



PRECISION COOLING TECHNOLOGY ENVIRONMENT CONTROL EVO



User Manual **Microprocessor**



USER INTERFACE

The user interface is provided with a graphical LCD display and 6 keys. It allows you to perform all the operations of the program. The user interface allows you to show the operating condition of the unit at any time and change the parameters.



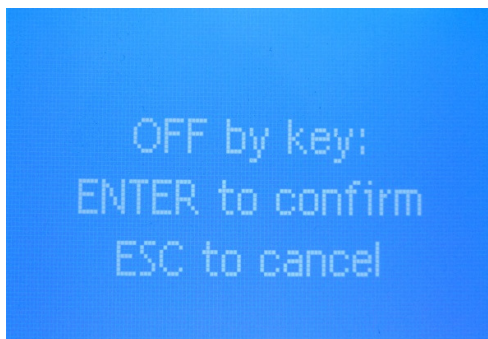
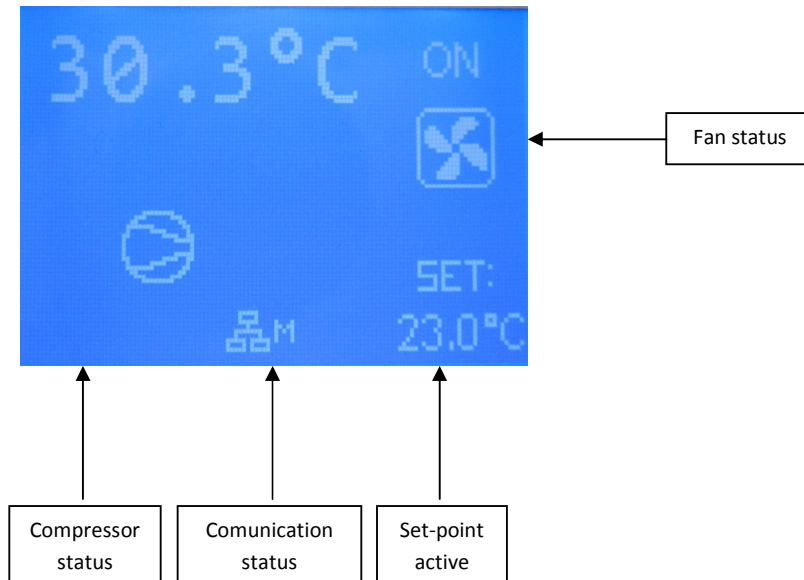
Description of the keyboard

The user interface PGD has 6 buttons and their use is described in the following table.

	Keys	Description
	ALARM key	Press ALARM key to enter the alarm menu.
Esc	PROGRAM key	Press PROGRAM key to enter the main menu where is possible to select the items: MAINTENANCE, PRINTER, INPUT/OUTPUT, CLOCK, SETPOINT, USER, MANUFACTURER
Prg	ESC key	Press ESC key to go out from a menu and come back into the main screen.
	UP key	Press UP key to move into the next screen or to increment the value of a parameter.
	ENTER key	Press ENTER key to move into the next modifiable parameter field and confirm the modification
	DOWN key	Press DOWN key to move into the previous screen or to decrement the value of a parameter.

Navigation on the main menu

To navigate on the main menu use the Up button and the Down button, I report the list of masks:



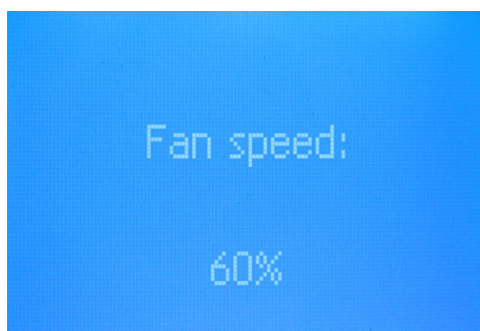
In this screen you can turn off or turn on the unit.



Display of discharge temperature read by the relative probe.



Setting the set temperature required by the plant.



Display of the actual speed of the evaporator fan.

Parameter list

Scr.	Par.	Description	Default	Special value	Range	Um
		Configuration (Password 110)				
C0	1	Unit type	DX		CW / DX / SHELTER	
C1	1	Circuit number	1		1 – 2	
C2	1	Compressor number	1		1 – 2	
C3	1	Compressor type	ON/OFF		ON/OFF – INVERTER	
C4	1	Condensing control	NO		NO – YES	
C5	1	High pressure device presence	YES		NO – YES	
C6	1	Low pressure device presence	NO		NO – YES	
C7	1	Cold water coil presence	NO		NO – YES	
C8	1	Water valve	Only cold		Only cold - One cold/hot - Two cold/hot	
C9	1	Water probe presence	NO		NO – YES	
C10	1	Flooding alarm	NO		NO – YES	
C11	1	Fire/Smoke alarm	NO		NO – YES	
C12	1	Main fan type	Modulating		ON-OFF – Modulating	
C13	1	Heater presence	NO		NO – YES	
C14	1	Outlet probe presence	YES		NO – YES	
C15	1	Humidity probe presence	NO		NO – YES	
C16	1	External probe presence	NO		NO – YES	
C17	1	Control air probe	Board		Board / Display	
C18	1	ON/OFF by digital input	YES		NO – YES	
C19	1	Clogged filter device present	NO		NO – YES	
C20	1	Air flow or thermal switch presence	YES		NO – YES	
C21	1	Humidifier presence	NO		NO – YES	
C22	1	Damper presence	NO		NO – YES	
C23	1	Digital output alarm logic	N.O.		N.O. / N.C.	
C24	1	Summer/Winter selection	Board		Board / Display	
C25	1	Select language	English		Italian / English / Deutsch	
C26	1	Default values reset	NO		NO – YES	
		Regulation (Password 108)				
R0	1	Minimum temperature setpoint limit	15.0		0.0 - 99.0	°C
R1	1	Maximum temperature setpoint limit	38.0		0.0 - 99.0	°C
R2	1	Control type	Proportional		Proportional - Proportional+Integral	
R3	1	Cooling proportional band	3.0		0.0 - 15.0	°C
R4	1	Heating proportional band	3.0		0.0 - 15.0	°C
R5	1	Integral time	90		0 - 999	Second
R6	1	Dead Zone	0.0		0.0 - 15.0	°C

R7	1	Humidity control	YES		NO – YES	
R8	1	Minimum humidity setpoint limit	35		0 - 100	%
R9	1	Maximum humidity setpoint limit	75		0 - 100	%
R10	1	Humidity hysteresis	5		0 - 100	%
R11	1	Modulating fan minimum value	60		0 - 100	%
R12	1	Modulating fan maximum value	60		0 - 100	%
R13	1	Air probe offset	0.0		-99.9 - 99.9	°C
R14	1	Delivery probe offset	0.0		-99.9 - 99.9	°C
R15	1	External air probe offset	0		-99.9 - 99.9	°C
R16	1	Humidity probe offset	0		-50 - 50	%
R17	1	Delivery temperature control	NO		NO – YES	
R18	1	Minimum outlet temperature limit	8		0 - 99.9	°C
R19	1	Minimum outlet temperature limit band	3		0 - 99.9	°C
R20	1	High temperature warning offset	8.0		0.0 – 99.9	°C
R21	1	High temperature alarm offset	10.0		0.0 – 99.9	°C
R22	1	Flooding alarm type	Only signalling		Only signalling – Main fan switch-off	
R23	1	Digital input alarm delay	0		0 - 180	Second
R24	1	Water probe offset	0.0		-99.9 - 99.9	°C
R25	1	Maximum dehumidification offset	2		0.0 - 15.0	°C
R26	1	Low pressure alarm reset type	Semi-automatic		Semi-automatic - Manual	
R27	1	Low pressure alarm start delay	30		0 - 180	Second
R28	1	Low pressure alarm running delay	10		0 - 180	Second
R29	1	Low pressure alarm number of autoreset	3		0 - 10	
R30	1	Condensation control set	18		0 - 50	bar
R31	1	Condensation control offset	5		0 - 20	bar
R32	1	Minimum time compressor on	60		0 - 240	Second
R33	1	Minimum time compressor off	60		0 - 240	Second
R34	1	Minimum time compressor on - compressor on	360		0 - 999	Second
R35	1	Closing liquid solenoid valve offset	5		0 - 50	Second
R36	1	Compressor cut-on Request	20		0 - 100	%
R37	1	Compressor starting speed	40		0 - 100	%
R38	1	Compressor starting time	60		0 - 240	Second
R39	1	Minimum compressor speed	20		0 - 100	%
R40	1	Maximum compressor speed	100		0 - 100	%
R41	1	Maximum operating compressor speed	100		0 - 100	%
R42	1	Dehumidification compressor speed	80		0 - 100	%
R43	1	Envelope control pressure start	28		0 - 99.9	bar
R44	1	Envelope control pressure end	20		0 - 99.9	bar
R45	1	Envelope control decreasing speed	30		0 - 100	%
R46	1	Oil valve opening time	10		0 - 240	Second
R47	1	Oil valve closing time	5		0 - 60	Minutes

		LAN and networks (Password 108)				
S1	1	Master/Slave	None		None / Slave local / Slave by SPV / Master	
S1	2	Protocol	Modbus		Modbus / Konnex	
S1	3	Serial address	0		0 - 255	
S1	4	Baudrate	9600		1200 - 2400 - 4800 - 9600 - 19200 - 38400	

Table of alarms

Table of alarms	
Alarm code	Description
AL001	Flooding alarm
AL002	Digital input alarm
AL003	Air flow or thermal fan alarm
AL004	High temperature alarm
AL005	Inlet air temperature probe alarm
AL006	Outlet air temperature probe alarm
AL007	Inlet water temperature probe alarm
AL008	Humidity probe alarm
AL009	Dirty filter alarm
AL010	High pressure alarm
AL011	Low pressure alarm

RS485 SERIAL VARIABLES – MODBUS RTU PROTOCOL

ONLY READ DIGITAL VARIABLES (INPUT STATUS)

ADDRESS	DESCRIPTION
1	ON/OFF UNIT STATUS
2	CRITICAL ALARM
3	ROOM TEMPERATURE PROBE ALARM
4	WATER TEMPERATURE PROBE ALARM
5	DELIVERY TEMPERATURE PROBE ALARM
6	ROOM HUMIDITY PROBE ALARM
7	AIR FLOW ALARM

8	ALARM BY DIGITAL INPUT
9	FLOODING ALARM
10	HIGH ROOM TEMPERATURE ALARM
11	DIGITAL OUTPUT 1 STATUS
12	DIGITAL OUTPUT 2 STATUS
13	DIGITAL OUTPUT 3 STATUS
14	DIGITAL OUTPUT 4 STATUS
15	DIGITAL OUTPUT 5 STATUS
16	DIGITAL OUTPUT 6 STATUS
17	DIGITAL OUTPUT 7 STATUS

READ/WRITE DIGITAL VARIABLES (COIL STATUS)

ADDRESS	DESCRIPTION
1	UNIT ON/OFF

ONLY READ REGISTER (INPUT REGISTER)

ADDRESS	DESCRIPTION
1	ROOM TEMPERATURE
2	ROOM HUMIDITY
3	WATER TEMPERATURE
4	DELIVERY TEMPERATURE
5	ANALOGUE OUTPUT 1
6	ANALOGUE OUTPUT 2
7	ANALOGUE OUTPUT 3
8	ROOM TEMPERATURE SET ACTIVE
9	HUMIDITY TEMPERATURE SET ACTIVE

READ/WRITE REGISTER (HOLDING REGISTER)

ADDRESS	DESCRIPTION
1	ROOM TEMPERATURE SET
2	ROOM TEMPERATURE SET MINIMUM VALUE
3	ROOM TEMPERATURE SET MAXIMUM VALUE
4	ROOM HUMIDITY SET
5	ROOM HUMIDITY SET MINIMUM VALUE
6	ROOM HUMIDITY SET MAXIMUM VALUE
7	MAIN FAN MODULATING SPEED

COMMUNICATION PARAMETERS

Baudrate: 9600 (default); Format: none parity, 8 data-bit, 1 stop-bit





Tutti i diritti riservati.

Nessuna parte di questa pubblicazione può essere riprodotta senza preventivo permesso scritto da Lennox. Lennox S.p.A. si riserva il diritto di modificare le specifiche ed altre informazioni contenute in questa pubblicazione senza dover fornire notizia preventiva. "In nessun caso Lennox sarà responsabile per ogni danno a cose e/o persone, che sia provocato in modo diretto o indiretto a causa dalle informazioni contenute in questa pubblicazione."