

USER MANUAL

PRD4

Wi-Fi

Controller for heating, smoking and measuring applications

KEY BENEFITS**PRECISION**

Accurate control of processes and measurements

**SECURITY**

Security at the highest level

**RELIABILITY**

Stable and reliable operation

**UPDATES**

Continuous improvement and new features

**IN THIS MANUAL**

- Device and security information
- Installation and connection
- Configuration and operation
- Features and settings
- Troubleshooting
- Updates and service

DOCUMENTATION AND SUPPORT

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How to use the manual

PRD4 • firmware version 0.4

The instructions guide you from the first start to saving your own program. The names written in capital letters correspond to the buttons and settings of the controller.

First read the principle of operation and safe operation. Before the first START, check the probe assignment, power mode and operation of all valves.

The setting range is the range allowed by the controller. It does not specify the permissible temperature of the probe, cable or other elements of the installation.

The factory values are the starting point for configuration. They are not a ready-made recipe for every set.

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OPERATING PRINCIPLE

What does PRD4 do

PRD4 measures temperatures, regulates the heater power and controls three valve outputs. Supports up to four probes. You assign a role to the probe and then select it in the power, valve or process end settings.

The process may include STABILIZATION, FORESHOTS and DISTILLATION. You set temperatures and times for stages. The disabled stabilization stage and the pre-tail at time 0 are skipped.

In MANUAL mode, you set the power percentage yourself. AUTO P and AUTO PID calculate power from the temperature of the selected probe and the setpoints of the current stage. The valves have their own settings and do not have to switch with a stage change.

After power-up, the controller remains in STOP. Loading a program or recipe does not start heating. Before START, check the readiness of the entire installation.

You can operate it on a touch screen or via a local panel on your phone or computer. Internet connection is also used for Cloud and updates.

Safe operation

Read before connecting

DANGER - voltage 230 V. Disconnect power before connecting loads, working on cables or cleaning. STOP on the screen does not replace disconnecting the power supply. Do not open the housing under voltage.

WARNING - load on the installation. The heater can have a maximum of 5,5 kW and each valve can draw a maximum of 1 A at 230 V. Power, protection, wiring and connections must match the load of the set. Entrust the assessment of the installation to an electrician.

WARNING - hot components. Do not operate the heater without the conditions required by its manufacturer. Provide the required cooling of the installation. After STOP, some components still remain hot.

ATTENTION - water and steam. Protect the controller and connectors against flooding and condensation. An airtight heater socket does not mean that you can pour water over the entire controller.

Don't leave the process unattended. Wi-Fi connectivity and remote STOP are not a substitute for installation security and on-site power disconnection.

Controller and equipment

What do you connect to the PRD4

The power cord is 180 cm long. You connect the heater to the hermetic socket 230 V. Three separate valve outputs are narrow sockets GN11 230 V, maximum 1 A for each output.

You connect the probes via two D-SUB and one RJ45 connectors. For larger numbers of probes, use the appropriate PAMEL hubs. In total, the controller supports a maximum of four probes, regardless of the number of hub sockets.

The RJ45 connector for probes is not an Ethernet jack. Only connect probes and accessories compatible with this PAMEL connection.

Depending on the purchased variant, the set includes a controller without probes or a controller with two D-SUB standard probes. Before installation, compare the equipment with your order.

Power supply/heater	230 V / max. 5,5 kW
Valve outputs	3 × 230 V; max 1 A per output
Probes	Up to 4; 2 × D-SUB and 1 × RJ45
Operation	2,8" touch screen; local Wi-Fi
Program memory	5 own programs

First run

Preparation sequence

1. With the power disconnected, check the cables, receivers and probes. Place the controller in a dry place, away from steam and hot surfaces.
2. Turn on the controller. Check if STOP is visible. When touch calibration appears, follow the on-screen instructions.
3. Install the probes and assign them to the appropriate roles: COLUMN, TANK, 3 PROBE, or 4 PROBE. The assignment method is described on page 9.
4. In MENU → PROCESS configure stages, power and valves. Check the power control probe and any end-of-process probe.
5. Under safe conditions, perform short output tests. Check which actual valve corresponds to each number on the screen.
6. If you want to use your phone, set up local Wi-Fi. Save the proven settings in one of five programs.
7. Prepare the installation for operation. Only then press START. Once you start, keep an eye on temperatures, power, and valve condition.

Touch screen

Reading and changing settings

On the main screen you can see the temperatures of the assigned probes, settings and information about operation. With more probes, the fields are smaller to accommodate four readings.

Touch the temperature field to open the setpoint change. The -1, -0,1, +0,1 and +1 buttons change the value. SAVE commits and CANCEL rejects the change.

The power control probe setting applies to the stage temperature. Simply setting a value on another probe does not automatically assign it to a valve or end condition.

MENU opens settings. START starts the process if the startup conditions are met. STOP terminates and turns off the outputs.

Lack of correct measurement is indicated by dashes. Do not treat them as temperatures 0°C.



PRD4 screen. The values in the illustrations are examples. Screen photography in the Polish version of the interface. The function names are described in the text.

Menu and saving changes

Where to look for settings

PROCESS: stage settings, POWER, VALVES and PROGRAMS. In the settings view, select EDIT, then parameter. Confirm the change by pressing the SAVE button.

PROBE: readings, installation and calibration. You can also conveniently change the names and assignment of detected probes in the local panel.

NETWORK: device connection and address information; LCD and WWW language selection.

COMMUNICATION: PAMEL CLOUD, PAMEL_BUS, UPDATE and contact with the manufacturer.

SERVICE: output tests, alarms, statistics, device information, touch calibration and restore settings.

Stop the process before making changes that affect heating or valves. Saving the current settings does not replace saving them to the selected program.



Menu on the controller screen. Screen photography in the Polish version of the interface. The function names are described in the text.

Installation and assignment of probes

The role of the probe does not depend on the slot number

Each probe has its own ID. The controller remembers the assignment of the ID to the role. Moving the plug to another compatible socket does not automatically change the role of the probe.

Single LCD installation: stop the process. With the power off, leave only the probe you want to assign connected. Turn on the controller and select MENU → PROBES → INSTALL.

Select COLUMN, TANK, 3 PROBE or 4 PROBE. Wait for the message INSTALLED. Repeat for additional probes and then connect all of them.

In the web panel: in the probes tab, refresh the list of detected IDs. With the correct ID, select a role and ASSIGN. If you don't know which ID belongs to which probe, install them one at a time.

The same probe cannot occupy two roles at the same time. The new assignment removes her previous role. CLEAR removes the assignment; does not repair a damaged probe.

After installation, check if the reading changes with the probe you are heating. The name can be shortened to a maximum of 10 characters.

Probe calibration

Multiplier and offset

Calibration corrects the reading of the assigned role. The calculation is: **displayed temperature = measured temperature × multiplier + offset.**

Multiplier: factory 1,000; range 0,5-1,5. Changes the measurement scale. For alignment based on two reference points, reliable measurements are needed at both points.

Offset: factory 0,0°C; range from -20 to +20°C. Shifts the entire reading by a fixed amount.

Example: the probe shows 24,6°C and the reliable reference thermometer shows 25,0°C. With the 1,000 multiplier, the offset +0,4°C equalizes this measurement point.

In the MENU → PROBES, select CALIBRATE and the appropriate probe. In WWW, set the multiplier and offset for its role, and then SAVE.

Compare probes under the same, stabilized conditions. Do not adjust the reading just because two different installation locations have different temperatures. After replacing the probe, also check its retained role coefficients.

Process flow

Stages and transitions

STOP: the controller is waiting to be started. The settings remain saved, but the process does not run.

STABILIZATION: if it is enabled and has a time greater than 0, it starts the process. The stabilization countdown starts when the control probe temperature reaches the set band.

FORESHOTS: occurs after stabilization or immediately after START if stabilization is omitted. 0 time skips this step.

DISTILLATION: stage of work with its own set temperature. It may end after a time or after reaching the end temperature if these conditions are enabled.

END: normal process completion. The heating and valve outputs are turned off. Prepare the installation before reinstalling START.

NEXT STEP in the local panel skips the remaining time of the current stage. Use it consciously: from DISTILLATION it goes to completion.

Valve algorithms work according to separate settings. The valve name or function does not automatically synchronize it with the stage.

Stabilization settings

When the countdown starts

STABILIZATION: YES/NO; factory YES. Selecting NO skips the stabilization step. Setting the time to 0 also skips this step.

TEMP. STABILIZATION: factory 78,0°C; range -20 to 150°C. In AUTO P and AUTO PID it is the set temperature for power control during this stage.

BANDWIDTH $\pm$: factory 0,5°C; range 0,1-10°C. Specifies the area into which the control probe temperature should enter to start the countdown.

TIME STABILIZATION: factory 1200 s, i.e. 20 minutes; range 0-86400 s. In the web panel, enter seconds.

Example: for 78,0°C and the $\pm 0,5^\circ\text{C}$ band, the countdown can start when reading from 77,5 to 78,5°C.

After the first entry into the band, the counter continues running. Temperature going outside the band does not reset it and does not stop it. WAIT means waiting for the countdown to start.

In the MANUAL, the stage temperature does not automatically change the power, but the stabilization countdown start condition still requires correct measurement.

Foreshots and distillation

Temperature, time and skipping steps

FORESHOTS TEMPERATURE: default 78,2°C; range -20 to 150°C. This is the temperature setpoint used by AUTO P and AUTO PID during this stage.

FORESHOTS TIME: default 300 s (5 minutes); range 0-86400 s. A value of 0 skips this stage. The timer starts on entry into the stage without waiting for the temperature to reach its setpoint.

TEMP. DISTILLATION / TEMP. WORK: factory 78,3°C; range -20 to 150°C. Defines the set temperature of the main stage of operation in automatic mode.

TIME DISTILLATION / WORKING TIME: factory default 0, i.e. without time limit. Range 0-604800 s. A positive value ends the stage after the specified time.

If you do not set a timeout or end after temperature, the process continues until the user stops or an emergency condition occurs.

The names of the stages describe the operation of the program. Temperature measurement alone does not determine the composition or suitability of the resulting product.

Termination and stopping

Three different situations

END AFTER TEMPERATURE: factory NO. Once enabled, it runs at stage DISTILLATION. The selected probe must have a valid reading.

END PROBE: one of four roles; factory TANK. It does not have to be the same probe that controls the power.

END TEMPERATURE: default 98,0°C; range -20 to 150°C. A valid reading at or above this threshold ends the process. If a time limit is also enabled, the process ends when either condition is met first.

STOP: simple process stop. Use it before program replacement, configuration changes and servicing.

STOP EMERGENCY: blocks operation until the emergency condition is cleared. First remove the cause, then reset the alarm. Reset does not start the process.

A power failure interrupts the process. After the power returns, the controller starts in STOP and does not automatically resume the previous countdown.

After each stop, check the actual condition of the installation. Turning off the power to the valve does not necessarily mean that the flow is physically closed.

Power regulation

MANUAL, AUTO P and AUTO PID

MANUAL: you set the power percentage directly. The controller does not adjust it to the stage temperature. Monitor readings and installation response.

AUTO P: the power depends on the difference between the set temperature of the stage and the temperature of the control probe. The greater the positive difference, the greater the calculated power.

When the temperature reaches or exceeds the set point, AUTO P determines the power 0%. MIN POWER does not mean constant heating at the achieved temperature.

AUTO PID: the controller takes into account the current temperature difference, its persistence over time and the rate of change. Kp, Ki and Kd settings are described on page 17.

THE CONTROL PROBE must correspond to the measurement point according to which you want to regulate the heating. By default, it is a COLUMN.

Power percentage is a heater control command, not a measurement of energy used. The HEATER ON/OFF status may change during adjustment, despite the constant percentage value.

Power parameters

Factory ranges and values

POWER MODE: MANUAL / AUTO P / AUTO PID; factory AUTO P.

CONTROL PROBE: COLUMN, TANK, PROBE 3 or PROBE 4; factory COLUMN.

POWER MANUAL: 0-100%, factory 45%. It works in MANUAL mode. The MIN POWER and MAX POWER limits of the automatic controller do not limit this setting.

MIN POWER: 0-100%, factory 20%. Raises the positive power calculated by the automatic controller to this value. Does not force heating when the controller result is 0%.

MAX POWER: from MIN POWER to 100%, factory 100%. Limits the result of AUTO P and AUTO PID. It does not replace the proper selection of the heater or installation protection.

WSP: 0,1-50, factory 12. In AUTO P, the positive temperature difference is multiplied by WSP, then the MIN POWER and MAX POWER are taken into account.

Example AUTO P: difference 2°C and WSP 12 give 24%. The difference 0,5°C gives 6%, raised to 20% at factory MIN POWER. With a difference of 0°C, the power is 0%.

AUTO PID Settings

Selection of the controller's response

PID Kp: range 0-100; factory 10. Determines the response to the current temperature difference. A larger value increases this part of the reaction.

PID Ki: range 0-20; factory 0,08. Specifies the escalation of response to an error that persists over time. Too high a value may cause excessive heating and fluctuations.

PID Kd: range 0-100; factory 0. Responds to the rate of error change. A large value may intensify the reaction to measurement disturbances.

The PID result is influenced by MIN POWER and MAX POWER. WSP settings apply to AUTO P; they do not replace PID coefficients.

Change one parameter at a time and watch the installation respond. Take into account the delay between a change in power and a change in temperature reading.

If you do not have the PID coefficients selected, start the configuration with AUTO P. Do not copy parameters from installations with different power, volume or probe position without checking operation.

Valves - common settings

Three independent outputs

Each valve has its own name, function, mode, probe and settings. The number on the screen corresponds to the output number, not the valve location in the installation.

NAME: maximum 10 characters. **FUNCTION:** NOT ASSIGNED, COOLING, RECEIVING FORESHOTS, DISTILLATE RECEIVING, REFLUX/RETURN or OTHER. A function is a description; you select the algorithm in the MODE field.

PROBE: one of four roles; factory COLUMN. The valve threshold refers to the reading of this probe.

CONTROL: AUTO executes the algorithm; ON and OFF force its state while the process is running. After STOP, the outputs are turned off.

LOGIC: factory NO; NC reverses the output command during operation. Match it to the actual valve and check it with a test. Don't assume that ON always means open flow.

Before START, also check unused valves. The factory UNASIGNED function does not disable their algorithm. Set the unused valve consciously to OFF and check the output logic.

Valve: HYSTERESIS

Switching on and off at different thresholds

The valve algorithm switches on when the temperature reaches T1. It switches off when the temperature falls to T1 minus the hysteresis value or below.

SWITCH-ON TEMPERATURE (T1): range -20 to 150°C; default 78,0°C for valves 1 and 3.

HYSTERESIS: range 0-20°C; factory 0,5°C. The gap between the switch-on and switch-off temperatures limits frequent switching.

Example: T1 = 78,0°C and hysteresis = 0,5°C. When the temperature increases, switching on will occur from 78,0°C. When falling, the shutdown will occur at 77,5°C or lower.

The description concerns the state of the algorithm. LOGIC NC reverses the command on the output.

By default, the 1 and 3 valves operate in HYSTERESIS. Check whether this mode corresponds to their actual task.



View valve settings on LCD. Screen photography in the Polish version of the interface. The function names are described in the text.

Valve: WINDOW and WINDOW 2

Similar thresholds, different reconnection

LOWER THRESHOLD (T1) and UPPER THRESHOLD (T2): both settings range from -20 to 150°C. Set T1 below T2.

WINDOW: the output switches on when $T1 \leq T < T2$. At $T \geq T2$ it switches off and stays off until the temperature drops below T1. Only then is it ready to switch on again.

Example WINDOW: thresholds 77,5°C and 79,0°C. After reaching 79,0°C, the valve turns off. Dropping to 78,0°C will not turn it on again. A drop below 77,5°C is needed first.

WINDOW 2: the output is on whenever $T1 \leq T < T2$. Exceeding the upper threshold does not latch the output off.

In this example, a drop from 79,0°C to 78,0°C switches the output on again in WINDOW 2 mode.

From the factory, the 2 valve has the WINDOW mode, $T1 = 77,5^\circ\text{C}$ and $T2 = 79,0^\circ\text{C}$. NC LOGIC inverts the output state also in these modes.

Valve: FORESHOTS and TAILS

One-time activation after the temperature threshold

In these two modes, the operation is triggered by reaching the temperature threshold of the selected probe. The mode name does not imply automatic association with a process step.

TEMP. START (T1): range -20 to 150°C. The first reading equal to or greater than T1 starts the valve sequence.

DELAY: 0-86400 s; factory default 0 s. After triggering, the valve waits for the specified time.

START TIME: 1-86400 s; factory default 60 s. After the delay, the algorithm turns the valve on for this time and then turns it off.

Example: threshold 78°C, delay 30 s, on-time 60 s. When the temperature first reaches 78°C, the delay starts. After 30 s, the valve switches on for 60 s and then switches off.

This sequence runs once per process. A temperature drop followed by a rise does not restart it. A new START resets the sequence.

FORESHOTS and TAILS have the same countdown method. You achieve different tasks by selecting the probe, threshold, delay and time.

Five of your own programs

Save, edit and load

The program stores the settings for stages, power, three valves and temperature settings. Five memory locations do not mean five ready-made recipes - they have the same factory settings.

Saving current settings: in the web panel, open PROGRAMS, select a location, enter a name and use the function to save current settings to the program. The name can be up to 16 characters long.

Program Edit: select it in WWW, change the process, power and valve fields, then save the program. Editing program memory does not constitute starting a process.

Loading: stop the process. On the LCD, select MENU → PROCESS → PROGRAMS and touch the selected program or load it in the web panel.

After loading, check all settings. Only the separate START starts working. The driver does not allow you to load the program while the process is in progress.

Probe assignments, calibration and Wi-Fi data are separate settings. They don't change based on the program name alone.

Wi-Fi without a router

Direct connection to PRD4

1. Turn on the controller. If it doesn't have an available network saved, it will provide its own network **PRD4WIFI_PAMEL**. In case of an unsuccessful attempt to connect to the router, it may take approximately 20 seconds.
2. On your phone or computer, open the Wi-Fi network list and connect to **PRD4WIFI_PAMEL**. The configuration network does not require a password.
3. If your phone reports no Internet, choose to stay on that network. Internet is not needed for local operation.
4. In your browser, type **http://192.168.4.1**. Enter the address in the address bar, not in the search box.
5. Check the device number and readings. You can use the local panel or go to configure the connection to the router.

Use the configuration network in a controlled environment. A person connected to this network has access to the local control panel.

Connection to home Wi-Fi

Save the network and find a new address

1. In the local panel, open the Wi-Fi settings. Select SEARCH FOR NETWORKS or enter the name SSID. Use the 2,4 GHz network.
2. Enter your router password and select CONNECT AND SAVE. Check your password's spelling, case and selected network name.
3. After successful connection, the controller saves the network data and disables its own network PRD4WIFI_PAMEL. The current page may stop responding - this is a connection change.
4. Connect your phone to the same router network. Open the network information on the LCD and read the new address IP of the controller.
5. Open this address in a browser, prefixing it with http://. The router may assign a different address after a restart.

Changing the router or password: after a failed connection, use the PRD4WIFI_PAMEL network and enter new data. WI-FI RESET / AP deletes the saved network and activates the access point.

A guest network or device isolation in the router may block local communication despite a proper connection to Wi-Fi.

Local web panel

Preview and commands

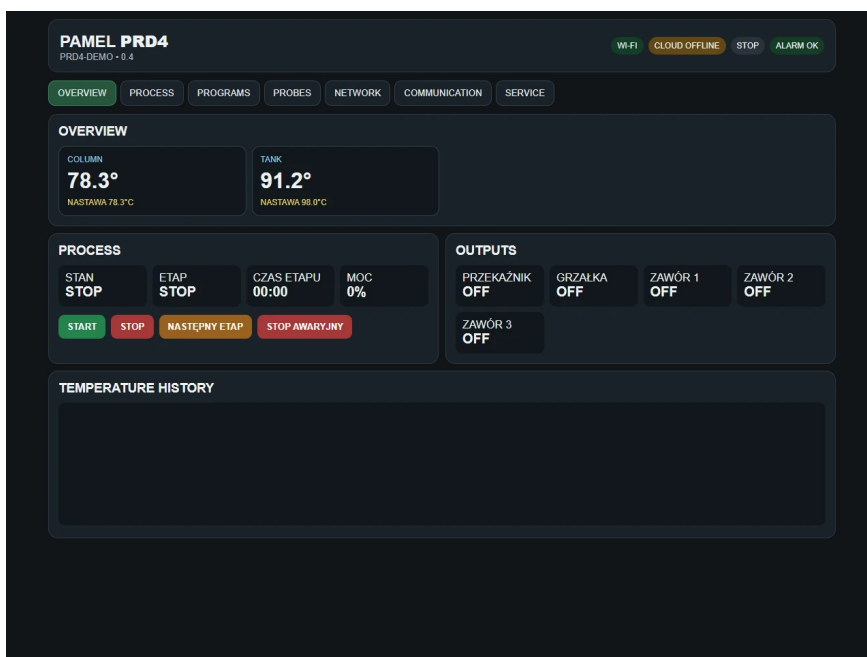
You open the panel in the browser at the local address of the controller. No subscription required. In the upper part you can check the device number, version, connectivity, operation and alarms.

The preview shows temperatures, setpoints, power, stage and time. ON/OFF at the outputs informs about the control status, it does not confirm the flow or physical operation of the valve.

START starts the process, STOP stops it. NEXT STEP skips the rest of the current stage. STOP EMERGENCY blocks operation until the emergency condition is reset.

The graph shows the local measurement history. After restarting, do not treat it as a complete archive of previous processes.

If data stops refreshing, check your connection. The last visible reading on your phone may be out of date.



Local panel PRD4 - sample preview.

Changing settings via the web

Save the correct section

The process tab lets you change stabilization, foreshots, distillation and temperature-based termination settings. **SAVE PROCESS** saves this group of settings.

Power settings include mode, control probe, manual power, limits, WSP and PID. Confirm them with **SAVE POWER**.

You save each valve using a separate **SAVE VALVE** button. After changing the mode, check the thresholds and the appropriate time fields.

The probes tab lets you name probes, assign their identifiers and save calibration settings. The interface settings let you select the display language and enable or disable the alarm sound.

After saving, read the result message. Simply entering a value into the field does not confirm that it has been saved in the controller.

If you want to return to these settings, also save them to the selected program.

The screenshot displays the PAMEL PRD4 web interface. At the top, there's a header with 'PAMEL PRD4' and 'PRD4-DEMO - 0.4'. Below this is a navigation bar with tabs: OVERVIEW, PROCESS (selected), PROGRAMS, PROBES, NETWORK, COMMUNICATION, and SERVICE. The main content area is divided into three sections: PROCESS SETTINGS, POWER SETTINGS, and VALVES. The PROCESS SETTINGS section includes fields for STABILIZATION (TAK), STABILIZATION TEMP (78), BAND (0.5), STABILIZATION TIME (1200), FORESHOTS TEMP (70.2), FORESHOTS TIME (300), DISTILLATION TEMP (78.3), DISTILLATION TIME (0), and distillation stop settings. The POWER SETTINGS section includes POWER MODE (AUTO P), CONTROL PROBE (COLUMN), MANUAL POWER (45), MIN POWER (20), MAX POWER (100), WSP (12), PID Kp (10), PID Ki (0.08), and PID Kd (0). The VALVES section shows a table for VALVE 1 (OFF) with columns for NAME, FUNCTION, MODE, SENSORS, LOGIC, and CONTROL, with values like NIEPRZYPIŚANY, COLUMN, NO, and AUTO.

Process settings in the local panel.

PAMEL Mobile

Your controller on your phone

The current application and installation instructions can be found at: serwer.pamel.pl/apka/. Use this page to download the correct edition.

For local operation, the phone must be connected to the controller: directly through PRD4WIFI_PAMEL or through the same router.

Open the app and add or select PRD4. If the device cannot be found automatically, check its local address IP on the LCD and the availability of this address in the browser.

Local support works without a paid Cloud package. Lack of Internet does not disable local settings and previews.

Outside your home network, you use Cloud functions assigned to your account and package. This is a different connection than direct local service.

After changing the router, phone network or IP address, check the connection to the correct device again.



PAMEL Mobile - installation and help
<https://serwer.pamel.pl/apka/>

PAMEL Cloud

Access via the Internet

Cloud requires connecting the PRD4 to a router with Internet access and assigning the device to your account. Go to serwer.pamel.pl and use the My devices section.

You can check the device number on the LCD or in the local panel. When adding, use the pairing instructions displayed in your account; do not enter the number of another controller.

BASIC is available for the lifetime of the device. The three-month PRO trial starts on activation, when the device first reports to Cloud. After the trial, you can renew PRO at the standard price or continue using BASIC.

The scope of services depends on the package shown in your account. Cloud Package does not block local driver support or local application use.

PRD4 transmits status periodically, usually approximately every minute. Web preview is not as fast as local preview.

PRD4 supports remote STOP when the feature is available on the account. Does not support remote START via Cloud. Check confirmation of command execution; lack of Internet makes it impossible to receive it currently.

Recipes and settings via Wi-Fi

First download, then check

Use the recipe library available in your package in your account. Select a recipe with settings intended for **PRD4** and the right device.

1. Stop PRD4 and remove any fault condition. Provide an Internet connection.
3. Check the stabilization, foreshots and distillation settings on the controller. Downloading settings does not start the process.
3. Check the stabilization, pretail and distillation settings in the controller. The download does not start the process.
4. Separately check the power, control probe, valves and end condition by temperature. In the 0.4 version, the received recipe settings include stages and their temperatures and times; they do not override these other settings.
5. If you want to keep the entire prepared set locally, save the current settings to one of the five programs. Run it only after checking the installation.

A message requiring STOP means that the controller cannot accept the settings at this time. Incompatible model or invalid values are rejected.

Alarms and emergency status

First the cause, then the reset

You can check the alarms in MENU → SERVICE → ALARMS and in the website service tab. History helps determine when a problem occurred.

Lack of reading from the installed probe causes its role alarm. During operation, if this is the probe selected for power control, a critical alarm stops the process.

The loss of another probe may be a warning. Do not assume that any damage to the probe will automatically stop the entire process. Especially check the probe used for termination by temperature.

EMERGENCY STOP records the fault state and prevents starting. Once the cause has been removed, reset the alarm in the local panel. Check the readings and settings before pressing START again.

The alarm sound can be turned off in the interface settings; it is enabled by default. Turning off the sound does not remove the cause of the alarm or the operation lock.

When the alarm returns, do not clear it repeatedly without checking the installation. Prepare the device number, version and message content for the service.

Output tests

Brief supervised check

The tests are used to check real receivers. Run them only in a prepared, safe installation. The heater test turns on the heating.

1. Stop the process. Remove alarms blocking the test.
2. Open MENU → SERVICE → output tests or the appropriate WWW section.
3. Select 230 V relay, heater, 1-3 valve or signaler. 25%, 50%, 75% and 100% are available for the heater.
4. Observe the correct receiver. The output test takes approximately 5 seconds; beeper test approximately 1 seconds. STOP TEST terminates the test early.
5. After trying, check whether the receiver has turned off. Verify valve number assignments and their behavior without power.

Don't use the test as a way to guide your trial. If the item does not respond or remains on, disconnect power and determine the cause before continuing.

Software update

Checking, installation, inspection

1. End the process and leave the driver in STOP. Ensure stable power and Internet connection. Keep a record of your important settings.
2. Open MENU → COMMUNICATION → UPDATE or the update section in the web panel.
3. Select CHECK / check for updates. Compare the current and available versions and read the release notes.
4. If you want to install an available release, select INSTALL. Monitor progress and messages. Do not turn off the power while recording.
5. After the correct update, the driver will restart. Check version, probe assignment, power, stage and valve settings.
6. Before the next process, perform a performance check appropriate to the changes made.

An ERROR or interrupted transfer does not indicate a completed update. Save the message. Check the network; if the error persists, please contact PAMEL.

Settings and service information

Touch calibration, report and reset

Touch calibration: select it in the service menu or order it from the website. Display subsequent points on the LCD. Touch the marked places carefully.

Information: read the model, device number and software version. This data is needed when reporting a problem.

Service report: download it from your local panel. Contains device status and settings, as well as events and alarms. Attach it to your report instead of rewriting all the parameters.

Statistics: work counters show. They are not an electricity meter or a basis for billing consumption.

Restore settings: execute in STOP. Restores factory operating settings. It is not intended to remove device number, Wi-Fi data, Cloud assignment or counters.

After restoration, re-check all process, power and valve settings. To remove the saved network, use a separate WI-FI RESET / AP. Use the probe settings to change probes.

PAMEL_BUS modules

Additional devices in the local network

The PAMEL_BUS enables operation with compatible PWR, PWR1, PWR3 and ALR2 modules in the same local network. The modules are separate equipment.

PAMEL_BUS: ON/OFF; factory enabled. Enables communication with modules.

AUTO PWR: YES/NO; Factory default: YES. It allows you to transfer the calculated power to the adopted power module.

AUTO ALR2: YES/NO; Factory default: YES. It allows for transmitting alarm signals to the adopted alarm module.

In the panel you can check the detected model, its ID and status. ACTIVE means an active module has been accepted, WAIT is waiting, BUSY is taken by another controller, and OFFLINE means no current communication.

Save the settings using the SAVE button PAMEL_BUS. Do not take over a module working with another driver without sorting out its assignment.

Check the electrical parameters and connection method of the module in its own manual. Adding a module does not increase the permissible load on the local PRD4 slots.

BEFORE YOU CALL THE SERVICE

Temperatures, heating and process

START is discarded. Check the message, critical alarm, fault condition and presence of the control probe. With the end turned on, also check the end probe by temperature.

Instead of temperature there are lines. Check the probe installation and assignment. With the power disconnected, check the connector, cable and hub. Then refresh the detection.

The temperature is assigned to the wrong place. Check the role and ID. Simply replacing the socket does not change the saved assignment.

Stabilization shows WAITING. The temperature of the control probe has not yet entered the band or the measurement is incorrect. Check the set temperature, band, reading and power mode.

Power drops to 0% despite MIN POWER. In AUTO P, after reaching the set temperature, this is normal. MIN POWER only increases the positive result of the regulator.

The trial ended early. Check the timeout, end threshold and probe, alarm history, and any STOP command.

BEFORE YOU CALL THE SERVICE

Valves, Wi-Fi and Cloud

The valve works in reverse. Check the NO/NC LOGIC and the status of the valve without power. Compare the output number and the actual receiver.

WINDOW does not turn on again. Once T2 is reached, this mode requires a drop below T1. If you need repeatable performance over a temperature range, please check the WINDOW 2 description.

FORESHOTS/TAILS valve does not repeat the pulse. The sequence is one-time in a given process run.

The phone reports no Internet at PRD4WIFI_PAMEL. Stay on this network and open <http://192.168.4.1>. Local operation does not require Internet.

The panel disappeared after saving Wi-Fi. Connect your phone to the router and read the new address IP on the LCD. Check if your router is isolating devices.

Cloud doesn't update data, but it works locally. Check your router's Internet, Cloud status and last reading age. Connecting to Wi-Fi alone does not confirm Internet access.

The recipe was not accepted. Check model PRD4, status STOP, Internet and result confirmation in the library.

After finishing work

Clearing and saving your own configuration

Stop the process and check the status of the receivers. Disconnect power before cleaning or disconnecting cables. Wait for the installation components to cool down.

Clean the housing with a soft, slightly damp cloth. Do not immerse the controller, do not direct water jets at the connectors and do not use aggressive solvents.

Before the next start-up, check the cables and plugs. Damaged, loose or excessively hot connections require the cause to be corrected before further work.

Store the device in a dry place. After moving from the cold to a warm room, wait until the risk of moisture condensation disappears.

Save your own proven program settings and probe designations. This will make it easier to re-prepare the installation and contact the service.

Do not throw away your used device with municipal waste. Take them to a collection point for waste electrical equipment or to PAMEL. BDO number: 000073814.

Name of the program used:

Control probe / end probe:

Documentation and support

PAMEL - contact and useful links

Before contacting, prepare: PRD4 model, device number, software version, error content, readings and settings. Attach a photo of the screen, a description of the connection, and a service report if you can download it.

PAMEL

Fertile 5E, 42-300 Myszków, Poland

Phone: +48 453 343 360

E-mail: pamel@pamel.pl

[Product Center PRD4](#) • [PRD4 in store PAMEL](#)

[PAMEL instructional videos](#) • [PAMEL on Facebook](#)

[PAMEL Cloud Terms and Conditions](#)

[PAMEL Cloud Privacy Policy](#)

Model: PRD4. Software: 0.4.

Document version and update date: 21.10.2026.

You can find current information at pamel.pl.



Documentation, account and support PAMEL

<https://serwer.pamel.pl/>

WARRANTY TERMS

Dear User,

First of all, we would like to thank you for choosing a PAMEL product. We are confident that you will be satisfied with your choice. We design our devices to meet your requirements and provide trouble-free use in the future.

1. PAMEL provides a warranty for the controller (excluding additional equipment) within the territory of the Republic of Poland for a maximum period of 60 months:

- 24 months of basic warranty,
- 6 months of manufacturer's extended warranty,
- additionally, a warranty extension to 40 or 50 months may be purchased.

The total warranty period may not exceed 80 months from the date of manufacture of the device.

Additional equipment (e.g. probes, heaters) is covered by the standard warranty resulting from the Polish Civil Code.

A purchased warranty extension is confirmed by a holographic sticker on the warranty card.

2. The warranty does not cover consumable parts and accessories intended for self-installation (e.g. antennas, sensors, holders, heaters, cables, batteries).

3. During the warranty period, the manufacturer undertakes to remedy physical defects free of charge. If at least four repairs have been carried out under the basic warranty and the device is still defective, the Buyer is entitled to replacement with a new unit of equivalent parameters or to a refund of the purchase price.

4. The warranty period is extended by the duration of the repair.

5. Claims should be submitted by e-mail (pamel@pamel.pl) or by telephone. The manufacturer will first attempt to resolve the problem remotely and will indicate the further steps of the claims procedure.

6. At the manufacturer's request, the Buyer is required to complete a complaint report.

7. The warranty covers only defects arising from causes inherent in the device.

8. The warranty does not cover damage resulting from:

- improper installation, operation or maintenance,
- storage under unsuitable conditions,
- use of improper consumables,
- unauthorised repairs or modifications,
- mechanical damage, flooding, condensation, contamination, atmospheric phenomena or random events,
- exceeding rated parameters.

9. The warranty does not cover claims concerning the technical parameters of the device if they comply with the manufacturer's data.

WARRANTY TERMS - continued • version dated 16.05.2026

10. To retain warranty rights, the device must be delivered:

- complete,
- in packaging protecting it against damage,
- together with documentation, cables and additional components,
- with seals and labels intact and not removed,
- with the original warranty card signed by both parties and a sticker showing the production date.

11. The warranty does not cover services and materials associated with normal operating maintenance (e.g. installation, programming, cleaning, maintenance, replacement of fuses and bulbs). These services are chargeable.

12. Service may refuse to perform a warranty repair in the event of:

- inconsistency between the data in the documentation and the actual condition of the device,
- unauthorised alterations to documents,
- removal of device identification marks (e.g. labels).

13. Warranty repairs are performed within up to 21 days from the date the device is delivered to service. If parts must be sourced from abroad, this period may be extended - the Buyer will be informed by e-mail.

14. The device must be installed in accordance with the standards and the user manual. Where required by law, installation must be carried out by a person holding the appropriate qualifications.

15. The scope of the parties' rights and obligations is governed exclusively by this document.

16. Equipment not collected from service within 3 months after completion of the repair becomes the property of the service centre.

17. Parts replaced during repair remain the property of the manufacturer.

18. The manufacturer is not responsible for loss of user data stored in the device. After repair, the device is returned restored to factory settings.

19. By signing the warranty card, the Buyer confirms that they have read and accept the warranty terms.

A card without a signature and without the original sticker showing the production date is invalid.

Note: The number of repairs does not include maintenance activities, cleaning, replacement of bulbs, fuses, consumable components or repairs resulting from natural wear (e.g. potentiometers).

WARRANTY PERIOD START DATE	SELLER'S STAMP	CUSTOMER SIGNATURE