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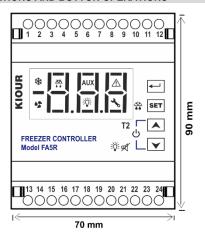
Read carefully these instructions before installing and using this device and keep them for future reference. Attention to installation and electrical wiring. Use this device only as described in this document and never use itself as a security device. The device must be disposed of in accordance with local standards for the collection of electrical and electronic equipment.



DECRIPTION

FA5R is a temperature controller for ventilated freezer rooms with deFrost control and smart defrost function. It has two temperature sensors for the cabinet and the evaporator, five relays: compressor 30A, fan 5A, deFrost 5A, lamp 5A, and auxiliary/alarm 10A; one alarm buzzer and two digital inputs for controlling the door of the room (DOOR indication) and for the protection of a person inside the room (indication MAN). Both sensors can be either NTC scale -37÷+110°C (-34÷+230°F) or PTC scale -50÷+110°C (-58÷+230°F) by adjusting a parameter. The controller via the serial input can connect either via Cloud on the CORTEX platform or via pc to the CAMIN Modbus network for full monitoring and data logging of the device.

INDICATIONS AND BUTTON OPERATIONS



Indications					
compressor ON					
\$	fan ON				
**	deFrost ON				
AUX	auxiliary ON				
- Vi	lamp ON				
\triangle	alarm ON				
*	malfunction ON				

Keyboard	
	enter parameter's menu
SET (M)	display the value of a parameter confirm new value of a parameter manual defrost
*	down arrow mute buzzer ON/OFF lamp of the room ON/OFF device (see below)
T2	up arrow indication of the evaporator's temperature T2 OFF device (see below)

For more indications regarding the alarms please see the alarm's table at page 5.

ADJUSTING ROOM'S TEMPERATURE - SET POINT

- 1. Press to display the first parameter **SPo**.
- 2. Press to display its value. With $\hat{\tau}_2$ $\hat{\eta}$ change the value of **SPo**.
- 3. Press to save the new value. The cabinet is working properly with the new adjustment.

INDUSTRIAL FACTORY SETTINGS OF CABINET

- 1. Press to display the first parameter **SPo**. Press once and the parameter **Cod** is displayed.
- 2. Press to display its value and press to enter the value 31. By pressing we enter the value in the Cod parameter.
- 3. Press 🚭 again to exit the parameter menu, 'YES' is displayed on the screen. All appropriate factory settings are now stored in the device.

[☼] ON/OFF DEVICE

Press for 7 seconds to activate or deactivate the device.

If we select the *manual operation* of the room lamp, dLA = 0, then to turn it on or off, press for 3 seconds

If we select the automatic operation of the room lamp, dLA = 1, then the lamp opens and closes based on the door switch. By setting up timer tLA, when the room door closes the lamp stays on until timer tLA elapses.

MANUAL DEFROST

Pressing for 3 seconds starts the manual defrost for as long as we have set the **dd2** parameter.

For more information on defrost see the description of parameter dt6.

PROGRAMMING A PARAMETER

ATTENTION: to gain full access to the parameter's menu, the 2nd parameter **Cod** must be adjusted to **22** (see parameter table next page).

- 1. Press to enter the parameter menu.
- 2. Choose the parameter you want to adjust by pressing or to display its value.
- Press or to change its value and then press to store the new value.
- Press to exit the parameter menu.

TECHNICAL SPECIFICATIONS OF THE THERMOSTAT

Power supply: 230VAC 50/60Hz / Maximum power consumption: 3W

It is recommended using a power supply safety fuse: 0.5A (not included)

Two NTC/PTC temperature sensors room and evaporator coil (NTC -37+110°C and PTC -50+110°C) / Accuracy: 0.5°C

Two digital inputs for controlling the door of the room (DOOR indication) and for the protection of a person inside the room (MAN indication)

Buzzer / Serial input

Compressor relay NO contact 250VAC 30A resistive load / Relays Fan, defrost, lamp NO contact 250VAC 5A / Relay auxiliary SPDT NO contact 250VAC 10A Maximum current load 16A

Connections: cable cross section 2.5 mm² for all relays / cable cross section from 0.25 to 1.0 mm² for the sensor and door switch

Connections with terminal blocks 18A using cable with cable cross section up to 2.5 mm² / It is recommended using a torque wrench with maximum torque 0.4Nm

Operating temperature: -15÷+55°C / Storage temperature: -20÷+80°C

The device is mounted on Ω rail and it is restrained with one plastic bracket / Dimensions 70x90x65mm

Firmware: V2

SERIAL INPUT

FA5R connects via serial input to the following options:

- Cloud IoT CORTEX platform: connection to the cloud and the CORTEX platform for monitoring recording and managing the thermostat from your mobile, tablet or any computer, notifications via email and Viber SMS
- CAMIN program: local connection and monitoring recording and management of the thermostat through the CAMIN program installed on a local computer.
- Mini Logger recorder: the thermostat can be connected to the recorder and record based on selected minutes on a microSD memory card, its temperatures and the state
 of the relays and alarms. It is connected via a cable to the serial input and we program the parameter Add = 1.
- Memory key: the parameter values are stored in the memory key or recorded by it in the thermostat.

SMART DEFROST

Smart defrost operates in parallel and independently from the conventional defrost. Both defrost modes can operate at the same time based on the respective settings. By enabling smart defrost, it is recommended to adjust conventional defrost to operate in safe mode - for example once every 48 hours: parameter No 22, dFr = 48. If smart defrost is not executed, then the conventional defrost will start after 48 hours from the last successful defrost. Each time a smart defrost is executed, the timer of the conventional defrost is renewed.

Smart defrost is activated from parameter No 29, dSE = 1.

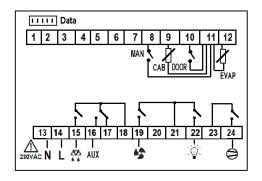
It is recommended during the start-up of the temperature controller, to execute a smart defrost cycle, parameter No 30, dSb = 1.

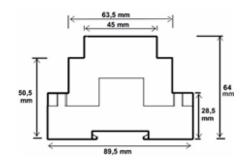
CONNECTIONS - DIMENSIONS

ATTENTION: according to safety standards, the device must be properly positioned and protected from any contact with electrical parts. The device must be fastened in such a way that it cannot be removed without the use of tools. Disconnect the main safety switch of the installation before proceeding to any maintenance. Disconnect the power supply of the device before proceeding to any maintenance. Do not place the device near heat sources, equipment containing strong magnets, in areas affected by direct sunlight or rain. Prevent electrostatic discharges and sharp objects from been inserted to the device. Separate signal cables from power supply cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables.

Dimensions are in mm. The device is mounted on Ω rail and it is restrained with one plastic bracket







PARAMETER TABLE						
No		description	min	max	FA5R	UOM
1	SPo	SET POINT: temperature control of the cabinet	LSP	HSP	-21.0	°C/°F
2	Cod	Enter password code Cod = 22 and press to enter the other parameters	0	255	0	-
ANAL	ANALOG INPUTS - TEMPERATURE					
3	diF	Differential of room temperature SPo (thermostat delay)	0.1	25.0	3.0	°C/°F
4	LSP	Lower setting limit of SPo	-50.0	+150	-21.0	°C/°F
5	HSP	Maximum setting limit of SPo	-50.0	+150	-10.0	°C/°F
6	dEC	Temperature indication as integer or decimal, where 0 = integer / 1 = decimal	0	1	1=decimal	-
7	SEn	Sensor type NTC/PTC 0 = PTC / 1 = NTC	0	1	1=NTC	-
8	SE1	Room sensor offset	-10.0	+10.0	0.0	°C/°F
9	SE2	Evaporator sensor offset	-10.0	+10.0	0.0	°C/°F
10	tdS	Delay in displaying the actual room temperature on the screen when the door is opened	0	255	0	min

Comparison of the comparison of personnel Comparison of the co			Exposuratoria conservacioni				
1 1 0 Nameur			Evaporator's sensor operation				
Very New New Processor (s. OFF, by pressing						1-	
When the sensor is OFF, by preseng □ □ it is depicted the content temperature in the catherd temperature is the catherd temperature.	11	oS2	1 = ON sensor	0	1	= -	-
During directions, when the exequence is serves is off, the others or the representative is the control temperature. C. F. Tomperature measurement with bodging between YCFF do not adjust the SPo automatically, it most 0 1 1 0=10 1-10 1-10 1-10 1-10 1-10 1-1			When the sensor is OFF by pressing $\begin{pmatrix} 1 \\ 12 \end{pmatrix}$ it is displayed ""			activated	
C. F. Temperature measurement unit boging between "CPF 6 not adjust the SPo automatically, it must			During defrosting when the evaporator sensor is off, the defrost end temperature is the cabinet temperature				
1. No.	4.0		Temperature measurement unit: toggling between °C/°F do not adjust the SPo automatically, it must			0.00	00/05
ALANOWS	12	C_F		0	1	0=°C	°C/°F
13 ALD	ALAF	RMS	, as the state of				
All			lower alarm limit temperature of the cabinet	-50.0	+150	-25.0	°C/°F
Time delay in activating 4417 **Act and the buzzer among treen Time delay in activating by a seasor fallow and door allarin: -1 = OFF buzzer -1 = OFF							
This setting does not apply to sensor fallure and door alern. 1 o							
15 AZ			This setting does not apply to sensor failure and door alarm.				
1 to 120 min - eliely in fuzzer activation AFT A	15	At2	-1 = OFF buzzer	-01	120	20	min
Advance and the process of the same stops once the cause of the alarm disappears. 1			0 = immediately buzzer is ON				
0 = automatic deactivation, where the alarm altops once the cause of the alarm disappears. 16			1 to 120 min = delay in buzzer activation				
1			Alarm setting				
16 AF1 disappears and it's cleared only by pressing 17 at 18 at 18 at 18 at 18 at 18 at 19 at 19 at 19 at 10 at 1			0 = automatic deactivation, where the alarm stops once the cause of the alarm disappears.				
In any case by pressing 1, the buzzer stops and 1 turns on to state that the cause of the alarm still exists. Muting the alarm buzzer by pressing 2 once is valid until all alarms disappear. Disappear			1 = manual deactivation, where the alarm indication remains even if the cause of the alarm				
In any case by pressing 1, the buzzer stops and 1 turns on to state that the cause of the alarm still exists. Muting the alarm buzzer by pressing 2 once is valid until all alarms disappear. Disappear	16	AF1	disappears and it's cleared only by practing (*)	0	1	0 = automatic	_
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DIGITAL INPUT - DOOR SWITCH							
Door switch operation Ower Prime For F	DIOI	TA / /A/D	still exists. Muting the alarm buzzer by pressing once is valid until all alarms disappear.				
Committee Com	DIGIT	I AL INP		I			
1							
resumes once door is closed. Defrost duration based on timer dd/2 keeps counting from the beginning of defrost. 18	17	તાત	If eachingt's door is onen during defrect for more than times the defrect relay turns OFF and	0	2	1-ON us NC	
Second Content Seco	17	uLu		U	2	1-ΟΙΝ με ΙΝΟ	-
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27 dY4 -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF -1 = "dFr" is displayed when room temperature is greater than SPo + diF 0 = room temperature is displayed 1 to 40 minutes = "dFr" is displayed from 1 to 40 minutes from the initiation of defrost Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF (parameter dY4=-2) on screen after defrost ends Indication "dFr" disappears once room's temperature is smaller than SET POINT + diF. SMART DEFROST - more details on page 2 Smart defrost function 0 = OFF 1 = ON A defrost cycle is executed once the device starts-up 30 dSb 0 = OFF 0 1 1 1	22 23 24 25	dt6 dFr dd2 dE5	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost.	0 1 0.0	100 120 100	6 30 30.0	min °C/°F
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Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF (parameter dY4=-2) on screen after defrost ends Indication "dFr" disappears once room's temperature is smaller than SET POINT + diF. SMART DEFROST – more details on page 2 Smart defrost function 0 1 0 - 1 0 - 1 0 - 1 0 - 1 0 - 1 0 0 - 1 0 0 - 1 0 0 - 1 0 0 - 1 0 0 - 1 0 0 - 1 0 0 - 1 0 0 - 1 0 0 0 - 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22 23 24 25 26	dt6 dFr dd2 dE5 dP3	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of deactivated evaporator sensor defrost end temperature is the room temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SP0 + diF value is displayed when room temperature is greater than SP0 + diF -1 = "dFr" is displayed when room temperature is greater than SP0 + diF	0 1 0.0	1 100 120 100	6 30 30.0 2	min °C/°F 26
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Indication "dFr" disappears once room's temperature is smaller than SET POINT + diF. SMART DEFROST - more details on page 2 Smart defrost function 0 - OFF 1 - ON A defrost cycle is executed once the device starts-up 30 dSb 0 - OFF 0 1 1 - O	22 23 24 25 26	dt6 dFr dd2 dE5 dP3	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF -1 = "dFr" is displayed when room temperature is greater than SPo + diF 0 = room temperature is displayed 1 to 40 minutes = "dFr" is displayed from 1 to 40 minutes from the initiation of defrost	0 1 0.0	1 100 120 100	6 30 30.0 2	min °C/°F 26
SMART DEFROST - more details on page 2 29 dSE Smart defrost function 0 0 1 0 - 1 0 0 - 1 0 0 0 0 0 0 0 0 0 0	22 23 24 25 26	dt6 dFr dd2 dE5 dP3	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF -1 = "dFr" is displayed when room temperature is greater than SPo + diF 0 = room temperature is displayed 1 to 40 minutes = "dFr" is displayed from 1 to 40 minutes from the initiation of defrost Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF (parameter	0 1 0.0 0 -2	1 100 120 100 15	6 30 30.0 2 -1	min °C/°F 26 min
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1 = ON	22 23 24 25 26 27	dt6 dFr dd2 dE5 dP3 dY4	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF -1 = "dFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater than SPo + diF -1 = "ofFr" is displayed when room temperature is greater	0 1 0.0 0 -2	1 100 120 100 15	6 30 30.0 2 -1	min °C/°F 26 min
30 dSb A defrost cycle is executed once the device starts-up 0 = OFF 0 1 1 -	22 22 23 24 25 26 27 28 SMA	dt6 dFr dd2 dE5 dP3 dY4 dt5	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF -1 = "dFr" is displayed when room temperature is greater than SPo + diF 0 = room temperature is displayed 1 to 40 minutes = "dFr" is displayed 1 to 40 minutes = "dFr" is displayed from 1 to 40 minutes from the initiation of defrost Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF (parameter dY4=-2) on screen after defrost ends Indication "dFr" disappears once room's temperature is smaller than SET POINT + diF.	0 1 0.0 0	1 100 120 100 15 40	6 30 30.0 2 -1	min °C/°F 26 min
30 dSb 0 = OFF 0 1 1 -	22 22 23 24 25 26 27 28 SMA	dt6 dFr dd2 dE5 dP3 dY4 dt5	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF 0 = room temperature is displayed 1 to 40 minutes = "dFr" is displayed from 1 to 40 minutes from the initiation of defrost Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF (parameter dY4=-2) on screen after defrost ends Indication "dFr" disappears once room's temperature is smaller than SET POINT + diF. ROST — more details on page 2 Smart defrost function 0 = OFF	0 1 0.0 0	1 100 120 100 15 40	6 30 30.0 2 -1	min °C/°F 26 min
	22 22 23 24 25 26 27 28 SMA	dt6 dFr dd2 dE5 dP3 dY4 dt5	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor ON Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost dend temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + dif value is displayed when room temperature is greater than SPo + diF 0 = room temperature is displayed from 1 to 40 minutes from the initiation of defrost Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF (parameter dY4=-2) on screen after defrost ends Indication "dFr" disappears once room's temperature is smaller than SET POINT + diF. ROST — more details on page 2 Smart defrost function 0 = OFF 1 = ON	0 1 0.0 0	1 100 120 100 15 40	6 30 30.0 2 -1	min °C/°F 26 min
	22 23 24 25 26 27 28 SMAI 29	dt6 dFr dd2 dE5 dP3 dY4 dt5 RT DEFI	Type of defrost 0 = electrical: compressor OFF, resistance ON 1 = hot gas: compressor ON, resistance ON Defrost with the evaporator's temperature sensor OM Automatic or manual defrost ends either with time adjusted from the parameter dd2 or with defrost end temperature dE5, whatever comes first. Automatic or manual defrost does not start if the evaporator temperature is greater than the defrost end temperature dE5. Defrost with the evaporator's temperature sensor OFF Defrost end temperature is the room temperature. Automatic defrost ends either with time adjusted from the parameter dd2, or with defrost end temperature dE5, whatever comes first. Manual defrost starts regardless of the room's temperature and ends after time adjusted in parameter dd2 elapses. Time between two successive defrost, where dFr = 0, defrost is deactivated. Defrost duration (manual and automatic) Defrost duration (manual and automatic) Defrost end temperature – evaporator temperature - sensor EVAP T2 In case of deactivated evaporator sensor, defrost end temperature is the room temperature. In case of evaporator's sensor malfunction (LF2), there is no check of defrost end temperature and defrosting is completed after timer adjusted in parameter dd2 elapses. Dripping time, where the compressor is OFF after defrost. The fan starts based on the parameters Fd3 and Fd4. Display indication during defrost -2 = SPo + diF value is displayed when room temperature is greater than SPo + diF -1 = "dFr" is displayed when room temperature is greater than SPo + diF -0 = room temperature is displayed 1 to 40 minutes = "dFr" is displayed from 1 to 40 minutes from the initiation of defrost Time delay in restraining indication "dFr" (parameter dY4=-1) or indication SET POINT + diF. ROST - more details on page 2 Smart defrost function 0 = OFF 1 = ON A defrost cycle is executed once the device starts-up	0 1 0.0 0 -2	1 100 120 100 15 40 150	6 30 30.0 2 -1 0	min °C/°F 26 min

31	dS2	Minimum time between two successive smart defrosts	1	255	60	min
32	dS1	Time constant: a steady increase in the constant, delays more the start of the smart defrost and increases the ice on the evaporator	1	20	3	min
33	dSt	Temperature constant: a steady increase in the constant, delays more the start of the smart defrost and increases the ice on the evaporator	0.5	5.0	1.0	°C/°F
COM	PRESSO					
34	Co1	Compressor's minimum time ON	0	15	0	min
35	CP2	Compressor's minimum time OFF	0	15	3	min
36	CF3	Compressor's operation in case of room's sensor malfunction LF1 -1 = compressor OFF 0 = compressor ON while defrost starts based on timer dFr and ends based on timer dd2 or temperature dE5, whichever comes first.	-1	15	3	min
		1 to 150 min = compressor time ON while defrost starts based on timer dFr and ends based on timer dd2 or temperature dE5, whichever comes first.				
37	CF4	Compressor time OFF in case of room's sensor malfunction	1	150	3	min
FAN	01 7	Compressor time or i in case or room's sensor manufiction	_ '	100		111111
38	Ft2	Evaporator's fan operation -2 = continuously ON for evaporator's temperature smaller than temperature Fo1 -1 = continuously ON 0 = parallel operation to the compressor 1÷15 min = parallel operation with the compressor and when the compressor is OFF, the fan stops after the selected minutes	-2	15	-1= ON continuously	min
39	Fo1	Evaporator's temperature controlling the fan operation during defrost and normal operation. If the evaporator's sensor is OFF, the parameter does not operate. For more information check the parameters Ft2, Fd3 and Fd4.	-50.0	+100	-2.0	°C/°F
40	Fd3	Evaporator's fan operation <u>during defrost the with evaporator's sensor ON</u> (parameter oS2 = 1) 0 = OFF and starts with the compressor if the evaporator's temperature is smaller than Fo1 1 = ON when the evaporator's temperature is smaller than Fo1 2 = always ON in both types of defrost (electrical / hot gas) If the <u>evaporator's sensor is OFF</u> (parameter oS2 = 0), the fan is OFF during defrost and starts after timer Fd4 elapses.	0	2	0	-
41	Fd4	Time delay in activating the fan after defrost ends and only if the evaporator's temperature is smaller than temperature Fo1 (check parameter Fd3).	0	255	0	min
RELA	Y AUXII	LIARY / ALARM	l			
42	AU1	Relay function AUX/ALARM 0 = OFF 1 = ON in case of alarm - all alarms activate the relay 2 = ON parallel to the operation of the compressor 3 = pump-down operation in combination with parameter AU2 (see parameter No. 43 AU2)	0	3	0	-
43	AU2	For pump-down operation with parameter AU1 = 3: To the AUX relay we can connect the magnetic of the compressor. Once the room temperature reaches the desired SPo, the compressor remains ON, the AUX relay turns ON and the timer AU2 begins to count down. After timer AU2 elapses, both compressor relay and AUX relay turn OFF.	0	10	0	min
		GENERAL SETTINGS	ı	ı		
44	Add	Device address on network	0	255	1	-
45	trE	Response time of the device on network	5	100	40	msec
46	bAU	Baud rate: 0 = 2400 / 1 = 4800 / 2 = 9600 / 3 = 19200 Enter the new value, exit the parameter menu by pressing and toggle the power supply of the device	0	3	3	-
47	Pro	Cabinet's program (factory settings) is displayed – no access	-	-	31	-
48	tPE	Unique product number – no access	-	-	228	-
49	SrU	Room service: after the end of the selected time, 'SrU' is displayed and informs that the room needs service. The thermostat continues to operate normally and its functions are not suspended. -1 = disabled function 0 to 150 weeks = remaining time to activate the 'SrU' room service notification. The countdown starts once a new value is stored. Whenever we enter the parameter, the remaining time until the activation of 'SrU' notification is displayed. To deactivate the notification, insert SrU = -1.	-1	150	-1	weeks

ALA	ALARM TABLE					
1	LF1	Room sensor malfunction				
2	LF2	Evaporator sensor malfunction				
3	ALo	Low room temperature				
4	AHi	High room temperature				
5	dor	Open door alarm (when the cabinet's door opens, the fan stops)				
6	sos	Man inside the room alarm: when the button inside the cabin is pressed, all functions and remaining alarms are deactivated.				
	000	The button must be reset in order to restart the thermostat.				
7	SrU	room service notification: timer has elapsed and the cabinet needs a service (see parameter 49, SrU)				
8	EEr	Error in memory RAM: re-enter the SPo (see ADJUSTING TEMPERATURE – SET POINT page 1)				
The	The alarms are automatically deactivated once the cause of the alarm disappears.					

Made in Greece.



The device is under two year's guarantee. The guarantee is valid only if the manual instructions have been applied. The control and service of the device must be done by an authorized technician. The guarantee covers only the replacement or the service of the device. KIOUR PC implements a Quality Management System according to EN ISO 9001:2015 Standard with registration number 01013192. KIOUR preserves the right to adjust its products without further notice.