GB

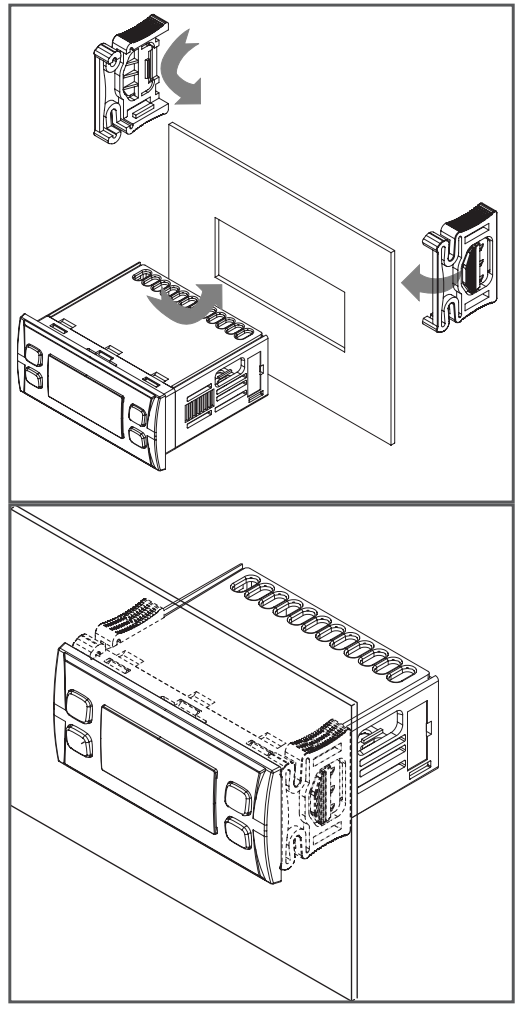
ID985/V

Electronic controllers for ventilated refrigeration units with electronic expansion valve management

SUMMARY

MECHANICAL ASSEMBLY

The unit has been designed for panel-mounting. Drill a 29x71 mm hole, insert the keyboard and fix it in place with the special brackets provided. It is pressure-mounted using special brackets. Do not install the instruments in excessively humid and/or dirty locations. They are suitable for use in locations with normal pollution levels. Always make sure that the area next to the instrument cooling slits is adequately ventilated. The TTL serial port is located on the left part of the instrument.



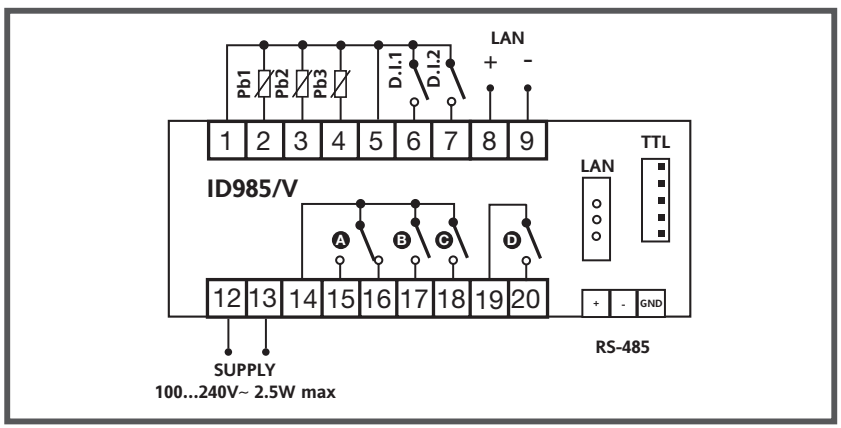
ELECTRICAL CONNECTIONS

Warning! Always switch off machine before working on electrical connections. The instrument has screw terminals for connecting electrical cables with a maximum diameter of 2.5 mm^2 (only one conductor per terminal for power connections): for terminal capacity, see the label on the instrument. The relay contacts are voltage free. Do not exceed the maximum current allowed. For higher loads, use a suitable contactor.

Make sure that the power voltage complies with the device voltage. Probes have no connection polarity and can be extended using an ordinary bipolar cable (note that if probes are extended this affects the electromagnetic compatibility (EMC) of the instrument: special care must be used when wiring). Probe cables, power supply cables and the TTL serial cable should be kept separate from power cables.

ELECTRICAL DIAGRAM

Terminal	Label	Description	Notes	PAR.
1-2	**Pb1**	Cabinet probe	to set NTC/PTC see section H00. If the probe type NTC/PTC is changed, restart the instrument	H00 H41
1-3	**Pb2**	Evaporator probe		H00 H42
1-4	**Pb3**	Display probe or 2nd evaporator		H00 H43
5-6	**D.I. 1**	Digital Input 1		H11
5-7	**D.I. 2**	Digital Input 2		H12



Terminal	Label	Description	Notes	PAR.
8-9	**LAN**	Serial port under voltage		L00...L06
12-13	**Supply**	Power supply 100...240V~	±10% 50/60 Hz 3VA max	
14-15-16	**A**	Outputs on relays	defrost	H22
14-17	**B**	Outputs on relays	compressor	H21
14-18	**C**	Outputs on relays	fans	H23
19-20	**D**	Outputs on relays	alarms	H24
TTL		TTL input for Copy Card		
RS485		Serial port for connection to Televis**System**		dEA/FAA
LAN		Serial port under voltage	in parallel with 8-9	L00...L06

TECHNICAL DATA

Frontal Protection: IP65
Container: PC+ABS UL94 V-0 resin plastic body, polycarbonate front, thermoplastic resin buttons.
Dimensions: front 74x32 mm, 60 mm depth.
Assembly: on panel, with drilling template 71x29 mm (+0,2/–0,1 mm).
Operational temperature: –5...55 °C.
Storage temperature: –30...85 °C.
Working environment humidity level: 10...90 % RH (not condensed).
Storage environment humidity level: 10...90% RH (not condensed).
Visualization range: –50...110 (NTC); –55...140 (PTC) °C without a decimal point (selectable by parameter), three digits and half + sign.
Analogue inputs: three PTC or NTC inputs (selectable by parameter).
Digital inputs: 2 voltage-free digital inputs configurable by parameter.
Serial ports:
- TTL for connection to Copy Card.
- RS485 for connection to Televis**System**
- LAN: output for LAN network

Digital outputs: 4 outputs on relays:
- (A) SPDT 5(2)A 1/4 HP 250V~,
- (B-C-D) SPST 3A 250V~,

LAN: Output for LAN network
Measurement field: from –55 to 140 °C.
Accuracy: better than 0.5% of bottom scale +1 digit.
Resolution: 1 or 0.1°C.
Consumption: 3VA.
Power Supply: 100...240V~ ±10% 50/60 Hz

USER INTERFACE

LED Table

	LEDs	ON	blinking	OFF	Notes
eco	eco	/	reduced set	set	(see SEt parameter)
	Compressor	compressor on	delay or protection	/	
	Defrost	defrost in progress	manual defrost	/	
	Alarms	activated alarms	silenced alarms (alarms still active)	/	
	Fans	fans in operation	/	/	
aux	Aux	auxiliary output operating	/	/	

Keys Table

Button		Description	Button		Description
		Scrolls through the menu items	fnc	fnc	Menu exit (ESC)
		Increases values			Configurable See section H33
	UP	**press for at least 5 sec.** Activates manual defrosting See section H31			Visualize Setpoint
					Visualize alarms - if present
		Scrolls through the menu items			Accesses the Menus
	DOWN	Decreases the values	set	set	**press for at least 5 sec.** Accesses programming menu
		Configurable via Parameter See section H32			Confirms command
					Activates functions - see FnC folder

ACCESS AND USE OF MENU

The resources are arranged in a menu that can be accessed by pressing and quickly releasing the “set” button (Machine Status menu) or holding down the “set” button for more than 5 seconds (Programming menu). To access the contents of each folder indicated by the relevant label, just press the “set” button once.
You can now scroll through the contents of each folder, modify it or use its functions. If you do not use the keyboard for over 15 seconds (time-out) or if you press the “fnc” button once, the last value shown on the display is confirmed and you are taken back to the previous screen mask.

STATUS MENU (SETPOINT / PROBES / ALARMS)

(The Status Menu Diagram)

To access the “Status” menu, press the “set” button and release it.

If no alarms are present, the label “SEt” appears. By using the “UP” and “DOWN” buttons you can scroll through the other folders in the menu.

Setpoint Setting

Press and release the “set” that button. The “Set” folder label appears. To display the Set point value, press the “set” button again. The Set point value appears on the display. To change the Set point value, use the “UP” and “DOWN” buttons within 15 seconds. If the parameter is LOC = y the Set point cannot be changed.

Alarm on

Press and release the “set” that button. If an alarm is president, the folder label “AL” will appear (see section “Alarms”).

Displaying probes

If you press the “set” button when the corresponding label appears, the value of the probe associated with it is displayed.

Real Time Clock

By pressing the “set” button when the “rtc” label appears, the label d0x (days) is displayed. Use the “UP” and “DOWN” buttons to set days. If you do not use the buttons for over 2 seconds or if you press “set” you switch to the hours (h00) and minutes (‘00) folders: use the “UP” and “DOWN” buttons to set the hours and minutes respectively. If you do not use the keyboard for over 15 seconds (time-out) or if you press the “fnc” button once, the last value shown on the display is confirmed and you are taken back to the previous screen mask.

NOTE: Always use the “set” button to confirm the hours/minutes/days setting. NOTE2: We recommend considering the first day d00 as SUNDAY.

PROGRAMMING MENU

(See Programming Menu Diagram)

1) Visualize User parameters (Usr).

To access the “Programming” menu hold down the “set” button for more than 5 seconds.
If present, a User PASSWORD will be requested (see parameter “PA1”) and (if the correct password is inserted) the label of the first folder will then appear. If the password is incorrect, the display will visualize the PA1 label again.
To scroll the other folders, use the buttons “UP” and “DOWN”. The folders will visualize all User parameter folders.

2) Visualize Installer parameters (Ins.)

Once in the Programming Menu, accessed the “CnF” folder, scroll through the parameters until the label PA2. Pressing the button “set” accesses all of the parameters (Usr + Ins) and the label of the first programming menu folder appears.
The Installer parameters can be protected by a second password (see “PA2” parameter in the “diS” folder, not to be confused with the PA2 label inside of the “CnF” folder). If present, the level ‘Ins’ parameters are hidden from the user; the Installer PASSWORD will be requested to open the “CnF” folder and (if correct password is inserted) then the label of the first programming folder will appear.
To enter the folder, press “set”. The label of the first visible parameter will appear. To scroll through me other parameters, use the buttons “UP” and “DOWN” and to modify the parameter press and release “set”, then set the desired value using the buttons “UP” and “DOWN” and confirm using the button “set” to continue to the next parameter.
NOTE: It is recommended to power cycle (switch off and back on) the controller anytime the parameters in CnF folder have been changed to prevent malfunctioning and ensure correct configuration.

PASSWORD

The passwords “PA1” and “PA2” permit access to the respective User and Installer parameters. In the standard configuration the passwords are not present (value = 0). To enable these (value ≠0) and assign the desired values it is necessary to open in the “Programming” menu and then the folder labelled “diS”.
In the case that the passwords are enabled, the program will request:
- PA1 upon opening the “Programming’ menu (see section Programming Menu);
- PA2 upon opening the “CnF” folder in User parameters.

ACTIVATING MANUAL DEFROST CYCLE

To activate the defrost cycle manually, press the “UP” button (if configured =1) for 5 seconds.
If the right defrosting conditions are not present (the temperature of the evaporator probe is higher than the end of defrost temperature, for example) or parameter OdO different than 0, the display will flash three times to indicate that the operation will not be performed.

COPY CARD

The Copy Card is an accessory connected to the TTL serial port used for quick programming of the unit parameters (upload and download parameter map to one or more units of the same type). These operations are executed as follows:
Fr-Format Using this command it is possible to format the key, an operation that is necessary in case of first use or for incompatible models.
Warning: when the key is programmed, using the “Fr” parameter will cancel all of the inserted data. This operation cannot be undone.
UL-Upload instrument --> Copy Card Using this operation loads the programming parameters from the instrument.
dL-Download Copy Card --> instrument This operation downloads the programming parameters into the instrument.

These operations are executed by accessing the folder labelled “FPr” and according to the specific case selecting the command “UL”, “dL” or “Fr”. The command is confirmed by pressing the “set” button. For executed operations. “y’ appears, while “n” appears for failed operations.

Download “from reset”

Connect the copy card when the instrument is OFF. The programming parameters are downloaded when the device is switched on. At the end of the lamp test, the following messages are displayed for about 5 seconds:

- dLY label if copy operation is successful
- DLn label if operation fails

NOTE:

- after the parameters have been downloaded, the device uses the downloaded parameter map settings.

TELEVIS**SYSTEM**

Connection to Televis**System** can take place via serial port RS485.

To configure the instrument for this purpose, it is necessary to access the folder labelled “Add” and to use the “dEA” and “FAA” parameters.

SETPOINT CHANGE SHUTDOWN

The instrument has the possibility to disable the set Point change function by programming the appropriate parameter “LOC” (see folder labelled “diS”). THE SETPOINT WILL NOT BE CHANGEABLE THROUGH THE SHUTDOWN KEYBOARD

It is still possible to:

- visualize the SetPoint value;
- access the programming MENU by pressing the button “set”.

Through programming of the “LOC” parameter (see folder labelled “diS”), it is possible to disable the keyboard

function. If the keyboard is locked, you can access the “Programming” MENU by pressing the “set” key. The Setpoint can also be viewed.

ADVANCED FUNCTIONS

LAN

The LAN function permits connecting up to 8 instruments to the network for standard use and up to 4 V800 connected instruments (see V800 manual code 9MAX0016). The distance between one device and another must be 7 metres maximum whereas the maximum distance between the first and last instrument in the network must be approximately 50m.
NOTE: the serial link between the devices is powered.
Master: Instrument that controls the networks and sends commands to the Slaves. The Master is selected using parameter L00 (the value 0 defines the Master)
Slave: Instrument(s) with own controllers that also perform(s) commands issued by the Master (with parameters L00..L07). (via parameters L00..L07).
The Master can activate all of the functions associated with buttons or the Digital Inputs for all of the Slaves: turn on, turn off, alarm deactivation, auxiliary SetPoint, auxiliary and stand-by relays (on/off).
The Master can also synchronize the Slave displays with the Master device display (see parameter L04).
The functions are associated with the instruments by correctly setting the parameters (see the parameter table for the “Lin” label folder)

CONFIGURATION OF 3RD PROBE AS 2ND EVAPORATOR

Using the 3rd probe it is possible to control defrosting in a second evaporator. To implement this function:
a) configure the 3rd probe in 2nd evaporator defrost control mode (par. H43=2EP).
b) configure a relay output as 2nd evaporator defrost relay (configuration parameters H21...H24).
c) define the defrost mode by setting parameter H45:

• H45=0: Defrosting is enabled by controlling the temperature of the 1st evaporator so it is lower than parameter dSt,
• H45=1: Defrosting is enabled by controlling so that at least one of the two probes is below its end of defrosting temperature (dSt for the 1st evaporator and dS2 for the 2nd evaporator)
• H45=2: Defrosting is enabled by controlling so that both the probes are below their respective end of defrosting set points (dSt for the 1st evaporator and dS2 for the 2nd evaporator)
The probe error condition is considered the defrost calling probe.
When defrosting is terminated by a probe or is timed out (see par. dEt), dripping follows (see par. dt).

End of defrosting

If two evaporators are used, defrosting ends when both the probes have reached or exceeded their respective end of defrosting set points (dSt for the 1st evaporator and dS2 for the 2nd evaporator)
If one or both the probes are faulty, defrosting is ended by a time-out.
NOTE:
• If there are no conditions for defrosting, the request is ignored.
Defrosting of a single evaporator ends when the value read by the respective probe is equal to or higher than the end of defrosting temperature or a time-out occurs.
Dripping starts when both defrosts have been completed.
• If one or both the probes are faulty, defrosting in the corresponding evaporator is ended by a time-out. The start of defrosting is permitted when the corresponding temperature is lower than the corresponding set point (dSt or dS2).
• If probe 3 is not configured as a probe on the second evaporator (H43≠2EP), defrosting on the second evaporator occurs if a digital output is configured to control defrosting on the second evaporator (see par. H21..H24).
If this is the case, defrosting is confirmed (as if Pb3<dS2) and ends with a time-out. The fan controller remains unchanged.

PRESSURE GAUGE INPUT

This controller performs diagnostics on an associated digital input using a configuration table. It is activated by setting parameters H11 and H12 = 9.

If the pressure switch input trips, the compressor loads are immediately deactivated, the alarm LED lights up to signal tripping and the label nPA appears in the alarm folder.

Controlling is performed using 2 parameters PEn and PEI:

nPA is a subfolder of AL (Alarms), and keeps a record of each time the pressure switch is activated if the value indicated by PEn is reached in a period of time that is less than or equal to PEI, the label nPA is replaced by PA (pressure alarm).

The alarm conditions only occurs when the maximum number of alarms is reached before the time indicated by parameter PEI expires. As soon as the first alarm occurs, the time PEI is calculated.

If the number of times the pressure switch is activated exceeds the number established PEn in the period PEI:

- compressor outputs, fans and defrosting are deactivated
- the label PA is displayed in the subfolder nPA
- the alarm LEDs and alarm relay if configured are switched on.

NOTE: Once the device is in alarm mode, it must be switched off and on again or reset by activating the rAP parameter in the functions menu. The nPA folders can be reset using the rAP function in the Fnc folder.

NOTE: If parameter PEn is set to 0 the function is excluded and the alarms and counts are disabled.

CONDENSER FANS

This controller is associated with probe Pb3 and features:

- intervention set point
- operating differential
- exclusion of fans in defrosting mode
- start-up delay after end of defrosting

If a digital output is set as condenser fans (H21...H24=10) the output will behave as shown below:
If probe Pb3 is not present and alarm E3 is active, the controller will always be on during the defrost cycle.
Probe 3 can be excluded and the failed connection with the instrument will not trigger an error message.
NOTE: During dripping time the output is OFF.
NOTE: If a digital output is programmed as condenser fans (H21...H24 =10) parameter SA3 is always an absolute value irrespective of the value of parameter Att.

ALARMS

Driver Alarms Table V800 electronic expansion valve

Driver 1	Driver 2	Fault	Notes
1E1	2E1	Probe 1 alarm	See V800 manual 9MAX0016
1E2	2E2	Probe 2 alarm	
1HP	2HP	MOP Alarm	
1H0	2H0	Max output alarm	
1EA	2EA	External alarm	
1E7*	2E7*	LAN with V800 alarm	* missing communication between ID985/V and V800. Alarm detected directly by ID985/V. See alarm E7 - Alarms Table ID985/V.

ID985/V Alarms Table

Label	Fault	Cause	Effects	Problem resolution
E1	Probe cabinet fault Pb1	• reading of out of range operating values • fault probe / in short / open	• Visualization E1 label on display • Disabling of maximum and minimum alarm regulator • Compressor Function based on parameter "Ont". And "OFt" if programmed for duty cycle. See Duty Cycle Table	• control NTC/PTC probe type (see H00) • control the probe wiring • replace the probe
E2	Probe evaporator fault Pb2	• reading of out of range operating values • fault probe / in short / open	• Visualization E2 label on display • The Defrost cycle terminates for a Time Out (Parameter "dEt")	• control NTC/PTC probe type (see H00) • control the probe wiring • replace the probe
E3	Probe display fault Pb3	• reading of out of range operating values • fault probe / in short / open	• Visualization E3 label on display • Disabling of maximum and minimum alarm regulator **in the case of Pb3 configured as second evaporator probe:** • The Defrost cycle terminates for a Time Out (Parameter "dEt")	• control NTC/PTC probe type (see H00) • control the probe wiring • replace the probe

Label	Fault	Cause	Effects	Problem resolution
AH1	HIGH Alarm Pb1 Temperature	• value read by Pb1 > HAL after a time equal to "tAO". (see diagram TEMPERATURE ALARMS)	• Registration AH1 label in the AL folder • No effect on control	• Wait until the temperature value read by Pb1 is below HAL-AFd.
AL1	LOW Alarm Temperature Pb1	• value read by Pb1 > LAL after a time equal to "tAO". (see diagram TEMPERATURE ALARMS)	• Registration AL1 label in the AL folder • No effect on control	• Wait until the temperature value read by Pb1 is over LAL + AFd.
AH3	HIGH Alarm Pb3 Temperature	• PbA=1,2* --> value read by Pb3 > HAL • PbA = 3 & dA3>0* --> value read by Pb3 > SA3 *after a time equal to "tAO". (see diagram TEMPERATURE ALARMS)	• Registration AH3 label in the AL folder • No effect on control	• Wait until the temperature value read by Pb3 is below PbA=1,2 -->HAL-AFd PbA=3 -->SA3-dA3
AL3	LOW Alarm Temperature Pb3	• PbA=1,2* --> value read by Pb3 < LAL • PbA = 3 & dA3<0* --> value read by Pb3 < SA3 *after a time equal to "tAO". (see diagram TEMPERATURE ALARMS)	• Registration AL3 label in the AL folder • No effect on control	• Wait until the temperature value read by Pb3 is over PbA=1,2 -->LAL-AFd PbA=3 -->SA3-dA3

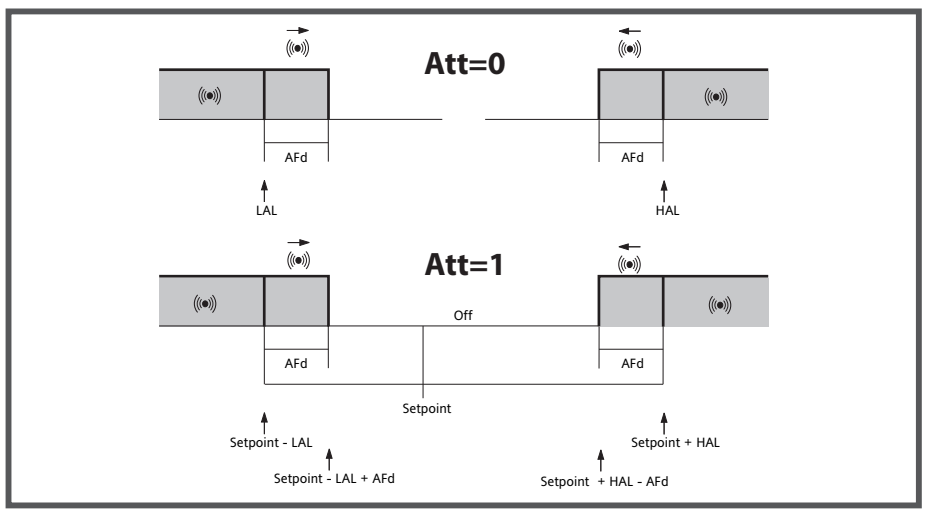
Label	Fault	Cause	Effects	Problem resolution
Ad2	defrosting for time-out	end of defrosting because of time instead of because of reaching the defrost end temperature detected by the defrost probe	• Registration Ad2 label in the AL folder	• wait until the next defrost for automatic return
EA	External alarm	• activation of digital input (set as external alarm). See section H11/H12	• Registration EA label in the AL folder • Controller shutdown (see section rLO/dOA/PEA)	• in case of alarm silenced, the controllers remain shutdown until the next deactivation of the digital input. • wait for next deactivation of digital input.
OPd	Alarms Open door	• activation of digital input (set as door light). See section H11/H12 • delay function defined by td0 parameter	• Registration OPd label in the AL folder • Controller shutdown (see section dOA/PEA)	• door closure • delay function defined by OA0 parameter
E7*	LAN alarm between the ID985/V	• missing master/slave communication.	• Visualization E7 label on display • NO LAN functionalities	• check LAN wiring

Label	Fault	Cause	Effects	Problem resolution
E10	RTC Clock alarm	• clock fault or battery exhausted	• functionalities releted to RTC not available	• contact Eliwell Technical Customer Support

Press any button to silence the alarm. The LED will start to blink.
If these are simultaneously visualized alternating on the display every 2 seconds If these are simultaneously visualized alternating on the display every 2 seconds
* NOTE E7
• The E7 error is signalled after approx. 20 seconds in “no link” condition to avoid any link disturbance causing communication errors in the LAN network.
• The E7 error is also signalled for addressing conflicts when:
a) the number of Slaves set on the MASTER is different from the actual number of Slaves on the network
b) 2 or more Slaves have the same address.
*No-link alarms and addressing conflicts alternate with the temperature or probe error values normally displayed on the Master or Slave.

Temperature Alarms Diagram

Att=0	Att=1	Att=0	Att=1
MAX Alarm		MIN Alarm	
TEMP > = HAL HAL with signal	TEMP > = SEt + HAL*	TEMP < = LAL LAL with signal	TEMP < = SEt + LAL**
MAX Alarm Return		MIN Alarm Return	
TEMP < = HAL - AFd	TEMP < = SEt + HAL - AFd	TEMP > = LAL + AFd	TEMP > = SEt + LAL + AFd
*if HAL is negative it will be subtracted from the Setpoint (SEt+HAL<SEt) **if LAL is negative it will be subtracted from the Setpoint (SEt+LAL<SEt)			



Duty Cycle Table

Ont	Oft	Compressor output
0	0	OFF
0	>0	OFF
>0	0	ON
>0	>0	Duty Cycle

CONDITIONS FOR USE - PERMITTED USED

For safety reasons the instrument must be installed and used in accordance with the instructions supplied. Users must not be able to access parts with dangerous voltage levels under normal operating conditions.
The device must be suitably protected from water and dust according to the specific application and only be accessible using special tools (except for the front keypad).
The device can be fitted to equipment for household use and/or similar use in the refrigeration sector and has been tested with regard to safety in accordance with the European harmonized reference standards. It is classified as follows:

- as an automatic electronic control device to be independently mounted as regards its construction;
- as a 1 B type operated control device as regards its automatic operating features;
- as a Class A device as regards the category and structure of the software.

PROHIBITED USE Any use different from the permitted uses are in fact prohibited.
It should be noted that the relay contacts supplied with the device are functional and therefore exposed to potential faults. Any protection devices required to comply with product requirements or dictated by common sense due to obvious safety reasons should be installed externally.

RESPONSIBILITY AND RESIDUAL RISKS

ELIWELL CONTROLS SRL is not responsible for possible damages deriving from:

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

DISCLAIMER

PARAMETERS TABLE

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
EE0		**DRIVER 1 ELECTRONIC EXPANSION VALVE V800** **NOTE: for a complete description of these parameters see manual V800 9MAX0016** NOTE: the parameters of the folders EE0/EE1 are visible at a USr level or Ins level, but not both.					
EE0	Adr	Driver valve enable. 0= disabled	0...6	1	num	Ins	
EE0	OLt	Minimum heating threshold.	0.0...100.0	8.0	°C/°F	Ins	
EE0	U01	PWM Period	3...10	6	sec	Ins	
EE0	U02	% maximum valve opening.	0...100	100	num	Ins	
EE0	U06	% minimum operating valve opening.	0...100	0	num	Ins	
EE0	U07	% maximum operating valve opening.	0...100	100	num	Ins	
EE0	H00	Heating probe configuration.	diS/ntc/420	ntc	num	Ins	
EE0	H03	Lower current input limit.	-14.5...1000.0	-0.5	bar/PSI	Ins	
EE0	H04	Upper current input limit.	-14.5...1000.0	7.0	bar/PSI	Ins	
EE0	H05	Pressure unit of measure.	PSi/bAr	bAr	flag	Ins	
EE0	H06	Pressure unit of measure.	C/F	C	flag	Ins	
EE0	H10	Refrigerant selection.	404/.../PAr	404	num	Ins	
EE0	H60	System type.	0...16	1	num	Ins	
EE0	FSS	Equipment mask. Read only parameter	/	/	num	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
EE0	rel.	Equipment version. Read only parameter.	/	/	num	Ins	
EE0	PEr	% valve opening. Read only parameter.	/	/	%	Usr	
EE0	PSH	Heating probe value. Read only parameter.	/	/	°C/°F	Ins	
EE0	PSA	Saturation probe value. Read only parameter.	/	/	°C/°F	Ins	
EE0	SHt	Heating temperature. Read only parameter.	/	/	°C/°F	Usr	
EE1		**DRIVER 2 ELECTRONIC EXPANSION VALVE V800 analogical parameters to EE0.** **NOTE: for a complete description of these parameters see manual V800 9MAX0016**					
EE1	Adr	Driver valve enable. 0= disabled	0...6	0	num	Ins	
CP		**SETPOINT**					
	SEt	Set point with range falling between the minimum LSE set point and the maximum HSE set point. The value of the set point is in the machine status menu	LSE...HSE	0.0	°C/°F	Usr/Ins	
CP		**COMPRESSOR**					
CP	diF	diFferential. Intervention differential of relay compressor; the compressor will stop once the SetPoint value has been reached (indicated by the control probe) and then restart at a temperature value equal to the setpoint of the differential value. Note: This value cannot be 0.	0.1...30.0	2.0	°C/°F	Usr/Ins	
CP	HSE	Higher SEt. Maximum value that can be attributed to the setpoint.	LSE...302	50.0	°C/°F	Usr/Ins	
CP	LSE	Lower SEt. Minimum value that can be attributed to the setpoint.	-55.0...HSE	-50.0	°C/°F	Usr/Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
CP	OSP	Offset SetPoint. Temperature value to add algebraically to the setpoint in case of decreased enabled set (Economy setting). Activation can take place via a button configured for this purpose.	-30.0...30.0	0	°C/°F	Ins	
CP	Cit	Compressor min on time. Minimum activation time of compressor before its possible deactivation. If set at 0, it is not active.	0...250	0	min	Ins	
CP	CAt	Compressor mAx on time. Maximum activation time of compressor before its possible deactivation. If set at 0, it is not active.	0...250	0	min	Ins	
CP		**COMPRESSOR PROTECTIONS**					
CP	Ont	On time (compressor). Compressor activation time if probe is faulty. If set to "1" with OFt=0 the compressor always remains on whereas if Oft>0 it operates in duty cycle mode. See Duty Cycle diagram.	0...250	0	min	Usr/Ins	
CP	Oft	OFF time (compressor). Compressor deactivation time if probe is faulty. If set to "1" with Ont=0 the compressor always remains off whereas if Ont>0 it operates in duty cycle mode. See Duty Cycle diagram.	0...250	1	min	Usr/Ins	
CP	dOn	delay (at) On compressor. Delay time for compressor relay activation on call.	0...250	0	sec	Usr/Ins	
CP	dOF	delay (after power) OFF. Delay after shut-down; between compressor relay shut-down and subsequent start-up the specified time must elapse.	0...250	0	min	Usr/Ins	
CP	dbi	delay between power-on. Delay between switch-ons; the specified time must elapse between two subsequent switch-ons	0...250	0	min	Usr/Ins	
CP	OdO	delay Output (from power) On. Delay in enabling outputs after start-up of instrument or after a power failure. 0= not active	0...250	0	min	Usr/Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
dEF		**DEFROST**					
		In the deF folder there are two folders: "dd" (daily defrost) and "Fd" (festive defrost); the first folder includes the parameters dE1...dE8 (start of daily defrost) and the second folder includes the parameters F1...F8 (start of festive defrost). The two folders can only be seen if parameter dCt=3 and RTC is declared present. **NOTE: Do not confuse the days d0...d6 related to the nAd folder with dE1...dE8 daily defrost.**					
dd		dE1...dE8 daily defrost start time. To disable daily defrost set to 24h-00'	0..23/0...59	24	h/min	1	
Fd		F1...F8 festive defrost start time. To disable festive defrost set to 24h-00'	0..23/0...59	24	h/min	1	
dEF	dtY	defrost type. Defrost type: 0= electric defrost - compressor off during defrost 1= not used if ID985/V is connected to the driver V800. Otherwise: Reverse cycle defrost (hot gas) - Compressor On during Defrost 2 = 'Free' : Independent compressor defrost	0/1/2	0	num	Usr/Ins	
dEF	dit	defrost interval time. Period of time elapsing between the start of two defrosts 0= function disabled (NEVER executes defrost cycle)	0...250	6h	hours	Usr/Ins	
dEF	dt1	defrost time 1. Unit of measurement for defrost times (parameter "dit"). 0= parameter "dit" expressed in hours. 1= parameter "dit" expressed in minutes. 2= parameter "dit" expressed in seconds.	0/1/2	0	num	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
dEF	dt2	defrost time 2. Unit of measurement for duration of defrosting (dEt parameter). 0= "dEt" parameter expressed in hours 1= "dEt" parameter expressed in minutes 2= "dEt" parameter expressed in seconds	0/1/2	1	num	Ins	
dEF	dCt	defrost Counting type. Selection of defrosting time count mode. 0 = compressor operating hours (DIGIFROST® method); Defrost activated ONLY with compressor on. NOTE: the compressor operating time is counted independently of the evaporator probe (activated counting if evaporator probe is absent or faulty). 1 = equipment operating hours; counting of the defrost sysle is always activated with the machine on and at every start-up; 2=compressor stop Each time the compressor stops a defrosting cycle is performed according to parameter dtY; 3= RTC. Defrosting at times set by dE1...dE8, F1...F8 parameters.	0/1/2/3	1	num	Usr/Ins	
dEF	dOH	defrost Offset Hour. Delay time for start up of on call defrost.	0..59	0	min	Usr/Ins	
dEF	dEt	defrost Endurance time. Defrosting time-out; determines maximum duration of defrosting.	1...250	30	min	Usr/Ins	
dEF	dSt	defrost Stop temperature. End of defrost temperature (determined by evaporator probe).	-50.0...150	8.0	°C/°F	Usr/Ins	
dEF	dE2	defrost Endurance time 2nd evaporator. Defrost time-out on 2nd evaporator; this determines the maximum duration of defrost in the 2nd evaporator.	1...250	30	min/ sec	Usr/Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
dEF	dS2	defrost Stop temperature 2nd evaporator. End of defrost temperature (determined by 2nd evaporator probe).	-50.0...150	8.0	°C/°F	Usr/Ins	
dEF	dPO	defrost (at) Power On. Determines if at start-up the instrument must start defrosting (always if the temperature of the evaporator permits it). y = yes, defrost on; n = no, do not defrost at start-up.	n/y	n	flag	Usr/Ins	
dEF	tcd	time compressor for defrost. Minimum compressor defrost time On or OFF before defrost. If >0 (positive value) the compressor remains ACTIVATED for tcd minutes; If <0 (negative value) the compressor remains DEACTIVATED for tcd minutes; If =0 the parameter is ignored.	-31...31	0	min	Ins	
dEF	Cod	Compressor off (before) defrost. Compressor time OFF in proximity of the defrost cycle. If defrosting is planned within the set time for this parameter, the compressor will not turn on. If =0 excluded function.	0...60	0	min	Ins	
FAn		**FANS** **NOTE: in this group the evaporator parameters are intended for the 1st evaporator.**					
FAn	FPt	Fan Parameter type. 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	0	flag	Ins	
FAn	FSt	Fan Stop temperature. Fans shutdown temperature; a value read by the evaporator probe over the set value causes fan stopping. The value is positive or negative and is based on the FPt parameter, and represents the temperature in an absolute or relative manner related to the setpoint.	-50...150	2.0	°C/°F	Usr/Ins	
FAn	Fot	Fan on-start temperature. Fans start-up temperature; if the evaporator temperature is less than the set value in this parameter, the fans remain stopped. The value is positive or negative and is based on the FPt parameter, and represents the temperature in an absolute or relative manner related to the setpoint.	-50...150	-50.0	°C/°F	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
FAn	FAd	FAn differential. Fan activation intervention differential (see section “FSt” and “Fot”).	1.0...150	2.0	°C/°F	Usr/Ins	
FAn	Fdt	Fan delay time. Delay before fan activation after defrosting.	0...250	0	min	Usr/Ins	
FAn	dt	drainage time. Dripping time.	0...250	0	min	Usr/Ins	
FAn	dFd	defrost Fan disable. Permits selection or not of evaporator fan disable during defrost. y = yes; n = no.	n/y	y	flag	Usr/Ins	
FAn	FCO	Fan Compressor OFF. Permits selecting or not fan shutdown with compressor OFF. n = fans off; y = fans on (thermostats; based on the value read by the defrost probe, see parameter “FSt”); dc = duty cycle (via parameters “Fon” and “FoF”).	n/y/dc	y	num	Usr/Ins	
FAn	Fod	Fan open door open. Permits selecting or not fans shutdown with the door open and restarting once door is closed (if activated). n= fans shutdown; y=fans not affected	n/y	n	flag	Ins	
FAn	FdC	Fan delay Compressor off. Delay time for fans shutdown after compressor stopping. In minutes. 0=function excluded	0...99	0	min	Ins	
FAn	Fon	Fan on (in duty cycle). Time for fans ON for duty cycle. Use of the fans with duty cycle mode; valid for FCO = dc and H42=1 (if present 2nd evaporator probe)	0...99	0	min	Ins	
FAn	FoF	Fan oFF (in duty cycle). Time for fans OFF for duty cycle. Use of the fans with duty cycle mode; valid for FCO = dc and H42=1 (if present 2nd evaporator probe)	0...99	0	min	Ins	
FAn	SCF	Set point condenser fans	-50...150	10	°C/°F	Ins	
FAn	dCF	Condenser fan differential	-30...30	2	°C/°F	Ins	
FAn	tCF	Condenser fan start-up delay after defrost	0..59	0	min	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
FAn	dCd	Exclusion of condenser fans in defrost mode	n/y	y	flag	Ins	
AL		**ALARMS**					
AL	Att	Alarm type. Parameters "HAL" , "LAL" & "SA3" mode, intended as absolute temperature value or as differential in respect to Setpoint. 0 = absolute value; 1 = relative value. (If relative values are present (par. Att=1) parameter HAL is set to positive values and the parameter LAL is set to negative values (-LAL)	0/1	0	flag	Inst	
AL	AFd	Alarm diFferential. Alarm differential	1.0...50.0	2.0	°C/°F	Usr/Ins	
AL	HAL	Higher ALarm. Maximum temperature alarm Temperature value (intended as distance from Setpoint or in an absolute value based on Att) which when exceeded determines activation of an alarm signal. See Max/Min Alarms diagram.	LAL...150	50.0	°C/°F	Usr/Ins	
AL	LAL	Lower ALarm. Minimum temperature alarm Temperature value (intended as distance from Setpoint or in an absolute value based on Att) which when below determines activation of an alarm signal. See Max/Min Alarms diagram.	-50.0...HAL	-50.0	°C/°F	Usr/Ins	
AL	PAO	Power-on Alarm Override. Alarm exclusion time after start-up of instrument following a power failure Refers exclusively to high and low temperature alarms.	0...10	0	hours	Usr/Ins	
AL	dAO	defrost Alarm Override. Temperature alarm exclusion time after defrosting.	0...999	0	min	Usr/Ins	
AL	OAO	Alarm signal delay* after disabling the digital input (door closed) *Alarm is intended as high and low temperature alarmed.	0...10	0	hours	Ins	
AL	tdO	time out door open. Open door alarm activation delay time	0...250	0	min	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
AL	tAO	temperature Alarm Override. Temperature alarm delay time. Refers exclusively to high and low temperature alarms.	0...250	0	min	Usr/Ins	
AL	dAt	defrost Alarm time. Alarm for defrosting ended due to time out. n = alarm deactivated; y = alarm activated.	n/y	n	flag	Ins	
AL	rLO	Controllers disabled by external alarm 0=no resources are disabled 1=disables compressor and defrosting 2=disables compressor, defrosting and fans	0/1/2	0	num	Ins	
AL	AOP	Alarm Output Polarity. Polarity of alarm output: 0 = alarm activated and output disabled; 1 = alarm activated and output enabled.	0/1	1	flag	Ins	
AL	PbA	Configuration of temperature alarms on Pb1 and/or Pb3 probe. 0 = alarm on Pb1 cabinet probe ; 1 = alarm on probe 3 (display); 2 = alarm on probe Pb1 and Pb3 (cabinet and display); 3 = alarm on probe Pb1 and Pb3 (cabinet and display) on external threshold	0/1/2/3	0	num	Ins	
AL	SA3	Alarm Setpoint probe Pb3 (display)	-50...150	50	°C/°F	Ins	
AL	dA3	Alarm differential probe Pb3 (display)	-30.0...30.0	2.0	°C/°F	Ins	
Lit		**LIGHTS AND DIGITAL INPUTS**					
Lit	dSd	Enable light relay on micro door. n = open door does not turn on light; y = open door turns on light (if it was off).	n/y	y	flag	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
Lit	dLt	Deactivation delay (turning off) light relay (cabinet light). The cabinet light remains on for dLt minutes upon door closure if the dSs parameter calls for turning on.	0...31	0	min	Ins	
Lit	OFL	Deactivated light switch always light relay. Enables turning off via cabinet light switch even if delay is activated after closure set by dLt.	n/y	n	flag	Ins	
Lit	dOd	Micro door utilities off. The digital input command (Digital input), programmed as micro door, permits turning off utilities at the opening of he door and restarting upon closure (respect any timing in progress).	n/y	n	flag	Ins	
Lit	dAd	Digital Input activation delay.	0...255	0	min	Ins	
Lit	dOA	Forced behaviour from digital input: 0=no activation; 1=compressor activation; 2=fans activation; 3=compressor and fans enabled	0/1/2/3	0	num	Ins	
Lit	PEA	Enables forced behaviour from door light and/or from external alarm 0=function deactivated; 1=associated to door light; 2=associated to external alarm; 3=associated with door light and external alarm	0/1/2/3	0	num	Ins	
Lit	dCO	Delay in enabling compressor with consensus	0...250	0	min	Ins	
Lit	dFO	Delay in enabling fans with consensus.	0...250	0	min	Ins	
Lin		**LAN**					
Lin	L00	Permits selecting an instrument as Master (0) or Slave (from 1 to 7). Note: For Slaves, use consecutive addresses (for example: 1,2,3; 4,5,6, etc.).	0...7	0	num	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
Lin	L01	Refers only to Master. Number of Slaves in network (from 0 to 7). For Slaves leave value =0	0...7	0	num	Ins	
Lin	L03	Refers to both Master and Slave. Simultaneous/Sequential Defrost. Master: n = sequential; y = simultaneous. Slave: y = accept; n = ignore.	n/y	n	flag	Ins	
Lin	L04	Refers to Slave only. Distributed display. n = the Slave visualizes local values; y = the Slave visualizes Master display.	n/y	y	flag	Ins	
Lin	L05	Refers to both Master and Slave. Master: n = does not require that the Slaves have remote function activated; y = requires the Slaves to have remote function activated. Slave: n = ignores activation of remote functions coming from Master; y = accepts activation of remote functions coming from Master.	n/y	n	flag	Ins	
Lin	L06	Shuts down resources (compressors, fans, etc) at end of defrosting. n=no; y=yes	n/y	y	flag	Ins	
nAd		**NIGHT & DAY** **The following parameters are present in each of the subfiles that can be displayed inside nAd: d0, d1, d2, d3, d4, d5, d6 and Ed.** Please Note: we recommend considering the first day d0 as SUNDAY. 'Ed' allow to programme daily events effective all days of the week					
nAd	E00	Functions enabled during events; 0=control disabled; 1=reduced set point; 2=reduced set point+light; 3=reduced set point+light+aux; 4=instrument off	0...4	0	num	Ins	
nAd	E01	Hours/minutes of start of intervention. Starting from this time, the "NIGHT" mode will be enabled. The duration is determined by E02	0...23/ 0...59	0	hours/ min	Ins	
nAd	E02	Duration of event. Sets the duration of the event that begins at time E01 determined by value E00	0...999	0	hours	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
nAd	E03	Blocking/unblocking daily or holidays defrosting. 0= "work days" defrost sequence defined by parameters dE1...dE8; 1= "festive/holidays" defrost sequence defined by parameters F1...F8. Note: this parameter is ignored for daily event 'Ed'. Defrost is not allowed.	0...1	0	flag	Ins	
PrE		**PRESSURE GAUGE**					
PrE	PEn	Number of errors allowed per maximum/minimum pressure switch input. 0 = disabled.	0...15	10	num	Ins	
PrE	PEI	Minimum/maximum pressure switch error count time	1...99	60	min	Ins	
Add		**COMMUNICATION**					
Add	dEA	Device address in family (valid values from 0 to 14).	0...14	0	num	Usr/Ins	
Add	FAA	Device family (valid values from 0 to 14). The FAA and dEA values represent the network address of the equipment and are indicated in the following format "FF.DD" (where FF=FAA and DD=dEA).	0...14	0	num	Usr/Ins	
Add	bAU	Baudrate. 24=2400 baud; 48=4800 baud; 96=9600 baud;192=19200 baud.	24/.../192	96	num	Ins	
diS		**DISPLAY**					
diS	LOC	LOCk. Setpoint change shutdown. See related paragraph. There is still the possibility to enter into parameters programming and modify these, including the status of this parameter to permit keyboard shutdown. n = no; y = yes.	n/y	n	flag	Usr/Ins	
diS	PA1	PAssword 1. When enabled (value diverse from 0) it constitutes the access key for the User parameters (Usr).	0...250	0	num	Usr/Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
diS	PA2	PAssword 2. When enabled (value diverse from 0) it constitutes the access key for the User parameters (Usr).	0...250	0	num	Ins	
diS	ndt	number display type. Display with decimal point. n = no (only whole numbers); y = yes (visualization with decimal);	n/y	n	flag	Usr/Ins	
diS	CA1	CAlibration 1. Calibration 1. Positive or negative temperature value that is added to that read by probe 1, based on the setting of parameter 'CA".	-12.0...12.0	0	°C/°F	Usr/Ins	
diS	CA2	CAlibration 2. Calibration 2. Positive or negative temperature value that is added to that read by probe 2, based on the setting of parameter 'CA".	-12.0...12.0	0	°C/°F	Usr/Ins	
diS	CA3	CAlibration 3. Calibration 2. Positive or negative temperature value that is added to that read by probe 3, based on the setting of parameter 'CA".	-12.0...12.0	0	°C/°F	Usr/Ins	
diS	CA	CAlibration Intervention. Intervention of offset on display, heating station or both. 0 = modifies only the displayed temperature; 1 = sum with only the temperature used by the controllers and not for the display, which will remain unchanged; 2= sum with the temperature displayed that is also used by controllers.	0/1/2	2	num	Ins	
diS	LdL	Low display Label. Minimum value visualized by the instrument.	-55.0...302	-50.0	°C/°F	Ins	
diS	HdL	High display Label. Maximum value visualized by the instrument.	-55.0...302	140.0	°C/°F	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
diS	ddL	defrost display Lock. Visualization mode during defrost. 0 = visualizes the temperature read by the heating station probe; 1 = shuts down reading of the temperature value detected by the heating station probe at the moment of defrost start and until the next tie the Setpoint value is reached; 2 = visualizes the "deF" label during defrosting and until the next time the Setpoint value is reached (or until the Ldd expires).	0/1/2	1	num	Usr/Ins	
diS	Ldd	Lock defrost disable. Time-out value for display shutdown (dEF label) if reaching the setpoint value should last too long during defrost, or if LAN Master-Slave communication is interrupted (error E7).	0..255	0	min	Usr/Ins	
diS	dro	display read-out. Selection of °C or °F for temperature probe reading visualization. 0 = °C, 1 = °F. PLEASE NOTE: modification of °C to °F or vice versa the setpoint, differential, etc. values will NOT be modified. (for example, set=10°C becomes 10°F).	0/1	0	flag	Usr/Ins	
diS	ddd	Selection of type of value to be displayed. 0 = Setpoint; 1 = Pb1cabinet probe; 2 = Pb2 evaporator probe; 3 = Pb3 display probe.	0/1/2/3	1	num	Ins	
CnF		**CONFIGURATION** **NOTE: It is mandatory to power cycle (switch off and back on) the controller anytime the parameters in CnF folder have been changed to prevent malfunctioning and ensure correct configuration.**					
CnF	H00	Selection of probe type. PTC or NTC. 0 = PTC; 1 = NTC.	0/1	1	flag	Usr/Ins	
CnF	H02	Button activation time, when configured with a second function. For fnc buttons, UP and DOWN configured with a second function (defrost, aux, etc.) sets the rapid activation time of the function. The exception is aux, which has a fixed time of 1 second.	0...15	5	sec	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
CnF	H06	button/input aux/door lights activated with instrument off (but powered)	n/y	y	flag	Ins	
CnF	H08	Operating mode in stand-by. 0= display off; controllers activated, instrument signals possible alarms by reactivating the display; 1= display off and controllers shutdown, including alarms; 2= display visualizes 'OFF'. Controllers shutdown including the alarms.	0/1/2	2	num	Ins	
CnF	H11	Configuration of digital/polarity inputs. 0 = disabled; ± 1 = defrost; ± 2 = reduced set; ± 3 = auxiliary; 4 = door light; ± 5 = external alarm ± 6,8 = not used ; ± 7 = stand-by (ON-OFF); ± 9 = pressure switch. The sign "+" indicates that the input is activated when the contact is closed. The '-' sign indicates that the input is activated when the contact is open.	-9...9	0	num	Ins	
CnF	H12	Configuration of digital/polarity inputs. Same as H11	-9...9	0	num	Ins	
CnF	H21	Digital output configurability (B) 0 = disabled; 1 = compressor; (default); 2 = defrost; 3 = fans; 4 = alarms; 5 = auxiliary; 6 = stand-by; 7 = lights; 8 = buzzer; 9 = Defrost at 2nd evaporator; 10=condenser fans.	0...10	1	num	Ins	
CnF	H22	Digital output (A) configurability Analogue at H21.	0...10	2	num	Ins	
CnF	H23	Digital output (C) configurability Analogue at H21.	0...10	3	num	Ins	
CnF	H24	Digital output (D) configurability Analogue at H21.	0...10	4	num	Ins	
CnF	H25	Configurable buzzer output. 0 = disabled; 8 = enabled; 1-7; 9-10 = not used	0...10	8	num	Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
CnF	H31	Button configurability UP. 0 = disabled; 1 = defrost; 2 = auxiliary; 3 = set reduced; 4-5 = not used; 6 = lights; 7 = stand-by; 8 = not used.	0...8	1	num	Ins	
CnF	H32	DOWN button configurability Same as H31 (0 = disabled; default)	0...8	0	num	Ins	
CnF	H33	fnc button configurability Same as H31 (0 = disabled; default)	0...8	0	num	Ins	
CnF	H40	Enabling inversion of probe 1 and probe 2 0=Pb1 on channel 1, Pb2 on channel 2; 1=Pb1 on channel 2, Pb2 on channel 1	0/1	0	flag	Ins	
CnF	H41	Presence of control probe. n= not present; y= present	n/y	y	flag	Ins	
CnF	H42	Presence of evaporator probe. n= not present; y= present	n/y	y	flag	Ins	
CnF	H43	Display probe configuration. n= not present; y= present (display probe); 2EP= present (2nd evaporator probe).	n/y/2EP	n	num	Ins	
CnF	H45	Input mode of defrosting for dual evaporator 0= Defrosting is enabled exclusively by controlling the temperature of the 1st evaporator so it is lower than parameter dSt, 1 = Defrosting is enabled by controlling so that at least one of the two probes is below its end of defrosting temperature (dSt for the 1st evaporator and dS2 for the 2nd evaporator) 2 = Defrosting is enabled by controlling so that both the probes are below their respective end of defrosting set points (dSt for the 1st evaporator and dS2 for the 2nd evaporator)	0/1/2	1	num	Ins	
CnF	H48	Presence of RTC . n= not present; y= present (Real Time Clock)	n/y	y	flag	Ins	
CnF	rEL	release firmware. Equipment version. Reserved: Read only parameter.	/	/	/	Usr/Ins	

FOL	PAR.	DESCRIPTION	RANGE	DEF.	U.M.	LIV	VAL
CnF	tAb	tAble of parameters. Reserved: Read only parameter.	/	/	/	Usr/Ins	
	PA2	**in the CnF folder you can access level 'Ins' parameters from label PA2 when you enter the correct password by pressing the "set" button**					
FPr		**COPY CARD**					
FPr	UL	Upload. Transfer of parameter map from instrument to Copy Card.	/	/	/	Usr/Ins	
FPr	dL	Download. Transfer of parameter map from Copy Card to Instrument.	/	/	/	Usr/Ins	
FPr	Fr	Formatting. Cancels all data in the Copy Card.	/	/	/	Usr/Ins	
FnC		**FUNCTIONS** **Note: folder visible only at Usr level**	**Function NOT active**		**Function active**		
FnC	SP	Reduced set point	SP*		OSP		
FnC	AoF	Auxiliary	AOF*		AOn		
FnC	rAP	Pressure switch alarm reset	rAP				
		* default					

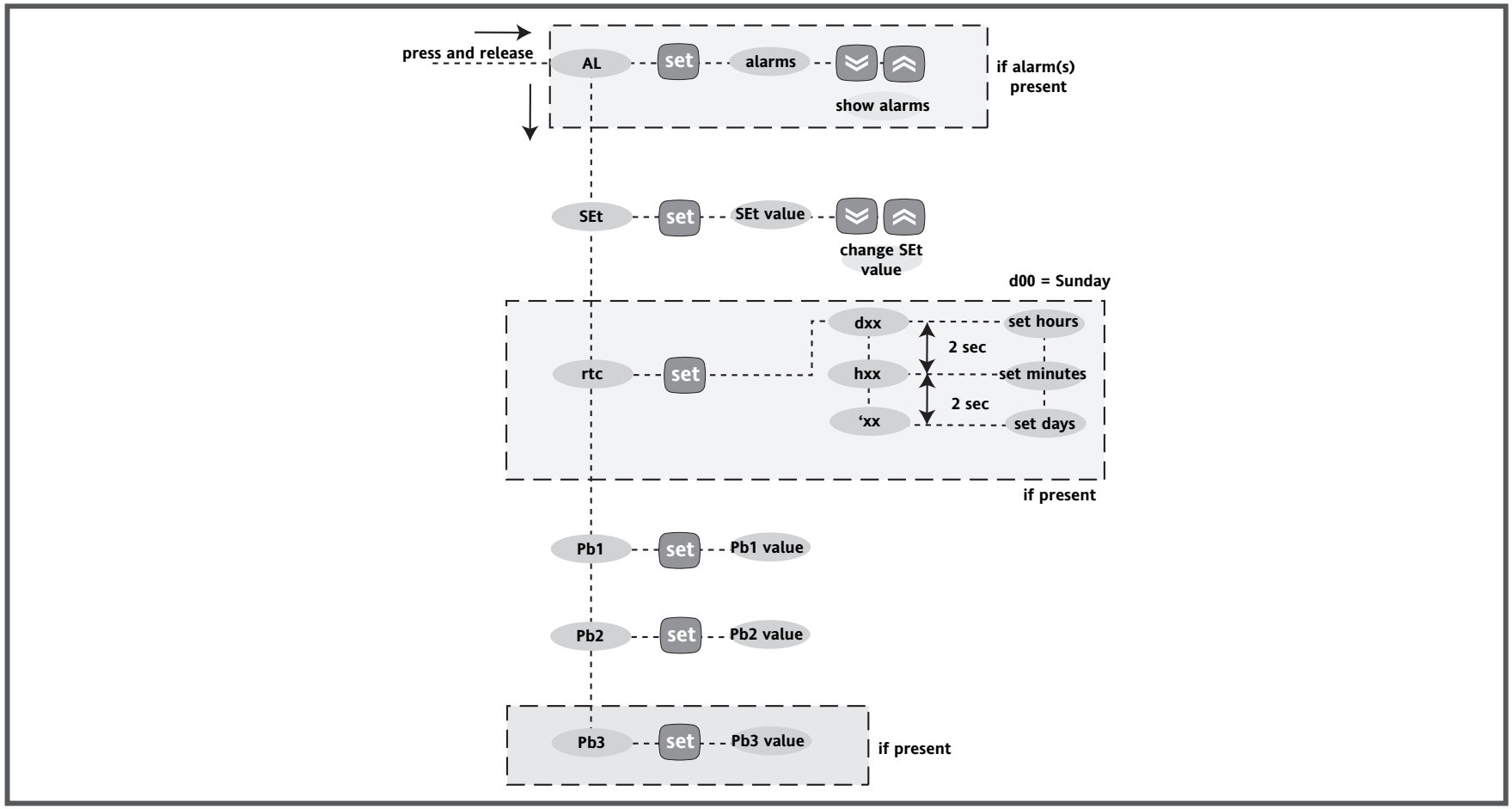
NOTES:

FOL = FOLDER (example: DEF folder includes DEFrost parameters); PAR. = PARAMETER;

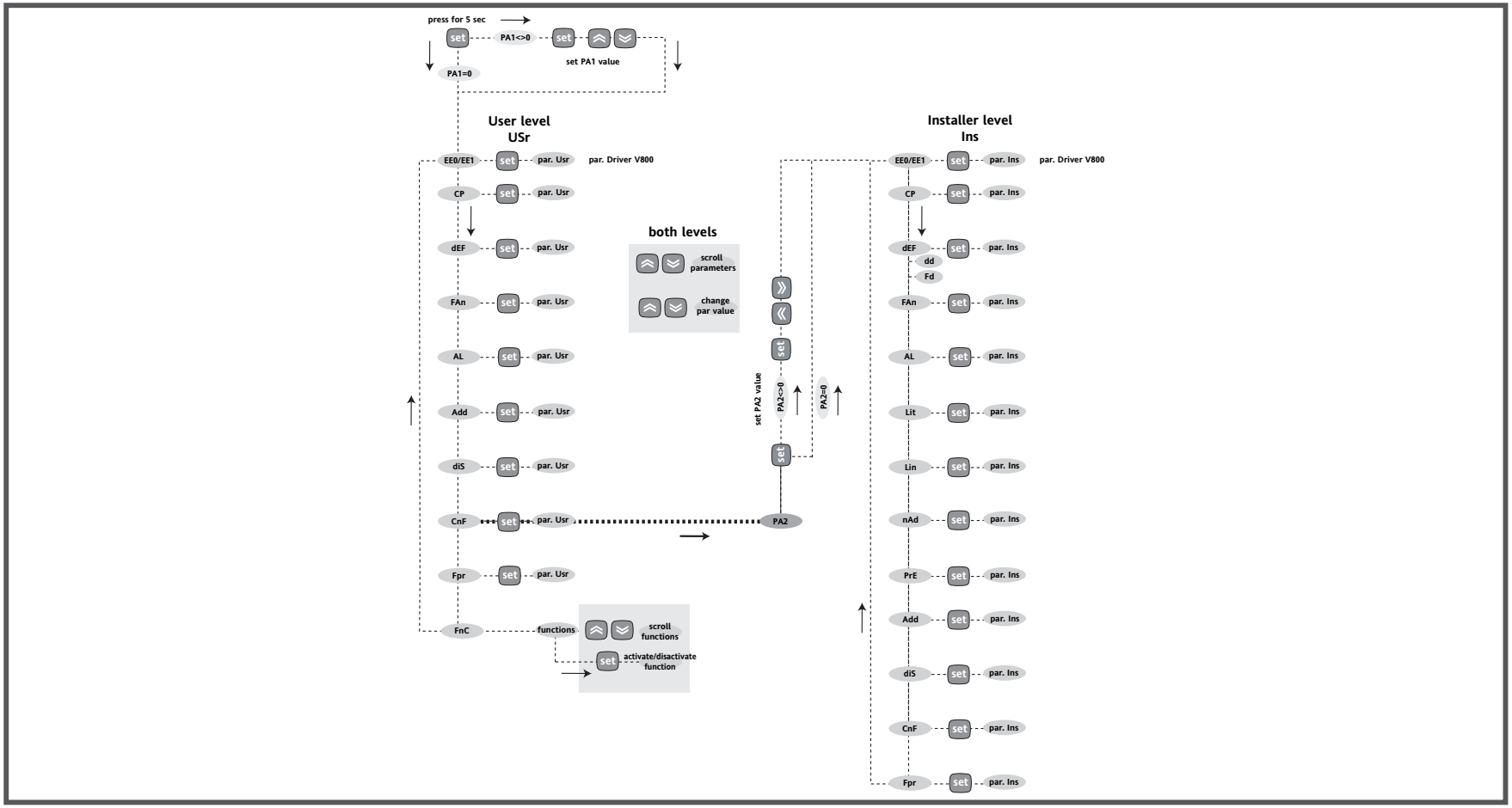
DEF. = DEFAULT; LIV= LEVEL: indicates the visibility level of parameters accessed using a password (see related paragraph)

VAL= VALUE: to be compiled manually by user with any custom settings (if different from default settings)

Menu Status Diagram



Programming Menu Diagram



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