EWPlus 974 with Pb3

Electronic controllers for refrigeration units



USER INTERFACE



EW PLUS 974 with Pb3

NOTE
When switched on, the device performs a Lamp Test; the display and LEDs will flash for several seconds to check that they all function correctly.

Reduced SET / Economy LED Flashing: Reduced SET active Quick flashing: access to level2 parameters Off: otherwise		**Fans LED** Permanently on: fans active Off: otherwise	
Compressor LED Permanently on: compressor active Flashing: a delay, a protection or a locked start-up Off: otherwise		**Defrost LED** Permanently on: defrost active Flashing: manual activation Off: otherwise	
Alarm LED Permanently on: alarm active Flashing: alarm acknowledged Off: otherwise		**Aux LED** Permanently on: Aux output active Off: Aux output not active	AUX
°C LED Permanently on: °C setting (dro=0) Off: otherwise	°C	**°F LED** Permanently on: °F setting (dro=1) Off: otherwise	°F

KEYs

UP
Press and release
- Scroll menu items
- Increases values

Press for at least 5 sec
- Activates the Manual Defrost function

DOWN
Press and release
- Scroll menu items
- Decrease values

Press for at least 5 sec
- Function can be configured by the user (see parameter H32)

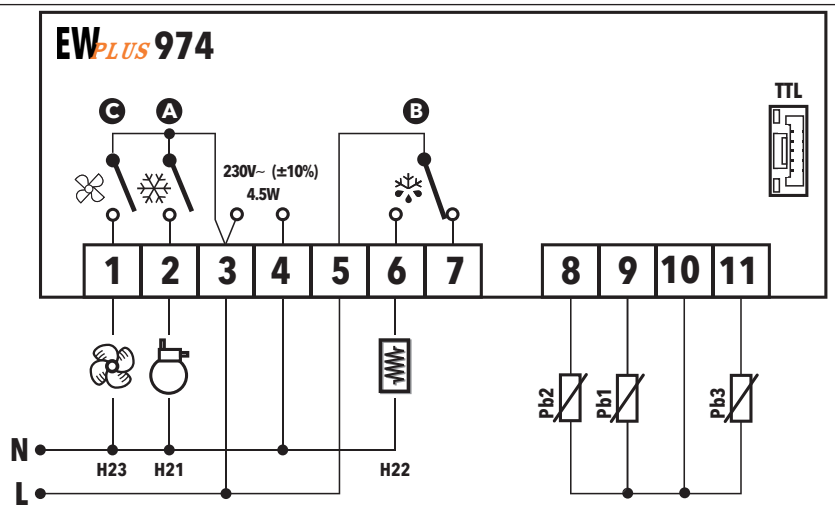
STAND-BY (ESC)
Press and release
- Returns to the previous menu level
- Confirms parameter value

Press for at least 5 sec
- Activates the Standby function (OFF) (when outside the menus) (see parameter H33)

SET (ENTER)
Press and release
- Displays alarms (if active)
- Opens Machine Status menu

Press for at least 5 sec
- Opens Programming menu
- Confirm commands

CONNECTIONs



TERMINALs

3-4	230V~ power supply input		**1-3**	C - N.O. Fans relay ( )
L-N	230V~ power supply		**2-3**	A - N.O. Compressor relay ( )
10-9	Pb1 probe		**6-5**	B - N.O. Defrost relay ( )
10-8	Pb2 probe		**7-5**	B - N.C. Defrost relay ( )
10-11	Pb3 probe		**TTL**	TTL input

ACCESSING AND USING THE MENUs

Resources are organised into 2 menus which are accessed as explained below:

- '**Machine Status**' menu: press and release the set key.
- '**Programming**' menu: press for at least 5 secs the set key.

Either do not press any keys for 15 seconds (time-out) or press the ⏻ key once, to confirm the last value displayed and return to the previous screen.

PASSWORD

Password PA1: used to access '**User**' (**User**) parameters. The password is not enabled by default (**PS1=0**).
To enable it (**PS1≠0**): press and hold set for longer than 5 seconds, scroll through the parameters using ⌃ and ⌄ until you see the label **PS1**, press set to display the value, modify it using ⌃ and ⌄, then save it by pressing set or ⏻.
If enabled, it will be required in order to access the User parameters.

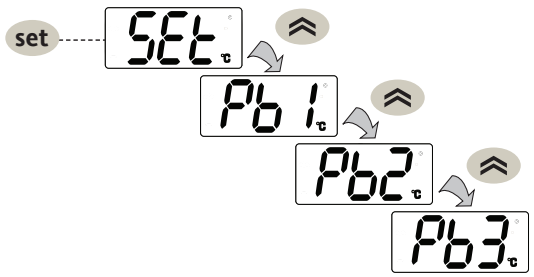
Password PA2: used to access '**Installer**' (**Inst**) parameters. The password is enabled by default (**PS2=15**).
To modify it (**PS2≠15**): press and hold set for longer than 5 seconds, scroll through the parameters using ⌃ and ⌄ until you see the label **PA2**, press set, set the value to "15" using ⌃ and ⌄, then confirm using set. Scroll through the folders until you find the label **diS** and press set to enter. Scroll through the parameters using ⌃ and ⌄ until you see the label **PS2**, press set to display the value, modify it using ⌃ and ⌄, then save it by pressing set or ⏻.
The visibility of **PA2** is as follows:

1. **PA1 and PA2 ≠ 0**: Press set for longer than 5 seconds to display **PA1** and **PA2**. It will then be possible to decide whether to access the 'User' parameters (**PA1**) or the 'Installer' parameters (**PA2**).
2. **Otherwise:** The password **PA2** is amongst the level1 parameters. If enabled, it will be required when accessing the Installer parameters; to enter it, proceed as instructed for password **PA1**.

N.B.: If the value entered is incorrect, the label PA1/PA2 will be displayed again and the procedure will need to be repeated.

'MACHINE STATUS' MENU

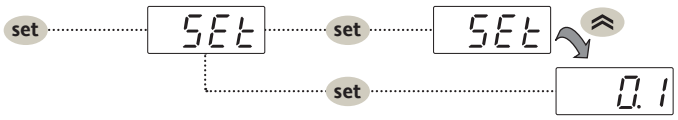
Access the Machine Status menu by pressing set and releasing the key. If no alarms are active, the 'SEt' label appears.
Use the keys ⌃ and ⌄ to scroll through all the folders in the menu:



- AL: alarms folder (**only visible if an alarm is active**);
- SEt: Setpoint setting folder;
- Pb1: probe 1 - Pb1 folder;
- Pb2: probe 2 - Pb2***** folder;
- Pb3: probe 3 - Pb3****** folder;

*** folder displayed if Pb2 present (H42 = y)**
**** folder displayed if Pb3 present (H43 = y)**

SETPOINT SETTING: To display the Setpoint value press the set key when the 'SEt' label is displayed.
The Setpoint value appears on the display. To change the Setpoint value, press the ⌃ and ⌄.
Press set to confirm the modification.



LOCK SETPOINT MODIFICATION: The keypad can be locked by programming the 'LOC' parameter.
With the keypad locked you can still access the 'Machine Status' menu by pressing set to display the Set point, but you cannot edit them. To disable the keypad lock, repeat the locking procedure.

DISPLAYING THE PROBES: When labels Pb1, Pb2 or Pb3 are present, press the set key to view the value measured by the corresponding probe. **N.B.: the value cannot be modified**.

PROGRAMMING MENU

To access the 'Programming' menu, press the **set** key for more than 5 seconds. If specified, an access PASSWORD will be requested **PA1** for "**User**" parameters and **PA2** for "**Installer**" parameters (see 'PASSWORD' paragraph).

"**User**" parameters: When accessed, the display will show the first parameter (e.g. 'diF').
Press ⌃ and ⌄ to scroll through all the parameters on the current level. Select the desired parameter by pressing **set**.
Press ⌃ and ⌄ to modify it and **set** to save the changes.

"**Installer**" parameters: When accessed, the display will show the first folder (e.g. 'CP').
Press ⌃ and ⌄ to scroll through the folders on the current level. Select the desired folder using **set**.
Press ⌃ and ⌄ to scroll through the parameters in the current folder and select the parameter using **set**.
Press ⌃ and ⌄ to modify it and **set** to save the changes.

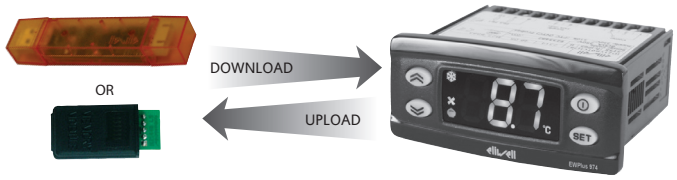
N.B.: Make sure you switch the instrument off and on again each time the parameter configuration is changed, in order to prevent malfunctioning in the configuration and/or timing in progress.

USING THE UNICARD/COPYCARD

The Unicard/Copycard is connected to the serial port (TTL) and allows rapid programming of the instrument parameters.
Access '**Installer**' parameters by entering **PA2**, scroll through the folders using ⌃ and ⌄ until folder **FPr** appears.
Select it using **set**, scroll through the parameters using ⌃ and ⌄, then select the function using **set** (e.g. **UL**).

- **Upload** (**UL**): Select UL and press **set**. This function uploads the programming parameters from the instrument to the card. If the procedure is a success, '**y**', will appear on the display, otherwise '**n**' will appear.
- **Format (Fr):** This command is used to format the Unicard/Copycard, (recommended when using the card for the first time). **IMPORTANT**: the **Fr** parameter deletes all data present. This operation cannot be cancelled.
- **Download:** Connect the Unicard/Copycard when the instrument is switched off. At power-on, data is downloaded from the Unicard/Copycard to the instrument automatically. At the end of the lamp test, the display will show '**dLy**' if the operation was successful and '**dLn**' if not.

N.B.: After downloading, the instrument works with the settings of the new map just downloaded.



MANUAL DEFROST CYCLE ACTIVATION

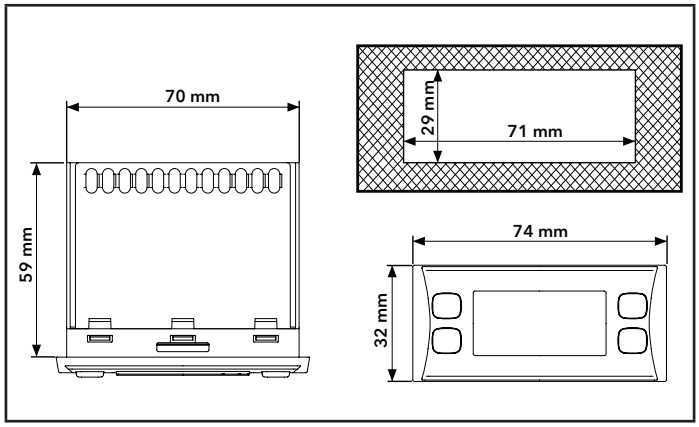
Hold down the ⌃ key for longer than 5 seconds. It is only activates if the temperature conditions are fulfilled.
Otherwise, the display will flash three times to indicate that the operation will not be performed.

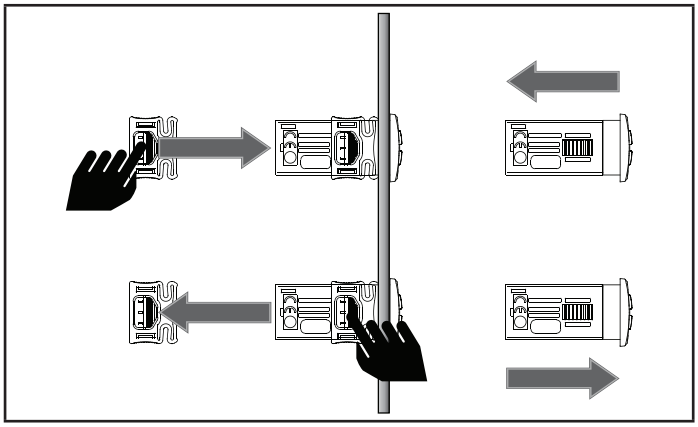
INSTRUMENT ON/OFF

The instrument can be switched off by pressing the key ⏻ for longer than 5 seconds.
In this condition, the adjustment algorithms and defrost cycles are disabled and the text 'OFF' will appear on the display.

MOUNTING - DIMENSIONS

The device is designed for panel mounting. Drill a 29x71 mm hole and insert the instrument; secure it with the special brackets provided. Do not install the instrument in damp and/or dirty places; in fact, it is suitable for use in places with ordinary or normal levels of pollution. Keep the area around the instrument cooling slots adequately ventilated.





DIAGNOSTICS

Alarms are always indicated by the buzzer (if present) and the alarm icon ((•)).
To switch off the buzzer, press and release any key; the corresponding icon will continue to flash.

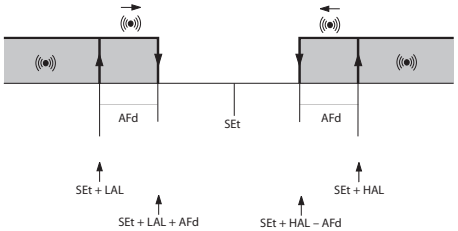
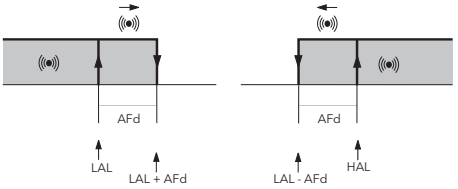
N.B.: If alarm exclusion times have been set (see **AL** folder in the parameters table) the alarm will not be signalled.

- **E1**: In the event of cold room probe faulty (Pb1), the indication 'E1' will appear on the display.
- **E2**: In the event of defrost probe faulty (Pb2), the indication 'E2' will appear on the display.
- **E3**: In the event of probe 3 faulty (Pb3), the indication 'E3' will appear on the display.

ALARMs

Label	Fault	Cause	Effects	Remedy
E1	Probe1 faulty (cold room)	• measured values are outside operating range • Probe faulty/short-circuited/open	• Display label **E1** • Alarm icon permanently on • Disable max/min alarm controller • Compressor operation based on parameters **Ont** and **OFt**	• check probe wiring • replace probe
E2	Probe2 faulty (defrost)	• measured values are outside operating range • Probe faulty/short-circuited/open	• Display label **E2** • Alarm icon permanently on • The Defrost cycle will end due to Timeout (**dEt**) • The evaporator fans will work in Duty Cycle mode	• check probe wiring • replace probe
E3	Probe3 faulty	• measured values are outside operating range • Probe faulty/short-circuited/open	• Display label **E3** • Alarm icon permanently on	• check probe wiring • replace probe
AH1	Alarm for HIGH Pb1 temperature	value read by **Pb1 > HAL** after time of **tAO**. (see 'MAX/MIN TEMPERATURE ALARMs')	• Recording of label **AH1** in folder AL • No effect on regulation	Wait until value read by Pb1 returns below **HAL-AFd**
AL1	Alarm for LOW Pb1 temperature	value read by **Pb1 < LAL** after time of **tAO**. (see 'MAX/MIN TEMPERATURE ALARMs')	• Recording of label **AL1** in folder AL • No effect on regulation	Wait until value read by Pb1 returns above **LAL+AFd**.
Ad2	end of defrost cycle due to timeout	end of defrost cycle due to timeout rather than due to defrost end temperature being recorded by probe Pb2.	• Recording of label **Ad2** in folder AL • Alarm icon permanently on	wait for the next defrost cycle for automatic return.
Ad3	end of defrost cycle due to timeout	activation of the defrost for temperature independently **dAt** (active if **dCt** = 3).	• Recording of label **Ad3** in folder AL • Alarm icon permanently on	wait for the next defrost cycle for automatic return.
COH	Over Heating alarm	**Pb3** value set by parameter **SA3** exceeded.	• Display label **COH** • Alarm icon permanently on • Regulation locked (Compressor)	wait for the temperature to return to a value of **SA3** (Setpoint) minus **dA3** (differential).

MAX/MIN TEMPERATURE ALARMs

	Relative Temperature Value to setpoint (Att=1)	**Absolute Temperature Value (Att=0)**
		
Minimum temperature alarm	Temp. ≤ **Set + LAL ***	Temp. ≤ **LAL** (**LAL** with sign)
Maximum temperature alarm	Temp. ≥ **Set + HAL ****	Temp. ≥ **HAL** (**HAL** with sign)
Returning from minimum temperature alarm	Temp. ≥ **Set + LAL + AFd** or ≥ **Set -** I**LAL**I **+ AFd** (LAL < 0)	Temp. ≥ **LAL + AFd**
Returning from maximum temperature alarm	Temp. ≤ **Set + HAL - AFd** (HAL > 0)	Temp. ≤ **HAL - AFd**
	*** if LAL is negative, Set + LAL < Set** **** if HAL is negative, Set + HAL < Set**	

TECHNICAL DATA (EN 60730-2-9)

Classification:	control device (not safety) to integrate
Mounting:	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template
Control type:	1.B
Pollution rating:	2
Material class:	IIIa
Overvoltage category class:	II
Nominal impulsive voltage:	2500V~
Temperature:	Operating: –5 … +55 °C - Storage: –30 … +85 °C
Power Supply:	230V~ (±10%) 50/60 Hz
Consumption:	4,5W max
Digital Output (relays):	please refer to the device label
Fire resistance class:	D
Software class:	A

NOTE: check the power supply specified on the instrument label; for relay, power supply capacities and PTC probes, contact the Sales Office.

FURTHER INFORMATIONS

Input Characteristics

Display Range:	**NTC**: –50.0°C ... +110°C (on display with 3 digit + sign)
Accuracy:	Better than 0,5% of full-scale + 1 digit
Resolution:	0,1 °C
Buzzer:	YES (it depends from model)
Analogue Input:	3 NTC
Digital Input:	NO

Output Characteristics

Digital Output:	1 Compressor relay:	EN60730-1 12 (8)A max 250V~
		UL60730 2Hp (12FLA - 72LRA) max 240V~
	1 Defrost relay:	N.O. 8(4)A - N.C. 6(3)A max 250V~
	1 Fans relay:	5(2)A max 250V~

Mechanical Characteristics

Casing:	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys
Dimensions:	front panel 74x32 mm, depth 59 mm (without terminals)
Terminals:	screw/disconnectable terminals for cables with a diameter of 2.5mm^2
Connectors:	TTL for connection of Copy Card
Humidity:	Operating / Storage: 10…90 % RH (non-condensing)

Regulations

Electromagnetic compatibility: The device conforms to Directive 2004/108/EC

Safety: The device conforms to Directive 2006/95/EC

Food Safety: The device complies with standard EN 13485 as follows:

- suitable for storage
- application: air
- climate range A
- measurement class 1 in the range from -25°C to 15°C

(**exclusively using Eliwell NTC probes**)

NOTE: The technical specifications given in this document regarding measurement (range, accuracy, resolution, etc.) refer 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 typical error of the instrument.

ELECTRICAL CONNECTIONs

Attention! Make sure the machine is switched off before working on the electrical connections.

The instrument is equipped with screw or disconnectable terminal blocks for connecting electrical cables with a max. diameter of 2.5 mm^2 (one wire per terminal for power connections): for the terminal ratings, see the label on the instrument.

Do not exceed the maximum permissible current; in case of higher loads, use a suitably rated contactor.

Make sure the power supply voltage complies with that required by 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 electromagnetic compatibility - EMC - of the instrument: take great care with the wiring).

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

PARAMETERS TABLE

PAR.	DESCRIPTION	RANGE	M.U.	VALUE	LEVEL
SEt	Temperature control SEtpoint. **The SEtpoint is visible from the "machine status" menu only.**	LSE ... HSE	°C/°F	3.5	
	COMPRESSOR ('CP' folder)				
diF	Compressor relay activation differential. **NOTE: diF cannot be equal to 0.**	0.1 ... 30.0	°C/°F	2.0	User/Inst
HSE	Maximum value that can be assigned to the Setpoint. **NOTE: The two Setpoints are interdependent: HSE cannot be less than LSE and vice-versa.**	LSE ... 302	°C/°F	99.0	User/Inst
LSE	Minimum value that can be assigned to the Setpoint. **NOTE: The two Setpoints are interdependent: LSE cannot be higher than HSE and vice-versa.**	-58.0 ... HSE	°C/°F	-50.0	User/Inst
Ont	Controller on time for faulty probe. If **Ont = 1** and **OFt = 0**, the compressor remains ON; if **Ont > 0** and **OFt > 0**, it runs in duty cycle mode.	0 ... 250	min	0	Inst
OFt	Controller off time for faulty probe. If **OFt = 1** and **Ont = 0**, the compressor remains OFF; if **Ont > 0** and **OFt > 0**, it runs in duty cycle mode.	0 ... 250	min	1	Inst
dOn	Compressor relay activation delay after request.	0 ... 250	secs	0	Inst
dOF	Delay after switching off and subsequent activation.	0 ... 250	min	0	Inst
dbi	Delay between two consecutive compressor activations.	0 ... 250	min	0	Inst
OdO (!)	Delay in activating outputs after the instrument is switched on or after a power failure. **0 = not active**	0 ... 250	min	0	Inst
dFA	Delay time in activating compressor and condenser fans after request.	0 ... 255	secs	0	Inst
	DEFROST ('dEF' folder)				
dty	defrost type. Type of defrost. **0** = electric defrost - compressor OFF during defrost cycle **1** = cycle inversion defrost (hot gas) - compressor ON during defrost cycle **2** = 'Free': defrosting independently of compressor	0/1/2	num	0	User/Inst
dit	Interval between the start of two consecutive defrost cycles. **0** = function disabled (**defrosting NEVER performed**)	0 ... 250	hours	24	User/Inst
dCt	Selects the count mode for the defrost interval: **0** = compressor hours of operation (DIGIFROST® method); defrost active ONLY when the compressor is on. **NOTE: compressor operation time is counted separately from the evaporator probe (count active also when evaporator probe missing or faulty).** **1** = appliance running hours; the defrost count is always active when the machine is on and starts at each power-on; **2** = compressor stop Every time the compressor stops, a defrost cycle is performed according to parameter dtY; **3** = temperature	0/1/2/3	num	1	Inst
dOH	Defrost start delay time after request.	0 ... 59	min	0	Inst
dEt	Defrost time-out; determines the maximum defrost duration.	1 ... 250	min	30	User/Inst
dSt	Defrost end temperature (determined by the evaporator probe).	-67.0 ... 320	°C/°F	8.0	User/Inst
dPO	Determines whether the instrument must enter defrost mode (if the temperature measured by the evaporator allows this operation). **n** (0) = no, does not start defrosting at start-up; **y** (1) = yes, starts defrost at start-up.	n/y	flag	n	Inst
dSE	Temperature threshold for start of defrost.	-67.0 ... 320	°C/°F	0.0	Inst
dtt	Time for which the temperature of the evaporator must remain below **dSE**.	0 ... 255	min	0	Inst
	FANS ('FAn' folder)				
FPt	Characterizes the 'FSt' parameter that can be expressed or as an absolute temperature value or as a value related to Setpoint. **0** = absolute; **1** = relative.	0/1	flag	0	Inst
FSt	Fan lock temperature; if **Pb2 > FSt**, the fans are stopped. The value is either positive or negative and, depending on parameter **FPt**, can be either the absolute temperature or the temperature relative to the Setpoint.	-67.0 ... 320	°C/°F	50.0	User/Inst
FAd	Fan starting differential (see parameter **FSt**).	1.0 ... 50.0	°C/°F	2.0	Inst
Fdt	Delay time in activating fans after a defrost operation.	0 ... 250	min	0	User/Inst
dt	Dripping time.	0 ... 250	min	0	User/Inst
dFd	Allows to select the evaporator fans exclusion during defrost. **n** (0)= no; **y** (1)= yes.	n/y	flag	y	User/Inst
FCO	Evaporator fans operating mode. The state of the fans will be: **DAY** / **NIGHT** **H42** / **FCO** / **COMPRESSOR ON** / **COMPRESSOR OFF** / **COMPRESSOR ON** / **COMPRESSOR OFF** **H42 = y**: 0 — Thermostat controlled / OFF / Thermostat controlled / OFF **H42 = y**: 1 — Thermostat controlled / Thermostat controlled / Thermostat controlled / Thermostat controlled **H42 = y**: 2 — Thermostat controlled / Dutycycle Day / Thermostat controlled / Dutycycle Night **H42 = y**: 3 — Dutycycle Day / Dutycycle Day / Dutycycle Night / Dutycycle Night **H42 = n**: 0 — ON / OFF / ON / OFF **H42 = n**: 1 — ON / Dutycycle Day / ON / Dutycycle Night **H42 = n**: 2 — ON / Dutycycle Day / ON / Dutycycle Night **H42 = n**: 3 — Dutycycle Day / Dutycycle Day / Dutycycle Night / Dutycycle Night **Dutycycle Day**: controlled by means of parameters '**Fon**' and '**FoF**'. **Dutycycle Night**: controlled by means of parameters '**Fnn**' and '**FnF**'.	0/1/2/3	num	3	Inst
FdC	Evaporator fans switch-off delay after compressor disabled.	0 ... 99	min	1	Inst
Fon	Evaporator fans ON time in duty cycle **DAY** mode. Use of fans in duty cycle mode; valid when **H42 = 1** (probe Pb2 present).	0 ... 250	secs*10	12	Inst
FoF	Evaporator fans OFF time in duty cycle **DAY** mode. Use of fans in duty cycle mode; valid when **H42 = 1** (probe Pb2 present).	0 ... 250	secs*10	6	Inst
Fnn	Evaporator fans ON time in duty cycle **NIGHT** mode. Use of fans in duty cycle mode; valid when **H42 = 1** (probe Pb2 present).	0 ... 250	secs*10	1	Inst
FnF	Evaporator fans OFF time in duty cycle **NIGHT** mode. Use of fans in duty cycle mode; valid when **H42 = 1** (probe Pb2 present).	0 ... 250	secs*10	12	Inst

PAR.	DESCRIPTION	RANGE	M.U.	VALUE	LEVEL
	ALARMS ('AL' folder)				
Att	Parameters **HAL** and **LAL** intended as the absolute temperature value or differential in relation to the setpoint. **0** = absolute value; **1** = relative value.	0/1	flag	1	Inst
AFd	Alarm differential.	1.0 ... 50.0	°C/°F	2.0	Inst
HAL (!)	Maximum temperature alarm. Temperature value (intended as distance from Setpoint or as an absolute value based on **Att**) which, if exceeded in an upward direction, triggers the alarm activation. See '**Max/Min Temperature Alarms**'.	LAL ... 320	°C/°F	50.0	User/Inst
LAL (!)	Minimum temperature alarm. Temperature value (intended as distance from the set point or as an absolute value based on **Att**) which, when exceeded downwards, triggers the alarm activation. See '**Max/Min Temperature Alarms**'.	-67.0 ... HAL	°C/°F	-50.0	User/Inst
PAO (!)	Alarm exclusion time after instrument switch on, after a power failure. **This parameter refers to high (HAL) / low (LAL) temperature alarms only.**	0 ... 10	hours	0	Inst
dAO	Temperature alarm exclusion time after defrost.	0 ... 999	min	0	Inst
tdO	Alarm activation delay time open door.	0 ... 250	min	0	Inst
tAO	Temperature alarm signal delay time. **This parameter refers to high (HAL) / low (LAL) temperature alarms only.**	0 ... 250	min	0	User/Inst
dAt	Alarm for defrosting ended due to time out. **n** (0) = alarm deactivated; **y** (1) = alarm activated.	n/y	flag	n	Inst
AOP	Alarm output polarity. **0** = alarm active and output disabled; **1** = alarm active and output enabled.	0/1	flag	1	Inst
SA3	Probe **Pb3** alarm Setpoint.	-67.0 ... 320	°C/°F	60.0	Inst
dA3	Probe **Pb3** alarm activation differential.	1.0 ... 50.0	°C/°F	1.0	Inst
	COOL PROTECTION ('CPr' folder)				
CPS	Cool protection setpoint.	-67.0 ... 320	°C/°F	-10.0	Inst
CPd	Cool protection differential.	0.1 ... 30.0	°C/°F	1.0	Inst
CPt	Time that the temperature remains below the cool protection Setpoint (**CPS**)	0 ... 255	min	0	Inst
	COMMUNICATION ('Add' folder)				
PtS (!)	Communication protocol selection. **t** (0) = Televis; **d** (1) = ModBus.	t/d	flag	t	Inst
dEA (!)	Device address: indicates the device address to the management protocol.	0 ... 14	num	0	Inst
FAA (!)	Family address: indicates the device family to the management protocol.	0 ... 14	num	0	Inst
Pty (!)	Modbus parity bit setting (only if **PtS=d**). **n** (0) = none; **E** (1) = even; **o** (2) = odd.	n/E/o	flag	n	Inst
StP (!)	Modbus stop bit setting (only if **PtS=d**). **1b** (0) = 1 BIT; **2b** (1) = 2 BIT.	1b/2b	flag	1b	Inst
	DISPLAY ('diS' folder)				
LOC	LOCk. Setpoint change shutdown. There is still the possibility to enter into parameters programming and modify these, including the status of this parameter to permit keyboard shutdown. **n** (0) = no; **y** (1) = yes.	n/y	flag	n	User/Inst
PS1	PAssword 1. When enabled (**PS1≠0**), this is the access key to level 1 parameters (**User**).	0 ... 250	num	0	User/Inst
PS2	PAssword 2. When enabled (**PS2≠0**), this is the access key to level 2 parameters (**Inst**).	0 ... 250	num	15	Inst
ndt	Display with decimal point. **n** (0) = no (integers only); **y** (1) = yes (displayed with decimal point).	n/y	flag	y	Inst
CA1	Calibration 1. Positive or negative temperature value added to the value read by **Pb1**. This sum is used both for the temperature displayed and for regulation.	-12.0...12.0	°C/°F	0.0	User/Inst
CA2	Calibration 2. Positive or negative temperature value added to the value read by **Pb2**. This sum is used both for the temperature displayed and for regulation.	-12.0...12.0	°C/°F	0.0	User/Inst
CA3	Calibration 3. Positive or negative temperature value added to the value read by **Pb3**. This sum is used both for the temperature displayed and for regulation.	-12.0...12.0	°C/°F	0.0	User /Inst
ddL	Display mode during defrost. **0** = display the temperature read by **Pb1**; **1** = locks the reading on the temperature value read by **Pb1** when defrosting starts, and until the next time the **SEt** value is reached; **2** = displays **dEF** during defrosting, and until the next time the **SEt** value is reached. (or until **Ldd** has elapsed).	0/1/2	num	1	User/Inst
Ldd	Timeout value for display unlock - **dEF** label.	0 ... 255	min	30	User/Inst
dro	Select °C or °F for displaying the temperature read by probes (**0** = °C, **1** = °F). **NOTE: switching between °C and °F or vice-versa DOES NOT modify the SEt, diF values, etc. (e.g. Setpoint=10°C becomes 10°F).**	0/1	flag	0	Inst
ddd	Selection of type of value to be displayed. **0** = Setpoint; **1** = probe Pb1; **2** = probe Pb2; **3** = probe Pb3.	0/1/2/3	num	1	Inst
	CONFIGURATION ('CnF' folder) - NOTE: the instrument must be switched off and then on again each time folder CnF parameter configuration is modified to prevent any malfunction of the configuration and/or current timer operations.				
H08	Stand-by operating mode. **0** = display switch off; the loads are active and the device reactivates the display to signal any alarms **1** = display switch off, loads and alarms stopped **2** = display with OFF label, loads and alarms stopped	0/1/2	num	2	Inst
H21	Configurability of digital output 1 (**A**). **0** = disabled; **1** = compressor; **2** = defrost; **3** = fans; **4** = alarm; **5** = AUX; **6** = stand-by; **7** = not used; **8** = condenser fan change rotation; **9** = retain valve.	0 ... 9	num	1	Inst
H22	Configurability of digital output 2 (**B**). Same as **H21**.	0 ... 9	num	2	Inst
H23	Configurability of digital output 3 (**C**). Same as **H21**.	0 ... 9	num	3	Inst
H25	Enable/Disable buzzer (if present). **0** = disabled; **4** = enabled; **1-2-3-5-6-7-8-9** = not used.	0 ... 9	num	0	Inst
H32	Configurability of **DOWN** key. **0** = disabled; **1** = defrost; **2** = AUX; **3** = reduced SET; **4** = stand-by; **5** = not used; **6** = not used.	0 ... 6	num	0	Inst
H33	Configurability of **ESC** key. Same as **H32**.	0 ... 6	num	4	Inst
H42	Probe **Pb2** present. **n** (0) = not present; **y** (1) = present	n/y	flag	y	User/Inst
H43	Probe **Pb3** present. **n** (0) = not present; **y** (1) = present	n/y	flag	y	Inst
reL	reLease firmware. Device software version: **read-only parameter**.	/	/	/	User/Inst
tAb	tAble of parameters. Reserved: **read-only parameter**.	/	/	/	User/Inst
	COPY CARD ('Fpr' folder)				
UL	Upload. Programming parameter transfer from instrument to Copy Card	/	/	/	Inst
Fr	Format Copy Card. Erase all data contained in the Copy Card **ATTENTION: If parameter 'Fr' is used, the data entered will be permanently lost. This operation cannot be cancelled.**	/	/	/	Inst

PAR.	DESCRIPTION	RANGE	M.U.	VALUE	LEVEL
	FUNCTION ('FnC' folder)				

The following functions are available:

Function	Function label ACTIVE	Function label NOT ACTIVE	Alarm signaling
Reset pressure switch alarms	rAP	rAP	Alarm ON icon

NOTES: - To modify the status of a given function, press the 'set' key
- If the instrument is switched off, the function labels will return to the default status

LIABILITY AND RESIDUAL RISKS

ELIWELL CONTROLS SRL declines any liability for damage due to:

- installation/uses different from those specified and, in particular, not complying with the safety regulations and/or instructions given in this document;
- use on panels that do not provide adequate protection against electric shocks, water or dust when assembled;
- use on panels allowing access to dangerous parts without the use of tools;
- tampering with and/or modifying the product;
- installation/use on panels not complying with current standards and regulations.

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The same applies to any person or company involved in preparing and editing this document.
ELIWELL CONTROLS SRL reserves the right to make aesthetic or functional changes at any time without notice.

CONDITIONS OF USE

Permitted use
For safety reasons, the instrument must be installed and used according to the instructions supplied and, in particular, parts under dangerous voltages must not be accessible in normal conditions.
The device must be adequately protected from water and dust with regard to its application, and must only be accessible using tools (except for the front panel). The device is suitable for use in household refrigeration appliances and/or similar equipment and has been tested for safety aspects in accordance with the harmonised European reference standards.

Improper use
Any use other than that expressly permitted is prohibited. The relay contacts provided are of a functional type and subject to failure: any protection devices required by product standards, or suggested by common sense for obvious safety requirements, must be installed externally to the instrument.

DISPOSAL



The appliance (or the product) must be disposed of separately in compliance with the local standards in force on waste disposal

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