PAMEL

PRS4

User manual

Cheeses • yogurts • vat processes

Screen by screen

26 programs with sequence of steps

First start-up and your own settings

English • 1.1

For PRS4 0.5 software

7 November 2026

Release of software for testing. Scope and limitations: page 4.

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Where to look for information

Principle of operation and preparation 4

Home screen and menu 7

Selecting a program and your own banks 10

Stages: editing and saving 13

START, DALEJ, PAUZA, STOP and LIVE 18

Stage modes, mixer and ranges 21

Power regulation and autotuning 26

Probes and Wi-Fi connection 30

Language, service and update 34

Output testing and touch calibration 37

Messages and abbreviation of temperature setting 40

Local site WWW and CLOUD 42

First yogurt step by step 50

Factory programs: reading rules 52

Problems, alarms and power outages 79

Data, history, cleaning and help 83

Warranty conditions 87

Select a product

Natural yogurt	**53**
Greek yogurt	**54**
Labneh - strained yogurt	**55**
Cultured kefir	**56**
Yogurt - incubation	**57**
Sour cream	**58**
Crème fraîche	**59**
Fresh rennet cheese	**60**
Quark	**61**
Chèvre	**62**
Fromage blanc	**63**
Cream cheese	**64**
Cottage cheese	**65**
Paneer	**66**
Queso blanco	**67**
Ricotta from milk	**68**
Whey ricotta	**69**
Mascarpone	**70**
Feta - vat phase	**71**
Gouda - vat phase	**72**
Cheddar - vat phase	**73**
Mozzarella - vat phase	**74**
Halloumi - vat phase	**75**
Camembert - vat phase	**76**
Pasteurization 65 °C / 30 min	**77**
Own program	**78**

What is PRS4 used for?

PRS4 carries out subsequent stages of work in the vat: heats the product, maintains the temperature, controls the mixer and opens the cooling water valve. You select the program, check its settings and start the process.

One probe measures the temperature of the milk or other product. The second measures the temperature of the water jacket surrounding the tank. Both measurements are required for the controller to operate.

When prompted to add cultures or rennet, or to cut the curd, carry out the action yourself. Then press DALEJ. The cooling valve supplies water to the jacket. It does not add water to the milk or wash the curd grains.

This manual describes the PRS4 0.5 software. The controller release is still marked as testing. The LCD drawings show the layout and captions reproduced from the program, with sample readings; are not photos of the device. WWW's views come from its interface. The illustrations show the Polish version of the interface. The button names in the text correspond to the inscriptions in the illustrations.

The programs are sets of settings to match the vat and cultures used. The controller does not measure pH, dosage additives and does not assess the product's suitability for consumption.

Important safety rules

Check the water in the jacket before heating. The controller does not measure its level. The heater requires independent protection against dry running and overheating.

Do not make electrical connections under voltage. Entrust the installation and selection of protection devices to a person with appropriate authorizations. The permissible load results from the designation of a specific device, not from the name of the output in the menu.

Protect your hands from the mixer. Stop the mixer and secure it against accidental operation before putting tools into the vat. Hot water, milk and steam may cause burns.

Do not flood the controller. Place it out of reach of splashes and steam. Do not wash the housing with a water jet. Keep the product probe and parts in contact with food clean.

STOP on the screen does not disconnect power to the installation. Use the power disconnect switch when working on cables. The lack of reading on the phone also does not mean that the device is turned off.

Before the first load, check the probe assignment, water flow direction and agitator operation. Don't start manufacturing if you don't know which socket powers which receiver.

What to prepare before the first launch

1. Check the markings of the cables and sockets: heater, stirrer, valve and probes. The heater heats the jacket and the valve allows cooling water to enter the jacket.

2. Place the PRODUKT probe in a location representative of the batch temperature. Don't lean it against a hot wall. Place the PŁASZCZ probe according to the vat design.

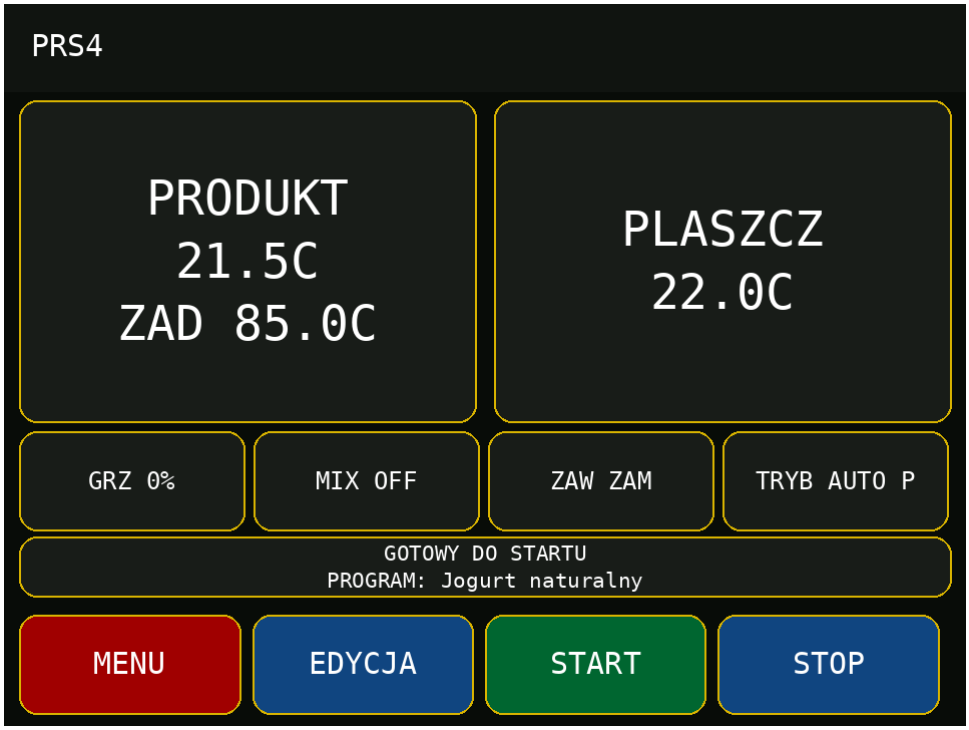
3. Check the filling of the jacket, the possibility of water drainage and the protection of the heater. Cold water must be able to flow when the valve is opened.

4. Turn on the controller. Wait for the temperature screen. A reading of "---" means there is no correct measurement. This is not the temperature 0°C.

5. In MENU → SONDY, assign both required probes. With a cold installation, the readings should be consistent with the actual temperatures at the measurement locations.

6. Choose a program, watch all its stages, check the mixing and jacket limit. Only then press START. The following pages show each of these activities.

Home screen: temperatures and operating status



LCD layout reconstructed from software 0.5; example readings.

PRODUKT is the temperature of the batch, and **PŁASZCZ** is the temperature of the water surrounding the tank. "ZAD" means the set temperature, i.e. the purpose of the controller. A large number is a measurement.

GRZ shows the heating power in percent. **MIX ON/OFF** means the mixer is on or off. **ZAW OTW/ZAM** means valve open or closed. **TRYB** shows the selected power regulation.

Under the tiles you will find the process status and the program name. Read both lines: the temperature itself does not tell you whether the program is running, it is waiting for confirmation or stopped.

MENU opens the settings. **EDYCJA** on STOP opens the stage list, and during operation the LIVE screen. **START** starts the process; its inscription changes during operation. **STOP** stops the process. Gray STOP is inactive at rest.

Colors, icons and additional probes



LCD layout reconstructed from software 0.5; example readings.

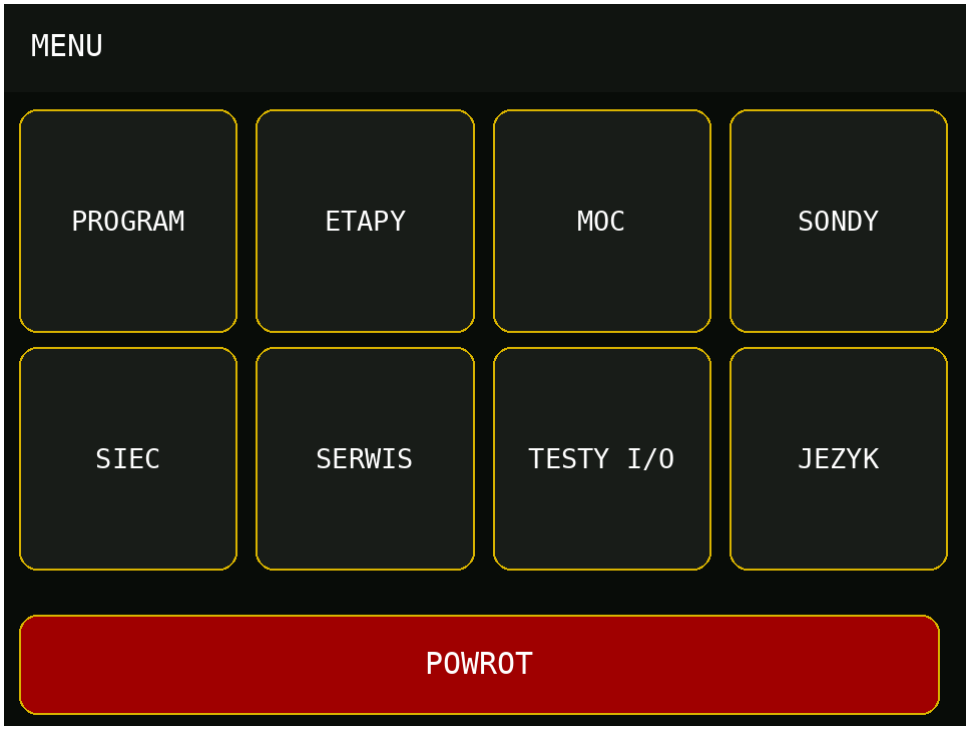
A green probe mark indicates a correct measurement. Red indicates a problem with the assigned probe and gray indicates no probe installed. "---" appears instead of the incorrect temperature.

When you add a third or fourth probe, the screen changes to four smaller fields. PRODUKT and PŁASZCZ are still mandatory. CHŁODZIWO and DODATKOWA are for additional viewing.

The Wi-Fi icon refers to the network, the connection symbol refers to the bus of additional modules, and the operation or alarm symbol shows the controller status. Wi-Fi connection is not confirmation of command receipt in CLOUD.

During operation, the START button shows the short name of the current stage. When DALEJ appears, the controller is waiting for your action. Gray list arrows indicate that there are no further items in that direction.

MENU: where to find the function you need



LCD layout reconstructed from software 0.5; example readings.

PROGRAM opens the recipe library and its own banks. **ETAPY** show the settings of the selected program. **MOC** is used to set the heater regulation.

SONDY are used to assign sensors. **SIEĆ** shows the connection and address of the controller page. **SERWIS** contains program version, device number and update.

TESTY I/O allow you to check selected outputs when the process is stopped. During operation, this tile changes into **LIVE**, i.e. the current adjustment.

JĘZYK opens the language selection. The bottom **POWRÓT** takes you to the home screen. Simply opening the menu does not stop a running program.

PROGRAM: product type selection



LCD layout reconstructed from software 0.5; example readings.

Enter MENU → PROGRAM. Select a group: FERMENTOWANE, SERY ŚWIEŻE, SERY KWASOWE, SERY PODPUSZCZKOWE or TECHNICZNE.

In the FERMENTOWANE group you will find, among others, yogurts, kefir and cream. TECHNICZNE include pasteurization and the "Own program" template. MOJE BANKI lead to ten places for storing your own settings.

You do not overwrite the factory program. If you want to change its settings permanently, save a copy in your bank. You can go back to the original by reselecting it from the library.

Changing the selected program is possible with STOP. Selecting a program doesn't start it yet.

Program list: select and check stages



LCD layout reconstructed from software 0.5; example readings.

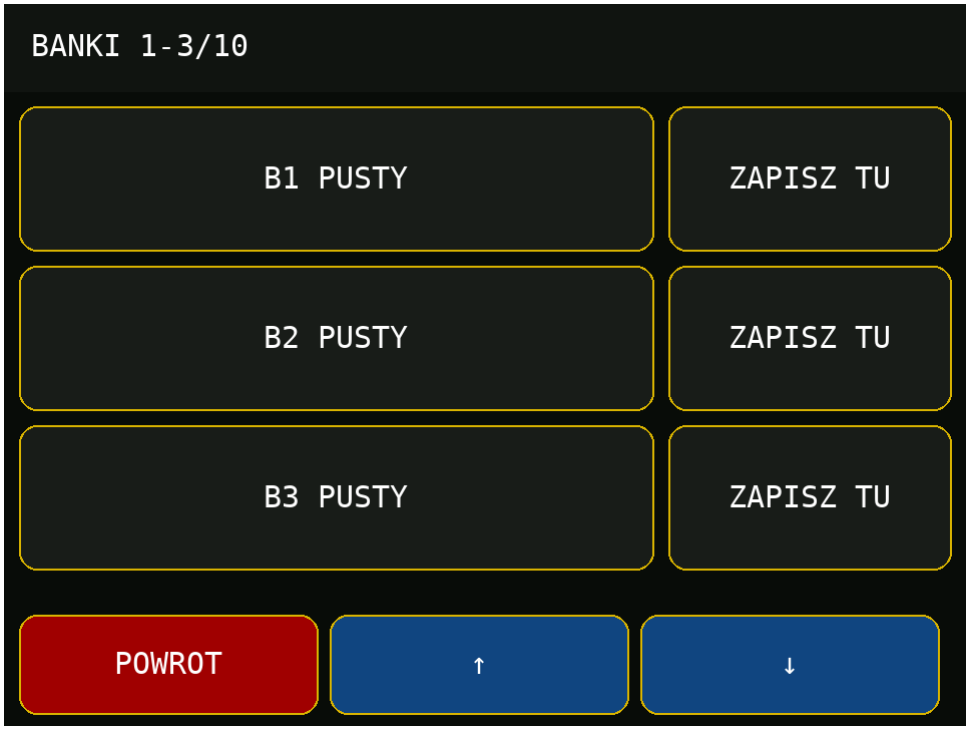
After entering a group, you can see up to three programs on the screen. Tap the name of the selected program. The controller will open its stages.

The down arrow shows the next items and the up arrow shows the previous items. GRUPY returns to the product type selection.

Before START, check all stages, including those further down the list. The incubation temperature, mixing during curd formation and final cooling are particularly important.

For a complete description of each of the 26 programs, see the "Factory Programs" section. There are separate controller activities and manual activities.

MOJE BANKI: saving your own program



LCD layout reconstructed from software 0.5; example readings.

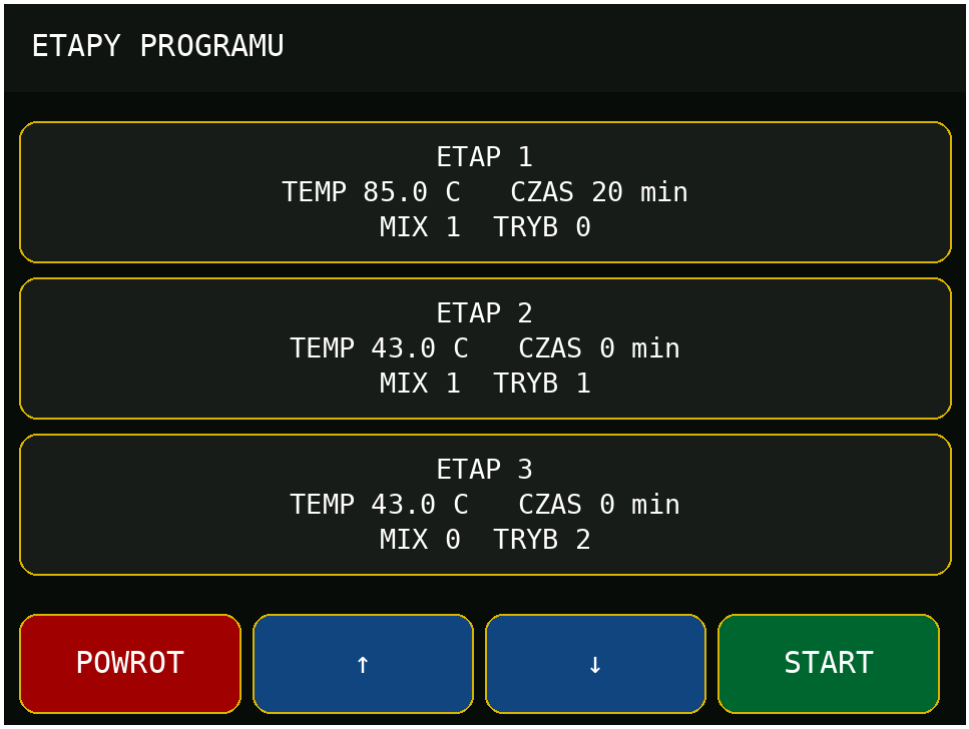
A bank is a place in the controller's memory for its own program. B1–B10 banks are available. You can store different variants of the same product in them.

To make a copy: first select the factory program. Then go to MENU → PROGRAM → MOJE BANKI and press ZAPISZ TU at the selected location. Read and confirm the message.

An entry to a seized bank replaces its current content. Please check the number and name before confirming. An empty bank is not a ready recipe and cannot be run.

To use a saved program, tap its name on the left. The right button of ZAPISZ TU is for copying, not for running.

ETAPY PROGRAMU: reading list



LCD layout reconstructed from software 0.5; example readings.

Enter via EDYCJA on the home screen or MENU → ETAPY. ETAP 1–8 specifies the position in the program. TEMP is the product temperature target, CZAS is the time in minutes, MIX is the mixing method, and TRYB is the operation type.

MIX: 0 = disabled, 1 = continuous, 2 = cyclical. TRYB: 0 = hold, 1 = cool, 2 = operator activity, 3 = incubation, 4 = gentle preheat, 5 = rest.

OFF / POMIN. indicates a disabled step. The time 0 minutes does not mean a shutdown: this stage may wait for the temperature or for your confirmation.

Tap a stage to edit it. The arrows scroll through the list. START starts the selected program after checking the startup conditions. POWRÓT rounds out the list.

Edit stage: what the fields mean



LCD layout reconstructed from software 0.5; example readings.

PRODUKT C is the temperature target, **CZAS MIN** is the stage time. **TRYB** determines when time counts and what the controller should do. Just setting the temperature is not enough.

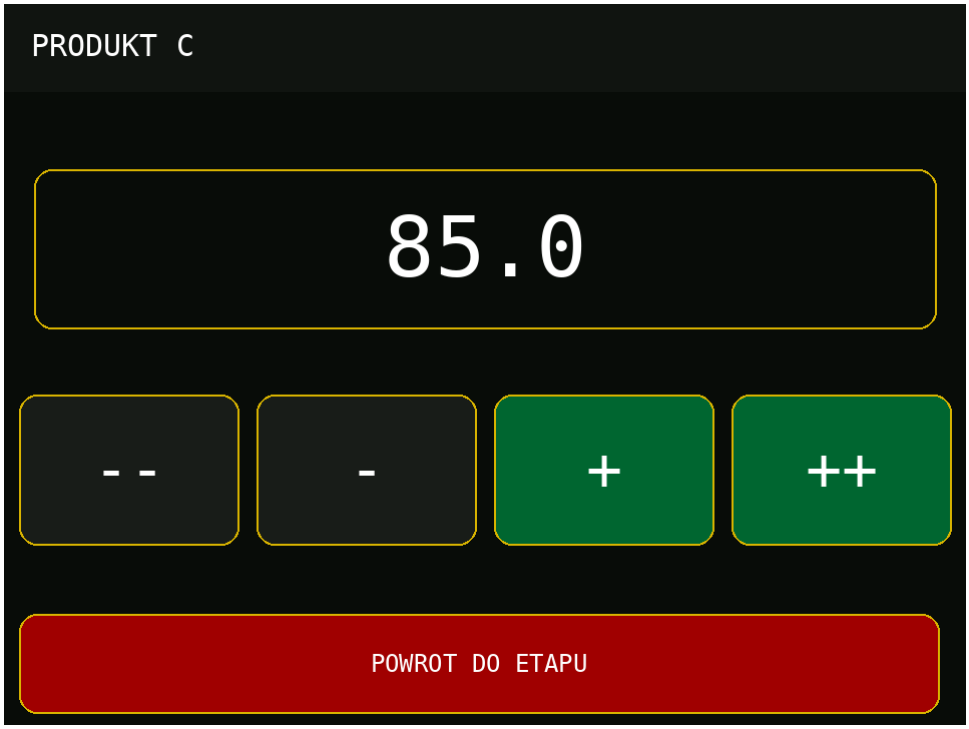
MIESZADŁO selects OFF, continuous or cyclical operation. **PRACA S** and **PRZERWA S** provide working and idle seconds in the cycle.

PŁASZCZ MAX limits the jacket temperature. **LIMIT MIN** reduces the waiting time for a stage to successfully execute.

POTWIERDŹ specifies whether to wait for DALEJ after the step. **KOMUNIKAT** selects the action text. WŁĄCZ/WYŁĄCZ determines whether the step will be executed.

ANULUJ abandons editing. ZAPISZ > leads to bank selection. Edit fixed settings using STOP.

Change value and save



LCD layout reconstructed from software 0.5; example readings.

Tap a field, e.g. PRODUKT C. You will see its value in the middle. "−" and "+" change it in small steps, and "−−" and "++" in larger steps. For temperatures, these are 0,5°C and 5°C, respectively.

For stage time, a small step is 1 minutes, a large step is 10 minutes. For mixer operation and pause: 1 and 10 seconds. In the checkboxes you cycle through the available settings.

POWRÓT DO ETAPU returns to the form with the change entered. **This is not a bank save yet.** On the edit screen, press ZAPISZ > and select a save location.

After saving, look at the list of stages again. Check temperature, time, mode and mixing. If you change several steps, write down each step.

GDZIE ZAPISAĆ: original protection



LCD layout reconstructed from software 0.5; example readings.

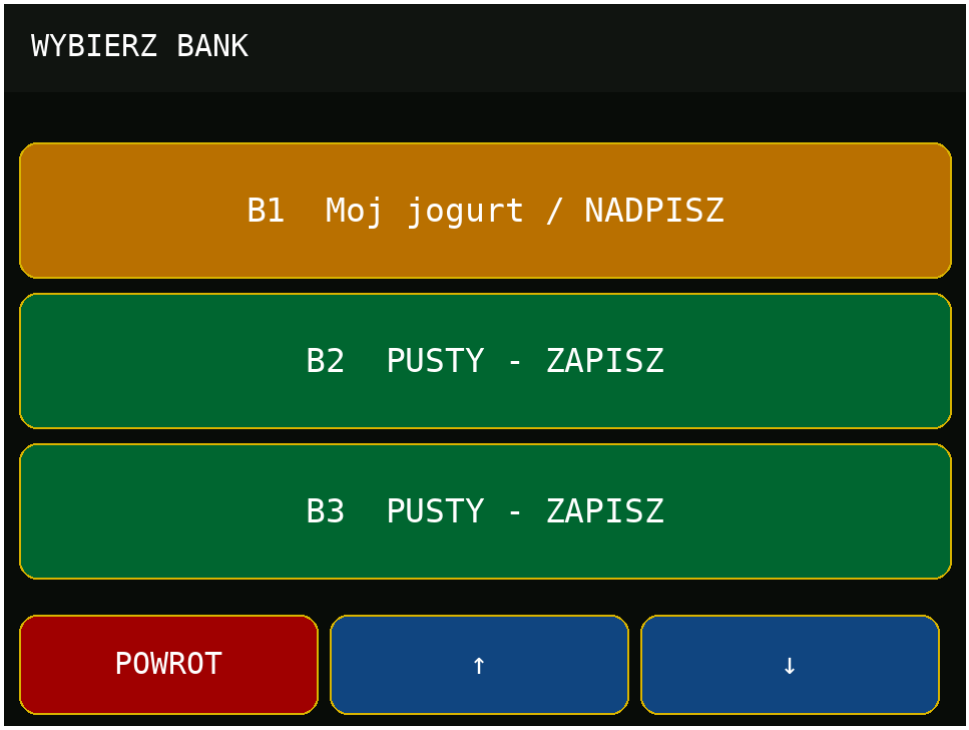
If you are editing a factory program, you will see the information ORYGINAŁ CHRONIONY and the button WYBIERZ BANK 1–10. The original program remains in the library.

If you already work with your own bank, you can save in the same bank or choose a different one. Subscription to another bank creates a separate variant of the program.

POWRÓT DO EDYCJI allows you to correct settings before saving. Don't press ZAPISZ in a random bank just to close the window.

After the message ZAPISANO W BANKU B…, check the active bank number in the stage list. The next START will run the selected program with its saved settings.

Bank selection and overwrite warning



LCD layout reconstructed from software 0.5; example readings.

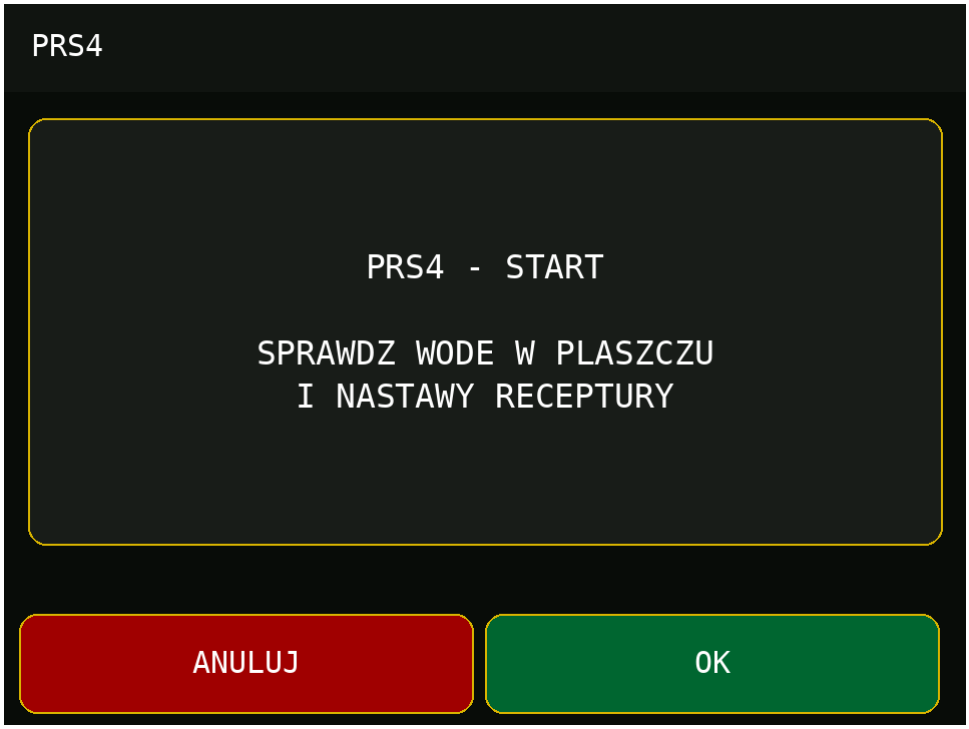
The green button indicates a new location or current bank. Orange indicates a busy bank whose contents will be replaced.

If the bank is busy, check its name against the program you want to keep before confirming. Cancel if you are unsure and choose another location.

The message BANK ZMIENIONY means that the settings have changed since the edition was opened, e.g. in the browser. Reload the stage and compare the values. Do not assume that the earlier form still shows the current record.

The arrows allow you to reach all ten banks. POWRÓT takes you to the previous save screen.

START: start the selected program



LCD layout reconstructed from software 0.5; example readings.

1. Check the program name, jacket water, probe readings and product preparation. Remove tools from mixer reach.

2. Press START on the home screen or in the stage list. If PRS4 - START appears, read the message and confirm OK. ANULUJ returns without starting.

3. Check the status change on the home screen. You should be able to see the current stage and the actual temperature and power readings. Do not confirm START repeatedly if you do not know whether the process has already started.

4. For the message START NIEMOŻLIWY, remove the indicated cause. The most common reasons are a missing probe, an empty bank, no stages turned on, or a recording of a process interrupted by a power outage.

DALEJ, PAUZA, STOP and end of program

DALEJ means: "I have completed the indicated action, you can proceed." When adding cultures or cutting the curds, the heater, stirrer and cooling are turned off. The temperature can then change automatically.

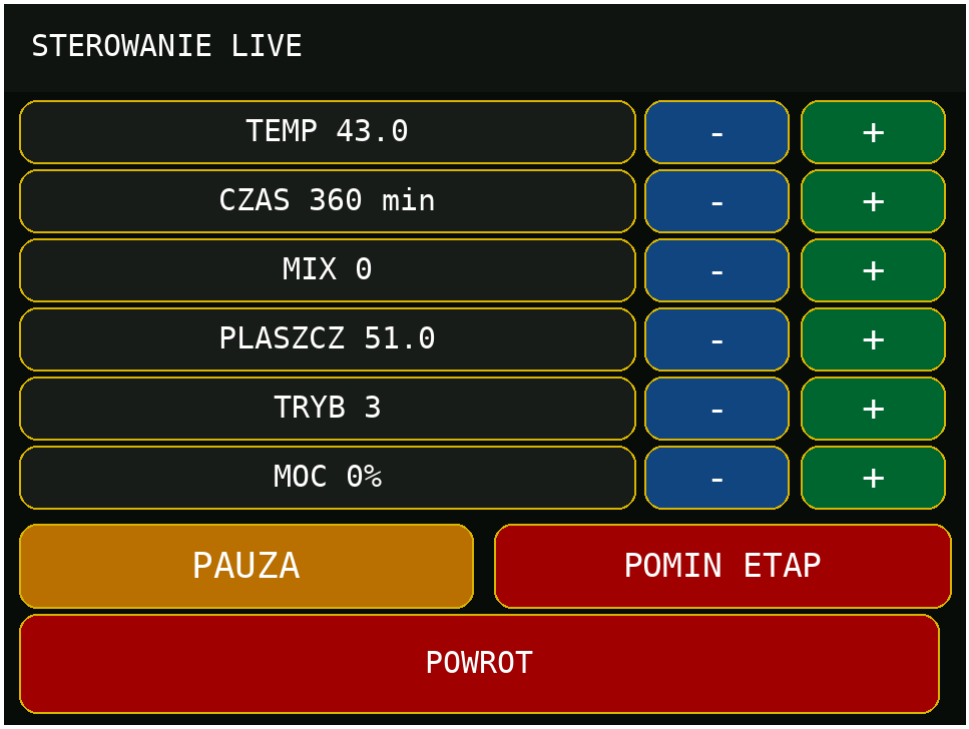
PAUZA turns off the outputs and stops the countdown. **KONTYNUUJ** resumes the same stage. Exception: in UTRZYMANIE CIĄGŁE mode, the pause resets the calculated temperature maintenance time.

STOP terminates the process and disables its outputs. The next START starts the program from the beginning, not from where it stopped.

POMIŃ ETAP moves to the next enabled stage. Requires confirmation. A skipped step is not completed.

KONIEC indicates the completion of the programmed steps. It does not automatically mean the end of cheese production. Straining, forming, salting, maturing and cooling in a cold store should be carried out according to your technology.

LIVE: change during operation



LCD layout reconstructed from software 0.5; example readings.

While running, enter MENU → LIVE. TEMP, CZAS, MIX, PŁASZCZ and TRYB change the settings of the current stage only. They do not overwrite the program in the bank.

Changing these fields starts the stage counter again. Example: after 15 minutes of holding, you change the temperature. The controller will start the required time for the new settings from the beginning.

MOC switches the current stage to manual power control. This change does not save the recipe. When you change the stage or STOP, the temporary setting disappears. In the local WWW there is a "Return to Settings Mode" button.

PAUZA / KONTYNUUJ and POMIŃ ETAP control the process. POWRÓT closes the LIVE screen without stopping the controller. LIVE is unavailable during a pause, while waiting for DALEJ, or while a blocking alarm is active.

Six modes: heating and cooling

0 · UTRZYMANIE CIĄGŁE. The controller heats to the setting and counts the time only in the ±0,5°C band. Going out of band or pausing resets the counter. Example: at 85°C / 20 min, 20 minutes of uninterrupted stay in this band are needed.

1 · CHŁODZENIE. The heater is turned off. The valve opens when the product is warmer than the target. The stage ends when the set point is reached or goes below it. The entered time is not the temperature maintenance time.

2 · CZYNNOŚĆ OPERATORA. All process outputs are disabled. The controller shows a message and waits for DALEJ. It does not measure whether culture or rennet has been added or whether the curd is ready.

In heating modes, power may drop to zero when the water jacket limit is reached. This is a limitation of heating, not the end of the entire program. Check that the limit is appropriate for the product temperature.

Six modes: incubation and rest

3 · INKUBACJA. The controller maintains the temperature. The counter starts when the ±0,5°C band is first reached. A later deviation does not reset the time. Above the target by more than 0,5°C it can open the cooling.

4 · ŁAGODNE DOGRZEWANIE. The temperature target gradually increases from the input temperature to the final temperature. Example: 30°C to 39°C in 30 minutes means the target increases by approximately 0,3°C per minute. The stage ends after the set time and the final temperature band is reached.

5 · ODPOCZYNEK BEZ GRZANIA. The time is counted from entering the stage. Heater and cooling are turned off; the mixer operates according to the selected setting. The displayed temperature is not maintained in this mode.

The end of the countdown is the product inspection point. Curd or fermentation may require different times depending on the milk, culture and conditions. You make further decisions after checking the product.

Agitator and jacket temperature limit

Off (MIX 0) select when you want the product to remain stationary. This is how the stages of curd formation and yogurt incubation are set in factory programs.

Continuous (MIX 1) means continuous operation during the active stage. **Cyclic (MIX 2)** means alternating work and break. The 20 s / 60 s setting is 20 seconds of mixing, then 60 seconds of standstill, repeated until the end of the stage.

PRS4 controls the activation of the mixer relay. The value MIX 2 does not indicate second gear or 2% of revolutions. The speed and direction of the mixer are determined by the vat drive.

PŁASZCZ MAX is the highest allowable jacket temperature at a given stage. When it is reached, the heating is limited. A limit that is too low may prevent the product from achieving its goal.

In the factory templates, the jacket limit is the stage temperature +8°C, not more than 98°C. A jacket 99°C reading during the process triggers an emergency stop. This does not replace separate heater protection.

Stage setting ranges

The ranges below apply to stage editing. In WWW you enter the time in seconds; on LCD the stage time and limit are in minutes. 20 min = 1200 s, 6 h = 21 600 s.

The initial values for temperature, time and mixing depend on the program. Each program is described below. The default additional time limit is 120 min.

Field	Range/step LCD
PRODUKT C	4–95°C; 0,5 / 5°C
CZAS MIN	0–1440 min; 1 / 10 min
MIESZADŁO	0 off, 1 continuous, 2 cyclic
TRYB	0–5; according to the description of the modes
PŁASZCZ MAX	5–98°C; 0,5 / 5°C
PRACA S / PRZERWA S	1–3600 s; 1 / 10 s
POTWIERDŹ	TAK / NIE; factory NIE
KOMUNIKAT	16 messages (0–15)
LIMIT MIN	1–360 min; 1 / 10 min

LIMIT MIN and 0 time: how to understand them

LIMIT MIN is additional time for the stage. The program checks the total time since entering the stage: set time + this limit. If the stage does not reach the completion condition, alarm LIMIT CZASU GRZANIA / CHŁODZENIA occurs.

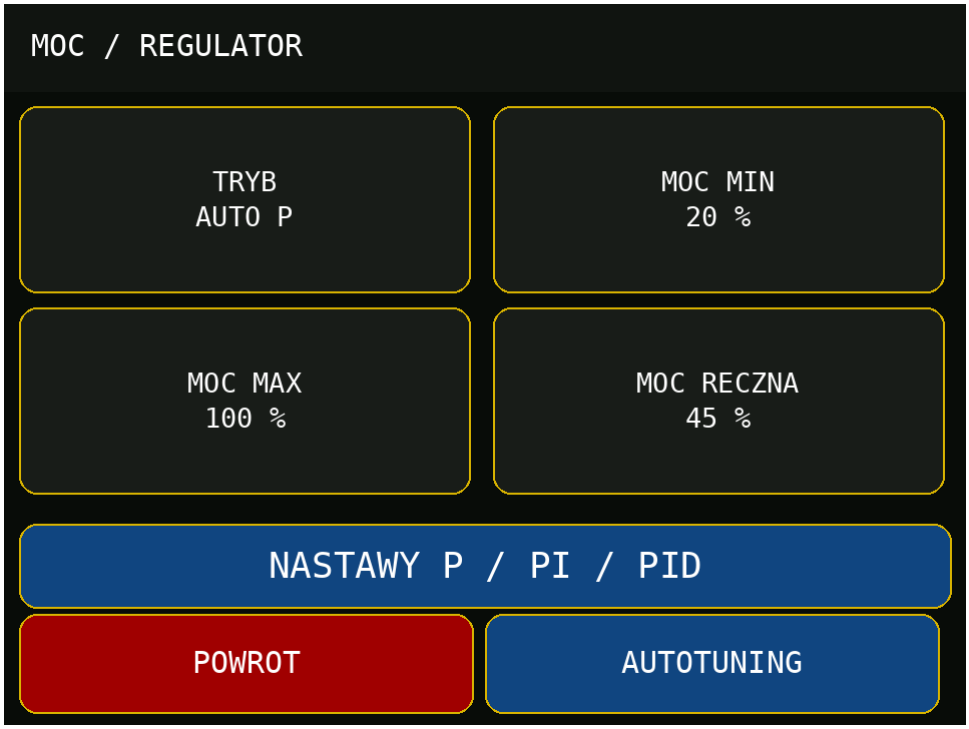
Example: maintaining 20 min and limit 120 min gives a total of at most 140 minutes of active work for this stage. Warm-up time and retries for uninterrupted hold are within this limit.

In cooling with time 0 and limit 120 min, the controller has up to two hours to reach the temperature. If the water is too warm, simply increasing the limit will not provide effective cooling.

0 time in UTRZYMANIU CIĄGŁYM means: reach temperature and move on, without additional heating. In CZYNNOŚCI OPERATORA, the transition depends on DALEJ, not on time.

Pausing and waiting for confirmation do not add additional seconds to the active stage. Changing the parameters by LIVE also starts the limit calculation again.

MOC / REGULATOR



LCD layout reconstructed from software 0.5; example readings.

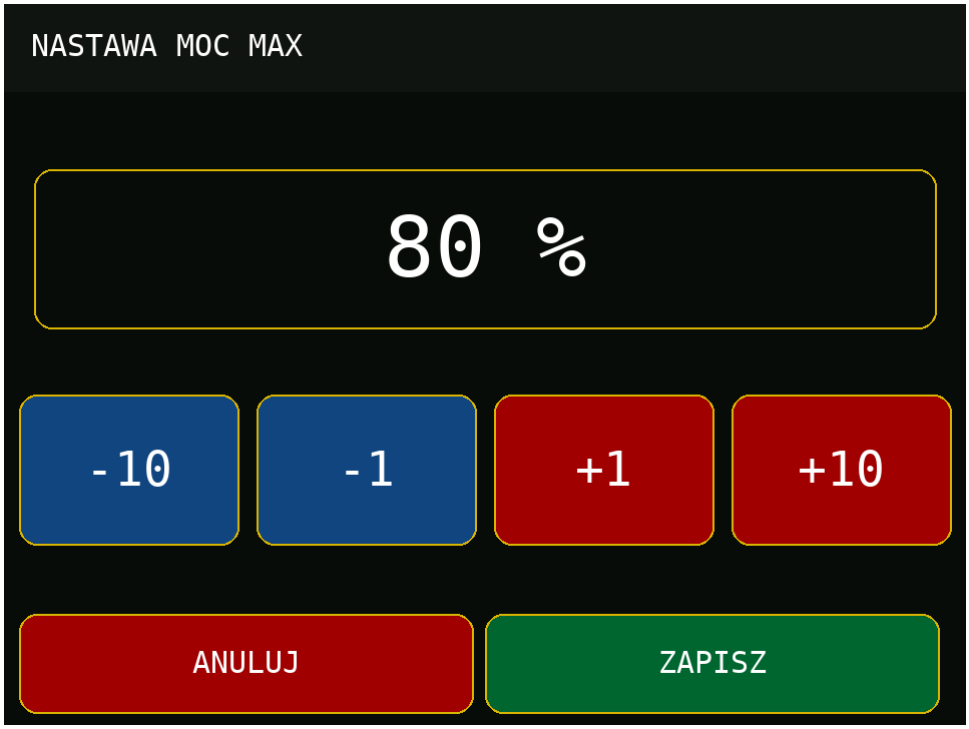
Enter MENU → MOC. TRYB selects the heater control method. MOC MAX limits the highest power, MOC MIN sets the lower level for active automatic heating, and MOC RĘCZNA sets the power in MANUAL.

AUTO P adjusts the power to the difference between the set and measured temperature. **AUTO PI** further corrects the persistent deviation. **AUTO PID** also takes into account the rate of change of deviation.

MANUAL maintains the set power instead of automatically adjusting it to the temperature. Stage locks, required probes, jacket limit, and MOC MAX still apply. The heating is also turned off when the target temperature is reached. Watch the product temperature.

To start with, use the settings received for your vat. Do not copy coefficients from another device without checking. You save permanent power changes at STOP.

Power change: ANULUJ or ZAPISZ



LCD layout reconstructed from software 0.5; example readings.

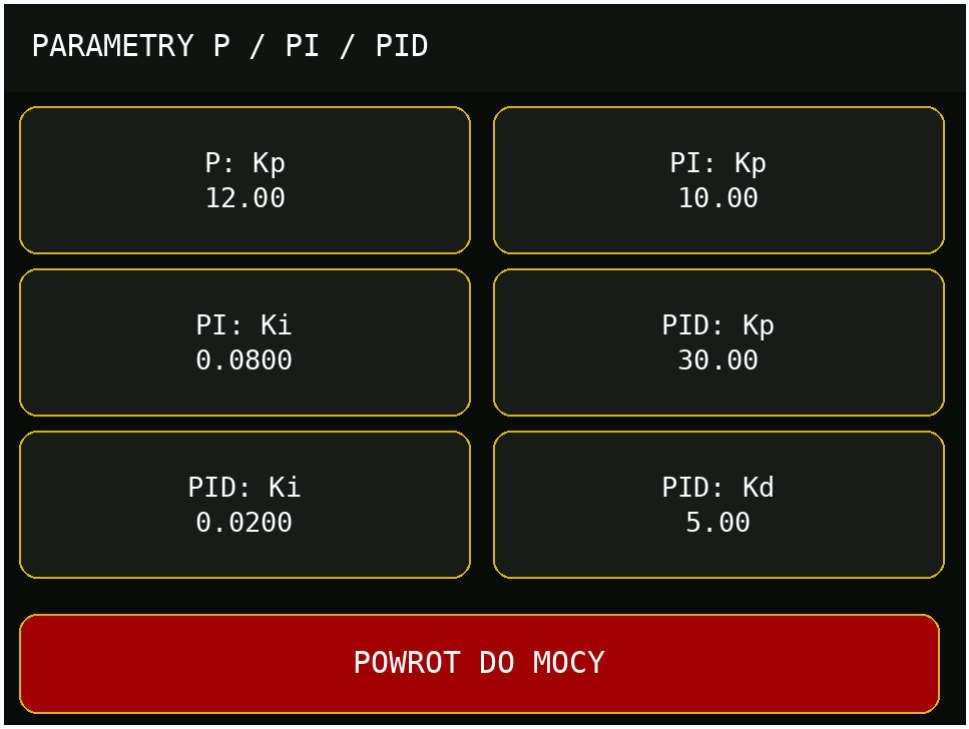
Touch the desired field on the MOC screen. For percentage values, the small step is 1 percentage point and the large step is 10. Example: from 80%, the +10 button changes the setting to 90%.

ANULUJ discards the change and returns. ZAPISZ saves it in the controller settings. If the process is running, you will be informed that you need to use the LIVE adjustment or stop the process.

MOC MIN cannot be greater than MOC MAX. MOC MAX = 0% blocks heating. Setting MOC RĘCZNA = 45% does not limit AUTO modes to 45% - the upper limit there is MOC MAX.

The TRYB field has POPRZEDNI and NASTĘPNY instead of number buttons. Select MANUAL, AUTO P, AUTO PI or AUTO PID and confirm ZAPISZ.

P / PI / PID coefficients



LCD layout reconstructed from software 0.5; example readings.

Path: MENU → MOC → NASTAWY P / PI / PID. Tap the ratio, change the value and save. Each mode has its own set of coefficients.

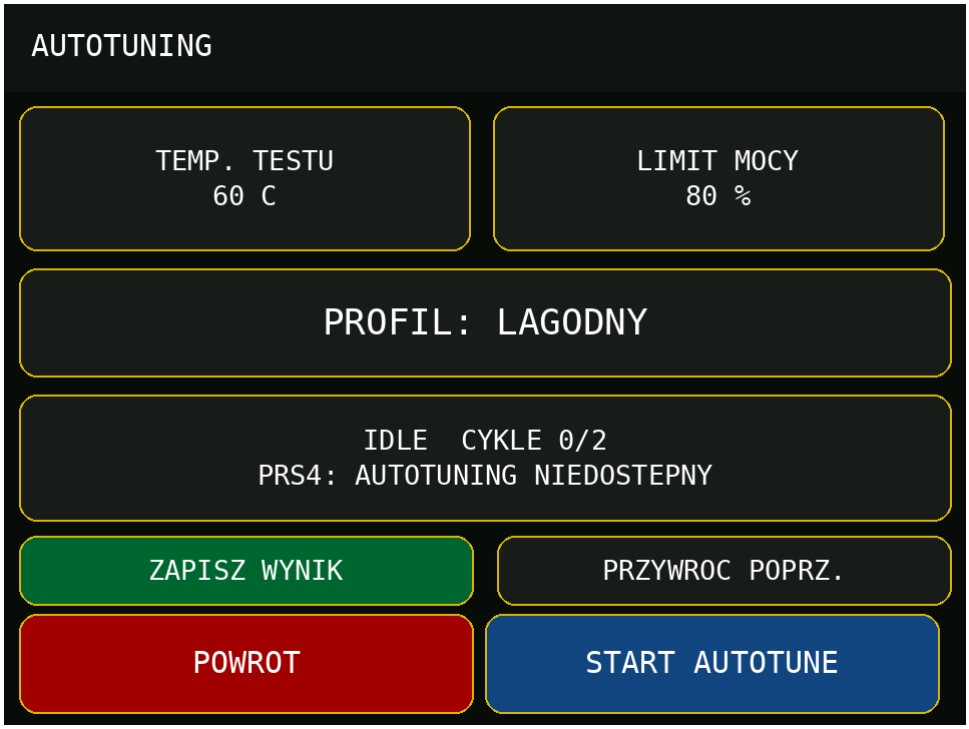
Kp determines the reaction force to the temperature difference. Ki gradually corrects longer-lasting deviations. Kd changes the reaction depending on the rate of change. Too large values may cause fluctuations.

Factory default: P Kp = 12; PI Kp = 10, Ki = 0,08; PID Kp = 30, Ki = 0,02, Kd = 5. These are the starting values of the program, not the result of tuning your vat.

Kp range: 0,1–100; Kd: 0–100. Small/Large Step: 0,1/1. Range of recorded Ki: 0,001–10; step 0,001/0,01. Factory power settings: MIN 20%, MAX 100%, RĘCZNA 45%; range 0–100%.

POWRÓT DO MOCY takes you to the previous screen. Ask the person commissioning the installation to change the coefficients if you have no experience in temperature control.

AUTOTUNING: visible but unavailable



LCD layout reconstructed from software 0.5; example readings.

The screen opens with MENU → MOC → AUTOTUNING. In PRS4 0.5 startup is blocked. START AUTOTUNE is followed by PRS4: AUTOTUNING NIEDOSTĘPNY.

TEMP fields visible. TESTU, LIMIT MOCY and PROFIL and buttons ZAPISZ WYNIK and PRZYWRÓĆ POPRZ. do not mean that the function can currently be used to select vat settings.

Don't wait for the measurement or result. Return via POWRÓT to the power screen. For operation, use the P, PI or PID settings verified for the installation.

This is a limitation of this version of the program, not a fault with your heater. The manual does not recommend autotuning PRS4 0.5.

SONDY: readings and assignment



LCD layout reconstructed from software 0.5; example readings.

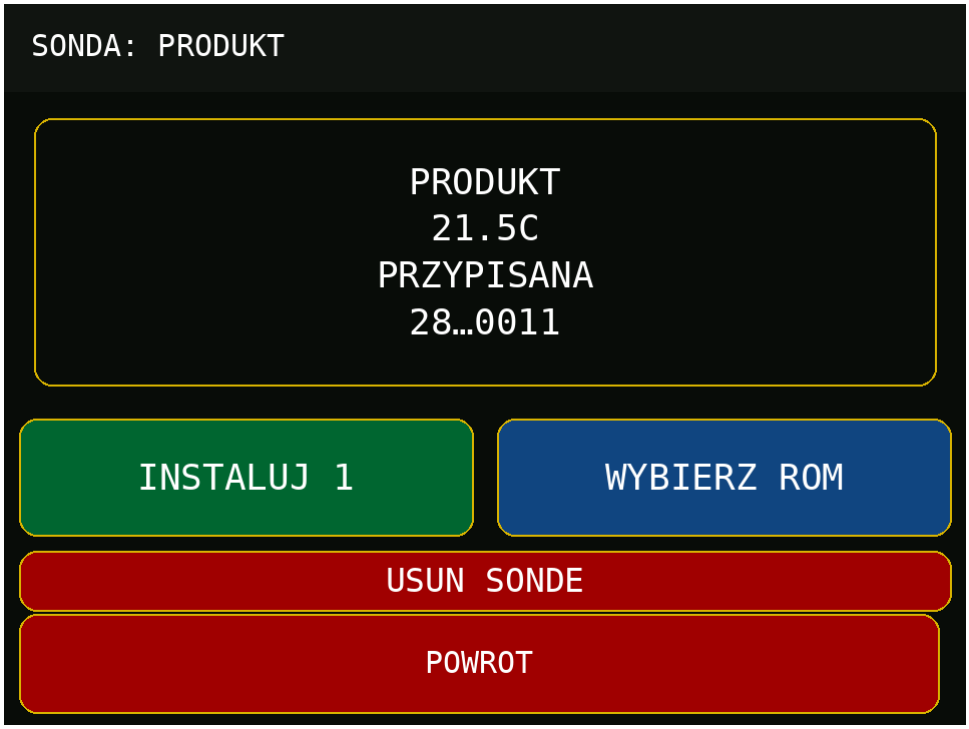
Enter MENU → SONDY. Each tile corresponds to a specific role: PRODUKT, PŁASZCZ, CHŁODZIWO and DODATKOWA. The first two roles are required to start the process.

Tap a tile to open the assignment. The number visible next to the probe is its individual address, called ROM. After saving the role, the controller recognizes the sensor by this address.

Don't accidentally assign a jacket probe as a product. The swap may give apparently correct numbers, but the controller will regulate according to the wrong measurement.

Once assigned, check the response of each sensor separately with the installation stopped and safe. Mark the wires so that they do not get confused during subsequent installation.

INSTALUJ 1 and WYBIERZ ROM



LCD layout reconstructed from software 0.5; example readings.

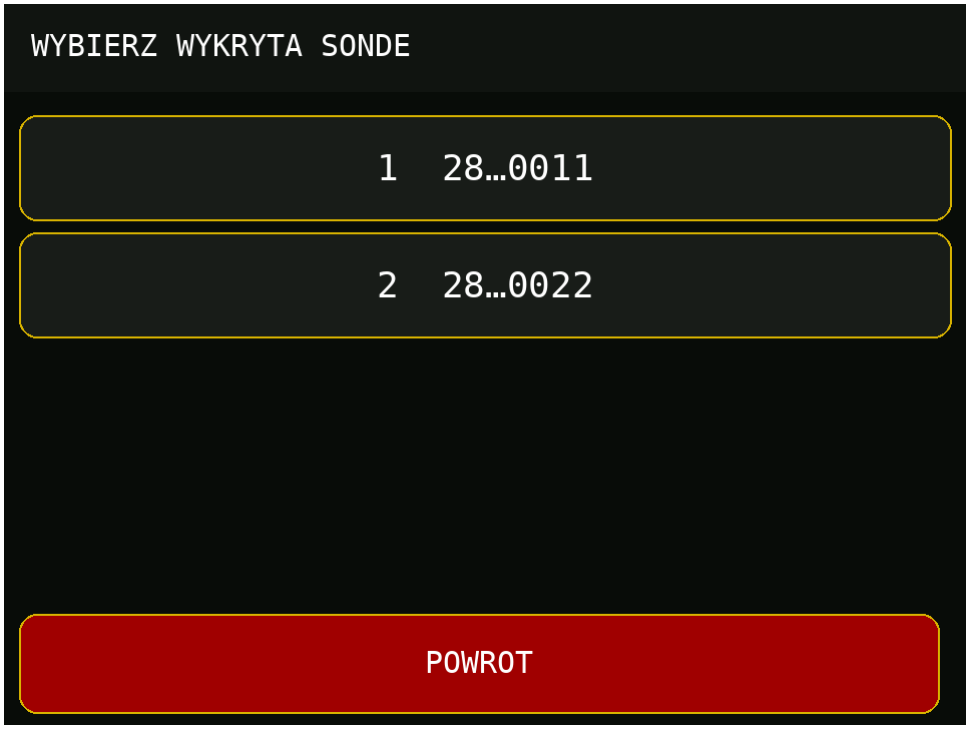
INSTALUJ 1 is used to assign a single probe. Prepare the connection so that there is one recognized probe on the bus, select its role and use this button. Change connections safely with the power off.

If several probes are connected, use WYBIERZ ROM and select the correct address from the list. Don't choose a number based solely on the order in the list.

USUŃ SONDĘ removes the role assignment. Does not repair the sensor or cable. After removing the PRODUKT or PŁASZCZ probe, the process will not be able to start.

POWRÓT closes the screen. After each change, go back to the list and check that the correct measurement appears with the correct name.

List of detected probes



LCD layout reconstructed from software 0.5; example readings.

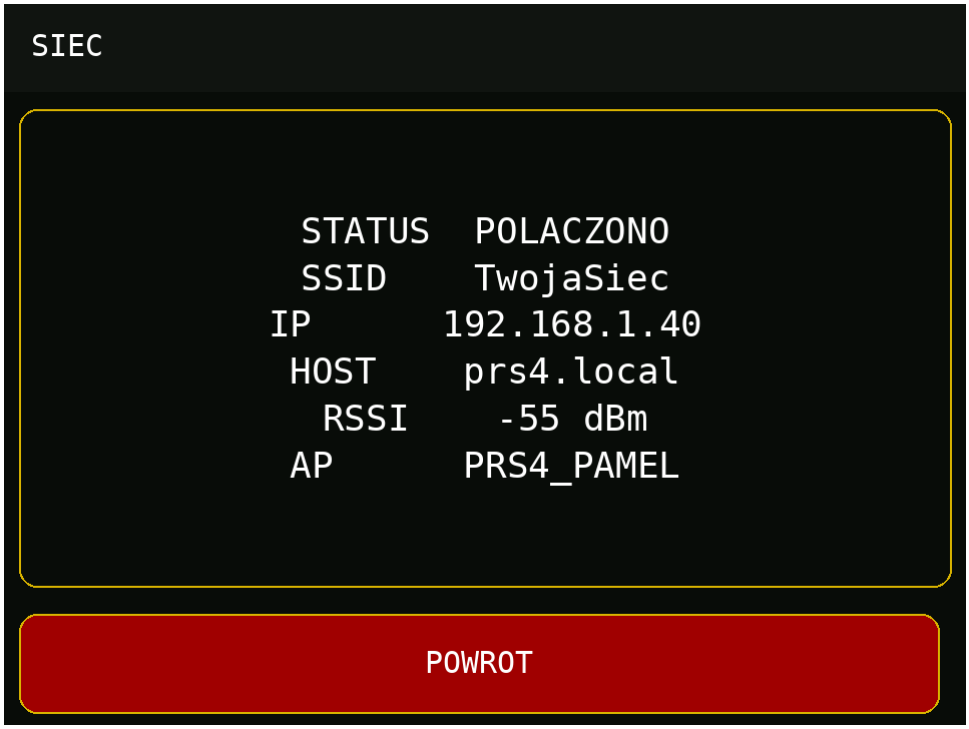
In the list you see the addresses of sensors detected on the cable. Tap the probe address for the selected role. In the illustration, the addresses are abbreviated; on the controller, use the full number.

If you don't know which sensor has a given address, assign them one at a time. Save or tag: This sensor measures the product, this jacket. It is helpful to compare readings while changing the temperature of one probe in a controlled manner.

BRAK SOND - SPRAWDŹ PODŁĄCZENIE means that the search did not find a sensor. Check the connectors and cable after disconnecting the power. Do not start heating until you have the two required measurements.

POWRÓT takes you to the selected probe screen.

SIEĆ: connection to phone



LCD layout reconstructed from software 0.5; example readings.

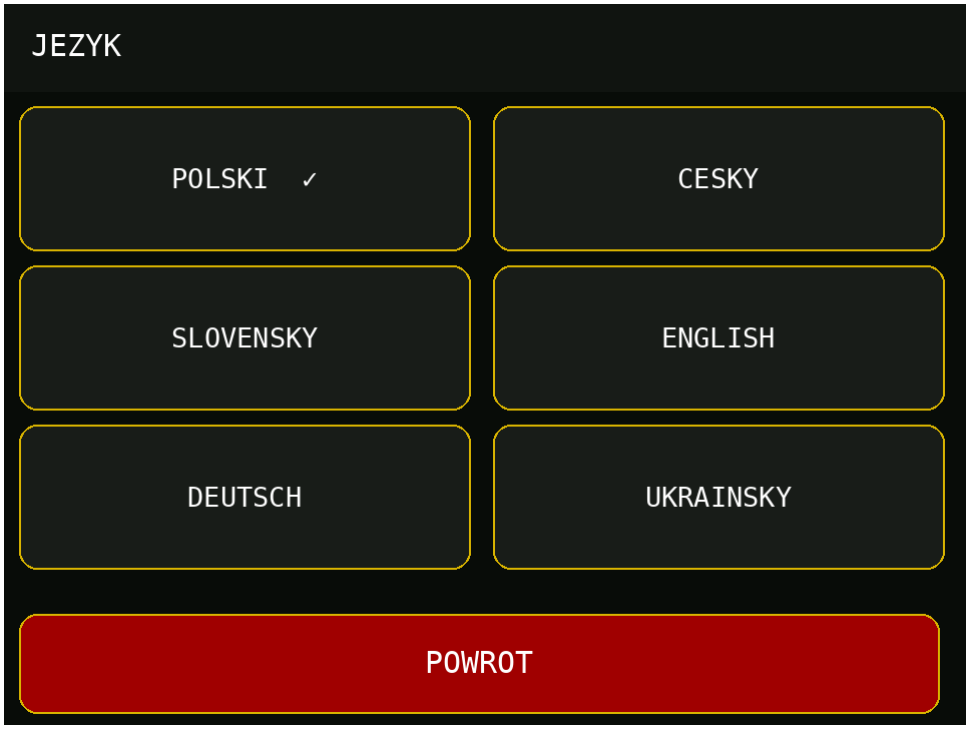
At the controller, open your phone's Wi-Fi settings and select the PRS4_PAMEL network. In this version, the access point does not require a password. The phone may warn "no internet"; stay on this network.

In your browser, type **http://192.168.4.1**. This is the local page of the controller. You do not need a CLOUD account to use it.

To connect the controller to your home router, on the local website, expand "Wi-Fi and probes", enter the network name and password, and then press "Connect to Wi-Fi". After connection, read the address IP in MENU → SIEĆ.

When connected via a router, the phone must be on the same network. Enter the address IP shown by your controller. The numbers in the illustration are just an example. RSSI is the signal strength; SSID is the network name.

JĘZYK and save the setting



LCD layout reconstructed from software 0.5; example readings.

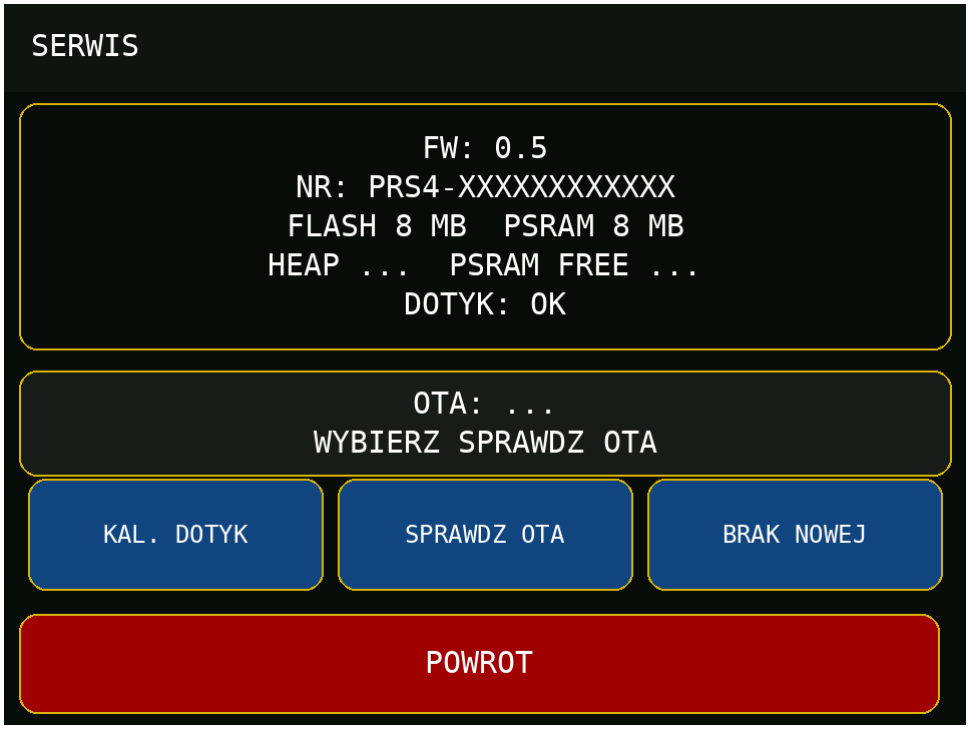
Enter MENU → JĘZYK. Tap POLSKI to set PL. Czech, Slovak, English, German and Ukrainian are also available.

The active selection is marked in green. After selecting, the controller returns to the menu and saves the language without the need to restart.

Changing the language does not change temperatures, times or saved programs. In the 0.5 release, some of the detailed messages and recipe names remain in Polish.

If you see BŁĄD ZAPISU / JĘZYK NIE ZMIENIONY, the setting has not been saved. Go back to the menu and check the active language. POWRÓT closes the selection without additional change.

SERWIS: version and device number



LCD layout reconstructed from software 0.5; example readings.

Enter MENU → SERWIS. FW indicates the software version. NR is the PRS4 number needed for assignment in CLOUD and for the service request.

FLASH, PSRAM, HEAP and PSRAM FREE are memory information. They are not process settings and do not need to be changed. DOTYK shows the panel calibration status.

The OTA field informs about an update being checked, a version found or an error. SPRAWDŹ OTA only checks availability. INSTALUJ starts installation when the conditions are met.

BRAK NOWEJ means there is no newer version specified for installation. First, use SPRAWDŹ OTA with a working internet connection. POWRÓT returns to the menu.

Program update step by step

1. End the process by STOP. Make sure there is no active alarm. Do not update the program during production.

2. Check the controller's connection to the router and the Internet. Simply connecting your phone to the PRS4_PAMEL does not provide Internet to the controller.

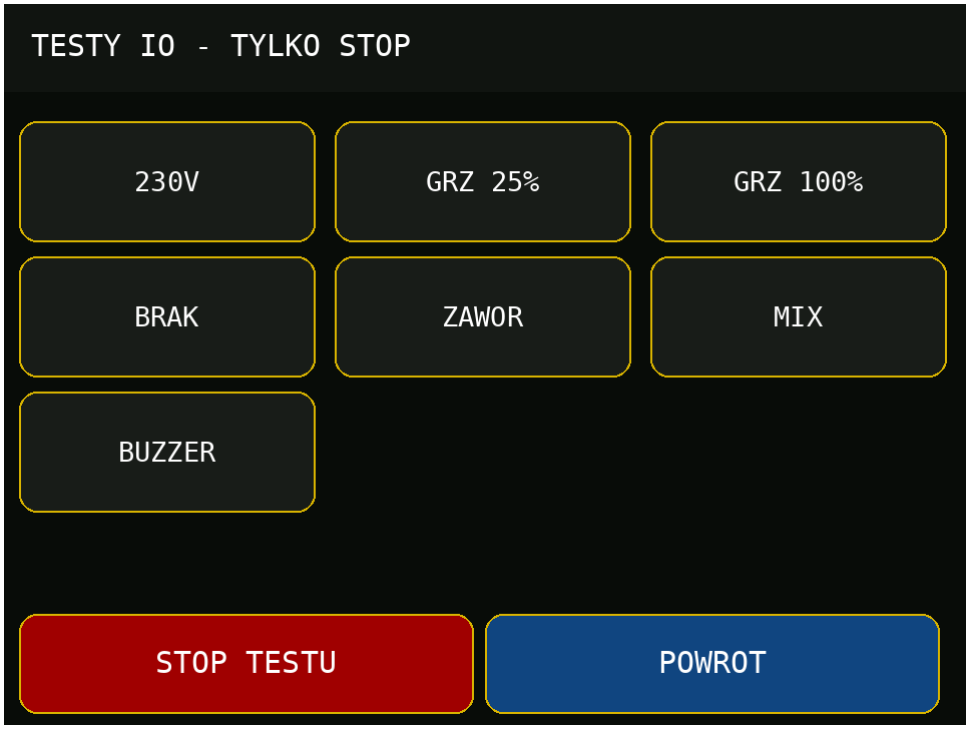
3. Go to MENU → SERWIS and press SPRAWDŹ OTA. Wait for the result. Compare the found version number with FW.

4. When a newer version is available, press INSTALUJ and confirm the message. Do not disconnect the power while downloading and saving. The controller will restart.

5. After returning, check the version in SERWIS, the readings of both probes, the selected program and the network connection. The update should not require you to re-enter Wi-Fi.

BRAK INTERNETU requires network check. HTTP/TLS or update file error requires checking the connection or contacting PAMEL. Do not install a file intended for PRW4 or PRD4 in PRS4.

TESTY I/O: mixer, valve and signal



LCD layout reconstructed from software 0.5; example readings.

Go to MENU → TESTY I/O next to STOP. MIX checks the stirrer output, ZAWÓR checks the cooling output, and BUZZER checks the sound signal. Before testing, make sure that the receiver in question is safe to run.

The mixer and valve test lasts up to 5 seconds, and the signal test lasts up to 1 seconds. STOP TESTU aborts the attempt. Check the actual movement of the agitator or water flow, not just the text on the screen.

The 230 V, GRZ 25 %, GRZ 100 % and BRAK buttons are visible, but their activation is blocked in PRS4 0.5. Heating is checked through a controlled program with probes and safeguards.

After trying, use STOP TESTU. During the normal process, tests are unavailable; LIVE appears in the menu instead.

Touch calibration: service access



LCD layout reconstructed from software 0.5; example readings.

Calibration is needed when touching a button selects a different location or the panel responds poorly. Does not change temperature measurements.

Path: MENU → SERWIS → KAL. DOTYK. The screen requires a service password. WYCZ deletes the entered digits, OK confirms, and POWRÓT returns to the website.

Don't try random settings if the panel is working properly. Get help from PAMEL if needed. You will find the device number and version on the previous screen.

Once you have access, follow the wizard instructions on the next page. Perform calibration with the process stopped.

Calibration: five points on the screen



LCD layout reconstructed from software 0.5; example readings.

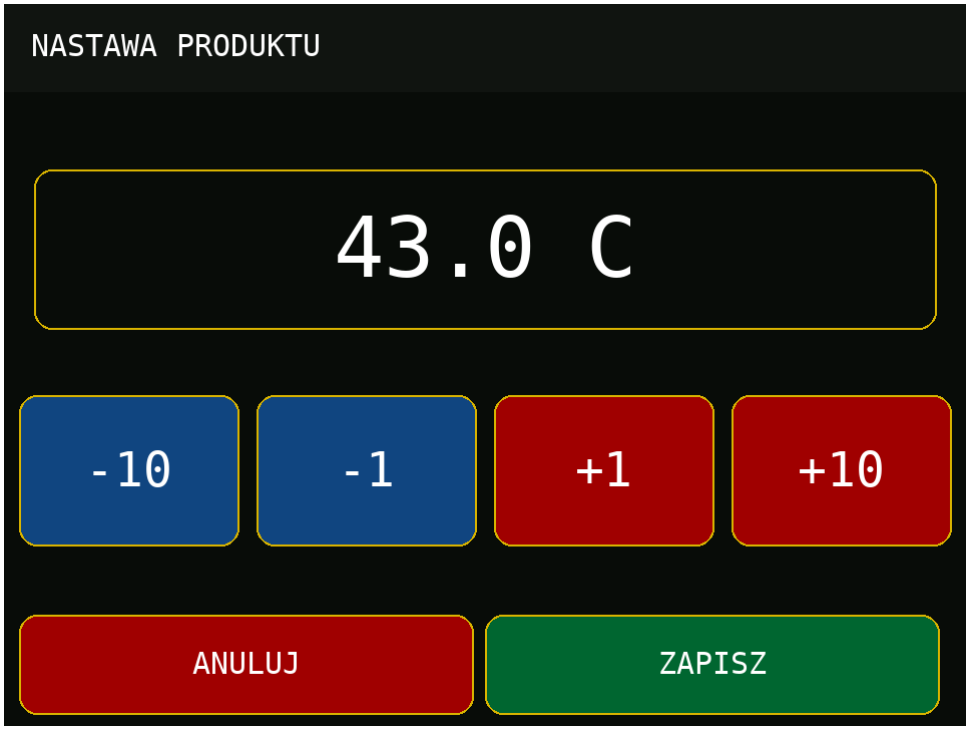
The wizard shows five points one by one. Touch the exact center of the indicated cross as indicated on the screen. Do not press several places at the same time.

The number PUNKT 1 / 5, 2 / 5 etc. shows the progress. Once completed, the result will appear. Then check the functionality of the buttons in different parts of the panel.

If the result is incorrect or the touch still goes to the wrong places, do not run the process. Contact the service.

The illustration shows the principle of operation of the wizard. The position of the crosshair changes on subsequent screens.

Touching the temperature on the home screen



LCD layout reconstructed from software 0.5; example readings.

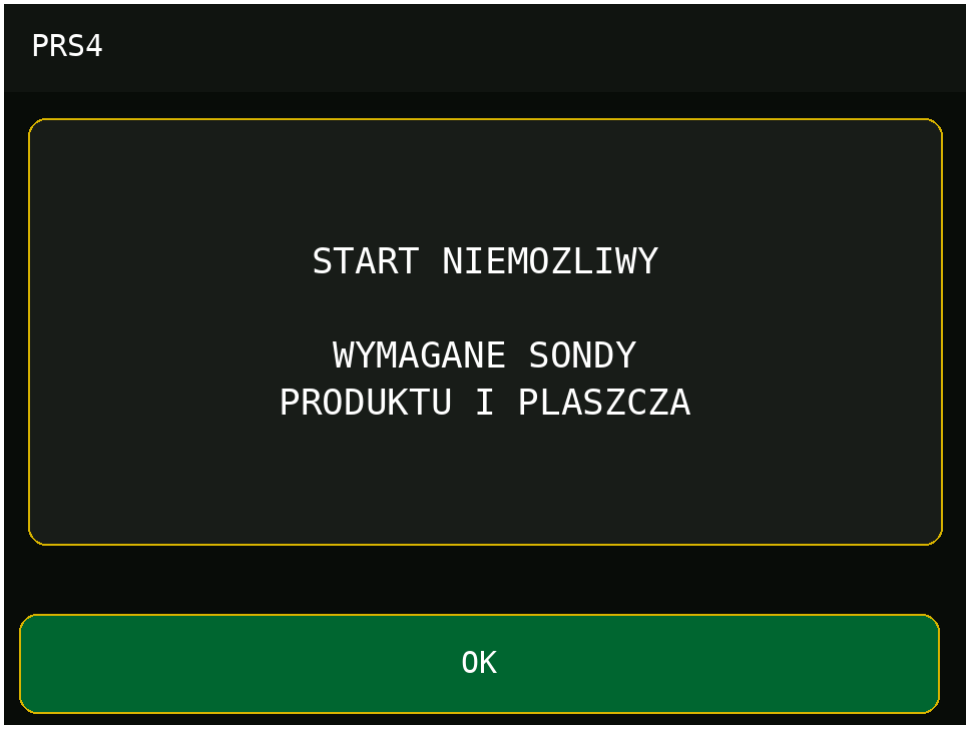
Tapping the temperature field opens a simple screen with buttons − 10, − 1, + 1 and + 10 and ANULUJ and ZAPISZ. In PRS4 0.5 this shortcut has a limited scope.

Product change is only accepted for STOP and for its own program. It is not used to change the temperature of the active stage or to save the factory program.

Do not set the limit of the jacket by touching its temperature. In this version, this field does not save such a setting. Use ETAPY → selected stage → PŁASZCZ MAX, and during regulation operation LIVE.

Use the full step editor to prepare your recipe. It simultaneously shows the type of operation, time and appropriate setting ranges. After each change, check the entry in the stage list.

Messages: When to press OK



LCD layout reconstructed from software 0.5; example readings.

The OK one-button window provides information such as the reason for the START lockout. Closing the window does not fix the cause of the problem.

The window with ANULUJ and OK asks you to perform an action, e.g. start a process or overwrite a bank. OK commits the action; ANULUJ returns without executing it.

When there is a message about missing probes, go back to MENU → SONDY, check the assignment and correct measurement. Only after correcting the cause, retry START.

While you wait for the cultures or rennet to be added, you use DALEJ in the process screen. Don't treat it as simply closing a message - you're confirming an action has been taken.

WWW: process screen on the phone



Actual WWW interface 0.5 with example data, not connected to a vat.

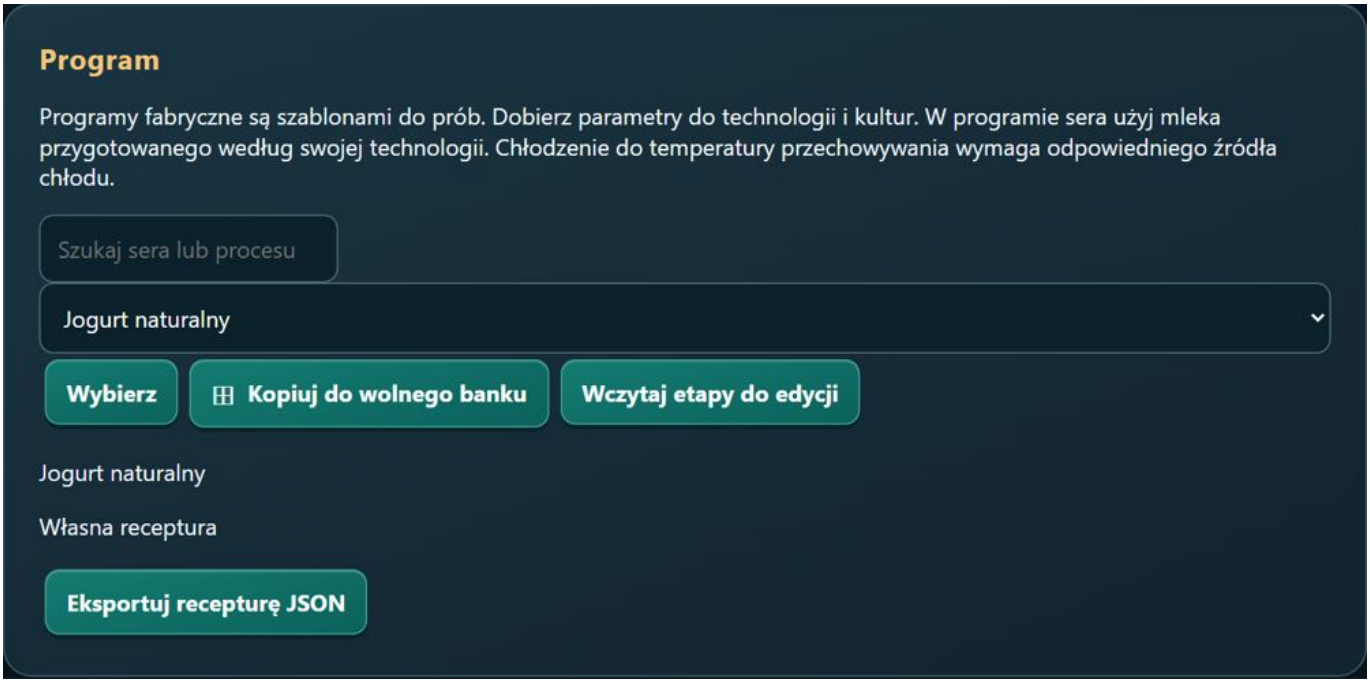
Open the local address of the controller. At the top are the PRODUKT and PŁASZCZ readings, target temperature, power, mixer and valve status, and the current stage.

START starts, STOP stops, PAUZA / KONTYNUUJ pauses or resumes. GOTOWE - DALEJ you press after performing an action. Skip step... continues after confirmation.

Confirm alarm use after the cause has been removed. Discard Interrupted Process appears when there is a record of the interrupted batch remaining. LIVE control opens the settings of the current stage.

The ± 1 % and ± 10 % power buttons set the manual power for the current stage only. "Return to settings mode" restores the selected control method. The readings in the screenshot are examples.

WWW: program selection and copy to bank



Actual WWW interface 0.5 with example data, not connected to a vat.

In the "Search for a cheese or process" field, enter part of the name. Expand the list, select the program and press Select. Simply marking an item is not enough.

Copy to free bank saves a copy of the selected program in the first free location. If all banks are occupied, you will receive a notification that there is no space available.

Load steps for editing opens your own bank's forms at STOP. When a factory original is selected, it must first be copied.

Export recipe JSON downloads the file with settings to your phone or computer. This is a record of data, not a ready-made printout of instructions. The "Source Technology Description" link leads to additional description for the program, if such a link is available.

WWW: single stage form



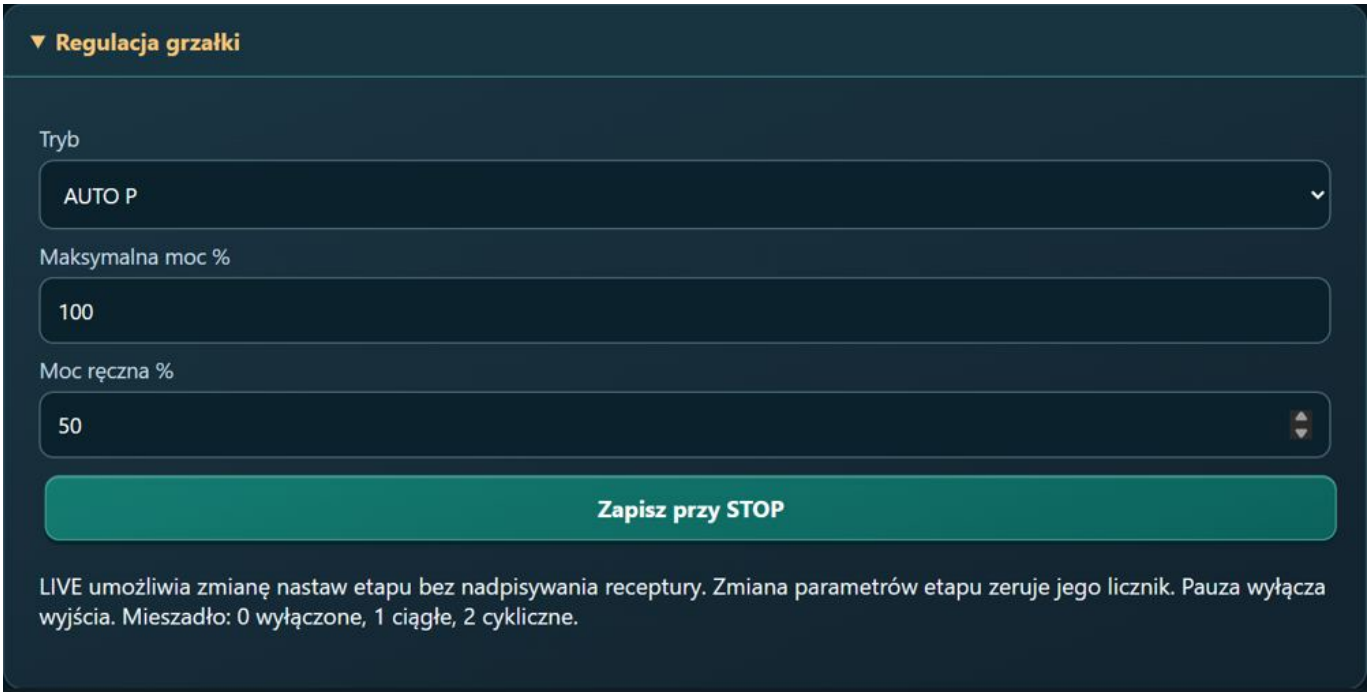
Actual WWW interface 0.5 with example data, not connected to a vat.

Expand Stage 1, Stage 2 etc. An activity is a type of stage; The stage determines whether the item is enabled. Product temperature and maximum jacket temperature are separate settings.

Hold time, mixer operation, pause and limit are here in seconds. For 30 minutes, enter 1800. Choose your mixing and step by step method.

Save stage saves only this form. After changing several steps, write down each step separately. If the bank has been changed elsewhere, reload the data instead of forcing the old save.

WWW: heater adjustment



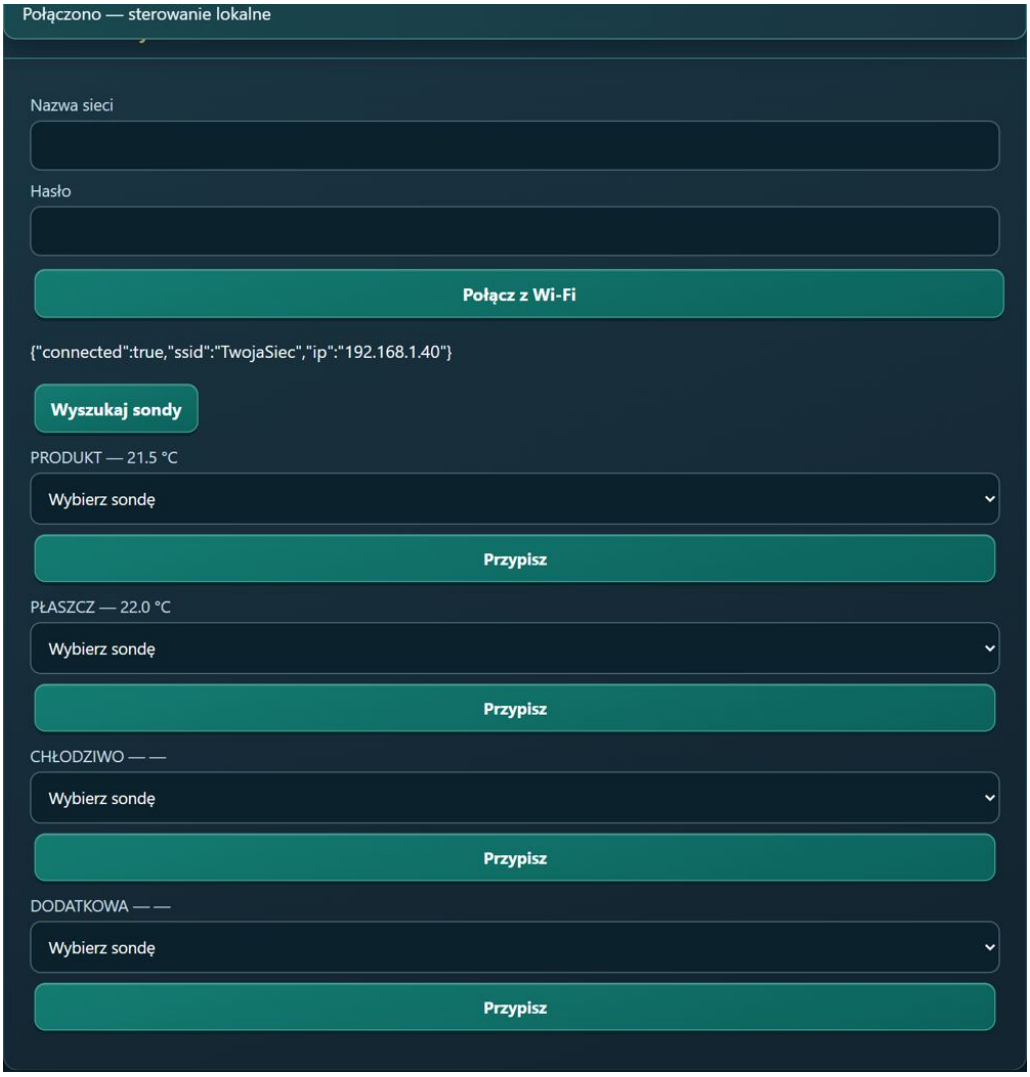
Actual WWW interface 0.5 with example data, not connected to a vat.

Expand "Heater Adjustment". Select AUTO P, AUTO PI, AUTO PID or MANUAL, enter max power and manual power and press “Save at STOP”.

This form is used for permanent power settings. Please refer to Regulations LIVE at the top of the page during the process. In LIVE, changing stage parameters requires confirmation and resets its counter.

Don't assume that values in an unvalidated form already control the heater. Wait for the save result and check the actual process status. Full controller coefficients are available on LCD in MENU → MOC.

WWW: Wi-Fi and probes



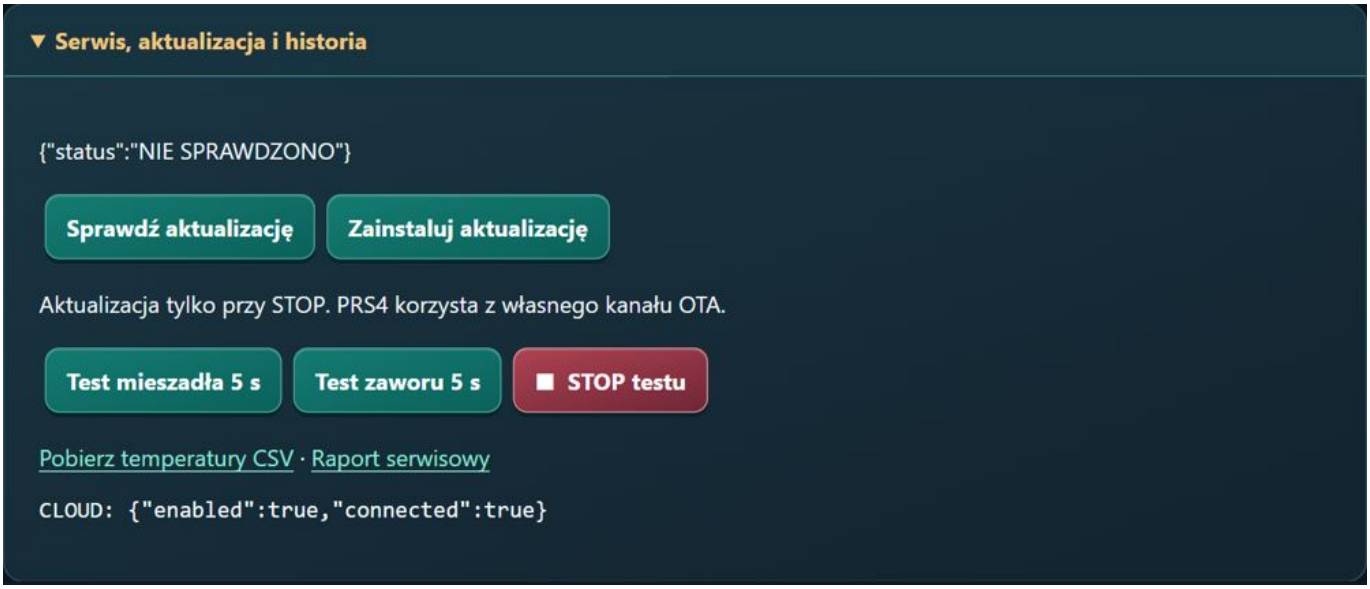
Actual WWW interface 0.5 with example data, not connected to a vat.

Expand "Wi-Fi and Probes". The network name is SSID of the router and the Password is the password of this network. Enter them carefully and press "Connect to Wi-Fi".

If the website stops responding after changing the network, check the current address in MENU → SIEĆ. You can reconnect your phone to PRS4_PAMEL and open 192.168.4.1.

“Search Probes” refreshes the sensor list. For the appropriate role, select the address and press Assign. Do this with STOP. Please check the product and jacket separately; the address order does not tell you where the sensor is located.

WWW: service, tests and history download



Actual WWW interface 0.5 with example data, not connected to a vat.

"Check for Update" checks version availability. "Install Update" starts the installation after confirmation. The same conditions apply as for LCD: STOP, no alarm and Internet.

“5 s Mixer Test” and “5 s Valve Test” activate the indicated output. "STOP test" terminates the test. Prepare the vat before pressing the button.

"Get Temperatures CSV" saves a history of measurements that can be opened in a spreadsheet. The "Service Report" contains data that is helpful when reporting a fault. The technical status note CLOUD at the bottom is not a control button.

CLOUD: Internet preview



CLOUD panel in DEMO mode.

The local page runs on the controller's network. CLOUD works online after logging in to your PAMEL account and assigning the PRS4 number. You can read the number in MENU → SERWIS.

In "My Devices", select your PRS4. The panel shows temperatures, stage, outputs and available commands. Check the device name and number before remote control.

The DEMO panel is used for learning. It shows sample data and does not send commands to your vat. The screenshot below comes from DEMO.

After sending the command, wait for the controller to confirm execution. Information about sending or accepting to the queue does not mean execution.

CLOUD: commands and no connection

The PRS4 panel supports program selection, START/STOP, pause, continue, DALEJ, step skip, custom banks and LIVE changes. Button availability depends on device status and read freshness.

When editing your own bank, load the current stages. After saving, check the device confirmation. LIVE changes affect the current step, not the saved program.

A normal read to CLOUD is sent approximately every 69 seconds, and command checks are sent approximately every 12 seconds. After the command, the device can send an additional reading. Therefore, CLOUD does not respond like a button on the local panel.

If you see OFFLINE or no confirmation, do not retry START repeatedly. Check the command result and status on the device. Internet loss does not stop a locally executing program.

The command has a limited validity period. It may be rejected when the stage or state of the process has changed. If you need to stop when CLOUD is not responding, use STOP on the controller.

First yogurt: preparation and heating

1. Prepare milk and yogurt culture according to your technology. Check the culture manufacturer's recommendations regarding temperature, dose and time. Do not add the culture before the stage intended for adding it.

2. Select MENU → PROGRAM → FERMENTOWANE → Natural yogurt. Review the settings: 85 °C / 20 min, cooling to 43 °C, adding cultures, incubation 43 °C / 6 h, control, cooling to 20 °C and transfer to cold room.

3. If the culture requires different settings, copy the program to the bank and change the appropriate steps before START. Do not assume that each culture is operating at 43 °C.

4. Check jacketed water, probes and mixer. Press START and confirm the message. The controller heats and stirs constantly. The 20 min time will start counting only after reaching the 84,5 – 85,5 °C band.

5. Once the temperature is maintained correctly, the program will automatically switch to cooling. The heater will turn off, the valve will open and the mixer will continue to operate.

The first yogurt: cultures, incubation and the end

6. Once 43 °C is reached, DODAJ KULTURY will appear. The process outputs will be disabled. Add the culture according to its instructions and mix as directed. Then press DALEJ.

7. In incubation, the controller regulates 43 °C without mixing. The 6 hours will start counting after the temperature is first reached. Do not use LIVE to accidentally correct the time - changing the settings resets the counter.

8. After the deduction, the program will ask you to check the pH and fermentation. Perform the checks provided in your technology. The controller will not check it for you. DALEJ starts cooling, so confirm only after you have decided to complete incubation.

9. The program cools to 20 °C without mixing. It then displays PRZENIEŚ DO CHŁODNI. Carry out further cooling and handling of the product according to your technology. 20 °C is not the declared storage temperature.

10. Once done, confirm DALEJ. The program will end. Save your batch notes; enter any corrections for the next batch in your bank at STOP.

How to read program cards

Each subsequent tab describes one actual factory program PRS4 0.5. The rows correspond to its included stages. After the last activated stage, the program ends.

The "Action" column provides the temperature and time or a manual action. "Agitation" means continuous operation, no agitation or on/off cycle in seconds.

“Heat to…” is a heating stage with time 0: it advances when the temperature band is reached. “Hold…” requires the temperature to stay continuously within ±0,5°C. “Incubate…” counts time from the first time the temperature is reached.

In manual operation, the outputs are turned off. Read the command, execute it and press DALEJ. The temperature value recorded at this stage does not mean that it is maintained.

The factory extra time limit is 120 min and the water jacket limit is the stage target + 8 °C (maximum 98 °C). The jacket temperature is not the product temperature.

The times on the card do not include the entire production time. Heating, cooling and manual operations depend on the vat, the load and the operator. Ingredient dosage and quality criteria come from your technology.

Natural yogurt

Prepare milk and yogurt culture. Adjust the temperature and incubation time to the culture requirements. Six hours is a time setting, not a measurement of the end of fermentation. After product inspection and cooling in the vat, perform further cooling in the cold room.

Stage	Action	Mixing
1	Hold at 85°C for 20 min	Continuous
2	Cool to 43°C	Continuous
3	Add cultures. Confirm DALEJ.	Off
4	Incubate at 43°C for 6 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Cool to 20°C	Off
7	Transfer the product to cold storage. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Greek yogurt

The process in the vat is the same as for natural yogurt. You obtain the thickness later by straining it. Prepare a suitable vessel and material for straining. The controller does not perform or evaluate this step outside the vat.

Stage	Action	Mixing
1	Hold at 85°C for 20 min	Continuous
2	Cool to 43°C	Continuous
3	Add cultures. Confirm DALEJ.	Off
4	Incubate at 43°C for 6 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Cool to 20°C	Off
7	Strain the yogurt/labneh. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Labneh - strained yogurt

Yogurt program with longer incubation and straining after its completion. Adjust the time 8 hours to the culture and expected result. You do salting and straining outside the controller.

Stage	Action	Mixing
1	Hold at 85°C for 20 min	Continuous
2	Cool to 43°C	Continuous
3	Add cultures. Confirm DALEJ.	Off
4	Incubate at 43°C for 8 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Cool to 20°C	Off
7	Strain the yogurt/labneh. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Cultured kefir

The program is intended for prepared milk and kefir culture. Fermentation 22 °C / 18 h requires adjustment to the culture used. Do not treat the program as a ready-made technology for kefir grains.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Cool to 22°C	Off
4	Incubate at 22°C for 18 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Cool to 20°C	Off
7	Transfer the product to cold storage. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Yogurt - incubation

The incubation stage itself. The batch must be prepared and vaccinated in advance in accordance with the technology. The program does not include heating to 85 °C or a separate command to add cultures. Before START, check whether the milk is ready for incubation.

Stage	Action	Mixing
1	Heat to 43°C	Off
2	Incubate at 43°C for 6 h	Off
3	Check pH and fermentation. Confirm DALEJ.	Off
4	Cool to 20°C	Off
5	Transfer the product to cold storage. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Sour cream

Prepare pasteurized cream and appropriate culture. 22 °C / 18 h are settings to be checked and adjusted, not an automatic acidification assessment. Inspect the product before cooling.

Stage	Action	Mixing
1	Heat to 22°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 22°C for 18 h	Off
4	Check pH and fermentation. Confirm DALEJ.	Off
5	Cool to 20°C	Off
6	Transfer the product to cold storage. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Crème fraîche

Prepare pasteurized cream and crème fraîche culture. The program assumes adding the culture at 30 °C, then cooling to 22 °C and 10 hours of incubation. Adjust these settings to the recommendations of the culture.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Cool to 22°C	Off
4	Incubate at 22°C for 10 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Cool to 20°C	Off
7	Transfer the product to cold storage. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Fresh rennet cheese

Program for prepared milk, cultures and rennet. Set the doses of additives according to their manufacturer. After 45 minutes of resting, check the curds before slicing. Straining, salting and cooling are done manually.

Stage	Action	Mixing
1	Heat to 32°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 32°C for 30 min	Off
4	Add rennet. Confirm DALEJ.	Off
5	Rest 45 min, without heating	Off
6	Check and cut the curds. Confirm DALEJ.	Off
7	Incubate at 32°C for 20 min	20 s / 60 s
8	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Quark

A program inspired by fromage blanc technology for skimmed milk. The instructions about cultures and rennet require that you take into account the composition of the culture used - do not add rennet again if the mixture already contains it. After incubation, check the clot.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures and rennet according to the recipe. Confirm DALEJ.	Off
3	Cool to 22°C	Off
4	Incubate at 22°C for 13 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Chèvre

Apply the culture appropriate for chèvre to the prepared goat's milk. If it contains rennet, take this into account when dosing. After 10 hours, check for clot; perform further straining, salting and cooling according to the technology.

Stage	Action	Mixing
1	Heat to 22°C	Continuous
2	Add cultures and rennet according to the recipe. Confirm DALEJ.	Off
3	Incubate at 22°C for 10 h	Off
4	Check and cut the curds. Confirm DALEJ.	Off
5	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Fromage blanc

Fromage blanc milk and culture program. Take into account the rennet present in the finished mixture. After adding the culture at 30 °C, the program cools down to 22 °C and conducts 13 hours of incubation. Check the curds before straining.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures and rennet according to the recipe. Confirm DALEJ.	Off
3	Cool to 22°C	Off
4	Incubate at 22°C for 13 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Cream cheese

Prepare milk with cream and cream cheese culture. Match the entered 22 °C / 18 h to the ingredients used. After inspection, perform straining and salting outside the vat.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures and rennet according to the recipe. Confirm DALEJ.	Off
3	Cool to 22°C	Off
4	Incubate at 22°C for 18 h	Off
5	Check pH and fermentation. Confirm DALEJ.	Off
6	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Cottage cheese

After 6 hours of incubation, inspect and cut the curd. Carry out the manual mixing required in the technology before reheating. The program raises the target to 45 °C in 75 minutes. Grain grading, straining and rinsing are done manually.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures and rennet according to the recipe. Confirm DALEJ.	Off
3	Incubate at 30°C for 6 h	Off
4	Check and cut the curds. Confirm DALEJ.	Off
5	Preheat to 45 °C in 75 min	20 s / 60 s
6	Check the grain/strain. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Paneer

Prepare the milk and food acid specified in the recipe. After heating and cooling to 77 °C, acidify and observe the separation of the curd. The program does not measure acid. You do the straining and pressing by hand.

Stage	Action	Mixing
1	Hold at 85°C for 25 min	Continuous
2	Cool to 77°C	Continuous
3	Add acid according to the recipe. Confirm DALEJ.	Off
4	Rest 20 min, without heating	Off
5	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Queso blanco

Prepare milk and kvass according to the selected technology. The program reaches 85 °C without additional holding time, then waits for acidification. After resting, strain, salt and shape the product.

Stage	Action	Mixing
1	Heat to 85°C	Continuous
2	Add acid according to the recipe. Confirm DALEJ.	Off
3	Rest 20 min, without heating	Off
4	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Ricotta from milk

The first step is manual: prepare the initial portion of acid and salt according to the recipe. At 77 °C, assess clot formation and correct acidification if necessary. Final heating to 90 °C takes place without stirring.

Stage	Action	Mixing
1	Add acid and salt according to the recipe. Confirm DALEJ.	Off
2	Heat to 77°C	Continuous
3	Add acid according to the recipe. Confirm DALEJ.	Off
4	Heat to 90°C	Off
5	Rest 20 min, without heating	Off
6	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Whey ricotta

Use fresh sweet whey from rennet cheese according to your recipe. Don't automatically replace it with sour cottage cheese whey. At 77 °C add the intended ingredients; at 85 °C, assess clot secretion. The agitator remains switched off.

Stage	Action	Mixing
1	Heat to 77°C	Off
2	Add acid and salt according to the recipe. Confirm DALEJ.	Off
3	Heat to 85°C	Off
4	Add acid according to the recipe. Confirm DALEJ.	Off
5	Rest 20 min, without heating	Off
6	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Mascarpone

Prepare the cream and acid provided in the recipe. After reaching 85 °C, acidify manually and evaluate the consistency. 20 minutes of rest without heating follow. Perform further straining and cooling outside the program.

Stage	Action	Mixing
1	Heat to 85°C	Continuous
2	Add acid according to the recipe. Confirm DALEJ.	Off
3	Rest 20 min, without heating	Off
4	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Feta - vat phase

This tab covers the work in the vat: adding the cultures, rennet, forming the curds, and stirring after cutting. Prepare the molds, brine and ripen separately. Check the curds before cutting.

Stage	Action	Mixing
1	Heat to 34°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 34°C for 45 min	Off
4	Add rennet. Confirm DALEJ.	Off
5	Rest 45 min, without heating	Off
6	Check and cut the curds. Confirm DALEJ.	Off
7	Incubate at 34°C for 25 min	20 s / 60 s
8	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Gouda - vat phase

The manual rinsing stage includes cutting, approximately 15 minutes of manual mixing, pouring off part of the whey and adding warm water according to the technology until approximately 38 °C is reached. The PRS4 valve cools the jacket and is not used to add water to the grain.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 30°C for 30 min	Off
4	Add rennet. Confirm DALEJ.	Off
5	Rest 40 min, without heating	Off
6	Rinse the grain as described. Confirm DALEJ.	Off
7	Incubate at 38°C for 30 min	20 s / 60 s
8	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Cheddar - vat phase

After cutting, the program gently heats the grain to 39 °C in 30 minutes. Check its condition before straining. Cheddarization, salting, pressing and maturing are not covered by this program.

Stage	Action	Mixing
1	Heat to 30°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 30°C for 90 min	Off
4	Add rennet. Confirm DALEJ.	Off
5	Rest 45 min, without heating	Off
6	Check and cut the curds. Confirm DALEJ.	Off
7	Heat to 39 °C in 30 min	20 s / 60 s
8	Check the grain/strain. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Mozzarella - vat phase

After cutting the curd, mixing takes place briefly and with long breaks: 10 s working / 300 s standing. Then strain, bring the mass to the conditions specified in the technology and perform a tensile test. The controller does not measure pH and does not brew.

Stage	Action	Mixing
1	Heat to 38°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 38°C for 1 h	Off
4	Add rennet. Confirm DALEJ.	Off
5	Rest 45 min, without heating	Off
6	Check and cut the curds. Confirm DALEJ.	Off
7	Incubate at 38°C for 1 h	10 s / 300 s
8	Prepare the cheese brewing. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Halloumi - vat phase

The program includes coagulation, cutting and heating of grain. The final brew command does not cook the cheese. Forming and processing in hot whey is carried out outside this profile.

Stage	Action	Mixing
1	Heat to 31°C	Continuous
2	Add rennet. Confirm DALEJ.	Off
3	Rest 40 min, without heating	Off
4	Check and cut the curds. Confirm DALEJ.	Off
5	Heat to 39 °C in 25 min	20 s / 60 s
6	Incubate at 39°C for 25 min	10 s / 240 s
7	Prepare the cheese brewing. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Camembert - vat phase

Use cultures and molds specific to Camembert technology. After rennet, the program provides for 90 minutes of rest without heating. Check the curds before cutting and filling the molds. PRS4 does not control humidity or ripening room.

Stage	Action	Mixing
1	Heat to 32°C	Continuous
2	Add cultures. Confirm DALEJ.	Off
3	Incubate at 32°C for 30 min	Off
4	Add rennet. Confirm DALEJ.	Off
5	Rest 90 min, without heating	Off
6	Check and cut the curds. Confirm DALEJ.	Off
7	Strain/put into molds. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Pasteurization 65 °C / 30 min

Technical program for heating and cooling milk. 65 °C / 30 min settings are a saved controller profile. Pasteurization effectiveness requires confirmation for specific milk, batch and vat. After cooling, perform further preparation according to your technology.

Stage	Action	Mixing
1	Hold at 65°C for 30 min	Continuous
2	Cool to 32°C	Continuous
3	Prepare the milk for further processing. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

Own program

It's a simple template: heat up to 40 °C, hold for 30 minutes and wait for confirmation. Copy it to the bank and set the necessary steps. The name "Custom Program" itself does not mean that the factory original can be overwritten.

Stage	Action	Mixing
1	Hold at 40°C for 30 min	Continuous
2	Confirm execution. Confirm DALEJ.	Off

Manual actions: outputs are off; press DALEJ to continue. Times apply to individual stages, not the entire production process.

When START is not working

WYMAGANE SONDY PRODUKTU AND PŁASZCZA. Check both assignments and readings in MENU → SONDY. The mere presence of a plug-in is not enough.

PUSTY BANK. Select factory program or save a copy to the bank.
BRAK AKTYWNYCH ETAPÓW. Enable the necessary steps and save the program.

AKTYWNY ALARM KRYTYCZNY. Read the cause, correct it and acknowledge the alarm. Do not retry START if the jacket is overheated or the probe is not measuring.

PRZERWANY PROCES. Check the product status after a power outage. Discard the save of the interrupted batch; PRS4 0.5 does not automatically continue such a batch.

PROCES JUŻ PRACUJE. Return to the home screen. Use PAUZA to temporarily pause and STOP to end. Do not attempt to restart an active program.

TRWA AKTUALIZACJA or BLOKADA PAMEL. Wait until the update is completed or contact the service, providing the exact message.

The temperature does not rise or fall

Heating has 0 %. Check whether the program is running, waiting for DALEJ and whether it is on pause. In cooling, operator activities and rest periods, the heater is intentionally turned off.

Check the product purpose, water jacket reading and PŁASZCZ MAX. Once the target temperature or jacket limit is reached, the heating can be turned off. Also check MOC MAX and selected controller mode.

There is power but no temperature increase. Stop the process and check the installation: water, heater, power and security. Don't bypass restrictions with an exit test.

Valve is open and product is not cooling. Check cooling water inlet, outlet and temperature. Water warmer than the target will not ensure reaching this target. Also check the position of the product probe.

LIMIT CZASU GRZANIA / CHŁODZENIA. The stage did not reach its completion condition within the allowed time. First remove the cause. Simply increasing the time will not fix the flow or the coil.

The counter stands, returns to zero or waits for DALEJ

The counter has not started yet. In maintenance and incubation, the temperature must first be reached. Watch the product measurement, not just the jacket temperature.

The counter has returned to zero. In UTRZYMANIU CIĄGŁYM, going out of band ± 0,5 °C resets the time. Pause works the same way in this mode. Changing stage parameters via LIVE also restarts the counter.

The stage has 0 min but is still running. In cooling, the temperature must be reached. For operator action, you must execute the command and press DALEJ. Zero minutes does not mean a disabled stage.

DALEJ is displayed. The controller is waiting for confirmation and the process outputs are disabled. Check the message and recipe. Do not leave the product in this condition, assuming that the temperature will be maintained.

During cooling, a general message about heating appears. IN PRS4 0.5 such text can be used for a stage without a counter running. Check stage TRYB and valve condition. The inscription itself does not mean that the heater is turned on.

Power failure and process interruption

When the power returns, the outputs do not automatically start production. The controller may show a record of the interrupted process and a WZNÓW button.

In PRS4 0.5, resuming an interrupted batch is blocked. Despite the visible inscription WZNÓW, the program requires product evaluation and rejection of the entry. Don't take this button as a guarantee to continue.

On the local WWW page, use "Discard interrupted process". On LCD STOP, it deletes the record of the interrupted process and leaves the outputs disabled.

Before starting a new program, determine the break time and actual product conditions. If they can't be judged, don't assume the batch is correct just because the temperature is back on the screen.

The new START starts the program from its first enabled stage. It does not reproduce the waveform that the controller could not control during a power failure.

Device data and equipment limits

PRS4 0.5 supports TFT 320 × 240 touch screen, DS18B20 probes, heating, mixer relay and cooling valve. Requires product and jacket measurement; two more probes are optional.

The library has 26 programs in five groups. 10 banks are used for your own settings. The program may contain up to eight stages. Connectivity: Wi-Fi, WWW local site and PRS4 separate panel in CLOUD.

The output described in the PRW base installation as "heating fan" serves here as a control for the mixer relay. "Dehumidification fan" corresponds to the cooling valve. This is a description of the function; does not specify the permissible power of the receiver.

Check the power supply, currents, load capacity and socket types in the markings of the delivered unit and its installation documentation. There is no approved complete data for the finished product in the 0.5 test release documentation. This software manual does not replace the wiring diagram.

Some of the functions described may be of a test nature, optional or dependent on software and equipment versions. Not all functions need to be present in every copy of the controller.

History, additional modules and a copy of settings

The temperature history has up to 576 samples recorded every 300 seconds, i.e. every 5 minutes. With continuous collection, this corresponds to approximately 48 hours. This is the range of history, not the maximum operating time of the device.

Download CSV when you need to keep data outside the controller. The reading history does not confirm that manual actions were performed or that the entire technology was correct.

Before making a major change to your own program, you can use "Export Recipe JSON" in your local WWW. Save the file with the product name and date. This version of the page does not provide a button to import such a file.

The common program database contains the PAMEL_BUS bus icon. It does not mean that PRS4 is compatible with every PAMEL module. For the 0.5 release, there is no approved list of extensions in this manual; Before connecting an additional module, confirm compatibility in PAMEL.

Don't plug in an additional device just because it has a similar socket. The module name or icon on screen does not indicate voltage or connection compatibility.

Cleaning and daily inspection

Once the process is complete, stop the device and disconnect the power before working on the installation. Wait until hot components can be safely handled.

Clean the controller housing without pouring water or using a stream of water. Do not allow condensation to form on the joints. Clean sensors in contact with the product in accordance with their design and installation hygiene rules.

Before the next batch, check the probe cables, the seating of the connectors, the water flow, the operation of the valve and mixer, and the filling of the jacket. A damaged cable or unstable measurement must be removed before heating.

Do not dispose of the used controller with household waste. Take it to the appropriate collection point for electrical and electronic equipment. BDO PAMEL number: 000073814.

Help, instructions and exercises

PAMEL
42-300 Myszków, ul. Urodzajna 5E
Tel. +48 453 343 360
E-mail: pamel@pamel.pl

When reporting, please provide the PRS4 model, FW version, device number, program name and stage. Copy the exact message or attach a photo. Please write whether the problem occurs on LCD, the local site or CLOUD.

PRS4 product centre
PRS4 manuals
PAMEL EDU – operating practice
PRS4 CLOUD panel DEMO

The latest contact details, manuals, knowledge base and service information are available at pamel.pl . EDU and DEMO are for practice; they do not control the actual heater.

YouTube: PAMEL STEROWNIKI · Facebook PAMEL

WARUNKI GWARANCJI

Firma PAMEL udziela gwarancji na sterownik (bez wyposażenia dodatkowego) na terenie Rzeczpospolitej Polskiej na okres maksymalnie 60 miesięcy:
24 miesiące gwarancji podstawowej,
6 miesięcy gwarancji rozszerzonej producenta,
dodatkowo możliwe jest zakupienie przedłużenia gwarancji do 40 lub 50 miesięcy.
Łączny okres gwarancji nie może przekroczyć 80 miesięcy od daty produkcji urządzenia.
Wyposażenie dodatkowe (np. sondy, grzałki) objęte jest standardową gwarancją wynikającą z Kodeksu Cywilnego.
Zakupione przedłużenie gwarancji potwierdza hologramowa naklejka na karcie gwarancyjnej.
Gwarancją nie są objęte elementy eksploatacyjne i akcesoria przeznaczone do samodzielnego montażu (np. anteny, czujniki, uchwyty, grzałki, przewody, baterie).
W okresie gwarancji producent zobowiązuje się do bezpłatnego usunięcia wad fizycznych.
Jeżeli w ramach gwarancji podstawowej dokonano co najmniej czterech napraw, a urządzenie nadal jest wadliwe, Kupujący ma prawo do wymiany na nowy egzemplarz o równorzędnych parametrach lub do zwrotu zapłaty.
Okres gwarancji ulega przedłużeniu o czas trwania naprawy.
Reklamacje należy zgłaszać mailowo (pamel@pamel.pl) lub telefonicznie.
Producent w pierwszej kolejności podejmie próbę rozwiązania problemu zdalnie i wskaże dalsze kroki reklamacyjne.
Na żądanie producenta Kupujący zobowiązany jest do wypełnienia protokołu reklamacyjnego.
Gwarancja obejmuje wyłącznie wady powstałe z przyczyn tkwiących w urządzeniu.
Gwarancją nie są objęte uszkodzenia powstałe na skutek:
niewłaściwego montażu, eksploatacji lub konserwacji,
przechowywania w nieodpowiednich warunkach,
używania niewłaściwych materiałów eksploatacyjnych,
samodzielnych napraw lub modyfikacji,
uszkodzeń mechanicznych, zalania, kondensacji pary wodnej, zanieczyszczeń, zjawisk atmosferycznych, zdarzeń losowych, przekroczenia parametrów znamionowych.
Gwarancja nie obejmuje roszczeń dotyczących parametrów technicznych urządzenia, o ile są one zgodne z danymi producenta.
Warunkiem zachowania praw gwarancyjnych jest dostarczenie urządzenia:
w stanie kompletnym,
w opakowaniu chroniącym przed uszkodzeniem,
wraz z dokumentacją, kablami i elementami dodatkowymi,
bez usuniętych lub naruszonych plomb i naklejek,
z oryginalną kartą gwarancyjną podpisaną przez obie strony i naklejką z datą produkcji.
Gwarancja nie obejmuje usług i materiałów związanych z normalną obsługą eksploatacyjną (np. montaż, programowanie, czyszczenie, konserwacja, wymiana bezpieczników i żarówek). Usługi te są płatne.

Serwis może odmówić wykonania naprawy gwarancyjnej w przypadku:
niezgodności danych w dokumentacji ze stanem faktycznym urządzenia,
nieuprawnionych poprawek w dokumentach,
usunięcia znaków identyfikacyjnych urządzenia (np. nalepki).
Naprawy gwarancyjne wykonywane są w terminie do 21 dni od daty dostarczenia urządzenia do serwisu.
W przypadku konieczności sprowadzenia części z zagranicy termin ten może zostać wydłużony – Kupujący zostanie o tym poinformowany mailowo.
Montaż urządzenia musi być wykonany zgodnie z normami i instrukcją obsługi. W przypadku wymogu prawnego instalację musi przeprowadzić osoba z odpowiednimi uprawnieniami.
Zakres praw i obowiązków stron reguluje wyłącznie niniejszy dokument.
Sprzęt nieodebrany z serwisu w ciągu 3 miesięcy od zakończenia naprawy przechodzi na własność serwisu.
Wymienione podczas naprawy części pozostają własnością producenta.
Producent nie odpowiada za utratę danych użytkownika zapisanych w urządzeniu. Urządzenie po naprawie zwracane jest w stanie przywróconym do ustawień fabrycznych.
Kupujący składając podpis na karcie gwarancyjnej potwierdza, że zapoznał się z warunkami gwarancji i je akceptuje.
Karta bez podpisu oraz bez oryginalnej nalepki z datą produkcji jest nieważna.
Uwaga: Do ilości napraw nie wlicza się czynności konserwacyjnych, czyszczenia, wymiany żarówek, bezpieczników, elementów zużywalnych czy napraw wynikających z naturalnego zużycia (np. potencjometrów).
19.09.2025

DATA ROZPOCZĘCIA OKRESU GWARANCJI
PIECZĄTKA SPRZEDAWCY
PODPIS KLIENTA