its signalling.

with IF2= P4: door open signalling delay with IF2= P4: PAL: time for pressure switch function: time interval to calculate the number of the pressure switch activation.

nPs Pressure switch number: (0 ÷ 15) Number of activation of the pressure switch, during the “dint” interval, before signalling the alarm event (IF2= P4). If the nPs activation in the ditd time is reached, switch off and on the instrument to restart normal regulation.

ocD Compressor and fan status when open door: no = normal; Fan = Fan OFF; CL: Compressor OFF; F = Compressor and fan OFF.

rdO Outputs restart after doA alarm: no outputs not affected by the doA alarm; y = outputs restart with the alarm.

HES Temperature increase during the Energy Saving cycle: (-30, 0°C, 30°C) it sets the increasing value of the set point during the Energy Saving cycle.

TO SET CuRREnt timE aNd WeEkLY hOLIdaYS (OnLy for moDelS with RCt)

hur Current hour (0 ÷ 23h)

Min Current minute (0 ÷ 59min)

dAY Current day (Sun ÷ SA)

h1D First weekly holiday (Sun ÷ nu) Set the first day of the week which follows the holiday.

h2D Second weekly holiday (Sun ÷ nu) Set the second day of the week which follows the holiday times.

nB. toB. HES can be set also as “nu” value (Not Used).

TO SET ENERGy SaVING TIMES (ONLy FOR moDelS WITH RCt)

ILE Energy Saving cycle start during working days: (0 ÷ 23h 50 min.) During the Energy Saving cycle the set point is increased by the value in HES so that the operation set point is SET + HES.

dLE Energy Saving cycle length during working days: (0 ÷ 24h 00 min.) Sets the duration of the Energy Saving cycle on weekdays.

ISE Energy Saving cycle start on holidays. (0 ÷ 23h 50 min.)

dSE Energy Saving cycle length on holidays (0 ÷ 24h 00 min.)

TO SET DEFrOSt TIMES (ONLy FOR moDelS WITH RCt)

Ld1÷Ld6 Workday defrost start (0 ÷ 23h 50 min.) Those parameters set the beginning of the programmed defrost cycles during working days. Ex. When Ld2 = 12.4 the second defrost starts 12:40 during working days.

Sd1÷Sd6 Holiday defrost start (0 ÷ 23h 50 min.) Those parameters set the beginning of the programmed defrost cycles during holidays. Ex. When Sd2 = 3.4 the second defrost starts at 3.40 on holidays.

nB. toB. a defrost cycle set it to “nu”(not used). Ex. If Ld6 = nu ; the sixth defrost cycle is disabled.
# 8. DIGITAL INPUTS

The first digital input 13-14 is enabled with P3 = n.

With P3 = n and I2F = I2F the second digital input is disabled.

The free voltage digital inputs are programmable by the "I2F" and I2F parameters.

## 8.1 GENERIC ALARM (I1F or I2F = EAL)

As soon as the digital input is activated the unit will wait for "did" time delay before signalling the "EAL" alarm message. The outputs status don't change. The alarm stops just after the digital input is de-activated.

## 8.2 SERIOUS ALARM MODE (I1F or I2F = BAL)

When the digital input is activated, the unit will wait for "did" delay before signalling the "CA" alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is de-activated.

## 8.3 PRESSURE SWITCH (I1F or I2F = PAL)

If during the interval time set by "did" parameter, the pressure switch has reached the number of activation of the "nPS" parameter, the "CA" pressure alarm message will be displayed. The compressor and the regulation are stopped. When the digital input is ON the compressor is always OFF. If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.

## 8.4 DOOR SWITCH INPUT (I1F or I2F = dor)

It signals the door status and the corresponding relay output status through the "odc" parameter: no = normal (any change), Fan = Fan OFF; CPR = Compressor OFF; F, C = Off. Since the door is opened, after the delay time set through parameter "did", the door alarm is enabled, the display shows the message "dor" and the regulation restarts. The alarm stops as soon as the external digital input is disabled again. With the door open, the high and low temperature alarms are disabled.

## 8.5 START DEFROST (I1F or I2F = dEF)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the "Mf" safety time is expired.

## 8.6 SWITCH THE AUXILIARY RELAY (I1F or I2F = AUS)

With oA3 = AUS the digital input switched the status of the auxiliary relay.

## 8.7 INVERSION OF THE KIND OF ACTION: HEATING-COOLING (I1F or I2F = 2F=Ht)

This function allows to invert the regulation of the controller: from cooling to heating and viceversa.

## 8.8 ENERGY SAVING (I1F or I2F = ES)

The energy-saving function allows to change the set point value as the result of the SET+ HES (parameter) sum. This function is enabled only on the digital input is activated.

## 8.9 HOLIDAY DEFROST (I1F or I2F = HDF) – ONLY FOR MODELS WITH RTC

This function enabled the holiday defrost setting.

## 8.10 ON OFF FUNCTION (I1F or I2F = onF)

To switch the controller on and off.

## 8.11 DIGITAL INPUTS POLARITY

The digital input polarity depends on the "I1P" and "I2P" parameters. I1P or I2P = Col. The input is activated by closing the contact. I1P or I2P = Op. The input is activated by opening the contact.

# 9. TTL SERIAL LINE – FOR MONITORING SYSTEMS

The TTL serial line, available through the HOT KEY connector, allows by means of the external TTLRS485 converter, X485-CX, to connect the instrument to a monitoring system ModBUS-RTU compatible such as the X-WEB500/3000300.

# 10. X-REP OUTPUT – OPTIONAL

As optional, an X-REP can be connected to the instrument, trough the dedicated connector.

To connect the X-REP to the instrument the following connectors must be used: CAB/REP1(1m), CAB/REP2 (2m), CAB/REP5 (5m).

# 11. INSTALLATION AND MOUNTING

The controller XW60L shall be mounted on vertical panel, in a 150x63 mm hole, and fixed using two screws Ø 3 x 3 mm. To obtain an anti-protective coating the front panel rubber gasket (mod. RG-L). The temperature range allowed for correct operation is 0 - 60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let the air circulate by the cooling holes.

# 12. ELECTRICAL CONNECTIONS

The instruments are provided with screw terminal block to connect cables with a cross section up to 2.5 mm² for the digital and analogue inputs. Relays and power supply have a Faston connection (6,3mm). Heat-resistant cables have to be used. Before connecting cables make sure the power supply complies with the instrument’s requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.

N.B. Maximum current allowed for all the loads is 20A.

## 12.1 PROBE CONNECTION

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where must be is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

## 12.2 HOW TO USE THE HOT KEY

1. **HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (UPLOAD)**
   1. Program one controller with the front keypad.
   2. When the controller is ON insert the “Hot Key” and push <key> the “uPL” message appears followed by a flashing “End”.
   3. Push "SET" key and the End will stop flashing.
   4. Turn OFF the instrument remove the “Hot Key”, then turn it ON again.

   NOTE: the “Err” message is displayed for failed programming. In this case push again the <key> key if you want to restart the upload again or remove the “Hot Key” to abort the operation.

2. **HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (DOWNLOAD)**
   1. Turn OFF the instrument.
   2. Insert a programmed “Hot Key” into the 5 PIN receptacle and then turn the Controller ON.
   3. Automatically the parameter list of the “Hot Key” is downloaded into the Controller memory, the “60L” message is blinking followed by a flashing “End”.
   4. After 10 seconds the instrument will restart working with the new parameters.
   5. Remove the “Hot Key”.

   NOTE: the message “Em” is displayed for failed programming. In this case turn off the instrument and then on if you want to restart the download again or remove the “Hot Key” to abort the operation.

## 13. ALARM SIGNALS

<table>
<thead>
<tr>
<th>Message</th>
<th>Cause</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1°</td>
<td>Room probe failure</td>
<td>Compressor output acc. to par. “Con” and “COF”.</td>
</tr>
<tr>
<td>P2°</td>
<td>Evaporator probe failure</td>
<td>Defrost end is timed</td>
</tr>
<tr>
<td>P3°</td>
<td>Third probe failure</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>P4°</td>
<td>Fourth probe failure</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>H1A°</td>
<td>Maximum temperature alarm</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>U1A°</td>
<td>Minimum temperature alarm</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>H2A°</td>
<td>Condenser high temperature</td>
<td>It depends on the “AC2” parameter</td>
</tr>
</tbody>
</table>
14.1 SILENCING BUZZER | ALARM RELAY OUTPUT

If "BA" ≠ y, the buzzer and the relay are silenced by pressing any key.
If "BA" ≠ n, only the buzzer is silenced while the alarm relay is on until the alarm condition recovers.

14.2 ALARM RECOVERY

Probe alarms P1, P2, P3 and P4 start some seconds after the fault in the related probe, they automatically stop some seconds after the probe restores normal operation. Check connections before replacing the probe. Temperature alarms "MA", "LA" and "LA2" automatically stop as soon as the temperature returns to normal values.

Alarms "EA" and "CA" (with [-IF-BAL]) recover as soon as the digital input is disabled. Alarm "CA" (with [-IF-PAL]) recovers only by switching off and on the instrument.

15. TECHNICAL DATA

Housing: self extinguishing ABS. Case: facia 38x185 mm; depth 76 mm
Mounting: panel mounting in a 150x31 mm panel cut-out with two screws. ø 3 x 2 mm.

Distance between the holes 165 mm
Protection: IP20, front protection: IP65 with flanged gasket MOD-RG-L. (optional)
Connections: Screw terminal block: 2,5 mm² heat-resistant wiring and 6,3 mm² Faston
Power supply: 230Vac or. 110Vac or 24Vac ±10%
Power absorption: 5VA max.

Display: 3 digits, red LED, 14 mm high.
Display: 3 digits, red LED, 14.2 mm high. Inputs: Up to 4 NTC or PTC probes.
Digital inputs: 2 free voltage
Relay outputs: Total current on loads MAX. 20A
Compressor: relay SPST 20A), 250Vac
light: relay SPST 8 or 16A) 250Vac
fan: relay SPST 8(3) A, 250Vac
defrost: relay SPST 8(3) A, 250Vac

Other output: buzzer (optional)

Serial output: 77TL standard Communication protocol Modbus - RTU
Data storing: on the non-volatile memory (EEPROM)
Internal clock back-up: 24 hours (only for model with RTC)

Kind of action: 1B; mean action, 3B; periodic action

16. CONNECTIONS

Supply: 120Vac or 24Vac; connect to terminals 11-12
The X-REP output is optional
The light relay may be also 16/50A according to the model

17. DEFAULT SETTING VALUES
<table>
<thead>
<tr>
<th>Label</th>
<th>Name</th>
<th>Range</th>
<th>°C/°F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ld1*</td>
<td>1st workdays defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>6.0</td>
</tr>
<tr>
<td>Ld2*</td>
<td>2nd workdays defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>13.0</td>
</tr>
<tr>
<td>Ld3*</td>
<td>3rd workdays defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>21.0</td>
</tr>
<tr>
<td>Ld4*</td>
<td>4th workdays defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>0.0</td>
</tr>
<tr>
<td>Ld5*</td>
<td>5th workdays defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>0.0</td>
</tr>
<tr>
<td>Ld6*</td>
<td>6th workdays defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>0.0</td>
</tr>
<tr>
<td>Sd1*</td>
<td>1st holiday defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>6.0</td>
</tr>
<tr>
<td>Sd2*</td>
<td>2nd holiday defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>13.0</td>
</tr>
<tr>
<td>Sd3*</td>
<td>3rd holiday defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>21.0</td>
</tr>
<tr>
<td>Sd4*</td>
<td>4th holiday defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>0.0</td>
</tr>
<tr>
<td>Sd5*</td>
<td>5th holiday defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>0.0</td>
</tr>
<tr>
<td>Sd6*</td>
<td>6th holiday defrost start</td>
<td>0 ÷ 23h 50 min.</td>
<td>nu</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Adr | Serial address | 1÷247 | 1 | Pr2 |
Pbc | Kind of probe | Ptc; ntc | ntc | Pr2 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>onf</td>
<td>Off/on key enabling</td>
<td>nu, OFF; ES</td>
<td>OFF</td>
<td>Pr2</td>
</tr>
<tr>
<td>dp1</td>
<td>Room probe display</td>
<td>--</td>
<td>--</td>
<td>Pr2</td>
</tr>
<tr>
<td>dp2</td>
<td>Evaporator probe display</td>
<td>--</td>
<td>--</td>
<td>Pr2</td>
</tr>
<tr>
<td>dp3</td>
<td>Third probe display</td>
<td>--</td>
<td>--</td>
<td>Pr2</td>
</tr>
<tr>
<td>dp4</td>
<td>Fourth probe display</td>
<td>--</td>
<td>--</td>
<td>Pr2</td>
</tr>
<tr>
<td>rSE</td>
<td>Real set</td>
<td>actual set</td>
<td>-</td>
<td>Pr2</td>
</tr>
<tr>
<td>rEL</td>
<td>Software release</td>
<td>--</td>
<td>1.8</td>
<td>Pr2</td>
</tr>
<tr>
<td>Pib</td>
<td>Map code</td>
<td>--</td>
<td>Pr2</td>
<td></td>
</tr>
</tbody>
</table>

* Only for model with real time clock
2 Only for XW60L with X-REP output

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E-mail: dixell@dixell.com - http://www.dixell.com
# Refrigerated Wall Shelving Display Specifications

<table>
<thead>
<tr>
<th>Models</th>
<th>Lengths</th>
<th>Depths</th>
<th>Height</th>
<th># of Doors</th>
<th>Net Weights (lbs)</th>
<th>Remote BTU's @ +35°F</th>
<th>*Volages</th>
<th>Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRW1000 A</td>
<td>39 3/8&quot; (1000mm)</td>
<td>19 7/8&quot; (505mm)</td>
<td>88 3/4&quot; (2255mm)</td>
<td>2</td>
<td>320</td>
<td>1100</td>
<td>120</td>
<td>3</td>
</tr>
<tr>
<td>VRW1500 A</td>
<td>59 1/16&quot; (1500mm)</td>
<td>19 7/8&quot; (505mm)</td>
<td>88 3/4&quot; (2255mm)</td>
<td>3</td>
<td>420</td>
<td>1470</td>
<td>120</td>
<td>4</td>
</tr>
<tr>
<td>VRW1000 B</td>
<td>39 3/8&quot; (1000mm)</td>
<td>17 11/16&quot; (449mm)</td>
<td>32 1/4&quot; (819mm)</td>
<td>2</td>
<td>295</td>
<td>1100</td>
<td>120</td>
<td>3</td>
</tr>
<tr>
<td>VRW1500 B</td>
<td>59 1/16&quot; (1500mm)</td>
<td>17 11/16&quot; (449mm)</td>
<td>32 1/4&quot; (819mm)</td>
<td>3</td>
<td>405</td>
<td>1470</td>
<td>120</td>
<td>4</td>
</tr>
</tbody>
</table>

A (Including Wall Panel) = 19 7/8"D (505mm) / 88 3/4"H (2255mm)  | B (Free Standing/Without Wall Panel) = 17 11/16"D (449mm) / 32 1/4"H (819mm)

* Remote Condensing Unit Not Supplied

---

**Vetrina with Wall Panel**

**Vetrina without Wall Panel**

**Vetrina with Wall Panel**

**Vetrina without Wall Panel**

**VWR PRO**

- Opening on top output for the Compressor Air
- Support Reinforcements for Compressor Compartment
- Digital Control
- Support Reinforcements for Compressor Compartment

**WALL MOUNTING HARDWARE**

- 18" (450mm)
- 13" (322mm)
- 35" (860mm)
- 24" (600mm)
PLAN VIEWS

A - 19 7/8"D (505MM) / 88 3/4"H (2255MM)
VETRINA WITH WALL PANEL

B - 17 11/16"D (449MM) / 32 1/4"H (819MM)
VETRINA WITHOUT WALL PANEL

REAR ELEVATIONS (OPERATOR SIDE)

A - 19 7/8"D (505MM) / 88 3/4"H (2255MM)
VETRINA WITH WALL PANEL

B - 17 11/16"D (449MM) / 32 1/4"H (819MM)
VETRINA WITHOUT WALL PANEL

VWR2000
Below you find instruction on how to assemble COMPACT STYLE backwall elements.

1) SLOTTED RACKS
Position tubular bars (racks) 45x45mm behind back counter and anchor them tight to the bottom sustaining structure. They have to be mounted at $h=112\text{mm}$ from floor level.
Their distance ($d$) is 100cm or 125cm, depending on the model chosen.
In order to have the proper distance, install the black squared sustaining elements and position the “c shaped” galvanized steel over them.

In the inner sides of the two plugs are fixed racks of black colour. Top with two particular profiles shaped like a “c” will be fixed racks and spaced between them, as shown in the following two figures:
2) HANGING REFRIGERATOR AND BACK COVER

Hook up the hanging refrigerator on racks using the special brackets installed at the back of the cabinet.

The position of the wall cabinet is designed in such a way as to covers as much as possible behind racks:
At this point fit the back cover under the cabinet in such a way as to have a total coverage of the counter:

3) COUPLING/MULTIPLEXING
In order to pair the modules screw the shelves together using M8 threaded pins inside the enclosed plans as shown on below image:
4) MOUNTING ADDITIONAL INTERMEDIATE SHELVES

If it requires intermediate shelves in glass, attach the shelf supports (one for each rack).
FIXING SYSTEM: BACKREST BRACKETS

FIX THE SUPPORT BRACKETS TO THE BEARING WALL WITH DOWELS (USE APPROPRIATE LENGTH DOWELS).

SUPPORT REINFORCEMENTS FOR COMPRESSOR COMPARTMENT