

Safety instructions

Only use the quick reference guide in combination with the detailed operating manual.

⚠ WARNING! Risk of electric shock! Check whether the voltage selector switch (bottom) is set to the correct mains voltage.

⚠ CAUTION! Risk of burns! Close the heated lid before starting the program. Use protective equipment when handling hot samples.

i NOTICE! Reduce the contact pressure for opening: Turn the wheel counterclockwise and then press the button. After closing the lid, apply the contact pressure via the lid wheel.



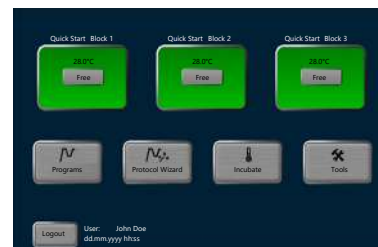
Design

- Wheel for exerting the contact pressure (1)
- Lid sealing button (2)
- Touch screen display with control software (3)
- USB port (4)

Login and Home screen

After the initial self test, the software first opens the login screen and then the **Home** screen.

Option	Icon	Description
Login		Logging in a user
Quick Start Block		Display of the current block status. If the block is free: Tap to open the quick-start function
DE/EN/CN	/	<ul style="list-style-type: none"> ■ Change login screen language ■ Set the software language in the user management
Programs		<ul style="list-style-type: none"> ■ Create or edit PCR programs ■ Select a program and start the PCR run
Protocol Wizard		<ul style="list-style-type: none"> ■ Automatically create a PCR program ■ Calculate the annealing temperature and holding time for the elongation step
Incubate		Incubate the samples at constant temperature
Tools		<ul style="list-style-type: none"> ■ Customize the software settings ■ Set up the user management ■ View documentation, self test ■ Create Service info file, carry out a backup



Creating or editing PCR programs

- ▶ Tap **Programs** on the **Home** screen.
- ▶ Select a program on the page **Program overview** and edit it. Or: Tap **New from template**. Select a program template and tap **Open template** to open it.
- ▶ Use or to select the graphical or the spreadsheet programming mode.



Graphical programming mode

Step	Block Temp (°C)	Hold Time (minutes)	Go To	Cycles	ΔT(°C)	Δt(s)	ΔC(°C)
1	95.0	0:05:00	---	---	---	---	4.0
2	95.0	0:00:30	---	---	---	---	4.0
3	65.0	0:00:30	---	---	+0.5	---	4.0
4	72.0	0:00:30	2	30	---	2	3.5
5	72.0	0:05:00	---	---	---	---	4.0
6	18.0	00	---	---	---	---	4.0

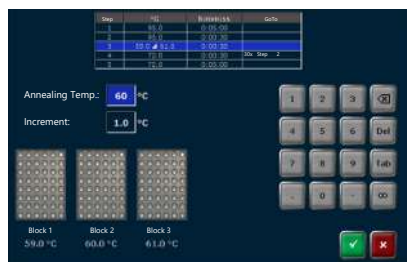
Spreadsheet programming mode

- ▶ Enter the program name under **Name:**. Define the temperature for the heated lid under **Lid:**. Select **On** to activate the preheating function of the heated lid.
- ▶ Use **Insert** and **Delete** to add or delete steps. Maximum number of steps: 30
- ▶ Select a program step for editing. Change individual parameters in graphical/spreadsheet view. Or: Tap **Edit** and change all parameters.
- ▶ Define the block temperature (3 to 99 °C) and the holding time (max. ≤9 h 59 min 59 s). Use ∞ to program a pause.
- ▶ If required, define optional program parameters.
- ▶ Tap **Done**. Select a user directory under **Copy/save programs**.
- ▶ Save the program. Or: Enter a new name under **Save as**.

Setting optional program parameters

- ▶ Open a program or a program template for editing. Select a step.
- ▶ Program loops: Define to which step the program shall return under **GoTo**. Define the number of reiterations under **Cycles**. Maximum: 999
- ▶ Define a temperature increment (± 0.1 to $20\text{ }^{\circ}\text{C}$) under **ΔT** by which the temperature shall increase/decrease per cycle.
- ▶ Define a time increment (1 to 240 s) under **Δt** by which the holding time shall increase per cycle.
- ▶ Set the heating and cooling rate precisely in steps of $0.1\text{ }^{\circ}\text{C/s}$ under **ΔR** .
- ▶ In order to optimize the annealing temperature, define the temperature optimization step **TOS** in which the block temperature shall increase or decrease from one block to the next, see below.
- ▶ If prompted, confirm your entries. Tap **Done**. Tap **Save** to save the program.

Programming a temperature optimization step



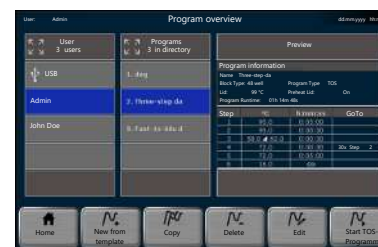
- ▶ Open a program or a program template for editing. Select the annealing step.
- ▶ Tap the field for the block temperature. Tap **TOS** on the keypad. Or: In the graphical/spreadsheet view, first tap **Edit** and then **TOS**.
- ▶ Enter the annealing temperature under **Annealing Temp.:**. The temperature is applied to block 2.
- ▶ Define a temperature increment under **Increment:** which determines the temperatures for block 1 and block 3.
- ▶ Confirm your entries. Tap **Done**. Tap **Save** to save the program.

Copying and deleting programs

Option	Icon	Description
Copy all		Copy all programs of the selected user
Copy		Copy the selected program
Delete all		Delete all programs of the selected user
Delete		Delete the selected program

Starting, stopping and pausing programs

- ▶ Use the quick-start function on the login screen/**Home** screen, to start the PCR run.
- ▶ Or: Tap **Programs** on the **Home** screen. Select the user directory and the program on the page **Program overview**.



- ▶ Use the arrow keys to navigate through the list, if the number of users/programs is greater than what can be displayed.
Or: Use to display all users/programs.
- ▶ Use the preview function to validate the program and tap **Edit** to adjust it, if required.
- ▶ Insert samples into the thermal block. Use replicates of a sample to optimize the annealing temperature. Close the lid. Establish the contact pressure: Turn the wheel clockwise until you hear a clicking sound.
- ▶ Tap **Start** to start the program.
- ▶ Select one or several blocks in the prompt **Please select block to start:**. Confirm your selection.
- ▶ Use **Start TOS-Programm** to start a program with TOS. The program will start automatically and simultaneously on all blocks.
- ▶ Tap **Pause** to stop the currently executed program. Tap **Continue** to resume the program. Tap **Skip** to skip a step. Tap **Stop program** to abort a PCR run.
- ▶ Tap **Choose block stop program** to select one or several blocks.