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TEMPERATURE REGULATOR OF THE SOLID FUELS CENTRAL HEATING KETTLE

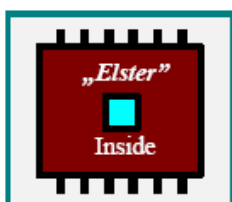
LUKSUS PRO

MANUAL

“Lüksus” is an universal water temperature regulator for central heating kettles with blow-in steering, coal-, culm-, brown coal-, wood-, pellet-fired etc. It provides economical and automated work of the whole installation of central heating and hot usable water. It can cooperate with room thermostat.

Regulator parameters:

- temperature setting exactness 1 °C
- temperature setting range 70÷90 °C
- temperature of turning-off of the regulator 30 °C
- temperature of alert 90 °C
- kettle power setting 20-100%
- temperature of central heating pump turning on 60-65 °C
- automated air intake
- service of the room control panel
- service of the hot usable water

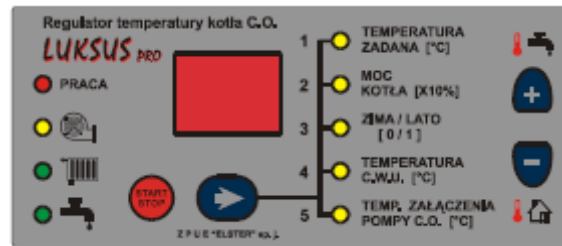


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
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I. Regulator's servicing





1. Main site







picture 1 – Control panel

We turn on the control panel with  switch. The version of the software is displayed first and then the test of the blower and the pump is performed. Then the regulator will display the current temperature of the water in the kettle's coat. If the option of cooperation with room regulator is active, the dot in the right bottom corner of the display will light on.

The symbols' meaning:

-  **PRACA** the work status (pulsating – **FIRING UP**, constant – **WORK**, turned off – **BURNING OUT**)
-  the blower's work
-  the work of central heating circulating pump
-  the work of hot usable water loading pump





The function of buttons:

-  starting and ending the combustion process (II)
-  parameters edition (I 2)
-  increasing the parameter's value, monitoring the current temperature in the hot usable water's dispenser
-  decreasing the parameter's value, monitoring the room thermostat's status

2. Setting the parameters

Parameters available in the using mode and the range of possible change:

1. **Temperature set** in the kettle's coat 70÷90 [°C]
2. **Kettle's power** 2÷10 [x10%]
3. **Winter/summer** 0/1
4. **Hot usable water's temperature** 30÷65 [°C]
5. **Temperature of central heating's pump turning on** 60÷65 [°C]
- the temperature of turning off is 5 °C lower than set


In order to change any parameter's value  button should be pressed. The control lamp by the first parameter will light on. That means the value of this parameter can be changed using   buttons. In order to confirm the setting's change or to move to next parameter  should be pressed again. After moving through all parameters the display will return to the main screen showing the current temperature of the water in the kettle.

II. The usage of the oven, choosing the right parameters.



1. Choosing the right parameters:

- The *SET TEMPERATURE* parameter gives an user the possibility of choosing the set temperature in which the oven will work. The minimal set temperature depends on the kettle characteristics and should be described by its producer.
- *THE KETTLE POWER* influences the amount of air supplied to the burner, and that is why the value of this parameter will change according to the quality and type of the fuel. Approximate values for different types of fuels:
 - wood – 2 (20%)
 - coal – 5 (50%)
 - culm – 10 (100%)
- The regulator can work in two modes: *WINTER* or *SUMMER*. In winter mode both central heating system and hot usable water system are turned on. After moving to summer mode, the central heating system is turned off and only the hot usable water system is turned on.
- *HOT USABLE WATER TEMPERATURE* parameter is used to set the temperature of the hot usable water's dispenser. After heating the dispenser of the hot usable water to this temperature the loading pump of the hot usable water will be turned off.
- Parameter *CENTRAL HEATING PUMP TURNING ON TEMPERATURE* is used to determine in which temperature of the water in the kettle the circulation pump will be turned on. The temperature of turning off the pump is 5 degrees lower than the turning on limit. In order to preserve the hot water in the circulation even after the kettle burning out it is recommended to set the this temperature no lower than 40 °C.

2. Firing up the kettle.

- Fire up the accumulated fuel.
- If the system is in **BURNING OUT** mode (the control lamp **WORK** is not lighting), press the  button. Regulator will move on to **FIRING UP** mode (the control lamp **WORK** will start pulsating) engaging the blower at the same time. After exceeding 30 °C the regulator will move on to **WORK** mode (the control lamp **WORK** will stop pulsating).


3. Adding fuel to the kettle, monitoring combustion quality

- If the system is in **WORK** mode, press the  button. The regulator will move on to **BURNING OUT** mode (the blower will be turned on, while the pump will remain active).
- Open the door.
- Refill the fuel in the oven / monitor the combustion quality.
- Close the door.
- Press the  button again (the blower will be turned on again). The regulator will return to the **WORK** mode.

III. Servicing errors.

No	Notification on the display	Acoustic signal	Reason	Actions to undertake
1	A 1	intermittent	coat's sensor damaged	replace the temperature's sensor
2	A 2	continuous	water temperature in the coat exceeded 90 °C	observe the coat's temperature, check if the blower is turned off
3	A 3	continuous	regulator's memory error	contact the service
4	A 4	continuous	hot usable water's sensor error	replace the hot usable water's sensor
5	regulator is not responding for user's actions	none	microprocessor is frozen (not responding)	reset the regulator
6	regulator moves to SUPERVISION after exceeding 40 °C	none	work with active ROOM REGULATOR WORK MODE	contact between room regulator and kettle regulator is lost
7	blower or pump do not turn off	none	the steering system of the blower or pump is damaged	contact the service
8	regulator does not work	none	safety-valve is burnout	replace the safety-valve underneath the attachment plate

If user has lost the control over the combustion process due to improper parameters' setting,

the regulator should be turned off and button  should be pressed until the "n.p." communicate is displayed. Then the regulator should be turned on again. The default producer's parameters will be set this way.

Caution! If after performing the above-described actions the regulator will not return to normal work, the producer should be contacted on phone number 061/4377690.

FITTER'S ANNEX

IV. Attaching the regulator to the central heating oven

Caution! Installation should be done by a person with adequate authorizations and the power plug must be removed from the electrical network at this time.

Because of electromagnetic distractions of the electrical network that can influence the system's work as well as the safety during the service, the regulator must be connected to the network with zeroing wire. The pump and blower must be zeroed correctly. Special attention must be paid to proper zeroing of this appliances' engines.

Possible change of the powering wire should be done by the producer or in the authorized servicing point.

I. Mechanical mounting.

The regulator can work in two versions:

a) Horizontal

The mounting is performed by moving the regulator onto the DIN rail and securing it additionally with two screws, that pass through the rear jig feet underneath the attachment plate.

b) Vertical

This version should be discussed with the steering producer who rotates the panel. In the vertical version the additional screw and the hole in the lower part of the casing can be used to hang the regulator on the side of the oven.

Caution! The appliance is fully detachable. Demounting is performed by removing the plate on the rear side of the casing, removing the joints and culverts on the wires from the lower part of the casing and leaving the attachment plate by the oven with braided zeroing wires.

II. Electrical mounting.

Attach powering wires to executive elements and sensors (**picture 2**) according to following procedure:

a) pump and blower:

- green-yellow vein (protective zero) should be attached in the can to the zeroing screw marked as PE (situated at the bottom of the plate)
- blue and brown vein (N and Br) should be attached to the terminal strip
- on the other side these wires should be attached with proper clamps in attachment cans of these appliances

b) thermal switch of the blower

- blue and brown vein (N and Br) should be attached to the terminal strip
- on the other side the sensor should be installed using the band clip on the powering pipe just by the exit from the oven

Caution! In case when the thermal switch is not installed the blower should be attached to the N clamp of the thermal switch and Br clamp of the blower.

c) coat's temperature sensor

- blue, brown and black vein (N, Br, Cz "CZUJNIK PŁASZCZA") should be attached to the terminal strip
- the sensor should be placed in the hole filled previously with oil in the kettle's coat

d) hot usable water dispenser's temperature sensor


- blue, brown and black vein (N, Br, Cz "CZUJNIK CWU") should be attached to the terminal strip
- the sensor should be placed in the hole filled previously with oil in the hot usable water dispenser

e) room thermostat's wire

Caution! It is recommended to use wire in form of telephone spiral, the order of attachment (1, 2) is not important.


- thermostat should be installed on the inner wall, approximately 1,5 meters above the floor, in place that is not subject to accidental air circulation, far from any heating elements
- attachment wire's veins (1 and 2 "TERMOSTAT POKOJOWY") should be attached to the terminal strip underneath the attachment plate of LUKSUS steering
- on the other side the wires should be attached to the room regulator

TERMOSTAT POKOJOWY	CZUJNIK PŁASZCZA	CZUJNIK CWU
1 2	N Br Cz	N Br Cz

POMPA ŁĄD. CWU.	N WYŁ.TERM.	Br DMUCHAWA	POMPA CYRK. C.O.	230 V	
N ~ Br	N ~ Br	N ~ Br	N ~ Br	N ~ Br	

picture 2 – Attachment strip

V. Installation mode.

To start the steering in the installation mode where additional parameters are available, the regulator should be turned off (if it is on) and restart it while pressing  button (until the “t. i.” communicate is displayed). The installation mode is signaled by blinking lamps by the subsequent parameters. Parameters available in the installation mode and their range of settings:

1. SCAVENGE BREAK

1÷20 [min]

this parameter becomes active after moving into **SUPERVISION** mode. It assures blowing out of gases accumulated in the combustion chamber, disallowing explosions in the combustion chamber. In case of such phenomenon the SCAVENGE BREAK should be shortened. Setting too short SCAVENGE BREAK can result in higher temperature in the kettle than set.

2. MINIMAL BLOWER'S REVOLUTIONS

1÷25 [%]

it describes with what minimal speed should the blower rotate, while editing this parameter the blower works with set value

3. BURNING OUT TIME

1÷99 [min]

if the water temperature in the coat fall more than 10 °C below SET TEMPERATURE, the regulator will start counting time, after which it will move to BLOWING OUT. Increasing the temperature will result in resetting the counting.

4. ROOM REGULATOR WORK MODE

1 / 0 [on/off]

- 1 means room regulator's activation, in the lower right part of the displayer the dot will light on

- 0 means work without room regulator

5. HOT USABLE WATER'S PRIORITY

1 / 0 [on/off]

in WINTER mode it turns off the central heating circulation pump for the time of regaining the heat losses in hot usable water dispenser and increases the SET TEMPERATURE by 10 °C for the time of loading

VI. Regulator's work rules

1. Circulation pump's steering

This pump is activated when the temperature of the coat reaches the CENTRAL HEATING PUMP TURNING ON TEMPERATURE and is deactivated when the temperature is 5 °C lower. If the SET TEMPERATURE is lower than pump activation limit, the minimal value from these two will be chosen.

Caution! If the temperature of the coat is lower than 6 °C then the anti-frost function is activated, the pump is activated. The pump is also activated, when the temperature exceeds 92 °C and the regulator is signaling overheating.

2. Hot usable water loading pump's steering

This pump work in three modes:

- if the hot usable water's temperature sensor is not attached, it is activated when the coat's temperature reaches the lower from two values (SET TEMPERATURE and HOT USABLE WATER TEMPERATURE), it will deactivate 5 °C below this limit.
- if the sensor is attached and the HOT USABLE WATER PRIORITY is inactive, pump activates after finishing firing up and load the dispenser enough to keep the lower from two temperatures (SET TEMPERATURE and HOT USABLE WATER TEMPERATURE). Activation of the pump happens when the hot usable water temperature falls 5 °C below set HOT USABLE WATER TEMPERATURE.
- if the sensor is attached and HOT USABLE WATER PRIORITY is active, then when the temperature in hot usable water dispenser falls 5 °C below set HOT USABLE WATER TEMPERATURE the loading process will start. In this process (if the set HOT USABLE WATER TEMPERATURE is higher than coat's SET TEMPERATURE) regulator will set the coat's SET TEMPERATURE 10 °C higher than required HOT USABLE WATER TEMPERATURE and will turn the circulation pump of the central heating off and turn the loading pump of the hot usable water on. When the temperature in the hot usable water dispenser reaches the set value, the loading pump of the hot usable water will be turned off


and the circulation pump of the central heating will be restarted. If the set **HOT USABLE WATER TEMPERATURE** is lower than coat's **SET TEMPERATURE**, then only the circulation pump of central heating's work is blocked for the time of reloading.

Caution! Hot usable water loading pump is activated after moving to the **WORK** mode by the regulator (the control lamp **WORK** is lighting).

In case when the temperature of the coat will be lower than hot usable water temperature the hot usable water loading pump will be turned off.

When the hot usable water priority is active, the loading of the hot usable water dispenser may be stopped if the coat's temperature will become lower than hot usable water dispenser's temperature. All pumps will be turned off in order to raise the temperature in the kettle and to continue the loading of the hot usable water dispenser.

3. Blower's steering

After pressing  button the regulator moves to **FIRING UP** mode and for approximately three minutes it increases the blow gradually. Then it starts to supply the air with maximal efficiency, dependent on the **KETTLE POWER** parameter. If the coat's temperature exceeds 30 °C regulator moves to **WORK** mode. From this time for 2 following hours the possibility of self-acting turning off of the blower in case when coat's temperature falls below 28 °C is blocked. **KETTLE POWER** determines the kettle efficiency through appropriate air supply to the burner. After entering the **REGULATION RANGE** the taken air amount is picked automatically by the regulator. **REGULATION RANGE** determines in what temperature (how many degrees below **SET TEMPERATURE**) regulator will start picking the amount of air supplied to the burner automatically. If the coat's water temperature will exceed the **SET TEMPERATURE** by 5 °C or if the regulator will count the minimal value, the steering moves to **SUPERVISION** mode. The blower works then according to **SCAVENGE TIME** and **SCAVENGE BREAK** parameters.

The ideal parameters are such when the regulator is in the **WORK** mode and temperature is close to **SET TEMPERATURE**. The air will then be supplied continuously what decides about the efficient and economical burning of the fuel, the carbon monoxide will not be produced and explosions in the kettle will not happen.

Regulator will self-move to **BURNING OUT** mode, if the coat temperature falls 10 °C below **SET TEMPERATURE** and **BURNING OUT TIME** will expire.

If the kettle does not reaches appropriate power, what means it is underheating and can not reach **SET TEMPERATURE**, the **KETTLE POWER** should be increased.

4. Cooperation with room thermostat

LUKSUS regulator together with room thermostat provides such steering of the set temperature in the kettle's coat, that the temperature in the room is kept on the level set in the room thermostat. To assure the regulator's work in very broad range of temperatures, it is recommended to use the mixing system with three- or four-pass valve. It assures higher temperature of water in the kettle's coat.

Temperature of water in the kettle is picked automatically in such a way, so that it does not exceed **SET TEMPERATURE** set as a parameter 1 in **LUKSUS** regulator and does not cause the kettle's burning out (it keeps the minimal temperature at 40 °C level).



To harmonize the regulator with the room thermostat following actions should be undertaken:

- **SET TEMPERATURE** of the water in the kettle in **LUKSUS** regulator should be set in such a way, so that it will be higher by approximately 10 °C than temperature enough to reach appropriate temperature in the room, for example 80 °C
- In the installation parameter number 4 **ROOM REGULATOR WORK MODE** set value 1 (see p. V)
- Set appropriate set temperature in the room at the room regulator

VII. Producer's settings

No	Parameter name and range	Producer's setting	User's setting
1	SET TEMPERATURE 35÷90 [°C]	70	
2	KETTLE POWER 2÷10 [x10%]	10	
3	SUMMER/WINTER MODE 0/1	0	
4	HOT USABLE WATER TEMPERATURE 30÷65 [°C]	40	
5	CENTRAL HEATING PUMP TURNING ON TEMPERATURE 25÷65 [°C]	65	
6	SCAVENGE BREAK 1÷20 [min]	3	
7	BLOWER'S MINIMAL REVOLUTIONS 1÷25 [%]	20	
8	BURNING OUT TIME 1÷99 [min]	60	
9	ROOM REGULATOR WORK MODE 1/0 [on/off]	0	
10	HOT USABLE WATER PRIORITY 1/0 [on/off]	0	


VIII. Working conditions

- environment temperature	0 – 40 °C
- powering voltage	230 V, 50 Hz
- power intake	4 W
- exits capacities:	
• central heating circulation pump	100 VA
• hot usable water loading pump	100 VA
• blower	160 VA
- protection grade	IP 30 
- certificate	



This appliance has markings accordant with Polish Law Act from 29th July 2005 about worn out electrical and electronic appliances – Dz. U. Nr 180 poz. 1495.


By providing the appropriate scrapping of this appliance you will contribute to reducing the risk of negative impact of this product on the environment and human's health, which can occur in

case of improper scrapping of the appliance.  symbol placed on the product or on the documents attached to the product means that this product is not considered to be a household waste. The appliance, in order to utilize it, should be turned over in an appropriate utilization point in order to recycle the electronic and electrical systems.

The appliance should be scrapped according to local utilization law.

Additional information about utilization, scrapping and recycling can be obtained in local city office, in local waste utilization enterprise or in the shop, where the product was bought.

IX. Producer's mode.

In order to start the steering system in producer's mode, where additional parameters are available, the regulator should be turned off (if it is on) and then restarted while pressing the  button (until the "t. p." communicate is displayed). Moving into producer's mode is signaled by blinking control lamps by the subsequent parameters.

1. INACTIVE

2. INACTIVE



3. SCAVENGE TIME 5÷30 [s]


This parameter self-activates after the regulation moves into SUPERVISION mode. It causes blowing out the gases accumulated in the combustion chamber, preventing the so called "explosions in the kettle". If such a phenomenon happens, the SCAVENGE TIME should be increased. If the SCAVENGE TIME is too long, it may cause that the temperature in the kettle will remain higher than set temperature.

4. MINIMAL SET TEMPERATURE 69÷70 [°C]

The minimal coat temperature in which the oven can be exploited. Set by the producer.

5. TYPE OF DISPLAYED COMMUNICATE 0/1

- it determines what communicate will be displayed after pressing the   button
- 0 – the state of room thermostat's joints will be displayed; on/off
- 1 – current set temperature of the kettle will be displayed

These parameters are used to harmonize the regulator with an oven. The oven's producer is obliged to discuss the default settings with the regulator's producer. The default settings can be restored by turning off the regulator and restarting it while pressing the  button.

X. Warranty services card.

Service stamp				
Date of returning				
Defect description				
Date of accepting				

Warranty card

of the central heating solid fuel kettle temperature's regulator type

“LUKSUS PRO”

factory number	production date	selling date
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producer

seller

Warranty conditions:

- The warranty is given for two-year-period from the date of selling and maximum three-year period from the date of production.
- The warranty and post-warranty service is conducted by the producer.
- The subject of the complaint should be send via post together with the warranty card to the producer.
- The warranty is no longer valid in cases of unauthorized repairs, mechanical damages and improper exploitation.
- All changes and corrections in the warranty card are valid only if they are made by an authorized person and signed with a stamp and signature.
- The product should be exploited in conditions over 0 °C and without humidity.