

DESCRIPTION

RSD is a temperature controller for refrigerator rooms using touch technology for the keyboard. Through a PTC sensor controls room's temperatures in range -50÷+150°C (-58÷+302°F). In scale -19.9÷+99.9°C there is a decimal analysis with accuracy ±0.1°C. It has **three relays** (compressor, fan, level control). It has also defrost control and a buzzer activation due to an alarm. The controller has a serial input and can connect to the **KIOUR CAMIN** modbus network for full monitoring and data logging of the device.

INDICATIONS AND BUTTON OPERATIONS

Indications	
	compressor ON
	fan ON
	defrost ON
	heater ON
	locked keyboard
	sensor malfunction

button	Operations		
	pressed once	pressed more than 3 sec	pressed at the same time
	enter parameter's menu confirm new value	-	-
	temperature scale indication °C/°F mute buzzer	ON/OFF controller	unlock device
	-	-	
SET df	cancel new value	manual defrost	-

STARTING UP - SWITCHING ON/OFF THE DEVICE

At the startup of the device, the temperature controller performs a self-check for 7sec and the room's temperature is displayed. Do not touch the screen during self-check. By pressing the two buttons (,) at the same time for 3 seconds the countdown starts and the temperature controller unlocks (images below). By pressing for 3sec we turn ON or turn OFF the controller (images below). The keyboard locks automatically after 50sec without activity.



PROGRAMMING THE PARAMETERS

By pressing we enter the parameter's menu. The first parameter "SPO" is displayed and with , we scroll into the parameters with the order they appear to parameters table below. By pressing **[SET]** the value of the parameter is displayed and with the , we change the value. By pressing we **confirm** the new value and the name of the parameter is displayed. By pressing **[SET]** we **cancel** the new value and the name of the parameter is displayed. By pressing we **exit** the parameters menu.

TECHNICAL SPECIFICATIONS

Power supply: 230VAC 50/60Hz / Maximum power consumption: 3W
 It is recommended to use a power supply safety switch: fuse 0,5A (not included)
 Cabinet's temperature sensor PTC 1K 25°C / Accuracy: 0.5°C
 Relay compressor 250VAC 30A resistive load 2HP / Relays fan, water level 250VAC 10A
 Operating temperature: -15÷+70°C / Storage temperature: -20÷+80°C
 The device is mounted through panel hole 29x71mm and secured with snap-in brackets

CONNECTIONS - DIMENSIONS



SERIAL INPUT

RSD can connect to the **key programmer** or to the data logger **Mini Logger** or to the **KIOUR CAMIN** network or to any **modbus network**.

- **Key programmer:** controller's parameter values can be saved or retrieved from the programming key. Plug in the programming key to the controller and press at the same time **[SET]+[up arrow]**. The device connects to the key and the message "Eo" is displayed. By pressing the device downloads the parameters from the key and the message "ro" = read O.K. or "rF" = read Fail is displayed. By pressing the device uploads the parameters to the key and the message "Yo" = Write O.K. or "YF" = Write Fail is displayed. In case of failure (rF or YF) reenter the key to the serial input and repeat the procedure from the beginning. The key can connect to all **KIOUR** devices. If you try to read the parameters of a different device, message "rF" is displayed. At any time, we can perform the aforesaid operation. After 10sec the key is disconnected.
- **Data logger Mini Logger:** the controller is connected to the data logger via cable and by programming the parameter **Add = 1**. Automatically, based on selected minutes, the data logger writes to a microSD memory card the controller's temperatures, status and alarms.
- **CAMIN network:** the controller can connect to the **CAMIN** network via an interface **NET-INS-485**. **CAMIN** is an PC software application designed to collect information, watch and fully control a net of **KIOUR** devices while sending SMS and email in case of an alarm. The maximum length of the net can be 1000 meters.

PARAMETER TABLE

#	code	description	min	max	RSD	UOM
1	SPo	SET POINT: temperature control room	SLo	SHi	0.0	°C/°F
2	ALo	lower alarm limit temperature of the room	-50	AHi	-4.0	°C/°F
3	AHi	higher alarm limit temperature of the room	ALo	+150	15.0	°C/°F
4	dFr	deFrost repetition time in hours	1	12	4	h
5	Cod	code to enter parameter's menu = "22" with Cod=1 and exit the menu → back to factory settings	0	255	0	-
6	diF	differential operating temperature of SPo	0.1	25.0	3.0	°C/°F
7	CFA	In case of sensor's malfunction (LF1), the compressor operates as follows: 0 = 40% compressor's operation (3min ON, 4min OFF), 1 = 100% compressor's operation (ON continuously).	0	1	0	-
8	Crt	minimum pause time of the compressor	0	4	2	min
9	dTi	maximum duration of deFrost	1	90	25	min
10	dLE	Temperature limit of deFrost: above this temperature the automatic deFrost stops and it is not possible to start the procedure again manually. Manual deFrost lasts 20 min and does not stop based on "dLE" temperature limit.	0.0	25.5	10.0	°C/°F
11	doP	type of deFrost: compressor OFF (not programmable)	-	-	0	-
12	dri	dripping time, in which the compressor remains OFF after deFrost ends	0	10	0	min
13	tdF	During deFrost the indication "dFr" is displayed, where: 0 = the room's temperature is displayed during defrost.	0	99	20	min
14	AJ1	zero adjustment of temperature sensor	-9.9	+15.5	0.0	°C/°F
15	AJ2	(not in use)			0.0	
16	tSd	time delay for refreshing the temperature indication on screen	0	20	0	sec
17	F_C	switch °C/°F (0=°C, 1=°F) ATTENTION: changes between °C/°F do not apply on SPo	0	1	0	°C/°F
18	brA	baud rate (9600mbps)	-	-	-	-
19	trE	time response of the device to the CAMIN network	0	100	20	msec
20	FFu	Fan's relay operation (1=ON continuously, 0=ON when the compressor is ON). The fan operates during deFrost.	0	1	0	-
21	UFu	serial input operating mode, where 0 = operates with the network and the serial key, 1 = connects with an external device for exporting alarms. ATTENTION: if the value in "Add" parameter is ≠ 0, then the "Ufu" is programmed automatically to 0.	0	1	0	-
22	SLo	minimum temperature limit of SPo	-50	SHi	0.0	°C/°F
23	SHi	maximum temperature limit of SPo.	SLo	+150	+8.0	°C/°F
24	Odo	Door input polarity (0=OFF, 1=ON with NO contact, 2=ON with NC contact). When the door opens, the fan turns OFF immediately.	0	2	0	-
25	At2	Start delay time alarm, where: 0 = activate immediately, 1 ÷ 120 min = the alarm is activated after the selected minutes. For sensor and door failure alarms, the above rules do not apply.	0	120	20	min
26	U3	(not in use)	-	-	-	-
27	U4	(not in use)	-	-	-	-
28	U5	(not in use)	-	-	-	-
29	Add	address of the device in the CAMIN network	0	255	1	-

ALARM TABLE

1	LF1	cabinet sensor malfunction
2	ALo	alarm low temperature in the cabinet
3	AHi	alarm high temperature in the cabinet
4	dor	open door alarm (if the door is open more than 2min the alarm is activated and the compressor stops)

The alarms are automatically deactivated when the cause of the alarm disappears.

Made in Greece.



ATTENTION according to safety standards, the device must be properly positioned and protected from any contact with electrical parts. All parts that provide protection must be fastened in such a way that they cannot be removed without the use of tools. **ATTENTION:** disconnect the power supply of the device before proceeding to any kind of maintenance. **ATTENTION:** do not place the device near heat sources, equipment containing strong magnets, in areas affected by direct sunlight or rain. **ATTENTION:** prevent electrostatic discharges at the side slots of the device and sharp objects from been inserted. **ATTENTION:** separate the signal's cables from the power supply's cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables. **Use the device only as described in this document, not to 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. Read and keep these instructions.** The device is under two year's guarantee of good operation. 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 preserves the right to adjust its products without further notice.