

MANUAL AND SERVICE MANUAL ORLIGNO 100



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1. Boiler application

Steel boiler ORLIGNO 100 tested according to EN 303-5 is designed for central heating installations with maximal temperature on the boiler 90°C and working pressure 3 bar.

Recommended fuel for boiler: wood, coke, coal and in case of mounting pellet burner – pellets and oats.



ATTENTION!

Using fuel different than the recommended not guarantees optimum boiler operation and achieving parameters featured in technical data. It can also affect durability of the boiler and its components.



ATTENTION!

Using fuel different than the recommended is treated as wrong boiler operation and resultant performance irregularities cannot be reason for complaint.

2. Installation

2.1. Boiler-room ventilation

According to european safety regulations each boiler room should have supply-exhaust ventilation ensuring correct boiler operation and user's safety . Lack of ventilation or its obstruction is the main reason of incorrect boiler operation (i.e. boiler cannot reach set temperature). Exhaust ventilation removes from boiler room used air and harmful gases. Boiler room with natural draught cannot have installed mechanical ventilation.

2.2. Supply air ventilation

- 1. Ventilating duct section should have at least 50% area of chimney's section and not less than 20 x 20 cm. Duct should be placed 1m above the floor.
- 2. Ventilating duct should have installed device for air flow control; device shouldn't limit duct section above 1/5.Ventilating duct should be made of non-inflammable material.

2.3. Exhaust ventilation

- Exhaust duct should be made of bricks with section of at least 25% of chimney section not less 14 x 14 cm. Inlet hole cannot have any devices that reduce its section. Outlet hole should be placed close to the ceiling led out 1,5 m above the roof. Ventilating duct should be made of non-inflammable material.
- 2. Height of the boiler room min. 2,2 m.

2.4. Chimmey connection.

Chimney ducts should be installed according to binding rules and norms in countries to which boilers are sold. Part of chimney system connection boiler with chimney is called flue. In order to lower flow resistance of exhaust gases this part should lead as a straight pipe with, if necessary, joints up to 45°.

Because of exhaust gases temperature ORLIGNO 100's need to be connected to heat-resistant. 30 cm above the floor closing door should be installed with tight closing.

Chimney section should be round or close to square shape because of low flow resistance. Minimal flue diameter should be 160 mm.

Chimney should lead above the roof. Chimney outlet location is dependent on roof slope and its combustibility.

3. ORLIGNO 100 - technical data

Power	wood Coke/pellets	kW kW	14 30/16
Boiler class acc. to EN-303-5		3	
Efficiency	coke pellets	%	76,5 86
Max working pressure		bar	3
Max temperature		°C	90
Min. temperature		°C	60
Water capacity		ltr.	60
Weight		kg	305
Loading chamber capacity		ltr.	70
Length		mm	1100
Width		mm	675
Height		mm	1220
Upper door dimensions		mm	300x300
Water outlet	inner thread	inch	5/4"
Return	inner thread	inch	5/4"
Drain valve	inner thread	inch	1/2"
Cooling coil	inner thread	inch	1/2"
Min. cooling coil pressure		bar	2
Flue diameter		mm	160
Required chimney draft		Pa	20
Max. moisture content:	wood/pellets	%	23/12
Exhaust gases temperature at nominal power		°C	250-280
Burning period at pominal power	coke	h	4,5
	wood	h	2-2,5
Fuel parameters	wood/max length	mm	500
	pellets/ diameter	mm	6-8
Water resistance	∆t=20 K	mbar	0,8
	∆t=10 K	mbar	3,4

3.1. Dimensions



3.2. Boiler construction





3.3. Safety valve connection



ORLIGNO 100 is equipped with copper cooling coil mounted in boiler body, protecting boiler from overheating. To one of cooling coil tappings on right side of the boiler one should connect safety valve.

When temperature increases above 95°C safety valve opens and lets in cold water through cooling coil. Water from mains at 10°C temperature cools down boiler, water from boiler is removed to drain.



4. Boiler startup

Before first startup it is necessary to:

- Check water level in installation, pressure in installation should be 2 bar.
- Check fire-grate location (fire-grate gaps from bottom should be bigger than from top).
- Draft regulator seal with oakum and mount, fit arm and block with screw.

Startup:

- Mount draft regulator horizontally, regulator set on 70°C.
- Open flue flap.
- Put on fire-grate papers and small wood pieces; open bottom door .
- After lightning up put bigger wood logs and create ember layer (close bottom door and unscrew primary air flap opening in flap at least 2cm- regulation knob is located on bottom door.
- After creating ember layer fully load boiler with wood or coke. Put wood logs along chamber.
- Set chimney draft with flue flap
- Connect draft regulator chain with primary air flap. Burn in boiler up to 70°C then set draft regulator on 70°C and shorten chain till primary air flap is barely opened. Draft regulator knob is for temperature change. Marking on regulator is every 10°C.



ATTENTION!

Before stoking boiler open slowly open upper door to suck out gases.



ATTENTION!

It is not allowed to open bottom door during boiler burning - glow may fall out.

SECONDARY AIR SETTINGS:

- wood opening 1/2
- coke opening 1/4.

Troubleshooting

Reason	Activity
Heat exchanger gets dirty to fast	Use good quality wood, moisture content 18-23%.
Smoke leakage	Seal chimney pipe, open more flue flap, check chimney draft
Too high temperature of exhaust gases	Check fuel moisture content, cannot be too dry. Check secondary air settings.
Too short burning period	To high exhaust gases temperature: burning period depends on used fuel and heat demand

4.1. Boiler stoking

In order to stoke boiler:

- 1. Close primary air flap.
- 2. Open completely flue flap.
- 3. Open slightly upper door in order to suck out gases through chimney.
- 4. Open completely upper door and stoke boiler.
- 5. Close upper door, return to previous setting of flue flap and primary air.

4.2. Tarring and condensation

Lightning up in cold boiler may cause that water precipitated from fuel falls on boiler walls and runs down to ash chamber. That may look like boiler leakage. It is important to keep boiler temperature high enough at least 70°C. It is recommended to install four-way mixing valve which protects boiler from low temperature return below 50°C. Too humid wood also causes that boiler works on low temperatures, which leads to tarring. In order to avoid problem of tarring and condensation – keep high boiler temperatures, boiler must be properly sized to heated space to avoid oversizing – boiler then will work on low temperatures.



5. Maintenance



Advice: Clean boiler works efficiently. Boiler life is extended.

- Fire-grate and ash clean/remove daily.
- Boiler must be cool during this activities.
- Open upper door and remove cleaning flap.
- Check if heat exchanger surfaces are cleaned, clean with brush.
- Remove ash from bottom chamber (ashpan may be hot).
- Fit cleaning flap.
- Each 2-4 weeks clean boiler depending on burning intensity.



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1. Basic informations

1.1. Construction description and burner application

Self- cleaning burner is a new look into the automatic burning of solid fuels in Europe – pellets of 6-8 mm of diameter or as a option oats with maintaining low emissions, complying with European norms.

Burner doesn't have any drawbacks of chute burners –gravitational, in which ash and sinter have to be removed manually.

Main burner advantage is its simple service: just fill in hopper with pellets and press START button. Reports are shown on big graphic display. Within few minutes burner will automatically select work parameters, maintain constant room temperature and hot utility water.

Burner's features:

- automatic burner's start
- automatic modulation
- flame control through photo-cell
- low heat inertness during start and stop
- low electric energy consumption
- possibility to control 16 heating circuits (radiators and underfloor heating or hot utility water)
 option
- control of burner's temperature
- three phases of lightning up eliminate risk of explosions
- AUTOSTART function after power failure memory of last settings
- separation of primary and secondary air emissions on the same level as in gas and oil burners
- efficiency > 94,5%
- soot = 0
- self-cleaning function, automatically removes ash from the burner's grate
- oats -burner's construction enables to burn grain (oats) option

2 years of warranty for appliance durability enables to decrease exploitation and service costs.

Burner's regulator can control:

- boiler pump
- 1-16 heating circuits (radiators or underfloor heating) controlled according to outside temperature
- room's temperature

Useful functions of controller:

You don't have to keep in mind about next boiler service - it is shown on the display

Statistics - function enables to preview

- minimal, maximal and average burner's power
- fuel usage: minimal, maximal and average.

Temperature's parameters are shown as a digits and charts on big graphic display

1.2. Fuel characteristics

a) Pellet granulate made according to DIN 51731

- granulate 5-8 mm
- recommended calorific value 17500-19500 kJ/kg
- ash content 1,5%
- max moisture content 12%
- density 1-1,4 kg/dm³

b) Oats

- moisture content <15%



ATTENTION!

It is recommended to use fuel from reliable sources. Fuel should have appropriate humidity and low content of small fractions. It is necessary pay attention especially to mechanical pollution (stones), which worsen burning process and may lead to burner's failure.

Eko-Vimar Orlański sp. z.o.o. is not responsible for appliance failure or improper burning process when using inappropriate fuel.

1.3. Transport and delivery specification

Burner during transport should be secured with straps against leaning and movement.

Burner need to be stored in roofed and dry place.

Burner is delivered in separate boxes wrapped in foil. Boxes contains: pellet tank with lid, fuel feeder, burner with controller and elastic feeding pipe. Before installation it is recommended to check delivery completeness and its condition.

2. Burner's technical data

Parameter	SI	16 kW
Pellet power range	kW	4 – 16
Oats power range*	kW	3,6 – 14,4
Efficiency	%	>94,5
CO emission	ppm	<200
Weight	kg	14
Feeder length standard	m	1,3 – 1,6
Feeder length option	m	2.0;2.5;3.0
Fuel		pelety
Fuel diameter	mm	6-8
Fuel (option) humidity<15%		owies
Voltage	V	230
Power consumption	W	30
Protection level		IP40
Tank dimensions	mm	600x600x1400
Capacity	L	305



ATTENTION!

Producer reserves the right for construction and documentation changes in order to modernize the boiler.

1. Boiler

- 2. Burner
- 3. Fuel tank
- 4. Feed system



Pic.1. Basic package elements.

- 1. Burner's body
- 2. Grate
- 3. Fan
- 4. Feeder casing (worm+ igniter)
- 5. Drive plate
- 6. Plate for electric connections
- 7. Sealant
- 8. Motoreducer
- 9. Burner's casing



Pic.2. Burner construction

3. Package

Standard package:

- burner
- controller
- fuel feeder
- tank
- manual
- 4 refractory bricks
- Sensor sleeve 1/2"

4. Location and package installation

4.1. Rules, norms, recommendations

Boiler room should comply with construction law valid in country where boiler is installed.



Pic.3. Package layout.

4.2. Boiler room recommendation

- Package (boiler, burner, tank, feeder) should be placed in separate room, centrally to heated rooms
- Front door should open outside and must be made of nonflammable materials, with 0,8 width
- Floor should be made of nonflammable materials or covered with 0,7 mm steel plate at minimum 0,5 m distance to door edges. Boiler should be located on a nonflammable foundation, lifted 0,05 m above floor level
- Boiler room should have artificial lightning but natural light is also recommended
- Distance to walls in boiler room should allow for easy access to all sides of the boiler
- Minimal distance from front side of the boiler to opposite wall should be 1m
- Minimal height of the boiler room: at least 2,2 m; in existing building it is allowed 1,9 m with assured supply-exhaust ventilation.
- It is forbidden to install boiler and burner in damp rooms or with elevated humidity. Corrosion process may in short time damage the boiler and burner.

4.3. Ventilation

- Boiler room should have 200 cm² supply-air duct
- Exhaust duct should have at least 14x14 cm section with inlet hole under boiler room ceiling that should lead above roof and be placed near chimney.
- Ventilation ducts should be made of nonflammable materials.
- It is forbidden to install mechanical ventilation



ATTENTION!

High risk of carbon monoxide poisoning exists if boiler is located in a room with insufficient access to fresh air.

4.4. Safe distance to inflammable substances

- During installation and exploitation it is advisable to maintain safe distance of 200 mm from inflammable substances
- For inflammable substances with C3 grade of combustibility which rapidly and easy burn (ex. paper, cardboard, wood, plastic) distance is minimum 400 mm;
- If combustibility grade is unknown safe distance should be doubled.

Combustibility grade of building products	Building products
A – non-burning	sandstone, concrete, bricks, fire plaster, Mortar, tile, granite
B - hard burning	cement board, fiberglass, mineral insulation
C1- hard burning	beech tree, oak tree, plywood
C2 – middle burning	pine, larch, spruce tree, cork, rubber floor cover
C3 – easy burning	tarmac plywood, celuloids, polyurethane, Polystyrene, polyethylene, plastic

User please remember:

- Only adult person acquainted with this manual may operate the burner It is forbidden for kids to stay in close distance to burner without presence of adult person.
- If inflammable gases penetrate boiler room during activities (varnishing, gluing) it is recommended to turn off the burner.
- It is forbidden to use inflammable substances for lightning up the burner, burner will light up automatically.
- High risk of fire exist when using open fire or inflammable substances close to installed boiler package.
- Burner should be turned off during maintenance (position OFF.
- Pay attention on hot burner's surfaces risk of burn.
- It is forbidden to lay inflammable items on the burner or nearby.
- All defects should be removed at once.
- After heating season it is recommended to clean the burner and pellet tank thoroughly.
- Oversee the burner during power failure
- It is forbidden to manipulate with any electric parts or interfere in burner's construction.

5. Putting into operation

5.1. Burner start

First startup of the burner must be done by authorized company trained by manufacturer with valid certificate of authorized serviceman issued by Eko-Vimar Orlanski ltd.

5.2. Burner's assembly to ORLIGNO 100

- 1. Remove the screws (1) fastened to burner's casing (pic.4) and take off casing (2)
- 2. Take off ORLIGNO 100 bottom door
- 3. Fix adapter (3) in bottom's door place (pic.5)
- 4. Fix burner (4) in adapter (3) screwing it with two bolts (5)
- 5. Mount burner's casing (2) with two screws (1)
- 6. Slide feeder's pipe (6) in to fixing pipe (7) (pic.6)
- 7. Fit flexible pipe (8) on feeder's pipe (6) and secure with band clip (9)
- 8. Fit flexible pipe (8) on burner's pipe (10) and secure with band clip (9)

5.3. Adjustment of ORLIGNO 100 to work with pellet burner

- 1. Remove iron-cast grate from boiler.
- 2. Place two refractory bricks on each of two supports above support for iron-cast grate.



Pic.4. Disassembly of burner's casing.



Pic.6. Feeder assembly

5.4. Tank assembly



5.5. Before starting of the burner it is necessary:

- 1. Check installation condition.
- 2. Fill in pellet to the tank, cover with lid
- 3. Check if fuel contains any unwanted elements (rocks, metal elements)
- 4. Screw in sensor's sleeve in one of two probes on the right side of boiler behind safety coil
- 5. Put the boiler sensor in to the sleeve

Pellet*		
	30% of power	100% of power
Feed time	1,5	5
Max air	8	13
OATS**		
Feed time	2	7
Max air	9	14

- 8. Feed fuel from tank till it show up in flexible pipe.
- 9. Turn off fuel feed and hold ON button.
- 10. When changing fuel ex. on oats; it is necessary:
 - turn off boiler
 - wait till boiler cool down
 - remove pellet grate and clean surface
 - put oats grate
 - set feed time and max air amount acc. to chart
- 11. Burner maintenance after heating season:
 - turn off and disconnect from power supply
 - clean thoroughly
 - remove pellet from tank

6. Burner's maintenance



ATTENTION!

It is necessary to put out, cool down and disconnect burner from power supply when servicing.

Pay attention on hot burner's surfaces - risk of burn.

In order to keep high efficiency of burner it is recommended to clean and service it systematically. Remove soot and ash from burner's grate.



ATTENTION!

Much more ash is created during oats burning than pellets.

Cleaning activities:

- 1. Turn off the boiler (wait till burner completely put out), disconnect boiler from power supply and wait till boiler cool down.
- 2. Disconnect burner form boiler and power supply.
- 3. Remove grate from burner and clean it (check permeability of air holes) Clean burner's casing (pic.7)



Pic.7. Burner maintenance.

7. Troubleshooting

Type of defect	Possible cause of defect	Suggested repair
One of controller's button doesn't work	Display malfunction	Display repair
Automatic lightning up Doesn't work	Wrong connection of igniter or photo-cell	Check plug and wires connections of igniter and photo-cell
	Clogged outlet hole of hot air	Clean heater hole
	Very damp fuel	Change or dry fuel
	Damaged igniter	Replace igniter
	Damaged photo-cell	Replace photo-cell
Smoke from door	Lack of chimney draft	
	Clogged chimney	
	Clogged heat exchanger	Clean heat exchanger
	Damaged sealant (rope)	Replace sealant (rope)
Water in boiler	Lack of chimney draft	Improper chimney installation
	Very damp fuel	Change or dry fuel
	Leaky heat exchanger	To check heat exchanger, turn off boiler on 8 hours, remove water, when water is still in boiler – call service
Boiler cannot reach set temperature	Improperly selected boiler for heating space	Check if boiler is properly selected
	Wrongly located sensor of return water	Check sensor location
	Sensor malfunction	Check sensors
	Set low boiler power	Check feed time and fan power

8. Main functions of the controller.

8.1. Front panel



Graphic display (2.1.3)

Buttons (2.1.2) Status diode (2.1.1)

8.2. Status diode

Lightning description	Meaning
Green- continuous light	Controller off
Green – pulsate	Controller on, burner off
Orange – continuous light	Controller on, burner on
Orange – pulsate	Burner work
Red – continuous light	Alarm – to confirm
Red – pulsate	Alarm active

8.3. Buttons

Button	Function
Return, Esc	Return in menu to previous level, cancellation of parameter's change. After pressing button > 3 sec – change of controller's status ON/OFF
Arrow down	Menu moving, decrease parameter's value On main display entering to simple menu
Info	Shows navigational informations and description of parameters
Arrow up	Menu moving, increase parameter's value On main display entering to simple menu
Enter	Enter the menu. Confirmation of edited parameter Alarm confirmation

9. Graphic display

9.1. Graphic display



controller's status (OFF/ON)

9.2. Grate statuses

Status	Description
OFF	Burner doesn't work. Work approval off.
Cleaning	Burner cleaning with strong stream of air.
Lightning up	Fuel lightning up. Initial fuel feeding, Heater and fan are on.
Kindling	After flame detection, additional fuel feeding and fan power increase for better grate kindling.
Power 1	Burner works with first power.
Power 2	Burner works with second power.
Modulation	Burner works with modulated power.
Extinguishing	Grate extinguishing. Feeder and fan work till flame die out.
Stop	Burner doesn't work. Required boiler's temperature reached.

10. Service

10.1. Menu navigation

Controller contains two types of menu: simple and main menu.

Simple menu – enables to access basic functions of the controller. To enter simple menu press button "arrow up" or "arrow down" on main display. Simple menu description chapter 4.

Main menu – enables to access all functions of the controller (monitoring of status, changes and service settings). To enter main menu press "Enter" on main display. Main menu description chapter 5.



ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

10.2. Start of the controller ON

In order to start the controller (mode ON) press for 3 sec "Return, Esc" on main display, when it is in OFF mode.

10.3. Shutdown of the controller OFF

In order to turn the controller off (mode OFF) press for 3 sec Return, Esc" on main display, when it is in ON mode.



ATTENTION!

After controller shutdown depending on its previous status, burner may still work (extinguishing), it's not advisable to disrupt this process. If controller will be disconnected from main power, please wait till burner status is on OFF mode.

10.4. Time programs

Controller is equipped with clock and calendar. Thanks to that it is possible to program work of individual parts of heating system depending on current time and weekday. Date and time aren't deleted during power outage because controller contains battery, which needs to be replaced every 2 years.

Programming takes place in menu of given heating circuit (ex. hot domestic water, heating, water tank) and for each element proceeds in the same way.

Weekday choice. After entering in menu " Time program", weekday pulsates, with arrow buttons choose day for setting or just to check program settings.

Programming. After choosing weekday and confirming with "Enter" button; current programmed hour starts to pulsate, next to displayed hour, icon with chosen time zone is shown (sun symbol stands for comfort temperature, moon symbol – economic temperature). To move to next hour press "arrow down" button (comfort temperature) or "arrow up" (economic temperature). If all day is programmed press "enter". After confirmation of changes (or cancellation) weekday starts to pulsate.



Economic temperature 00:00 - 6:00

Comfort temperature 6:00 - 9:00

Economic temperature 9:00 - 18:00

Comfort temperature 18:00 - 24:00



Values of economic and comfort temperatures are set in SETTINGS menu and may differ for each of the heating circuits. In order to activate time program activate it in SETTINGS menu.

10.5. Service password

Access to service parameters is protected with password. After writing correct password access is cleared. Access is denied after 10 minutes without pressing the buttons.

Service password: it is a set temperature in BOILER/SETTINGS menu and 3 letters "EST"

Example: If set temperature in BOILER/SETTINGS menu is 60°C then password is: "60EST".



ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

11. Simple menu



11.1. Simple menu's displays



OGRZEWANIE TEMPERATURA	Shows current room temperature in room no.1 (large type) and set value (small type). After pressing "Enter", set desired room temperature
OGRZEWANIE PROGRAM	Circuit heating program no. 1: a. time program – according to programmed time- intervals b. permanent – no matter of time-intervals comfort temperature is kept c. off – heating is turned off
	Burner work: ON/OFF. When burner is OFF, controller controls heating system, but doesn't start the burner.
	Manual start of feeder from pellet tank. Function useful after fuel runs out. After filling the tank with fuel activate FEED THE FUEL function, till the moment when fuel will be on the burner.

12. Main menu

13. Heating

13.1. Circuit selection

Enables to choose number of heating system circuit. Selection of circuit: "arrow down/up".

CIRCUIT SELECTION	20:54
	Ţ
OBWOD NR: 1	
KUCHNIA	

13.2. Status

Enables to monitor status of central heating.

13.3. Settings

Description of functions in submenu SETTINGS.

Function	Description
Comfort temperature	Programmed temperature in room during heating.
Program	Programs: a. time program – according to programmed time- intervals b. permanent – no matter of time-intervals comfort temperature is kept c. off – heating is turned off d. economic – during all period economic temperature in room is kept
Economic temperature	Programmed temperature in room after heating period

13.4. Time program

It is for time program configuration that controls central heating.

Settings description of time program can be found in chapter 3.4

13.5. Service

ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

Description of functions in submenu SERVICE.

Function	Description
Temp. MIN pump comf.	Minimal calculated central heating temperature, at which pump is ON during comfort period.
Temp. MIN pump. econ.	Minimal calculated central heating temperature, at which pump is on during economic period
Source	Determines source of energy for central heating
Max. temperature	Maximal calculated temperature for central heating
Mixing valve time	Time when mixing valve is fully opened
H.d.w. priority	H.d.w. priority for given central heating circuit; during h.d.w. heating, central heating pump doesn't work
Pump test	Starts circulation pump regardless of outside conditions.
Mixing valve test	Starts mixing valve actuator regardless of outside conditions.
Circuit name	Gives the name for central heating circuit.

14. Hot domestic water

14.1. Circuit selection

Enables to choose number for h.d.w. circuit.

CIRCUIT SELECTION	20:54
C.W.U. NR: 1 Parter	

14.2. Status

Enables to monitor status of h.d.w.

14.3. Settings

Description of functions in submenu SETTINGS

Function	Description
Comfort temperature	Programmed temperature of h.d.w. during heating period
Program	 Programs: a. time program – according to programmed time- intervals b. permanent – no matter of time-intervals comfort temperature is kept c. off – heating is turned off
Heat now	Heats once h.d.w. up to comfort temperature regardless of program
Hysteresis	Decrease of temperature value for h.d.w.
Economic temperature	Programmed h.d.w. temperature after heating period.

14.4. Time program

It is for time program configuration of h.d.w.

Settings description of time program can be found in chapter 3.4

14.5. Service

ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

Description of functions in submenu SERVICE:

Function	Description
Source delta	Source temperature increase in relation to programmed
Source	Determines source of energy for h.d.w.
Max. temperature	Maximal h.d.w. temperature
Delta MIN temp.	Minimal temperature difference between source and h.d.w, at which pumps work
Pump test	Starts pump regardless of other conditions.
Circuit name	Gives the name for h.d.w. circuit

15. Water tank

15.1. Service

ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

16. Boiler

16.1. Status

Boiler work statistics during last 24h. Chart shows boiler's temperature and burner power.

16.2. Settings

Description of functions in submenu SETTINGS.

Function	Description
Programmed boiler's temperature	Heat medium temperature in the boiler kept by the controller.

16.3. Service

ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

Description of functions in submenu SERVICE:

Function	Description
Pumps MIN temp	Temperature above which controller may turn on the pumps
Work mode	Boiler's work mode: a. auto – temperature set automatically b. continuous – temperature is kept continuously
Hysteresis	Temperature's value that needs to decrease to start the burner.

17. Settings

17.1. Date and time

Enables to set the date and controller's time.

17.2. Language

Enables to choose controller's language in menu.

17.3. Restore factory settings

Selecting this option enables to cancel all current controller's settings and restore factory settings.

18. Burner

18.1. Status

Animation showing work of burner's appliances.

18.2. Settings

Description of functions in submenu SETTINGS.

Function	Description
Feed the fuel	Starts feeder regardless of other functions.
Burner's work	Burner's work approval.
Type of fuel	Determines type of burned fuel.

18.3. Service

ATTENTION!

Service menu is only for qualified staff. Any settings' changes may lead to incorrect system operation.

Function	Description of functions in submenu SERVICE
Air MIN	Minimal air amount during modulation or at power no. 1
Air MAX	Maximal air amount during modulation or at power no. 2
Feeding MAX	Minimal burner's power during modulation.
MIN power	Maximal burner's power during modulation.
MAX power	Maximal burner power during modulation.
Modulation type	Method of burner's work, modulated power or 2 levels of power
Photo threshold	Brightness in burner, above which controller recognizes flame
Test of igniter	Starts igniter for test.
Test of burner's feeder	Starts feeder for test.
Test of fuel's feeder	Starts feeder for test.
Test of fan	Starts fan for test.

19. Alarms

Menu contains history of maximum 20 alarms, that occured during controller's work. Meanings of code alarms is shown below:

Alarm codes and their meaning.

Code	Short description	Description
1	Processor's overheating	Controller's processor has been overheated. Improper controller placement may be one of the reasons.
2	Lack of flame/fuel	Controller detected lack of flame in burner. Lack of fuel or flame gone out may be one of the reasons.
3	Burner's overheating	Burner's temperature has exceeded maximum value
4	Boiler's sensor short circuit	Controller detected short circuit. Damaged sensor or connecting wire may be one of the reasons.
5	Boiler's sensor break	Controller detected gape of boiler sensor. Damaged sensor or conecting wire may be one of the reasons.
6	Burner's sensor short circuit	Controller detected gape of sensor. Damaged sensor or connecting wire may be one of the reasons.
7	Gape of burner's sensor	Controller detected gape of sensor. Damaged sensor or connecting wire may be one of the reasons
8	Boiler's overheating	Boiler's temperature has exceeded maximum value
9	Processor reset	Possible controller's damage! Lack of power supply

20. Electric installation

20.1. Overall requirements

Before use of this controller; it is necessary to thoroughly read instruction manual.

Person responsible for controller's installation should have technical experience. Connections made of copper should be adjusted to operate at temperatures of 75°C.

All electric connections should comply with electric scheme enclosed in this manual and national or local rules concerning electric installations

20.2. Location

Appliance is intended for use in confined premises.

Assembly location must be free from dampness and inflammable, fumes that cause corrosion.

Appliance assembly cannot be done close to any high-power, appliances, industrial equipment or welding equipment.

Ambient temperature around assembly place cannot exceed 60° C and should not be lower than 0° C. Humidity should be in range 5-95%.

20.3. Connection

It is necessary to connect to boiler sensor and other executive elements if needed. Picture shows connection diagram of appliances table shows description of inputs and outputs.

ATTENTION! It is not allowed to connect (PE) safety wire with zero(N).

ATTENTION!

Connection works should be made when controller is disconnected from power. Only authorized person is allowed to do electrical connections with necessary qualifications.

Output description	Description
Foto	Brightness sensor in burner
Tkotła	Boiler sensor
Tpalnik	Burner sensor
Tc.w.u.	Hot domestic water sensor
Tpokój	Room sensor
GND	Ground for sensor connection
Pcwu	Hot domestic water pump
Zapalarka	Burner's igniter
Рсо	Central heating pump
Dmuchawa	Burner's fan
Pod.zas.	Pellet tank feeder
Pod.pal	Burner's feeder
N	Neutral constant
N1	Neutral separable
PE	Protective

20.4. Technical data

PARAMETER	VALUE
Power supply	~230V/50Hz ±10%
Power consumption	<6VA
Outputs capacity:	
Central heating pump	100W
Hot domestic water pump	100W
Igniter	400W
Fan	150W
Burner's feeder	150W
Pellet tank feeder	150W
Measurement accuracy	±4ºC
Sensors	NTC 10kΩ
	B _{25/05} =3877K±0,75%
	VISHAY BCcomponents
Outside temperature	0-60ºC
Humidity	5-95% without condensation
Software class	A

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