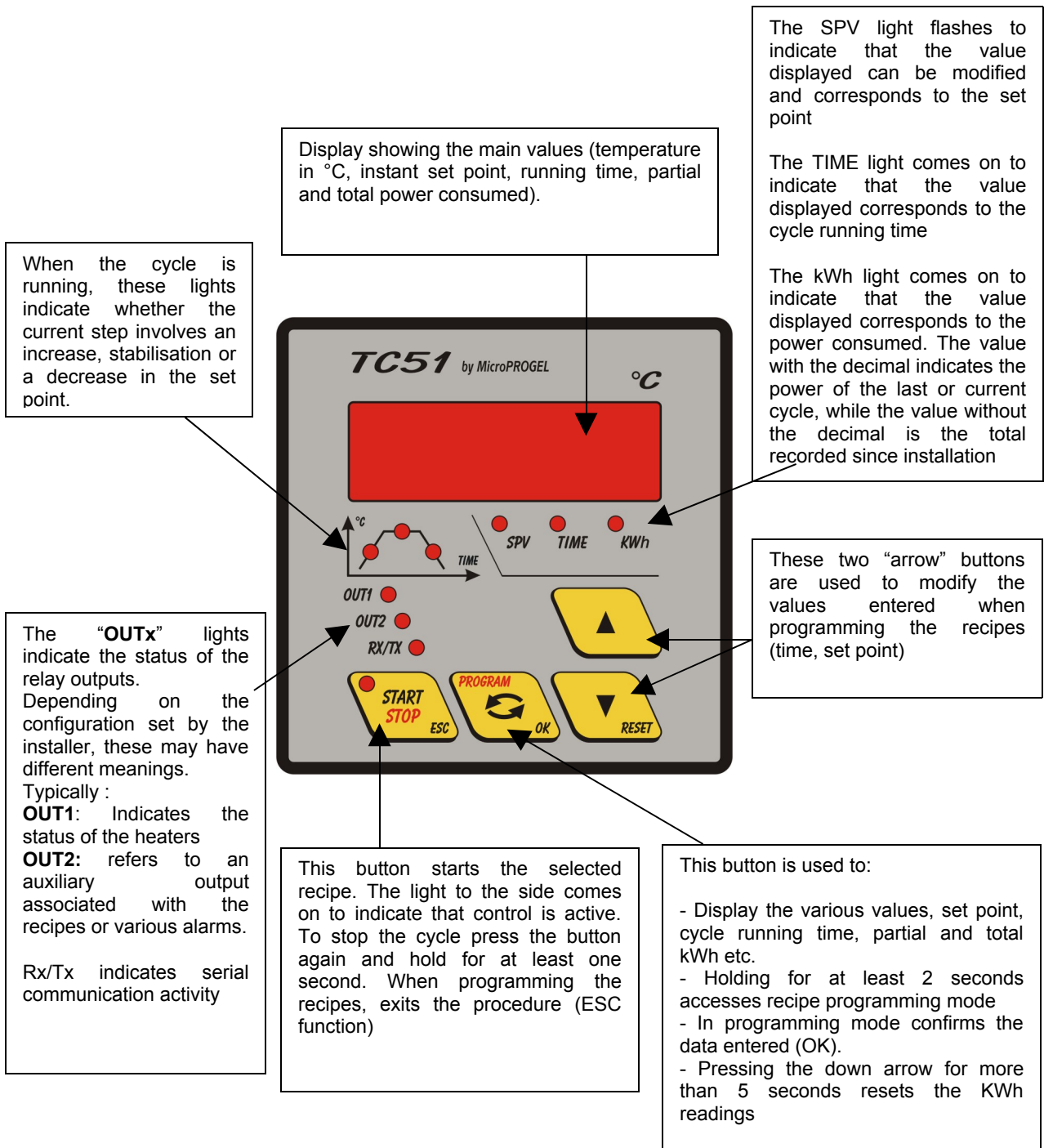


**TC51 controller
User Manual**

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SUMMARY

page

Sect. 1) Description of the controller operating modes.....	4
STOP mode.....	4
Single set point mode.....	5
RUN cycle mode.....	5
RECOVERY mode.....	7
WAIT mode.....	7
Sect. 2) Selecting and entering / modifying a cycle.....	7
Example of programming a cycle.....	8
Sect. 4) Signals.....	10
Sect. 5) Alarms.....	10
Sect. 6) Pre-alarms.....	11


Sect. 1) Description of the controller operating modes

The controller features different operating modes:


•STOP mode

In this mode, the controller does not run any cycles, it simply measures the temperature of the oven and shows the reading on the display.

To access this mode, hold the  button for at least 1 second. The light next to the button is off in this situation.

Pressing the  button displays the following values in sequence:



- the temperature measured, expressed in °C

the three signals  are off

- the total running time of the last recipe, expressed in “hh.mm”,
the TIME light is on

- the power consumed by the previous cycle,
the value is expressed with one decimal figure,
the kWh light is on

- the total power consumed,
the value is expressed as a whole number
the kWh light is on

The   buttons have no function in this mode.

In this mode, the following actions are possible:



- Select and activate the “Single set point” function
- Select and activate a cycle
- Enter and/or modify a cycle


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•Single set point mode

In this mode, the controller manages the oven temperature based on the set point.

This mode can only be activated if the controller is in STOP status.

Press the  button to access to the list of cycles and then press the  button repeatedly until the display shows the message “S.Set” flashing.

Confirm by pressing the  button again within 5 seconds. The light next to the button comes on to indicate that the operation has been completed.



Pressing the  button displays the following values in sequence:


- the temperature measured, expressed in °C

the three signals _____ are off

- the instant set point expressed in °C,
the SPV light flashes to indicate that the value can be modified
- the power consumed since the mode was activated,
the value is expressed with one decimal figure,
the kWh light is on
- the total power consumed,
the value is expressed as a whole number,
the kWh light is on

Pressing the  or  button displays the temperature setting and increases or decreases the value.

The new set point value is confirmed by pressing the  button or by waiting 30 seconds, that is, when the controller automatically displays the temperature measured.

To exit the procedure and return to STOP mode, hold the  button for at least one second.

•RUN cycle mode




In this mode, the controller runs a cooking cycle, controlling the temperature of the oven according to the parameters of the pre-set recipe.

This mode can only be activated if the controller is in STOP status.

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Press the  button to access to the list of cycles, then press buttons  and  the to make the selection.

Confirms by pressing the  button again within 5 seconds.
The light next to the button comes on to indicate that the operation has been completed.

If a non-programmed cycle is activated, the controller signals the following error:
“ER26 Cycle empty”.

To cancel the error signal press the  or  button.

Pressing the  button displays the following values in sequence:

- the temperature measured, expressed in °C

the three signals are off

- the instant set point expressed in °C,
the SPV light flashes to indicate that the value can be modified

- the step of the current cycle

the display shows “S-*nn*” to indicate the number of the step

- the time elapsed since the start of the cycle

the value is expressed in “hh.mm”

the TIME light is on


- the power consumed since the start of the cycle,
the value is expressed with one decimal figure,


the kWh light is on

- the total power consumed,

the value is expressed as a whole number,

the kWh light is on

Pressing the  or  button scrolls forwards or backwards to a specific point in the recipe. Each time the button is pressed the recipe is scrolled by one minute, while holding the buttons scrolls by 10 minutes.

The new set point value is confirmed by pressing the  button or after

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waiting 30 seconds, that is, when the controller automatically displays the temperature measured.

At end of the cycle, the controller shows the message "End Cycle" on the display.

To stop the cycle and return to STOP mode, hold the



button for at least one second.

•RECOVERY mode

The controller enters RECOVERY mode when a cycle is stopped due to a blackout. When power returns, the controller performs an additional step at a fixed gradient (defined by the installer) to return to the set point prior to the blackout and then

continue the recipe. This condition is signalled by the



light flashing and by

the message "Recovery in progress"; pressing the



button twice displays the current step.

To stop Recovery mode and return to Run simply press the up



or down

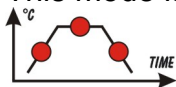


button.

•WAIT mode

The controller enters WAIT mode when the temperature of the oven does not reach the end step temperature within the preset time.

This mode is signalled by the flashing of one of the three indicator lights



To stop Wait mode, simply press the up



button to display the set point

and press it again to confirm the continuation of the cycle.

Sect. 2) Selecting and entering / modifying a cycle

The cycle can only be selected when the controller is in STOP mode.

When running, only the current cycle can be programmed.

When programming, the display flashes to indicate that the value can be modified using

the up



or down




button.

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To access the list of cycles, press the  button for 2 seconds. The display shows the message “C-*nn*” to indicate the number of the selected cycle.


- N.B.: the message “Conf” accesses the programming procedure by code,

in this case, press the  button to stop the operation.

The selection is confirmed by pressing the  button. The display starts showing the following parameters that define the cycle for each individual step in sequence:


- duration expressed in “hh.mm”
the value and the TIME light flash
- temperature set point expressed in °C
the value and the SPV light flash

Pressing the  button confirms the value set and moves to the next parameter. The programming procedure ends automatically after the 12th step, the maximum number of steps in each cycle, or by setting the duration of a step to 00.00.

On the other hand, to terminate programming simply press the  button.

Example of programming a cycle

To program recipe 2 with the following pairs of time/set point values (steps):
01:00 600°C, 00:30 600°C, 00:45 700°C

✓ place the controller in STOP mode by pressing the  button for more than one second

✓ press  for 2 seconds

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✓ select cycle 2 by pressing the  or  buttons

✓ confirm by pressing





✓ the controller awaits the entry of the time for the first pair of time/set point values (STEP no. 1)

✓ press  to increase the value shown or  to decrease it, until the display shows the time 01:00 (that is, 1h) flashing

✓ press





✓ the controller awaits the entry of the set point for the first pair of time/set point values (STEP no. 1);

✓ press  to increase the value shown or  to decrease it, until the display shows the temperature 600 °C flashing

✓ press





✓ the controller awaits the entry of the time for the second pair of time/set point values (STEP no. 2)

✓ press  to increase the value shown or  to decrease it, until the display shows the time 00:30 (that is, 30 minutes) flashing

✓ press





✓ the controller awaits the entry of the set point for the second pair of time/set point values (STEP no. 2)

✓ press  to increase the value shown or  to decrease it, until the display shows the temperature 600 °C flashing

✓ press



✓ the controller awaits the entry of the time for the third pair of time/set point values (STEP no. 3)



✓ press  to increase the value shown or  to decrease it, until the display shows the time 00:45 flashing

✓ press




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✓ the controller awaits the entry of the set point for the third pair of time/set point values (STEP no. 3)

✓ press  to increase the value shown or  to decrease it, until the display shows the temperature 700 °C flashing

✓ press 

✓ the controller awaits the entry of the time for the fourth pair of time/set point values (STEP no. 3)

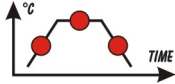
✓ press  until the display shows the time 00:00 flashing

✓ press  to end the recipe, the controller exits the recipe setting procedure.

Sect. 3) Resetting power consumption

To reset the total counter of the power consumed, press the  button until the value is displayed, then hold the  button for at least 4 seconds.

Sect. 4) Signals

The section of indicator lights  shows whether the temperature setting, during the steps in the cycle, is increasing, steady or decreasing. One of the three indicator lights flashing means the controller is in Wait mode.

Sect. 5) Alarms

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When a cycle is running the controller may signal one of the errors described in the following table.

ERROR CODE AND MESSAGE DISPLAYED	CAUSE	SOLUTION
ER21 EEprom failure	Memory device fault	Contact the installer
ER25 Cycle data error	Recipe in the memory with incorrect data	Contact the installer
ER26 Cycle empty	Attempt to run a cycle without programmed steps.	Program the recipe
ER41 TC1 not connect	Thermocouple interrupted, not connected or connected incorrectly.	Check the thermocouple and the connections
ER42 TC2 not connect	Thermocouple interrupted, not connected or connected incorrectly.	Check the thermocouple and the connections
ER43 TA error	Cold joint temperature sensor faulty or interrupted.	Contact the installer
ER51 Recovery not allowed	When power returns the temperature is less than the set point – maximum recovery temperature	Reset the alarm
ER53 End step timeout	The delay in which the controller should have measured a temperature near the set point has expired	Reset the alarm
ER61 Process out of limit	The temperature measured is greater than the alarm threshold set for the auxiliary output	Reset the alarm

Sect. 6) Pre-alarms

These are reset automatically, no operation needs to be performed

MESSAGE DISPLAYED	CAUSE
Alarm 1	The conditions defined for the activation of output 1 have been reached
Alarm 2	The conditions defined for the activation of output 2 have been reached
OPEN	One of the two digital inputs has been programmed to acquire the status of the door, which is found to be open