

SATEPA UV CONTROLLER

8 – Systems with *Electronic LCD Display*

The LCD control unit is an integrated power supplier suitable for the UVC lamps management (40W or 80W) and it can also be provided with a sensor to measure the irradiation and the water temperature (secured to the collector). The cabinet is provided with a free contact relay for alarms and a powered contact for the control of a solenoid valve. An input for the remote control completes the features.



8.1 – Assembly

The box, with IP54 degree of protection, is provided with a support for the wall-mounted assembling. It includes also 1.5m (5x0,5mm²) cable for every lamp with a 4-pin socket, and 1.5m (3x0,75/1,5mm²) power cable and, in the version with the sensor, it also has a 1.5m (4x0,35mm²) cable with a round connector.

8.2 – Connections

Connect the lamps to the 4-pin connector at the end of the lamp cable and to the sensor, if provided. Then, connect the power cable to the mains.

WARNING: Connect the power cable only when all the connections are completed, in order to avoid electricity problems or damage to the lamps, caused by mistakes in the assembling process.

8.3 – Operations

1. STARTING OPERATION: When the system is switched on, the Control Unit starts to switch on the lamps, while controlling the input signals. "WAIT" is displayed and the symbol ">" progresses. When the device is completely switched on, Control Unit immediately manages the status of the lamps and, if the sensor is provided, the input temperature of the water and the UV irradiation of the lamp.



2. **STAND BY MODE:** During the ordinary operations carried out by the System, it is possible to stop the Control Unit by pressing the "OK" button. By doing so, the system is put in *Stand-by* mode, where the lamps are switched off and all the input and output signals are disabled. Pushing again the "OK" button for a few seconds allows the system to restart. The same function can be carried out by a remote on/off input signal connected to "REMOTE" input.

3. **MODE OF OPERATION:** When switched on, Control Unit monitors the input and output signals. The display shows the following information:

- **"Hr TOT"**. It represents the plant lifetime starting from the first activation. It is updated every 10 minutes.
- **"Hr LAMPS"**. It represents the lamp lifetime, and it starts at the set value (i.e. 9000h) decreasing every hour and generating an alarm when this time elapsed. IMPORTANT: The alarm does not switch the lamp off.
- **"UVC 100%"**. If provided it represents the actual value measured by the sensor (i.e. 100%). When it falls below the set-up limit, it generates an alarm. IMPORTANT: The alarm does not switch the lamp off.
- **"TEMP 20°"**. If provided it represents the water temperature inside the collector, which is monitored by the sensor. When it goes beyond the set-up limit, it generates an alarm: IMPORTANT: This alarm DOES switch the lamp off. By pushing the "OK" button, the alarm is cancelled, and the lamp can be restarted by pushing the "OK" button for a second time.

When the system is working, by pressing the buttons "↓" or "↑" the user can enter the *Setup* mode, the *New Lamps* mode or the *Calib UVC* mode:

"NEW LAMPS" is the menu that counts all the lamps' replacements. By pushing the "OK" button the partial hours counter **"Hr LAMPS"** will be restored at the set value (i.e. 9000h). The calculation of the lamps' replacements increases and, if provided, the alarm is reset.



“**CALIB UVC**” allows the user to calibrate the current irradiation value at a 100% rate. WARNING: These values should be set after some minutes from the start, so that the parameters get fixed, and the sensor is able to analyse a stable emission. Press “OK” button to enter the calibration menu, where the value in mV is shown in red by the sensor: by pressing again “OK” button this value is set to 100%.

4. STATE OF ALARM: When the EBC LCD Control Unit activates a state of alarm, the led flashes and its alarm is displayed as follows:

Lamp fault	LAMPn OFF
End of Lamp life	Hr LAMPS 00000
Irradiance under the threshold	LOW UVC %
Temperature over the threshold	High Temper.

IMPORTANT: When the system activates the alarm it also turns on a dry contact and a powered contact relay @230 VAC, (both relay 1 A @ 30Vdc; 0,250 A @ 230Vac).

8.4 – Setting

After the system activation, by pressing the buttons “↓” or “↑” the user can enter the *Setup* mode with the password “000” (as factory default). The *Setup* mode allows the user to change the following parameters:

- “**SET Hr**”: which indicates the lamps’ lifetime (9.000 hours as factory default). Once elapsed, the EBC LCD enters in a state of alarm (see chapter 3)
- “**SET TEMP**”: which indicates the set limit of the temperature for the collector and it is expressed in °C (80 as the factory set default); if the system reaches this temperature, the EBC LCD enters in a state of alarm (see chapter 3). The message “High Temperature” will be displayed, and a manual operation is requested in order to restart the system and clear the alarm.



- **"SET UVC"**: which indicates the set limit of the UV irradiation (50% as the factory set default); when the irradiation falls below this value, the UVCUBE enters in an alarm state (see chapter 3), but it does not switch the lamps off: if the value goes up again, the alarm is reset.
- **"SYSTEM"**: it is not available for this version of the product.
- **"SENSOR"**: allows the user to select if the plant is provided with the sensor through the option "YES" or "NO".
- **"LAMPS NUMBER"**: it indicates the number of connected lamps (i.e. 2).

8.5 – Alarm

On the circuit board, the user will find an alarm, which is activated in case of the occurrences described in paragraph 3. As for the alarm, two relays are provided: a dry contact relay NO-COM-NC (1 A @ 30Vdc; 0,250 A @ 230Vac) and the second one with a PHASE OPEN – NEUTRAL – PHASE CLOSED powered contact (1 A @ 30Vdc; 0,250 A @ 230Vac) to operate a solenoid valve that stops the water flow when necessary.



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