

USER MANUAL

REGULATOR WATLOW F4 Series



1) INTRODUCTION

F4 series is the latest of the WATLOW 16 bits microprocessor generation.
The main feature is the easy program settings thanks to a wide and bright LCD screen combined with a very easy access menu and comfortable key panel.

Some features :

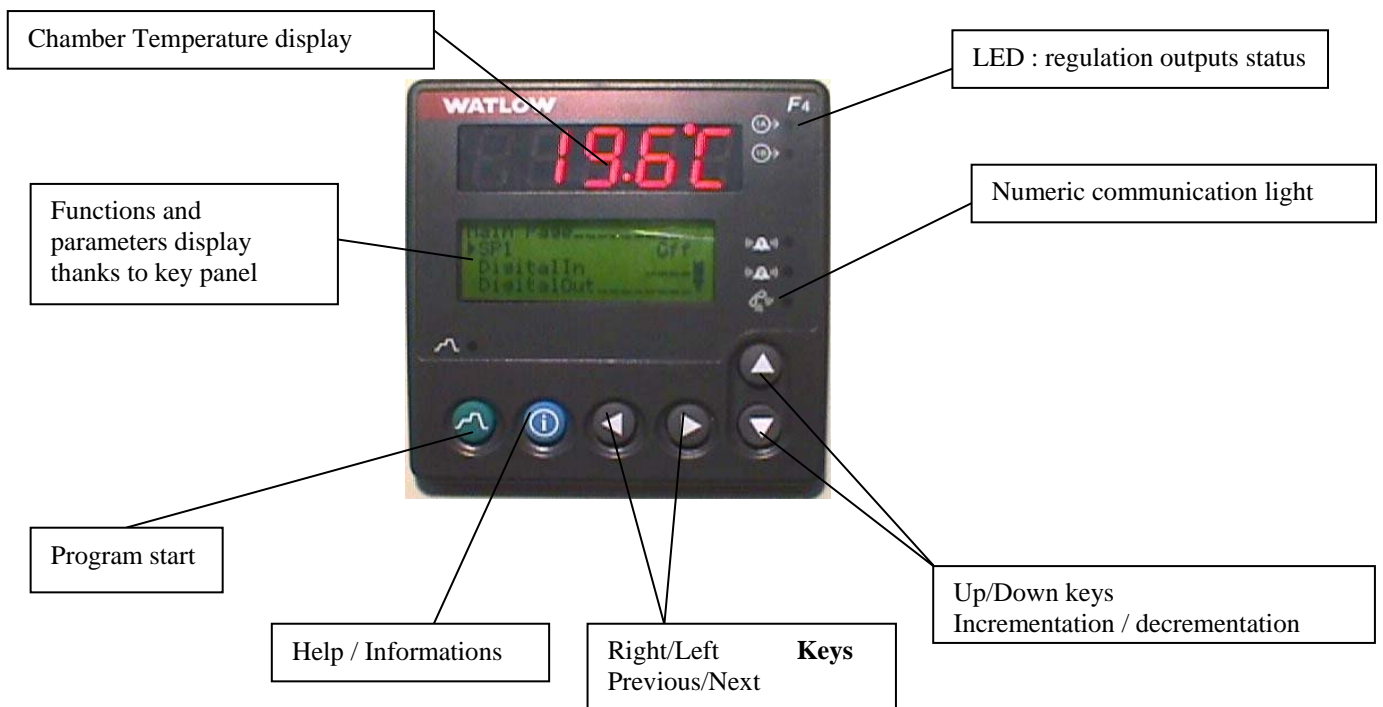
- Create and record up to 256 segments over 40 different programs.
- Program names up to 10 alphanumeric characters.
- Delayed start available thanks to “Live” clock on battery
- “High definition” LCD display
- Personalized Menu.

2) KEYBOARD, DISPLAY and BROWSING

The regulator software is organized around 5 main functions :

- *Main page*
- *Operations*
- *Profiles*
- *Setup*
- *Factory*

The regulator key panel gives easy access to all functions and parameters.
Data are displayed on a 4 lines LCD screen. The main page can be personalized to display the desired parameters.



3) USER MODES

‘MANUAL’ Mode :

3.1 How to enter the setpoint

From MAIN PAGE, select *SPI* parameter (temperature setpoint) with the Up/Down keys

The cursor is in front of the parameter, using > key, you can change the value of the parameter.

Modify *SPI* to the target value with the Up/Down keys.

Validate with > key .

Press > key to return to main page.

The setpoint value is taken into account.

3.2 How to start the chamber

From MAIN PAGE, select *DigitalOut* parameter (Logical Outputs) with the Up/Down keys.

The cursor is in front of the parameter, using > key, you can change the value of the parameter.

Select '*event output 1*' with > key.

Put the cursor on '*ON*' with the Up/Down keys.

Validate with > key, the chamber starts.

Press < to return to the main page .

NOTA :

In the main page, you have now : DigitalOut 1_ _ _ _ _

3.3 How to stop the chamber

Proceed the same way as for starting the chamber, with the Up/Down keys, place the cursor on '*OFF*' .

Validate with > key, the chamber stops.

Press < to return to the main page.

NOTA :

In the main page, you have now : DigitalOut _ _ _ _ _

‘PROGRAM’ MODE :

3.4 Program Editor

From MAIN PAGE, select *Go to profiles* parameter with the Up/Down keys.
Validate with > key, you can choose three options :

- *Create Profile*
- *Edit Profile*
- *Delete Profile*

3.5 Create a new program

Validate ‘*Create Profile*’ with > key.

Name a Program :

This function allows to choose a name for your program :

Choose to name :

No
Yes

Select with the Up/Down keys, and then validate with > key.

To name your program, you must choose character one by one, with the Up/Down and </> keys.

Once the name is chosen, validate with > key.

To come back, use < key.

Segment type choice :

For each new segment of the program, you must choose the type of segment among 6.

For each type of segment, each function has its own configuration :

- **Autostart** (delayed start)
 - Date*
 - Day*
- **Ramp Time**
 - Wait for*
 - Event Outputs* (logical outputs)
 - Time* (time to reach the setpoint)
 - Ch1 SP* (temperature setpoint)
 - Ch1 PID Set* (configuration choice for PID 1-5)
 - Guar. Soak1* (immersion mode guarantee)

- **Ramp Rate**
Wait for
Event Outputs (logical outputs)
Rate
Ch1 SP (temperature setpoint)
Ch1 PID Set (configuration choice for PID 1-5)
Guar. Soak1 (immersion mode guarantee)
- **Soak**
Wait for
Event Outputs (logical outputs)
Time (soak time)
Ch1 PID Set (configuration choice for PID 1-5)
Guar. Soak1 (immersion mode guarantee)
- **Jump**
Jump to profile (Go to program1-40)
Jump to step (Go to segment1-256)
Number of Repeats (number of loops)
- **End**
Hold
Control off (regulation outputs stop)
All Off (all outputs(regulation and events) stop)
Idle

Parameters can be adjusted for each segment with the **Up/Down** and </> keys.

IMPORTANT :

- For each segment, parameter *Event Outputs 1* (Logical output 1) must be ON (Chamber start function). Choose ‘*All of*’ on the last segment (« End » type) of the program to stop the chamber at the end of the program.
- Parameter *Ch1 PID Set* (configuration choice for PID 1-5) is set to 1 by default.

Record the program :

When going out of “Create profile” menu, you have two options :

- Save profile data*
- Or restore values ?* (restore old values ?)

Save with the **Up** key, or cancel with the **Down** key.

3.6 Modify an existing program

From MAIN PAGE, select parameter *Go to profiles* with the **Up/Down** key.

Validate with > key, you have three options :

- ***Create Profile***
- ***Edit Profile***
- ***Delete Profile***
-

To modify or edit a program:

- Validate '***Edit Profile***' with > key.
- Choose the program to edit (>)
- 3 options :
 - ***Insert Step***
 - ***Edit Step***
 - ***Delete Step***

To edit one segment :

- Validate '***Edit Step***' with > key'.
- Select the segment to edit with > key.
- Modify the type or configuration of the segment (See §3.5)

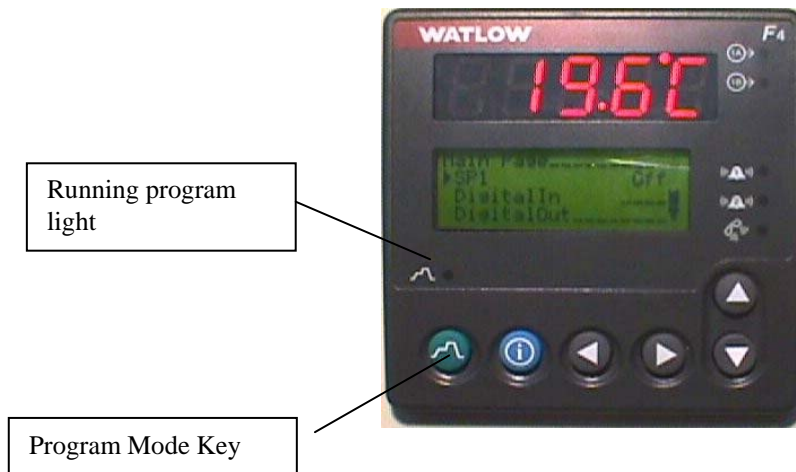
To insert one segment :

- Validate '***Insert Step***' with > key.
- Move the cursor on the segment number in front of which one segment will be inserted (all following segments will be renumbered).
- Validate with > key.
- Complete the new segment configuration. (See §3.5)

To delete one segment :

- Validate '***Delete Step***' with > key.
- Move the cursor on the segment number you want to delete.
- Validate with > key (all following segments will be renumbered).

3.7 Start an existing program



- Press 'Mode programme' key.
- '**Start Profile**' appears with the list of the existing profiles.
- Choose a profile by moving the cursor (>).
- Validate with > key.
- Choose starting segment (segment 1 by default)
- Validate with > key.
- The program starts and the chamber starts running.

From that time, pressing 'Mode programme' key allows you to :

- Suspend the program (**Hold**),
The regulator keeps last setpoint as active and regulates on this value.
- Resume the program from where it has been stopped (**Don't Hold**)
- Stop the program (**Terminate**).