

2. Operation Rules

The regulator steers the C.H. installation with a culm boiler in which by controlling blower efficiency boiler temperature is changed. Additionally rotary CH and feeding CWU pump operation is controlled.

The regulator recognizes the following emergency situations: damage of temperature sensor, disconnection of temperature sensor, activation of alarm thermostat. Emergency situation is stored into regulator memory (also after power is off), generated a sound and red LED ALARM blinks. Pressing the button ALARM CANCEL turns off the sound and if the cause of breakdown is out, brings back a normal operation (alarm thermostat is off after cooling down to ~70°C). If red LED ALARM still blinks, it means that the cause of breakdown still exists. Exceeding temp. 93°C is signaled by the display flashing. The flashing stops if temperature comes down below 91°C.

C.H boiler operates in the following cycle: Burn-up ; Work ; Extinguish.

Burn-up phase starts by button START. Going over to the other phases is automatically done. Regulator kicks off a blower and a rotary pump.

By this culm is burnt up and boiler temperature gradually goes up.

Reaching 35°C finishes Burn-up phase. Burn-up duration is restricted to up to 2 hours. If temperature doesn't increase, regulator goes to Extinguish phase.

At Burn-up phase you can switch off a boiler by STOP button at any moment .

Burn-up is signaled by a blinking lamp WORK (**between START and STOP is located**).

The regulator skips the Burn-up phase and automatically switches on a boiler if water temperature exceeds 35°C after turning on the mains.

At **Work phase** the regulator keeps boiler temperature at the given level.

If boiler temperature is lower than the given level, a blower starts (its rotation is automatically set). Temperature increase above the given level stops a blower. There are boiler scavenges at that stage in order to get rid of combustion gas (acc. to given values). Work is signaled by constant light of lamp WORK.

During boiler operation you can press the button STOP (a longer press is required at 2 sec.). It causes then a interim blower switch-off e.g. for cleaning up the hearth. The state is signaled by a fast blinking LED WORK. After 30 min. regulator automatically goes over to a normal operation. The pause in blower work can be shortened by pressing once more the button START.

The temperature fall below 35°C starts **Extinguish phase** of a boiler. If for 45 min temperature doesn't increase then a blower stops and the cycle of boiler work is finished.

At **Extinguish phase** you can turn off a boiler by long pressing (~2 sec) the button STOP.

Extinguish phase is signaled by a blinking lamp WORK (LED between START and STOP)

(At the end of this phase the lamp goes off)

2.1 Alarm signal

The regulator recognizes the following emergency situations: damage of boiler temperature sensor, disconnection of that sensor, boiler temperature increase above 93°C and operation of alarm thermostat STB. Emergency situation is saved in regulator memory (also after switching off power), alarm sounds and red lamp ALARM blinks. Pressing the button KASOWANIE ALARMU switches off alarm sound and if the cause of alarm stops, brings back the normal operation (Alarm thermostat turns off if temperature falls to 70°C.) If the lamp ALARM blinks, it means the cause of alarm still exists. During the alarm regulator brings down boiler temperature by switching off a blower and switching on a pump CH (central heating).

CE CONFORMITY DECLARATION

Ref. No. 28.RT.09.2007/1/B

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

declare under our sole responsibility that
the product: Temperature regulator of the central heating stoves

model: RT-01, RT-02, RT-03, RT-01B, RT-02B, RT-03B, RT-03C

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 12.12.06 (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 ZETOM, 17 H. Bednorza st., 40-384 Katowice
Laboratory INSTYTUT LOGISTYKI i MAGAZYNOWANIA
6 E.Estkowskiego st., 61-755 Poznan

Test report No. B/04/156/1 of 23.07.2004
B/04/156/2 of 23.07.2004
366÷373/2004 of 01.2005
374÷381/2004 of 02.2005

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:

Wroclaw

Date of issue:

08.2007

Manufacturer representative:

Jerzy Kopeć

Jerzy Kopeć
Position:

Designer

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 MODIFYING 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 transferred to the utilization collection place, where will be accepted for free

ARGO-FILM
Recycling Plant No. 6
180 Krakowska st., 52-015 Wrocław
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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. O/WROCLAW 6910901522-0000-0000-5201-9335
www.tatarek.com.pl.; E-mail: tatarek@tatarek.com.pl

Kind of failure	Temperature display shows:	Remarks
Damage/disconnection of boiler temperature sensor	99 blinks	ALARM Needs deleting
Safety sensor activation STB	„cb” blinks along with temperature measured by boiler sensor	ALARM Needs deleting
Boiler temperature 93...99 °C	Temperature measured by boiler sensor blinks	ALARM-WARNING Alarm turns off automatically if temperature falls below 91C. Prevents an emergency switch-off of boiler in case of momentary exceeds of max temperature.
Boiler temperature above 99°C	99 blinks	ALARM Needs deleting

2.2 Pump operation C.H.

Additional function is to control a rotary pump CH. If boiler temperature exceeds the pre-set value, the pump turns on. Switching off the pump below that value causes a faster heating of boiler above the dew point and in effect the lengthening of boiler life. If the regulator works with a room thermostat, if temperature in room is too high, pump works in cycles (see the description of parameters adjusting the regulator to the features of boiler and C.H installation). Pump C.H. works in cycles also if priority CWU is set (see parameters) while feeding the pod of warm usable water.

2.3 Pump operation CWU

The regulator can control the pump of feeding the pod with warm usable water CWU. The pump CWU works if water temperature on the boiler is higher than in the pod, that's why temperature sensor in the pod is required.

If temperature CWU exceeds the pre-set value, pump CWU is off (see description of parameters).

In case of lack of sensor CWU pump will not work.

2.4 Cooperation with room thermostat

The regulator has an output to connect a room thermostat of any kind, equipped with a no-voltage relay output. The thermostat clamps need to be connected to the regulator. The clamps are short-circuited if room temperature is higher than the given value. As long as room temperature is lower than the set value in the thermostat (relay clamps are open), the regulator works normally. If room temperature exceeds the in thermostat set value (relay clamps are short-circuited), which is signaled by blinking lamp T-ROOM (fig. 1/4), the regulator modifies its functions: preset boiler temperature gets down.

If thermostat is not mounted, then the proper input of the regulator needs to be left loose (unconnected).

The thermostat ought to be located in the largest room. Installing by-heater thermostatic valves are not allowed to be installed in the room. The thermostat should be fixed at 1,5m off ground, far away from windows and heaters. In the other rooms by-heater valves can be installed.

3. Signaling of regulator operation

Phase	Blower	C.H. pump		Lamp WORK
		switch-off temp. of C.H. pump (Parameter P1)=30	switch-off temp. of C.H. pump (Parameter P1)=31...50	
Burn-up	works	works	works if temp. is higher than P1+2°C no work if temp. is lower than P1	blinks
Work	works only if temp. lower than that given. No work if temp. higher than that given	works	works if temp. is higher than P1+2°C no work if temp. is lower than P1	lights
Extinguish	works	works	works if temp. is higher than P1+2°C no work if temp. is lower than P1	blinks
End	no work	works only if temp. higher than 32°C. No work if temp. lower than 30°C	works if temp. is higher than P1+2°C no work if temp. is lower than P1	off

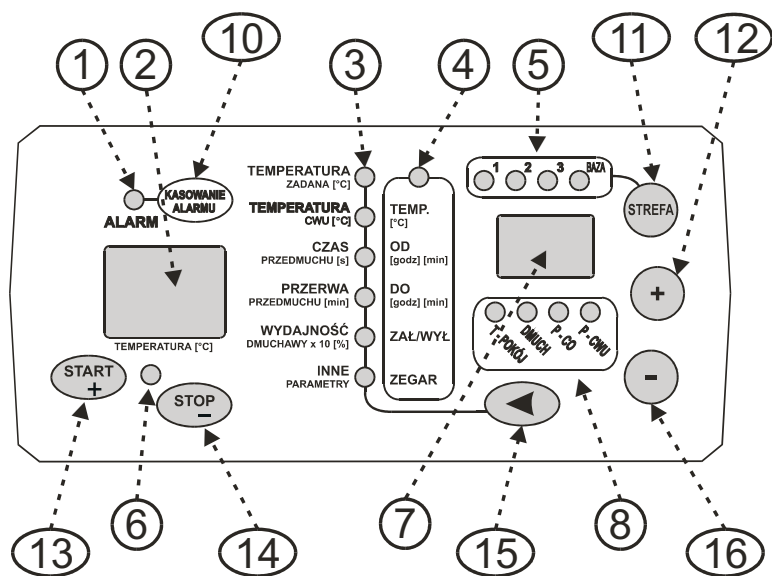


Fig.1 Control panel view

1. Connection socket of temperature sensor of the pod CWU
2. Connection socket of temperature sensor and alarm thermostat STB
3. Connection socket of room thermostat
4. Connection socket of pump feeding the pod CWU
5. Connection socket of rotary pump
6. Connection socket of blower
7. Power switch of regulator, blower and pump
8. Fuse socket 5A
9. Mains cable 230V/50Hz

7. Solution of problems

Problem	Possible cause	Solution
Regulator turns off	1. Wrong connection of mains cable 2. Damaged fuse 3. Switch MAINS is off	1. Check the supply connection 2. Check the fuses, swap them for new ones acc. to the documentation 3. Set the switch to I
Wrong boiler temp. displayed by regulator	1. Temp. sensor disconnected 2. Temp. sensor damaged	1. Check sensor connection 2. Get in touch with the service
Regulator does not control boiler, lamp ALARM blinks	1. Not deleted the memory of alarms 2. The cause of alarm still exists 3. Temp. sensor damaged	1. Press ALARM CANCEL to delete the memory of alarms 2. Wait till the end of alarm (e.g. a security device sensor cools down) 3. Get in touch with the service
Boiler temperature strongly higher than that preset.	1. Too fast burning	1. Change the scavenge parameters

8. Regulator installation

- ! 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.

The Regulator is designed to mount on the C.H. boiler. The control should be connected to the proper sockets on the back wall. An integrated temperature sensor /alarm thermostat has to be located in the special hole of the boiler housing. In order to guarantee a proper thermal conductance, that hole should be filled with machine oil or silicon paste. The cables should be directed in such way so they cannot be exposed to overheating.

Parameter	Code	Value	factory sets	Remarks
Recovering factory sets (initial setting)	UP	0÷3	0	This is not a parameter but the way for setting parameters to factory values (except for operation mode of blower motor SL, which will not change - its value is set by boiler producer acc. to a blower.). In order to make initial setting, UP should be "2" and press the choice button "14".
Switch-off temperature of rotary pump (change of operation mode of pump) [°C]	P1	30÷50	35	30 Pump works always during Burn-up, Work, Extinguish. If boiler doesn't work, pump is on if temp. is higher than 32°C. Pump is off if temp. is lower than 30°C
				31-50 Pump is on if temp. is higher than P1+2 °C, and is off if temp. is lower than P1
Switch-off time of pump C.H. [min]	P2	1÷30	4	Pause time of pump C.H. if a room thermostat decides about turning off heating or the priority of pump CWU is activated. After ending that time, pump is on for 30 sec.
Switch-on temperature of pump CWU [°C]	U1	20÷85	45	Minimal boiler temp. at which pump CWU is on.
Switch-off temp. of pump CWU [°C]	U2	30÷99	80	Maximum temp. of the pod CWU. Switch-off temp. of pump CWU
Delta CWU [°C]	U3	1÷10	5	Minimal difference between boiler and pod CWU temp. required for pump operation CWU
Priority CWU [0-off 1-on]	U4	0÷1	0	Switch-on of this function causes that while feeding the pod CWU, thermal reception by C.H. installation is restricted by cyclic pump operation C.H. (the same as in room thermostat)
Temperature of room thermostat [°C]	F1	40÷60	40	Preset boiler temperature in cooperation with room thermostat. It means temperature to which the regulator sets boiler in case of room thermostat deciding about turning off heating.
Blower efficiency during scavenges x10[%]	F2	1÷10 (10÷100%)	10 (100%)	
hysteresis of blower at operation on/off [°c]	F3	0÷5	2	Insensitivity zone, the difference between switch-on and switch-off temperature.
Operation mode of blower motor	SL	0÷2	1	0 Lack of variable rotations, operation on/off. The mode is designed for any kind of motor, impervious to floating rotation regulation
				1 Floating rotation regulation
				2 Floating rotation regulation, it relates to the motors class RV-14
Time zones mode	SF	0÷1	0	0 given temperature for time zones as an absolute one in the range of 40 - 90 degrees.
				1 given temperature for time zones as a relative one to BAZA temperature in the range of 40 - 90°C.

- Lamp signaling ALARM caused by exceeding of limit temperature or activation of device safety sensor
- Display of measured temperature
- Lamps indicating the kind of parameter displayed on "7"
- Lamp indicating the parameter settings of time zones
- Lamps indicating the number of time zone
- Lamp indicating boiler operation
- Auxiliary display
- Lamps signaling the operation of devices:
 - T-ROOM - activation of room thermostat
 - BLOW - activation of blower
 - P-C.H - activation of rotary pump
 - P-CWU - activation of pump feeding the pod with warm usable water
- Button to cancel alarm
- button to program the time zones
- Button to increase value
- Button to start boiler operation
- Button to stop boiler operation
- Button to choose parameter
- Button to decrease value

4. Handling of regulator

Power switch is located on the back wall (Fig. 2). Turning off the regulator by switch "6" (Fig. 2) disconnects the power supply of a blower and a rotary pump as well. Control Panel (Fig. 1) is designed to put in regulator adjustments. The left display "2" shows boiler temperature. Buttons "13" and "14" serve to initiate **Burn-up** and **Extinguish phase** of a boiler. (**Extinguish** is possible only if temperature is lower than 35°C). Boiler state is indicated by lamp "6". The right display "7" shows the value of a parameter chosen by button "15" signaled by one of lamps "3". The value of the parameter can be changed by buttons "12/16". If the buttons are not used for longer than 10sec and the regulator indicates the given temperature.

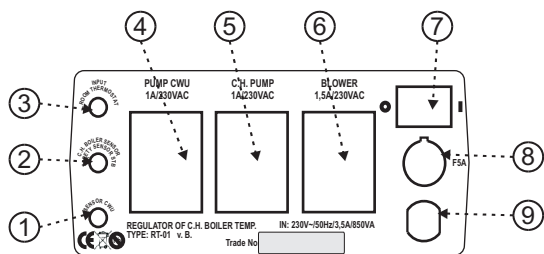


Fig.2 Back wall view

<i>Parameter</i>	<i>Range of changes</i>	<i>Factory adjustment</i>
Given temperature	40+90°C	70°C
Scavenge time	1+30 sec	10sec
Scavenge break	2+40 min	3 min
Blower efficiency x 10%	1+10 (it means 10+100%)	10 (it means 100%)

5. Time zones

Regulator is equipped with a clock, which enables an automatic change of boiler temperature at different times.

The day is divided into 3 zones (1,2,3) and the span in which no zone is active (BAZA). The zone (1,2,3) is characterized by a given temperature (TEMP), start time (OD), end time (DO) and the activation mark of zone (ZAL/WYL), though BAZA is only parameterized by a given temperature (TEMP). On the front panel are 4 small lamps. Each of them is marked by zone symbol (Fig.1/4) meaning which time zone is actually active (If all the zones are inactive, only the lamp BAZA shines).

The change of given temperature during the zone other than BAZA (only one zone lamp shines 1 or 2 or 3) is a temporary one, it means it's active till the end of current zone and reentering that zone sets the programed temperature for it. The change of settings for the zones are conducted by pressing the button STREFA ("11"). In that case the lamp "4" starts blinking, reminding that from now on the inscriptions to the right of the lamps "3" are in force.

The first pressing of the button STREFA enables to change the settings for BAZA- the lamp BAZA blinks. On the right display shows a given temperature that can be altered by the buttons +/-.

WARNING!

If the lamp BAZA blinks, the other lamps show if any of the zones is active (The lighted lamp 1,2 or 3 means the marked zone is active)

Further pressing the button STREFA enables to change the settings for the zones (The lamp 1,2 or 3 blinks).

The following in the zone frame can be changed (by button "15"):

- A given temperature (TEMP), on the right display the temperature can be altered by the buttons +/- . The zones can operate in the absolute or relative mode (see the description of parameter SF in 6 chapter. In the absolute mode a zone temperature is set between 40-90°C

In the relative mode an amendment is defined -19 +19°C to BAZA temperature. In the relative all the zones need not be reprogramed during changing weather conditions, only BAZA temperature needs controlling. E.g setting -5°C by night means the temperature fall of 5°C to BAZA temperature.

- Zone start time (OD), on the left display an hour changed by buttons START+/STOP-, on the right display a minute changed by buttons +/-
- Zone end time (DO), on the left display an hour changed by buttons START+/STOP-, on the right display a minute changed by buttons +/-
- Zone activation mark (ZAL/WYL), on the right display - the value 0: zone deactivated, 1 zone activated.

The adjustments by buttons +/-

- Setting a clock (ZEGAR), on the left display- an hour changed by buttons START+/STOP-, on the right a minute changed by buttons +/-

WARNING! Setting a clock can be done over any zone time

WARNING! Time zones can overlap each other, then the settings for a turned-on zone of higher number are active .

WARNING!: The program for the zones in the regulator is in factory set:

ABSOLUTE TIME ZONE MODE (SF=0, see chapter 6)

<input type="checkbox"/>	BAZA	70°C		
<input type="checkbox"/>	ZONE 1	60°C	from 21.30 to 6.00	ZONE OFF
<input type="checkbox"/>	ZONE 2	75°C	from 14.00 to 16.30	ZONE OFF
<input type="checkbox"/>	ZONE 3	75°C	from 18.00 to 21.00	ZONE OFF

What does setting temperature for 70°C mean?. Turning on ZONE 1 causes an automatic change of temperature to 60°C at night 21.30-6.00

RELATIVE TIME ZONE MODE (SF=1, see chapter 6)

<input type="checkbox"/>	BAZA	70°C		
<input type="checkbox"/>	ZONE 1	-10°C	from 21.30 to 6.00	ZONE OFF
<input type="checkbox"/>	ZONE 2	+5°C	from 14.00 to 16.30	ZONE OFF
<input type="checkbox"/>	ZONE 3	+5°C	from 18.00 to 21.00	ZONE OFF

What does setting temperature for 70°C mean?. Turning on ZONE 1 causes an automatic change of temperature to 60°C (70°C-10°C=60°C) at night 21.30-6.00

Further pressing the button STREFA ends the programming of the zones. Lamp "4" is off and the regulator comes back to the normal displaying

If the buttons are not pressed for longer than 15s the regulator automatically goes over to the standby state (showing an actual boiler temperature on the left display and a given temperature on the right display)

6. Additional parameters

Apart from the parameters of 4th chapter being mentioned, the regulator can be fitted to C.H. installation and user's wishes by additional parameters. Their value has a significant meaning for a proper operation of the regulator and casual changes are not allowed.

The additional parameters access is possible for a first minute since switching on the regulator. The parameters are located under the position "OTHER PARAMETERS" (going over acc. to 4-th chapter).

The value shows up on the right display "7" and can be changed by buttons +/- ("12/16").

The kind of parameter (the code of which shows on the left display "2") is changed by buttons START/STOP ("13/14"). If the buttons are not used for the time longer than 15sec , the regulator automatically goes over to the standby state (actual boiler temperature on the left display, preset temperature on the right)