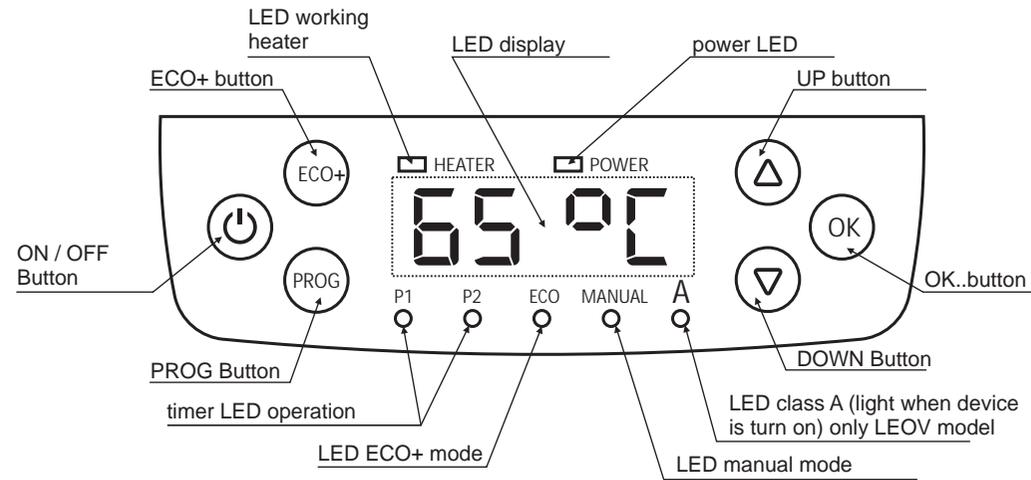


5. Construction of control Panel



2. description of the elements.

- button on / off - to turn on and turn off the electronic controller,
- button ECO + - to switch modes ECO + from any program or setting ECO+ program while programming programmer living in the selected time interval,
- button PROG - used to change the operating mode (manual / eco + / programmer) and to change settings daily program timer,
- button up / down - are used to change the setting value displayed on the LED display,
- button OK - is used for approval and to view the clock

- LED working heater - lights when the water is heated by electric heaters,
- Power LED - lights when the driver is powered by electricity,
- timer LED operation - light when the controller is in programming mode daily and present the current mode of the program:

- program P1 - light LED P1
- program P2 - light LED P2
- program P3 - light LED P1 and P2

- LED ECO+ mode - illuminates when the driver is in the ECO mode +
- LED manual mode - illuminates when the controller is in manual mode,

- LED display - presents the current settings / data, and data necessary to program the device,

3. Activities during the first run:

3.1. Setting the clock and day of week - by pressing the PROG switch to manual mode then press and hold the PROG button, the display shows the date in the format dd: xx where xx (Flashing) and the mean day of the week, using up down keys set the day and to approve the OK button. The day is represented by the numbers where: 1-Monday 2-Tuesday , 7-Sunday
Then the display shows the time in hh: mm (hh - hour ; mm - minutes) using Up Down keys to set the hour (flashing digits) and confirm pressing OK. then starts minutes and to flash by pressing the up / down to set minute button and confirm Ok..

Every clock change causes reset of ECO+ program so they will teach from beginning.

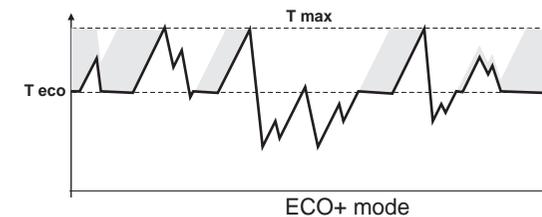
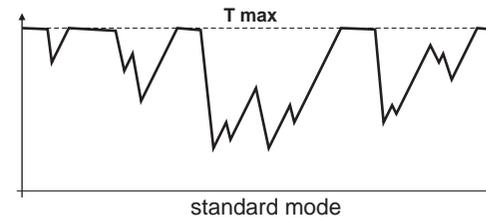
4. The basic modes of operation and adjustment

4.1. MANUAL mode - is the mode in which the manually set the target temperature for the heater.

To set the manual mode should be: push the button until the PROG LED comes on manual operation mode by pressing the up / down to set the target temperature in the range of 20 to 75 OC), after set and about 3-5 sec. controller will alternately display the target temperature / current temperature in the tank by the following formula.



4.2. ECO+ mode - is the mode in which the driver learns when and in what amounts customer was take water from the tank and heats the water in advance to cover the plan used of hot water. For the first week learning the driver keeps the water in the tank temperature 75 ° C after this time, the electronic controller keeps the tank water temperature 45 ° C or another for 35 to 45 ° C in depending on the user's choice, and it warms up to 75°C depending on the projected salary of warm water. This allows you to minimize heat loss resulting the radiation of heat through the heater housing and the heater itself is by consuming less the energy required to maintain water temperature in the tank higher than required. The following graphs presenting abstractions in normal mode and the ECO mode +.

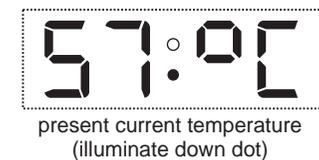
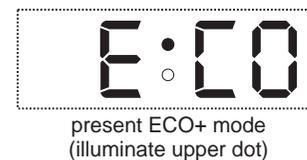


grey fields - saving.

For regular salary at the time recommended to set temp = ECO + 35oC for greater comfort and at irregular draws is recommended to set temp = 45 ° C + ECO.

To reset the memorized by the driver software + ECO (start learning from beginning) should be on + ECO mode, press and hold more than 3 seconds. PROG key, the display shows the word "RST" and start learning ECO + again.

To set the operation mode + ECO should be: push the PROG button until the PROG LED comes on work + ECO mode or press once ECO + button, after setting the display driver to display alternately ECO string and the current water temperature in the tank by the following formula.
+ ECO mode can also be set in any period of time programming daily.



4.3. DAILY PROGRAMATOR MODE - is the mode in which the program we three time intervals and inclined temperature / ECO + for them. It is recommended that you use this mode if you have two electricity tariffs (day and night). In order to minimize costs power setting of maximum recommended temperature for a night time tariff for the tariff per day ECO mode. Factory setting the timer shown in the following graph.
P1 from 13:00 to 15:00 temp. 70 oC ; P2 from 22:00 to 6:00 temp. 70 oC ; P3 ECO+ mode



To set the timer to be: press the PROG button until the LED lights / LED modes programmer (P1, P2, P3), then press and hold PROG.

- The display shows P1S (the beginning of the first program), then the display shows the time in the format hours: minutes - hours digit will flash with the keys down, set up start time and approve the OK button. then flashing digit minutes with the keys set up a minute down the start button and confirm with OK.
- The display shows P1E (end of the first program), then the display will show time in the format hours: minutes - hours digit will flash with the keys down, set up one hour complete and approve the OK button. then flashing digit minutes by pressing up down set end minute and confirm the OK button.
- The display shows P1 OC (temperature of the first program), then the display temperature appears or the words ECO (providing that at this time is set + ECO mode) by pressing up / down to select the temperature for the program or press the button ECO + for selecting ECO mode for the first program and the OK.. button.
- The display shows P2S (the beginning of the second program), then the display shows the time in the format hours: minutes - hours digit will flash with the keys down, set up start time and approve the OK button. then flashing digit minutes with the keys set up a minute down the start button and confirm with OK.
- The display shows P2E (end of the second program), then the display will show time in the format hours: minutes - hours digit will flash with the keys down, set up one hour complete and approve the OK button. then flashing digit minutes by pressing up down set end minute and confirm the OK button.
- The display shows P2 OC (temperature of the second program), then the display temperature appears or the words ECO (providing that at this time is set + ECO mode) by pressing up / down to select the temperature for the program or press the button ECO + for selecting ECO mode for the second program and the OK.. button.
- The display shows P3 OC (temperature of the third program), then the display temperature appears or the words ECO (providing that at this time is set + ECO mode) by pressing up / down to select the temperature for the program or press the button ECO + for selecting ECO mode for the third program and the OK. button.

P3 program will work in a time when there is not set program P1 or P2.

In the event of a collision during the program P1 P2 driver will implement the program P2 which takes precedence.

5. Other Features / running in the background:

- 5.1. Dry stop function - is designed to protect heating element against damage in the case when is no water in the tank,
This feature is only enable to avoid damage to the heating element and not it eliminates the record that it is impossible to attach and use the tank is not filled with water,
The function is activated at any time when the heater starts and lasts 1.5 minutes. at this time HEATER LED will still light up even if we change the program or setting temperature.

- 5.2. anty freezing function - activated when the device is turn off (power LED lights only) and is designed to prevent freezing of water in the tank by turning the heater power,
5.3. antylegionella function - every 14 days driver adjusts to the desired temperature of 75oC and is awaiting heating of the water, the aim is to disinfect the surface of the tank and eliminate any legionella bacteria,
5.4. safety switch off function - is desing to prevent the overheating of water in the tank - in the case when the temperature rises above the limit, and disconnects the electricity supply to the heater on both poles,
5.5. histeresis function - driver turns the water heater when the temperature drops by 2 ° C below the target temperature this is aimed to avoid the constant switching on and disconnect electric heater, and is increasing vitality to the driver elements such as relays,
5.6. Clock - displays the current time programmed in the controller to display the current time should be press OK.
5.7. Active protection - is a collection of relays which, in comparison to standard heaters water heater hangs on the two electric poles (+ and -) This feature improves security use the heater by minimizing the risk of possible electric shock.

6 Error codes:

- Er 01 - Safety switch out are turn on - exceeding the limit temperature of water inside Tank - Call for - to re-attach the heater to the moments of arrival Site pull the plug on at least 60 seconds. and wait until the temperature water drops.
Er 02 - device was detect no water in the tank - to remove the error, press the OK button. At button is pressed, the driver locks the power supply to the heater for 20 minutes - this is in order allow the heater to cool down in order in case of re-activation feature does not stop dry there was damage,
AL or AH - damage the temperature sensor or a decrease in temperature below 0 ° C or rise above 99 oC. Call for the exchange of sensor,

7. Service menu - recommended not to change the settings in the service menu, unless it is necessary and necessary for proper operation.

To access the service menu, turn off the driver (only the POWER LED is lit), then Press and hold PROG. On display will show Fx yy (yy blinking) where x is the number of parameters and yy its value. Press Up / Down button and change the value of Ok. confirm and go to the next parameter, and for the last six parameter editing the driver exit the service.
Every clock change causes reset of ECO+ program so they will teach from beginning.

Kod	Description	adjustment range	factory setting
F1	Antylegionella function status (0 - turn off ; 1 - turn on)	0 / 1	1
F2	The frequency function antylegionelli	7 - 21 day	14 day
F3	Starting time functions antylegionella	0 - 23 hour	1 hour
F4	Status detection functions no water in the tank (0 - tunr off ; 1 - turn on)	0 / 1	1
F5	Walue temp. anty freezing	5 - 10 oC	7 oC
F6	The value of temp. mode ECO+ (the temperature which will seek driver).	35 - 45 oC	45 oC