

IWC 720-730

Electronic controllers for "ventilated" refrigeration units



KEYS AND LEDS

- UP Key**
 - Scrolls menu entries
 - Increases values
 - programmable key (can be associated a direct function)
- DOWN Key**
 - Scrolls menu entries
 - Decreases values
 - programmable key (can be associated a direct function)
- set key** (press once)
 - Accesses the setpoint
 - Displays the alarms (if active)
 - Displays Pb1 and Pb2 (see (hold down) Accesses the parameter programming menus
- defrost/ESC Key** (press once)
 - ESC function (exit) (hold down)
 - activates manual defrosting
- AUX/LIGHT Key**
 - Turns on the auxiliary relay/light (1)
 - forcing fans ON (see par. H34) (2) (WHEN AVAILABLE) -->the aux/light LED (1) R.H. % or the LED (2) turns on.
- on-off key (STAND-BY)** (press for 2 seconds)
 - Turns the instrument On/Off the on-off LED turns on and the word OFF is displayed
- Alarm**
 - ON for alarm active;
 - blinking when the alarm is silenced
- Fans**
 - ON when fan is on;
- Compressor**
 - ON for compressor on;
 - blinking in case of delay, protection, or blocked enabling
- Defrosting**
 - ON when defrosting;
 - blinking during dripping
- eco Set/Reduced set**
 - ON for Set-Point changing;
 - blinking when the reduced set is on
- "R.H. %"**
 - ON for fans forcing by key (see par. H31-32-34=4)
 - OFF normal fans functioning
- lock (LED belongs to lock key)**
 - ON for lock (keyboard locked);
 - ON for lock (keyboard locked);
 - "manual defrosting" (LED belongs to defrost key)**
 - ON for manual defrosting
 - ON for manual defrosting
 - STANDBY (LED belongs to on/off key)**
 - ON for instrument "turned off"
 - OFF for instrument turned on;

If the conditions for defrosting are not present, or if parameter OD0<0, the display will blink three times, to indicate that the operation will not be performed.

MACHINE STATUS MENU - SETTING THE SET POINT

a) You can access the machine status menu by pressing and releasing the 'set' key. You can use the "UP" and "DOWN" keys to scroll through all the folders in the menu in normal conditions, which are:
 - SET Setpoint setting folder.
 - Pb1, Pb2: probe 1 and 2 folders.
 The first label displayed is 'SEt'. To display the Setpoint value press the "set" key.



The value of Setpoint appears on the display. To change the Setpoint value, press the "UP" and "DOWN" keys within 15 seconds. If you press the "set" key again or press the "fnc" key or a time of 15 seconds elapses, the last value displayed

will be saved and the label "SEt" will reappear on the display. b) To view the temperature value read by the probes, scroll through the menu labels and press the "set" key corresponding to the desired probe, "Pb1" or "Pb2".



c) If an alarm condition exists, when accessing the "Machine Status" menu the "AL" folder label appears. Press the "set" key to display the alarms present in the folder.



(e.g. in the presence of maximum and minimum temperature alarms)

"Use UP" and "DOWN" keys to scroll the list of active alarms

PROGRAMMING MENU

To access the Programming menu, hold the "set" button down for more than 5 seconds.

- When the 'set' button is pressed, the first folder in the menu is displayed. (e.g.: "CP" folder)
- By using the 'UP' and 'DOWN' buttons, you can scroll through all the folders in the programming menu



- By pressing the "set" button for the selected folder (in this example, 'dEF/dtY') the first parameter is displayed. Use the "UP" and "DOWN" buttons to select the required parameter.
- Press "set" to display the selected parameter value and use the "UP" and "DOWN" buttons to change it.

Once the "set" button has been pressed (or the 15 second time out elapses) the new value is stored and the label of the corresponding parameter will be displayed.

PASSWORD

Access to parameter handling can be limited by using a password. The password can be enabled by setting the PA1 parameter in the 'dis' folder. The password is enabled if the value of the PA1 parameter is not 0.

- To enter the Programming menu hold the "set" button down for more than 5 seconds. If specified, the PASSWORD will be requested



- If the PA1 password is enabled (not 0) you will be asked to enter it. Do this by selecting the correct value using the UP and DOWN buttons and confirm by pressing the 'set' button.

If the password is not entered correctly, the device will display the 'PA1' label again and the step will have to be repeated.

On each level of both menus, if you press the "fnc" key or a time of 15 seconds elapses, you will return to the level above and the last value on the display will be saved.

COPY CARD

The Copy Card is an accessory connected to the TTL serial port which allows for quick programming of the instrument parameters (upload and download parameters map to or from one or more instruments of the same type). The operations of upload (label UL), download (label dL) and key formatting (label Fr) are performed as follows:

- 

 - The commands needed to use the Copy Card are contained in the 'FPr' folder. Press 'set' to access the functions.
- 

 - Scroll using 'UP' and 'DOWN' to display the required function. Press the 'set' key to perform the upload (or download).
- 

 - If the operation is successful, the display will show 'y', if not it will show 'n'.

Download reset

Connect the key with the instrument OFF. When the instrument is switched on, the programming parameters will be loaded into the instrument. After the lamp-test the display will read the following for about 5 seconds:

- label dLY if copy operation successful
- label DLn if not



NOTE:

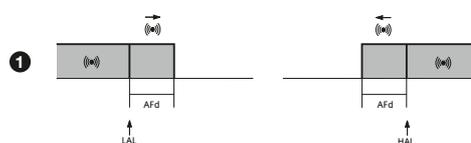
- after the download operation, the instrument will work with the newly loaded parameters map.
- see "FPr" folder in Parameters table and Parameters description

ALARMS

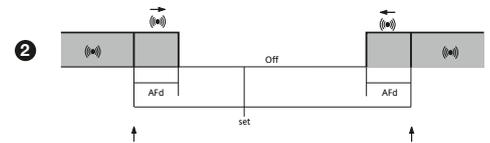
LABEL	ALARM	CAUSE	EFFECTS	Resolving problems	NOTES
E1	Probe 1(control) faulty	<ul style="list-style-type: none"> • measuring of values outside the nominal reading range • control probe faulty/shorted/open probe 	"E1" label appears on display; Controller enabled as indicated by the Ont and OFt parameters if programmed for the Duty Cycle	<ul style="list-style-type: none"> • check the probe wiring • replace the probe 	
E2	Probe 2 (evaporator) faulty	<ul style="list-style-type: none"> • measuring of values outside the nominal reading range • control probe faulty/shorted/open probe 	"E2" label appears on display;	<ul style="list-style-type: none"> • check the probe wiring • replace the probe 	
AH1	High temperature alarm	<ul style="list-style-type: none"> • value read by probe 1 > HAL after time equal to "tAO". (see "MIN MAX ALARMS" and description of "HAL", "Att" and "tAO" parameters) 	Alarms created in the "AL" folder with the AH1 label	<ul style="list-style-type: none"> • Wait for temperature value read by probe 1 to fall below HAL 	
AL1	Low temperature alarm	<ul style="list-style-type: none"> • value read by probe 1 < LAL after time equal to "tAO". (see "MIN MAX ALARMS" and description of "LAL", "Att" and "tAO" parameters) 	Alarms created in the "AL" folder with the AL1 label	<ul style="list-style-type: none"> • Wait for temperature value read by probe 1 to go above LAL 	
Ad2	End of defrost due to time-out	<ul style="list-style-type: none"> • If defrost ends because of a time-out (instead of being caused by a defrost end temperature detected by the defrosting probe), an alarm is generated and the icon is turned on consequently. 	Alarms created in the "AL" folder with the "Ad2" label	<ul style="list-style-type: none"> • Automatic back swing occurs when the next defrost starts • By pressing any key during the alarm condition, the signal light disappears. In order to really erase the alarm you must wait the next defrost. 	
Opd	Open door alarm	<ul style="list-style-type: none"> • In case of an open door, in response to delay defined by tdO parameter the Open Door alarm is signalled. 	Alarms created in the "AL" folder with the "Opd" label NOTE: parameter tAO does not set to zero in case the door is closed: actually, in case of continuous opening and closing of the door alarms would never be signalled.	<ul style="list-style-type: none"> • Automatic reset 	
EA	External alarm	<ul style="list-style-type: none"> • control of alarm from active D.I. if "H11" = -5/5 (see description of "H11" parameter) 	Alarms signalled in the "AL" folder with the EA label. Blocks controllers only if "H11"=-5 /5		
			ALL see Alarm LED – Signalling through buzzer. ONLY IN MODELS WITH BUZZER AVAILABLE	ALL • Manual silencing by pressing button	ALL – If there are alarm exclusion times (see parameter table "AL" folder) the alarm will not be signalled.

MAX-MIN ALARMS

Temperature expressed as an absolute value (par "Att"=0) Abs(olute)



Temperature in relation to set point (par "Att"=1) rEL(ative)



Minimum temperature alarm	Temperature lower than or equal to LAL (LAL with sign)
Maximum temperature alarm	Temperature greater than or equal to HAL (HAL with sign)
Minimum temperature alarm back swing	Temperature higher than or equal to LAL+AFd
Maximum temperature alarm back swing	Temperature lower than or equal to HAL-AFd

Temperature lower than or equal to set point +LAL (LAL positive only)
Temperature greater than or equal to set point +HAL (HAL positive only)
Temperature greater than or equal to set point + LAL + AFd set point - LAL +AFd
Temperature lower than or equal to set point+HAL-AFd

if Att=rEL(ative) LAL must be negative: therefore set point+LAL<set point because set point+(-|LAL|)=set-|LAL|

KEYBOARD LOCKING

The instrument includes a facility for disabling the keyboard:

- using the keys (pressing **UP+DOWN simultaneously** for 2 seconds; see KEYS AND LEDS)
- by programming the “Loc” parameter (see folder with “diS” label).

If the keyboard is locked, you can access the “Programming” Menu by pressing the “set” key.

The Setpoint can also be viewed.

PARAMETERS TABLE

PAR.	RANGE	DEFAULT	U.M.
SEt	LS1...HS1	0.0	°C/°F

Compressor - label CP			
diF	-0.1...30.0	2.0	°C/°F
HSE	LS1...302	50.0	°C/°F
LSE	-58.0...HS1	-50.0	°C/°F
OSP	-30.0...30.0	0	°C/°F
Cit	0...250	0	min
CAt	0...250	0	min
Ont	0...250	0	min
Oft	0...250	1	min
dOn	0...250	0	sec
dOF	0...250	0	min
dbi	0...250	0	min
OdO	0...250	0	min
dSC (*)	0...250	0	sec
(*) only visible in models with two compressors			
Defrost - label dEF			
dty	0/1/2	0	num
dit	0...250	6h	h/min/sec
dct	0/1/2	1	num
dOH	0...59	0	min
dEH	1...250	30	min
dSt	-50.0...50.0	8.0	°C/°F
dPO	n/y	n	flag
Fans - label FAN			
FSt	-50.0...150.0	2.0	°C/°F
FAd	1.0...50.0	2.0	°C/°F
Fdt	0...250	0	min
dt	0...250	0	min
dFd	n/y	y	flag
FCO	n/y/d.c.	y	num
Fod	n/y	n	flag
FdC	0...99	0	min
Fon	0...99	0	min
FoF	0...99	0	min

Alarms - label AL			
Att	0/1	0	flag
AFt	1.0...50.0	2.0	°C/°F
HAL	LAL1...150.0	50.0	°C/°F
LAL	-50.0...HA1	50.0	°C/°F
PAO	0...10	0	h
dA1	0...999	0	min
OAO	0...10	0	h
tdO	0...250	10	min
tAO	0...250	0	min
dAt	n/y	n	flag
EAL	n/y	n	flag
AOP	0/1	0	flag

label Lit			
dSd	n/y	n	flag
OFL	n/y	n	flag
dOd	n/y	n	flag
dAd	0...250	0	min

Display - label diS			
LOC	n/y	n	flag
PA1	0...250	0	num
ndt	n/y	n	flag
CA1	-12.0...12.0	0	°C/°F
CA2	-12.0...12.0	0	°C/°F
ddl	0/1/2	2	num
dro	0/1	0	flag

* see description of parameters H2x
 **parameter visible ONLY models with a BUZZER
 (*) only visible in models with two compressors

Configuration - label CnF			
H06	n/y	y	flag
H11	-6...6	3	num
H21*	0...6/0...10 (°)	1	num
H22*	0...6/0...10 (°)	2	num
H23*	0...6/0...10 (°)	3	num
H26**	0...6/0...10 (°)	4	num
H31	0...6	0	num
H32	0...6	0	num
H34	0...6	2	num
H42	n/y	y	flag
rEL	/	/	/
tAb	/	/	/
label FPR			
UL	/	/	/
dL	/	/	/
Fr	/	/	/

The following functions are available in the FnC folder (last folder visible from the Programming Menu):

* default

NOTE: to modify the status of a specified function press the ‘set’ button

NOTE: If the unit is switched off, the function labels go back to their default status.

label FnC	Function label	
	ACTIVE	INACTIVE
reduced Set	OSP	SP*

DESCRIPTION OF PARAMETERS

diF **COMPRESSOR CONTROL (folders with label “CP”)**
 Compressor relay activation differential: the compressor stops on reaching the Setpoint value (as indicated by the adjustment probe) and restarts at a temperature value equal to the Setpoint plus the value of the differential.
 Note: the value 0 cannot be assumed.

HSE Maximum possible setpoint value.

LSE Minimum possible setpoint value.

NOTE: The two sets are interdependent: HSE (maximum set) cannot be less than LSE (minimum set) and vice versa

OSP Temperature value to be added algebraically to the setpoint if reduced set enabled (Economy function). The reduced set can be enabled by pressing a key which must be specially configured for this purpose.

Cit Minimum compressor activation time before disabling. If set to 0, it is not active.

CAt Maximum compressor activation time before disabling. If set to 0, it is not active.

Ont Compressor activation time in the event of a faulty probe. If set to “1” with Oft set to “0”, the compressor is always on, while with Oft > 0 it operates in duty cycle mode.

Oft Compressor off time in the event of a faulty probe. If set to “1” with Ont at “0”, the compressor is always off, while with Ont > 0 it operates in duty cycle mode.

dOn Starting delay. The parameter indicates that a protection is active on the relay actuations of the generic compressor. Between the request and effective activation of the compressor relay, at least the specified time

dOF must elapse.
 Delay after switching off. The parameter indicates that the protection is active on compressor relay actuations. At least the indicated time must elapse between switch-off of the compressor relay and the successive switch-on.

dbi Delay between switch-ons. The indicated time must elapse between two subsequent switch-ons of the compressor.

OdO Delay time in activating the outputs after switch-on of the instrument or after a power failure. 0= not active.

dSC (*) **ONLY VISIBLE IN MODELS WITH TWO COMPRESSORS**
 Starting delay (seconds) depends on compressor.
 Used to prevent the two compressors from starting up too close together. N.B.: at least one H2x must be set to 10 (see)

DEFROSTING CONDITIONS
 The instrument allows defrosting to be performed in the following conditions:

- the evaporator temperature is lower than the defrost end temperature set by the dSt parameter;
- manual defrosting is not already activated (see); in this case the request for automatic defrosting will be cancelled.

DEFROSTING CONTROL 1/2 (folders with labels “dE1”/“dE2”)
dty Type of defrost.
 0 = electrical defrosting;
 1 = cycle inversion defrosting (hot gas);
 2 = Free mode defrost (independent of compressor).

Automatic defrosting

In this case, defrosting takes place at time intervals set by parameter dit (=0 defrosting will not take place at all).

As mentioned above, if the parameter dit> 0 and defrosting conditions apply (see parameter dSt), defrosting will take place at fixed intervals and according to the parameter dCt

dit Interval between the start of two subsequent defrosting operations.
0= the function is disabled (defrosting is NEVER performed)

dCt Selection of count mode for the defrosting interval.
0 = compressor hours of operation (DIGIFROST® method);
Defrosting active ONLY with the compressor on.
NOTE: compressor time of operation is counted regardless of the evaporator probe (counting is active if evaporator probe is absent or faulty).
1 = hours of appliance operation. Defrost counting is always active when the machine is on and starts at each power-on.
2 = compressor stop. Every time the compressor stops, a defrosting cycle is performed according to parameter dty

dOH Defrost start delay time from start up of instrument.

dSt Defrosting end temperature (determined by the evaporator probe).

dEt Defrost time-out: determines the maximum duration of defrosting.

dPO Determines whether the instrument must enter **defrosting at start-up** (if the temperature measured by the evaporator allows this operation).
y = yes, starts defrosting at start-up; n = no, does not start defrosting at start-up.

FAN CONTROL (folder with "FAn" label)

FSt Fan lock temperature: if the evaporator probe reads a higher value than the set value, the fans are stopped. The value is positive or negative and, depending on parameter FPt, can represent the temperature as an absolute value or relative to the Setpoint.

FAd Fan activation intervention differential (see par. "FSt" and "Fot").

Fdt Delay time at fan activation after a defrosting cycle.

dt Dripping time.

dFd Allows exclusion of the evaporator fans to be selected or not selected during defrosting, y = yes (fans excluded); n = no.

FCO It allows the fan lock to be selected or not when the compressor is OFF.
y = fans active (with thermostat); depending on the value read by the defrosting probe, see "F5t" parameter);
n = fans off;
dc = duty cycle (through "Fon" and "FoF" parameters).

FoD Allows fan lock to be selected when the door is open and fan restart when the door is shut (if they were active).
n=fan lock; y=fans unchanged

FdC Fan switch off delay time after compressor stop.
In minutes. 0= function excluded

Fon/FoF Time fans are ON/OFF per duty cycle.
Use of fans in duty cycle mode; valid for FCO = dc

ALARMS (folder with "AL" label)

Att Parameter "HAL" and "LAL" modes, as temperature absolute value or as differential relative to the Setpoint.
0 = absolute value; 1 = relative value.

Aft Alarm differential.

HAL Maximum temperature alarm. Temperature value (understood as distance from the Setpoint or as an absolute value based on Att) which if exceeded in an upward direction triggers the activation of the alarm signal.
See Max/Min. Alarm Diagram.

LAL Minimum temperature alarm. Temperature value (understood as distance from the Setpoint or as an absolute value based on Att) which if exceeded in a downward direction triggers the activation of the alarm signal.
See Max/Min. Alarm Diagram.

PAO Alarm exclusion time after instrument is switched on following a power failure.

dAO Alarm exclusion time after defrost.

OAO RitAlarm signalling delay after digital input disabling (door open). Alarm means high/low temperature alarm.

tdO Time out after alarm signal following digital input disabling (door open).

tAO Temperature alarm signal delay time.

dAt Alarm signal for defrosting end due to time-out.
n = alarm not enabled; y = alarm enabled.

EAL External alarm to lock controls (n=does not lock, y=locks).

AOP Polarity of alarm output.
0 = alarm active and output disabled; 1 = alarm active and output enabled.

The Digital Input can be configured as the auxiliary/door switch (parameter H11=3). In this case, a digital output should be provided as an auxiliary (parameters Hxx=5). As mentioned above, this function allows the light relay to be activated if it was de-energized and vice versa.
So when the digital input (D.I.) is enabled, the light relay is enabled (if par. **dSd=y**) and the light relay is disabled when the D.I. is disabled.
To maintain correct operation, the status is stored in the event of a black-out; the light key and the light enabling function can also be enabled if the instrument is on STAND-BY (see par. **H06**). The light key always disables the light relay if par. **OFL=y**

LIGHT AND DIGITAL INPUTS (folder with "Lit" label)

dSd Enabling light relay by door switch.
n = door open, the light does not turn on;
y = door open, the light turns on (if it was off).

OFL The light key always disables the light relay. Enables switching off via the cell

dOd light switch even if the delay after closing the door set by dLt is enabled
Door switch switches off loads. On digital input command, programmed as door-switch, this allows all loads to be stopped when the door is opened and restarted when the door is closed (respecting any timings in progress).

dAd Digital input activation delay

DISPLAY (folder with "dis" label)

LOC Keyboard locking. It is still possible to enter parameter programming and modify the parameters, including the status of this parameter, in order to allow keyboard unlocking. y = yes (keyboard locked); n = no.

PA1 When enabled (value other than 0), it constitutes the access key for level 1 parameters.

ndt View with decimal point.
y = yes (view with decimal point); n = no (only integers).

CA1/CA2 Calibration 1/2. Positive or negative temperature value added to the value read by probe 1/2

ddl Viewing mode during defrosting.
0 = shows the temperature read by the thermostat probe;
1 = locks the reading at the temperature value read by thermostat probe when defrosting starts and until the next time the Setpoint value is reached;
2 = displays the label "deF" during defrosting and until the next time the Setpoint value is reached.

dro Select °C or °F for displaying the temperature read by the probe.
0 = °C, 1 = °F. **PLEASE NOTE: switching between °C and °F or vice versa DOES NOT modify the setpoint, differential, etc. (for example set=10°C become 10°F).**

CONFIGURATION (folder with "CnF" label)

H06 key/aux input/light door switch active when the instrument is off (but powered)

H11 Configuring digital inputs/polarity.
0 = disabled 1 = defrosting 2 = reduced set
3 = door switch 4 = external alarm 5 = on-off (STAND-BY)
6 = NOT USED

H21* Digital output configurability (A)
0 = disabled 1 = compressor 2 = defrosting
3 = fans 4 = alarm 5 = auxiliary/light
6 = stand-by. 7, 8, 9 = not used
(*) 10 = 2nd compressor (see dSC)

H22* Digital output configurability (B) (Analogous to H21)

H23* Digital output configurability (C) (Analogous to H21)

H26** BUZZER output configurability 0= disabled;
4 = enabled; 1-3, 5-6 = not used

*** NOTE:** **MODEL IWC 730 has 3 relay outputs;**
MODEL IWC 720 has only 2 relay outputs;
please check the availability of the relay and related parameter:
where the relay is NOT available the related parameter will NOT be visible.

****parameter visible ONLY models with a BUZZER**

Function R.H.%

Pressing the key programmed as R.H.% forces the fans always ON": the fans operate continuously (always ON). During defrosting the fans are controlled according to the defrosting parameters. In particular during the dripping cycle, they will be turned off even if RH% is enabled. **NOTE: RH% status takes priority over all other parameters.** In the event of a power failure or when the machine has been turned off, the RH% status will be restored as soon as the mains power supply returns/the machine is turned on.

H31 UP key configurability
0 = NOT used 1 = defrost 2 = light 3 = reduced set
4 = function R.H.% 5 = stand-by 6 = NOT used

H32 DOWN key configurability (Analogous to H31)

H34 Defrost key configurability (Analogous to H31)

H42 Evaporator probe presence. n= not present; y= present.

rEL Device version: read only parameter.

tAb Reserved: read-only parameter.

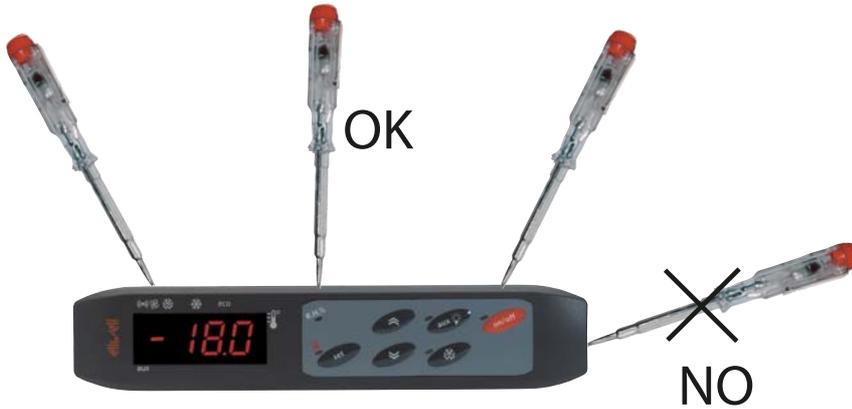
COPY CARD (folder with label "Fpr") - (see "Copy Card" section)

UL Upload. Programming parameter transfer from instrument to Copy Card.

dL Download. Programming parameter transfer from Copy Card to instrument.

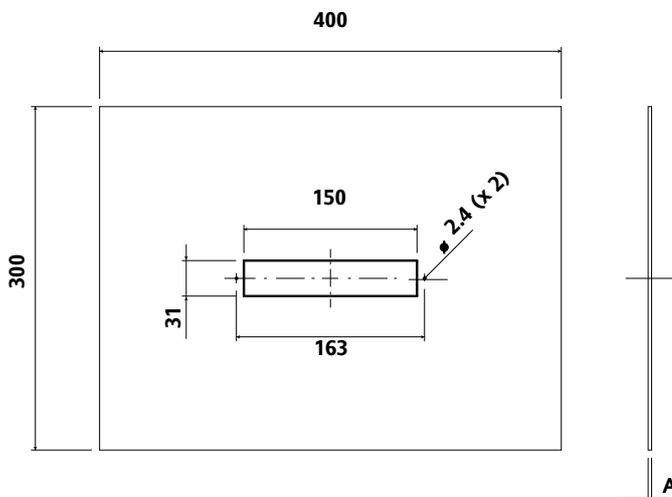
Fr Format. Erasing all parameters in the key.
PLEASE NOTE: using the "Fr" parameter (key formatting) results in permanent loss of data inserted in key. The operation cannot be cancelled.

MECHANICAL ASSEMBLY



To remove the front operate on the three fastening hooks as indicated in the figure (from above or from below but never from the side)

CUT-OUT



(A) PANEL THICKNESS 0.5-1-1.5-2-2.5-3 mm

PANEL THICKNESS - SPESSORE PANNELLO - ESPESOR DEL PANEL -
PANEELDICKE - EPAISSEUR PANNEAU -

NOTE: The technical specifications stated in this document regarding the measurement (range, accuracy, resolution, etc.) refer strictly to the instrument and not to any accessories provided, such as the probes. This means, for example, that the error introduced by the probe must be added to the error of the instrument.

RESPONSIBILITY AND RESIDUAL RISKS

Eliwell & Controlli S.r.L. shall not be liable for damage or injury deriving from:

- installation/use other than as prescribed and in particular not complying with the safety provisions established in the standards and/or stated herein;
- use on panels that do not guarantee adequate protection against electric shock, water or dust when assembled;
- use on panels that allow dangerous parts to be accessed without the use of tools;
- tampering with and/or alteration of the product;
- installation/use on panels that do not comply with the standards and regulations in force.

The instrument is designed for mounting on a panel. Drill a 150x31 mm hole and insert the instrument, securing it to the front panel using the screws provided.

Do not mount the instrument in humid and/or dirty places. It is suitable for use in places with ordinary or normal levels of pollution. Always make sure that the area next to the cooling openings of the instrument is adequately ventilated.

ELECTRICAL CONNECTIONS

Warning! Turn the machine off before working on electrical connections.

The instrument is equipped with screw terminal boards for connection of electrical cables with a diameter of 2.5 mm² (one conductor only per terminal for power connections). For the capacity of the terminals, see the label on the instrument.

The relay outputs are voltage free. Do not exceed the maximum permitted current; in case of higher loads, use an appropriate contactor. Make sure that power supply is the correct voltage for the instrument.

Probes have no connection polarity and can be extended using a normal bipolar cable (note that the extension of the probes influences the instrument's electromagnetic compatibility (EMC): take great care with the wiring).

Probe cables, power supply cables and the TTL serial cables should be routed separately from power cables.

CONDITIONS OF USE

PERMITTED USE

For safety reasons, the instrument must be installed and used according to the instructions provided. In particular, parts with dangerous voltage levels must not be accessible in normal conditions.

The device must be adequately protected from water and dust according to the application and must also only be accessible by the use of tools (with the exception of the front panel).

The device is ideally suited for use on household appliances and/or similar refrigeration equipment and has been tested for safety aspects in accordance with harmonised European reference standards.

It is classified as follows:

- according to its construction, as an independently mounted automatic electronic control device;
- according to its automatic operating characteristics, as a 1B-type operated control type device;
- according to its software class and structure, as a Class A device.

UNPERMITTED USE

The unit must not be used for applications other than those described.

Note that the relay contacts provided are of a functional type and therefore subject to malfunction. Any protection devices required by product standards or dictated by common sense for obvious safety reasons must be applied externally to the instrument.

DISCLAIMER

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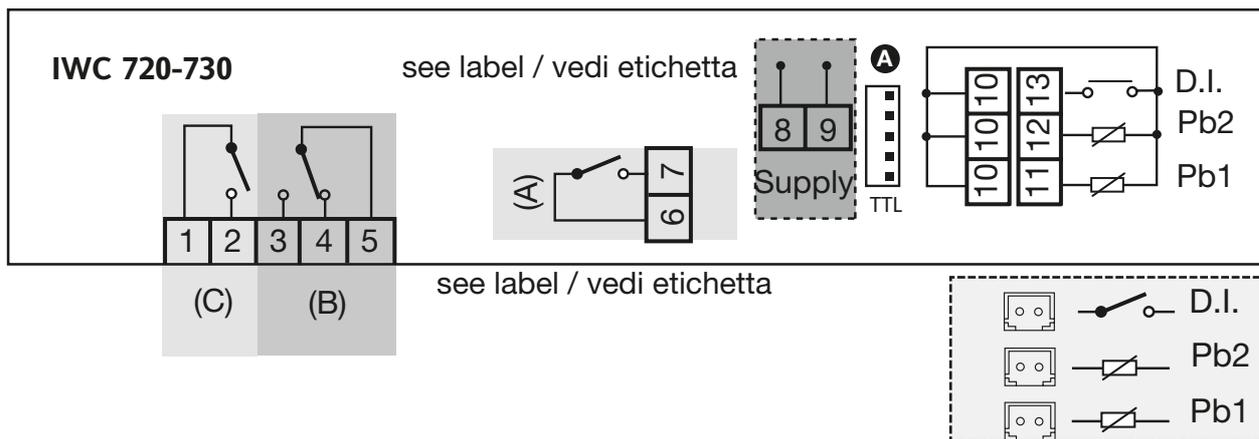
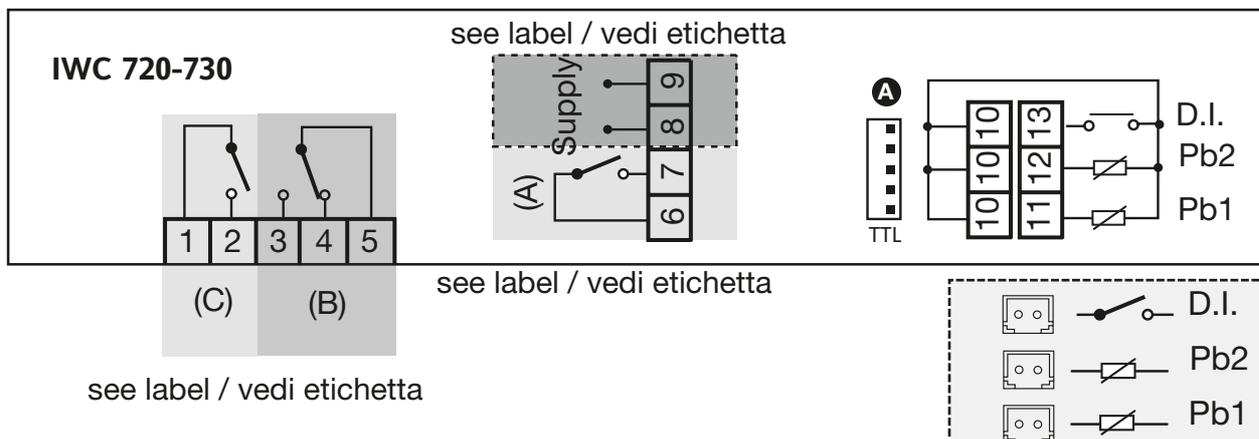
12-06 - GB -
cod. 9IS43042

IWC 720-730

ISO 9001



Container	PC+ABS UL94 V-0 resin plastic casing, polycarbonate glass
Dimensions	front 180x37 mm, depth 48mm
Mounting	panel mounting with 150x31mm (+0.2/-0.1mm) drilling template
Usage temperature	-5°C...55°C
Storage temperature	-30°C...85°C
Usage and storage environment humidity	10...90% RH (non-condensing)
Display range	NTC: -50...110°C (-58...230°F) on display 3 and a half digits and sign
Analog inputs	2 NTC type inputs
Digital Input	1 voltage-free
Serial	TTL for Copy Card connection
Digital outputs (configurable)	3 relay outputs (IWC 730) / 2 relay outputs (IWC 720) • (A) 1 SPST 12A 1 hp 250V~ / SPST 20A 2 hp 250V~ depending on model • (B) 1 SPDT SPST 8(3)A 1/2 hp 250V~, • (C) 1 SPST 8(3)A 1/2 hp 250V~,
Buzzer output	only on models where provided - ON DEMAND ONLY -
Measurement range	from -50 to 110°C
Accuracy	better than 0.5% of full-scale +1 digit.
Resolution	0.1°C (0.1°F up to +199.9°F; then 1°F)
Consumption	6 VA
Power supply	230 V~ 10% 50/60 Hz or 12 V~/~ 10% 50/60 Hz
PLEASE NOTE: please refer to label on the instrument for relay capacity, power supply and terminals layout.	



TERMINALS

8 - 9	Power Supply 230V~ or 12V~/~
***10 - 11	Probe Input (termostation) Pb1
***10 - 12	Probe Input (evaporator) Pb2
***10 - 13	Digital Input D.I.
A	TTL Input for Copy Card

RELAY OUTPUTS

	relay	load	associated par*. & default
1 - 2	N.A. relay (C) config.		H23=3 (°)
3 - 5	N.A. relay (B) config.		H22=2 (°)
4 - 5	N.C. relay (B) config.		
6 - 7	N.A. relay (A) config.		H21=1

(°) H22 or H23=10, models with two compressors.

- Default user settings
- all relays configurable by parameter
- for the capacity of the relays, see the label on the instrument.

* see note description of parameters H2x
****PLEASE NOTE: MODEL IWC 720 has only 2 relay outputs: please refer to label on the instrument for relay capacity and terminals layout**

*** models available with quick-fit connectors.

Contact the Sales Office for further information on feasibility and part number availability