Zakład elektroniczny TATAREK Jerzy Tatarek
50-559 Wroclaw, 75 Swieradowska st.
ph. (071) 367-21-67, 373-14-88, fax 373-14-58; Tax index number 899-020-21-48;
Bank account: BZ WBK S.A. WROCLAW 6910901522-0000-0000-5201-9335
www.tatarek.com.pl.; E-mail: tatarek@tatarek.com.pl

USER MANUAL

KOMINEK LUX (RT-08P)

REGULATOR OF HEATING SYSTEM WITH A FIREPLACE CONTROLLED BY AIR THROTTLE

The regulator controls heating system based on a water jacket fireplace that is a heat source, in which combustion process is controlled by air throttle. The heat receivers are: Warm Applicable Water accumulator (WAW) and Central Heating system (CH).

1.Basic technical parameters:

Power	230V/50Hz
Power consumption without load	5W
Max connection power	750W
Operation conditions	0÷50°C, humidity 10÷90% (No condensation)
Housing protection class	IP41
Fuse	6,3A/250V
Number of outputs to control pumps	3 * 250W/230V/50Hz
Number of nonvoltage outputs	1
Number of outputs to control a throttle drive	1 * 5V/500mA/DC
Number of water temperature sensors	3 * KTY81 (0...+100°C)
Temp. measurement precision	2°C
Temp. measurement resolution	0,5°C
Number of time zones	4

2. Principle of operation

The first function of the regulator is to keep temperature in the water jacket at set value. The task is realized by measuring temperature (T3) and controlling the throttle (PP) properly. Fireplace operation temperature is identified by the "*T.Firep*" parameter (see LEVEL PARAMETERS 1).
If fireplace temperature (T3) is higher than the "*T.Firep*" parameter the throttle is gradually shut off limiting air supply, and if temperature (T3) is lower than the "*T.Firep*" parameter the throttle is gradually opened up.

The second function is to control the pump (P1) supplying the warm applicable water accumulator (WAW). The pump operates if fireplace temperature both exceeds the "ON WAW" value and is higher than the WAW accumulator temperature (T2) by the "DeltaWAW" parameter (see LEVEL PARAMETERS 1).

The third function is to control the circulating pump (P3) of central heating system. The pump works if fireplace temperature exceeds the "ON CH" value. It's possible to activate the WAW priority function - see the description of operation modes of the pump CH.

The regulator is equipped with the clock to control the WAW priority in selected times of day.

! The fireplace can also be equipped with warm air distribution system based on the regulator RT-03C. The regulator measures temperature in the chamber of a fireplace air ventilator and controls its rotation speed in manual or automatic mode.

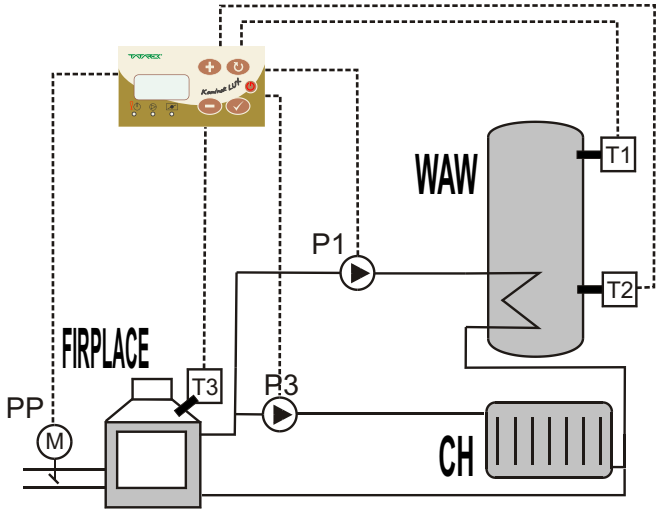

Fig. 1a Basic operation configuration of the regulator

Admission date	Realization date	Signature	Remarks

PRODUCENT ZASILACZY SIECIOWYCH
ISO 9001: 2000

CE CONFORMITY DECLARATION

Ref. No. 58.RT.01.2007/1/B

We, ZAKŁAD ELEKTRONICZNY TATAREK Jerzy Tatarek
75 Swieradowska St. , 50-559 Wroclaw

declare under our sole responsibility that
the product: Regulator of heating system with solar collector

model: RT-08, RT-08K, RT-08P

is in conformity with the basic requirements included in Directive EMC 2004/108/WE of 15.12.2004 (the electromagnetic compatibility law of 13.04.07) and Directive LVD 2006/95/WE of 21.08.07 (Laws Journal of 2007 No. 155 pos. 1098) regarding the requirements for electric devices.

To the conformity evaluation the following harmonized standards were used:

PN-EN 60730-2-1: 2002 - Automatic electric regulators for house usage and the like. Part 2-1: Specific requirements regarding electric regulators for electric house devices
PN-EN 60730-1: 2002 - Automatic electric regulators for house usage and the like. Part 1: General requirements.

PN-EN 55022: 2000 - Electromagnetic compatibility (EMC)- IT devices Characteristics of radioelectric noises. Acceptable levels and measurement methods

Complementary information:

Laboratory IASE 51-618 Wroclaw, 1 Wystawowa st.

Test report No. 39/DL/I/07 of 22.06.2007
41/DL/I/07 of 03.07.2007

Electronic Engineering Plant TATAREK
has initiated management system and complies with the following standard :
ISO9001: 2000 CERTIFICATE No. 133/2004 of 01.2004
Polish Foreign Trade Chamber

The last two digits of the year in which the CE marking was affixed: 07

Place of issue: **Manufacturer representative:**

Wroclaw **Mirosław Zasępa**

Date of issue: **Position:**

08.2007 **Konstruktor**

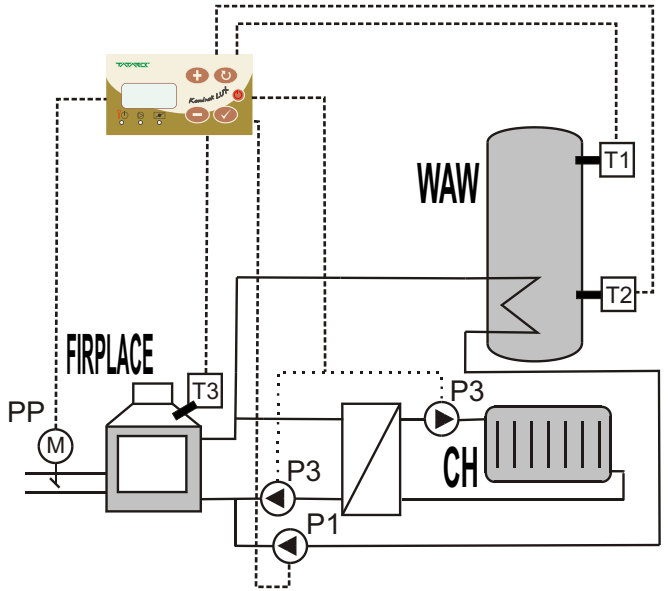

Fig. 1b Operation configuration of the regulator with heat exchanger for the system CH (pump of heat exchanger and system CH connected to output P3)

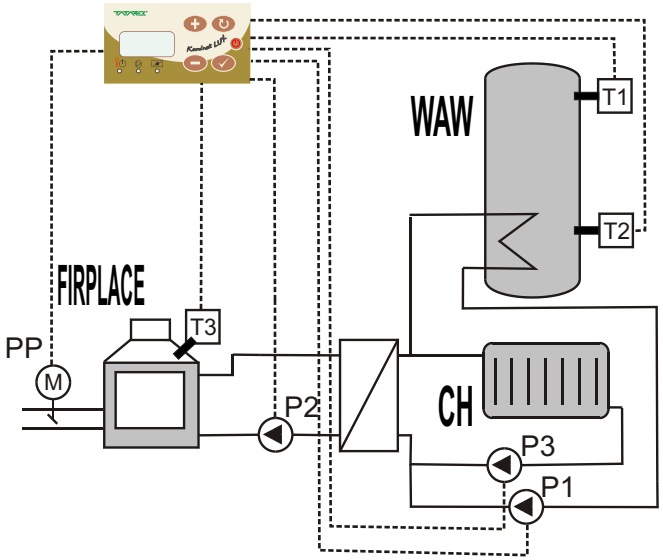

Fig.1c Operation configuration of the regulator with heat exchanger for CH and WAW systems

WAW	Warm Applicable Water accumulator (boiler)
FIRPLACE	Water jacket fireplace
CH	Central heating system
T1	Upper temperature sensor of WAW
T2	Lower temperature sensor of WAW
T3	Temperature sensor of fireplace water jacket
P1	Pump supplying WAW from fireplace
P2	Pump of the primary side of heat exchanger (it operates if P1 and P3 are activated)
P3	Circulating pump CH
PP	Electronically controlled air throttle of fireplace

2.1 Air throttle operation

The throttle regulates an air supply to the combustion chamber, which allows the temperature of fireplace water jacket to be kept at set value. The task is realized by comparing temperature (T3) and set temperature ("*T.Firep*" parameter) and then by gradual opening/shutting the throttle.

The change of a throttle position takes place cyclically every 20 secs ("*Ti.Pause*" parameter). During the movement the control lamp (9) is lit. The blinking means the drive overload because of met resistances.

The shutdown of the regulator automatically causes the throttle to be set at rest position defined by "*ModeOFF*" parameter (Factory setting is 0% - full shut-off).

2.2 Pump CH operation

If fireplace temperature exceeds a set value of 45°C ("*T.CH.ON*" parameter) the pump CH turns on. The switch-off of the pump below the value causes a faster heating of the water jacket above the dew point and by that a longer life-time of the fireplace.
During supplying the warm applicable water accumulator WAW, the pump can operate cyclically if the WAW priority is set (Limitation of the heat amount flowing into the system CH).
The cyclical operation is based on turning on the pump for 45 secs and then turning off for 4min ("*Ti.EndCH*" parameter).
The regulator protects the system from freezing, automatically turning on the circulating pump if the measured temperature is below 4°C.
The regulator realizes the after season rundown of the pump by switching it on for 1 min if it doesn't operate for a week.

2.3 Pump WAW operation

The regulator controls as well the pump supplying the warm applicable water accumulator WAW.
The pump WAW is to turn on if water temperature in fireplace is higher than the threshold of 45°C ("*T.WAW.ON*" parameter) and higher than in the accumulator WAW by 5°C ("*DeltaWAW*" parameter). If WAW temperature exceeds 65°C ("*T.maxWAW*" parameter) the pump WAW turns off.
There are 2 ways of supplying the accumulator WAW:

WARRANTY

1.Warranty is valid [24] months from the date of sale.
2.Producer does not take responsibility for any mechanical damages made by user.
3.MAKING REPAIRS OR MODYFYING THE DEVICE BY USER IS FORBIDDEN AND CAUSES WARRANTY CANCELATION
4.Warranty card is valid only with date of sale, seller's signature and stamp
5.Warranty and after-warranty repairs should be done only by producer, damaged regulators should be sent to producer in order to make all repairs needed.
6.Warranty protection involves the EU
7.Warranty does not exclude, not restrict and not suspend buyer's rights coming from the incompatibility of the article with the agreement (Laws Journal No. 141 Pos. 1176)

WARNING !

ANY MODIFICATION OF THE REGULATOR MADE BY USER CAN BE THE CAUSE OF SAFETY CONDITIONS DETERIORATION AND CAN EXPOSE THE USER TO ELECTRIC SHOCK OR DAMAGE DEVICES SUPPLIED.

Connection cable of regulator may be replaced only by producer or his authorized service locations

WARNING!
1. Producer does not take the responsibility for damage caused by atmospheric discharge
2. and overvoltage in the mains
3. Burnt fuses are not subject to warranty replacement

Date of sale _____

Seller's signature and stamp _____

Register No.. GIOS: E 0002240WZ

Worn out electronic and electric devices must be transfered to the utilization collection place, where will be accepted for free

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Recycling Plant No. 6
180 Krakowska st., 52-015 Wroclaw
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50-559 Wroclaw, 75 Swieradowska st
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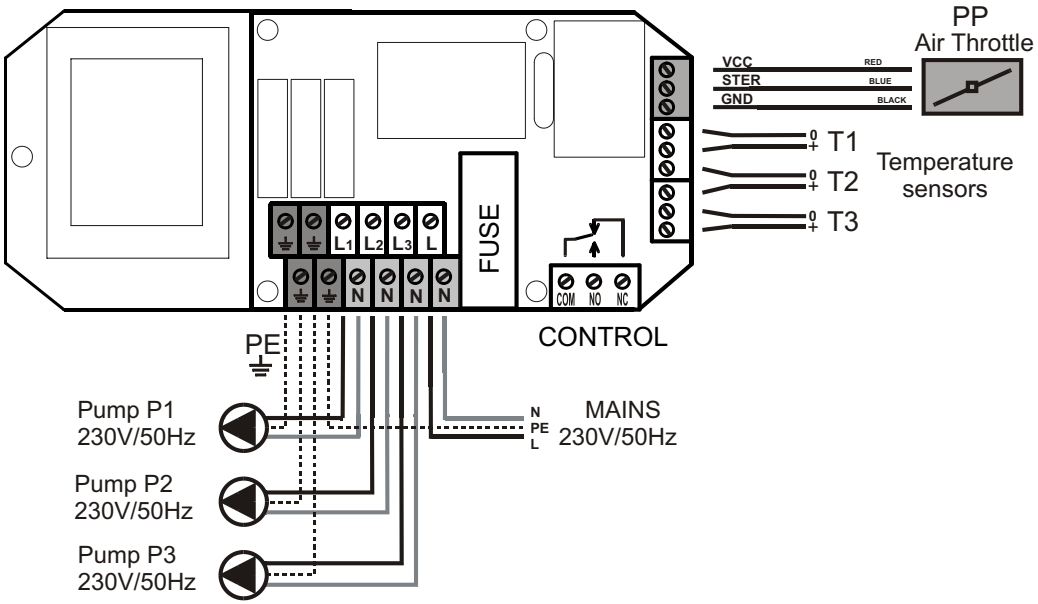


Fig.3 Electrical scheme

PP Air throttle

T1 Upper temperature sensor of WAW accumulator (option)

T2 Lower temperature sensor of WAW accumulator

T3 Temperature sensor of fireplace water jacket

P1 Pump supplying WAW accumulator from a fireplace

P2 Pump of the primary side of heat exchanger (it operates if P1 or P2 is activated)

P3 Circulating pump CH

- Keeping the accumulator WAW at maximal readiness (Parameter "*CtrlWAW*"=1).

The supply starts if the lower temperature sensor of WAW (T2) shows temperature below 65°C („T.maxWAW" parameter)

- Optimal supply (Parameter "*CtrlWAW*"=2) - from partial discharge to max supply. The supply turns on if the upper temperature sensor of WAW (T1) shows temperature lower than 50°C ("T.minWAW" parameter) and turns off if the lower temperature sensor of WAW (T2) shows temperature higher than 65°C ("T.maxWAW" parameter)

The regulator realizes the after season rundown of the pump by switching it on for 1 min if it doesn't operate for a week.

2.4 WAW priority and summer mode

In the regulator one can set "*ModeWAW*" parameter achieving different strategies of operation. Possible modes are:

OFF - The pump WAW turned off

SUMMER- Turning off the heating system in summer time (the pump CH doesn't operate). Fireplace only works in the preparation function WAW.

ON - Standard operation (parallel operation of pumps) without favouring the WAW circuit

PRIO-Faster reaching the readiness of WAW accumulator by limiting heat obtain by heating system. The pump CH works cyclically. Turning off the pump WAW after supplying the accumulator causes the comeback of normal operation of the pump CH

CLOCK-beyond time zones the pump operates like in the ON mode and in time zone like PRIO

2.5 Output „CONTROL"

The regulator is equipped with the relay CONTROL whose contacts can be used e.g. to switch off another heat source when a fireplace works. The "RelaySTR" parameter defines the function of the relay more precisely. (see PARAMETERS of LEVEL 3)

3 Service of the regulator

There are elements on the control panel (fig. 2). In the turn-off state only the orange lamp (7) lights indicating the standby mode. The turn-on of the regulator follows by pressing the ON/OFF button (6). In order to turn it off press once more the ON/OFF button (6) and at the same time hold it down for about 1sec. In case of supply voltage decline the regulator comes back to the state before the decline.

The state is presented on the text display (1). The screens inform about the operation of devices, temperature of sensors; they make it possible to change the parameters etc..The change of screen is done by pressing the CHOOSE button (3). If this is the screen that is able to change a parameter, press the CONFIRM button, which causes blinking of the parameter field to be changed. By pressing "+" (2) or "-" (4) one can alter its value.

If there are more parameter fields on the screen (e.g. setting the clock) then one will go among them by pressing the CHOOSE button (3). By clicking the CONFIRM button (5) one confirms the changes - the parameter field stops blinking. The changed parameter not confirmed for 10 secs is not accepted by the regulator and it recalls a previous value of the parameter.

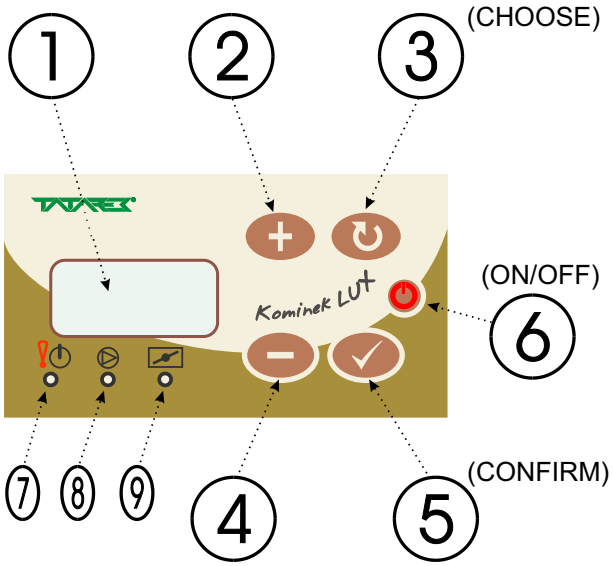


Fig.2 Control panel view

1. Text display
2. Increase button
3. Choice button of parameter
4. Decrease button
5. Confirm button
6. Power button
7. Status lamp of the regulator: emergency(red), standby (orange), operation (green)
8. Lamp of pumps operation
9. Lamp of throttle operation (blinking means the overload of the drive)

3.1 Time zones

The regulator is equipped with the clock, which enables the automatic change of the regulator operation at different times of day. 24 hrs are divided into 3 time zones (**$1, $2, $3**) and the single time when no zone is active that is ZONE 0 or BAZA (BASE). Each zone has a start time (OD)/FROM and an end time (DO)/TILL.

For the regulator factory settings are as it follows:

ZONE 1	FROM 6.00 TILL 8.00
ZONE 2	FROM 14.00 TILL 17.30
ZONE 3	FROM 20.00 TILL 22.30

Demonstration change of the "Mode OFF" parameter defining the throttle position in power-off state (parameter of level 3):
Press:

- repeatedly "CHOOSE" button till the "Menu 0" parameter setting screen appears
- „CONFIRM" button > „0" starts blinking
- threefold button "+" -> „3" blinks
- „CONFIRM" button -> „3" stops blinking (Parameters of level 3 were chosen)
- „CHOOSE" button -> „Ti.Pause xx" shows up
  (The value of the „*Ti.Pause*" parameter)
- „CHOOSE" button -> „ModeOFF" shows up(actual value)
- „CONFIRM"button -> actual value to be changed begins blinking
- „+"/"-„ -> setting a new value
- „CONFIRM" -> confirming the new value
- repeatedly "CHOOSE" button till the „***" parameter end setting screen appears.

4 Installing the regulator

! THE REGULATOR IS SUPPLIED BY 230V/50HZ .
ANY MOVES REGARDING INSTALLATION SHOULD BE MADE AT THE DISCONNECTED MAINS.

! THE REGULATOR HAS TO BE CONNECTED TO THE MAINS WITH THE ZERO-PIN.

! THE REGULATOR SHOULD NOT BE EXPOSED TO WATER AFFECTING. ITS ENVIRONS OUGHT TO BE CLEAN.

! THE PRODUCER DOESN'T TAKE ANY RESPONSIBILITY FOR DAMAGES CAUSED BY WRONG USAGE OF THE REGULATOR.

Connection diagram of the elements of the regulator is presented on fig. 3

PARAMETERS OF LEVEL 1			
NAME	**RANGE**	**FACTORY SETTING**	**FUNCTION**
T.Firep	45...85 °C	70 °C	Set temperature of fireplace kept by the regulator
T.CH.ON	30...60 °C	50 °C	Minimal temperature of fireplace at which the pump P3(CH) is activated.
T.WAW.ON	20...85 °C	50 °C	Minimal temperature of fireplace at which the pump P1(WAW) turns on.
T.maxWAW	30...100 °C	65 °C	Maximal temperature of WAW accumulator. The exceeding turns off the supply pump
T.min WAW	30...100 °C	50 °C	Minimal temperature of WAW accumulator. The exceeding turns on the supply pump
DeltaWAW	1...10 °C	2 °C	Minimal difference between fireplace and WAW accumulator temperature needed for the pump operation P1 (WAW)

PARAMETERS OF LEVEL 2			
NAME	**RANGE**	**FACTORY SETTING**	**FUNCTION**
Zone1 fr	0:00...23:45	6:00	Start of 1st time zone
Zone1 to	0:00...23:45	8:00	End of 1st time zone
Zone2 fr	0:00...23:45	14:00	Start of 2nd time zone
Zone2 to	0:00...23:45	17:30	End of 2nd time zone
Zone3 fr	0:00...23:45	20:00	Start of 3rd time zone
Zone3 to	0:00...23:45	22:30	End of 3rd time zone

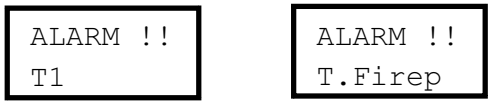
PARAMETERS OF LEVEL 3				
NAME	**RANGE**	**FACTORY SETTING**	**FUNCTION**	
Ti.Pause	10...60secs	20secs	Rest time of the throttle between successive change of its position	
ModeOFF	0...100%	0%	Position of the throttle in the power-off state (0%-full closing, 100%-full opening)	
Ti.EndCH	1...30mins	4mins	Pause time of CH pump in cyclical mode. After the time the pump turns on for 45 secs.	
ctrlWAW	1...2	1	Kind of supply for the WAW accumulator	
			1	Temperature sensor T2 (down) controls the supply of WAW
			2	Temperature sensors T1 (up) and T2 (down) control the supply of WAW accumulator
T.Alarm	75...95 °C	85 °C	Fireplace temperature at which alarm turns on.	
T.FirOFF	5...25 °C	10 °C	Decreasing fireplace temperature in relation to set temperature at whose exceeding the countdown of 30mins begins up to the switch-off of fireplace (stop condition at Firp.MOD=AUTO)	
RelaySTR	1...6	1	Switch-on of the relay CONTROL if	
			1	fireplace temperature is higher than „T.CH.ON”
			2	fireplace temperature is higher than„T.WAW.ON”
			3	WAW temperature measured by T2 sensor is higher than “T.minWAW”
			4	WAW temperature measured by T1 sensor is higher than „T.minWAW”
			5	WAW temperature measured by T2 sensor is higher than „T.maxWAW”
			6	fireplace temperature is higher than „T.Alarm”

PARAMETERS OF LEVEL 4			
NAME	**RANGE**	**FACTORY SETTING**	**FUNCTION**
Reset	0....1	0	Setting the value of “1” causes the recall of all parameters to their factory pre-sets and restart the regulator

3.2 Screens

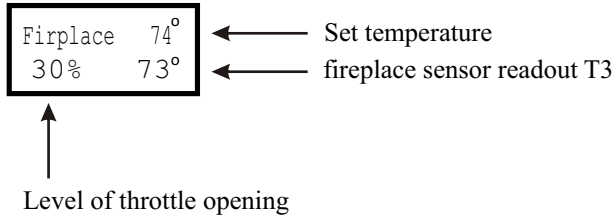
Alarm screens is not seen till the following emergency situation takes place:

1. Damage of sensor T1 (upper one of WAW). “T1” shows up. The alarm doesn’t work if the sensor is not installed.
2. Damage of sensor T2 (lower one of WAW). “T2” shows up.
3. Damage of sensor T3 (of fireplace). “T3” shows up.
4. The exceeding of the acceptable temperature of fireplace /”*T.Firep*”/ defined by the “*T.Alarm*” parameter



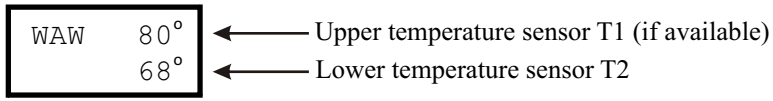
Emergency situation is accompanied by a broken sound alarm that can be turned off by pressing the CONFIRM button.
In emergency of temperature exceeding the pump CH turns on to cool off fireplace.

Screen of fireplace water jacket temperature measurement shows the actual temperature of fireplace and the level of throttle opening.



It’s a stable state that is in order to change it one need to press the CHOOSE button
During appearing this screen one can change the set temperature of a fireplace (”*T.Firep*” parameter). After pressing the CONFIRM button (5) the set temperature blinnks whose value can be altered with the buttons “+” (2) or “-” (4). To confirm the changes one needs to press CONFIRM once more. If the manual mode is set (Firp.MOD=MAN)one can manually control the throttle- the button “+” (2) causes the opening of the throttle (one step 10%) and the button “-” (4) causes its closing.

Screen of WAW temperature shows the actual temperature in the upper and lower part of the WAW accumulator.

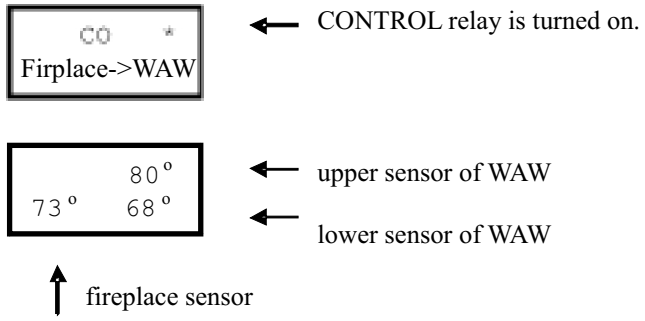


It’s a stable state that is in order to change it one needs to press the CHOOSE button

Screen of whole system operation

On the screen are the symbols of devices:
Firplace- fireplace
CH - central heating system
WAW - Warm Applicable Water accumulator
* - if the relay is switched on

The symbols (every few seconds or after pressing CHOOSE button) are replaced with numbers presenting the temperatures of those devices.
The blinking arrows mean the actual heat flow as an effect of pumps operation:
Firplace->WAW the pump P1 supplying the WAW accumulator is turned on.
Firplace->CH the pump P3 is turned on.



If the summer mode is active (only WAW), SUMMER replaces CH.
It's a stable screen that is in order to change it one needs to press the CHOOSE button

Screen of fireplace operation mode

There are the following modes:

ON The throttle is automatically controlled to stabilize temperature of the water jacket
Green status lamp lights (7)

AUTO Automatic operation is activated by pressing the "ON/OFF" button (6). The throttle is fully open. In 2hrs a fireplace ought to heat itself and reach the set temperature stabilized by throttle movements. From that moment the temperature fall by more than 10 °C ("*T.FirOFF*" parameter) existing for 30mins is treated as a turn-off of fireplace. The regulator ends an operation cyclesetting the throttle at rest position. Pressing the "ON/OFF" button once more starts another operation cycle.
Green status lamp (7) lights during fireplace operation and turns off after recognizing the turn-off state of fireplace.

OFF Setting the throttle at rest position (defined by the "*ModeOFF*" parameter).
Green status lamp (7) doesn't light

MAN Automatic control blocked - only manual control is available
Green status lamp (7) blinks.

It's a unstable state that is after 10secs from the last press of any button the screen changes to the screen of fireplace temperature measurement. All the next screens are unstable.

Screen of WAW operation mode

In the regulator one can set "*ModeWAW*" parameter achieving different strategies of operation. Possible modes are:
OFF - The pump WAW turned off
SUMMER- Turning off the heating system in summer time (the pump CH doesn't operate). Fireplace only works in the preparation function WAW.
ON - Standard operation (parallel operation of pumps) without favouring the WAW circuit
PRIO-Faster reaching the readiness of WAW accumulator by limiting heat obtain by heating system. The pump CH works cyclically. Turning off the pump WAW after supplying the accumulator causes the comeback of normal operation of the pump CH
CLOCK-beyond time zones the pump operates like in the ON mode and in the time zone like PRIO

Screen of clock

The screen shows the actual time and the number of active time zone.
Time correction is possible after pressing the CONFIRM button (5) and the minutes field begins blinking. The blinking value can be altered with the buttons "+" or "-". Pressing the CHOOSE button (3) one comes to the hours field that can be set with the buttons "+" or "-".
Pressing the CONFIRM button confirms the changes (the clock field will stop blinking).

Screen of setting the parameters

Normally the parameters setting level equals to "0" namely the parameters aren't available.
After changing the level to "1", "2" or "3" successive screens show the values of parameters.
The last screen contains "****" after which it comes back to the above mentioned screens.