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ph. (071) 367-21-67, 373-14-88, fax 373-14-58; Tax index number 899-278-63-72;
Bank account:SANTANDER BANK POLSKA SĄ WROCLAW 6910901522-0000-0000-5201-9335
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USER MANUAL

Program version 2.9 (02.2015)

KOMINEK LUX (RT-08P)

REGULATOR OF THE HEATING SYSTEM WITH A FIREPLACE CONTROLLED BY A CHOKE VALVE



The regulator controls heating system based on a water jacket fireplace that is a heat source, in which combustion process is controlled by a choke valve. 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 choke valve 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 the preset value. The task is realized by measuring temperature (T3) and controlling the choke valve (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 choke valve is gradually shut off limiting air supply, and if the temperature (T3) is lower than the "*T.Firep*" parameter the choke valve is gradually opened up.

The second function is to control the pump (P1) loading the warm applicable water accumulator (WAW). The pump operates if fireplace temperature both exceeds the "*T.PmpON*" 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 "*T.PmpON*" value. It's possible to activate the WAW priority function - see the description of operation modes of the accumulator WAW.

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.

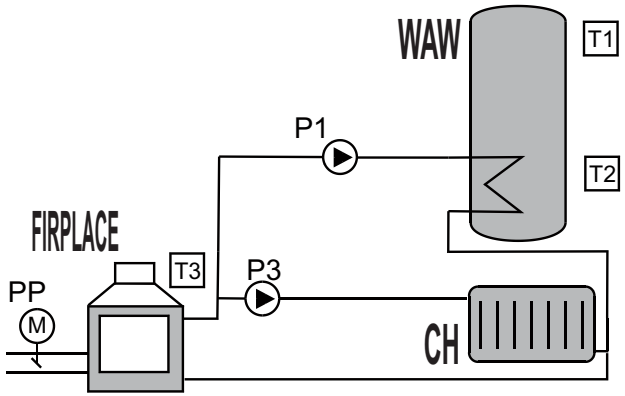


Fig. 1a Basic operation configuration of the regulator

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**

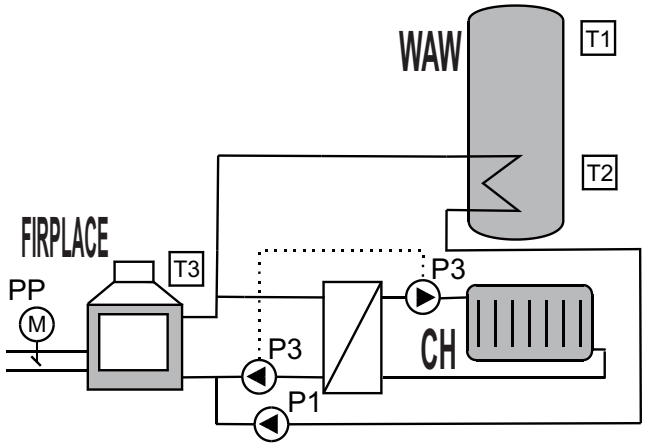


Fig. 1b Operation configuration of the regulator with heat exchanger for the system CH (pump of heat exchanger and system CH connected to output P3)

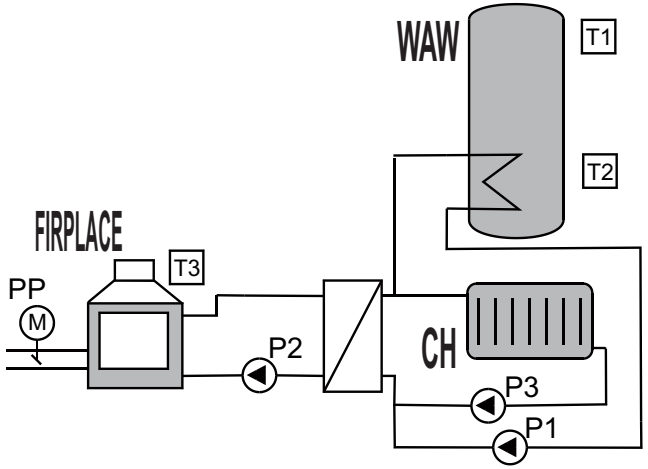


Fig.1c Operation configuration of the regulator with heat exchanger for CH and WAW systems

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 loading 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 choke valve of fireplace

2.1 Choke valve operation

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

The change of the choke valve position takes place cyclically every 20 secs. 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 thechoke valve 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 the preset value of 45°C ("*T.PmpON*" 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 loading 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 4mins ("*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 loading 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.PmpON*" parameter) and higher than in the accumulator WAW by 5°C ("*DeltaWAW*" parameter).

Dependent on the quantity of connected temperature sensors WAW there are the following ways of the pump operation:

** Sensors T1 and T2 not connected. Loading the accumulator WAW at random. The pump WAW turns on if water temperature in the fireplace jacket reaches the preset value or is higher than 50°C (parameter *T.minWAW*).

**One of the sensors T1 or T2 connected. The pump WAW turns on if the temperature of the accumulator WAW is lower than 50°C. (Parameter "*T.minWAW"*) and turns off if the temperature is higher than 60°C (parameter *"TmaxWAW"*).

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

ARGO-FILM
Recycling Plant No. 6
180 Krakowska st., 52-015 Wroclaw
ph.: 071 794 43 01,
0 515 122 142

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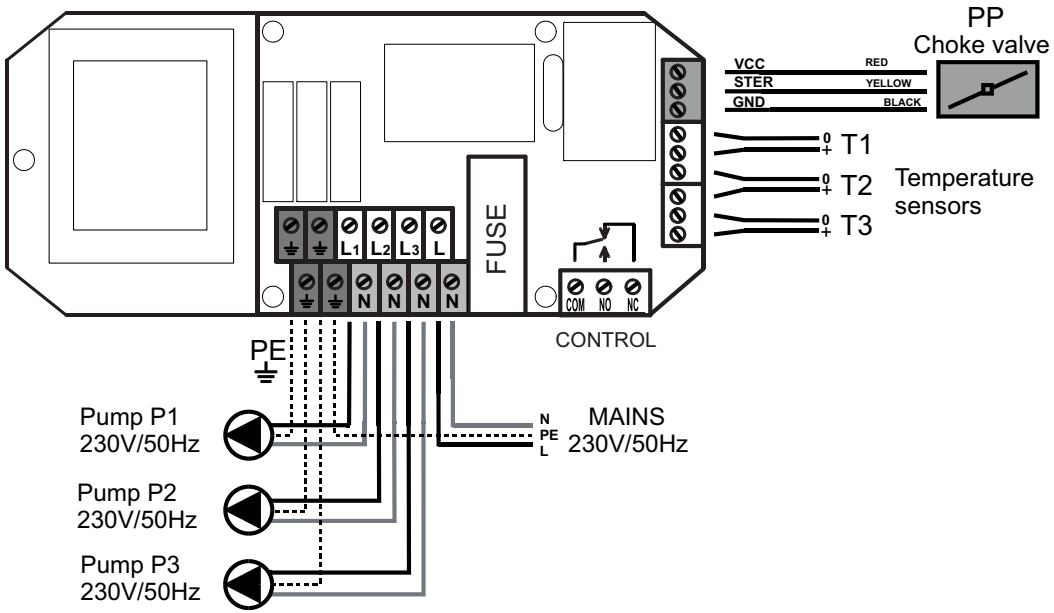
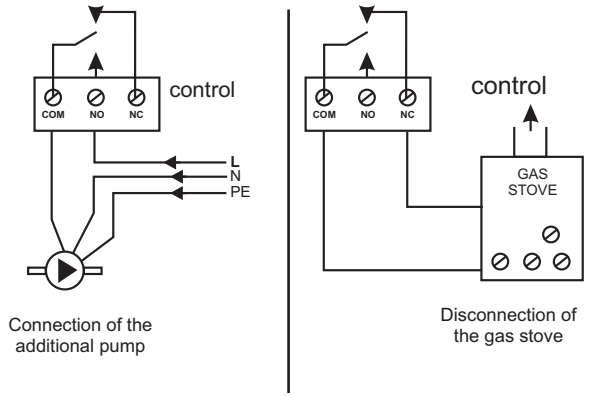


Fig.3 Electrical scheme

PP Choke valve
T1 Upper temperature sensor of WAW accumulator (option)
T2 Lower temperature sensor of WAW accumulator
T3 Temperature sensor of fireplace water jacket
P1 Pump loading 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

The plug on the connection block described as "STER" /CONTROL enables connecting various devices that control the operation of another heat source, which we want disconnected acc. to the parameter chosen in the settings table. The connection itself is inactive (nonvoltage) and you can use it to handle devices making use of contacts as closed or open ones.
At the short-circuit connection - you connect COM + NO
At the open connection - you connect COM + NC
This contact can be also used to handle any electrical device like a pump or electrovalve (remembering that the contact is nonvoltage, that is, the device must be supplied independently) of power 500W.



**Both of the sensors T1(low) and T2(up) connected. The loading starts when the temperature sensor (T1) measures below 50°C (parameter *"T.minWAW"*) and ends when the temperature sensor (T2) measures above 60°C (parameter *"T.maxWAW"*). The parameter *"CtrlWAW"* should have the value 2, which means the operation of both of the sensors. The value 1 causes the operation to be made like at the temperature sensor T2 only active - sensor T1 then doesn't take part in the control but its measurements are still shown.
After the loading of WAW ends the pump runs for 1mins (parameter *"Ti.RnWAW"*), which prevents the temperature in the water jacket from rising, especially in summer time when the pump CH doesn't operate.
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 the heating system. The pump CH works cyclically. Turning off the pump WAW after loading the accumulator causes the comeback of normal operation of the pump CH
CLOCK-beyond the time zones the pump operates like in the ON mode and in the time zone like PRIO
Special-beyond the time zones $1...$3 the pump operates like in the ON mode and in the time zone like PRIO. Additionally during loading the WAW accumulator the preset temperature of the water jacket is raised up to 65°C.(parameter "*T.ladWAW"*).

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 operation 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.

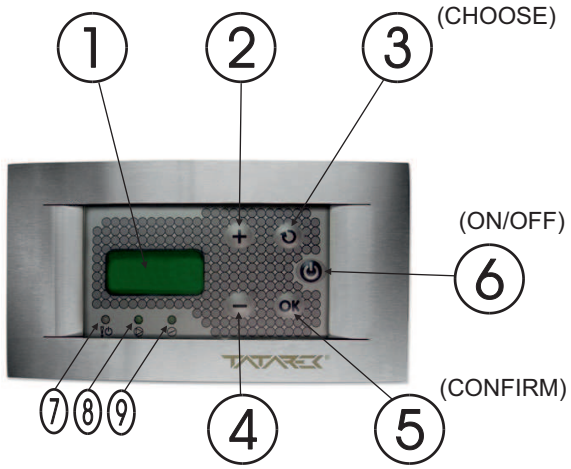


Fig.2 Control panel view

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)
   At the manual mode of the opeartion the green lamp blinks.
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 5 time zones (**$1, $2, $3, e4, e5**) 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. The same start and end time means the zone isn't active, which doesn't change the settings of the regulator. The time zones can overlap each other in that case binding are the settings for the active zone of higher number.

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
ZONE e4	FROM 23.00 TILL 5.30
ZONE e5	FROM 8.00 TILL 13.30

The zones $1...$3 relates to the pump loading the WAW accumulator in the mode **CLOCK** and **Special** (see p.2.4)
The zones e4...e5 enable lowering the preset temperature of the fireplace by the parameter value "*T.Econom"* at the limited demand for the heat.

RelaySTR	2...6	2	Switch-on of the relay CONTROL if
		2	fireplace temperature is higher than „T.PmpON"
		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"
TypChoke	1...2	1	Control type of choke valve
		1	Continuous control - servomotor of the choke valve is always active.
		2	Dynamic control - servomotor of the choke valve is active only if position change of the valve is needed.
Signal	ON/OFF	ON	Turning on/Turning off the alarms

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 restarts the regulator

Demonstration change of the "Mode OFF" parameter defining the choke valve 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	Preset temperature of fireplace kept by the regulator
T.PmpON	30...60 °C	50 °C	Minimal temperature of fireplace at which the pump P3(CH) and P1(WAW) can be activated.
T.maxWAW	30...100 °C	65 °C	Maximal temperature of WAW accumulator. The exceeding turns off the loading pump
T.min WAW	30...100 °C	50 °C	Minimal temperature of WAW accumulator. The exceeding turns on the loading pump
T.ladWAW	30...100 °C	65°C	Preset temperature of fireplace automatically set at the loading of WAW accumulator in the priority mode ModeWAW=Special
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**
ZONES ?	ON/OFF	OFF	OFF - time zones are disabled ON- time zones are enabled
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
Zonee4 fr	0:00...23:45	23:00	Start of 4th time zone- economical
Zonee4 to	0:00...23:45	5:00	End of 4th time zone-economical
Zonee5 fr	0:00...23:45	8:00	Start of 5th time zone-economical
Zonee5 to	0:00...23:45	13:30	End of 5th time zone-economical
T.Econom	-1...-9°C	-5 °C	The lowering of fireplace temperature in relation to the preset temperature during the economic time zone "e4" or "e5"

PARAMETERS OF LEVEL 3			
NAME	**RANGE**	**FACTORY SETTING**	**FUNCTION**
ModeOFF	0...100%	0%	Position of the choke valve 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.
PumpHysteresis	1...10 °C	1°C	Temperature hysteresis of switching on/off the pumps. The temperature difference between switch-on and switch-off of the pumps. It prevents often switch-overs.
Ti.RnWAW	0....10mins	1min	Rundown time of the pump WAW. The extending of the time for the pump operation after finishing loading the WAW accumulator It prevents a sudden temperature increase in the fireplace water jacket after ending the loading, especially in summer time when the pump CH doesn't run..
ctrlWAW	1...2	1	Kind of loading for the WAW accumulator 1 Temperature sensor T2 (down) controls the loading of WAW 2 Temperature sensors T1 (up) and T2 (down) control the loading of the WAW accumulator
T.Alarm	75...95 °C	85 °C	Fireplace temperature at which the alarm turns on.
T.FirOFF	5...25 °C	10 °C	Decreasing fireplace temperature in relation to preset temperature at whose exceeding the countdown of 30mins begins up to the switch-off of fireplace (stop condition at Firp.MOD=AUTO)

3.2 Screens

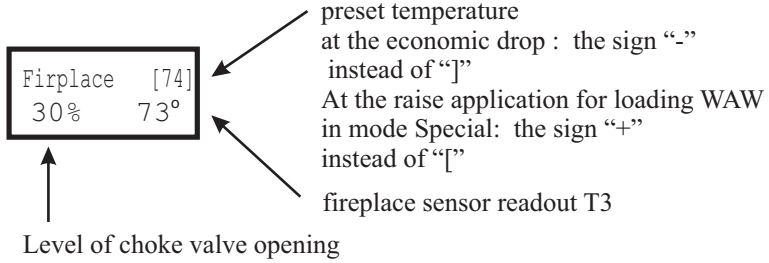
Alarm screens is not seen till the following emergency situation takes place:

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



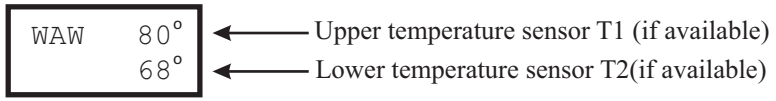
Emergency situation is accompanied by a broken sound alarm that can be turned off by pressing the CONFIRM button.
In emergency of temperature exceeding the pump CH turns on to cool off fireplace.

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



It's a stable state that is in order to change it one needs to press the CHOOSE button
During appearing this screen one can change the preset temperature of a fireplace ("*T.Firep*" parameter). After pressing the CONFIRM button (5) the preset temperature blinks whose value can be altered with the buttons "+" (2) or "-" (4). To confirm the changes one needs to press CONFIRM once more.
At the economic time zones "e4" or "e5" the displayed temperature is corrected by the drop (parameter *T.Econom"*). During the loading of the WAW accumulator in the mode *ModeWAW=Special* the preset temperature gets raised up to the parameter value *" T.ladWAW"*
If the manual mode is set (Firp.MOD=MAN)one can manually control the choke valve- the button "+" (2) causes the opening of the choke valve (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.

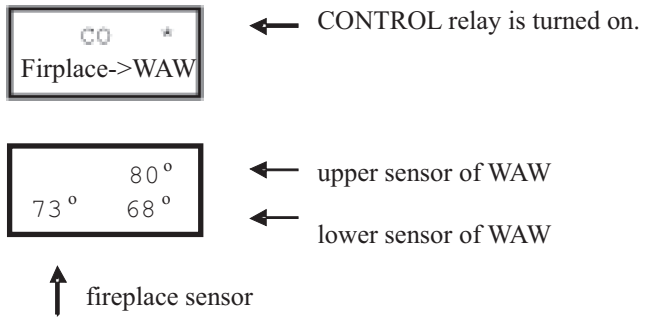


It's a stable state that is in order to change it one needs to press the CHOOSE button

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(loading) 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 choke valve 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 choke valve is fully open. In 2hrs a fireplace ought to heat itself and reach the preset temperature stabilized by choke valve 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 the operation cycle setting the choke valve 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 choke valve 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 the heating system. The pump CH works cyclically. Turning off the pump WAW after loading the accumulator causes the comeback of normal operation of the pump CH
CLOCK-beyond the time zones the pump operates like in the ON mode and in the time zone like PRIO
Special-beyond the time zones $1...$3 the pump operates like in the ON mode and in the time zone like PRIO. Additionally during supplying the WAW accumulator the preset temperature of the water jacket is raised up to 65°C.(parameter "*T.ladWAW"*).

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" , "3" or "4" successive screens show the values of parameters.
The last screen contains "****" after which it comes back to the above mentioned screens.