



di Urbani Settimio & C. snc
via Moriconi 4b
60035 Jesi (AN)
P.IVA 00738790427

tel. 0731 605587
fax 0731 607757
info[@aes-elettronica.com](mailto:info@aes-elettronica.com)
www.aes-elettronica.com

OPERATION MANUAL ELECTRONIC KIT

FOR SPA AND MINI POOLS

ITALIAN LIFE

SOMMARIO

Main Circuit board	3
Hydromassage	4
Airpool	5
Chromotherapy	6
Recirculation Pump	7
Ozone Generator	7
Heater	8
Antifreeze	8
Tub Loading/Unloading	9
Timed Settings Filter Cycles	9
Touch Keyboard	10
Key Operation	11/12
Home Screen Display	13
User Menu Items	14
Technical Menu Items	15/16
Alarms Table	17
Test System	18/19
Electrical Parameters/Maximum Ratings	20



WHIRLPOOL FUNCTION

Before starting the function, select the number of pumps in the system in the technical menu: up to 2 whirlpool pumps can be controlled simultaneously.

Pressing the hydro button the first time starts pump 1, pressing the hydro button again starts pump 2. The third press switches off pump 2 and the fourth press switches off pump 1.

Each press of the key corresponds to a short sound from the keyboard buzzer.

The standby button icon is white and when the function is active it is blue.

The pumps start at fixed speed only after both the low and high level sensors have read the presence of water.

The whirlpool function is untimed, so the pumps must be intentionally switched off using the button.

If one or both sensors do not read the presence of water, the function does not start.

THE LOW LEVEL SENSOR IS MARKED WITH THE LETTER L.

THE HIGH LEVEL SENSOR IS MARKED WITH THE LETTER H.

AIRPOOL FUNCTION



Before starting the function, select the number of blowers in the system in the technical menu: up to 2 blowers can be controlled simultaneously.

Pressing the airpool button the first time starts blower 1, pressing the airpool button again starts blower 2. The third press turns off blower 2 and the fourth press turns off blower 1.

Each press of the button corresponds to a short sound from the keyboard buzzer.

The standby button icon is white and when the function is active it is blue.

The blowers start at a fixed speed and without time out only after the water has been read by the 2 level sensors.

The function can be turned off intentionally by the button or automatically when both 2 sensors no longer read the presence of water in the tank (see water drain function).

Automatic drying of the nozzles at the bottom of the tank is provided: after 10' from the last reading of no water presence by the low level sensor, it is assumed that the tank is empty and therefore the 2 blowers are automatically restarted for 1' to purge and dry the jets. At the end they turn off and the icon returns to standby condition, i.e. from blue to white.

During the waiting and autopurge phase (10' + 1') the blower icon flashes blue/white to indicate that the autopurge function is active.

CHROMOTHERAPY FUNCTION

The chromotherapy function is started by pressing the dedicated light button. In standby mode the light is off and the button is backlit in white.

When the light is turned on, the button turns blue and the headlights light up on the first color in the table below.

Each press advances one color: there are 16 fixed colors, with 3 different shades for the yellow-green-light blue-blue colors, and 5 automatic sequences that go around the colors provided for in each sequence. At the twenty-second press the light turns off.

COLOR 1 → COLOR 2 → COLOR 3 ----→ COLOR 16 → SEQUENCE 1 → SEQUENCE 2 → SEQUENCE 3 → SEQUENCE 4 → SEQUENCE 5 → OFF

The chromotherapy function has no time out and therefore must be intentionally turned off from the keyboard, to turn off from any color or sequence hold down the light button for 3".

The electronic board has 1 to 4 outputs for the RGB lights, if you want to put more than 4 lights you can also connect them in series.

For the order of colors, follow the table below:

THE COLOR SEQUENCES OF CHROMOTHERAPY ARE:

A 01: Energy Sequence (Red 30 "Orange 30 "Green 6 "Yellow 30 "White 30 "Green 6 "Yellow 30 "Orange 30 "Green 6")

A 02: Tonic Sequence (Yellow 30 "Red 30 "Green 30 ")

A 03: Relax Sequence (Blue 30 "Green 30 "Orange 6 "Light blue 30 "White 30 "Orange 6")

A 04: Sun Sequence (Yellow 20 "Light Blue 15 "Yellow 20 "Orange 15 "Yellow 20 "White 15")

A 05: Dream Sequence (Green 20 "Blue 20 "Violet 20 "Red 20 "Orange 20 "Yellow 20 "White 20 "Light blue 20")

NB: In the sequences, when a colour is shown that has different shades, these are all reproduced in the order highlighted in the table.

For example, Yellow will be the following sequence "Yellow 1"→ "Yellow 2" "Yellow 3".

Step	Colour
1	White
2	Red
3	Orange
4	Yellow 1
5	Yellow 2
6	Yellow 3
7	Green 1
8	Green 2
9	Green 3
10	Light blue 1
11	Light blue 2
12	Light blue 3
13	Blue 1
14	Blue 2
15	Blue 3
16	Violet

RECIRCULATION PUMP

The recirculation pump is always active whenever the hydromassage or airpool or both at the same time are turned on.

It is also tied to the reading of the presence of water by the 2 level sensors.

The recirculation pump ON/OFF button is used only to voluntarily turn it off but not to turn it on. If you turn it off, to reactivate it you must start the hydromassage pump or the blower if they are not active or turn them off and on again to return to normal functionality which requires the recirculation pump to operate simultaneously with the hydromassage or airpool functions.

The recirculation button icon, which is lit up in white in standby, automatically becomes blue if it is started the whirlpool or airpool. If I intentionally want to turn off the recirculation pump, the icon will return to standby, i.e. white. It is possible to set automatic filtering cycles: by entering the user menu, the duration of the automatic filtering cycle and the interval of hours between one cycle and the next are stored (see items PAG_M_U_3 and PAG_M_U_4).

If the recirculation pump switch-off button is pressed during the automatic cycle, the automatic cycle programming is automatically reset and they must be reset again.

In parallel with the operation of the recirculation pump, the heater and ozone are also activated if previously set in the system configuration menu. However, they are linked to the reading of the presence of water, the closing of the contact of a flow switch and the reading of the 2 T° probes present in the system.

The water sucked up by the recirculation pump is conveyed to the sand filter which, by filtering it, passes it through a flow switch which, in the presence of sufficient flow, will determine the closing of an electrical contact that will allow the heater to be electrically powered; if the flow switch does not close the contact, the heater is not powered and remains off until the water flow is such as to bring the flow switch from the open contact condition to the closed contact condition. The water passing through the heater will be disinfected by the ozone generator (optional) and then reintroduced into the filtered and disinfected tank.

Every time the recirculation pump is turned on, the heater and the ozone generator will also be automatically turned on.

OZONE GENERATOR

The presence or absence of the Ozone generator will be set from the user menu.

Every time the recirculation pump is turned on, the ozone generator and the heater will be turned on automatically.

Only in the antifreeze mode the ozone generator does not activate even with the recirculation pump and heater turned on.

HEATER



As already described, the heater operation is tied to a series of safety consents that must all be positive for it to be powered.

The optimal operating conditions of the heater are: the reading of the presence of water by the 2 level sensors (low and high), the operation of the recirculation pump, the consent of the flow switch and the reading of the temperature by the 2 probes provided.

The NTC temperature probe reads the temperature of the water in the tank which is displayed on the normal operation screen of the display.

The temperature of the water in the tank is compared with the desired temperature previously set by pressing the T° button (advancement of 1° with each press starting from a minimum of 15°C up to a maximum of 40°C) and stored in the settings menu.

The heater remains on until the detected temperature reaches the set temperature, when it reaches it it switches off until it has to compensate for the difference detected again.

In the settings menu you can store a maximum time within which, if the set temperature is never reached, the heater alarm intervenes and turns off the heater (see alarm table).

As previously written, the system is equipped with 2 temperature probes, in addition to the NTC probe there is also the NTC1 probe that measures the temperature of the water at the heater outlet, this represents a safety, the detected temperature can never exceed the threshold of 40°C beyond which the electronics goes into alarm and deactivates all functions except the light.

OPERATING RANGE: 15°C–40°C, Step: 1°C STARTING FROM A DEFAULT SET T° OF 35°C.

THE NTC WATER TEMPERATURE PROBE IN THE TANK IS COLORED BLUE.

THE NTC1 SAFETY PROBE AT THE HEATER OUTLET IS COLORED RED.

AUTOMATIC ANTIFREEZE FUNCTION

The antifreeze function prevents the temperature of the water in the pool from falling below a minimum threshold of 8°C, this condition particularly concerns outdoor pools and pools.

The function must be set from the settings menu by selecting status 1 (ON) and always takes priority over the automatic cycles set.

When the water temperature detected by the NTC probe drops to 8°C, the recirculation pump activates together with the heater, bringing the temperature back above the threshold of 8°C.

The display shows the word ANTIFREEZE and the indication of the temperature read by the NTC probe of the water in the pool.

TANK LOADING/UNLOADING MANAGEMENT



The loading solenoid valve is normally closed and opens by pressing the tank filling button 1, for this to happen the tank must be empty, i.e. both level sensors do not detect the presence of water.

At that point the water flows into the tank, its presence is detected by the low level sensor and then by the high one; from the moment the high level sensor detects the presence of water, with a delay of 7" (to avoid possible fluctuations of the water itself that could deceive) the loading solenoid valve closes and the tub is ready for use.

The drain solenoid valve is normally closed and opens only intentionally (operation reserved for the operator) by simultaneously pressing the combination of button 6 + button 7 (associated with a short sound of the buzzer) at the same time, a mode that excludes the accidentality due to the casual touch of the user, at which point the drain solenoid valve opens and button 1 lights up blue.

From the moment the low level sensor no longer reads the presence of water after 2' the drain solenoid valve closes and the button turns white again.

In the event that the drain is semi-clogged and therefore after 2' in reality there is a residue of water, the drain solenoid valve can be opened intentionally for a further minute 1' by pressing the two again keys above.

FILTERING CYCLE TIME SETTINGS

The parameters to be entered for management will be:

Filtering duration: 0 – 12 hours, step 1 hour, default 0 (not active by default)

Filtering activation time: 0-12 hours, step 1 hour, default 2 hours

Every time a cycle starts there will be this activation sequence:

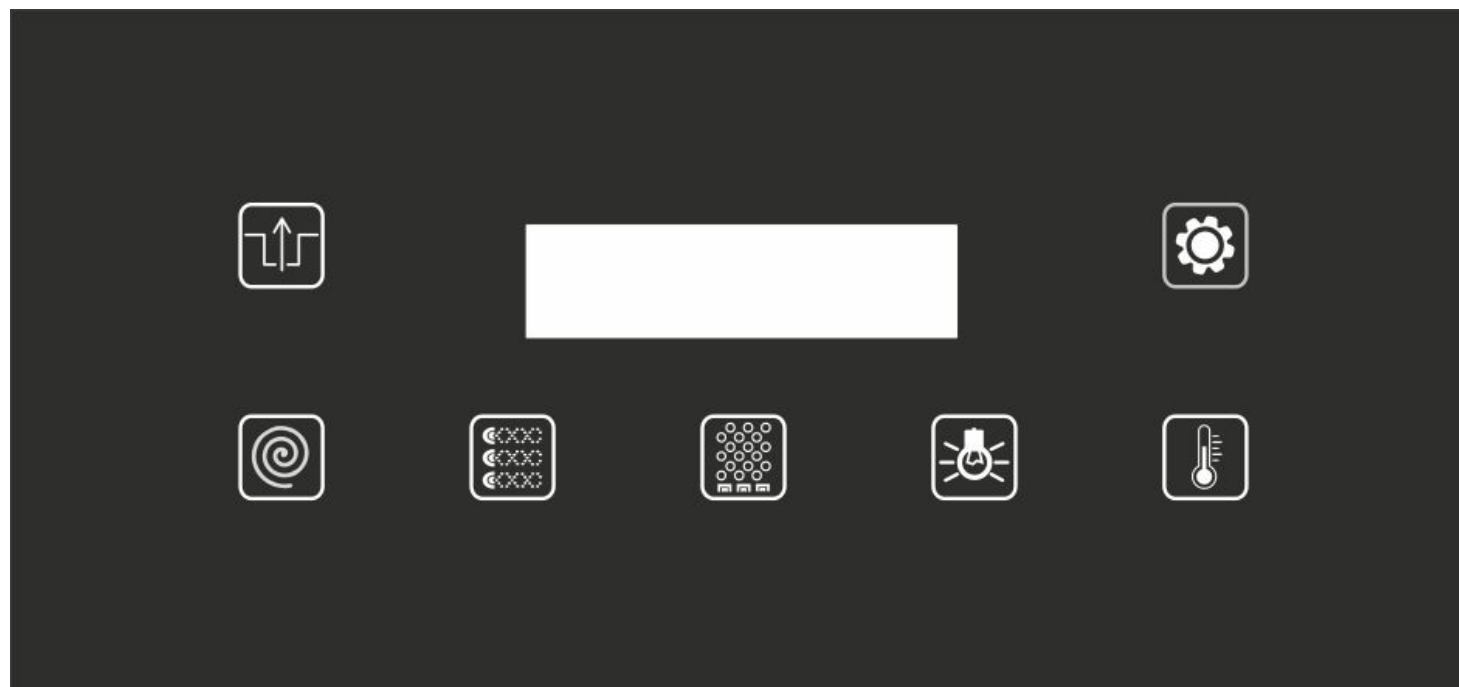
FIRST PHASE (to suspend the impurities present in the water): activation of the PUMP and BLOWER (if present) for 1 minute each with pauses of 5 seconds:

PUMP 1 ON for 1 minute – 5 sec OFF – BLOWER 1 ON for 1 minute – 5 sec OFF – PUMP 2 ON for 1 min – 5 sec OFF – BLOWER 2 ON for 1 min

SECOND PHASE: RECIRCULATION PUMP, OZONE and HEATER (if below the set point) active for the rest of the "filtering activation" time.

TOUCH KEYBOARD

KEY 1	
KEY 2	
KEY 3	
KEY 4	
KEY 5	
KEY 6	
KEY 7	



KEY	FUNCTION	DESCRIPTION	TEXT ON DISPLAY
	LOAD WATER INTO THE TANK/EXIT USER MENU BUTTON	Pressing the button when the tank is empty opens the water loading solenoid valve. When the function is active, the button is blue. Button 1 is also used to exit the user menu screen: by holding it down and hearing a long beep, you return to the ITALIAN LIFE home screen with the T° of the water in the tank displayed.	TANK LOADING/FILLING TANK
	RECIRCULATION PUMP/USER MENU CONFIRMATION BUTTON	The recirculation pump is activated whenever a pump or blower is turned on and also when automatic filtering cycles are active. When the function is active, the button is blue. When the function is active, you can turn it off by holding down the button and the icon will turn white. Button 2 in user menu mode is also used to memorize the setting selected in the user menu: holding down the button until a long beep is produced memorizes the selected setting.	ITALIAN LIFE TEMP. XXC
	HYDROMASSAGE/ DOWN MENU ITEM	The hydromassage button turns the pumps on and off. If you are in the user menu, the button acts as DOWN.	ITALIAN LIFE TEMP. XXC
	BLOWER / OK MENU ITEM	The airpool button turns the blowers on and off. If you are in the user menu, the button acts as a confirmation of the selected menu item.	ITALIAN LIFE TEMP. XXC
	CHROMOTHERAPY / UP MENU ITEM	The light button activates/deactivates and changes the colors of the chromotherapy function. If you are in the user menu, the button acts as UP.	ITALIAN LIFE TEMP. XXC CHROM: CX

	HEATER/HEATER ALARM RESET	The temperature button corresponds to the desired T° setting of the water in the tub. Once a temperature has been determined, it is automatically memorized. The selection is cyclical, for example: 15°C – 16°C – 17°C.....40°C and then restarts from 15°C and so on. In the heater alarm condition due to the failure to reach the set T° of the water within the chosen time out, this alarm can only be reset after checking the correct functioning of the 2 T° probes.	SET TEMP: XXC
	USER MENU INPUT	This button allows you to enter the user technical menu from which you can set the language and operating configuration of the tub.	
 	EMPTYING THE TANK	Holding down buttons 6 and 7 at the same time activates the solenoid valve for draining water into the tub.	BATH DRAIN

HOME SCREEN DISPLAY

On the home screen we find the words ITALIAN LIFE and the indication of the temperature of the water in the tub if present or the ambient temperature in the absence of water.



By pressing KEY 6 (associated with a short buzzer sound) the set temperature is displayed on the screen and can be changed by pressing the same button again, obtaining an advancement of 1° with each press. After 10" the chosen temperature will be acquired and this is associated with a long buzzer sound:



USER MENU ITEMS

PAGE NUMBER	DESCRIPTION	RANGE/STEP	NOTE	VIEWING
PAG_M_U_1	language		English Italian	LANGUAGE ENGLISH
PAG_M_U_2	Info cards		Versione FW MAIN, Version FW UI	FW UI XX FW MAIN XX
PAG_M_U_3	Cycle interval	0 -12 hours/1 hour	By entering 0, no default filtering cycle will start. Sets how many hours the filter is activated if no key is pressed.	CYCLES INTERVAL HOURS: 0
PAG_M_U_4	Filtering duration	0 -12 hours /2 hours	Determina quante ore deve durare il ciclo di filtraggio.	FILTERING DURATION HOURS: 2
PAG_M_U_5	Temperature format		C → CENTIGRADE F → FAHRENHEIT	TEMPERATURE FORMAT DEGREES: C
PAG_M_U_6	PW setting for technical menu entry		Pw: 123	PSW TECHNICAL AREA - - -

VOCI MENU' TECNICO

PAGE NUMBER	DESCRIPTION	RANGE / STEP / DEFAULT	VIEWING
PAG_M_T_1	LOAD STATUS A page that summarizes the status of the loads present in the card: KEY_2: C1-D1: Load-Unload KEY_3: P1-P2: Hydro1-Hydro2 KEY_4: B1-B2: Blower1-Blower2 KEY_5: R1: Recirculation KEY_6: O1: Ozone KEY_7: H1: Heater		STATE OUTPUT H1 C1 P1 P2 B1 B2 R1 O1 D1
PAG_M_T_2	INPUT STATUS A page that summarizes the status of the inputs present in the card: L: Low Level Probe H: High Level Probe H1: Auxiliary Level Probe		STATE INPUT L: 0 H: 1 H1: 0
PAG_M_T_3	PUMP Number Setting	Range 1 - 2, Step 1, Default 2	PUMPS NUMBER 2
PAG_M_T_4	BLOWER Number Setup	Range 1 - 2, Step 1, Default 2	BLOWERS NUMBER 2

PAG_M_T_5	Ozone Enablement	Range 0-1, Step 1, Default 1	OZONE 1
PAG_M_T_6	Heater Enable	Range 0-1, Step 1, Default 1	HEATER 1
PAG_M_T_7	Enable/Disable Antifreeze	Range 0-1, Step 1, Default 0	ANTIFREEZE 1
PAG_M_T_8	Time Out HEATER	Range 0-250, Step 1 hour, Default 3 hours	TIME OUT HEATER 3

ALARM TABLE

ALARM CODE	DESCRIPTION	ACTIVATION CONDITION	DEACTIVATION CONDITION	VIEWING
E_01	NTC temperature probe breakage	THE TEMPERATURE IS NOT READ OR A TEMPERATURE OUT OF RANGE IS MEASURED: - 10°C - 70°C	WITHOUT AN EFFICIENT T° PROBE THE HEATER DOES NOT WORK	ALARM TEMP. PROBE NTC
E_02	Heater alarm	IT MAY MEAN A TEMPERATURE OUTSIDE THE THRESHOLD, AN INDICATION THAT THE HEATER IS WORKING WITH LITTLE OR NO WATER. IT COULD BE CAUSED BY A FLOW SWITCH BREAKING OR DEFECTIVE. IT ALSO TRIGGERED IF THE HEATER REMAINS ACTIVE BEYOND THE TIME SELECTED FOR REACHING THE TEMPERATURE WITHOUT HAVING REACHED IT (SET POINT).	DEACTIVATE THE HEATER UNTIL THE FAULT IS RESOLVED (REPLACE THE HEATER THERMOSTAT, REPLACE THE FLOW SWITCH, etc.) TO RESET THE PARAMETER PRESS KEY 6	ALARM HEATER
E_03	Tank level alarm	THE SENSOR DOES NOT READ THE PRESENCE OF WATER AND THEREFORE MUST BE REPLACED	THE PUMPS DO NOT ACTIVATE: REPLACING THE SENSOR (HIGH OR LOW) THE PROBLEM WILL BE SOLVED	ALARM TANK LEVEL
E_04	Communication alarm with UI	THERE IS NO COMMUNICATION BETWEEN THE TOUCH KEYPAD AND THE POWER CONTROL UNIT.	CHECK THE CONNECTIONS AND CORRESPONDING CABLES.	ALARM NO COMUNICATION
E_05	High temperature detected alarm	HIGH TEMPERATURE ALARM DETECTED BY THE NTC1 PROBE LOCATED AT THE HEATER OUTPUT: IT IS TRIGGERED WHEN THE 42°C THRESHOLD IS EXCEEDED	ALL UTILITIES ARE DEACTIVATED. CHECK IF THERE IS SUFFICIENT WATER FLOW IN THE HYDRAULIC CIRCUIT OR THAT THE FLOW SWITCH IS NOT BROKEN.	ALARM HIGH TEMPERATURE
E_06	NTC1 temperature probe breakage	THE TEMPERATURE IS NOT READ OR A TEMPERATURE OUT OF RANGE IS MEASURED: - 10°C - 70°C	WITHOUT AN EFFICIENT T° PROBE THE HEATER DOES NOT WORK	ALARM TEMP. PROBE NTC1

TEST SYSTEM

The first page of the technical menu PAG_M_T_1 can also be used as a test system to quickly test the board loads, as described in the following table:

KEY	FUNCTION	VIEWING (Display)
KEY_1	SCROLL Technical Menu	STATE OUTPUT -- -- -- -- -- -- -- -- --
KEY_2	LOADING/UNLOADING	First press: C1 Second press: D1 Third press: D1 OFF Fourth press: C1 OFF STATE OUTPUT -- C1 -- -- -- -- -- -- D1
KEY_3	HYDRO	First press: P1 Second press: P2 Third press: P2 OFF Fourth press: P1 OFF STATE OUTPUT -- -- P1 P2 -- -- -- --

KEY_4	BLOWER	First press: B1 Second press: B2 Third press: B2 OFF Fourth press: B1 OFF STATE OUTPUT -- -- -- -- B1 B2 -- -- --
KEY_5	RECIRCULATION	First press: R1 Second press: R1 OFF STATE OUTPUT -- -- -- -- -- -- R1 -- --
KEY_6	OZONE	First press: O1 Second press: O1 OFF STATE OUTPUT -- -- -- -- -- -- -- O1 --
KEY_7	HEATER	First press: H1 Second press: H1 OFF STATE OUTPUT H1 -- -- -- -- -- --

ELECTRICAL PARAMETERS - MAXIMUM RATINGS

MAXIMUM RATINGS:	
Note: The outputs must be connected exclusively to self-protected loads	
Board Working Temperature	MAX.70°C
Input	230Vac, 35A
HEATER Output	3kW, 13A
PUMP 1 and 2 Output	1.5kW, 6.5A
BLOW 1 and 2 Output	750W, 3.2A
RECIRCULATION Output	500W, 2.1A
OZONE Output	100W, 0.4A
Charge and Discharge Output	100W, 0.4A

ATTENTION!!! USE WIRING OF APPROPRIATE CROSS-SECTION FOR THE CONNECTION OF POWER LOADS, IN PARTICULAR FOR NETWORK CABLES DO NOT CONNECT CABLES WITH A CROSS-SECTION LESS THAN 4MM.

