



9IS5477700

EWPlus 961-971-974 -HC

www.eliwell.com

USER INTERFACE

EWPlus 961 -HC



EWPlus 971-974 -HC

	Reduced SET / Economy icon Permanently on: energy saving active Flashing: reduced setpoint active Fast flashing: access to installer parameters Off: otherwise		Fans Icon (EWPlus 971-974 only) Permanently on: fans active Off: otherwise
	Compressor icon Permanently on: compressor on Flashing: delay, protection or start inhibited Off: otherwise		Defrost icon Permanently on: defrost active Flashing: manual activation or from digital input Off: otherwise
	Alarm icon Permanently on: alarm active Flashing: alarm acknowledged Off: otherwise	AUX	AUX Icon (EWPlus 971-974 only) Permanently on: AUX output active Flashing: deep cooling cycle active Off: AUX output not active
°C	Permanently on: display in °C (dro = 0) Off: otherwise	°F	Permanently on: display in °F (dro = 1) Off: otherwise
1	Status Heat Icon (EWPlus 961 only) Permanently on: fans active Off: otherwise	2	Not used

KEYS

	UP Press and release • Scrolls through menu options • Increases values Press and hold for at least 5 seconds • It activates manual defrost function by default		DOWN Press and release • Scrolls through menu options • Decreases values Press and hold for at least 5 seconds • The function is disabled by default (H32=0) • 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 and hold for at least 5 seconds • Enables manual stand-by function by default		SET (ENTER) Press and release • Displays alarms (if present) • Opens Machine Status menu Press and hold for at least 5 seconds • Open programming menu • Confirms commands
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ELECTRICAL CONNECTIONS**⚠️⚠️ DANGER****HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH**

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- Use only the specified voltage when operating this device and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and operate this equipment in an enclosure appropriately rated for its intended environment and secured by a keyed or tooled locking mechanism.
- Power line circuits must be wired and fused in compliance with local and national regulatory requirements for the rated current and voltage of the device used.
- Do not use this equipment for safety-critical machine functions.
- Do not disassemble, repair, or modify this equipment.

Failure to follow these instructions will result in death or serious injury.**⚠️⚠️ DANGER****HAZARD OF ELECTRIC SHOCK AND FIRE**

- Do not expose the device to liquids.
- Do not exceed the temperature and humidity ranges specified in the technical data.
- Do not apply dangerous voltages to the SELV connection terminals (see "Connections" section).
- Only use the terminals indicated and cables with a suitable cross-section (see "Wiring guidelines" section).

Failure to follow these instructions will result in death or serious injury.**⚠️ WARNING****UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE**

Before handling the equipment, always discharge the static electricity from the body by touching an earthed surface or type-approved antistatic mat.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠ WARNING

HAZARD OF OVERHEATING AND FIRE

- Do not use with loads other than those indicated in the technical specification.
- Do not exceed the maximum permitted current; for higher loads, use a meter with sufficient power capacity.
- Make sure the application has not been planned with the controller outputs connected directly to instruments that generate a frequently-activated capacitive load ⁽¹⁾.
- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Connect the relay outputs, including the shared hub, using cables with a cross-section of 2.5 mm² and a length of at least 200 mm (7.87 in.).

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⁽¹⁾ Even if your application not apply a frequently operated capacitive load on the relay, capacitive loads will reduce the life of any electromechanical relay, and installation of a contactor or an external relay, that is sized and maintained according the dimensions and characteristics of the capacitive load, will help minimize the consequence of relay degradation.

FLAMMABLE REFRIGERANT GASES

The use of flammable gas refrigerants is dependent on may factors, including local, regional and/or national regulations.

The devices and corresponding accessories described in the documentation accompanying the product use components and, more specifically, electromechanical relays tested in accordance with IEC standard 60079-15 and classed as nC components (non-sparking 'n' electrical apparatus). This condition complies to Annex BB of EN/IEC 60335-2-89.

Conformance to Annex BB EN/IEC 60335-2-89 is considered sufficient, and thereby suitable, for commercial refrigeration and HVAC applications applying flammable gas refrigerants, such as R290. However, other limitations, equipment, locations and/or type of machine (refrigerators, vending machines and dispensers, bottle coolers, ice machines, Reach-Ins, etc.) may also be implicated, restricted and/or required in so doing.

The use and application of the information contained herein require expertise in the design and parameterizing/programming of HVAC and refrigeration control systems. Only you—the original equipment manufacturer, installer or user—can be aware of all the conditions and factors present, and the regulations applicable, during the design, installation and setup, operation, and maintenance of the machine or related processes. Therefore, only you can determine the suitability of automation and associated equipment, and the related safeties and interlocks, which can be effectively and properly used in the locations for which the equipment is to be put into service. When selecting automation and control equipment, and any other related equipment or software for an application, you must also consider any applicable local, regional or national standards and/or regulations.

You must verify, while incorporating this controller and related equipment, the final compliance of the machine to regulations and standards when using flammable gas refrigerants. Although all statements and information contained herein are believed to be accurate and reliable, they are presented without warranty of any kind. Information provided herein does not relieve you from the responsibility of carrying out your own tests and validations of conformance to any applicable regulations.

⚠ WARNING

REGULATORY INCOMPATIBILITY

Make sure that all equipment used and the systems designed comply with all applicable local, regional and national laws.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

WIRING GUIDELINES

⚡⚠ DANGER

LOOSE WIRING CAN RESULT IN ELECTRIC SHOCK

Tighten the connections in compliance with the technical specifications for torque values and make sure the wiring is correct.

Failure to follow these instructions will result in death or serious injury.

Use copper conductors (obligatory).

The table below shows the type and size of cables to use for power supply and load screw terminals:

											N•m	0.5...0.6
									Ø 3.5 mm (0.14 in.)		lb-in	4.42...5.31
mm ²	0.2...2.5	0.2...2.5	0.25...2.5	0.25...2.5	2 x 0.2...0.75	2 x 0.2...0.75	2 x 0.25...0.75	2 x 0.5...1.5				
AWG	24...14	24...14	24...14	24...14	2 x 24...18	2 x 24...18	2 x 24...18	2 x 20...16				

The table below shows the type and size of cables to use for probe terminals and digital inputs:

											N•m	0.5...0.6
									Ø 3.5 mm (0.14 in.)		lb-in	4.42...5.31
mm ²	0.05...2.5	0.05...1.5	0.05...2.5	0.05...1.5								
AWG	30...14	30...16	30...14	30...16								

The table below shows the type and size of cables to use for quick disconnect terminals model MSTB 2.5/x-ST-5.00:

											N•m	0.5...0.6
									Ø 3.5 mm (0.14 in.)		lb-in	4.42...5.31
mm ²	0.2...2.5	0.2...2.5	0.25...2.5	0.25...2.5	2 x 0.2...1.0	2 x 0.2...1.5	2 x 0.25...1.0	2 x 0.5...1.5				
AWG	24...14	24...14	24...14	24...14	2 x 24...18	2 x 24...18	2 x 24...18	2 x 20...16				

Only use the quick disconnect terminals supplied (in certain models) or purchased directly from Eliwell; otherwise, make sure you use terminals suitable for operation in conjunction with the Eliwell controller in the specific application conditions.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

SELV cables must be kept separate from other cables (see “Connections” chapter).

Failure to follow these instructions can result in death, serious injury, or equipment damage.

The temperature probes (NTC) do not feature any connection polarity and can be extended using normal bipolar cable. Lengthening the probe wiring affects the electromagnetic compatibility (EMC) of the instrument.

CONNECTIONS

<p>EWPlus 961 -HC</p>	<p>TERMINALS</p> <table border="1"> <tr><td>2-3</td><td>Out1 relay</td></tr> <tr><td>3-4</td><td>Power Supply input 115 Vac or 230 Vac</td></tr> <tr><td>9-10</td><td>Probe Pb1</td></tr> <tr><td>11-10</td><td>Digital Input DI1</td></tr> <tr><td>SELV</td><td>SELV terminals</td></tr> <tr><td>TTL</td><td>TTL serial</td></tr> </table>	2-3	Out1 relay	3-4	Power Supply input 115 Vac or 230 Vac	9-10	Probe Pb1	11-10	Digital Input DI1	SELV	SELV terminals	TTL	TTL serial								
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NOTICE

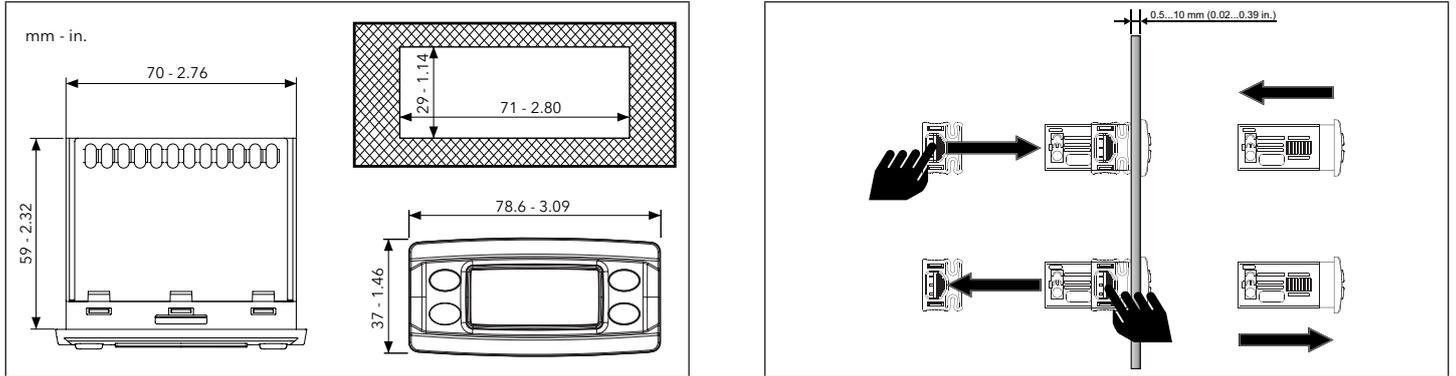
UNINTENDED EQUIPMENT OPERATION

- Use cables under 10 m (32.80 ft) in length for the I/O terminals (probes and digital inputs).
- Use cables under 3 m (9.84 ft) in length to connect the TTL serial line.

Failure to follow these instructions can result in equipment damage.

MOUNTING AND DIMENSIONS

The device is designed for panel mounting. Drill a 71x29 mm (2.80x1.14 in.) hole and insert the device; secure it with the special brackets provided. Keep the area around the instrument cooling slots adequately ventilated. The panel must be between 0.5 mm (0.02 in.) and 10 mm (0.39 in.) thick.



TECHNICAL SPECIFICATIONS

The product complies with the following harmonized Standards: EN 60730-1 / EN 60730-2-9

- Construction of control: Electronic automatic Incorporated Control
- Purpose of control: Operating control (not safety related)
- Type of action: 1.B
- Pollution degree: 2
- Overvoltage category: II
- Rated impulse voltage: 2500 V
- Ambient operating conditions: **EW.....7..:** Temperature: -5...55°C (23...131°F) / Humidity: 10...90% RH (non-condensing)
EW.....A.. - EW.....B.. - EW.....M.. - EW.....N..: Temperature: 0...65°C (32...149°F) / Humidity: 10...85 %RH (non-condensing)
Temperature: -30...85°C (-22...185°F) / Humidity: 10...90% RH (non-condensing)
- Transportation and storage conditions: 230 Vac (±10%) 50/60 Hz - 115 Vac (±10%) 50/60 Hz
- Power supply: 4.5 VA
- Power draw (maximum): A
- Software class: A

Loads:	Power supply	Model	Relay	EU (maximum 230 Vac)	USA (maximum 240 Vac)
230 Vac	EWPlus 961 -HC	Out1		12(8) A	12FLA - 72LRA
		EWPlus 971-HC	Out1	12(8) A	12FLA - 72LRA
	EWPlus 974 -HC	Out2		NO 8(4) A - NC 6(3) A	NO 8 A - NC 6 A resistive / NO 4.9FLA - 29.4LRA
		Out1		12(8) A	12FLA - 72LRA
		Out2		NO 8(4) A - NC 6(3) A	NO 8 A - NC 6 A resistive / NO 4.9FLA - 29.4LRA
	115 Vac	EWPlus 961 -HC	Out3		5(2) A
EWPlus 971 -HC			Out1	12(8) A	V* : 16FLA - 96LRA - S** : 12FLA - 72LRA
EWPlus 974 -HC		Out1		12(8) A	V* : 16FLA - 96LRA - S** : 12FLA - 72LRA
		Out2		NO 8(4) A - NC 6(3) A	NO 8 A - NC 6 A resistive / NO 4.9FLA - 29.4LRA
		Out1		12(8) A	V* : 16FLA - 96LRA - S** : 12FLA - 72LRA
Out2			NO 8(4) A - NC 6(3) A	NO 8 A - NC 6 A resistive / NO 4.9FLA - 29.4LRA	
Out3		5(2) A	5 A resistive / 2FLA - 12LRA		

V* = models with screw terminals - **S**** = models with quick disconnect terminals.

NOTE: check the power supply rating on the device label; contact our Sales Office for power and relay ratings.

FURTHER INFORMATION

Input Characteristics

- Display range: **NTC:** -50...110°C (-58...230°F) - on 3-digit display with +/- sign
 - Accuracy: Better than 0.5% of integral-scale ⁽¹⁾ + 1 digit
⁽¹⁾ fullscale = overall interval breadth -50...110 °C (-58...230 °F)
 - Resolution: 0.1°C (0.1°F)
 - Buzzer: Yes (depends on model)
 - Analogue Inputs: **EWPlus 961 -HC:** 1 NTC input (**Pb1**)
EWPlus 971-974 -HC: 2 NTC inputs (**Pb1** and **Pb2**)
 - Digital Inputs: **EWPlus 961 -HC:** 1 x voltage free digital input (**DI**)
EWPlus 971-974 -HC: 2 x voltage free digital inputs (**DI1** and **DI2**)
- NOTE:** **DI2**, if present and if activated, should be connected to terminals 1-2 of the TTL connector (**H12**≠0)

Mechanical Characteristics

Terminals: screw/disconnectable terminal blocks
 Connectors: TTL serial (used to connect Copy Card, UNICARD or Monitoring systems*)
 (*) Consult the Sales Office for information concerning compatibility with the dongle RS485, the BusAdapter or third-party devices.

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.

ACCESSING AND USING THE MENUS

The resources are organised into 2 menus which are accessed as follows:

- **Machine Status** menu: press and release **SET**.
- **Programming** menu: press **SET** for at least 5 seconds.

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.

PASSWORDS

Password PA1: used to access the **User (User)** parameters. The default setting is password disabled (**PA1=0**).
 To enable it (**PA1≠0**): press and hold **SET** for at least 5 seconds, scroll through the parameters using **⏪** and **⏩** until you find label **PS1**, then press **SET** to view its value, change it using **⏪** and **⏩** and save it by pressing **SET** or **ⓘ**.

Password PA2: allows access to the **Installer** parameters (**Inst**). The default setting is password enabled (**PA2=15**).
 To change it (**PA2≠15**): press and hold **SET** for at least 5 seconds, scroll through the parameters with **⏪** and **⏩** until you find label **PA2**, press **SET** to view its value, use **⏪** and **⏩** to set the value "15" and confirm using **SET**.
 Scroll through the folders using **⏪** and **⏩** until you find label **dis**, press **SET** to access, scroll through the parameters using **⏪** and **⏩** until you find label **PS2**, press **SET** to view its value, change it using **⏪** and **⏩** and save it by pressing **SET** or **ⓘ**.

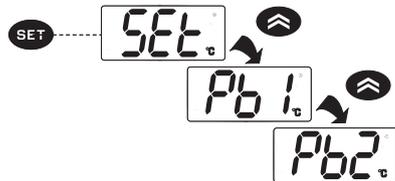
The visibility of **PA2** is:

- If **PA1** and **PA2≠0**: Press and hold **SET** for more than 5 seconds to view **PA1** and **PA2**. Select **PA1** to access the User parameters or **PA2** to access the Installer parameters.
- **Otherwise:** Password **PA2** is amongst the User parameters. If enabled, it will be required in order to access the Installer parameters.

NOTE: If the value entered is incorrect, label **PA1/PA2** will be shown again. Repeat the procedure.

"MACHINE STATUS" MENU

Press and release **SET** to access the **Machine Status** menu. If no alarms are active, the **SEt** label appears. Press **⏪** and **⏩** to scroll through the folders in the menu:



- **AL:** alarms folder (**only visible if the alarms are active**);
- **SEt:** Setpoint setting folder;
- **Pb1:** probe **Pb1** value folder;
- **Pb2:** probe **Pb2** value folder (shown if **Pb2** is present and **H42=y**)

NOTE: If the **reduced set** is active (**H11 = ±2**), the value displayed and the value in the **setpoint** folder is equal to (**SET + OSP**).
 In all other cases, the displayed value is **SEt**.

- Programming the SEt:** To view the Setpoint value, press **SET** when the **SEt** label is displayed. The Setpoint value appears in the display. To change the Setpoint value, press the **⏪** and **⏩** keys within 15 seconds. To confirm the modification press **SET**.
- SEt edit lock:** The keypad can be locked by programming **LOC** parameter. In the event of a locked keypad it is possible to access the Machine Status menu by pressing **SET** and viewing the Setpoint, but the value cannot be changed. To disable the keypad lock, repeat the locking procedure.
- Probes Display:** When the label **Pb1** or **Pb2** is displayed, press **SET** and the associated probe value will appear. **NOTE:** the value cannot be changed.

“PROGRAMMING” MENU

To access the **Programming** menu, press and hold the **SET** key for at least 5 seconds. If required, an access PASSWORD **PA1** will be requested for **User** parameters and **PA2** for **Installer** parameters (see **PASSWORDS** section).

User parameters: When accessed the display will show the first parameter (**dIF**). Press **▲** and **▼** to scroll through all parameters in the current level. Select the desired parameter by pressing **SET**. Press **▲** and **▼** to edit and **SET** to save the change.

Installer parameters: When the menu is accessed, the display will show the first folder (**CP**). Press **▲** and **▼** to scroll through the current level folders. Select the desired folder using **SET**. Press **▲** and **▼** to scroll through all parameters in the current folder. Select the desired parameter by pressing **SET**. Press **▲** and **▼** to edit and **SET** to save the change.

NOTE: The device must be switched off and then on again each time the configuration of the parameters is changed.

USING THE COPY CARD / UNICARD

When connected to the serial port (TTL), the Copy Card / UNICARD allows instrument parameters to be programmed rapidly. Access the parameters, scroll through the parameters with **▲** and **▼** and select the function with **SET** (for example, **UL**).

- **Format (Fr):** This command is used to format the Copy Card / UNICARD (recommended when using the card for the first time). **NOTE:** the use of the parameter **Fr** deletes all the data present. This operation cannot be reversed.
- **Upload (UL):** Select **UL** and press **SET**. With this function, the programming parameters are uploaded from the instrument to the card. If the operation is successful, the display will show **y**, otherwise it will show **n**.
- **Download:** Connect the Copy Card / UNICARD with the instrument switched off. At power-on, data will automatically start downloading from the Copy Card / UNICARD to the instrument. At the end of the lamp test, the display will show **dLy** if the operation was successful and **dLn** if it failed.

NOTE: After the download, the instrument will use the newly uploaded map settings.

INSTRUMENT STAND-BY

To switch the controller off, press and hold the **I** key for at least 5 seconds. In this condition, the adjustment algorithms and defrost cycles are disabled and the text **OFF** will appear on the display.

DIAGNOSTICS

Alarms are always indicated by the buzzer (if present) and the alarm icon (☎). To silence the buzzer, press and release any key, the relative icon will continue to flash.

NOTE: If alarm exclusion times have been set (see **AL** folder in the Parameters Table) the alarm will not be indicated.

ALARMS

Label	Description	Cause	Effects	Remedy
E1	Pb1 probe error	<ul style="list-style-type: none"> • Measured values are outside operating range • Probe error / short-circuited / open 	<ul style="list-style-type: none"> • Display shows E1 • Alarm icon permanently on • Maximum/minimum alarms controller disabled • Compressor operation based on parameters Ont and Oft. 	<ul style="list-style-type: none"> • Check probe wiring • Replace probe
E2	Pb2 probe error	<ul style="list-style-type: none"> • Measured values are outside operating range • Probe error / short-circuited / open 	<ul style="list-style-type: none"> • Display shows E2 • Alarm icon permanently on • Defrost will end due to Timeout (dEt) 	<ul style="list-style-type: none"> • Check probe wiring • Replace probe
AH1	Pb1 HIGH temperature alarm	Value read by Pb1 > HAL after time of tAO . (see “ MAXIMUM/MINIMUM TEMPERATURE ALARMS ”)	<ul style="list-style-type: none"> • Recording of label AH1 in folder AL • No effect on regulation 	Wait until temperature value read by Pb1 returns below (HAL-AFd).
AL1	Pb1 LOW temperature alarm	Value read by Pb1 < LAL after time of tAO . (see “ MAXIMUM/MINIMUM TEMPERATURE ALARMS ”)	<ul style="list-style-type: none"> • Recording of label AL1 in folder AL • No effect on regulation 	Wait until temperature value read by Pb1 returns above (LAL+AFd).
EA	Alarm External	Digital input activation (H11 = ±5)	<ul style="list-style-type: none"> • Label EA recorded in folder AL • Alarm icon permanently on • Regulation inhibited if EAL=y 	Check and remove external cause of alarm on DI
OPd	Door open alarm	Activation of digital input (H11 = ±4) for a time greater than tdO	<ul style="list-style-type: none"> • Recording of label OPd in folder AL • Alarm icon permanently on • Regulation inhibited if dOd≠0 	<ul style="list-style-type: none"> • Close the door • Delay function defined by OAO
Ad2	Defrost end due to timeout	End of defrost cycle due to timeout rather than due to defrosting end temperature being read by Pb2.	<ul style="list-style-type: none"> • Recording of label Ad2 in folder AL • Alarm icon permanently on 	Await next defrost cycle for automatic return to normal.

MAXIMUM/MINIMUM TEMPERATURE ALARMS

	Temperature value relative to setpoint (Att=1)	Temperature as an absolute value (Att=0)
Minimum temperature alarm	Temperature \leq SEt + LAL *	Temperature \leq LAL (LAL with sign)
Maximum temperature alarm	Temperature \geq SEt + HAL **	Temperature \geq HAL (HAL with sign)
Reset from minimum temperature alarm condition	Temperature \geq SEt + LAL + AFd or \geq SEt - LAL + AFd (LAL < 0)	Temperature \geq LAL + AFd
Reset from maximum temperature alarm condition	Temperature \leq SEt + HAL - AFd (HAL > 0)	Temperature \leq HAL - AFd
	* if LAL is negative, SEt + LAL < SEt ** if HAL is negative, SEt + HAL < SEt	

PARAMETER TABLE

PARA.	Description	Range	UM	961	971	974	Level
SEt	Temperature regulation Setpoint. SEt is only visible in the "machine status" menu.	LSE...HSE	°C/°F	0.0	0.0	0.0	User/Inst
COMPRESSOR (folder 'CP')							
diF	Compressor relay activation differential.	0.1...30.0	°C/°F	2.0	2.0	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	99.0	99.0	User/Inst
LSE	Minimum value that can be assigned to the set point. NOTE: The two setpoints are interdependent: LSE cannot be greater than HSE and vice versa.	-58.0...HSE	°C/°F	-50.0	-50.0	-50.0	User/Inst
HC	Operating mode. C (0) = Cooling; H (1) = Heating	C/H	flag	C			Inst
OSP	Temperature value to be added to the setpoint if reduced set enabled (Economy function).	-30.0...30.0	°C/°F	3.0	3.0	3.0	Inst
dOd	Enable utility switch-off on activation of door switch (only if H11 = ±4). n (0) = Do not turn off utilities; y (1) = Turn off utilities.	n/y	flag	n	n	n	Inst
dAd	Digital input activation delay.	0...255	min	0	0	0	Inst
Ont	Controller switch-on time in the event of probe error. • if Ont = 1 and OFt = 0, the compressor stays on permanently (ON); • if Ont > 0 and OFt > 0, it operates in Duty Cycle mode.	0...250	min	0	0	0	Inst
OFt	Controller switch-off time in the event of probe error. • if OFt = 1 and Ont = 0, the compressor is always off (OFF); • if Ont > 0 and OFt > 0, it operates in Duty Cycle mode.	0...250	min	1	1	1	Inst
dOn	Compressor relay activation delay after request.	0...250	s	0	0	0	Inst
dOF	Delay after switching off and subsequent switch-on.	0...250	min	0	0	0	Inst
dbi	Delay between two consecutive compressor switch-ons.	0...250	min	0	0	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	0	0	Inst
DEFROST (folder 'dEF')							
dtY	defrost type. Type of defrost. 0 = electric defrost - compressor off (OFF) during defrosting; 1 = cycle inversion defrost (hot gas) - compressor ON during defrosting; 2 = "Free": defrost independent of compressor.	0/1/2	num		0	0	User/Inst
dit	Time interval between the start of two consecutive defrost cycles. 0 = function disabled (defrost is NEVER activated).	0...250	hours	6	6	6	User/Inst
dCt	Selects the count mode for the defrost interval: 0 = compressor running time (DIGIFROST® method); defrost active only when the compressor is on. NOTE: compressor running hours are counted separately from the evaporator probe (count active also when evaporator probe missing or in error). 1 = device running time; 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 defrost cycle is performed according to parameter dtY ;	0/1/2	num	1	1	1	Inst
dOH	Delay preceding start of first defrost after call.	0...59	min	0	0	0	Inst

PARA.	Description	Range	UM	961	971	974	Level
dEt	Defrost timeout; determines the maximum defrost duration.	1...250	min	30	30	30	User/Inst
dSt	Defrost end temperature (determined by Pb2).	-50.0...150	°C/°F	8.0	8.0	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, no defrost at power-on; y (1) = yes, defrost at power-on.	n/y	flag	n	n	n	Inst
FANS ('FAn' folder)							
FPt	Characterises the FSt parameter which can be expressed either as an absolute temperature value or as a value relative to the Setpoint. 0 = absolute; 1 = relative.	0/1	flag			0	Inst
FSt	Fan disabling 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.	-50.0...150	°C/°F			-50.0	User/Inst
FAd	Fan activation differential (see FSt).	1.0...50.0	°C/°F			2.0	Inst
Fdt	Fans activation delay after a defrost cycle.	0...250	min			0	User/Inst
dt	Dripping time.	0...250	min		0	0	User/Inst
dFd	Select (or not) exclusion of the evaporator fans during defrost. n (0) = no (depending on the FCO parameter); y (1) = yes (fan off).	n/y	flag			y	User/Inst
FCO	Selects or deselects fan deactivation at compressor OFF. n (0) = fans off; y (1) = fans active (thermostat-controlled; depending on the value read by the defrost probe, see parameter FSt); dc (2) = not used.	n/y/dc	num			y	Inst
Fod	Fans active when the door is open. Selects or deselects fan deactivation when the door is open and fan restart when the door is shut (if they were running). n (0) = fans locked; y (1) = fans unchanged.	n/y	flag			n	Inst
ALARMS ('AL' folder)							
Att	Parameters HAL and LAL mode intended as the absolute temperature value or differential in relation to the Setpoint. 0 = absolute value; 1 = relative value. NOTE: If Att = 1, parameter HAL should be set to positive values, while parameter LAL should be set to negative values (-LAL).	0/1	num	1	1	1	Inst
AFd	Alarms cut-in differential.	1.0...50.0	°C/°F	2.0	2.0	2.0	Inst
HAL	Maximum alarm. Temperature value (intended either as distance from setpoint or as an absolute value based on Att) above which the probe will trigger activation of the alarm signal. See "Maximum/Minimum temperature alarms".	LAL...150	°C/°F	50.0	50.0	50.0	User/Inst
LAL	Minimum alarm. Temperature value (intended as distance from setpoint or as an absolute value based on Att) beneath which the probe will trigger activation of the alarm signal. See "Maximum/Minimum temperature alarms".	-50.0...HAL	°C/°F	-50.0	-50.0	-50.0	User/Inst
PAO	Alarm exclusion time after device is switched on following a power failure. This parameter refers to high/low temperature alarms only.	0...10	hours	0	0	0	Inst
dAO	Temperature alarm exclusion time after defrost.	0...999	min	0	0	0	Inst
OAO	Alarm indication delay (high and low temperature) following deactivation of digital input (port closed).	0...250	hours	0	0	0	Inst
tdO	Door open alarm activation delay.	0...250	min	0	0	0	Inst
tAO	Delay preceding temperature alarm signal. This parameter refers to high/low temperature alarms only.	0...250	min	0	0	0	User/Inst
dAt	Alarm indicating end of defrost as a result of timeout. n (0) = alarm not triggered; y (1) = alarm triggered.	n/y	flag		n	n	Inst
EAL	Regulators inhibited by external alarm. n (0) = no regulators inhibited; y (1) = regulators inhibited.	n/y	flag	n	n	n	Inst
COMMUNICATION ('Add' folder)							
dEA	Device address: indicates the device address to the management protocol.	0...14	num	0	0	0	Inst
FAA	Family address: indicates the device family to the management protocol.	0...14	num	0	0	0	Inst
DISPLAY ('diS' folder)							
LOC	LOCK. Setpoint edit lock. It is still possible to access parameter programming and edit parameters, including the status of this parameter. n (0) = no; y (1) = yes.	n/y	flag	n	n	n	User/Inst
PS1	PAssword 1. When enabled (PS1≠0), this is the access key to User parameters (User).	0...250	num	0	0	0	User/Inst
PS2	PAssword 2. When enabled (PS2≠0), this is the access key for the Installer parameters (Inst).	0...250	num	15	15	15	Inst
ndt	Display values with decimal point. n (0) = no (integers only); y (1) = yes (display with decimal point).	n/y	flag	y	y	y	Inst
CA1	Calibration 1. Positive or negative temperature value added to the value read by Pb1. This sum is used for both temperature display and temperature regulation purposes.	-12.0...12.0	°C/°F	0.0	0.0	0.0	User/Inst

PARA.	Description	Range	UM	961	971	974	Level
CA2	Calibration 2. Positive or negative temperature value added to the value read by Pb2. This sum is used for both temperature display and temperature regulation purposes.	-12.0...12.0	°C/°F		0.0	0.0	User/Inst
ddl	Display mode during defrost. 0 = displays the temperature read by probe Pb1; 1 = locks the reading at the temperature value read by probe Pb1 when defrost starts and until the next time the SEt* is reached; 2 = displays label dEF during defrost and until the SEt is reached.	0/1/2	num	1	1	1	User/Inst
dro	Selection of °C or °F to display the probe value. 0 = °C, 1 = °F. NOTE: switching between °C and °F or vice versa DOES NOT modify the setpoint, differential values, etc. (example: SEt = 10°C becomes 10°F).	0/1	flag	0	0	0	Inst
ddd	Selects the type of value to show in the display. 0 = Setpoint; 1 = Pb1; 2 = Pb2.	0/1/2	num	1	1	1	Inst
CONFIGURATION ('CnF' folder) - NOTE: the instrument must be switched off and then on again each time the configuration of the parameters is changed.							
H08	Stand-by operating mode. 0 = display off; the regulators are active and the device reactivates the display to signal any alarms; 1 = display off; the regulators and alarms are inhibited; 2 = the display shows the label " OFF "; regulators and alarms are inhibited.	0/1/2	num	2	2	2	Inst
H11	Configuration of digital input DI / polarity. 0 = disabled; ±1 = defrost; ±2 = reduced set; ±3 = reserved; ±4 = door switch; ±5 = external alarm; ±6 = stand-by; ±7 = reduced set + lights off. NOTE: - The "+" sign indicates that the input is active when the contact is closed; - The "-" sign indicates that the input is active when the contact is opened.	-7...7	num	0	0	0	Inst
H25	Enable/disable buzzer. 0 = disabled; 1 = reserved; 2 = reserved; 3 = reserved; 4 = enabled; 5 = reserved; 6 = reserved.	0...6	num			4	Inst
H32	Configuration of DOWN key. 0 = disabled; 1 = defrost; 2 = reserved; 3 = reduced set; 4 = stand-by.	0...4	num	0	0	0	Inst
H42	Probe Pb2 present. n (0) = not present; y (1) = present.	n/y	flag		y	y	User/Inst
rEL	reLease firmware. Read-only parameter.	/	/	/	/	/	User/Inst
tAb	table of parameters. Read-only parameter.	/	/	/	/	/	User/Inst
PA2	NOTE: The USER menu parameters also include PA2 which permits access to the INSTALLER (Inst) menu.						
COPY CARD / UNICARD ('FPr' folder)							
UL	Upload. To transfer programming parameters from instrument to Copy Card / UNICARD.	/	/	/	/	/	Inst
Fr	Formatting. Deletion of data found on the Copy Card / UNICARD. NOTE: If parameter " Fr " is used, the data entered will be permanently lost. This operation cannot be reversed.	/	/	/	/	/	Inst

LIABILITY AND RESIDUAL RISKS

Electrical equipment must be installed, used and repaired by qualified personnel only.

The liability of Schneider Electric and Eliwell is limited to the correct and professional use of the product according to the directives referred to herein and in the other supporting documents, and does not cover any damage (including but not limited to) the following causes:

- installation/uses other than those expressly specified and, in particular, failure to comply with the safety requirements of established standards and/or instructions specified in this document;
- use on panels that do not provide adequate protection against electric shocks, water or dust when assembled;
- use on panels which allow access to dangerous parts without the aid of a keyed or tooled locking mechanism;
- tampering with and/or modification of the product;
- installation/use on panels that do not comply with the regulations in force in the country of installation.

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CONDITIONS OF USE

Permitted use

The device must be installed and used in accordance with the instructions provided. In particular, parts carrying dangerous voltages must not be accessible under normal conditions. The device must be adequately protected from water and dust with regard to the application, and must only be accessible using tools or a keyed locking mechanism (with the exception of the front panel). The device is suitable for use in household refrigeration appliances and/or similar equipment and has been tested in accordance with the harmonised European reference standards.

Prohibited use

Any use other than that expressly permitted is prohibited. The relays provided are of a functional type and can be 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 controller.

DISPOSAL



The equipment (or product) must be subjected to separate waste collection in compliance with the local legislation on waste disposal.

Eliwell Controls s.r.l.

Via dell'Industria, 15 • Z.I. Paludi
32016 Alpago (BL) - ITALY
T: +39 0437 986111
www.eliwell.com

Customer's Technical Support:

T: +39 0437 986300
E: Techsuppeliwell@se.com

Sales:

T: +39 0437 986100 (Italy)
T: +39 0437 986200 (other countries)
E: saleseliwell@se.com

UK CA	UK Authorized Representative:
	Schneider Electric Limited
	Stafford Park 5
	Telford, TF3 3BL United Kingdom

MADE IN ITALY

EWPlus 961-971-974 -HC • EN
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