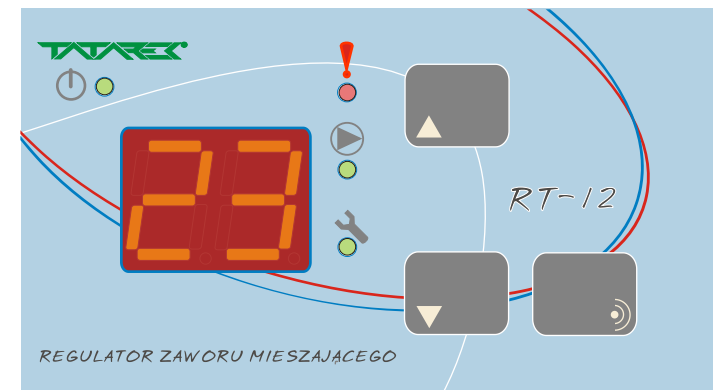


USER MANUAL
version 1.0 (11.01.2009 program 1v0)

RT-12
TEMPERATURE REGULATOR
OF
THE MIXING VALVE



1. Basic parameters

Power supply	230V/50Hz
Power consumption without load	2W
Max connection power	600VA
Operation conditions	0÷40 °C, humidity 10÷90% no condensation
Housing protection class	IP41
Fuse	3,15A/250V
Number of outputs to control the valve drive	2 * 200VA/230V/50Hz
Number of outputs to control the circulating pump	1 * 200VA/230V/50Hz
Number of temperature sensors	1 * KTY210
Temp. measurement precision	±/± 2 °C
Temp. measurement resolution	1 °C
Input of the room thermostat	1 * 2mA /5V
Input of the emergency thermostat	1 * 2mA /5V

CE CONFORMITY DECLARATION
 Ref. No. 58.RT.01.2007/1/B

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

declare under our sole responsibility that
 the product: **TEMPERATURE REGULATOR OF THE MIXING VALVE**

model: **RT-12**
 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 Wrocław, 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:

Wrocław

Date of issue:

08.2007

Manufacturer representative:

Mirosław Zasepa

Position:

Konstruktor

2.1 Operation of the regulator

When the power supply is given to the regulator or it'll be switched on by the keyboard, the circulation pump is being turned on. At first the regulator shuts the mixing valve. The procedure of shutting lasts for 120s. Then the essential procedure of controlling occurs. The algorithm compares the preset temperature (set by a user) with the measured temperature. If the measured temperature is too low, the regulator with a specific impulse opens a little the valve. If the measured temperature is too high, the regulator closes a little the valve. Checking the temperature and the correction of setting the valve the regulator carries out cyclically in its whole operation time. The size of the closing and opening impulses and the interval between them is set based on the difference between the preset and measured temperature and also on the speed of the measured temperature's changes.

2.2 Cooperation with the room thermostat

The regulator can cooperate with a room thermostat. On the contacts of the regulator where a thermostat can be connected by default the jumper is mounted. After removing the jumper and connecting a thermostat the algorithm will be changed. If the room temperature is too low (contact of the thermostat is shorted), the regulator operates normally, keeping the preset temperature. But if the temperature is too high (contact of the thermostat is open) the regulator starts keeping temperature lower than the preset one. The size of that decrease ought to be set by an installer. The default is 15°C.

2.3 Cooperation with the emergency thermostat

In order to protect some of the heat receivers against high temperature, the system with the RT12 regulator can be equipped with an additional emergency thermostat. By default on the contacts of the regulator where an emergency thermostat can be connected the jumper is mounted to allow normal operation without the thermostat. After removing the jumper and connecting the thermostat, the regulator reacts with an emergency signal, closing the mixing valve and turning off the circulating pump if the temperature of the thermostat is exceeded (its contact will be shorted).

3 Handling the regulator

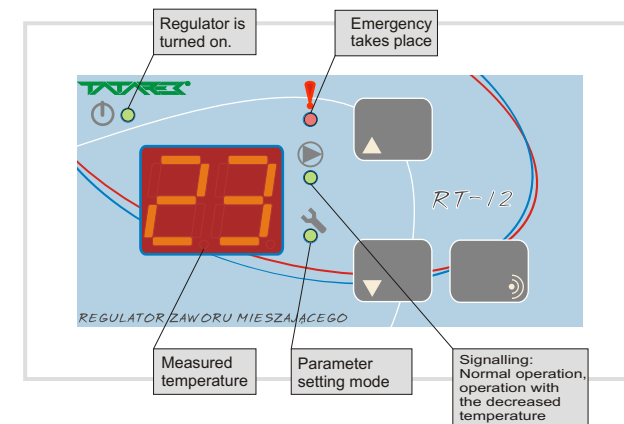
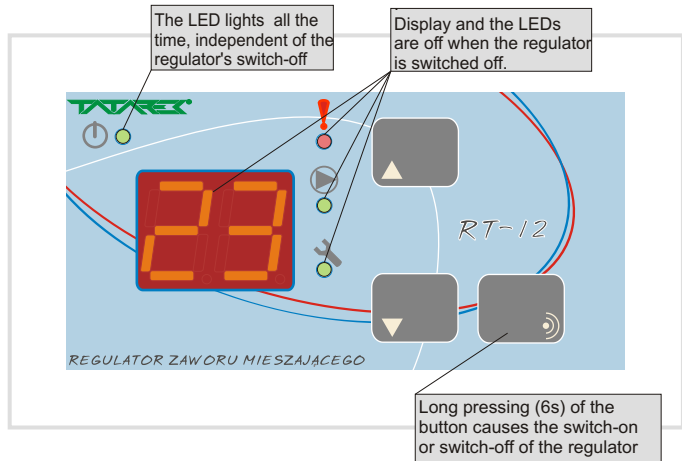


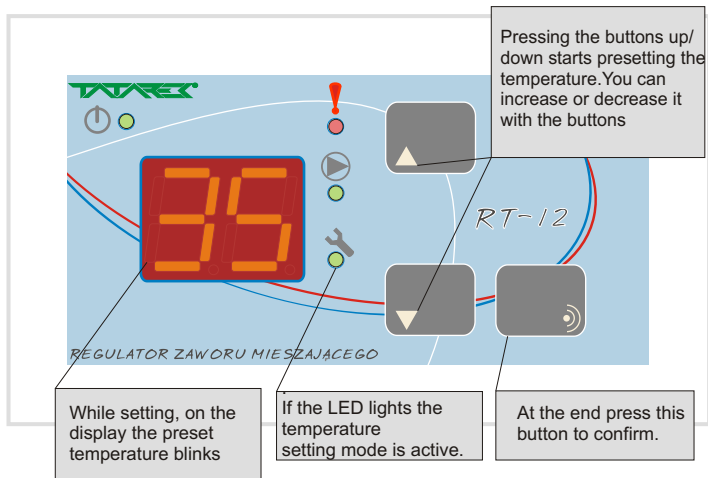
Fig.2 Control panel

3.1 Turning on/ off the regulator



! DESPITE THE SWITCH-OFF OF THE REGULATOR, IT'S UNDER DANGEROUS VOLTAGE. THE OUTPUTS (CONTROLLING THE CIRCULATING PUMP AND MIXING VALVE) ARE ALSO UNDER DANGEROUS VOLTAGE. When the RT-12 regulator is switched off, the display and the LEDs go out. Only the LED signalling power supply existence lights. The circulating pump is turned off. The output of closing the mixing valve is turned on.

3.2 Change of the preset temperature



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

ARGO-FILM
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ph.: 071 794 43 01,
0 515 122 142

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



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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/WROCŁAW 6910901522-0000-0000-5201-9335
www.tatarek.com.pl.; E-mail: tatarek@tatarek.com.pl

Description of the RT-12 contacts:

No	Name	Description	
1	N	Power supply 230V 50Hz -neutral cable	
2	L	Power supply 230V 50Hz – phase cable	
3	N	Circulating pump 230V 50Hz – neutral cable	
4	L	Circulating pump 230V 50Hz – phase cable	
5	N	Drive of the mixing valve 230V 50Hz – neutral cable	
6	L-Z	Drive of the mixing valve 230V 50Hz – phase cable, direction of shutting the valve	
7	L-O	Drive of the mixing valve 230V 50Hz – phase cable, direction of opening the valve	
8	PE	Power supply 230V 50Hz – protective cable	
9	PE	Pompa obiegowa 230V 50Hz – protective cable	
10	PE	Drive of the mixing valve 230V 50Hz – protective cable	
11	Tx	Temperature sensor	
12	Tx	Temperature sensor	
13	Tp	Room thermostat	Thermostat with the NC contact NC-normally closed. If the room temperature is too low the contact should be closed. After exceeding the preset temperature the contact should open.
14	Tp	Room thermostat	
15	Ta	Emergency thermostat	Thermostat with the NC contact. e.g. type bimetallic. If the temperature exceeds the limit level the contact should open.
16	Ta	Emergency thermostat	
17	-	do not connect !	
18	-	do not connect !	

Attention ! Remember ! If you don't want to connect a thermostat you must in its place jumper (short) the connections. As well when you want to connect a thermostat first you need to remove the jumper.

After setting the preset temperature its value must be confirmed with the confirmation button. If you don't do that after 10s the regulator restores the previous value and gets back to show the measured temperature.

4. Chapters for an installer

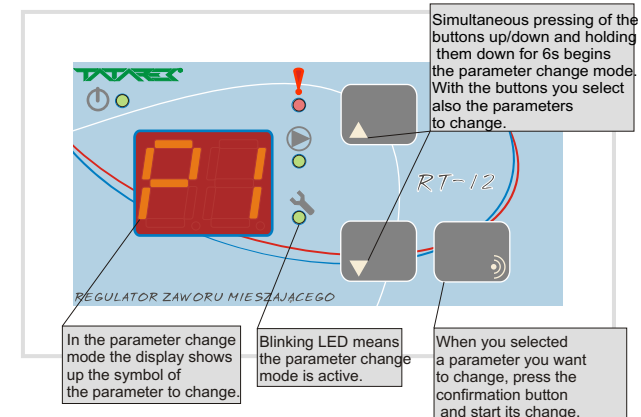
4.1. Change of the parameters

The RT-12 regulator after installing requires to have a few parameters set.

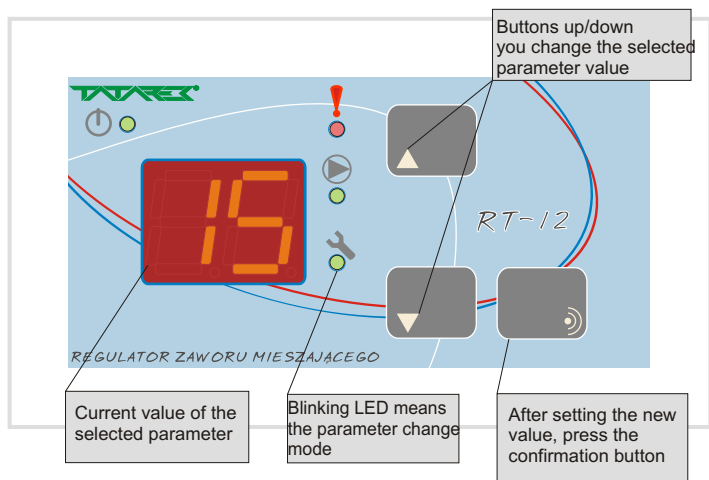
The list of parameters:

Symbol of Parameter	Description	Default value	Minimum value	Maximum value
P0	Lowering the temperature for the operation with a room thermostat. If the room temperature is high and the thermostat turns on, then the regulator will keep the lower temperature on the heat receivers. This parameter defines by what degrees this temperature must be lower.	15 °C	0 °C	40 °C
P1	Dynamics of the heating system. This parameter defines the reaction speed of the regulator at temperature changes. If you consider the temperature on the heat receivers too slowly goes to the preset temperature, you need to delicately increase this parameter. Too much dynamics may cause overcontrolling. znacznych przesterowań.	15	1	99
P2	Emergency temperature. If the measured sensor temperature reaches the emergency value, the regulator turns on an emergency signal, closes the mixing valve and turns off the circulating pump. The emergency state lasts till the temperature lowers to 10 °C from that value.	80 °C	50 °C	99 °C
P3	Limit temperature. Up to that value a user can preset the temperature	50 °C	30 °C	90 °C
P4	Insensibility zone. If the measured temperature is close to the preset temperature and finds within the insensibility zone, the regulator doesn't change the settings of the mixing valve	10 °C	0.0 °C	99 °C

The change of the parameters you begin from a simultaneous pressing of the buttons up/down and holding them down for 6s.



If for 10s you don't press any button, the regulator gets back to the normal operation. The parameter setting mode ends. After selecting a parameter to change and pressing the confirmation button you begin changing the parameter value.



If for 10s you don't press any button the previous value is restored and the regulator comes back to the parameter selection mode

4.2 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 THROUGH A DIFFERENTIAL DEVICE ACC. TO THE VALID LAWS
- ! THE PRODUCER DOESN'T TAKE ANY RESPONSIBILITY FOR DAMAGES CAUSED BY WRONG USAGE OF THE REGULATOR.

Connection layout of the elements of the regulator is presented on fig. 3 and 4

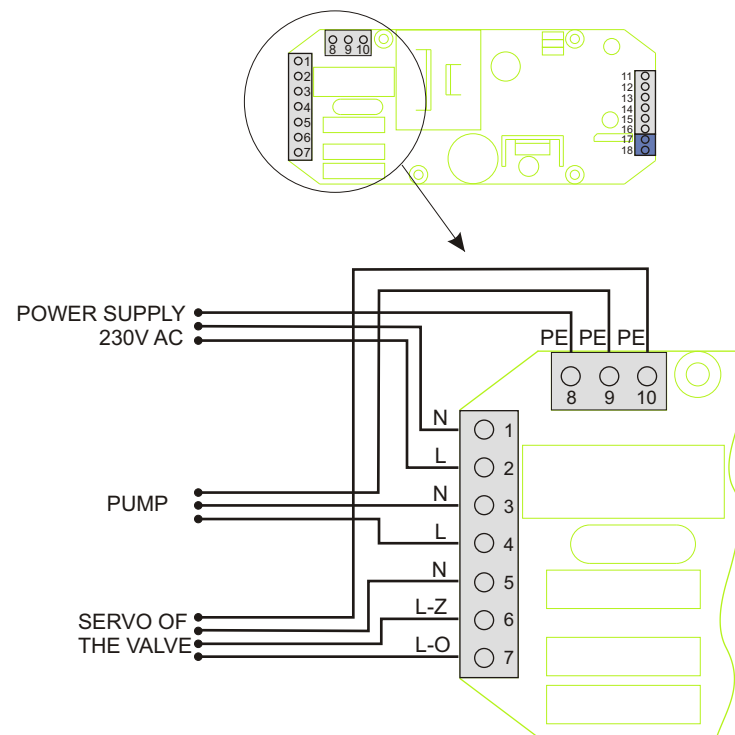


Fig. 3 Layout of connecting power supply, pump and valve drive.

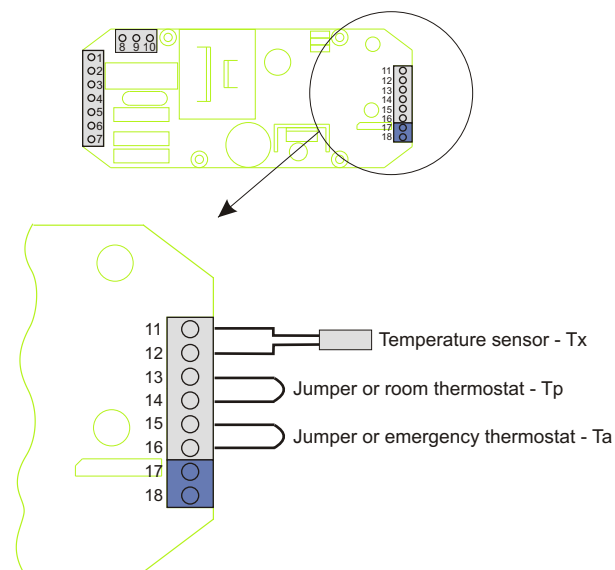


Fig. 4. Layout of connecting temperature sensor and thermostats.