

Use and maintenance manual of the automatic temperature recording system
approved by D.M. 8/7/1997 n ° 552138 and subsequent modification.
Conforms to the EN12830 normative.

REC96-T3



MADE SISTEMI

Attention !
Keep the manual
on board the vehicle

NOTE

Introduction

ATTENTION: This manual is to be considered an integral part of the temperature monitor and recorder REC96-T3. As indicated by the regulation DM 493 of 25/09/95 (abrogated) it must remain with the instrument and in the case of theft or loss the user must contact the producer or authorized dealer immediately to receive a substitute copy.

The absence of this manual or non observance of these regulations shall result in the invalidation of the guarantee.

The purpose of this manual is to prepare the user for correct usage of the instrument and possible devices connected to it.

It also contains the instructions for installation and regular maintenance and periodic revision as required by the norm EN 13486.

The temperature recorder REC96-T3 is certified to:

- EN 12830: Temperature recorders for the transport, storage and distribution of chilled, frozen, deep-frozen food and ice cream

The temperature recorder REC96-T3 is compliant to:

- EN 13486: Temperature recorders for the transport, storage and distribution of chilled,
- HACCP : Hazard analysis and critical control points
- WELMEC 7.2 : Issue 5 (point 4) Fundamental requests for measuring instruments with internal software (type P)



Technical characteristics

Power Supply	09/32 VDC	
Absorbed current (while not printing V=12.6)	35 mA	
Absorbed current (during printing V=12.6)	350 mA	
Absorbed current (during printing V=12.6 - Peak – Density 50%)	0,8 A	
Printing speed	2 lps	
Sensor connected (mod. PT100 with 3 wire)	3	
Back-lit LCD Screen	16 x 2 carat.	
Measurement cycles interval	1, 5, 10, 15, 20, 30, 60 min	
Memory	32000 x 2 byte	
Resolution	0.1 °C	
Division displayed	0.5 °C	
Precision (-30 / + 30 °C)	± 0.5 °C	
Accuracy class	1	
Designation EN12830	TB1 -59,5 +59,5	
Thermostat alarm threshold (-15°C pre-adjusted)	-59 / +59 °C	
Thermostat alarm activation delay (10 sec. pre-adjusted)	0 / 60 min.	
Clock precision	< 0.004 %	
Response time	120 sec.	
Field of use	- 40 / + 80 °C	
Field of recording	-59,5 / +59,5 °C	
Protection rating sensor	68 IP	
	Mod. C	Mod. E
Protection rating REC96-T3	20	65
Physical dimensions	186 x 56 x 113	230 x 200 x 117
Weight	2400	2700
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Instructions necessary for use

Introduction

We are very grateful that you have chosen our digital temperature monitor and recorder. Your appliance is produced according to the strictest quality criteria.

REC96-T3 is designed as an automatic digital temperature reading and recording system in the range of between -59.5 and +59.5 °C

REC96-T3 is equipped with a backlight 16 x 2 LCD screen displaying the temperatures read with a division of 0.5 °C in addition to the current date and time.

It can be equipped with a tiny remote alarm repeater or a GSM-GPRS device for data transmission and/or alarm message transmission through the net. The connection to GPRS, GPS and satellitare module is independent from the local data download allowing a complete autonomy or adaption of the service. It can be associated to a bluetooth module to manage the stored data and for a remote control of the recorder.

Identification of the REC96-T3 is tied to a unique and not modifiable 8 characters internal code. It's possible to set others recognitions of the device like "Heading" , "Operator" and "Vehicle".

REC96-T3 is equipped with 3 temperature channels and 2 digital inputs for the service control. The stored data are preserved until the exhaustion of the memory. The new data will be limited to cancel the first inserted ones.

The internal printer (not present in -NP version) uses cellulose paper to get a better storage of the printout document.

The print functions have been particularly facilitated. By a careful analysis of the needed service, it is possible to get the printout of the desired data with the push of only a button.

The model "C" have a natural installation in the STANDARD ISO RADIO size, but are available ulterior accessories to fix the thermorecorder to a wall, while the model "E" is developed to be positioned outside of the refrigerator cell by the accessories supplied.

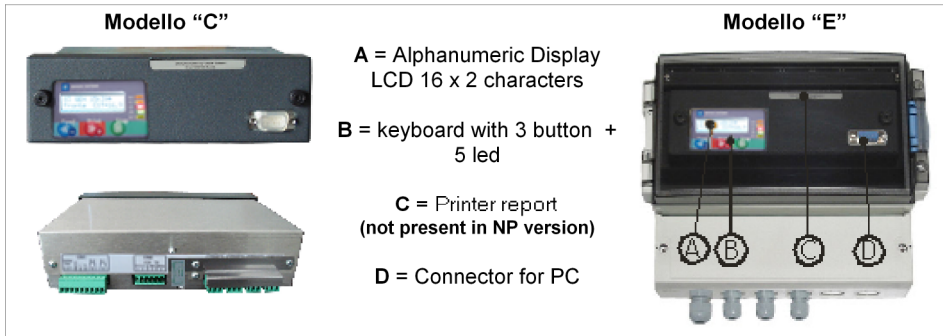
The system is already laboratory set, therefore no adjustment interventions are needed before use.

The recorder is equipped with a self-calibration system enabling calibration compensating work temperature variations of the equipment and variations in the length of the sensor cables. Nevertheless, calibration interventions as given in the chapter "ordinary maintenance", are essential every two years.

REC96-T3 incorporates a module with dot mechanism printer that uses normal cellulose paper for a longer conservation of printer reports.

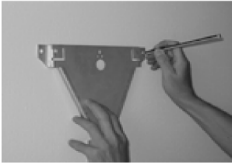
View ed installation

2.1 - View of device



2.2 - Central positioning and removing

All the following operations of installation of REC96-T3 must be done by technical assistance personnel. Before starting the installation check that the device is in working order by doing at least one temperature reading test and a printout of the stored data and lastly check for the warranty seal (pict.2).

Model ICI	Model IEI
The first operation is to fix the support to the vehicle dashboard in the proper place, bending the upper, lower and lateral internal tabs towards the outside of the support. At this point insert the device inside it until to hear a fixing clickl.  To remove the thermorecorder, to take away the front panel from the device and to insert the 2 keys between the body of the instrument and the support (side pict.) After the complete insertion of the keys pull out the thermorecorder.  keys	As a first step, use the supplied fixing bracket to mark the fixing points of the wall plugs.  Then fix the bracket to the rear of the thermorecorder, using the 4 screws supplied.  At last to fix the thermorecorder to the wall 

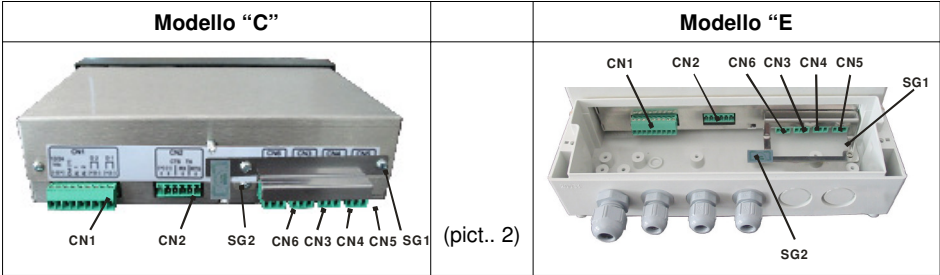
2.3 Connections

2.3.1 - Sensors and power supply connection

Correct power supply will be shown by lighting up of the backlight of the LCD screen. Each time the appliance is power supplied, it starts a self-diagnostic sequence to check correct operation of the internal elements. In case of malfunction it blocks, signalling fault status. Once installed, the power supply must never be disconnected. As temporary power returns, the display will once again indicate the temperatures read and recording will continue in a regular manner without to loose the recorded data.

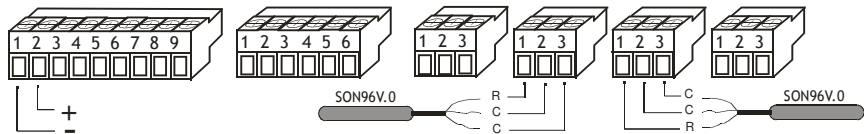
N.B: In optimal conditions, the Ram battery provides at least 2 years' holding capacity in absence of supply.

In pict. 2/B is indicated how to realize the power connection to the device. The minimum diameter of the cable to use is 0.5 mm.



CN1= Supply connector and output/input CN2 = GPRS-GPS module connector CN3= Sensor 1 connector CN4= Sensor 2 connector	CN5= Sensor 3 connector CN6= not connected SG1= Antitampering seal SG2= Warranty seal
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n°	CN1	CN2	CN3	CN4	CN5	CN6
1	Negative	Positive	Resistor	Resistor	Not conn.	Not conn.
2	Positive	Negative	Common	Common	Not conn.	Not conn.
3	Out (+)	CTS	Common	Common	Not conn.	Not conn.
4	Alarm 1	RX				
5	Alarm 2	TX				
6	Input 1 (+)	RTS				
7	Input 1 (-)					
8	Input 2 (+)					
9	Input 2 (-)					



Pict 2/B

The sensors must never be disconnected from the temperature recorder. If that happens the written SNC will be visualized. The reset procedure must be carefully followed keeping in mind the regulations for measurement equipment.

If the temperature read exceeds the measurement limits +/- OUT will be displayed. With the same text the events will be stored in memory.

Sensor technical characteristics are given in the chapter "Connected or compatible equipment and devices".

It's advised to insert a fusible along the supply cable like show in picture 3.

2.2.2 - Repeater connection

In order to obtain connection of the LED 00/01 repeaters to the REC96-T3, carry out connection as show in pict. 3.

2.2.3 Digital input D1 "Porta"

The digital input D1 is reserved for record and control of the state of a magnetic contact (normally close) installed on the main door of the refrigerator.

Brief opening (major of 1.5 msec.) are not left out but temporarily accumulated and then stored as a single event at the end of logging in progress. The port status is obviously displayed on the display or printed on the documents produced with a special symbol and / or text. The door can generate an acoustic/light alarm and send a text message if programmed to do. Illustrated connection to Fig. 3

2.2.4 Digital input D2 "Aux"

The digital input D2 can be configured in four ways:

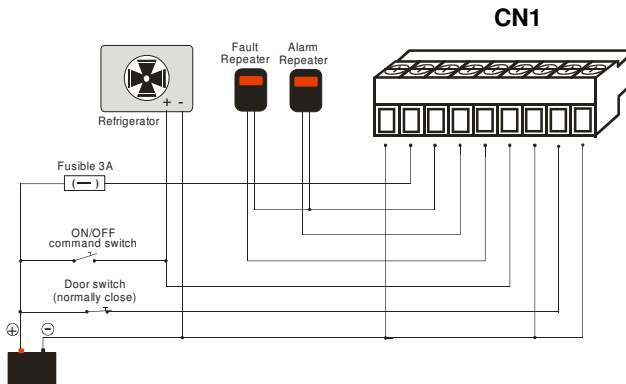
1) Command "ON / OFF fridge": If the command is used, the recorder must remain permanently powered

NOTE: If you are not connected automatically ignored the first power of the recorder. Follow the diagram in Figure 3. for the connections. Refer to chapter "Autostart and ExtraTime" for a detailed description of the service

2) Command "defroster": The presence of a voltage > 8 Vdc on command D2 (input2) indicates that there is an active defrost cycle. Even short defrost cycles are not left out but temporarily accumulated and then stored as a single event at the end of logging in progress. The viewing and printing are produced event with a special symbol and / or text. Illustrated connection to pict. 3

3) Command "side door": see paragraph 2.2.3 (digital input D1)

4) Command "Services": see paragraph 2.2.4 (digital input D2)

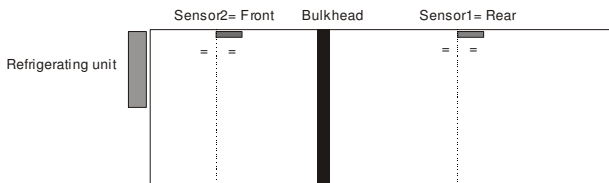


pict.3

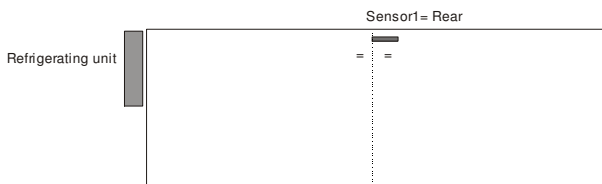
2.3 – Sensor Installation

Installation method for the sensor of the temperature recorder REC96-T3 following the regulation D.M. 493 of 25/09/95 (abrogated)

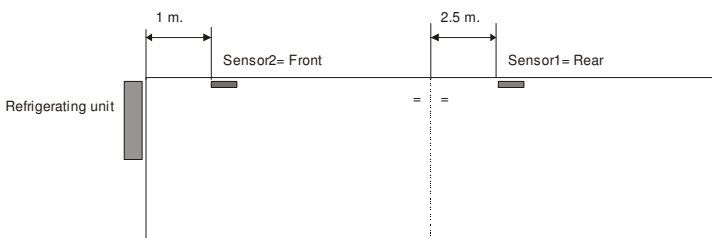
Refrigerator cell with bulkhead



Length of refrigerator cell less than 10 m.



Length of refrigerator cell more than 10 m.



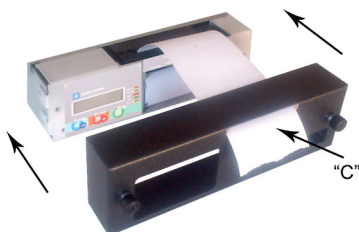
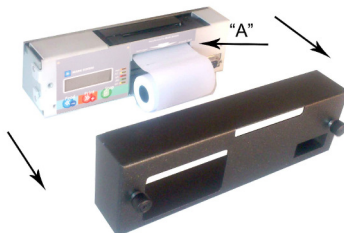
General precautions on sensor installation:

- Do not place sensors in direct contact with walls.
- Avoid objects being placed between the air outlet of the evaporator and the sensor.
- Position the sensor's most sensitive side (metallic side) toward the refrigerating unit.

2.4 – Paper loading

Remove front panel and insert the paper in slot "A".

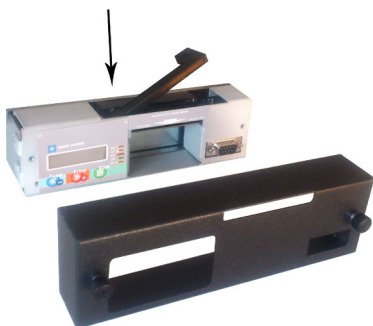
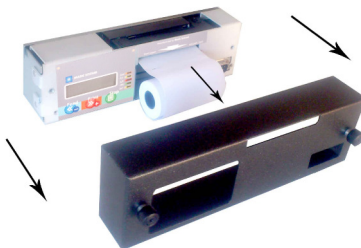
Press the ◀ button to make the paper advance until there is about 10 cm. coming out of the upper slot..



Insert paper into slot "C" and replace the panel in its original position. Cut off excess paper. (for further details on "Paper feed" see Chapter 6)

2.5 – Printer ribbon replacement

Remove front panel and roll of paper.



Press where shown by the arrow.

("PUSH" is written on the ribbon)

Put the new ribbon in the same position as the former.

Before replacing the roll of paper, turn on the temperature recorder and press the ◀ button for paper feed for about 10 sec. to tighten the ribbon.

After this replace the roll of paper.

Maintenance

This chapter provides information regarding necessary maintenance on the equipment and advice on preventing inconveniences.

3.1 - Ordinary maintenance

Every two years, starting from the date of initial installation, it is advisable to carry out a periodical check of the instrument and the sensor provided with it. Assessment of system conformity can be carried out by the manufacturer or by an authorised technical workshop. The periodical checks concern functionality tests and calibration of the measuring instrument and the relative sensors. The periodical check is certified by a sticker giving the name of the manufacturer or the workshop that carried it out.

3.2 - Extraordinary maintenance

The data relative to measurements carried out are stored in a lithium Ram memory battery for at least two years also in absence of external supply. The configuration data and the clock are stored in the Timekeeper memory which has its own battery with a typical life of five years.

Therefore, it is advisable to systematically replace the battery and the timekeeper after this period. The above mentioned operations for replacing parts or accessories coupled to the REC96-T3 must be carried out by technical service personnel. Eventual faults or anomalies in the system are signalled on the display with the wordings given in the chapter "Troubleshooting".

FUNCTIONS

User menu

This chapter deals with the various functions available to the user for using the REC96-T3. The calibration parameters of the instrument can only be modified by the Manufacturer.

Customer access: The user menu is accessed by keeping the key  pressed for a few seconds, after which the following wording appears "Print Data". Subsequently to push the key  or  to catch the desired menu and to push  to select it.

In the main menu, if no key is pressed, the system will be automatically restarted after 8 sec. while in the user menu the restart time is 20 sec. In case of programming error it is not possible to restore previous parameters or make parameters.

Access with Password (where required): after performing the "**Customer access:**" procedure, enter the password. (default: 0000)

4.2 - Print stored data (PRINT DATA)

Menu to print the mission data. The printout request resolution is daily.

To enter in this section to execute the procedure "**Customer access**".

To select the start day through the keys  or  and push the key . To repeat the operation to set finish day. Subsequently the keys  or  will be used to reproduce a printout in text or graphic mode and with forward or backward. A final selection "Sector", allows you to print only the desired channels.

N.B.: In all the cases  it does not identify a choice, will be considered pre-adjusted mode.

N.B: In graphic mode the first day printed will be the most recent.

N.B.: Push for 2 sec. the key  to stop the printout.

At the end of the report are printed the "Remarks" or "Note" only if present

4.2 - Alarm regulation (ALARM SET)

To enter in this section to execute the procedure "**Customer access**".

- 1) "Acoustic" : Management of internal bell.
- 2) "Monocompart": Simultaneous management of the 3 thermostats.
- 3) "C1 (Front)" : Thermostat channel 1 management.
- 4) "C2 (Center)" : Thermostat channel 2 management.
- 5) "C3 (Rear)": Thermostat channel 3 management.
- 6) "Activ Delay" : Timer (between 0 and 60 min.) before the thermostat activation.
- 7) "Int. Delay" : Initial timer of 30 min. before the thermostat activation.
- 8) "Alarm Events" : Activation of the internal bell and/or SMS sending for events associated to digital inputs.

The thermostat threshold can be set in "Manual", in the interval between -59°C and +59°C or pre-set in the following band:

Bands	Temp. max	Temp. min
Frozen	-15 °C	-35 °C
Refrigerated	-7 °C	-10 °C
Chilled	+4 °C	-1 °C
Aired	+35 °C	0 °C

NOTE: The thermostats are excludable.

NOTE: In the case that the internal ringer is enabled it will be possible to turn it off by pressing one of the 3 keys on the front panel. This operation will not turn off the repeater remote. By using the appropriate software (available from dealers) you can not activate the alarm system failure on this alarm. It isn't possible to turn off the remote alarm if it's set like alarm repeater. The internal and remote turned off is cancelled every time will exit from a menu or the system will be restarted. There is an automatic internal turned off alarm after a time-out of 5 minutes. The ringer is always enabled for fault alarm.

4.3 - Display stored data (VIEW DATA)

To enter in this section to execute the procedure "**Customer access**".

This only displays the stored data and the last 15 remarks events, if present, on the screen.

Search resolution is daily for the data stored in "(+) Historic".

With the presence of at least one anomaly it is enabled the option "(-) Fault".

Approaching to the "Fault" archives is possible to reset the yellow led "FLT" only if the anomaly is not running. "Enn Res (+)". (Enn = alarm code, see fault table). For the data stored in "historic" the search resolution is daily.

To select the desired day through the keys ◀ or ▶ and then push the key .

To start the consultation press on the keys ◀ or ▶. The stored data will be displayed in relation to the recording interval chosen. If the key ◀ or ▶ is held pressed for more then one second, will begin an automatic scroll of the stored data with an continuous increase advance speed.

When the display data vision is finished to press the key  to exit from the menu.

Note: The fault menu is showed and enabled only if one anomaly is happened. In this case is activate the memory reset option that power off the yellow blinking led and to send the event in a circular code of max 8 faults with own hour-date, progressive number and alarm code. The fault logger can be deleted only from authorized dealer. With repeated events of different kind, all are stored but only the last is displayed to reset.

4.4 – Options

To enter in this section to execute the procedure "**Customer access**".

Note: with the function "Mission" on running is possible to log into only to menu "Language", "Contrast" and "Brightness".

4.4.1 - Direct print configuration (DEF.PRINT.K)

List of commands which allow to execute a printout by pressing only the key ► (Print). There are 4 different kind of direct printout. The printout profile is completed with the Stile, in "Text" or "Graphic" and with the direction "Forward" or "Backward". It's possible to print only a single channel by choosing "Sector".

- **Print mission:** In the "mission" mode the data stored from the marker "beginning of mission" to now are printed. This marker is set by a print operation.
- **Print last period:** In the "Last period" mode all data stored in a period from 3 hours to 21 days is printed. The value is adjustable from the keyboard.
- **Print from last ON:** In the "Last On" mode all data stored since the last time the instrument or the refrigeration unit was turned to now are printed..
- **Print Delivery ticket:** In the "Delivery" mode the temperature at the time of request is printed. Alternatively it is possible to request a "log print" in which the last 51 deliveries are indicated.

4.4.2 - Language selection (SET LANGUAGE)

The choice can be made between 5 language: "Italiano", "English", Française", Deutsch", "Espanol".

All the texts show on the display, printout or SMS will be translated in the language chosen with the exception of the 12 characters used as Operator and Vehicle.

4.4.3 - Brightness

It allows to set the intensity of the backlight in 15 levels. The submenu "TmrLed" enables the timer for the automatic turn off.

4.4.4 - Contrast

It allows to set the viewing angle in 15 steps between +30° and -30°.

4.4.5 – Operator

When accessing this menu to enter another identification code with a maximum of 12 characters. The operator is evidenced in each printout, data download or SMS service.

The keys ◀ or ▶ allows to search the desired character, while the key  is used to accept the made choice. After insertion of twelfth character press "(Save) (+) (▶)".

4.4.6 – Vehicle

To enter in this section to execute the procedure “**Access with Password**”.

Accessing this menu to enter another identification code with a maximum of 12 characters.

The operator is evidenced in each printout, data download or SMS service. The change of this code causes memory deletion.

4.4.7 – Doc. heading

To enter in this section to execute the procedure “**Access with Password**”.

When accessing this menu to enter another identification code with a maximum of 12 characters.

The heading is evidenced in the head of each printout. If changed from PC is possible to insert until 16 characters.

4.4.8 – Scan time

To enter in this section to execute the procedure “**Access with Password**”.

Access this menu to change the recording interval. The keys ◀ or ▶ allows to change the value, while the key  is used to accept the made choice. See “Recording frequency and memory capacity for more information. The change of this value causes memory deletion.

4.4.9 – Set clock

To enter in this section to execute the procedure “**Access with Password**”.

In this menu is possible to update the clock of the thermorecorder. The procedure can be done only one in a day. Here it is also possible to set the automatic daylight saving and the correct time slot (WEST CEST EEST).

4.4.10 – Password

To enter in this section to execute the procedure “**Access with Password**”.

Access this menu to change the password to protected menu. The keys ◀ or ▶ allows to change the value, while the key  is used to accept the made choice. After insertion of fourth character press "(Save) (+) (▶)". In the following step can be enabled the password to access from remote too.

4.4.11 – Inputs

To enter in this section to execute the procedure “**Access with Password**”.

Use this menu to enable or disable the temperature and digital channels. To each channel is possible to associate a text (selectable within 8 pre-memorized) that indicate the position of the sensor. For a best explain of the service see chapter 2,3,3 and 2,3,4

The digital input D2, if configured as “Refrig” or “Defrost” causes only a indication on the display, while if it is configured as “Sd.Door” or “Service” enabled the alarm and the SMS sending. All the indications of D1 and D2 are recorded and only the modification of D1 (like Sd.Door or Service causes the memory deletion. All the inputs produce an local alarm with exception of D1 if configured as “Refrig/Defrost”

4.4.12 – Communication port (Comm. Port)

To enter in this section to execute the procedure “**Access with Password**”.

Access this menu to set the protocol of communication when a device (Bluetooth or GSM) is connected to the auxiliary serial port.

4.8 – SMS Service

This menu is visible only if GSM service has been activated with the specific software. This allows SMS messages to be sent through the net (if connected to the optional GSM device). Please read the specific user manual for further details.

GSM

Management of a GSM device to send SMS messages for alarm signals and/or data storage.

Characteristics of GSM service:

1. Outgoing telephone numbers (to send SMS): 3 (programmable from PC)
2. PIN code: programmable with a PC
3. Send SMS for thermostat alarm: to be activated with a PC
4. Send SMS for registration each scan time: to be activated with a PC
5. Send SMS for machine failure REC96-T3
6. Management of pending SMS (until new event) and line check for GSM presence, every 30 sec.
7. CALL CENTER service to download data and/or service configuration
8. SMS receiving to service configuration and status request.

Paper feed

By pressing the ◀ (Feed) button for about 2 seconds the paper feeds for as long as the button is pressed.

Recording frequency and memory capacity

In according with the norm EN12830 which imposes the data's conservation for at least one year, it is opportune to remember that the data download must be made within the number of day indicated in the table in relation to the recording interval chosen.

Recording interval	n° days in memory
1 min	21 days
5 min	111 days
10 min	221 days
15 min	329 days
20 min	435 days
30 min *	640 days
60 min *	1211 days

* = Do not available if the thermorecorder is in 92/1/CEE configuration.(abrogated)

NB: The memory dimension is calculated in not following day too.

After the period indicate in the table the new acquired data will delete progressively the older ones. To note that with an interval of 20 - 30 - 60 min. the memory will contain more then one year of data.

NB: The recording interval must be chosen in relation to the travel's duration, in according with the table extracted from norm EN12830

Recording interval	Travel's duration
5 min	<= 1 day
15 min	<= 7 days
20 / 30 min	> 7 days

The change of recording interval is followed to a complete cancellation of the data memory, therefore is necessary to download data memory before to change value.

Autostart and ExtraTime

The thermorecorder is equipped of a command called "AUTOSTART" used to optimise the data memory when the device is always turned on and the alarm management during operative phases or parking.

By connecting the command to the refrigeration unit it is possible to start the thermorecorder and to enable the alarms at the same time of the unit power on.

When the refrigerator unit is 'ON' will be displayed the icon  near the vehicle icon, instantaneously recording will restart and the thermostat alarms and the SMS service will be enabled.

When the refrigerator unit is 'OFF' will be displayed the icon  near the vehicle and it starts a countdown of 240 min. When it expires, if the refrigerator unit is OFF, the recording will be stopped, the alarm thermostat and the SMS service disabled (if ACTIVE) showing the text "Stop regist" on the display. In stop condition the direct print command is disabled, while the customer menu is enabled.

To restart immediately the recording press the red key " ► PRINT" for more than 2 seconds.

NB: All fault alarm are always enabled.

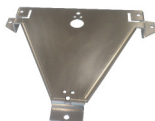
NB: AUTOSTART command is optional, and if not used will be automatically ignored at the first thermorecorder power on. The command is re-enabled if is connected to a working unit for more then one second.

CONNECTED OR COMPATIBLE EQUIPMENT OR DEVICES

This chapter provides information regarding eventual equipment that can be connected to the REC96-T3.

All the following equipment must be installed by technical assistance personnel.

	Code/Foto	Description
9.1	SON96V.007MT	Sensor PT 100 with 3 wire - 6 x 50 mm – IP68 - 7 mt.
	SON96V.011MT	Sensor PT 100 with 3 wire - 6 x 50 mm – IP68 - 11 mt.
	SON96V.015MT	Sensor PT 100 with 3 wire - 6 x 50 mm – IP68 - 15 mt.
	SON96V.020MT	Sensor PT 100 with 3 wire - 6 x 50 mm – IP68 - 20 mt.
9.2	GSM01MD	GSM module
	BT01MD	Bluetooth module
9.3		Remote acoustic - optical repeaters.
		Remote power repeaters.
9.4	FBX01SA6	Bracket for wall mounting (for mod. “E”)



55107

Support for under-dashboard mounting (for mod. “C”)



9.5 CAR57D30
ERC09

Paper for printer
Ink ribbon for mechanism printer

APPENDIX

This chapter (at point 10.1) gives a list of display icons and eventual faults that can occur on the REC96-T3, next to possible solutions to the relative problem. It also given instructions to be followed for correct functioning and use.

10.1 - Display icons

In normal operation, the alphanumeric display shows running hour with on side the cyclical temperature values of all the channel and digital inputs. The resolution of the temperature can be set to 0,1 °C (from PC) for visualization only.



The display is equipped of a double line visualization (side picture). To enabled this function is enough to click button IFeedI. In the above line is showed the IStatus lineI, with the possible icons, while in the below line the cyclical temperature values of all the channels, the digital inputs and the events with the sensors position.



Decodes of the icons that can be introduced during the functioning.:

Icons Area		Thermostat Icons	
	SMS service ON		High thermostat alarm
	GSM module ON		Low thermostat alarm
	GSM module fault		Thermostat active
	Transmimssion device connected		Bell disabled
	Transmimssion device fault		
	Open door (D1)		
	Main door open (D2)		
	Initial thermostat timer ON		
	Autostart ON (refrigerator ON)		
	ExtraTime (refrigerator OFF)		
	Defrost ON		

10.4 - Troubleshooting

Fault	Cause	Cure
Display does not come on	Recorder blocked or not power supplied	Check power supply and connections
Printer does not print		Check printer cable and connections

10.3 - Decodes of the alarms

BAT (yellow)	OPR (green)	ALR (red)	FLT (yellow)	Door (orange)	EVENT
=	off	=	off	=	RECORDER BLOCKED OR NOT SUPPLIED
=	off	=	on	=	RECORDER BLOCKED FAULT
=	blinking	=	blinking	=	Memory battery flat or faulty or fault on one or both sensors.
=	blinking	=	on	=	OUT OF ORDER Power supply voltage insufficient
=	blinking	=	Slow blinking	=	FAULT MEMORY happened anomaly memory
=	blinking	=	On 2 sec. + 3 beep	=	Communication error with PC or printer
=	=	on	=	=	Thermostat alarm
on	=	=	Fast blinking	=	Clock or Memory battery fault
=	=	=	=	blinking	Open door alarm (D1/D2 door)

10.4 - Display texts

Fault	Code	Cause	Cure
Fault BAT FL	E096	Memory battery flat or faulty	Do not disconnect power!
Fault BAT. FA	E097		Download the data and contact the dealer
Fault Tec.01	E001	Clock to be updated or blocked!	Reset recorder or contact the dealer
Fault Tec.02	E002	Software fault	Reset recorder
Fault Tec.04	E004	Input-output line fault	Reset recorder
Fault Tec.05	E005	A/D converter fault	Reset recorder
Fault Tec.06	E006	Communication with LCD fault	Reset recorder
Fault Tec.07	E007	Configuration data error	Contact the dealer
Fault Tec.08	E008	Ram Data fault. Recorder blocked	Contact the dealer
Fault Tec.99	E099	Clock battery flat or faulty	Contact the dealer
Fault VCC.LL	E098	Power supply voltage insufficient	Check power supply voltage
SNC (chan 1)	E015	Corresponding sensor not connected	Check sensor cable integrity
SNC (chan 2)	E012	Corresponding sensor not connected	Check sensor cable integrity
SNC (chan 3)	E018	Corresponding sensor not connected	Check sensor cable integrity

10.5 - Testi display

Display text	Description	Salution
Error GSM. (01/08)	GSM or SIM fault	Check cable integrity and SIM service
Err. net GSM	GSM connection fault	Check GSM network and SIM service
Err. printer	Printer fault	Contact the dealer
Error 232 / ComX	Error communication with PC or serial device connected	Check sensor cable integrity PC/Device to Recorder
Data error	Data memory fault	Restar the recorder
OUT / SNC	Sensor Fault or Out of range	Check sensor cable integrity
Stop Record.	Recording blocked	

10.6 – Useful information

IMPORTANT ! In the event the LCD breaks a slightly corrosive substance can come out. Avoid contact with skin and eyes

IMPORTANT ! Improper use of the system brings about complete cancellation of the warranty and unreliable data acquisition.

General warranty conditions For 18 months. Products found to be faulty within this period will be promptly replaced or repaired. The warranty does non cover damage caused by improper use, but covers early ageing or breakdowns and manufacturing faults in mechanical or electrical parts. The sensors are guaranteed for 6 months, whereas the incorporated printer, 12 months. REC96-T3 without guaranteed seals are non covered by warranty.

NOTE No responsibility can be accepted for the loss of stored data.

NOTE Resetting the recorder means turning off the power supply for approx. 10 seconds and subsequently turning it on.

NOTE Normally the "OPR" LED flashes with a frequency of 1 sec. When a recording is in progress the LED flashes at a faster rate. During this operation all the keyboard and print functions are suspended.

IMPORTANT ! Do not dispose of this equipment as miscellaneous solid municipal waste, but arrange to have it collected separately. The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the well-being of humans. In accordance with European Directive WEEE 2002/96/EC, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type. The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements. Unauthorised disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.



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MADE SISTEMI

via Berlinguer, 59 - Forlimpopoli (Forlì) - Italy
www.madesistemi.it - Tel. +39 (543) 743127