



bruli.pl

V1.0

Internet boiler controller

with flue gas temperature control

User manual

Kutno, 28/02/2013



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Visit our website

<http://bruli.pl>

<http://eSterownik.pl>

The websites include:

- Answers to the frequently asked questions – **FAQ**
- Latest version of **bruli.pl** controller software
- Latest version of **bruli.pl** controller website
- PC software enabling update of **bruli.pl** controller software
- **eSterownik.pl** website developed for **bruli.pl** users provides **Remote Access** to the controller via Internet, if no public IP is available. A proxy server allows communication, if no public IP address is available.
- And much more...



bruli.pl software - Version history

Version 0.1.17.15:

- Added: new power for - *Spalanie Grupowe* (Group Combustion) - 30 kW
- Added: 'T' - *Termostat* (Thermostat) active, and 'K' - *reg.pokojowy* (Room Thermostat) active

Version 0.1.17.14:

- Amended: forced standby cycle activated after 5 minutes, not immediately following the controller reset,
- Added: winter/summer operation mode logging after new fuel charge. The data are automatically send to eSterownik.pl
- Added: automatic entry on new fuel charge on eSterownik.pl following feeder operation time reset via LCD or website
- Added: 'P' on the display indicating *priorytet CWU* (DHW priority) mode activated

Version 0.1.17.13:

- Changed: Simplified *DHW priority* mode - CH/floor heating pump is always OFF in DHW priority mode
- Added: automatic fuel consumption calculation based on feeder operation time
- Added: logging fuel quantity after feed operation time reset (via LCD panel or website)

Version 0.1.17.12:

- Added parameter: ***Rozpoczęcie grzania w tłoku*** (Heating start in ram feeder) - heating is activated with a blower or feeder + blower ON
- Changed: description from ***Retortowy-auto*** (Retort - auto) to ***Retortowy-grupowe*** (Retort - group)
- Changed: *Min.temp.CO* (min. CH temperature) setting range (35...60 deg)
- Added: CH pump activation with ***Wygaszenie kotła*** (Boiler put out) alarm active (pump activated if CH temperature is over 60 deg)



- Amended: *Priorytet CWU* (DHW priority) mode error: if temp.CO (CH temp.) is lower than temp.MIN (min. temp.), CH pump operated in cyclic mode, and DHW pump OFF
- Amended: histogram data generation error
- Amended: error when entering values manually in the floating-point fields on the website

Version 0.1.17.11:

- Amended: SD card operation
- Added: intermittent CH pump operation in **DHW priority** mode - CH pump operation/idle time for internal temperature regulator.
- Added: cyclic floor heating pump operation in **DHW priority** mode.
- Changed: mixing pump may activate at CH temperature 1 deg higher than the return water temperature (temp. Powrotu)
- Changed: floor heating - pump activation allowed if temp. CO (CH temperature) exceeds (*Temp.MIN*) by 2 deg)
- Changed: DHW pump - pump activation allowed if temp. CO (CH temperature) exceeds (*Temp.MIN*) by 2 deg
- Changed: **Max.temp podajnika** (max. feeder temperature) setting range (40...110 deg)
- Added: local web server file buffering
- Added: feeder idle time histogram for group combustion - via website
- Added parameter: **Wyprzedzenie dmuchawy w podtrzymaniu** dla TŁOKA (Blower lead in sustain mode for RAM FEEDER). Parameter determines number of blower cycles in sustain mode
- Added parameter: **Podbicie temp.CO** przy aktywnym **priorytecie CWU** (Increase in CH temperature in DHW priority mode) - CH temperature increase
- Added parameter: **Czas wyrzutu paliwa** z podajnika, gdy aktywny alarm **Zapłon paliwa** (Fuel removal time from the feeder with Fuel ignition alarm active)
- Added: parameter change graph on the website
- Amended: **Alarm Zewnętrzny** (External Alarm) error in **Retortowy-auto** (Retort auto) and **Zasypowy** (Hopper) mode



Version 0.1.17.10:

- New group combustion algorithm for retort boiler (**Retortowy-auto**) (Retort auto)
- New group combustion algorithm for boilers with ram feeder (**Tłokowy-auto**) (Ram auto)
- Boiler with hopper feeder compatibility (emergency grate combustion)
- Added parameter - **Ustawienia/Zaawansowane/Algorytm wygaszenia kotła** - *Nieaktywny, tylko grzanie, tylko podt. aktywny* (Settings/Advanced/Boiler put out algorithm - Not active, heating only, sustain only, active) Parameter determines boiler put out analysis method.
- Added parameter **Ustawienia/Użytkownika/Priorytet CWU** (Settings/User/DHW priority) - separate DHW priority function - mode removed from Tryb pracy CWU (DHW operating mode)
- Added emergency CH pump activation above set temperature:
Ustawienia/Zaawansowane/Maksymalna temperatura CO
(Settings/Advanced/Maximum CH temperature)
- Added: new alarm - **Wysoka temp. podajnika** (High feeder temperature) - activated 5 °C below Max temp.podajnika (Max. feeder temperature)
- Added new parameter - **Programatory/Programator p.cyrkulacyjnej/Temp. zał. pompy cyrkulacyjnej** (Programmer/circulation pump programmer/Circulation pump activation temperature)
- Added new parameter - **Ustawienia/Zaawansowane/Temp. zał. pompy mieszającej** (Settings/Advanced/Mixing pump activation temperature)
- Floor heating pump deactivated in LATO (Summer) mode
- New operation parameters for cyclic floor heating pump operation -
Programatory/Programator p.podłogowej/Czas pracy i Czas postoju
(Programmer/Floor heating pump programmer/Operation and idle time)
- Added: status field on LCD for floor heating temperature sensor - **T.PODLG**

Version 0.1.17.5:

- Added: New parameters **Rejestracja danych na karcie SD** (SD card data logging) every 60, 30, 20, 10 sec
- Added: New parameter: **Histereza dla reg.pokojowego** (Room thermostat hysteresis)



(0.1 - 2.0 deg)

- Added: New parameter: Histereza trybu Auto-Lato (Automatic summer mode hysteresis) (0.5 - 5.0 deg)
- Added: New parameter **Funkcja wyjścia pompy CWU** (DHW pump output function)
- Added: New parameter **Funkcja pompy mieszającej** (Mixing pump function): **Mieszająca** (Mixing), **Cyrkulacyjna** (Circulation), **Podłogowa** (Floor heating). Floor heating sensor must be connected to **T.ZAW** controller output - see **FAQ**
- Added: New DHW operation modes: **AutoLato-temp** (Automatic summer - temperature), **AutoLato-programator** (Automatic summer - programmer)
- Added: Additional parameters for **Alarm zewnętrzny** (External alarm): **Opóźnienie** (Delay), **Inwersja wejścia** (Output inversion), **Zatrzymanie sterownika** (Controller OFF) for screw feeder only
- Added: **Auto-Lato** (Automatic summer) mode programmer
- Added: Programator Podłogówki (Floor heating) mode programmer. Pump activation at $\text{tempCO} \geq \text{Temp.MIN}$. Floor heating pump stopped in LATO (Summer) mode.
- Added: Factory settings restored by pressing **ESC** at power supply on.
- Added: *Room thermostat* set temperature logging
- Added: *Floor heating* thermostat set temperature logging
- Added: Display information on website, controller in LATO (Summer) mode (important information in Auto-Lato (Automatic summer) mode)
- Added: Feeder and blower OFF when switching to *manual mode*
- Added: Fast switching between *Manual/Auto mode* by pressing and holding **ESC**
- Added: Readout averaging - 64 logs table
- Added: After feeding the fuel in HEATING mode and switching to sustain mode, the blower will operate for min. 60 seconds
- Added: Analysis of boiler put out in sustain mode - **Wygaszenie kotła** (boiler put out) alarm is generated when the flue gas temperature does not rise by 5 deg in sustain mode
- Added: Alarm operation: **Damaged floor heating temperature sensor**
- Added: Parameter - **Niezależna praca pompy mieszającej** (Independent mixing pump operation). If parameter is active, mixing pump operates independently from the CH



pump (all modes)

- Added: Sustain cycle is forced after each controller fadeout/reset
- Added: DHW pump operation status depending on whether DHW pump is ON based on DHW algorithm (green) or mixing pump algorithm (yellow)
- Added: Boiler put out analysis algorithm in sustain mode
- Added: Cache-Control header: no-cache for each file transmitted
- Added: Cleaning unused EEPROM storage area
- Amended: Incorrect display of blower power on the website at <30% power setting
- Amended: Feeder OFF after switching from HEATING to sustain mode
- Amended: Introduced **DHW priority** for *Auto-Lato* (Automatic summer)
- Amended: Analiza wygaszenia kotła w grzaniu (Boiler put out analysis in heating mode) - **Wygaszenie kotła** (Boiler put out) alarm is generated in heating mode, if flue gas temperature falls below 50 °C and is maintained for at least 30 minutes
- Amended: **Circulation pump idle time** reduced to 0 minutes - circulation pump may operate in continuous mode.
- Amended: CH pump activation in LATO (Summer) mode >80 deg, pump deactivation 5 deg below
- Amended: DHW pump activation in LATO (Summer) mode >70 deg, pump deactivation 5 deg below
- Amended: Mixing pump operates depending on CH pump operation. Pump activation temperature <39.0 deg, deactivation >39.5 deg
- Amended: Ram stopped on **Uszkodzona krańcówka** (Damaged limit switch) alarm activation when switching from automatic to manual mode during ram stroke
- Amended: **Histereza CWU** (DHW hysteresis) parameter resolution changed to 0.1 deg
- Amended: Removed 45 days limit for next fuel charge
- Amended: Improved SD card data readout

Version 0.1.17.2:

- Added: Blower speed reduced to 25%



- Added new ram feeder parameter: **Krotność podawania** (Feed multiplicity, range 0-20)

Version 0.0.1.16:

- Added: Feeder operation time counter. Feeder operation time is displayed on the control panel in position 4 (press ↓ arrow down 3x) - **CP.POD:** field. Hold → (right arrow) or ← (left arrow) to reset the time after fuel charge to the hopper. Time may also be reset via our website: **Ustawienia użytkownika** (User settings), **Wyzeruj** (Reset) button
- Added: Indicates low fuel level in the hopper based on determined feeder operation time. Feeder operation time may be set via website: **Parametry użytkownika** (User parameters), **Czas do opróżnienia zasobnika [min]** (Time to empty hopper [min]) field.
- Added: Logging new fuel batch info in alarms and events.
- Added: Anticipated date of the next fuel charge. Algorithm calculates date based on defined hopper emptying time. The date is displayed after the next charge and feeder operation time reset.
- Added: New advanced parameters: **Tryb pracy pompy CO** (CH pump operation mode), **Czas pracy pompy CO** (CH pump operation time), **Czas postoju pompy CO dla regulatora pokojowego i termostatu** (CH pump idle time for room thermostat and thermostat)
- Added: Two new advanced setting parameters: **Auto/Lato** (Automatic summer) mode ON/OFF and **Temp.zew dla trybu Auto/Lato** (External temperature for Automatic summer mode) – automatic switching to **LATO** (Summer) mode after set external temperature is exceeded.
- Added: New user parameter: **Regulator temp.wewnętrznej** (Internal temperature regulator) to select temperature adjustment in the room: **Wyłączony** (Off), **Prog.Pokojowy** (Room thermostat), **Termostat** (Thermostat).
- Changed: **Zadawanie temperatury** (Temperature setting) parameter to **Regulator temperatury kotła** (Boiler temperature regulator). Select: **Prog.CO** (CH thermostat), **Prog.Pogodowy** (Weather compensator).
- Changed: Extended **CH and DHW hysteresis** setting from 0.2 deg
- Changed: Other feeder, blower parameters extended
- EEPROM memory reorganisation



- Amended: CH pump operation algorithm
- Amended: Mixing pump operation algorithm
- Amended: Setting preset temperature for weather compensator with 1 deg step

Version 0.0.1.14:

- Improved communication with **Zdalny Dostęp** (Remote access) service
- Amended error causing **Wysoka temp spalin** (High flue gas temperature) alarm
- Added communication frame for reading all required parameters during website loading.
- Extended parameter range (Feeder operation/idle time)

Version 0.0.1.9:

- Changed: Remote access service server IP address: 188.165.227.113
- Amended: Method of connection with **Zdalny Dostęp** (Remote access) service

Version 0.0.1.7:

- Changed: Method of connection authorization with **Zdalny dostęp** (remote access) service. Passwords are generated on each connection with the server
- Changed: CH set temperature in **CWU LATO** (DHW summer) mode set +5 °C above DHW set temperature – in heating mode
- Changed: CH set temperature in **CWU LATO** (DHW summer) mode set to **TEMP MIN CO** (Min. CH temp.) – if DHW heating is not required

Version 0.0.1.6:

- Added: **Histereza CO** (CH hysteresis) parameter in **Parametry zaawansowane** (Advanced parameters) menu.

Version 0.0.1.5:

- Improved communication with **Zdalny Dostęp** (Remote access) service
- Amended error causing **Wysoka temp spalin** (High flue gas temperature) alarm



- Added communication frame for reading all required parameters during website loading.
- Extended parameter range (Feeder operation/idle time)

Version 0.0.1.4:

- First public version of **bruli.pl** controller software



1.Introduction

bruli.pl is a central heating boiler controller compatible with solid fuel boilers. The controller enables remote operation and parameter setting via an internet browser. **bruli.pl** also enables easy software update via Internet. **bruli.pl** website developed for **bruli.pl** controller users provides **Remote Access** to the controller via website, if no public IP address is available. Proxy server for communication with the controller, without public IP address is also available.

1.1.Intended use

bruli.pl controller is intended for automatic supervision of central heating boiler with an automatic screw/ram feeder and a blower. It may also be used to control domestic hot water (DHW) pump, and in a systems fitted with a mixing pump it maintains minimum return water temperature. The controller can also supervise fuel feeder operation: fuel ignition (back burning). **bruli.pl** is compatible with a PC fitted with SD memory card, where all operation parameters are logged. It also features Ethernet interface. Implemented web server enables intuitive change of operation parameters, preview of parameter, alarm and event logs. The controller may be programmed in daily and weekly mode via a website. It also enables controller software update. The latest controller software version is available on <http://bruli.pl>

1.2.Algorithm - Group Combustion

Burning solid fuels in a boiler with an automatic burner is a complex process, both in respect of low fuel uniformity, e.g. particle size, and variable physical and chemical parameters, essential for combustion processes.

Coal is an especially problematic fuel, whose properties depend not only on its origin - a coal mine, but also on the specific coal bed. Coal fuel combustion in automatic boilers is a stochastic process.

In commonly used solutions, fuel feeding and combustion are considered as continuous processes. It means that the feeder operates in regular and



repeatable operation/idle cycles, and its power changes depending on operation and idle time ratio, which does not affect repeatability.

The disadvantages of continuous fuel feeding and combustion processes, include issues with fuel to air ratio due to a stochastic nature of the combustion process, and the fact that feeding fuel batches in small intervals does not allow complete assessment of the combustion process. Significant increase in fuel feeding interval must be related with significant increase in batch feeding time to reach required power, causing temporary incomplete combustion in form of a smoke.

Based on the combustion process testing in automatic solid fuel boilers, fuel batching, and therefore impulse (discrete) combustion process allows to assess, if the combustion process of a previous batch been completed.

Treating the fuel batching process, and therefore the combustion process, not as a continuous but as an impulse process is revolutionary innovation.

Realization of a new control method consists in group repeating of fuel feeding and short feeder idle time cycles, following a long interval to complete combustion of the previous fuel batch, and the moment of complete combustion is determined based on flue gas temperature trend analysis.

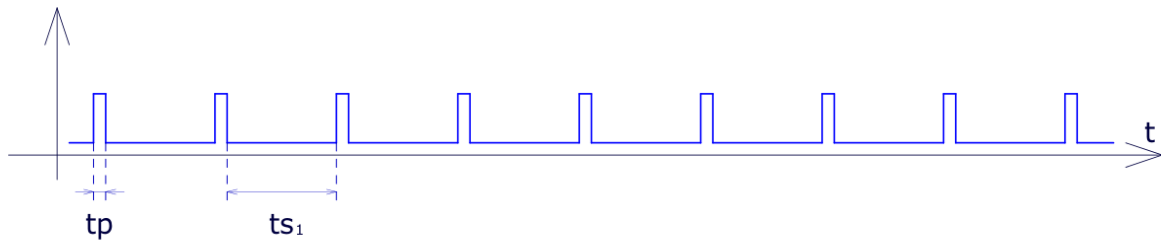


Fig. 1

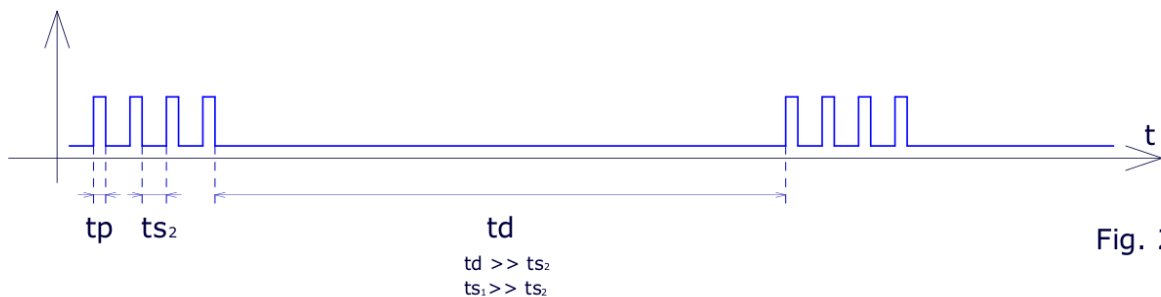


Fig. 2

tp - czas pracy podajnika
ts₁, ts₂ - czasy postoju podajnika
td - czas długiej przerwy w podawaniu

Fig. 1: Comparison of group and standard combustion processes

1.3.Group combustion histogram

Histogram is a graphical representation of the distribution of data. It is shown as adjacent rectangles on the coordinate axis. The rectangle sizes are determined by class intervals (see: distribution series), with height determined by the size.

In this case, feeder idle times with 10 s resolution are grouped on the X-axis. The higher the rectangle, the more often the specific idle time have occurred. Shorter idle times are grouped on the left side of the histogram, and longer idle times are grouped on the right side.

Idle times depend on blower rate - the higher the blower speed, the faster the combustion process (rectangles on the left side of the histogram), the lower the blower speed, the slower the combustion process (rectangles on the right side of the histogram).

Idle time may not be too short - excessive combustion rate (left side of the histogram) or too long - low combustion rate (right side of the histogram).



Distribution of the rectangles on the histogram shows the operation of a group combustion algorithm. If high rectangles are on the right side of the histogram, it means that the algorithm does not detect fuel combustion in set time and indicates low air supply.

The data can be used to set the blower power in the group combustion process, it will not replace observation of a furnace, soot and coal deposits. Histogram is a visualisation of group combustion algorithm only.

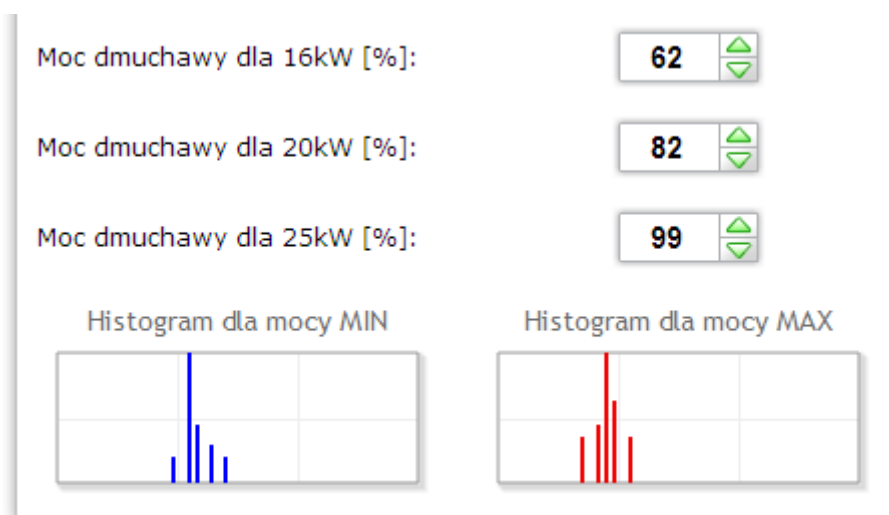


Fig. 2: Histograms on the website

1.4.Specification

Power supply.....230V~50Hz
 Protection rating.....IP40
 Electrical protection class.....I
 Allowable ambient temperature.....5 °C to 45 °C no condensation
 Feeder circuit load.....up to 0.8 A
 Blower circuit load.....up to 0.8 A
 Pump circuit load.....up to 0.8 A
 Fuses.....4 A



2.Safety

- Read the warranty terms and conditions and User manual before installation. Incorrect installation, operation and maintenance will render the warranty void.
- Assembly and installation works shall be carried out by the service centre or personnel with proper qualifications and authorization, in accordance with current regulations and standards.
- Due to the operation safety, and mains electromagnetic interferences which may affect operation of the controller and other devices, connect the controller to the socket with an earthing pin.
- Do not expose controller to water and excessive humidity resulting in condensation (e.g. rapid ambient temperature changes).
- Do not expose controller to temperature above 45 °C and below 5 °C.
- In case the auxiliary grate is used for wood or waste firing, remove the flue gas sensor from the flue.
- Wiring must be fixed on the entire length and must not contact water jacket or flue gas conduits.
- Disconnect mains plug before connecting/disconnecting devices supplied by the controller.
- During the storm, the controller must be disconnected from mains.
- The system must be protected with fuses with a correct rating in accordance with current standards and regulations.
- Do not install the controller with damaged housing or wires.
- All repairs must be carried out by an authorized service centre. In other case, the warranty is void.
- Flue gas sensor requires cleaning at least once a month.
- The flue gas must be fitted in the middle of the flue diameter, right behind



the boiler output.

- In case the sensor cable length exceeds 5 m, shielded cable pairs are recommended. Cable shield must be connected to PE terminal on the controller side only.



3.Installation

Assembly and installation works shall be carried out by the service centre or personnel with proper qualifications and authorization, in accordance with current regulations and standards.

3.1.Environmental conditions

Do not expose controller to water and excessive humidity resulting in condensation (e.g. rapid ambient temperature changes).

Do not expose controller to temperatures above 45 °C and below 5 °C.

3.2.Installation of a control panel

An LCD housing is snap fastened. Lead a cable through a gland in a bottom part of the LCD housing. Connect one end of the cable to a screw terminal on the display board and lead the other end through the gland in the controller housing, and connect to a suitable terminal. Connect in accordance with the following colour codes:

- GND – white
- B – yellow
- A – green
- +12V – brown

Recommended

cable: LIYY4x0.25mm²



Fig. 3: Control panel



3.3.Connecting measuring sensors

Activation of connected devices and controller functions is automatic and depends on connection of temperature sensors to the controller. E.g. connecting DHW temperature sensor activates DHW pump operation, and connecting external temperature sensor allows automatic use of a weather compensation programmer etc. The sensors must be connected to the controller in accordance with the markings on the printed circuit board, by leading the sensor cable via a correct cable gland (description on the housing). KTY81-210 type and PT-100 type (for flue gas) temperature sensors are used.

If the sensor is not connected, it is signalled with dashes by the sensor marking.

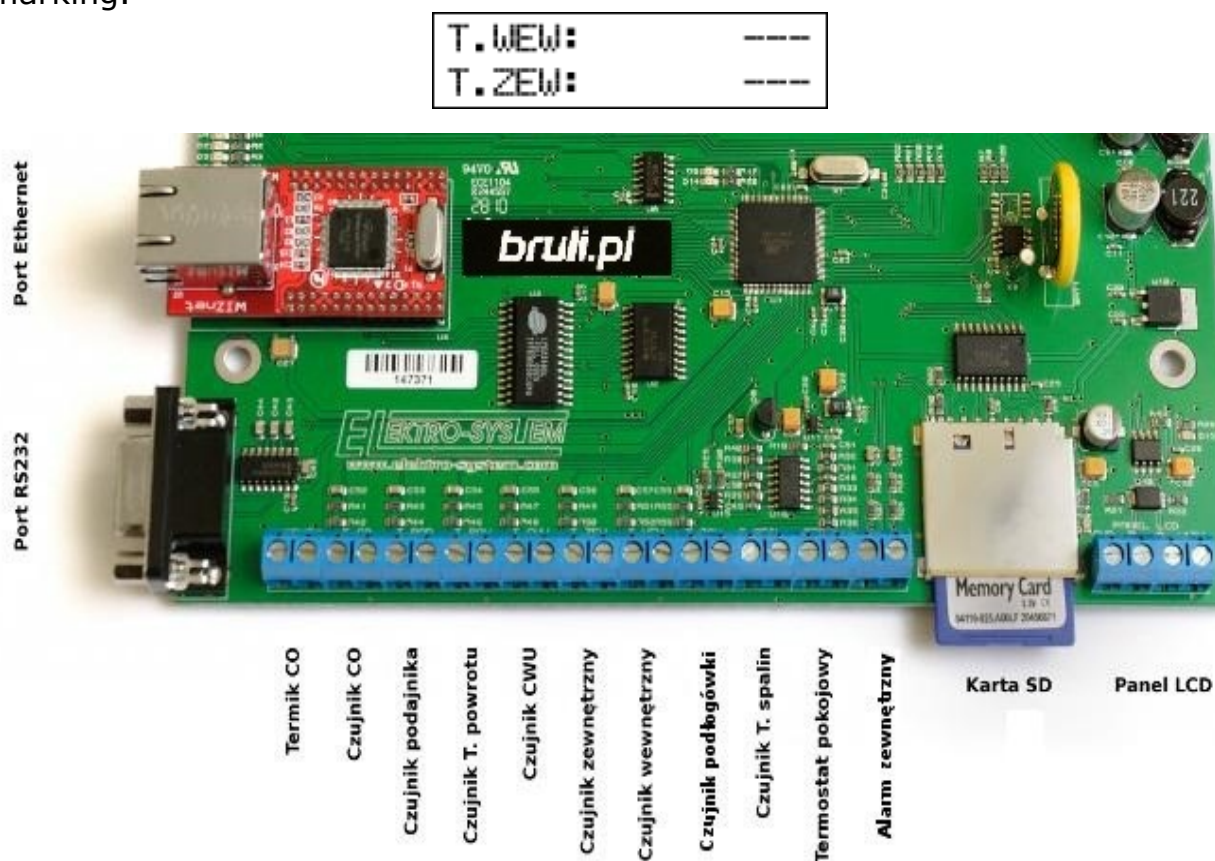


Fig. 4: Terminal strip for sensors

The controller may detect damaged sensors. Disconnect mains plug before connecting/disconnecting sensors to the controller and disconnect mains plug each time.



3.4.Connecting room thermostat

Room thermostat (*external device, e.g. Auraton*) must be connected to the controller board to **TERM** terminals. The thermostat connected to the controller shall be fitted with potential free contact. In case the room thermostat is connected, CH temperature is set by switching the contacts on the boiler: daily comfort (contact closed) or reduced (contact open). The option may be selected in **Ustawieniach użytkownika** (User settings) - **Regulator temperatury wewnętrzny: Termostat** (Internal temperature controller: Thermostat).

Higher boiler temperature is set with thermostat contacts closed. With contacts open, set temperature is lowered, also CH pump may operate in *cyclic* or *continuous mode* or can be *switched OFF* - set in **Parametrach zaawansowanych** (Advanced parameters).

3.5.Connecting sensors to external alarm input

The controller enables connection of potential free external sensors (e.g. hopper hatch open sensor, CO sensor, CO2 sensor etc.) to **Alarm zewnętrzny** (External alarm) input (see Fig. 1). In **Ustawienia zaawansowane** (Advanced settings) menu, user can set the controller response to input activation: **Czas opóźnienia** (delay time), **Inwersja wejścia** (input inversion) and **Zatrzymanie sterownika po zadziałaniu alarmu** (controller OFF after alarm activation).

3.6.Connecting control devices

The controller can be connected to the following devices:

- Blower
- Feeder
- CH pump



- DHW pump
- Mixing pump, circulation pump or floor heating pump

Connections shall be made in accordance with markings on the housing. Disconnect mains plug before connecting/disconnecting devices supplied by the controller.



Fig. 5: Housing wall with power outputs

3.7.PC connection

The PC is connected with cable included. The PC shall be fitted with RS232 connector (DB9 socket). Optional RS232/USB adapter is available.



Fig. 7: RS232 connector

Fig. 6: RS232 cable

connection

Controller shall be connected to the Ethernet with UTP network cable (PATCH CABLE) with RJ45 plug. The controller must be connected to local network switch or router. Set IP address, mask and default gateway in the controller. The options are available in **Internet** menu.

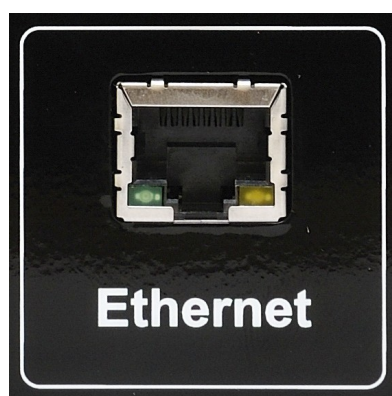


Fig. 8: Ethernet RJ45 connector

4.Controller operation

4.1.Control panel - keyboard

LCD panel features LCD, keys and LED indicators. Green LED indicates operation of the devices supplied by the controller. Red LED indicates alarm. Four arrow keys enable menu navigation and change of value. The following function keys are available: **OK** (Enter) - to select operation level, settings menu, and confirm changes. Press **OK** to select maintenance level or enter settings menu by holding the key for approx. 1 sec. The second function key is



(**Esc**). Press to exit the menu, cancel selected or set parameters.



Fig. 9: Control panel

4.2. Control panel - Maintenance level

After connecting power supply to the controller, software version screen is displayed. The main screen includes information on measured and set CH and DHW temperature (if DHW option is active and DHW sensor connected).

The main screen also shows information on boiler operation mode (top line):

- R – manual operation
- C – automatic operation – temperature set by CH programmer
- P – automatic operation – temperature set by weather compensation programmer
- K – room regulator active
- T – room thermostat active

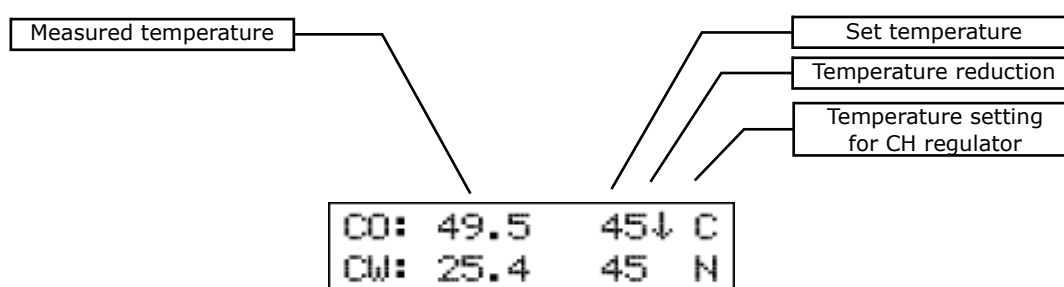


CO:	28.6	55	R
CW:	26.0	55	R

At DHW temperature (bottom line) in manual mode, R indication is showed (manual mode). In the automatic mode, the following marks indicate DHW temperature adjustment mode:

- N – winter mode – normal DHW pump operation
- P – DHW priority mode – DHW pump priority
- L – summer mode – domestic hot water pump operation only.
- Z – automatic summer temperature mode - switching winter/summer mode depending on external temperature
- G – automatic summer programmer mode - switching winter/summer mode depending on programmer setting

•



The main screen shows data for boiler operation at reduced temperature. It is indicated by a down arrow next to CH and DHW set temperature. No arrow indicates normal temperature.

Disconnecting DHW temperature sensor from the controller, deactivates DHW pump. A row of dashes next to DHW description indicates no active DHW option. The sensors must be disconnected with the controller OFF.



At the maintenance level, the temperature measured by the active sensor can be verified. Press up and down arrows to scroll.

Item	Symbol	Description
1	CO (CH)	CH temperature – measured and set
2	CW (DHW)	DHW temperature – measured and set
3	T.WEW (Internal temperature)	Internal temperature
4	T.ZEW (External temperature)	External temperature
5	POWROT (Return)	Return temperature
6	SPALINY (Flue gas)	Flue gas temperature
7	T.POD (Feeder temperature)	Feeder temperature
8	CP.POD (Feeder operation time)	Feeder operation time
9	T.PODLG (Floor heating temperature)	Floor heating temperature

4.3. Controller operation modes

The controller has two operation modes: *automatic and manual*. *Manual mode* is used for lighting off the boiler.

a) Manual mode

Manual mode can be selected via control panel at the maintenance level or via www browser. To switch the mode on via control panel, select **Tryb Pracy** (Operation mode) with left - right arrow and select **Tryb Pracy <ręczny>** (Operation mode <manual>). After selecting manual mode, all devices supplied by the controller may be switched ON/OFF. Hold **ESC** to switch to manual mode.



b)Automatic mode

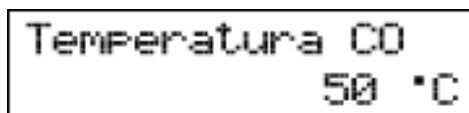
Automatic mode can be selected via control panel at the maintenance level or via web browser. To switch the mode on via control panel, select **Tryb Pracy** (Operation mode) with left - right arrow and select **Tryb Pracy <auto>** (Operation mode <auto>).



In the automatic mode, some parameters for switching the devices ON/OFF are not available. Hold **ESC** to switch to automatic mode.

4.4.Central heating temperature setting

In the main screen, press left arrow to enter **Temperatura zadana CO** (CH set temperature) screen.



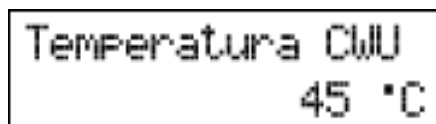
Press up arrow to increase set temperature, and press down arrow do decrease set temperature. Press **OK** to confirm and select main screen. Press **ESC** to cancel.

If down arrow (↓) is displayed in the status window, it indicates that the set temperature is reduced by the value set in **Parametry użytkownika - Temperatura CO Obniżona** (User parameters - CH temperature reduced), and set CH temperature may differ from set temperature. Temperature must not be reduced below **Minimalna temperatura CO** (Minimum CH temperature). Temperature setting range from **Parametry zaawansowane** (Advanced parameters): **Minimalna temperatura CO** (Minimum CH temperature) to **Parametry zaawansowane** (Advanced parameters): **Maksymalna temperatura CO** (Maximum CH temperature).



4.5.Domestic hot water temperature setting

In the main screen press right arrow to enter **Temperatura zadana CWU** (DHW set temperature) screen.



Press up arrow to increase set temperature, and press down arrow to decrease set temperature. Press **OK** to confirm and select main screen. Press **ESC** to cancel.

If down arrow (↓) is displayed in the status window, it indicates that the set temperature is reduced by the value set in **Parametry użytkownika – Temperatura CWU Obniżona** (User parameters - DHW temperature reduced), and set DHW temperature may differ from set temperature. Temperature setting range: 35°C - 60°C.

4.6.Function - fuel charge

The controller generates event log entries, and new fuel charge entries. It may also indicate low fuel level in the hopper based on the feeder operation time required to empty the fuel hopper. Feeder operation time to hopper emptying is available via website. Current feeder operation time is displayed in the status screen (**CP.POD** item). Press (← → - left or right arrow) to display prompt to enter the fuel quantity charged to the hopper (↓ ↑ - up and down arrow).

This function also enables controller registration on **eSterownik.pl** website to generate automatic statistics on combusted fuel, related costs and approximate boiler power.

5.Controller programming

Controller settings can be changed via control panel. To access the settings, press and hold **OK** for 1 second. Select the item and press **OK**.



5.1. Combustion parameters

Parametry spalania (Combustion parameters) menu items are changed depending on combustion algorithm selected in the advanced parameter menu: **Typ kotła** (Boiler type)

- **Retorta-ręczny** (Retort - manual) – retort feeder, manual combustion process.
- **Retorta-grupowe** (Retort - group) – retort feeder, semi-automatic combustion process.
- **Tłok-auto** (Ram - automatic) – ram feeder, semi-automatic combustion process.
- **Tłok-auto** (Ram - manual) – ram feeder, manual combustion process.
- **Zasypowy** (Hopper) – combustion at emergency grate with feeder stopped.

Select an item and press **OK**.

Select item with up or down arrow. Press **OK** to edit item. Press up and down arrow (↓↑) to change value. Press **OK** to confirm. Press **ESC** to cancel and exit.

a) **Parametry spalania** (Combustion parameters) – **typ Tłokowy** (Ram type) - **ręczny** (Manual)

Manual combustion process. All combustion parameters are set by the user.

Item	Parameter	Description
1	Regulator temperatury spalin (Flue gas temperature regulator)	The function limits flue gas loss by reducing blower power at exceeded flue gas temperature. <i>Range [Inactive/Active]</i>
2	Maksymalna temperatura spalin (Maximum flue gas temperature)	Maximum flue gas temperature maintained by the flue gas temperature regulator. Exceeding temperature will result in blower output reduction. <i>Range [90°C to 500°C]</i>
3	Minimum blower power for flue gas regulator	Minimum power at which the blower rate is reduced at flue gas temperature regulator active. <i>Range [25% to 100%]</i>
4	Czas pracy w grzaniu (Operation time in heating)	Fuel feeding time in heating mode. <i>Range [2s to 180s]</i>



Item	Parameter	Description
	mode)	
5	Czas postoju w grzaniu (Idle time in heating mode)	Feeder idle time in heating mode - interval between subsequent fuel batches. <i>Range [1s to 600s]</i>
6	Moc dmuchawy w grzaniu (Blower power in heating mode)	Blower power set in heating mode. <i>Range [25% to 100%]</i>
7	Czas postoju w podtrzymaniu (Idle time in sustain mode)	Feeder idle time in sustain mode. <i>Range [3min to 360min]</i>
8	Czas pracy w podtrzymaniu (Operation time in sustain mode)	Fuel feeding time in sustain mode. <i>Range [2s to 180s]</i>
9	Krótką przerwa w podtrzymaniu (Short pause in sustain mode)	Short feeder pause (idle time) in sustain mode. Fuel feeding cycle in sustain mode is carried out in the following stages: [OPERATION-SHORT PAUSE] - [OPERATION-SHORT PAUSE]... Cyclic operation allows complete fuel combustion in sustain mode. The number of cycles may be defined in the next parameter. <i>Range [5s to 120s]</i>
10	Ilość powtórzeń postoju podajnika (Number of feeder idle time cycles)	Number of cycles: [OPERATION-SHORT PAUSE] in sustain mode. <i>Range [1 to 5]</i>
11	Moc dmuchawy w podtrzymaniu (Blower power in sustain mode)	Blower power set in sustain mode. <i>Range [25% to 100%]</i>
12	Moc dmuchawy w trybie ręcznym (Blower power in manual mode)	Blower power set in manual mode. <i>Range [25% to 100%]</i>

b) Parametry spalania (Combustion parameters) – typ Tłokowy (Ram type) - grupowy (Group)

Semi-automatic combustion process. New combustion process control method. User may select 6 different power settings for boiler operation. User sets minimum and maximum power only. Blower power must be defined for selected power settings. Histogram facilitates blower power settings (available on the controller website). Switching between minimum and maximum power is automatic. Minimum power is activated below CH hysteresis, whereas maximum power is activated if CH temperature falls below double hysteresis.



Sustain mode is activated +1 °C above set temperature.

Item	Parameter	Description
1	Minimalna moc kotła (Minimum boiler power)	Minimum boiler power selected from the range of power settings
2	Maksymalna moc kotła (Maximum boiler power)	Maximum boiler power selected from the range of power settings
3	Moc dmuchawy dla 8kW (Blower power for 8 kW)	Blower power for selected 8 kW power. <i>Range [25% to 100%]</i>
4	Moc dmuchawy dla 12kW (Blower power for 12 kW)	Blower power for selected 12 kW power. <i>Range [25% to 100%]</i>
5	Moc dmuchawy dla 16kW (Blower power for 16 kW)	Blower power for selected 16 kW power. <i>Range [25% to 100%]</i>
6	Moc dmuchawy dla 20kW (Blower power for 20 kW)	Blower power for selected 20 kW power. <i>Range [25% to 100%]</i>
7	Moc dmuchawy dla 25kW (Blower power for 25 kW)	Blower power for selected 25 kW power. <i>Range [25% to 100%]</i>
8	Moc dmuchawy dla 30kW (Blower power for 30 kW)	Blower power for selected 30 kW power. <i>Range [25% to 100%]</i>
9	Czas postoju w podtrzymaniu (Idle time in sustain mode)	Feeder idle time in sustain mode. <i>Range [3min to 360min]</i>
10	Czas pracy w podtrzymaniu (Operation time in sustain mode)	Fuel feeding time in sustain mode. <i>Range [2s to 180s]</i>
11	Krótką przerwą w podtrzymaniu (Short pause in sustain mode)	Short feeder pause (idle time) in sustain mode. Fuel feeding cycle in sustain mode is carried out in the following stages: [OPERATION-SHORT PAUSE] - [OPERATION-SHORT PAUSE]... Cyclic operation allows complete fuel combustion in sustain mode. The number of cycles may be defined in the next parameter. <i>Range [5s to 120s]</i>
12	Ilość powtórzeń postoju podajnika (Number of feeder idle time cycles)	Number of cycles: [OPERATION-SHORT PAUSE] in sustain mode. <i>Range [1 to 5]</i>
13	Moc dmuchawy w podtrzymaniu (Blower power in sustain mode)	Blower power set in sustain mode. <i>Range [25% to 100%]</i>
14	Moc dmuchawy w trybie ręcznym (Blower power in manual mode)	Blower power set in manual mode. <i>Range [25% to 100%]</i>



c) Parametry spalania (Combustion parameters) – **typ Tłokowy** (Ram type)- **auto** (Automatic)

Group combustion in ram feeder consists in calculating the fuel feeding time based on the controller's algorithm. User enters an average ram time interval, and the controller operates based on this value. The interval range must be used for process control, otherwise the time would be from zero to infinity. User sets mean idle time for the feeder. Signal from the ram feeder limit switch is connected to the **KONT.** terminal of the controller. No operation of **Alarm zewnętrzny** (External alarm) is available for ram feeder.

Item	Parameter	Description
1	Czas ruchu tłoka (Ram stroke time)	Ram operation time. Range [10s to 360s]
2	Czas postoju w grzaniu (Idle time in heating mode)	Interval between fuel feeding in heating mode. Range [10s to 3600s]
3	Moc dmuchawy w grzaniu (Blower power in heating mode)	Blower power set in heating mode. Range [25% to 100%]
4	Rozpoczęcie grzania (Heating start)	Determines when the heating mode is activated after sustain mode. Range [Dmuchawa+podajnik (feeder+blower)/Tylko dmuchawa (blower only)]
5	Czas postoju w podtrzymaniu (Idle time in sustain mode)	Feeder idle time in sustain mode. Range [3min to 360min]
6	Czas dopalania węgla (Coal after combustion time)	Blower operation time after fuel charge (sustain mode). Range [5s to 360s]
7	Krotność podawania (Feed multiplicity)	Determines number of cycles in sustain mode before fuel charge. Range [0 to 20]
8	Wyprzedzenie dmuchawy w podtrzymaniu (Blower lead in sustain mode)	Parameter determines number of blower cycles in sustain mode Range [0 to 20]
9	Moc dmuchawy w podtrzymaniu (Blower power in sustain mode)	Blower power set in sustain mode. Range [25% to 100%]
10	Moc dmuchawy w trybie ręcznym (Blower power in manual mode)	Blower power set in manual mode. Range [25% to 100%]

d) Parametry spalania (Combustion parameters) – **typ Tłokowy** (Ram type)- **ręczny** (Manual)

Combustion process for ram feeder is set manually. All combustion parameters



are user defined. Signal from the ram feeder limit switch is connected to the **KONT.** controller terminal. No operation of **Alarm zewnętrzny** (External alarm) is available for ram feeder.

Item	Parameter	Description
1	Czas ruchu tłoka (Ram stroke time)	Ram operation time. Range [10s to 360s]
2	Czas postoju w grzaniu (Idle time in heating mode)	Interval between fuel feeding in heating mode. Range [10s to 3600s]
3	Moc dmuchawy w grzaniu (Blower power in heating mode)	Blower power set in heating mode. Range [25% to 100%]
4	Rozpoczęcie grzania (Heating start)	Determines when the heating mode is activated after sustain mode. Range [Dmuchawa+podajnik (feeder+blower)/Tylko dmuchawa (blower only)]
5	Czas postoju w podtrzymaniu (Idle time in sustain mode)	Feeder idle time in sustain mode. Range [3min to 360min]
6	Czas dopalania węgla (Coal aftercombustion time)	Blower operation time after fuel charge (sustain mode). Range [5s to 360s]
7	Krotność podawania (Feed multiplicity)	Blower operation time after fuel charge (sustain mode). Range [0 to 20]
8	Wyprzedzenie dmuchawy w podtrzymaniu (Blower lead in sustain mode)	Parameter determines number of blower cycles in sustain mode. Range [0 to 20]
9	Moc dmuchawy w podtrzymaniu (Blower power in sustain mode)	Blower power set in sustain mode. Range [25% to 100%]
10	Moc dmuchawy w trybie ręcznym (Blower power in manual mode)	Blower power set in manual mode. Range [25% to 100%]

e) Parametry spalania (Combustion parameters) – typ Zasypowy (Hopper type)

Combustion at an emergency grate with feeder stopped or for hopper type feeders. The algorithm reduces blower power at flue gas temperature over 350 °C, and stops the blower at flue gas temperature over 400 °C.

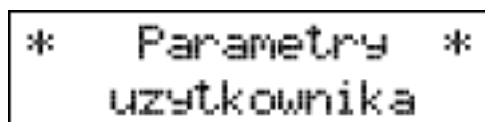
Item	Parameter	Description
1	Czas przedmuchu (Blow in time)	For set temperature over 8 °C, the controller automatically removes flue gases in the chamber (it



Item	Parameter	Description
		is important for hopper type boilers). Blow in time determines time to switch the blower ON. Range [0s to 90s]
2	Czas pomiędzy przedmuchami (Blow in interval)	Defines interval between subsequent blow ins. Range [1min to 15min]
3	Strefa automatycznej regulacji (Automatic adjustment zone)	Parameter relates to the range of temperature, directly before reaching set temperature, where the controller automatically reduces the blower power. Within this range, with the increase in CH temperature, the blower reduces its speed to reach set temperature. The blower speed is increased with the temperature decrease. Depending on the requirements, the range is adjusted by the user from 10 °C to 0 °C. Range [0°C to 10°C]
4	Moc dmuchawy w grzaniu (Blower power in heating mode)	Blower power in heating mode. Range [25% to 100%]
5	Moc dmuchawy w trybie ręcznym (Blower power in manual mode)	Blower power set in manual mode. Range [25% to 100%]

5.2. User parameters

Select **Parametry użytkownika** (User parameters) menu and press **OK**.



Press up or down arrow to select **Parametry użytkownika** (User parameters) menu items. Press **OK** to edit. Press up and down arrow to change the value. Press **OK** to confirm. Press **ESC** to cancel and exit.

Item	Parameter	Description
1	Regulator temperatury kotła (Boiler temperature regulator)	Central heating temperature at the boiler outlet: •Programator CO (CH programmer) - CH set temperature is set manually on the control panel, and reduced temperature is set based on programmed weekly schedule Programatory (Programmers) → Programator CO (CH programmers) → Tablica dobową (Daily schedule), and Temperatura CO obniżona (Reduced CH temperature) parameter. •Programator CO (CH programmer) - CH set



Item	Parameter	Description
		temperature is set based on weather compensation programmer algorithm, and reduced temperature is set based on programmed weekly schedule Programatory (Programmers) → Programator pogodowy (Weather compensation programmer) → Tablica dobową (Daily schedule), and Temperatura CO obniżona (Reduced CH temperature) parameter.
2	Regulator temperatury wewnętrznej (Internal temperature regulator)	Parameter for setting internal temperature: •Programator pokojowy (Room thermostat) – Room thermostat will maintain set temperature in the room (day or night - depending on weekly schedule). If room temperature exceeds value set in Programatory (Programmers)→ Programator pokojowy (Room thermostat)→ Temperatura dzienna (lub nocna) (Day/night temperature), CH temperature at the boiler is reduced by the value set for Temperatura CO obniżona (Reduced CH temperature) parameter. CH pumps operation may also be defined (Parametry zaawansowane (Advanced parameters) when CH temperature reduction does not cause temperature decrease in the room. An internal temperature sensor must be connected to activate the option. Termostat (Thermostat) - CH set temperature set manually on the control panel. In case the thermostat contacts are open, CH set temperature will be reduced by value set for Temperatura CO obniżona (Reduced CH temperature). CH pumps operation may also be defined (Parametry zaawansowane (Advanced parameters) when CH temperature reduction does not cause temperature decrease in the room.
3	Tryb CWU (DHW mode)	Parameter for setting DHW pump operation mode: •Zima (Winter) – normal DHW pump operation in winter mode. Both CH pump (central heating) and DHW pump (domestic hot water tank) are active. •Lato (Summer) – DHW pump operation in summer mode. CH pump is stopped (no central heating). •AutoLato-t.zew (Auto summer - external temperature) – automatic summer mode with external temperature setting in normal mode. Depending on external temperature (external temperature sensor is required) the controller will automatically switch from Lato (Summer) to Zima (Winter) mode and vice versa. Activation threshold for switching summer/winter mode is available in the advanced parameters menu: Temp. zewnętrzna dla Auto-Lato (External temperature for automatic summer mode) •AutoLato-prog. (Automatic summer -



Item	Parameter	Description
		programmer) - switches Lato/Zima (Summer/Winter) mode in accordance with defined times in AutoLato-prog (Automatic summer programmer) mode – available in Programatory (Programmers) -> Programator AutoLato (Automatic summer programmer)
4	Priorytet CWU (DHW priority)	Once activated, this function enables additional water heating in DHW tank. If this function is active, when additional water heating is required, CH and floor heating pump are stopped, and DHW pump operates. It is also possible to increase CH set temperature by CH temperature increase parameter. Parameter available in Ustawienia zaawansowane (Advanced settings): Podbicie temp.CO (CH temperature increase). Range [TAK (Yes)/NIE (No)]
5	Temperatura CWU obniżona (Reduced DHW temperature)	Temperature value by which DHW set temperature is reduced (display: ↓) if low temperature is set in the weekly schedule. Range [0°C to 20°C]
6	Temperatura CO obniżona (Reduced CH temperature)	Temperature value by which CH set temperature is reduced (display: ↓) if low temperature is set in the weekly schedule or if connected thermostat opens the contact. Range [0°C to 30°C]
7	Przywróć ustawienia serwisowe (Restore service settings)	Possibility to restore default settings stored by the service centre. Range [TAK (Yes)/NIE (No)]
8	Przywróć ustawienia fabrycznie (Restore factory settings)	Possibility to restore default controller settings. Range [TAK (Yes)/NIE (No)]

5.3.Programmers

Programmers facilitate and automate temperature settings based on a daily schedule and user requirements. Available programmers:

- **Programator CO** (CH programmer)
- **Programator CWU** (DHW programmer)
- Weather compensation programmer
- Room temperature programmer
- **Programator pompy cyrkulacyjnej** (Circulation pump



programmer)

- **Programator Auto-Lato** (Automatic summer programmer)
- **Programator ogrzewania podłogowego** (Floor heating programmer)

Tablica dobową (Daily schedule) is used for all programmers. Daily schedule is set with arrows on the keyboard. After selecting the programmer, use up and down arrow to select weekdays for which the temperature is reduced.

Tablica dobową
niedziela

Press **OK** to select a weekday and its schedule.

niedziela 01:00

A weekday is displayed, and the temperature can be reduced. Time for which the value is changed is shown, and the dash for a specific time blinks. Temperature change accuracy is 30 min. Use up and down button to change the value (dash on the bottom is the lower temperature). Press left and right arrow to change the time.

Programmer setting method is the same for all programmers. Select **Regulator temperatury kotła** (Boiler temperature regulator) in **Ustawienia użytkownika** (User settings) menu to access active programmer for CH temperature setting.

Select **Regulator temperatury kotła** (Boiler temperature regulator) in **Ustawienia użytkownika** (User settings) menu to access active programmer for internal temperature setting.



a)Programator CO (CH programmer)

Set temperature is set by the user. Reduced CH temperature is set with **Temperatura CO obniżona** (Reduced CH temperature) **Poziomu ustawień** (Setting level) in **Parametry użytkownika** (User parameters) menu. Reduced temperature is used with a correct setting in **Tablica dobową** (Daily schedule).

b)Programator CWU (DHW programmer)

The programmer sets temperature for domestic hot water. Reduced DHW temperature is set with **Temperatura CWU obniżona** (Reduced DHW temperature) **Poziomu ustawień** (Setting level) in **Parametry użytkownika** (User parameters) menu. Reduced temperature is used with a correct setting in **Tablica dobową** (Daily schedule).

c)Programator pogodowy (Weather compensation programmer)

The programmer may be used to set the boiler temperature depending on outside temperature. For **Programator pogodowy** (Weather compensation programmer) apart from **Tablica dobową** (Daily schedule) it is possible to set weather regulator parameters in two points: **Temperatura CO dla -10°C** (CH temperature for -10 °C) and **Temperatura CO dla +10°C** (CH temperature for 10 °C) (heating curve parameters setting - available in **Programatory** (Programmers). An external temperature sensor is required for correct operation. Activation of **Programator pogodowy** (Weather compensation programmer) is set in **Parametry użytkownika – Regulator temperatury kotła** (User parameters - Boiler temperature regulator).

Temp.dla -10 °C 70 °C

Temp.dla +10°C 40 °C

d)Programator pokojowy (Room programmer)

The programmer selects boiler temperature depending on the conditions in the

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room. Room temperature programmer requires installation of internal temperature sensor. Activation of **Programator pokojowy** (Room temperature thermostat) is set in **Parametry użytkownika – Regulator temperatury wewnętrznej** (User parameters - Internal temperature regulator): **Pokojowy (Room)**.

If internal temperature exceeds set value of the programmer, set temperature is reduced by the CH temperature decrease value. Additionally CH pump may operate in three (3) modes: Continuous, cyclic and OFF (after reaching set temperature in the room). CH pump operation mode after reaching set temperature is set in **Ustawienia zaawansowane** (Advanced settings): **Tryb pracy pompy CO dla reg. wewnętrznego** (CH pump operation mode for internal regulator). For cyclic CH pump operation, operation and idle time are set with the following parameters: **Czas pracy pompy CO dla reg.wew** (CH pump operation time for internal temperature regulator) and **Czas postoju pompy CO dla reg.wew.** (CH idle time for internal temperature regulator). The settings also apply to active thermostat.

Item	Parameter	Description
1	Temperatura dzienna (Day temperature)	Day temperature maintained in the room. <i>Range [5°C to 35°C]</i>
2	Temperatura nocna (Night temperature)	Night temperature maintained in the room. <i>Range [5°C to 35°C]</i>
3	Histereza (Hysteresis)	The parameter determines value by which the internal temperature is reduced, to start the room heating procedure. <i>Range [0.1°C to 2.0°C]</i>
4	Tablica dobowy (Daily schedule)	Daily schedule to set time intervals for day and night temperature. Upper dash – day temperature, bottom dash – night temperature.

Temp. dzienna 21 °C

Temp. nocna 17 °C



e) Programator pompy cyrkulacyjnej (Circulation pump programmer)

In case of DHW circulation pump activation, it is possible to set time intervals for pump activation. Time intervals are defined in **Tablica dobowa** (Daily schedule - top dash - pump ON, bottom dash - pump OFF).

Item	Parameter	Description
1	Czas pracy pompy cyrkulacyjnej (Circulation pump operation time)	Parameter determines circulation pump operation time (operation - idle - operation - idle ...), if pump operation is set in the programmer (top bar). Range [1min to 60min]
2	Czas postoju pompy cyrkulacyjnej (Circulation pump idle time)	Parameter determines circulation pump idle time (operation - idle - operation - idle ...), if pump operation is set in the programmer (top dash). Range [0min to 60min]
3	Temperatura załączenia pompy cyrkulacyjnej (Circulation pump activation temperature)	Minimum DHW temperature above which the circulation pump may operate. Circulation pump is stopped after DHW temperature is reduced by 0.5 °C. Range [25°C to 60°C]
4	Praca auto w trybie ręcznym (Automatic operation in manual mode)	Parameter enables automatic circulation pump operation in manual mode. Range [TAK (Yes)/NIE (No)]
5	Tablica dobowa (Daily schedule)	Weekly daily schedule to set time circulation pump operation intervals.

f) Programator Auto-Lato (Automatic summer programmer)

If **Auto-Lato-prog** (Automatic summer programmer) mode is set for **Tryb Pracy CWU** (DHW operation mode) you can set intervals to activate summer or winter mode. Time intervals are defined in **Tablica tygodniowa** (Weekly schedule - top dash - summer mode, bottom dash - winter mode).

g) Programator ogrzewania podłogowego (Floor heating programmer)

It selects floor heating temperature depending on the conditions in the room. Programmer requires floor heating temperature sensor installation. **Programator podłogowy** (Floor heating programmer) is activated in



Parametry zaawansowane (Advanced parameters) – **Funkcja pompy mieszającej** (Mixing pump function): **Podłogowa** (Floor heating).

Item	Parameter	Description
1	Temperatura dzienna (Day temperature)	Day temperature maintained in the room. <i>Range [5°C to 35°C]</i>
2	Temperatura nocna (Night temperature)	Night temperature maintained in the room. <i>Range [5°C to 35°C]</i>
3	Histereza (Hysteresis)	The parameter determines value by which the temperature in a room with floor heating is reduced, to start the room heating procedure. <i>Range [0.2°C to 5.0°C]</i>
4	Czas pracy pompy podłogowej (Floor heating pump operation time)	If temperature is reached, floor heating pump switches to cyclic operation mode. The parameter determines floor heating pump operation time. <i>Time set to 0 stops the pump after reaching set floor heating temperature. Range [0min to 60min]</i>
5	Czas postoju pompy podłogowej (Floor heating pump idle time)	If temperature is reached, floor heating pump switches to cyclic operation mode. The parameter specifies floor heating pump idle time. <i>Time set to 0 results in continuous pump operation, even if set floor heating temperature is reached. Range [0min to 60min]</i>
6	Tablica dobowa (Daily schedule)	Daily schedule to set time intervals for day and night temperature. Upper dash – day temperature, bottom dash – night temperature.

5.4.Internet

It enables parameter setting to connect with the controller via Internet. It requires configuration of appropriate parameters.

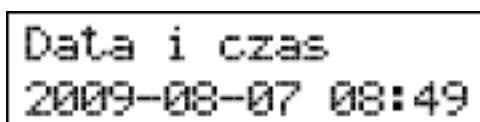
Item	Parameter	Description
1	Adres IP (IP address)	Controller IP address as displayed in the local network
2	Maska (Mask)	Subnet mask used in a local computer network.
3	Brama (Gateway)	The default gateway used in a local computer network.
4	Zdalny serwer (Remote server)	Shall the controller connect with a remote server? Remote server enables controller connection via website, to change parameters, view graphs, and to carry out general controller maintenance. Public IP address is not required for the proxy server. More on http://eSterownik.pl Zdalny dostęp (Remote access) tab
5	Adres serwera (Server address)	Proxy server IP address. Server address is always available on http://eSterownik.pl during registration of



Item	Parameter	Description
		a new controller – Zdalny dostęp tab
6	Port serwera (Server port)	Proxy server port. Server port is always available on http://eSterownik.pl during registration of a new controller – Zdalny dostęp tab
7	Identyfikator (Identifier)	Unique controller identifier. Identifier is generated automatically during registration of a new controller on http://eSterownik.pl website – Zdalny dostęp tab
8	Reset hasła (Password reset)	Setting default passwords for website access. Read only - user: user , password: user Administrator rights - user: admin , password: admin

5.5.Data i czas (Date and time)

Time settings ensuring correct programmer operation. After selecting **Data i czas** (Date and time), a window with time set for the controller is displayed.



Change time with up and down arrows. Select date items with right and left arrows.

5.6.Parametry zaawansowane (Advanced parameters)

Used for boiler installation settings.

Item	Parameter	Description
1	Typ kotła (Boiler type)	Feeder operation mode (combustion algorithm): - Retorta-ręczny (Retort - manual) – retort feeder, manual combustion process. Combustion parameters available in Parametry spalania (Combustion parameters) menu. - Retorta-grupowe (Retort - group) – retort feeder, semi-automatic combustion process. Combustion parameters available in Parametry spalania (Combustion parameters) menu. - Tłok-auto (Ram-auto) – ram feeder, semi-automatic combustion process. Combustion parameters available in Parametry spalania (Combustion parameters) menu. - Tłok-ręczny (Ram-manual) – ram feeder, manual



Item	Parameter	Description
		combustion process. Combustion parameters available in Parametry spalania (Combustion parameters) menu. - Zasypowy (Hopper) – combustion at an emergency grate. Combustion parameters available in Parametry spalania (Combustion parameters) menu.
2	Minimalna temperatura CO (Minimum CH temperature)	User defined CH set temperature limit. This parameter also defines CH temperature, at which CH pump is activated. CH pump activation threshold reduced by 2 °C from set value. CH pump deactivation 4 °C below set value. <i>Range [35°C to 60°C]</i>
3	Maksymalna temperatura CO (Maximum CH temperature)	User defined CH set temperature limit. This parameter also defines CH temperature, at which CH pump is activated (e.g. when room thermostat algorithm forces CO pump to deactivate). <i>Range [65°C to 80°C]</i>
4	Histereza CO (CH hysteresis)	Central heating temperature hysteresis. Temperature below set temperature minus Histereza CO (CH hysteresis) – switching to heating mode. <i>Range [0.2°C to 5.0°C]</i>
5	CH pump operation mode for internal regulator	Parameter determines CH pump operation with active <i>room thermostat/thermostat</i>. After room temperature is reached, CH pump may operate in three (3) modes: - Ciągła (Continuous) – always ON – reduced CH set temperature after reaching set temperature in the room – CH pump does not stop. - Cykliczna (Cyclic) – CH pump operates in cyclic mode with set operation/idle time intervals - parameter 5 and 6 - after reaching set temperature in the room. - Wyłączona (OFF) – CH pump is stopped after reaching set temperature in the room.
6	Czas pracy pompy CO (CH pump operation time)	Parameter determines CH pump operation time for active room temperature thermostat/thermostat and determined CH pump cyclic operation - parameter 5. <i>Range [1min to 99min]</i>
7	Czas postoju pompy CO (CH pump idle time)	Parameter determines CH pump idle time for active room temperature thermostat/thermostat and determined CH pump cyclic operation - parameter 5. <i>Range [1min to 99min]</i>
8	Funkcja wyjścia pompy CWU (DHW pump output function)	DHW pump operation mode: - CWU (DHW) – DHW pump is used as a pump for filling the domestic hot water tank - CWU + miesz (DHW + mixing) – DHW pump functions as a pump for filling the domestic hot water tank and mixing pump and a mixing pump returning



Item	Parameter	Description
		the water to the boiler through DHW exchanger (short circuit). This function enables use of mixing pump output to connect circulation pump or floor heating pump.
9	Histereza CWU (DHW hysteresis)	DHW temperature hysteresis. Above set DHW temperature – deactivated DHW pump, below DHW set temperature minus Histereza CWU (DHW hysteresis) – DHW pump is activated. <i>Range [0.2°C to 5.0°C]</i>
10	Podbicie temp. CO przy priorytecie CWU (CH temp. increase in DHW priority mode)	Parameter determines °C, the CH set temperature is increased in Priorytet CWU (DHW priority) mode if water requires heating. <i>Range [0°C to 10°C]</i>
11	Temperatura zewnętrzna dla Auto-Lato (External temperature for automatic summer mode)	External temperature, at which the controller switches from summer to winter mode. For correct AutoLato-temp. (Automatic summer - temperature) mode operation, external temperature sensor is required, and Tryb pracy CWU (DHW operation mode): AutoLato-temp (Automatic summer temperature) set. <i>Range [0°C to 25°C]</i>
12	Histereza Auto-Lato (Automatic summer mode hysteresis)	<i>Parameter determines hysteresis of switching from summer to winter mode in Auto-Lato-temp. (Automatic summer - temperature) mode. <i>Range [0.5°C to 5.0°C]</i></i>
13	Funkcja pompy mieszającej (Mixing pump function)	Pump operation mode selection: - pompa mieszająca (mixing pump) – function maintaining minimum return water temperature - pompa cyrkulacyjna (circulation pump) – function ensures continuous circulation of domestic hot water from the heater to the tap - pompa podłogowa (floor heating pump) – floor heating function. Temperature sensor connected to the terminals: Floor heating sensor.
14	Niezależna praca pompy mieszającej (Independent mixing pump operation).	Items: - Nie (No) – Normal mixing pump operation depending on CH pump operation - Tak (Yes) – Mixing pump operates irrespective of CH pump - mixing pump operation in summer mode available (with CH pump stopped).
15	Temperatura załączenia pompy mieszającej (Mixing pump activation temperature)	Minimum return water temperature, below which the mixing pump is activated. Mixing pump is deactivated, if return temperature is increased by 0.5 °C. <i>Range [25°C to 60°C]</i>
16	Maksymalna temp. podajnika (Maximum feeder temperature)	Setting maximum feeder temperature. Feeder alarm is activated above set temperature. Fuel is removed from the furnace if alarm is activated. Fuel removal time is set with the next parameter. <i>Range [40°C to</i>



Item	Parameter	Description
		110°C]
17	Czas wyrzutu paliwa (Fuel removal time)	Parameter determines feeder activation time after Zapłon paliwa w podajniku (Fuel ignition in the feeder) alarm is activated . Fuel is removed from the furnace to the ash pan for a set time. <i>Range [1min to 10min]</i>
18	Algorytm wygaszenia kotła (Boiler put out algorithm)	Boiler put out algorithm in sustain and heating mode, based on flue gas temperature: - Nieaktywny (Inactive) - boiler put out detection deactivated in heating and sustain mode. In case the boiler is put out, no alarm is generated and operation is not stopped. - Tylko grzanie (Heating only) - boiler put out detection in heating mode only. - Tylko podtrzymanie (Sustain only) - boiler put out detection in sustain mode only. - Aktywny (Active) - boiler put out detection in heating and sustain mode.
19	* Alarm zewnętrzny * (External alarm)	Potential free contact connected to <i>Alarm zewnętrzny</i> (External alarm) input signalling external events in the boiler room, depending on connected device, e.g. hopper hatch open, smoke detector active or increased carbon monoxide concentration.
20	* Alarm zewnętrzny * – Czas opóźnienia (External alarm – Delay time)	Delay time, after which the external alarm is generated. <i>Range [0s to 600s]</i>
21	* Alarm zewnętrzny * –Inwersja wejścia (External alarm – Input inversion)	Possibility to set a reverse logic for alarm input. <i>Range [TAK (Yes)/NIE (No)]</i>
22	* Alarm zewnętrzny * –Zatrzymanie po alarmie (External alarm – Stop after alarm)	The controller can be stopped (switching from manual mode with feeder and blower OFF) after external alarm is generated. <i>Range [TAK (Yes)/NIE (No)]</i>
23	Zapis ustawień serwisowych (Save service settings)	Restore all controller settings as service settings. In Parametry użytkownika (User parameters) menu the parameters can be restored: <i>Range [TAK (Yes)/NIE (No)]</i>

6.Alarms

Before alarm is generated, it is indicated with a red LED on the control panel. Select alarm with up and down arrow (↓↑), read the message, diagnose and remove the fault and press **OK** to confirm. In case of more than one alarm, scroll using left and right arrow (←→). First line shows number of alarms



generated, second shows the alarm message.

Alarm 1/3
Temp CO > 90

Item	Alarm name	Description
1	Termik CO (CH thermal overload relay)	Activation of thermal overload relay - protection against water boiling in the boiler. After alarm occurs, wait until the temperature is reduced below 50°C to acknowledge the alarm.
2	Temp. CO > 90 °C (CH temp. >90 °C)	90°C exceeded on the boiler
3	Uszk. cz. CO (CH sensor failure)	CH sensor failure
4	Uszk. cz. CWU (DHW sensor failure)	DHW sensor failure
5	Uszk. cz. powrotu (Return sensor failure)	Damaged return sensor
6	Uszk. cz. wew. (Internal sensor failure)	Internal sensor failure
7	Uszk. cz. zew. (External sensor failure)	External sensor failure
8	Uszk. cz. podajnika (Feeder sensor failure)	Feeder sensor failure
9	Uszk. cz. spalin (Flue gas temp. sensor failure)	Flue gas temperature sensor failure
10	Uszk. cz. podłogówki (Floor heating sensor failure)	Floor heating sensor failure
11	Zapłon paliwa (Fuel ignition)	Fuel ignition in the feeder – exceeding set temperature in the feeder – set Czas wyrzutu paliwa [min] (Fuel removal time) parameter for this alarm
12	Wysoka temp. podajnika (High feeder temperature)	Excessive feeder temperature – indicates high feeder temperature, without stopping the feeder. If temperature on the feeder increases by 5°C, Zapłon paliwa (Fuel ignition) alarm is activated.
13	Kocioł wygaszony (Boiler put out)	Boiler is put out – alarm in sustain and heating mode. Alarm is activated: - in heating mode - if flue gas temp. in 30 min. will not exceed 50 °C. Check boiler for impurities - sustain mode – in sustain mode, flue gas temperature will not rise by 5 °C. Incorrect sustain mode parameters
14	Wyczyść kocioł (Clean the boiler)	Boiler is dirty – check heat exchanger and flue for impurities



Item	Alarm name	Description
15	Wysoka t.spalin (High flue gas temperature)	Excessive flue gas temperature – check correct installation of boiler heat exchanger components
16	Konflikt adr.IP (Incorrect IP address)	Incorrect IP address – IP address is used by another device
17	Błąd pamięci EEPROM (EEPROM memory error)	Controller memory error – restore factory settings
18	Alarm zewnętrzny (External alarm)	KONT contact shorted on the controller board - universal alarm input
19	Pusty zasobnik (Hopper empty)	Low fuel level in the hopper – alarm does not stop boiler operation. It provides fuel combustion statistics
20	Długi czas krańcówki (Limit switch time too long)	Limit switch did not return to initial position in set time.
21	Nie zeszła krańcówka (Limit switch did not return)	Limit switch did not return in set time. Alarm generated, if after the ram activation, the limit switch did not return in set time. The situation may occur with feeder locked, deactivated feeder motor plug etc.

7.PC software

The controller is compatible with a PC, free **bruli.pl** updater provides controller software updates. The software can be used to update **bruli.pl** controller website. The website is stored on SD memory card. The PC is connected with cable included. USB/RS232 adapter is available for PCs without RS232 cable. The software is available on <http://bruli.pl>

7.1.Controller software update

Ensure the following to update the **bruli.pl** controller software:

- PC with Windows OS
- serial port or USB/RS232 adapter
- RS232 cable delivered with a controller
- latest software downloaded from <http://bruli.pl> **Wsparcie** (Support) tab: **6. Controller updater**

*Due to continuous development and improvements of **bruli.pl** controller, test*



software builds are regularly made available. Test builds include numerous amendments and new functions. Controller updater software is available on: <http://esterownik.pl/forum/posty,40>

To start software update in the controller, connect the PC with **RS232** cable, RS232/USB adapter is available if RS232 port is not available.



Fig. 11: RS232 connector



Fig. 10: RS232 cable

Start the updater software: **bruliUpdater_X.X.X.X.exe**

To start the controller software update, select RS232 communication port, to which the controller is connected. For RS232/USB adapter, check the port in Windows OS *Device manager*. If the controller is connected correctly, information on connection is displayed (bottom left corner of the Updater window).

Connect the controller and press: **Aktualizuj oprogramowanie** (Update software). Wait for the update to complete (information in Updated dialog box).

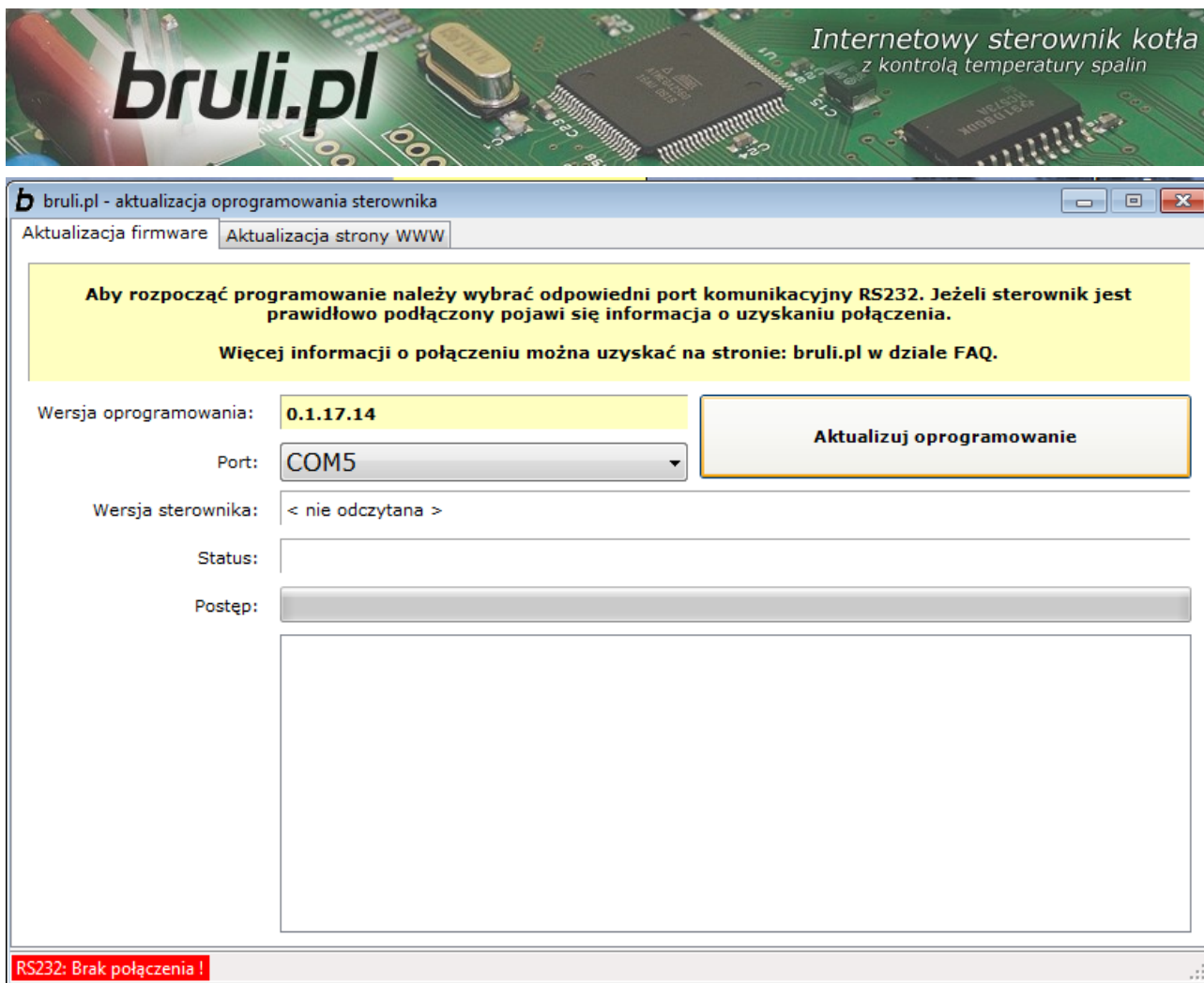


Fig. 12: Software update

Caution!

In case of update error, update is stopped and **Loading...** message is displayed on the controller:

1. Turn off the controller.
2. Run updater again.
3. Select RS232 port (if adapter is used, disconnect and reconnect USB)
4. Press software update button.
5. Status will change to: **Oczekiwanie na sterownik** (Waiting for controller)
6. Switch the controller ON.
7. Update process will start.



Try again if the first attempt did not succeed.

Update process does not allow controller failure due to software update.

Update website after the software update is completed.

Use the same software as used for the controller software update:

bruliUpdater.pl_X.X.X.X.exe and select: ***Aktualizacja strony www***

(Website update) tab - top Updater bar.

Connect the controller to the local Ethernet with RJ45 cable. The controller is assigned with a unique IP address, mask and gateway (*detailed description is indicated in item Setting local network parameters in the controller*).

Fill in the fields in the updater: Adres IP (IP address) - enter controller IP address. Enter administrator login and password (with proper rights) on the website (*default login: admin, password: admin*). Click the button: ***Sprawdź połączenie*** (Check connection). Connect the controller and click: ***Aktualizuj stronę WWW w sterowniku*** (***Update website in the controller***)

Exit the updater after the update is completed.

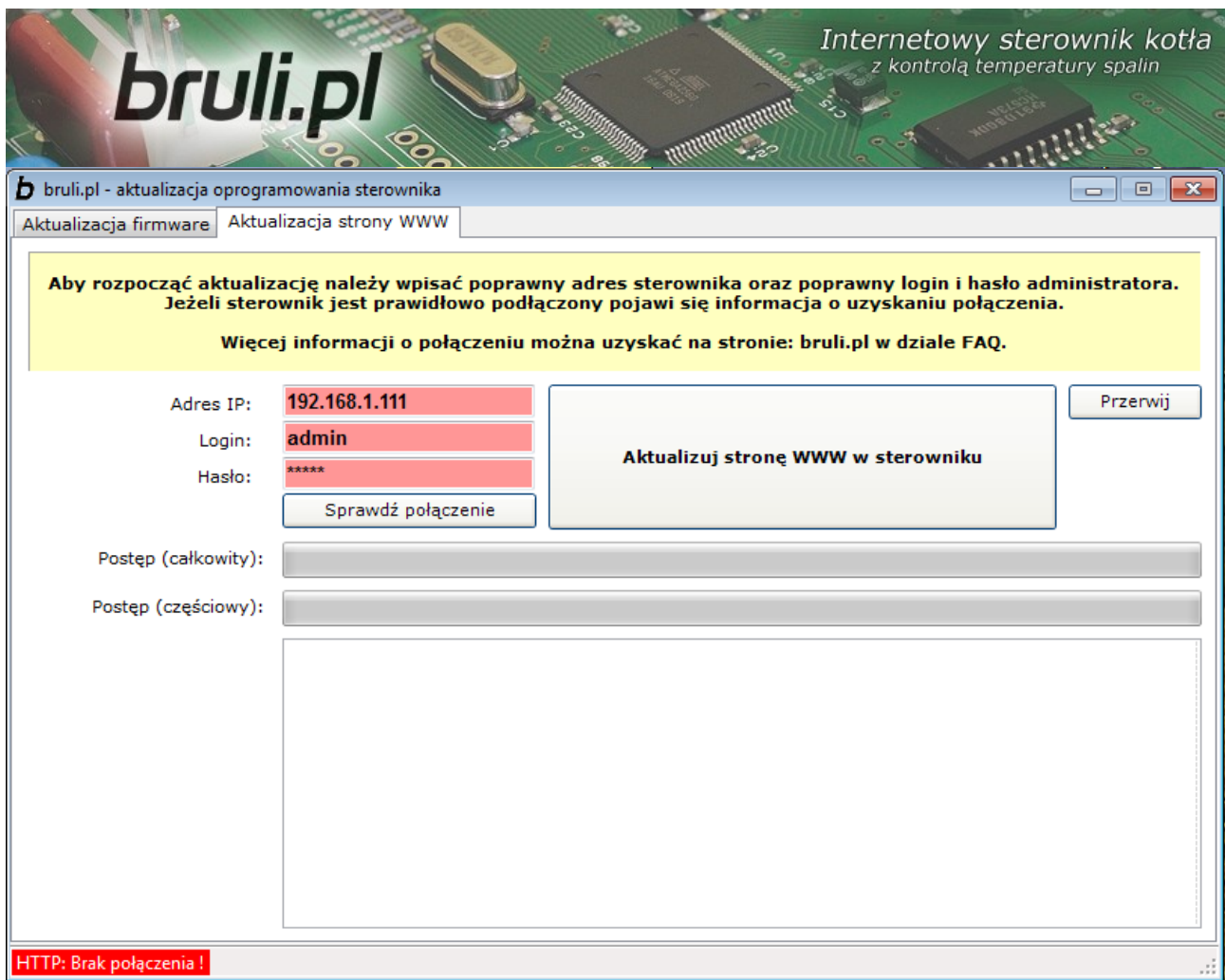


Fig. 13: Software update

Website can also be loaded from the .zip archive directly onto the SD card.

8.Website

bruli.pl controller features SD memory card and Ethernet module. Website stored on the memory card enables controller maintenance via an internet browser. The website allows user to modify operating parameters, view alarm and event history, display graphs with logged operation parameters and visualise current operation parameters.

To use website on **bruli.pl** controller, set Ethernet parameters in **Internet** (Internet) menu – **Adres IP** (IP address), **Maska** (Mask) and **Brama** (Gateway).

After setting parameters corresponding to the local network parameters, user can sign in by entering the IP address set in **Internet** (Internet) – **Adres IP** (IP address) menu.

Login and password are required to sign in on the website.



8.1. Controller connection to local network

The controller is connected to the local network in the same way you connect a PC. Use cable with two RJ45 connectors to a free router or switch socket. It is also necessary to set **adres IP** (IP address) **brama** (gateway) and **maska** (mask). Internet access is available via **Zdalny dostęp** (Remote access) service.

Depending on Internet provider and equipment:

Service type	Internet connection	Controller connection
DSL/ADSL link (Neostrada, Net24 etc.)	USB modem	Purchase router with ADSL modem
	Router (e.g. Livebox) with free RJ45 connector	OK
GPRS/UMTS/HSDPA connection (iPlus, blueconnect, Orange Free, Play Online etc.)	USB modem	Purchase GPRS/UMTS/HSDPA compatible router
	WiFi modem	Purchase Access Point
Cable link (chello, Vectra, Toya etc.)	Cable modem with a single RJ45 output	Purchase switch/router
Other internet provider	Modem connected to PC via RJ45	Purchase switch/router
	Switch/Router with free RJ45 socket	OK
	WiFi modem	Purchase Access Point
No Internet access (access via local network only)	No switch, no local network	Use switch. (no remote access service)
	Switch	OK (no remote access service)

Set three network parameters: **adres IP** (IP address) **brama** (gateway) and **maska** (mask).

8.2. Setting local network parameters in the controller

1. Click **Start**, and select **Uruchom** (Run)

2. Enter **cmd** and click OK.

3. Console is opened.

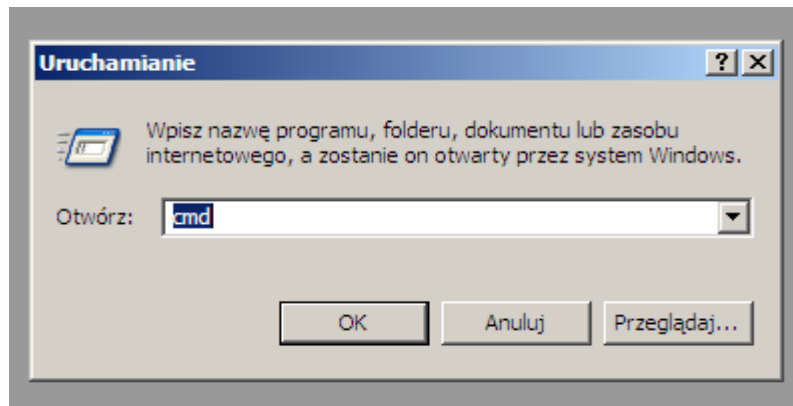


Fig. 14: Run window in Windows OS

4. Enter **ipconfig** and press **Enter**

The required data are circled:

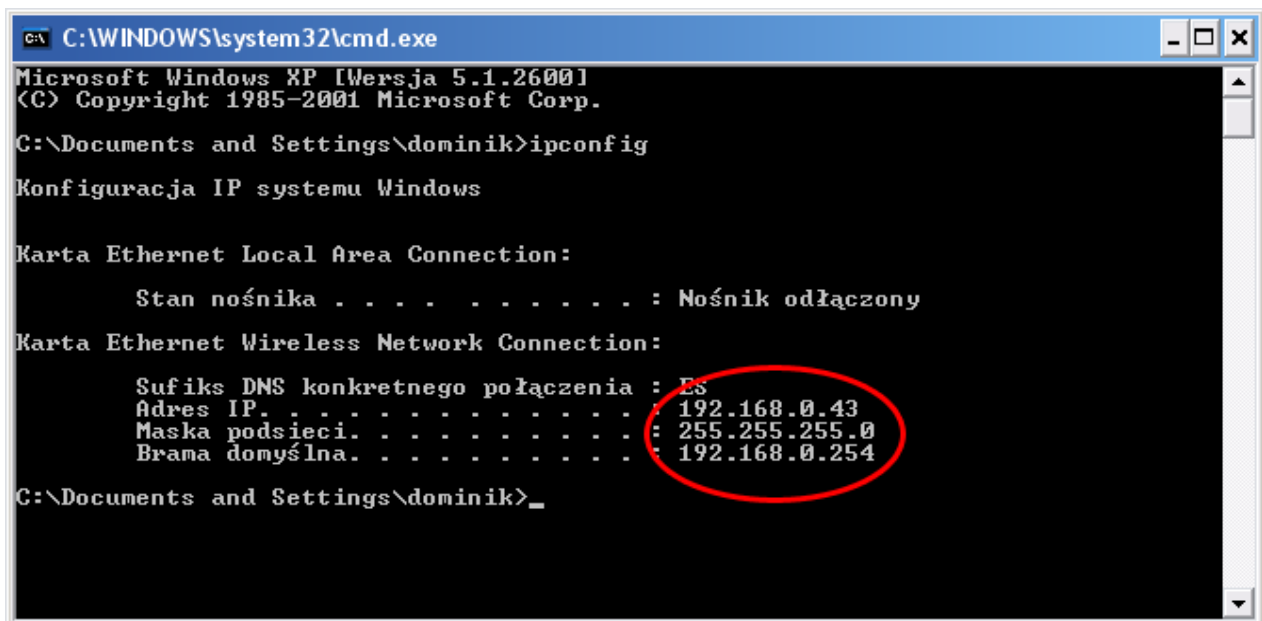


Fig. 15: Console window in Windows OS

5. Set identical **brama** (gateway) and **maska** (mask), **IP address** must be different.

Change the last IP address, for example *192.168.0.69*.

6. Check, if the IP address is not used by other devices:



Enter **ping 192.168.0.69** and press **Enter**

If similar message is displayed:

```
Odpowiedź z 192.168.0.1: bajtów=32 czas=2ms TTL=128
Odpowiedź z 192.168.0.1: bajtów=32 czas=2ms TTL=128
Odpowiedź z 192.168.0.1: bajtów=32 czas=2ms TTL=128
```

select other IP address, if the following message is displayed:

```
Upłynął limit czasu żądania.
Upłynął limit czasu żądania.
Upłynął limit czasu żądania.
```

continue.

7. Enter **gateway** and **mask** previously read in the console and selected **IP address**.

Select **Internet** menu on the control panel:

- press and hold **OK**
- press **up** and **down** to select **Internet** and press **OK**
- enter **adres IP** (IP address), **brama** (gateway) and **maska** (mask).

8. Connect the controller with twisted pair with RJ45 connector to a local network: :

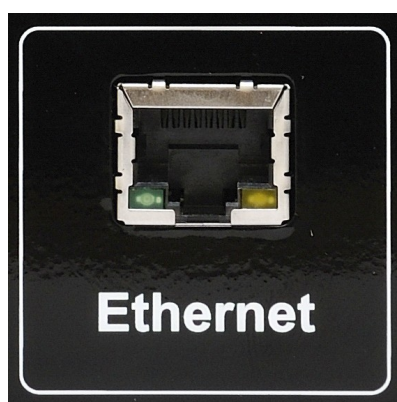


Fig. 16: Ethernet connector in **bruli.pl** controller

9. The controller shall automatically connect to the network. To enter **Panel**



WWW (Website panel), enter previously set controller IP address in the internet browser.

8.3. Website panel in the controller

Default sign in parameters:

–User with limited access (read only) – user: **user**, password: **user**

–User with administrator rights (parameter change) – user: **admin**, password: **admin**

Sign in parameters can be changed via website, see **Ustawienia** (Settings) → **Internet** (Internet).

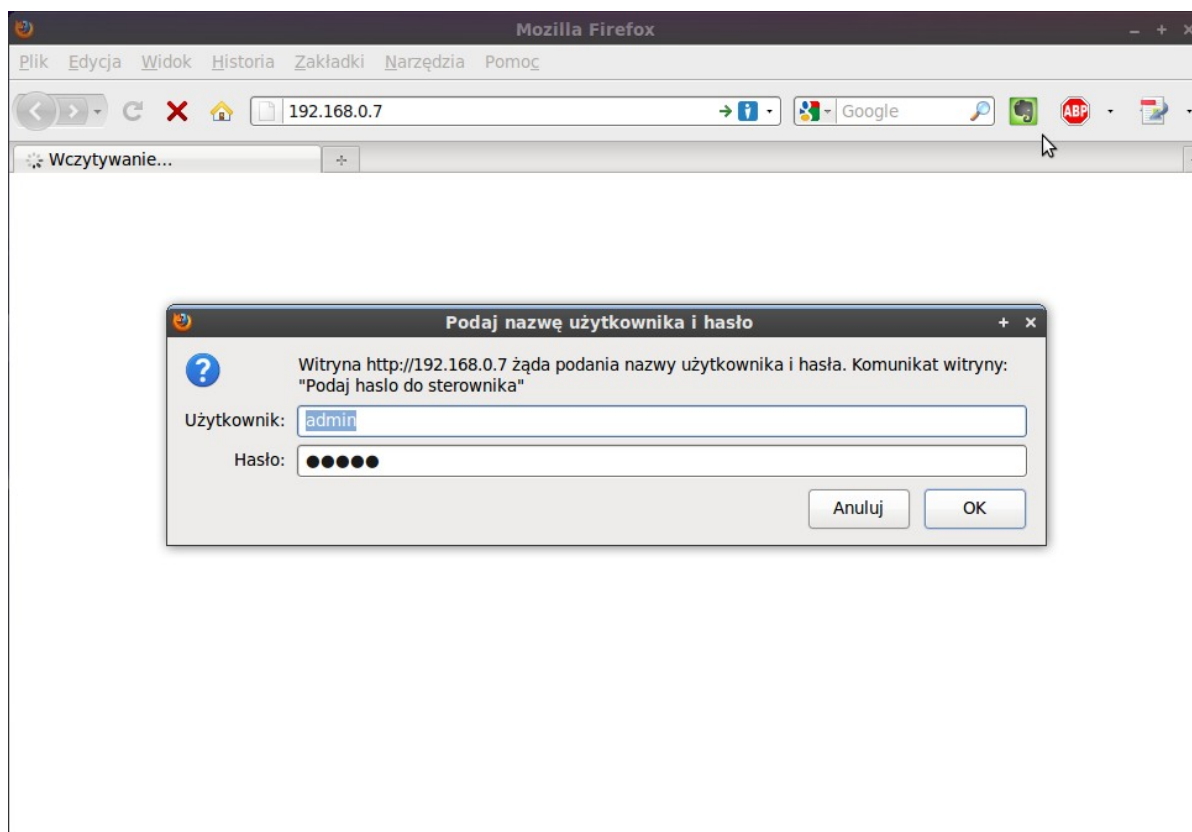


Fig. 17: Signing in on **bruli.pl** controller website

We recommend Mozilla Firefox or Google Chrome.



CH and DHW installation diagrams are displayed in the main page. Temperature sensor readouts are updated on-line. In the manual operation mode, the devices can be switched ON/OFF by clicking on the feeder, blower and pump icon. Select **TRYB AUTOMATYCZNY** (Automatic mode) to change the operation mode.

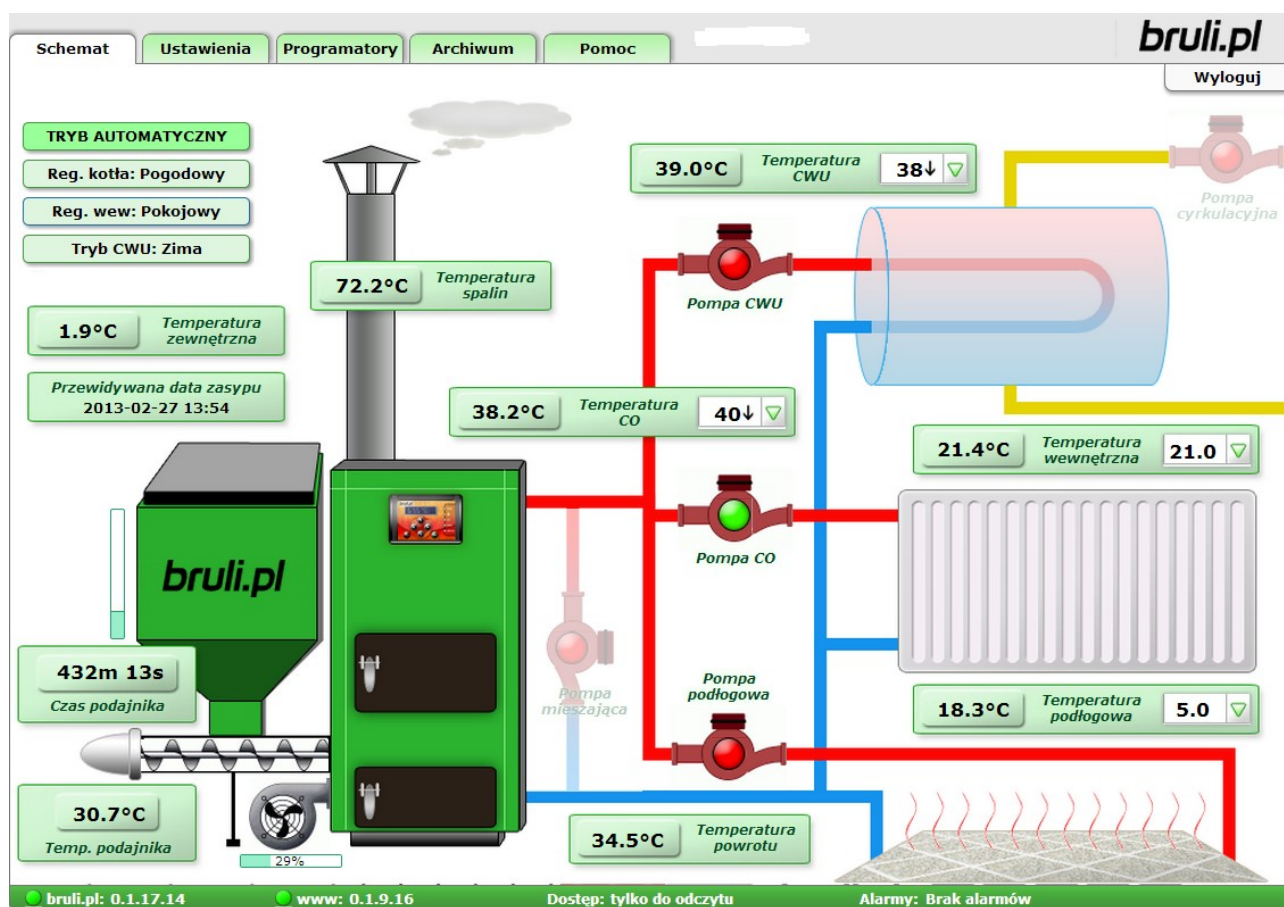


Fig. 18: **bruli.pl** controller main website window

All parameters set on the LCD panel are also available on **bruli.pl** controller website. Parameters can be changed by users with administrator rights.

Time and date, Ethernet parameters, and advanced parameters can be set and all temperature sensors can be calibrated via website.

bruli.pl
Internetowy sterownik kotła
z kontrolą temperatury spalin

Schemat
Ustawienia
Programatory
Archiwum
Pomoc
bruli.pl
Wyloguj

Parametry CO

Minimalna temperatura CO [°C]: 36 ▲▼

Maksymalna temperatura CO [°C]: 75 ▲▼

Histereza CO [°C]: 1.0 ▲▼

Tryb pracy pompy CO dla reg. wew.: Ciągła ▼

Czas pracy pompy CO dla reg. wew. [min]: 15 ▲▼

Czas postoju pompy CO dla reg. wew. [min]: 60 ▲▼

Wyjście pompy mieszającej

Funkcja pompy mieszającej: Mieszająca ▼

Temp. załączenia pompy mieszającej [°C]: 40 ▲▼

Niezależna praca pompy mieszającej: Nie ▼

Parametry CWU

Funkcja pompy CWU: CWU ▼

Histereza CWU [°C]: 1.0 ▲▼

Podbicie temp. CO [°C]: 2 ▲▼

Temp. zewnętrzna Auto-Lato [°C]: 5 ▲▼

Histereza Auto-Lato [°C]: 1.0 ▲▼

Inne

Typ kotła: Retortowy-grupowe ▼

Maksymalna temperatura podajnika [°C]: 60 ▲▼

Czas wyrzutu paliwa [min]: ▲▼

Okres rejestracji [sek]: co 60 sekund ▼

Algorytm wygaszenia kotła: Nieaktywny ▼

Alarm zewnętrzny

Czas opóźnienia [sek]: 30 ▲▼

Inwersja wejścia: Nie ▼

Zatrzymanie sterownika: Nie ▼

Zapisz
Odczytaj

bruli.pl: 0.1.17.14
www: 0.1.9.16
Dostęp: tylko do odczytu
Alarmy: Brak alarmów

Fig. 19: Advanced parameters window

Weekly schedule for CH programmer is shown below. Blue fields indicate reduced temperature, yellow fields indicate normal temperature. Click field to change colour and function. Press **Zapisz** (Save) to confirm each change in the website panel.

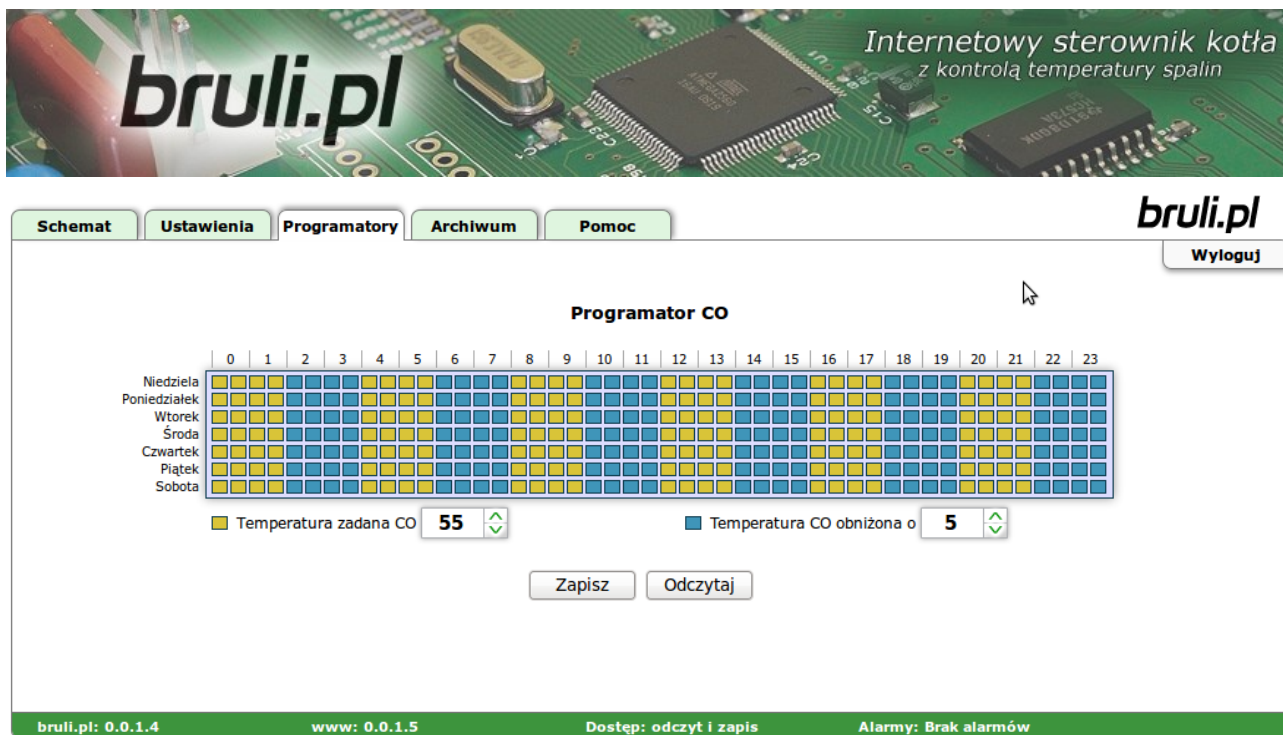


Fig. 20: Weekly schedule for CH programmer

bruli.pl controller records all operation parameters on the SD memory card. The data are logged every 60 seconds (10, 20 and 30 seconds interval can be set). All parameters can be displayed as graphs. The graphs may be zoomed in (mark the area from the left to the right side) or zoomed out (mark the area from the right to the left side). It is also possible to hide selected measurements - click measurement in the graph key.

bruli.pl controller logs Ethernet link data usage on SD memory card. Data usage may be viewed as graphs (send and received data). The graphs can be zoomed and specific measurements can be hidden.

bruli.pl controller logs all entries/website sign ins on the SD memory card. Connected hosts are also shown. Inputs can be viewed as list of hosts, input graphs by day, time or by most viewed hosts.

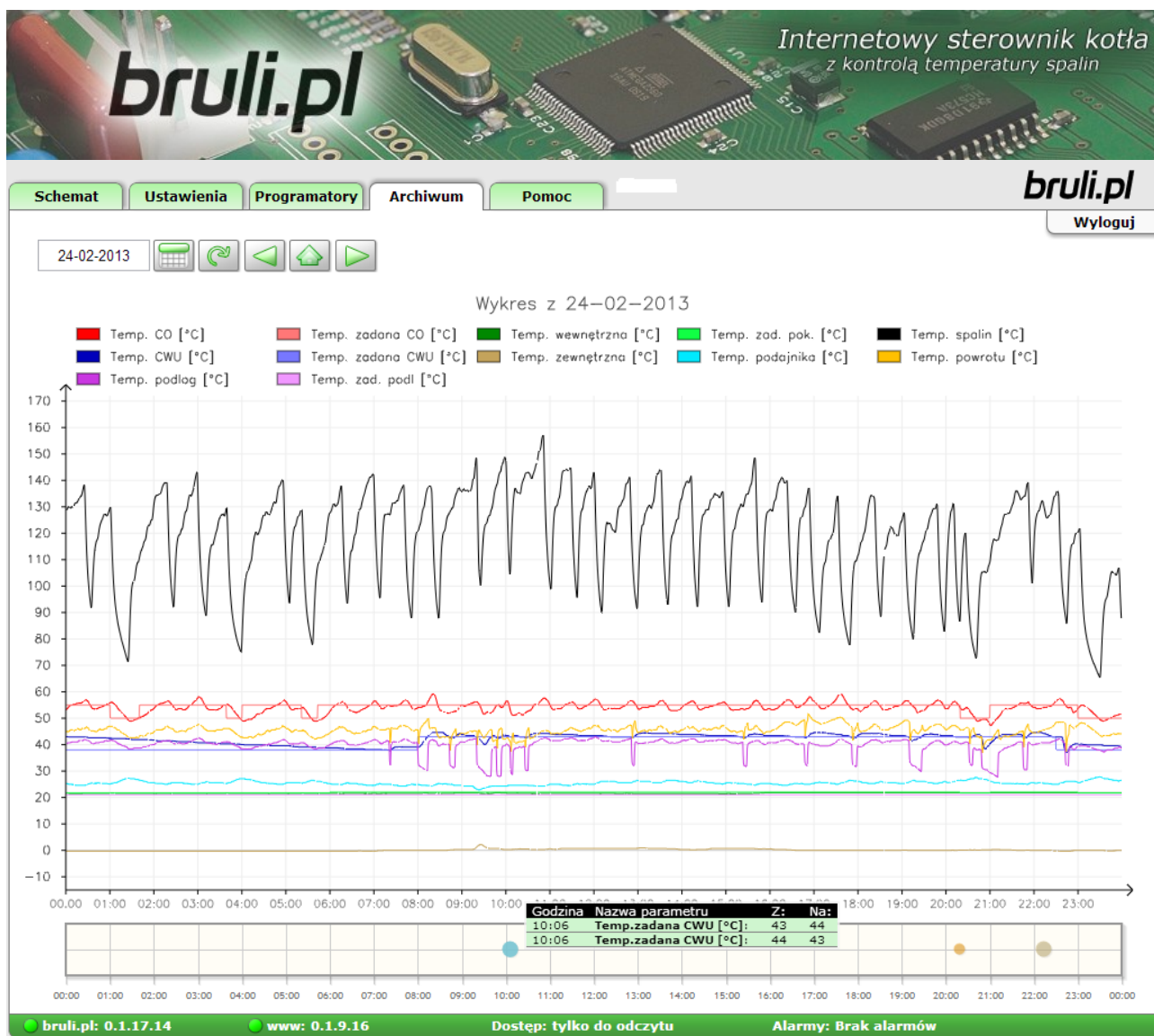


Fig. 21: Diagrams with logged boiler operation parameters

All alarms and events on the **bruli.pl** controller are also logged on the SD memory card.

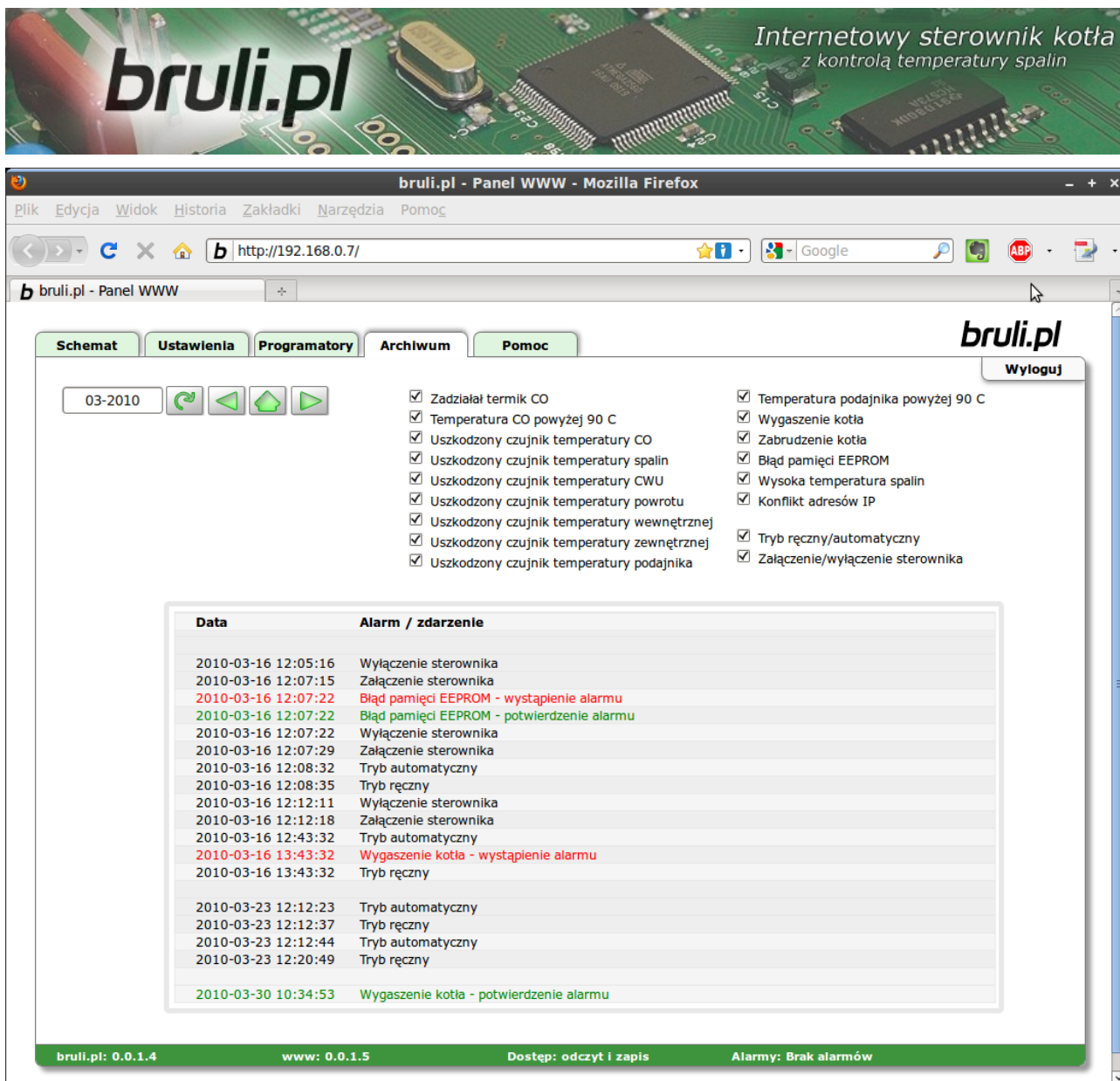


Fig. 22: Alarm and event window

8.4. Connecting controller to remote access service

Zdalny dostęp (Remote access) service is intended for users who purchased the controller and want easy access to boiler parameters via Internet. Service configuration is easy and does not require special experience.

The service helps with the following issues:

- no public IP address (mobile, cable network users etc.)
- no fixed IP address (ADSL users etc.)
- problems with router configuration



The service is free of charge.

1. The first step is to sign up on <http://eSterownik.pl> - click **Zarejestruj się** (Sign up).
2. After signing up, sign in, select MENU and click **Dodaj nowy sterownik** (Add new controller)
3. The controller must be connected to a local network. To connect, see User manual. Press **Dalej** (Next), if the website is available.



Fig. 23: Main **eSterownik.pl** website screen.

4. Main data

Nazwa (name) – any name, identifying the controller

Udostępnij sterownik publicznie (Share controller) - share controller on **eSterownik.pl** website with each visitor, read only (user may change



controller parameters)

Włącz powiadamianie na email (Email confirmations ON) – turns on e-mail confirmations for alarms

Email do powiadamiania (Confirmation email) – the confirmations and administrator messages will be send to the email entered at sign in

Synchronizacja czasu przez Internet (Synchronize time via Internet) – if this option is selected, time is automatically synchronized with the server clock.

5. Enter the following data

Identyfikator (Identifier) - Unique controller identifier

Adres IP serwera (Server IP address) - Proxy server IP address

Port serwera (Server port) - Proxy server port

6. The following data can be set on controller website panel. Enter website panel by entering controller IP address, administrator login and password (default: admin, admin). Select **Ustawienia** (Settings) -> **Internet** (Internet) -> **Zdalne połączenie z serwerem** (Remote server connection) and enter **Identyfikator** (ID), **Adres IP serwera** (Server IP address) and **Port serwera** (Server port) entered in remote access window, **Połączenie aktywne** (Active connection) is set to **TAK** (Yes):

7. Click **Zapisz** (Save).

The data can be set on the control panel:

- press and hold **OK**
- press **up** and **down** to select **Internet** and press **OK**
- enter the data in the control panel



Dodawanie nowego sterownika

Dane podstawowe

Nazwa:

Udostępnij sterownik publicznie: ☒
Sterownik publiczny jest dostępny do odczytu dla wszystkich. Pełne prawa ma tylko właściciel.

Udostępnij statystyki sterownika publicznie: ☒

Synchronizacja czasu przez internet: ☒

Dane do wpisania w sterowniku

Wejdź w sterowniku w menu "Internet" i wpisz następujące dane:

Identyfikator:

Adres IP serwera:

Port serwera:

Powiadamianie email

Włącz powiadamianie na email: ☐

Włącz powiadamianie na email: ☐

Włącz powiadamianie na email: ☐

Powiadamianie SMS - Stan konta SMS : 50

Prosimy wpisać tylko 9 cyfr, bez dodawania 48 lub +48

Włącz powiadamianie SMS na numer: ☐

Włącz powiadamianie SMS na numer: ☐

Włącz powiadamianie SMS na numer: ☐

Wybierz alarmy wysyłane SMSem

- | | |
|--|--|
| ☐ Zadziałał termik CO | ☐ Temp.CO powyżej 90 °C |
| ☐ Uszkodzony czujnik CO | ☐ Uszkodzony czujnik Spalin |

Fig. 24: Main data when adding new controller

8. Fill in the remaining fields – **Miejsce instalacji** (Installation place) and



Dane dodatkowe (Additional data) if required. The data facilitate technical support using our **FORUM**.

9. The following message is displayed:

Dodawanie nowego sterownika

1. Przejdź do zakładki "Ustawienia > Internet > Zdalne połączenie z serwerem" w Panelu WWW sterownika.
2. Ustaw następujące dane:

Zdalne połączenie z serwerem	
Połączenie aktywne	Tak
Identyfikator	D86B2714F7
Adres IP serwera	178.33.55.29
Port serwera	27854
Zapisz Odczytaj	

Kliknij "Zapisz" w Panelu WWW

3. Upewnij się, że sterownik jest podłączony do internetu oraz, że wpisałeś poprawnie powyższą konfigurację.

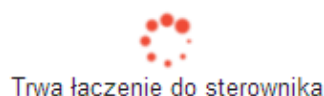


Fig. 25: Form for entering remote access parameters in the controller

10. User is informed about the correct connection with the controller.

The connection may take 5 to 60 seconds. After the controller is connected, a blue icon is displayed by the controller on **Twoje sterowniki** (Your controllers) list:



Lista Twoich sterowników

Sterownik	Nazwa	T.CO / zadana	T.CWU / zadana	Alarmy
eCoal.pl	Seba - eCoal.pl	25.7°C / 50.0°C	25.7°C / 45.0°C	1 alarm
bruli.pl	Zdzisław Sęczkowski - dom	40.6°C / 42.0°C	37.7°C / 38.0°C	

Fig. 26: List of controllers connected

If there are issues with the controller connection, check the connection with local network (**ping** command or local sign in via internet browser) and connecting local network to the Internet. Check if data in the controller are correct.

8.5. Sharing controller with other user

This option allows to share the controller with other users. You can share the controller with other users or with a service centre. It will help with troubleshooting. The service may view logged boiler operation data.

1. Sign in on **eSterownik.pl**
2. Select **Zdalny dostęp** (Remote access) -> **Twoje sterowniki** (Your controllers)
3. Click selected controller on the list
4. Click **Udostępnij** (Share)
5. The following screen is displayed:

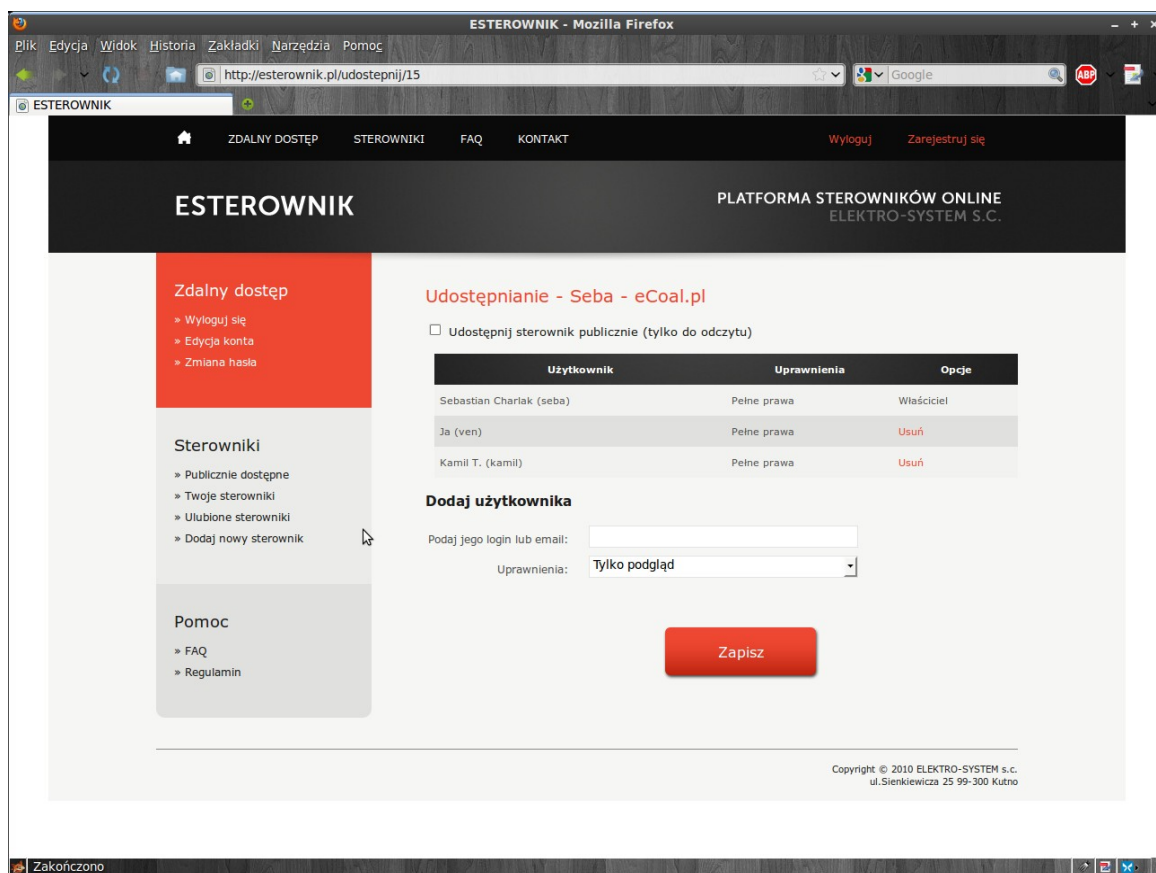


Fig. 27: Controller sharing

6. Enter login or email of the user, you want to share the controller with in **Dodaj użytkownika** (Add user) field. Select user rights: **Tylko podgląd** (Read only) – only parameter readout is possible, user may not change any parameters or control the controller.

Pełne prawa (Administrator rights) – read and store parameters, user may control the boiler and modify all controller parameters.

7. Users with specific rights can find the controller in **Twoje sterowniki** (Your controller) tab



Declaration of Conformity

ELEKTRO-SYSTEM s.c., with registered place of business at ul. Sienkiewicza 25, Kutno, declares that the product identified as:

***bruli.pl* Internet boiler controller**

is in conformity with the provisions of the following European directives:

- Directive 2006/95/EC of the European Parliament and of the Council on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
- Directive 2004/108/EC of the European Parliament and of the Council on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC

Compliance with these directives is safeguarded by respecting the following standards:

PN-EN 60730-2-9:2006 in conjunction with PN-EN 60730-1:2002 + A1:2008 + A2:2009 + A12:2004 + A13:2005 + A14:2006 + A15:2009 + A16:2009 + Ap1:2007

IEC 60730-2-9:2008 (Third Edition) in conjunction with IEC 60730-1:1999 (Third Edition) + A1:2003+ A2:2007

Last two digits of the year in which the CE marking was affixed: **'10**

This declaration does not represent any warranty of the properties within the meaning of the Product Liability Act. Safety provisions listed in the User Manual are to be followed.

According to the Low Voltage Directive (LVD), devices with the CE mark should be installed and connected according to the user manual and the provisions of the Electromagnetic Compatibility Directive.

ELEKTRO-SYSTEM s.c.
Szef Firmy - Wspólnik
Edward Stasiak

Kutno, 07/10/2010