1. INTRODUCTION

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 performances 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 display cabinet has been manufactured for beverage products presentation and sell.
- 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 2006/95/CE : Low tension
- Directive N° 97/23/EC (P.E.D.) : European Pressure Equipment
- Norm CEI 17-13/1 (EN 80439/1) : 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
- UL 471
- NSF 7

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

![Data Plate Sample]

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Production Date 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial No. 2</td>
<td></td>
</tr>
</tbody>
</table>

- 4 W/ 5 ph / 6 Hz
- Type 7
- No. 8
- Gas 9
- 10 Kg
- Cl. 11

- Pmax 12 psig
- Pmin 13 psig
- 120 V / 1 ph / 60 Hz
- 15 W
- 16 W
- 17 W
- 1500/15.6 W

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
11. Climatic rate (Cl.3 = +25°C/60% U.R., Cl.4 = +30°C/55% U.R.)
12. Test pressure – system high pressure side
13. Test pressure – system low pressure side
14. Nominal power/current absorbed during defrost
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 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 80%.

- 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 not to 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 determine 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 closed 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!
Although the wall showcase has main switch breaking both the phases.
Before any maintenance operation disconnect the electrical supply of the wall showcase. (pic.3.6).

3.7. IDRAULIC CONNECTION - REMOTE CONDENSING UNIT

- In the case then wall showcaset has a remote condensing unit, it is necessary make the connection of defrosting water outlet with the main water drain outlet.
<table>
<thead>
<tr>
<th>TECHNICAL FEATURES</th>
<th>MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Dimensions (L-D-H)</strong></td>
<td><strong>CENTRO</strong></td>
</tr>
<tr>
<td>Inches-MM</td>
<td>48&quot; - 48&quot; - 34&quot;</td>
</tr>
<tr>
<td>MM</td>
<td>1219 - 1219 - 864</td>
</tr>
<tr>
<td><strong>Crated Dimensions (L-D-H)</strong></td>
<td></td>
</tr>
<tr>
<td>Inches-MM</td>
<td>55&quot; - 55&quot; - 40&quot;</td>
</tr>
<tr>
<td>MM</td>
<td>1397 - 1397 - 1016</td>
</tr>
<tr>
<td><strong>Refrigeration</strong></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Ventilated</td>
</tr>
<tr>
<td><strong>Refrigeration Display Area</strong></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Deck</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td></td>
</tr>
<tr>
<td>°F</td>
<td>40°F</td>
</tr>
<tr>
<td><strong>Compressor</strong></td>
<td></td>
</tr>
<tr>
<td>Nr./Type</td>
<td>Hermetic</td>
</tr>
<tr>
<td><strong>BTU’S @ +14°F Evap Temperature</strong></td>
<td></td>
</tr>
<tr>
<td>BTU’S</td>
<td>5500 BTU’S</td>
</tr>
<tr>
<td><strong>Electric Supply</strong></td>
<td></td>
</tr>
<tr>
<td>(V/Ph/Hz)</td>
<td>120/1/60</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td></td>
</tr>
<tr>
<td>(A)</td>
<td>8A</td>
</tr>
<tr>
<td><strong>Defrost</strong></td>
<td></td>
</tr>
<tr>
<td>Mode/Type</td>
<td>Air</td>
</tr>
<tr>
<td><strong>Refrigerant Gas</strong></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>R404A</td>
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<tr>
<td><strong>Net Weights</strong></td>
<td></td>
</tr>
<tr>
<td>Kg/Lb</td>
<td>120Kgs / 264Lbs</td>
</tr>
<tr>
<td><strong>Crated Weights</strong></td>
<td></td>
</tr>
<tr>
<td>Kg/Lb</td>
<td>150Kgs / 330Lbs</td>
</tr>
</tbody>
</table>
AGD  DIGITAL FLAVOURS DISPLAY FEEDER
AEL  ELECTRONIC BALLAST
AP   SERVICE VALVE
CA   SUPPLY CAPACITOR
CAR  AIR CONDENSER
CE   ELECTRONIC CONTROL
CN   MULTIPOLAR CONNECTOR
CO   COMPRESSOR
D    DIO
DEV  SHUNT
DR   REMOTE DISPLAY
EM   PHOTOCELL EMITTER
EV   EVAPORATOR
F    FUSE
FD   FILTER DRIER
FLU  WATER FLOW SWITCH
FR   COMPRESSOR THERMAL PROTECTION
HL   COMPRESSOR ALARM LIGHT
I    GENERIC SWITCH
IEC  WATER EVAPORATION BIN SWITCH
IGD  DIGITAL FLAVOURS DISPLAY
H    LIGHTING SWITCH
IL   SIGHT GLASS
IMC  WARM SHELF SWITCH
INV  INVERTER
IR   REFRIGERATION SWITCH
IRP  LIGHT REFRIGERATION SWITCH
IV   INTERNAL FAN SWITCH
KM   CONTACTOR
LF   FRONT LIGHTING
LI   INTERNAL UPPER LIGHTING
LIA  FRONT LIGHTING
LIG  FLAVOURS DISPLAY LIGHTING
LIP  REAR LIGHTING
MDIG DIGITAL MODULE FOR FLAVOURS DISPLAY
MM   SPINNING SPINDLES ELECTRIC MOTOR
MUC  CONDENSING UNIT ELECTRIC CONNECTIONS
PA   HIGH PRESSURE CONTROL
PD   HIGH-LOW PRESSURE CONTROL
PO   WATER PUMP
QE   EXTERNAL ELECTRIC PANEL
QF   MAGNETIC-HEAT SWITCH
R    LIGHTING BALLAST
RADD RECTIFIER
RE   GENERIC RELAY
REL  ELECTRONIC BALLAST
REP  ELECTRONIC CONTROL TEMPERATURE REPEATER
RES1 COLD AIR DISCHARGE HEATING ELEMENT
RES2 FRONT PROFILE HEATING ELEMENT
RES3 RIGHT/LEFT GLASS HEATING ELEMENT
RES4 FRONT GLASS HEATING ELEMENT
RES5 DEFROST HEATING ELEMENT
RES6 WATER EVAPORATION HEATING ELEMENT
RES7 TOP LIGHTING FIXTURE HEATING ELEMENT
RES8 LATERAL GLASS SUPPORT HEATING ELEMENT
RES9 FRONT BAND HEATING ELEMENT
RES10 COUPLING BAND HEATING ELEMENT
RES11 SERVICE TOP HEATING ELEMENT
RES12 UPPER BAND/DOOR FRAME HEATING ELEMENT
RES13 HOT DRY/BAIN MARIE DISPLAY HEATING ELEMENT
RES14 ANTI-FOG SUCTION AIR BAND HEATING ELEMENT
RES15 WARM SHELF HEATING ELEMENT
RES16 SIDE BANDS/FRONT GLASS HINGE HEATING ELEMENT
RES17 DEHUMIDIFICATION HEATING ELEMENT
RES18 DEFROSTING WATER DRAIN HEATING ELEMENT
RES19 RING FRAME HEATING ELEMENT
RES20 SIDE BAND HEATING ELEMENT
RES21 SUCTION AIR GLASS HEATING ELEMENT
RES22 OUTLET AIR HEATING ELEMENT
RES23 REAR GLASS HEATING ELEMENT
RES24 INTERNAL GLASS HEATING ELEMENT
RES25 FRONT GLASS UPPER FRAME HEATING ELEMENT
RES26 FRONT GLASS LATERAL/LOWER FRAME HEATING ELEMENT
RES27 FRONT GLASS LATERAL FRAME HEATING ELEMENT
RES28 FRONT GLASS LOWER FRAME HEATING ELEMENT
RES29 FRONT GLASSES COUPLING PROFILE HEATING ELEMENT
RES30 DOORS FRAME MIDDLE POST HEATING ELEMENT
RES31 GLASSES CARRIAGE HEATING ELEMENT
RES32 HEATED DOORS HEATING ELEMENTS
RES33 WATER DRAIN HEATING ELEMENT
RES34 DOORS FRAME HEATING ELEMENT
RES35 COMPRESSOR CRANKCASE HEATING ELEMENT
RES36 FRONT GLASS FRAME HEATING ELEMENT
RES37 CABINET FRAME HEATING ELEMENT
RES38 HOT COMPARTMENT HEATING ELEMENT
REV  CONDENSER FAN SPEED CONTROL
REVC CONDENSER FAN RELAY
RI   REFRIGERANT TAP
RIC  COMPRESSOR DELAY
RIV  PHOTOCELL RECEIVER
RIS  RESERVE, ANTI-FOG HEATING ELEMENT
RL   LIQUID RECEIVER
RLA  WATER LEVEL ELECTRONIC CONTROL
RO   OIL HEATER ELEMENT
SAA  ABSENCE OF WATER LIGHT
SC   CONDENSER PROBE
SD   TERMINAL BOX
SDC  COMPRESSOR TERMINAL BOX
SE   PROXIMITY SENSOR
SEC  MAIN SWITCH
SFE  TANK BOTTOM HEATING COIL
SDG  FLAVOURS DISPLAY DIGITAL SYSTEM
SL   LIQUID SEPARATOR
SLA  WATER LEVEL PROBE
SPL  COMPRESSOR LIGHT
SPM  WARM SHELF LIGHT
SPR  ELECTRIC SUPPLY LIGHT
SPS  DROSTING LIGHT
SS   DEFROSTING PROBE
ST   TEMPERATURE PROBE
STR  LIGHTING STARTER
SU   HUMIDITY PROBE
T    TEMPERATURE CONTROL
TI   WINTER THERMOSTAT
TC   CAPILLARY TUBE
TE   TIMER
TER  THERMOMETER
TF   FUSIBLE PLUG
TMC  WARM SHELF THERMOSTAT
TP  LIGHTING FIXTURES REFRIGERATOR THERMOSTAT
TRA  TRANSFORMER
TRC  ELECTRONIC CONTROL TRANSFORMER
TREV WATER EVAPORATION HEATER ELEMENT THERMOSTAT
TS   SECURITY THERMOSTAT
TVC  CONDENSER FAN THERMOSTAT
VF   COMPRESSOR FAN / GENERAL USE
VC   CONDENSER FAN
VEC  WATER EVAPORATION BIN
VES  EXPANSION VALVE
V1   INTERNAL FAN
VPA  CONDENSING PRESSURE CONTROL WATER VALVE
VR   CHECK VALVE
VRA  SUCTION PRESSURE REGULATION VALVE
VRE  EVAPOTATING PRESSURE REGULATION VALVE
VS   GENERAL USE SOLENOID VALVE
VSA  SOLENOID WATER VALVE
VSAB BY-PASS SOLENOID WATER VALVE
VSC  REVERSING CYCLE SOLENOID VALVE
VSL  LIQUID SOLENOID VALVE
VSS  DEFROSTING SOLENOID VALVE
VT   POWER REGULATOR
VV   GLASS FAN
X1   CABINET CONNECTIONS
X2   EXTERNAL ELECTRIC PANEL CONNECTIONS
X3   CONDENSING UNIT CONNECTIONS
XW271K Wiring Diagram

DEFOST
RESISTANCE
HEATING
WIRE
INTERNAL
FANS
SELF-EVAPORATING
PAN'S RESISTANCE

TRANSFORMER
220V:12V
LED SUPPLIER

A MATERIALE
FINITURA
NOTE

REV. DATA DESCRIZIONE VERIFICA APPROVAZIONE

DESIGNER Pascolini A.
DATA 29/09/2015

FILE_NAME FOGLIO

Certified Quality System ISO 9001:2000
Digital controller for medium-low temperature refrigeration applications

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 herein; it cannot be used as a safety device.
- Check the application limits before proceeding.

1.2 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 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 "Diezel" (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 (per mod. FT1) in parallel with inductive loads could be useful.

2. GENERAL DESCRIPTION

Model XW60L format 23x16mm, 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 8 daily defrost cycles, divided into holidays and workdays. A "Day and Night" function with two different set points is fitted for energy saving. It is also provided with up to four NTC or PTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost temperature and to managed the fan. One of the 2 digital inputs can be configured as third temperature probe. The fourth probe is used to signal the condenser temperature alarm or to display a temperature.

The HOT KEY output allows to connect the unit, by means of the external module X4455-CX, to a network line ModBUS-RTU compatible such as the dxcel, monitoring units of X-WEB family. It allows to program the controller by means of 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 failure in the thermostat probe the start and stop of the compressor are timed through parameters "COn" and "COFF".

3.2 DEFROST
Two defrost modes are available through the "DEF" parameter: defrost through electrical heater ("E" = EL) and hot gas defrost (DEF = d)
The defrost interval depends on the presence of the RTC (optional). If the RTC is present is controlled by means of parameter "E":
- with "E" = In the defrost is made every "DEF" time - standard way for controller without RTC.
- with "E" = In "E," the defrost is made in real time depending on the hours set in the parameters L1d...L6d on weekdays and in L1d...L6d in holidays.

Other parameters are used to control defrost cycles: its maximum length (MDf) and two defrost modes: timed or controlled by the evaporator's probe (DFP).

At the end of defrost dropping time is started, its length is set in the DEF parameter. With DEF <0 the defrost is disabled.

3.3 CONTROL OF EVAPORATOR FANS
The fan control mode is selected by means of the "T" parameter:
- "T" = C: fans will run ON and OFF with the compressor and not running during defrost.
- "T" = C: fans will run ON even if the compressor is off, and not running during defrost.
After defrost, there is a timed fan delay allowing for defrost time, set by means of the "T" parameter.
- "T" = C: fans will run ON and OFF with the compressor and run during defrost.
- "T" = Y: fans will run continuously also during defrost.
An additional parameter "FSB" provides the setting of temperature, detected by the evaporator probe, above which the fans are always OFF. This is used to make sure circulation of air only if the temperature is lower than set in "FSB".

3.3.1 Forced activation of fans
This function managed by the Fct parameter is designed to avoid short cycles of fans, that could happen when the controller is switched on or after a defrost, when the room air warms the evaporator. Functioning: 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 Fct < 0 or > 0 (fans in parallel to the compressor), by means of the Fct and Fct parameters the fans can carry out on and off cycles even if the compressor is switched off. When the compressor is stopped, the fans go on working for the Fct time. With Fct < 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 a3 parameter, according to the kind of application. In the following paragraph the possible setting:

3.4.1 Auxiliary thermostat
(I.E. anti condensing heater) with the possibility of switching it on and off also by keyboard.

Parameters involved:
- ACH Kind of regulation for the auxiliary relay: Ht. heating; CL: cooling.
- SAA Setting point for auxiliary relay
- SBY Differential for auxiliary relay
- AP Probe for auxiliary relay
- Add 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 SBY parameter. The auxiliary relay can be switched on also by the AUX button. In this case it remains on till it's manually switched off.

NOTE: Set a3 = AUS and AP = Y (no probe for auxiliary output).
In this case the relay 1-3 can be activated only by digital input with AF or IF = AUS.

3.4.2 On/off relay - a3 = 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 a3 = d the relay 1-3 can control a heater element to perform a neutral zone action.
a3 out in = 1H = HY
a3 out in = 1E = SET

3.4.4 Second compressor
With a3 = 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 AC1 parameter. Both the compressors are switched off at the same time.

3.4.5 Alarm relay
With a3 = AL the relay 1-3 operates as alarm relay. It is activated every time an alarm happens. Its status depends on the BA parameter. If "BA = Y," the alarm is silenced by pressing any key.
If "BA = n," the alarm relay remains on until the alarm condition recovers.

3.4.6 Night blind management during energy saving cycles
With a3 = HIQ, 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 confirm an operation.
(DEF): To start a manual defrost
(UP): To see the max. stored temperature; in programming mode it blows the parameter codes or decreases the displayed value.
(DOWN): To see the min. stored temperature; in programming mode it blows the parameter codes or increases the displayed value.

To switch the instrument on, if onF = off.
To switch the light, if a3 = Lg.

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 + key for 3s (the "C" or "F" LED starts blinking).
2. Release the keys, then press again the SET + keys for more than 7s. The Pi2 label will be displayed immediately followed from the HY parameter.

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 Level 1 the decimal point is on.

6.7 HOW TO LOCK THE KEYPAD
1. Keep pressed for more than 3s the UP + DOWN keys. 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/min temperature stored.
2. If a key is pressed more than 3s the "POF" message will be displayed.

6.8 TO UNLOCK THE KEYPAD
Keep pressed together for more than 3s the + and - keys, till the "Pan" message will be displayed.

6.9 THE ON/OFF FUNCTION
With "off" = "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
rtc Real time clock menu (only for controller with RTC): to set the time and date and defrost start time.

8. REGULATION
Hy Differential: (-10.0 to +25.0°C) Intensity differential for set point. Compressor Cut IN is Set Point + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.
LS Minimum set point: (-50°C to +50°C) Set the minimum value for the set point.
US Maximum set point: (+10°C to +230°C) Set the maximum value for set point.
O0 Thermostat probe calibration: (-120.0 to +120.0) allows to adjust possible offset of the thermostat probe.
O2 Evaporator probe presence: n: present; the defrost stops by time; y: present: the defrost stops by temperature.
O3 Evaporator probe calibration: (-120.0 to +120.0) allows to adjust possible offset of the evaporator probe.
O4 Fourth probe calibration: (-120.0 to +120.0) allows to adjust possible offset of the fourth probe.
O5 Compressor ON time during continuous cycle: (0.0 to 24.0h; res. 10min) allows to set the length of the continuous cycle over which the compressor stays on without interruption for the CCR time. Can be used, for instance, when the room is filled with new products.
CCS Set point for continuous cycle: (50 to 150°C) sets the set point used during the continuous cycle.
COF Compressor OFF time with faulty probe: (0.0 to 255s) time during which the compressor is active in case of faulty thermostat probe. With COF=0 compressor is always OFF.
COF Compressor OFF time with faulty probe: (0.0 to 255s) time during which the compressor is OFF in case of faulty thermostat probe. With COF=0 compressor is always active.

8. DISPLAY
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, ATU and ALL have to be checked and modified if necessary.
E5 Resolution for °C (n = 1°C; d= 0.1°C) allows decimal point display.

6.5 HOW TO CHANGE A PARAMETER VALUE
To change the parameter value operate as follows:
1. Enter the Programming mode by pressing the SET + key for 3s (the "C" or "F" LED starts blinking).
2. Select the required parameter. Press the "SET" key to display its value.
3. Use "UP" or "DOWN" to change its value.
4. Press "SET" to store the new value and move to the following parameter.
5. To exit: Press SET + or wait 10s without pressing a key.

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

6.6.5 HOW TO START A MANUAL DEFROST
Push the DEF key for more than 2 seconds and a manual defrost will start.

6.6.6 HOW TO CHANGE A PARAMETER VALUE
To change the parameter value operate as follows:
1. Enter the Programming mode by pressing the SET + key for 3s (the "C" or "F" LED starts blinking).
2. Select the required parameter. Press the "SET" key to display its value.
3. Use "UP" or "DOWN" to change its value.
4. Press "SET" to store the new value and move to the following parameter.
5. To exit: Press SET + or wait 10s without pressing a key.

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

6.6.6 THE HIDDEN MENU
The hidden menu includes all the parameters of the instrument.
EdF Defrost mode (only for controller with RTC): RT = Real Clock Mode. Defrost time follows LT+Loc+H parameters on weekdays and Sd1=Sd2 on holidays.

EdF Probe selection for defrost termination: nP = no probe; P1 = thermostat probe; P2 = evaporator probe; P3 = condenser probe; P4 = probe on hot key plug.

EdF Change thermostat temperature alarm: (50°C – 5°C) when the thermostat is reached, a HAZ alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (100°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change defrost temperature alarm: (20°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Alarm relay presence: if the alarm relay is switched off, an alarm is signalled, possibly after the ADF delay.

EdF HAZ alarm type: if the HAZ alarm is signalled, the alarm is signalled, possibly after the ADF delay.

EdF Coolant temperature alarm: (5°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Defrost temperature alarm: (10°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (20°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change thermostat temperature alarm: (50°C – 5°C) when the thermostat is reached, a HAZ alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (100°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change defrost temperature alarm: (20°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Alarm relay presence: if the alarm relay is switched off, an alarm is signalled, possibly after the ADF delay.

EdF HAZ alarm type: if the HAZ alarm is signalled, the alarm is signalled, possibly after the ADF delay.

EdF Coolant temperature alarm: (5°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Defrost temperature alarm: (10°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (20°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change thermostat temperature alarm: (50°C – 5°C) when the thermostat is reached, a HAZ alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (100°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change defrost temperature alarm: (20°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Alarm relay presence: if the alarm relay is switched off, an alarm is signalled, possibly after the ADF delay.

EdF HAZ alarm type: if the HAZ alarm is signalled, the alarm is signalled, possibly after the ADF delay.

EdF Coolant temperature alarm: (5°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Defrost temperature alarm: (10°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (20°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change thermostat temperature alarm: (50°C – 5°C) when the thermostat is reached, a HAZ alarm is signalled, possibly after the ADF delay.

EdF Change coolant temperature alarm: (100°C – 10°C) when the coolant is reached, the alarm is signalled, possibly after the ADF delay.

EdF Change defrost temperature alarm: (20°C – 10°C) when the defrost temperature is reached, the alarm is signalled, possibly after the ADF delay.

EdF Alarm relay presence: if the alarm relay is switched off, an alarm is signalled, possibly after the ADF delay.

EdF HAZ alarm type: if the HAZ alarm is signalled, the alarm is signalled, possibly after the ADF delay.
8. DIGITAL INPUTS

The first digital input 13-14 is enabled with PIN 1 = 1. With PIN 1 = 0, the second digital input is disabled.

8.1 GENERIC ALARM (I1F or I2F = EAL)

As soon as the digital input is activated, the unit will wait for the "did" time delay before signaling 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 the "did" delay before signaling 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 the pressure switch has reached the number of activation of the "ps" 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 "ps" 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)

When the door is opened, the display shows the message "dor" and the alarm stops as soon as the door is closed. The high and low temperature alarms are enabled.

8.5 START DEFOST (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 "MSP" safety line is cleared.

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

With the auxiliary relay activated, the door switches on the auxiliary relay.

8.7 INVERSION OF THE KIND OF ACTION: HEATING-COOLING (I1F or I2F = htr)

This function allows to invert the regulator of the control: from cooling to heating and vice versa.

8.8 ENERGY SAVING (I1F = ES)

The Energy Saving function allows to change the set point value as the set point + HES (parameter) sum. This function is enabled until the digital input is activated.

8.9 HOLIDAY DEFOST (I1F or I2F = HDF)--ONLY FOR MODELS WITH RTC

This function enables 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 = "CL" the input is activated by closing the contact. I1P or I2P = "OPEN" 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 convertor, XA48S-L, to connect the instrument to a monitoring system ModBus-RTU compatible such as the X-A23B900-3000300.

10. X-REP OUTPUT -- OPTIONAL

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

11. INSTALLATION AND MOUNTING

The controller XW6OL shall be mounted on vertical panel, in a 150x31 mm hole, and fixed using two screws at 3.5 mm. To obtain an IPOS protection grade use 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, extreme dirt or humidity. The same recommendations apply to probes.

Let the air circuits 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 circuits. 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 most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

13. HOW TO USE THE HOT KEY

13.1 HOW TO PROGRAM A HOT KEY FROM THE INSTRUMENT (UPLOAD)

1. Program one controller with the front keypad.
2. When the controller is ON, insert the "Hot key" and press "key; the "FwL" message appears followed by 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 a key if you want to upload again or remove the "Hot Key" to abort the operation.

13.2 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 "dol", message is blinking followed by flashing "End".
4. After 10 seconds the instrument will restart working with the new parameters.
5. Remove the "Hot Key".

NOTE: the message "Err" is displayed for failed programming. In this case turn the unit off and then on if you want to download again or remove the "Hot Key" to abort the operation.

14. ALARM SIGNALS

<table>
<thead>
<tr>
<th>Message</th>
<th>Cause</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Room probe failure</td>
<td>compressor output deactivated</td>
</tr>
<tr>
<td>R2</td>
<td>Evaporator probe failure</td>
<td>Defrost end is timed</td>
</tr>
<tr>
<td>R3</td>
<td>Third pressure failure</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>R4</td>
<td>Fourth pressure failure</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>R5</td>
<td>Maximum temperature alarm</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>R6</td>
<td>Condenser high temperature alarm</td>
<td>Depends on the &quot;A02&quot; parameter</td>
</tr>
</tbody>
</table>
14.1 SILENCING BUZZER / ALARM RELAY OUTPUT

If fBA = fY, the buzzer and the relay are silenced by pressing any key. If fBA ≠ fY, 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 (HA, LA, H2A, and L2A) automatically stop as soon as the temperature returns to normal values.

Alarm (CA) with (fIF = fNL) recover as soon as the digital input is disabled. 

14.3 OTHER MESSAGES

Non: Keyboard unlocked
PxF: Keyboard locked
noP: In programming mode; none parameter is present in Pr1

On the display on p27, p37, and p47, the selected probe is not enabled.

15. TECHNICAL DATA

Housing: self-extinguishing ABS.
Case: foam 30x165 mm, depth 34mm.
Mounting: panel mounting in a 100x31 mm panel cut-out with two screws. O 3 x 3 mm.
Distance between the holes 150 mm.
Connections: Screw terminal block, 2.5 mm² cable, 0.25 mm² screw wire, 0.1 mm² Flex wire.
Power supply: 24 VDC or 440 VAC ± 10%.
Power absorption: 1.5 W max.
Display: 3 digits, red LED, 14.2 mm high.
Display: 3 digits, red LED, 14.2 mm high, inputs: Up to 4 NTC or PT100 probes.
Digital inputs: 2 upper voltage.
Relay outputs: Total current on loads MAX 20 A.
Compressor relay: 24 VAC.
Light relay: 24 VAC.
Fan relay: 24 VAC.
Relay: 24 VAC.
Other output: buzzer (optional).
Serial output: TTL standard Communication protocol: Modbus - RTU.
Data storage: on the non-volatile memory (EEPROM).
Internal clock back-up: 24 hours (only for model with RTC).
Kind of A/D: 16, Pollution grade: 2, Software class: A.
Rated impulse voltage: 250 VDC. Over voltage Category: II
Operating temperature: 0-40 °C, Storage temperature: -30-85 °C.
Relative humidity: 20-85% (no condensing).
PT100 probe: -50-150°C (-50-302°F).
Resolution: 0.1 °C or 1 °F (selectable). Accuracy: ambient temp. 25°C ±0.5 °C ±1 digit.

16. CONNECTIONS

Supply: 120 VAC or 24 VAC; connect to terminals 11-12.
The K-XPE output is optional.
The light relay can be also 150 A 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>nRC</td>
<td>Real time clock menu</td>
<td>0.1-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>User minimum setpoint</td>
<td>50°C</td>
<td>0-Pr8</td>
<td></td>
</tr>
<tr>
<td>U5</td>
<td>User maximum setpoint</td>
<td>100°C</td>
<td>0-Pr8</td>
<td></td>
</tr>
<tr>
<td>P22</td>
<td>High alarm temperature</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>P23</td>
<td>Low alarm temperature</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>P24</td>
<td>HI Triangular probe calibration</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>P25</td>
<td>HI Triangular probe calibration</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>P26</td>
<td>HI Fourth probe calibration</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>P27</td>
<td>HI Fourth probe calibration</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
</tr>
<tr>
<td>nPS Outputs delay at start up</td>
<td>0-255</td>
<td>0-Pr1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Label</td>
<td>Name</td>
<td>Range</td>
<td>°C/°F</td>
<td>Level</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Ld1*</td>
<td>1st workdays defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>6.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Ld2*</td>
<td>2nd workdays defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>13.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Ld3*</td>
<td>3rd workdays defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>21.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Ld4*</td>
<td>4th workdays defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>0.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Ld5*</td>
<td>5th workdays defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>0.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Sd1*</td>
<td>1st holiday defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>6.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Sd2*</td>
<td>2nd holiday defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>13.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Sd3*</td>
<td>3rd holiday defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>21.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Sd4*</td>
<td>4th holiday defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>0.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Sd5*</td>
<td>5th holiday defrost start</td>
<td>0 = 23h 50 min. - nu</td>
<td>0.0</td>
<td>rtc</td>
</tr>
<tr>
<td>Adr</td>
<td>Serial address</td>
<td>1-247</td>
<td></td>
<td>Pr2</td>
</tr>
<tr>
<td>PhC</td>
<td>Kind of probe</td>
<td>P.hc, etc</td>
<td></td>
<td>Pr2</td>
</tr>
<tr>
<td>onF</td>
<td>Standby key enabling</td>
<td>nu, off, ES</td>
<td>cOff</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>PfB</td>
<td>Map code</td>
<td>--</td>
<td></td>
<td>Pr2</td>
</tr>
</tbody>
</table>

* Only for model with real time clock

2 Only for XW60L with X-REP output

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Installing and Operating Instructions

WING

XW270K - XW271K

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**1. Switch Input**

When the digital input is activated, the unit will wait for the "EAL" alarm input to be activated. The unit will then wait until the "Mdf" safety time is expired. If the "EAL" alarm is disabled before the "Mdf" safety time is expired, the unit will do nothing.

**2. Mounting with Keyboard Cover Opening Upward**

**3. Electrical Connections**

**DIGITAL INPUTS POLARITY**

**INSTALLATION AND MOUNTING**

**6. Timer and LED Cut Out**

**7. Mounting with Keyboard Cover Opening Downward**
### 1. PARAMETERS LIST

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
<th>Lev.</th>
<th>Value</th>
<th>U.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set</td>
<td>LS +US (vedi sotto)</td>
<td>Pr1</td>
<td>+6</td>
<td>42 °C/°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pr1</td>
<td>3</td>
<td>7 °C/°F</td>
</tr>
<tr>
<td>Hy</td>
<td>0,1 + 25.5</td>
<td>Pr1</td>
<td>2</td>
<td>35 °C/°F</td>
</tr>
<tr>
<td>LS</td>
<td>Set point - 50</td>
<td>Pr2</td>
<td>+15</td>
<td>59 °C/°F</td>
</tr>
<tr>
<td>US</td>
<td>Set point + 110</td>
<td>Pr2</td>
<td>0</td>
<td>min.</td>
</tr>
<tr>
<td>U.M.</td>
<td></td>
<td>Pr1</td>
<td>1</td>
<td>min.</td>
</tr>
<tr>
<td>Ods</td>
<td>0 ÷ 255</td>
<td>Pr2</td>
<td>3</td>
<td>7 °C/°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pr2</td>
<td>2</td>
<td>35 °C/°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pr2</td>
<td>+15</td>
<td>59 °C/°F</td>
</tr>
<tr>
<td>AC</td>
<td>0 ÷ 30</td>
<td>Pr1</td>
<td>0</td>
<td>min.</td>
</tr>
<tr>
<td>CCT</td>
<td>0 ÷ 23h:50 min.</td>
<td>Pr2</td>
<td>0</td>
<td>h:min.</td>
</tr>
<tr>
<td>Con</td>
<td>0 ÷ 255</td>
<td>Pr2</td>
<td>5</td>
<td>min.</td>
</tr>
<tr>
<td>COF</td>
<td>0 ÷ 255</td>
<td>Pr2</td>
<td>5</td>
<td>min.</td>
</tr>
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<td>CF</td>
<td>celsius</td>
<td>Pr2</td>
<td>°C</td>
<td>°C/°F</td>
</tr>
<tr>
<td>rES</td>
<td>in °C</td>
<td>Pr1</td>
<td>de</td>
<td>°C/°F</td>
</tr>
<tr>
<td>Lod</td>
<td>P1 ÷ P1</td>
<td>Pr2</td>
<td>P1</td>
<td>-</td>
</tr>
<tr>
<td>Red</td>
<td>P1 + 1r2</td>
<td>Pr2</td>
<td>P1</td>
<td>-</td>
</tr>
<tr>
<td>tdf</td>
<td>°R / tF / in</td>
<td>Pr1</td>
<td>°R / tF / in</td>
<td>-</td>
</tr>
<tr>
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