

DESCRIPTION

RCT35 is a temperature controller for cooling and heating applications. The device can also be used as a **safety controller**. It has two relay outputs where the first relay operates in PID or ON-OFF mode while the second one only in ON-OFF mode. The two relays can be adjusted in cooling or heating mode with one or two set points. If we adjust one set point, then the second one is added to the first one. The state of the relays (ON or OFF) can be adjusted in case of sensor's malfunction. The sensor can be either **NTC** scale $-37 \pm 110^{\circ}\text{C}$ ($-34 \pm 230^{\circ}\text{F}$) or **PTC** scale $-50 \pm 110^{\circ}\text{C}$ ($-58 \pm 230^{\circ}\text{F}$) by adjusting a parameter. The controller has a serial input and can connect to the **KIOUR CAMIN** modbus network for full monitoring and data logging of the device.

PROGRAMMING THE PARAMETERS

By pressing [←] we **enter or exit** the parameter's menu.

The first parameter "**SP1**" is displayed and with the [▲], [▼] we scroll into the parameters based on the parameter's table below.

By pressing [SET] the value of the parameter is displayed and with the [▲], [▼] we adjust 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** parameter's 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)

Temperature sensor NTC 10K 1% 25°C IP68 (or PTC 1K 25°C is not included) / Accuracy: 0.5°C

Serial Input

Two Relays 250VAC 10A

Operating temperature: $-15 \pm 55^{\circ}\text{C}$ / Storage temperature: $-20 \pm 80^{\circ}\text{C}$

The device is mounted in Ω rail / Connection with terminal blocks 18A

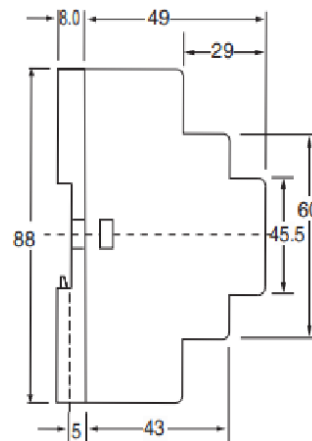
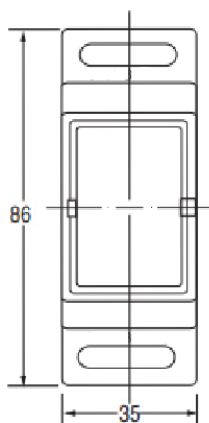
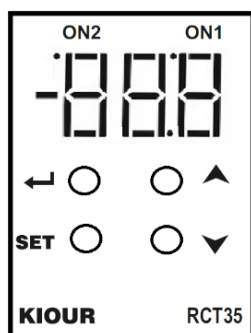
Dimensions 89x35x57mm

SERIAL INPUT

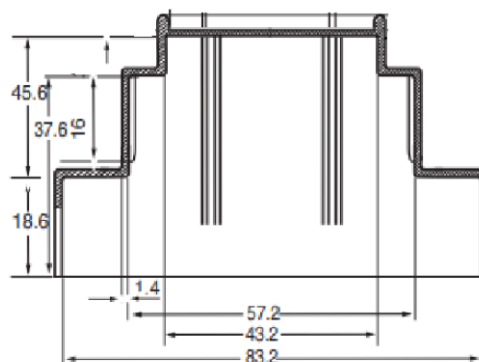
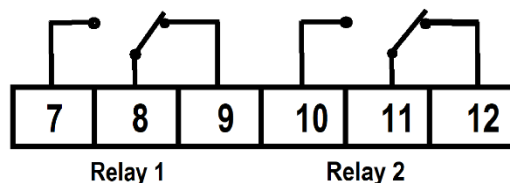
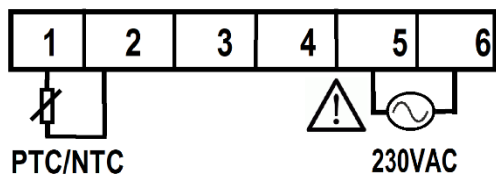
RCT35 can connect to the **key programmer** or to the data logger **Mini Logger** or to the **KIOUR CAMIN** network or to any **modbus network**.

- **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]+[▲]. 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.

CONNECTIONS - DIMENSIONS



Data



SAFETY THERMOSTAT FUNCTION: Via **tdE** parameter, we setup to normal or safety thermostat mode, as follows:

0 = Normal operation.

1 = Safety thermostat with automatic RESET.

2 = Safety thermostat with manual RESET. In operation as a safety thermostat, the parameters (according to the table below) are deactivated: 2, 5, 6, 7, 9, 10, 11, 12, 18, 19. The display shows the function of relay 1. An underscore in the number of hundreds flashes. If we have manual reset operation, **r** is displayed in the tens digit. RESET is the down arrow [▼]. The temperature is displayed by pressing the SET button. The relay is ON above **SP1**. When the relay is OFF the **r** flashes. Pressing RESET stops flashing.

PARAMETER TABLE

#		description	min	max	RCT35	UOM
1	SP1	SET POINT1: temperature control for relay1, when the relay is ON the Led "ON1" is displayed.	-50	150	5	°C/°F
2	SP2	SET POINT2: temperature control for relay2, when the relay is ON the Led "ON2" is displayed.	-50	150	10	°C/°F
3	Cod	code to enter parameter's menu Cod = 22	0	255	0	-
4	dF1	differential operating temperature of SP1	0.1	25.5	3.0	°C/°F
5	dF2	differential operating temperature of SP2	0.1	25.5	3.0	°C/°F
6	C_1	in PID mode, the controlled temperature value is adjusted exactly to SP1	0	25.5	0	°C/°F
7	Con	sets the relay mode, where: 0 = ON-OFF operation, 1 = PID control	0	1	0	-
8	rP1	operating status of SP1 relay (ON or OFF) in case of sensor's malfunction, where rP1 =0 OFF or rP1 =1 ON	0	1	0	-
9	rP2	operating status of SP2 relay (ON or OFF) in case of sensor's malfunction, where rP2 =0 OFF or rP2 =1 ON	0	1	0	-
10	dSP	determines the operation with one set point (1SP) or with two set point (2SP): 1 = one set point (1SP) 2 = two set point (2SP). In single set point operation, the second set point is added to the first set point and is entrained from it. With option= 2, the two set points are independent	1	2	2	-
11	HC1	sets SP1 relay in cooling (HC1 =0) or heating mode(HC1 =1). In heating mode, the relay is ON under the SP. The opposite occurs in cooling mode.	0	1	0	-
12	HC2	sets SP2 relay in cooling (HC2 =0) or heating mode(HC2 =1).	0	1	0	-
13	tOn	Timeout from ON to ON of the relay. Applies to relay 1 and relay 2. Not applicable to PID. Counts in minutes	0	5	0	min
		In safety thermostat mode, time for ON delay. Counts in seconds	0	5	0	sec
14	tOF	Time from OFF to ON of the relay. Applies to relay 1 and relay 2. Not applicable to PID. Counts in minutes	0	5	0	min
		In safety thermostat mode, time for OFF delay. Counts in seconds	0	5	0	sec
15	SE1	zero adjustment of the sensor	-10	10	0	°C/°F
16	tdE	Type device. Device mode, where: 0 = Normal operation. 1 = Safety thermostat with <u>automatic</u> RESET. 2 = Safety thermostat with <u>manual</u> RESET. Relay 2 does not operate in safety thermostat operations.	0	2	1	-
17	C F	temperature indication as integer or decimal , where dEC =0 integer, dEC =1 decimal	0	1	0=°C	-
18	ALo	lower alarm limit temperature of the cabinet	-50	+150	-10	°C/°F
19	AHi	higher alarm limit temperature of the cabinet	-50	+150	+80	°C/°F
20	tS	time delay for refreshing the temperature indication on screen	0	10	0	sec
21	Add	address of the device in the network for connecting to Mini Logger adjust Add = 1 .	0	255	1	-
22	Sen	NTC/PTC sensor selection for Sen = 0 PTC and Sen = 1 NTC	0	1	1=NTC	-
23	trE	time response of the device to the CAMIN network	0	100	30	msec
24	tdA	delay time for activation of the "AHi" and "ALo"	0	200	0	min

ALARM TABLE

1	LF1	sensor malfunction
2	ALo	alarm low temperature in the cabinet
3	AHi	alarm high temperature in the cabinet
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.