cod. 9IS44036
rel. 12/05 -GB-

ID 961

Electronic controllers for refrigeration units

KEYS & LEDS

UP
Scrolls menu entries
Increases values

DOWN
Scrolls menu entries
Decreases values

fnc
ESC funciton (exit)

set
Accesses menus and the Setpoint
Confirms commands

Compressor
ON for compressor on;
Blinking in case of delay, protection, or blocked enabling;

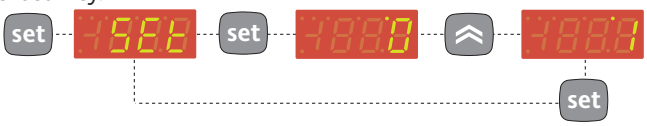
Defrost
ON when defrosting;

Alarm
ON when the alarm is enabled; blinking when the alarm is silenced

MACHINE STATUS MENU - SETTING THE SETPOINT

a) You can access the machine status menu by pressing and releasing the 'set' key. You can use the 'UP' and 'DOWN' keys to scroll through all the folders in the menu in normal conditions, which are:
- SEt: set point setting folder.
- Pb1: probe 1 displaying folder
- Pb3: probe 3 displaying folder

The first label displayed is **SEt**. To display the setpoint value press the 'set' key.



The value of Setpoint appears on the display. To change the Setpoint value, press the 'UP' and 'DOWN' keys within 15 seconds.
If you press the 'set' key again or press the 'fnc' key or a time of 15 seconds elapses, the last value displayed will be saved and the label **SEt** will reappear on the display.

b) To view the temperature value read by the probes, scroll through the menu labels and press the 'set' key corresponding to the desired probe, **Pb1** or **Pb3**.

PROGRAMMING MENU - PASSWORD

The access to the Parameter Programming Menu is restricted by the presence of a password. The PASSWORD is **111**, it is always active and it is possible to access the parameter folders only performing the described procedure:

How to insert the Password:

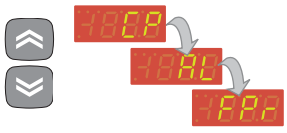
• Access to the programming menu: hold 'set' down for at least 5 seconds. Label **PA1** displays requesting a password

• Use keys 'UP' and 'DOWN' to set the PASSWORD value to **111**, then press 'set'

WARNING! If the password is incorrect, the display will show the **PA1** label again and you will have to repeat the operation.

How to access to programming menu:

• By pressing the 'set' key the display will show the first folder in the menu (e.g. folder **CP**)



• By pressing the 'UP' and 'DOWN' keys you can scroll through all the folders in the programming menu

• By pressing the 'set' key when the selected folder appears (in this example **AL**), the first parameter contained will be displayed. Use the 'UP' and 'DOWN' keys to select the desired parameter.

• Press 'set' to display the value of the selected parameter and 'UP' and 'DOWN' to modify the value.

Once you have pressed the 'set' key (or 15 seconds has elapsed), the new value will appear and the display will show the value of the corresponding parameter.

COPY CARD

How to use the 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). Upload (**UL** label), download (**dL** label) and copy card formatting (**Fr** label) operations are performed in the following way:

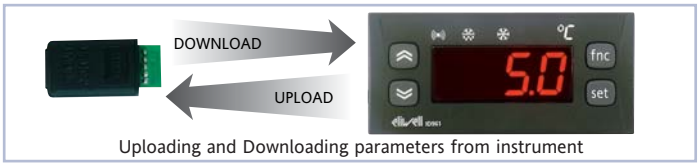
• The **FPr** folder contains the command needed to use the Copy Card. Press 'set' to access the functions.

• Use the 'UP' and 'DOWN' buttons to display the required function. Press the 'set' to perform uploading (or downloading).

• If the operation is successful **y** will be displayed, if it is not, **n** will be displayed.

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



Uploading and Downloading parameters from instrument

NOTE:
• After downloading, the instrument will work with the parameter map settings that have just been downloaded.
• **see** "FPr folder" in Parameter Table and Description of parameters

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

ALARMS

Label	Alarm	Cause	Effects	Resolving problems
E1	Probe 1 faulty (cell)	• measuring of values outside the nominal reading range • control probe faulty/shorted/open probe	• "E1" label appears on display;	• check the probe wiring • replace the probe
E3	Probe 3 faulty (condenser)	• Analogous to E1	• "E3" label appears on display;	• check the probe wiring • replace the probe
COH	High condenser temperature	• Active when condensation temperature higher than 70°C	• Compressor turning off; • Activation of buzzer; • "COH" label appears on display;	• When the condensation temperature returns under a value of 60°C the buzzer is deactivated. •Turn the device off and then on again when temperature is lower than 60°C (see COH diagram)

COH ALARM DIAGRAM

The alarm is enabled when the condensation probe, i.e. probe 3 (event A), reads a temperature value above 70°C.
The enabling of the alarm causes the compressor to immediatly switch OFF, the buzzer to enable and the COH label to be displayed.
The effects of the COH alarm continue to be present even if the temperature falls below 70°C.
The buzzer disables only when the temperature falls below 60°C.
To restart the compressor and cancel the COH alarm from the display, it is instead necessary to switch the device ON and OFF (provided that the condensation temperature is below 60°C).

Between A and B events:
• The compressor switches OFF
• The buzzer enables
• The COH label is displayed

After event B:
• The compressor continues to be OFF until the device is switched OFF and ON
• The buzzer disables
• The COH label is displayed until device is switched OFF and ON

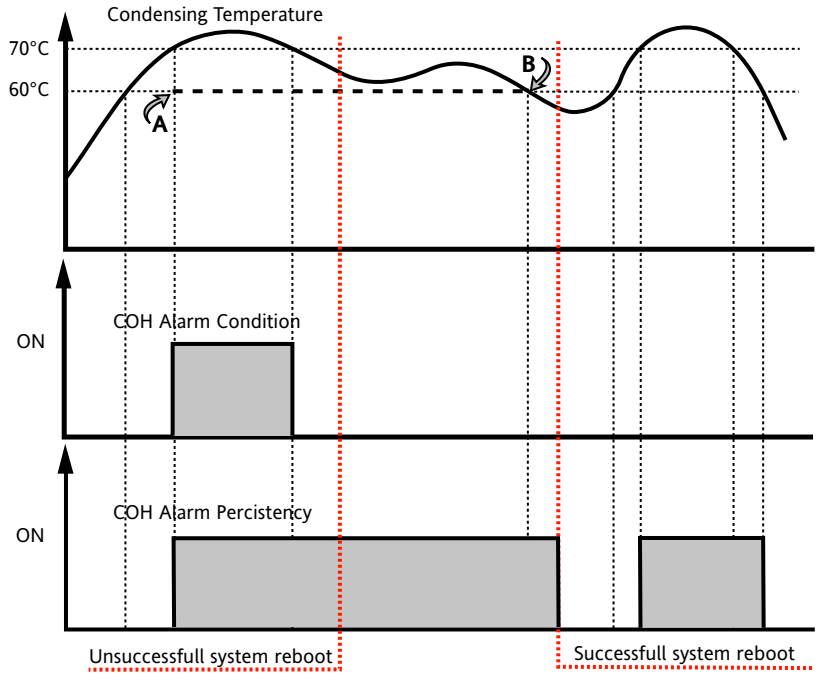


TABLE OF PARAMETERS

	PAR.	RANGE	DEFAULT	U.M.
	SEt	LSE...HSE	-2.0	°C/°F
CP label	dIF	-0.1...30.0	0.1	°C/°F
	HSE	LSE...302	1.0	°C/°F
	LSE	LSE...302	-4.0	°C/°F
AL label	SA3	-50.0...150.0	70.0	°C/°F
	dA3	-30.0...30.0	10.0	°C/°F
FPr label	UL	/	/	/
	dL	/	/	/
	Fr	/	/	/

DESCRIPTION OF PARAMETERS

COMPRESSOR CONTROL (folder with label "CP")

dIF Compressor relay activation differential: the compressor stops on reaching the Setpoint value (as indicated by the adjustment probe) and restarts at a temperature value equal to the Setpoint plus the value of the differential.
Note: the value 0 cannot be assumed.

HSE Maximum possible setpoint value.

LSE Minimum possible setpoint value.

ALARMS (folder with label "AL")

SA3 Probe 3 alarm set point

dA3 Probe 3 alarm differential

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

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

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

Fr Format. Erasing all parameters in the key.

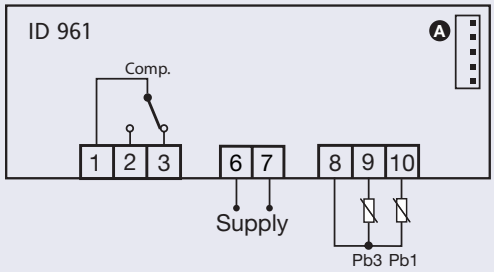
PLEASE NOTE: using the "Fr" parameter (key formatting) results in permanent loss of data inserted in key. The operation cannot be cancelled.

DISCLAIMER

TECHNICAL DATA — ID 961

Front protection	IP65
Casing	PC+ABS plastic resin body PC+ABS UL94 V-0, polycarbonate front, thermoplastic resin buttons
Dimensions	front keypad 74x32mm, depth 59mm (terminals excluded)
Mounting	each panel with drilling template 71x29mm (+0.2/-0.1mm)
Usage temperature	-5°C...55°C
Storage temperature	-30°C...85°C
Usage and storage environment humidity	10...90% RH (non-condensing)
Display range	NTC: -50...110°C (-58...230°F) on display 3 and a half digits and sign
Analog inputs	2 NTC type inputs
Digital outputs	1 SPDT 8(3)A 1/2 hp 250 V~
Serial	TTL for Copy Card connection
Buzzer output	YES
Measurement range	from -50 to 110°C
Accuracy	better than 0.5% of full-scale +1 digit.
Resolution	0.1°C (0.1°F up to +199.9°F; then 1°F)
Consumption	3 VA
Power supply	230 V~ 10% 50/60 Hz.

WIRING DIAGRAM



Wiring	
1 - 2	N.A. compressor relay
1 - 3	N.C. compressor relay
6 - 7	Power **Supply 230V~**
8 - 9	Probe **Pb3** input
8 - 10	Probe **Pb1** input
A	TTL input for Copy Card

The technical characteristics in this document concerning measurements (range, accuracy, resolution, etc.) refer to the instrument in the strictest sense and not to any accessories provided such as probes, for example. This means, for example, that an error introduced by the probe is added to any error that is typical of the instrument.

ELECTRICAL CONNECTIONS

Caution! 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 instrument label.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. The sensor has no connection polarity and can be extended using an ordinary bipolar cable (note that extending the probe may affect 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.

MECHANICAL ASSEMBLY

The unit has been designed for panel-mounting: Drill a 29x71 mm hole, insert a tool and fix it in place with the brackets provided. Do not assemble the instrument in excessively humid or dirty locations since it is designed to be used in locations with normal levels of pollution.
Always make sure that the area next to the cooling openings of the tool is adequately ventilated.

CONDITIONS OF USE

PERMITTED USE
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 integrated as regards its construction;
• as a 1 B type operated control device as regards its automatic operating features;
• as a Class A device in relation to the category and structure of the software.

UNPERMITTED USE
The use of the unit for applications other than those described above is forbidden.
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 shall not be liable for any 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 proper 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.

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