

COMMERCIAL REFRIGERATORS, STAINLESS STEEL PRODUCTS

OPERATING INSTRUCTIONS

CE

COMMERCIAL REFRIGERATORS

Model - S.N.: _____

Volt: 220 Hz: 50 Amps: _____

Watt: _____ Watt (heating element): _____

Fuse Amps: _____

Refrigerant: R gr: _____

Working temperature: _____ °C

CONTENTS

1. Transportation – Positioning – Installation	3
2. Starting up	3
3. Safety instructions	4
4. Temperature regulation	4
5. Defrosting	4
6. Temperature alarm	5
7. Fault codes on the display	5
8. Cleaning – Maintenance	5
9. Temporary function interruption	5
10. Saving energy advices	5
11. Troubleshooting	6
12. Instructions for positive refrigerators thermostat	7
13. Instructions for negative refrigerators thermostat	8
14. Electric charts	9

1. Transportation – Positioning – Installation



Keep the appliance in an upright position during the transportation in order to avoid critical damage in its systems.

Remove all packaging. Move carefully the device to its final position. If the floor is not flat regulate the legs, to ensure that the appliance is balanced.



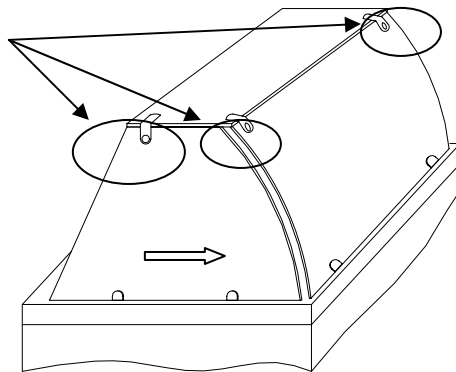
To ensure efficient operation do not place it near heat sources. The appliance is designed to operate in an ambient temperature of up to 40 °C.

Power must be connected via a wall socket. The appliance is supplied with an electric plug, SHUKO type.



Current taps and plugs always must be provided with ground.

If the device has a showcase remove the packaging among the crystals and move the side crystals unscrewing the screws pointed at the picture, so that the crystals line-up with the front crystal of the show case.



2. Starting up



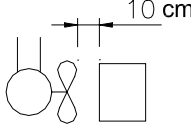
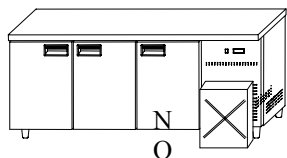
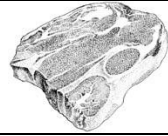

Press the on/off switch. The figure that appears in the display shows the actual temperature in the cabinet and indicates that power is connected. The motor starts after 2 minutes.



Do not store products in the appliance until its temperature reaches at the required point. Do not fill at once your appliance with big quantities of products.

3. Safety instructions

For your safety and the proper function of the appliance please follow the instructions below:

	Store all products to be preserved so as not to obstruct the air circulation among the shelves of the appliance.
	Do not store hot food or hot drinks in your appliance.
	Place products at least 10cm away from the fan, otherwise the refrigeration in the appliance will be impaired.
	Do not cover the intake air slots.
	Cover the food with a plastic film before storing it into the appliance.
	Do not operate pizza refrigerated show cases without gastronorm pans covering the whole cooling space.

4. Temperature regulation



Press to see the temperature setting.

If you wish to change keep this key pressed and change it by pressing the arrows [◀] or [▶] accordingly.

5. Defrosting

Refrigerators

Defrosting is automatically performed six times every 24 hours. It can also be performed manually by pressing the keys [◀]+[▶] simultaneously. If the refrigerator is on heavy load conditions (frequent door opening) manual defrosting may become necessary.

Condensate water is led through a tube to a tray, where it is evaporated by a pipe from the refrigeration system placed in the tray.

Freezers

Defrosting is automatically performed four times every 24 hours. It can also be performed manually by pressing the keys [▲]+[▼] simultaneously. If the freezer is operating on heavy load conditions manual defrosting may become necessary.

Condensate water is led through a tube to the drainage kit, where it is evaporated by a resistance, controlled by the water level

6. Temperature alarm

If the temperature in the appliance is higher or lower than the limits set, then an “ALR” indication flashes on the display. Filling with big quantities of products at once, or leaving the door open for long periods will cause the temperature to rise and produce an alarm effect.

7. Fault codes on the display

7.1 Refrigerators

[E1]: Sensor failure. If the sensor fails, the compressor remains on for 4 minutes and off for 4 minutes. Technical assistance should be requested.

[CLN]: Periodic condenser cleaning required. To erase this message press [I/O] (right button) to switch the device off and then press [I/O] and [◀].

7.2 Freezers

[ALO]: Low temperature alarm

[AHI]: High temperature alarm

[LF1]: Temperature sensor failure

[LF2]: Evaporator sensor failure

[doR]: Door opened

All alarm codes are also audible.

8. Cleaning – Maintenance

Frequent cleaning is highly recommended. Do not use sharp or other similar objects which may damage your appliance. Clean the inside surfaces with a mild soap solution or a detergent without chlorine.

Also clean the external surfaces using steel oil.



Do not use detergents or substances based on chlorine or acid solvents. These may cause corrosion of stainless steel surfaces.

Keep the compressor and the condenser free from dust and dirt, otherwise, the efficiency of the refrigerator will be reduced. Cleaning is best done with a vacuum cleaner and a brush.

Before you proceed to any cleaning or maintenance, disconnect the plug from the electrical supply.

9. Temporary function interruption

In case you wish to turn the appliance off for a while, in order to keep it in the best possible condition, follow the instructions below:

Turn the appliance off and disconnect from the electrical supply. Empty the appliance and clean it as indicated above. Keep the doors open in order to avoid unpleasant odors.

10. Saving energy advices

- Open the appliance's doors according to your needs but please **do not do** that pointlessly. They must remain open the less possible there can be.

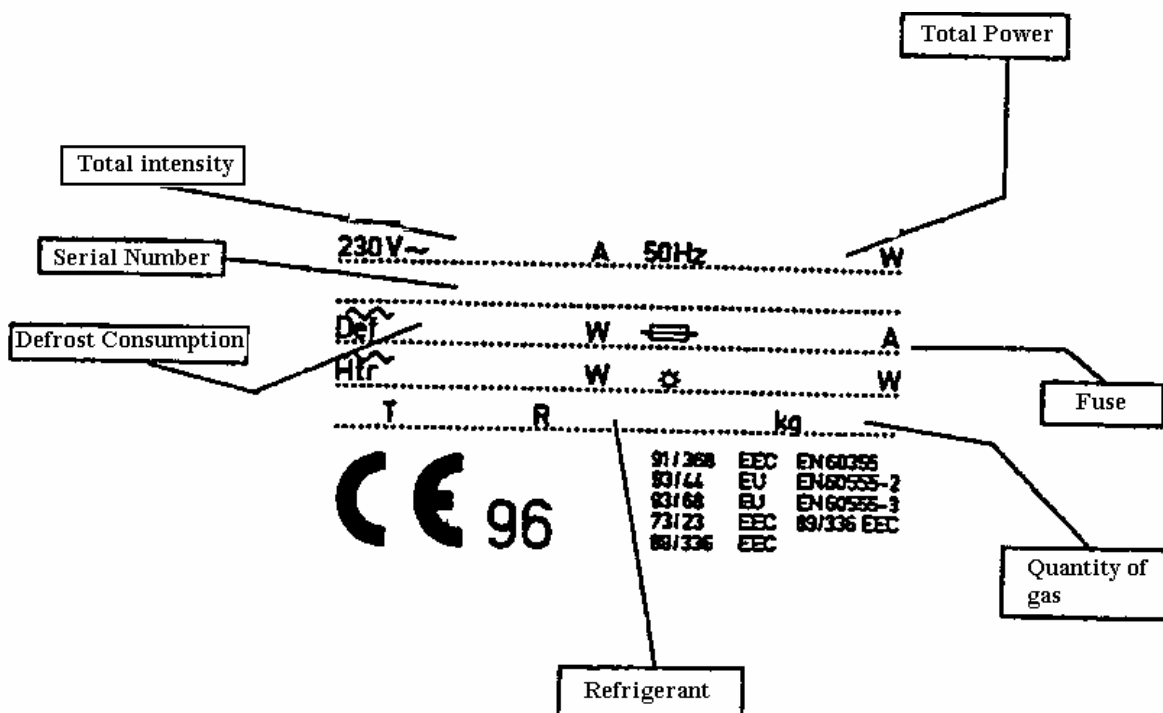
- Check regularly that the appliance's doors are solidly closed and that the door seals are in good condition.
- Do not place your appliance near heat sources or points with high sun radiation.
- Do not fill at once your appliance with big quantities of products, because this will increase energy consumption.

11. Troubleshooting

Malfunction	Possible cause	Solution
The appliance does not cool	<ul style="list-style-type: none"> • There is ice in the evaporator • The products are obstructing the air flow • The room temperature is very high 	(See case 2) Remove the products which obstruct the air flow of the evaporator Improve the temperature condition of the room
Ice in the evaporator	<ul style="list-style-type: none"> • The temperature adjustment is very low (refrigerators) • High humidity environment • Humid products have been placed in the refrigerator (ex. Vegetables) • The doors are opened frequently and for a long time 	Check the temperature adjustment. Increase the temperature setting. Improve the environment condition. Increase the defrost frequency. Cover the food with a plastic film before putting it in the refrigerator. Increase the defrost frequency and duration. Decrease the open door duration as possible. Increase the defrost frequency.
Water in the appliance	<ul style="list-style-type: none"> • The drainage pipe has been sealed 	Clean the drainage pipe
Water in the gastronorm pans (open top refr.)	<ul style="list-style-type: none"> • High humidity environment 	Increase the setting temperature

In any case of malfunction contact the dealer of our company describing the problem, denoting the type and the serial number (S/N) of your appliance.

All the technical characteristics necessary are specified on the identification tag positioned to the right of the device.



12. Instructions for positive refrigerators thermostat

The setting temperature is shown by pressing the [set] button. The user can change this temperature by pressing the arrows. All configuration parameters are adjustable within the SETUP function which is accessible by pressing [◀] + [▶] + [set] for 4 seconds. Scroll the parameter list via keys [◀] and [▶]. Press [set] to display the value correlated to the parameter and modify it by pressing [◀] or [▶]. Exit from the setup takes place automatically after 15 seconds of no key activation. The new LDU15 controller also comprises a button with auxiliary functions combined by parameters: alarm warning (ALR), defrost heater control (DEF), manual control (MAN) or on / off switch (NON).


Table 1, Parameters of thermostat LDU15

	Symb.	Description	Min and Max Limits	Factory settings
1	SPL	Minimum set point limit	-10.....SPh	-2 °C
2	SPH	Maximum set point limit	SPL.....+25 °C	+08 °C
3	SP	Set point	SPL.....SPH	0
4	HYS	Hysteresis (delay)	(+0.1...+10) K	+03 K
5	CRT	Compressor rest time	00.....30 min	02
6	CDC	Compressor activation with sensor failure	0.....10 min	4
7	DFR	Defrost frequency per 24 hours	00.....24	6
8	DTO	Defrost duration	01.....120 min	20
9	DDY	Defrosting display control	1....60 min	5
10	ATL	Low alarm differential	-12.....0 °C	-3
11	ATH	High alarm differential	0....12 °C	12
12	ATD	Temperature alarm delay	0.....120 min	0
13	ACC	Condenser periodic cleaning	0.....52 weeks	0
14	OAU	Auxiliary output mode	NON/SBY/MAN/ DEF/ALR	SBY
15	BAU	Auxiliary button mode	NON/SBY/MAN	SBY
16	SCL	Readout scale	1 °C/2 °C/ °F	2
17	OS1	Sensor T1 correction	(-12,5....+12,5) K	
18	SIM	Display slowdown	00.....100	0
19	ADR	Peripheral address	00.....20	1

Notes:

- All refrigerated counters work between 0 °C and 3 °C, except the open top refrigerators, that work between 2 °C and 5 °C.
- If you wish your refrigerator to work between -2 °C and +4 °C, then you should change the following parameters:
 - a) Change the parameter 1 (SP) to (SP)-2 (if (SP)=2 then you must set (SP)=0)
 - b) Set the parameter 4 (hys) = 6.

13. Instructions for negative refrigerators thermostat

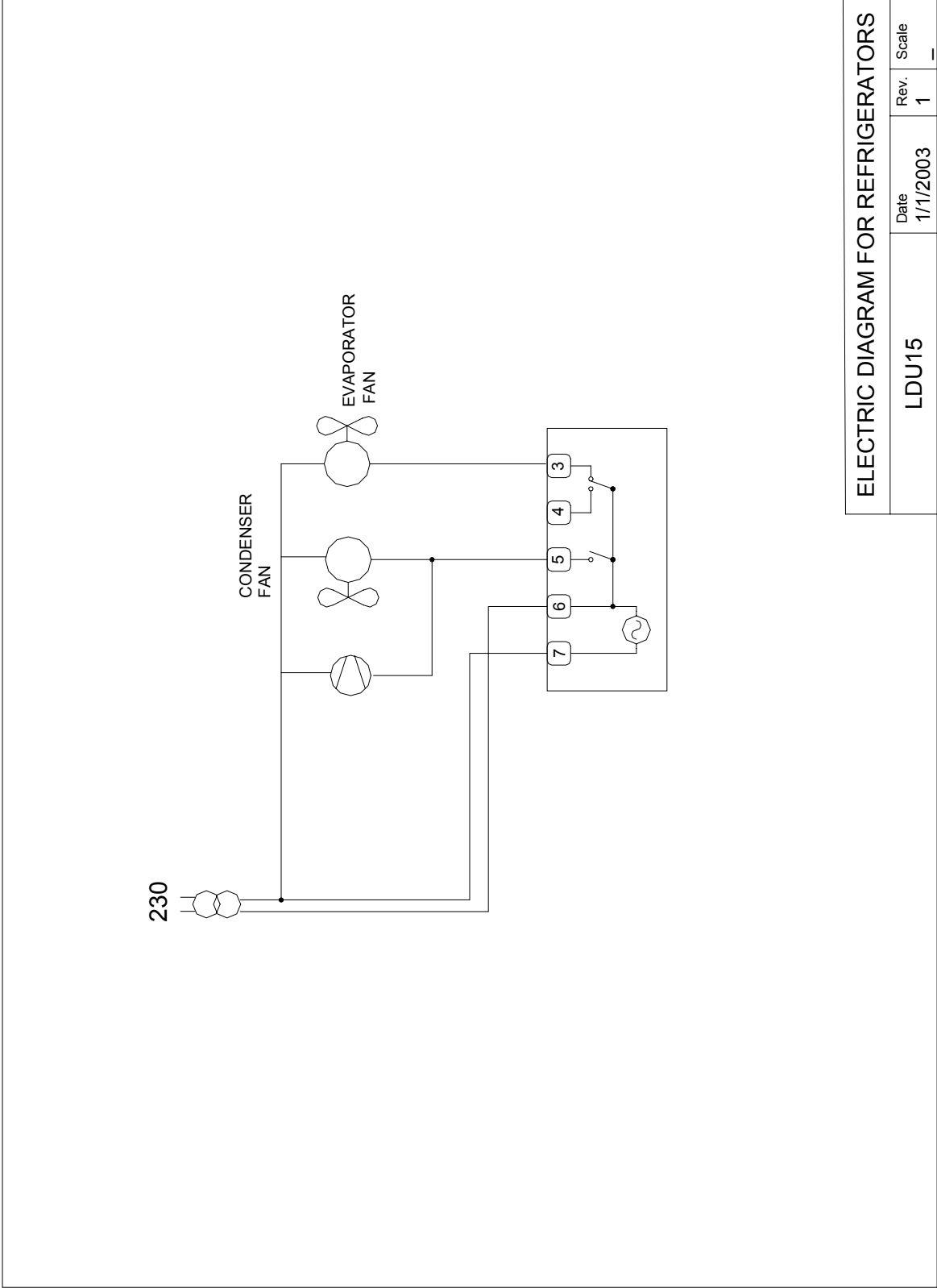
1. Push [←] to enter the parameters menu. The first parameter (SPo) shows up. Scroll the parameter list by pressing key [▼] or [▲].
2. Press [set] to display a parameter value and modify it by pressing the arrows. Press [←] to save the new value.
3. To exit the parameter menu press [←].
4. On/off switch: Press  for 3 seconds to switch the device off.
 T2 (▲): Press to see the evaporator temperature.
 Reset (▼): In case of alarm situation, press to reactivate.
 Df (set): Press for 6 seconds to start a manual defrost cycle.

Alarm messages:

ALo: Low temperature alarm AHi: High temperature alarm
 LF1: Room sensor failure LF2: Evaporator sensor failure
 Dor: Open door alarm (when a door remains more than four minutes opened)

PAMETER SETTINGS

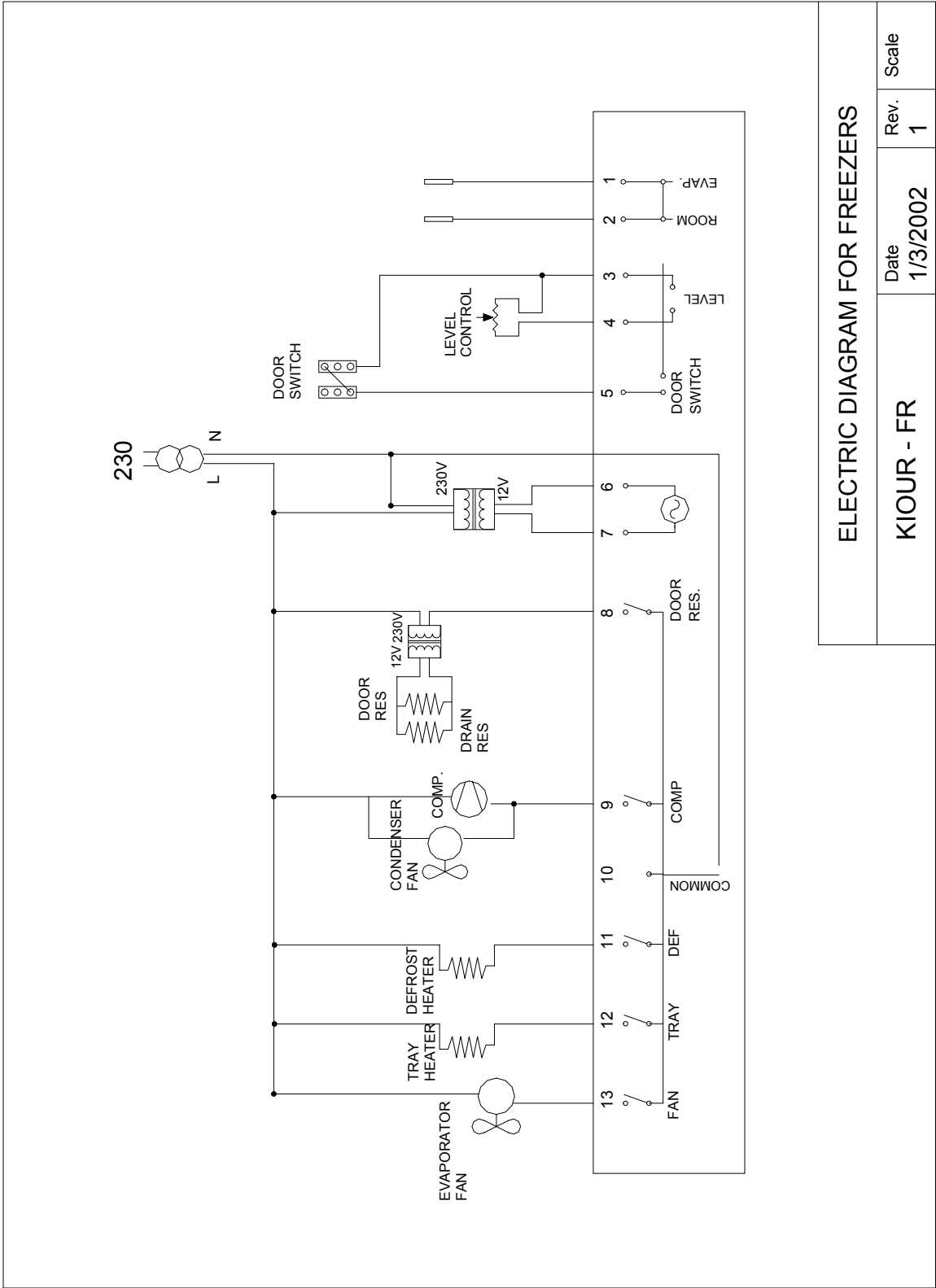
	Code	Description	Minimum - Maximum Limits	Settings
1	SPo	Temperature setpoint	LSP . . . HSP	-18
2	ALo	Low alarm threshold	-45 . . . 20 °C	-25
3	AHi	High alarm threshold	0 . . . 60 °C	0
4	Dr1	Defrost repetition time	1 . . . 100 h	6
5	Cod	Access code		22
6	DiF	Thermostat delay	1 . . . 20 °C	3
7	dd2	Defrost time out	0 . . . 100 min	18
8	dP3	Dripping time	0 . . . 15 min	0
9	dY4	Defrost display control	-1 . . . 40 min (-1: Displays Dfr while t>Spo+dif)	-1
10	dE5	Defrost end temperature	1 . . . 70 °C	+30
11	Dt6	Defrost type	0= ELE / 1=GAS	0
12	AF1	Alarm setting	0=Auto, 1=Manual	0
13	At2	Temperature alarm delay	-1 . . . 120 min (-1: alarm disabled)	0
14	Fo1	Fan restart temperature	-50 . . . 50 °C	-2
15	Ft2	Evaporator fan control	-1: Continuous function 0: Parallel with compressor 0-15 min: time fan stops after compressor	-1
16	Fd3	Ventilation in defrost	0: off 1: Starts when t2<Fo1 2: on	0
17	Co1	Compressor minimum on time	0 . . . 15 min	2
18	Cp2	Compressor minimum off time	0 . . . 15 min	2
19	CF3	Compressor control for T1 fault	-1: compressor off 0: compressor on 1-150 min: compressor on time	3
20	CF4	Compressor off time for T1 fault	1-150 min	3
21	SE1	Probe T1 offset	-20 . . . 20 °C	
22	SE2	Probe T2 offset	-20 . . . 20 °C	0
23	SEr	-		10
24	LSP	Minimum temperature setting	-50 . . . 100 °C	-21
25	HSP	Maximum temperature setting	-50 . . . 100 °C	-10



ELECTRIC DIAGRAM FOR REFRIGERATORS

LDU15

Date	Rev.	Scale
1/1/2003	1	_



ELECTRIC DIAGRAM FOR FREEZERS

KIOUR - FR	Date	1/3/2002	Rev.	1	Scale