TEMPERATURE CONTROLLER Model MICF2_V4 230VAC (GB) KIOUR

ATTENTION *Firmware V4.0.0*

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.

DESCRIPTION

MICF2 is a temperature controller for cooling and heating applications. The device can also be used as a **safety thermostat** by adjusting a parameter. The room temperature is controlled with an NTC / PTC sensor. It has 3 indication digits of temperature display with an accuracy of 0.5 ° C and 4 buttons. It has two relays where the first relay works in PID (only in heating mode) or ON-OFF state and the second relay works only in ON-OFF state. 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 device is mounted on a panel hole 29x71mm and it is restrained with plastic side brackets. Through the serial input it can be connected to a network either through Cloud IoT on the CORTEX platform, or through a local computer in the CAMIN program for complete local recording and monitoring of the device.

INDICATIONS - CONNECTIONS - DIMENSIONS

Indications	
❄	relay 1 ON
	relay 2 ON
⚠	alarm ON
🔧	malfunction ON

Keyboard	
↵	enter/exit the parameter's menu store new parameter
SET	display the parameter's value display the temperature (only for a safety thermostat)
▲	up arrow
▼ ⏻	down arrow ON/OFF device (check below) RESET (only for a safety thermostat)

For more indications regarding the alarms please see the alarm's table at page 3.

ADJUSTING TEMPERATURE – SET POINTS

1. Press ↵ to display the first parameter **SP1** and with ▼ display the second parameter **SP2.**
2. Press SET to display its value. With ▲ or ▼ change the value.
3. Press ↵ to save the new value. The device is working properly with the new adjustment.

INDUSTRIAL FACTORY SETTINGS

1. Press ↵ to display the parameter **SP1**. By pressing twice ▼ the parameter **Cod** is displayed.
2. Press SET to display its value and press and press ▲ to enter the value **31**. By pressing ↵ to store the value to parameter **Cod.**
3. Press ↵ again to exit the parameter menu, 'YES' is displayed on the screen. All appropriate factory settings are now stored in the device.

⏻ SWITCHING ON / OFF THE DEVICE

To activate or deactivate the device, press for 3 seconds ▼.

PROGRAMMING A PARAMETER

ATTENTION*: to gain full access to the parameter's menu, the 3rd 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 ▲ and press SET to display its value.
3. Press ▼ or ▲ to change its value and then press ↵ to store the new value.
4. Press ↵ to exit the parameter menu.

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 following parameters**:** 2, 5, 6, 7, 12, 13, 14, 16,17, 18, 20 are deactivated (according to the parameter table below).

The display shows the function of relay 1. An underscore in the number of hundreds flashes. The temperature is displayed by pressing the button SET.

With mode set to **manual** RESET (**tdE = 2**), the symbol **r** is displayed in the tens digit. The RESET is down arrow ▼.
The relay is ON above **SP1**. The symbol **r** flashes when the relay is OFF. Press **RESET** to stop flashing.

SERIAL INPUT

MICF2 connects via serial input to the cloud and the online CORTEX platform or to a local computer with the CAMIN program or to the memory key or to any Modbus network.

- Cloud and CORTEX platform: connection to the cloud and the CORTEX platform for monitoring - recording and managing the thermostat from your mobile, tablet or any computer. Also, send email and Viber SMS in case of alarm.
- CAMIN program: local connection and monitoring - recording and management of the thermostat through the CAMIN program installed on a local computer.

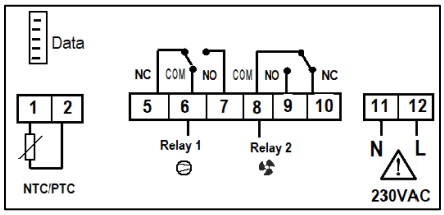
TECHNICAL SPECIFICATIONS

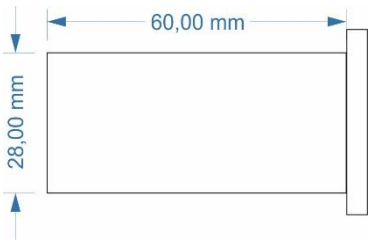
Model **MICF2** power supply: 230VAC 50/60Hz / Maximum power consumption: 3W. Model **MICF2W** switching power supply 100-264VAC 50/60Hz 5W.
It is recommended using a power supply safety fuse: 0.5A (not included)
Room temperature sensor NTC 10K 1% 25°C IP68 with temperature range -50÷+112°C (-58÷+230°F) (or PTC 1K 25°C with temperature range -50÷+150°C (-58÷+302°F) not included) / Accuracy: ±0.5°C
Serial input with 5pin connector
Relay 1 16A res., 250VAC NO,NC contacts (SPDT relay) / Max current load 16A
Relay 2 10A res., 250VAC NO,NC contacts (SPDT relay) / Max current load 10A
Connections: cable cross section 2.5 mm² for all relays / cable cross section from 0.25 to 1.0 mm² for the sensors
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
Dimensions 28x70x60mm / The device is mounted on a panel hole 29x71mm and it is restrained with plastic side brackets / Protection IP65 front
Firmware: V4.0.0

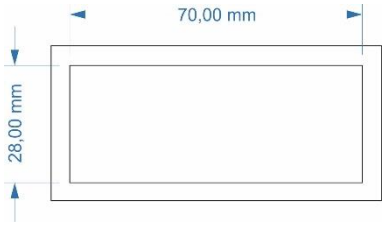
ELECTRICAL DIAGRAM - DIMENSIONS

***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.*
***ATTENTION**: Read carefully the technical specifications and make sure that the working conditions are appropriate. According to safety standards, the device must be fastened in such a way that it cannot be removed without the use of tools.*

Dimensions are in mm. The device is mounted on panel hole with cut 29x71mm and restrained with plastic side brackets.







PARAMETER TABLE

No.		description	min	max	MICF2	uom
1	**SP1**	SET POINT1: temperature control for relay1, when the relay is ON the symbol ❄ is displayed.	-50.0	150	5.0	°C/°F
2	**SP2**	SET POINT2: temperature control for relay2, when the relay is ON the Led is displayed.	-50.0	150	10.0	°C/°F
3	**Cod**	enter password code Cod = 22 and press to enter the other parameters	0	255	0	-
ANALOG INPUTS - TEMPERATURE						
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	**dSP**	sets the operation with one set point (1SP) or with two set point (2SP), where: **1 =** one set point (1SP) If we adjust one set point, then the second one is added to the first one. **2 =** two set point (2SP)	1	2	2	-
7	**C_I**	in **PID** mode, the controlled temperature value is adjusted exactly to SP1	0.0	25.5	0.0	°C/°F
8	**SEn**	sensor type **NTC/PTC,** where: **0 =** PTC , **1 =** NTC	0	1	1=NTC	-
9	**SE1**	room sensor offset	-10.0	10.0	0.0	°C/°F
10	**tdS**	delay in displaying the actual room temperature on the screen	0	255	0	sec
11	**C_F**	toggling **°C / °F** , where: **0 =** °C , **1 =** °F ***ATTENTION:*** toggling between **°C / °F** do not adjust the SP1, SP2, ALo, AHi automatically, it must be changed by the user	0	1	0=°C	-
ALARMS						
12	**ALo**	**lower** alarm limit temperature of the cabinet	-50.0	+150	+4.0	°C/°F
13	**AHi**	**higher** alarm limit temperature of the cabinet	-50.0	+150	+40.0	°C/°F
14	**At2**	*Time delay in activating "ALo", "AHi".* This setting does not apply to sensor failure "LF1"	0	200	0	min
MODE OF OPERATION OF THE DEVICE						
15	**tdE**	mode of operation of the device, where: **0 =** normal operation **1 =** Safety thermostat with **automatic** RESET **2 =** Safety thermostat with **manual** RESET. Relay 2 does not operate in safety thermostat operations	0	2	0	-
RELAYS						
16	**Con**	sets the relay mode, where: **0=** ON-OFF operation, **1=** PID control	0	1	0	-
17	**HC1**	sets operation mode of relay 1 in cooling or heating mode, where: **0 =** cooling , **1 =** heating In heating mode, the relay is ON under the SP1. The opposite occurs in cooling mode.	0	1	0	-
18	**HC2**	sets operation mode of relay 2 in cooling or heating mode, where: **0 =** cooling , **1 =** heating In heating mode, the relay is ON under the SP1. The opposite occurs in cooling mode.	0	1	0	-
19	**rP1**	operating status of relay 1 in case of sensor's malfunction, where: **0 =** OFF , **1 =** ON	0	1	0	-

20	**rP2**	operating status of relay 2 in case of sensor's malfunction, where: **0 =** OFF , **1 =** ON	0	1	0	-
21	**tOn**	Timeout from **ON to ON** of the relay. Applies to relay 1 and relay 2. **Counts in minutes** / **Counts in seconds** Not applicable to PID and safety thermostat operation.	0	5	0	min sec
22	**tOF**	Time from **OFF to ON** of the relay. Applies to relay 1 and relay 2. **Counts in minutes** / **Counts in seconds** Not applicable to safety thermostat operation.	0	5	0	min sec
NETWORK - GENERAL SETTINGS						
23	**Add**	device **address** on network.	0	255	1	-
24	**trE**	**response time** of the device on network.	10	100	40	msec
25	**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	-
26	**Pro**	*cabinet's program (factory settings) is displayed – no access*	-	-	1	-
27	**tPE**	*unique product number – no access*	-	-	71	-
28	**UEr**	*Firmware version - no access*	-	-	4.0.X	-

ALARM TABLE

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

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

Made in Greece.

CE RoHS TÜV AUSTRIA HELLAS ISO 9001:2008 No. 01013192

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.