PAMEL

DEST

User manual for the PC application

Application version: 0.5

Supported profiles	PRM, PRD3, PRD4, PRD5
Operating modes	DEMO, MONITOR, REMOTE
Application languages	Polish, Czech, Slovak, English
Communication	USB/COM, PAMEL_BUS_AT

SCOPE: This manual describes functions available in PAMEL DEST 0.5. It does not describe distillation technology or how to select process parameters.

1. Purpose of the application

PAMEL DEST is a PC application for monitoring and running a process with a compatible PAMEL controller. The application reads controller data through USB/COM, shows temperatures and output states and - after switching to REMOTE mode - can send settings and run consecutive stages of a stored recipe.

Version 0.5 supports the following profiles:

- PRM
- PRD3
- PRD4
- PRD5

2. Installation and startup

1. Run the PAMEL_DEST_SETUP_0.5.exe installer.
2. Choose the installation folder or keep the default: C:\PAMEL\PAMEL DEST.
3. After installation, start PAMEL DEST from the desktop shortcut or Start menu.
4. The application opens in its own Windows window. Microsoft Edge WebView2 is used to display the interface.

Local application data is stored in:

C:\ProgramData\PAMEL\PAMEL_DEST

> **NOTE:** Updating the application should not require deleting recipes, settings or the local licence certificate.

3. Operating modes

Mode	What it does	Licence
DEMO	Works without a connected controller. Use it to learn the interface and check recipes.	No
MONITOR	Reads the real controller without taking control.	No
REMOTE	Remote control, writing settings and running the process from the PC.	Yes

4. Connecting the controller

After startup, the application tries to find a compatible PAMEL controller. Manual connection tools are also available in Settings.

5. Connect the controller to the computer through USB/COM.
6. Click “Connect” or choose “Scan ports” in Settings.
7. When a compatible device is detected, the application shows the model, serial number and firmware version.
8. After connection the application enters MONITOR mode.

Settings provides:

- COM port selection
- baud-rate selection
- Scan ports
- Connect selected
- Send HELLO
- Get state
- Release control

PAMEL DEST uses PAMEL_BUS_AT 1.1. During discovery the application first tries HELLO 1.1 and then a compatible 1.0 fallback for older controller firmware.

5. Dashboard

The Dashboard shows current controller and process information:

- controller model, serial number and firmware version
- operating mode: DEMO / MONITOR / REMOTE
- alarm state
- process stage bar
- probe temperatures and setpoints
- process state and stage/process time
- outputs reported by the controller
- chart preview

NOTE: The application shows only the channels and data reported by the controller. The number of probes and outputs may differ between models.

6. Recipes and stages

Recipes are stored locally on the computer. You can create your own recipes, copy them, save them under a new name and change the order of stages.

The basic recipe contains four stage types:

Stage	Default setting in the application
STABILISATION	30 min; COLUMN probe; 78.0°C; range ±0.5°C; time counted only while in range; power 100%
FORESHOTS	10 min; HEAD probe; 78.5°C; power 100%; ends after time
MAIN DISTILLATION	HEAD probe; 78.5°C; power 100%; manual end
TAILS	HEAD probe; 92.0°C; power 80%; manual end

NOTE: The values above are the initial values stored in the application. This manual does not specify which technological parameters should be used for a particular process.

For each stage you can set, among other things:

- stage type
- stage enabled/disabled
- custom stage name
- control probe
- temperature setpoint
- power limit
- stage duration
- stabilisation range
- stabilisation time counting method
- end condition
- end-condition probe and temperature
- instruction shown before starting the stage
- valve settings for that stage

7. Stage end conditions

Condition	Action
Manual / NEXT	The stage continues until the user decides to proceed.

Time	The stage ends when the configured time has elapsed.
Probe ≥ temperature	The stage ends when the selected probe reaches or exceeds the configured temperature.
Probe ≤ temperature	The stage ends when the selected probe falls to the configured temperature or below.
Stabilisation time in range	Time is counted according to the stabilisation setting; it can be counted only while the temperature remains in the configured range.

8. Starting and changing a stage

Before each active stage starts, PAMEL DEST displays a stage-preparation window.

9. Check the stage name and the displayed instruction.
10. Choose “Confirm and start stage” to start the stage.
11. Choose “Skip” to omit the stage and move to the next active stage.

When changing stages, the application stops the controlled outputs before starting the next stage and waits for user confirmation.

9. Probes

In the Distillation section you can assign custom names to probes. The names are stored locally in PAMEL DEST and do not change names stored in the controller.

For the PRD5 profile, the application uses these default names:

- HEAD
- BOILER
- COOLER
- COLUMN
- COLUMN2
- COLUMN3

NOTE: If a probe used by temperature-dependent automation has no valid reading, the temperature-controlled valve is set to 0%.

10. Valves

For a valve you can set:

- custom name
- function: unassigned / cooling / foreshots / distillate take-off / reflux / other
- normal or inverted logic

Each stage has separate settings for three valves. Available modes:

Mode	Operating principle
OFF	Valve off.
ON	Valve on.
HYSTERESIS	Turns on at temperature ≥ threshold. Turns off at temperature ≤ threshold - hysteresis.
WINDOW	After dropping below T1 the logic is armed. While temperature rises, the valve turns on in the T1-T2 range. After exceeding T2 it turns off and does not turn on again until temperature drops below T1.
WINDOW2	The valve is on whenever the temperature is in the T1-T2 range.

11. MONITOR and REMOTE

11.1 MONITOR

MONITOR is used to observe the controller without taking control. The application reads temperatures, process states, outputs and other fields reported by the device.

11.2 REMOTE

REMOTE is used to control the process from the computer. Entering REMOTE requires a compatible controller and an active PAMEL DEST licence assigned to the device serial number.

After taking control, the application sends KEEPALIVE immediately and then every 5 seconds. The requested remote-control timeout is 30 seconds.

NOTE: Loss of communication does not cause automatic resumption of the PC process. After reconnecting, the user should consciously check the device state and decide whether to continue.

12. Licence

The remote-control licence is assigned to PAMEL_DEST + controller serial number, not to the computer.

- DEMO works without a licence.
- MONITOR works without a licence.
- REMOTE, START and writing settings require a valid entitlement for the serial number.
- After the first successful certificate download, the application can use it offline.
- Changing the computer does not change the controller serial number or the licence entitlement for that controller.

The licence state can be checked in the Information section. If an entitlement has been granted, the button in that section lets you download the certificate for the connected controller.

13. Chart and CSV

The Charts section is used to view stored process samples.

- Clear - removes the current chart samples from the application.
- Export CSV - saves data to a CSV file.
- Import CSV - loads a previously saved CSV file for viewing.

14. Log

The Log records application events, including connection, stage changes, process events and licence events. The user can also add a custom note.

Example note: take-off changed, sample collected, next stage started.

15. Settings and diagnostics

In Settings you can check:

- controller information
- COM port and baud rate
- list of detected ports
- FIELD_LIST reported by the controller
- READ/WRITE access for fields
- channel role assignment if the profile permits it
- raw PAMEL_BUS_AT communication

16. Updates

PAMEL DEST can check for PC-application updates through the PAMEL server. Updating PAMEL DEST does not update the firmware of the connected controller.

NOTE: Controller firmware must be updated only using the method specified for that model.

17. Common problems

Symptom	What to check
The application does not see the controller	Check the USB connection, use “Scan ports”, choose the correct COM port and baud rate, then use “Connect selected”. Close other applications using the same COM port.
The controller is visible but REMOTE is unavailable	Check the serial number, model compatibility and PAMEL DEST licence state. REMOTE is not required for MONITOR.
No offline licence	The first certificate download requires a connection to the licence server. After a successful download, the certificate is used locally.
A valve in a temperature-dependent mode stays off	Check the selected probe and its validity. An invalid temperature forces the temperature-dependent output to 0%.
After communication loss the PC process does not resume automatically	This is intentional. After reconnecting, check the controller state and consciously decide whether to continue.
The application window does not start correctly	PAMEL DEST uses Microsoft Edge WebView2 Runtime. If the component is missing or damaged, repair or reinstall it.

18. Safety rules

PAMEL DEST is a PC operation and control layer. It does not replace local controller safety functions or user supervision. The controller retains priority for local safety functions, STOP, alarms, probe errors and its own limits.

Before starting a stage, check the actual state of the installation, cooling, valves and take-off. This application manual does not define technological parameters for a specific process.

19. Uninstallation

PAMEL DEST can be uninstalled from Windows. During uninstallation the application asks whether to remove local PAMEL DEST data as well. If you want to keep recipes and local data, do not choose to remove them.

20. Contact

E-mail	pamel@pamel.pl
Website	https://serwer.pamel.pl/
Office	Monday-Friday 9:00-14:00
Technical support	Monday-Saturday 16:00-19:00

Manual for PAMEL DEST 0.5 - prepared from functions available in release 0.5.