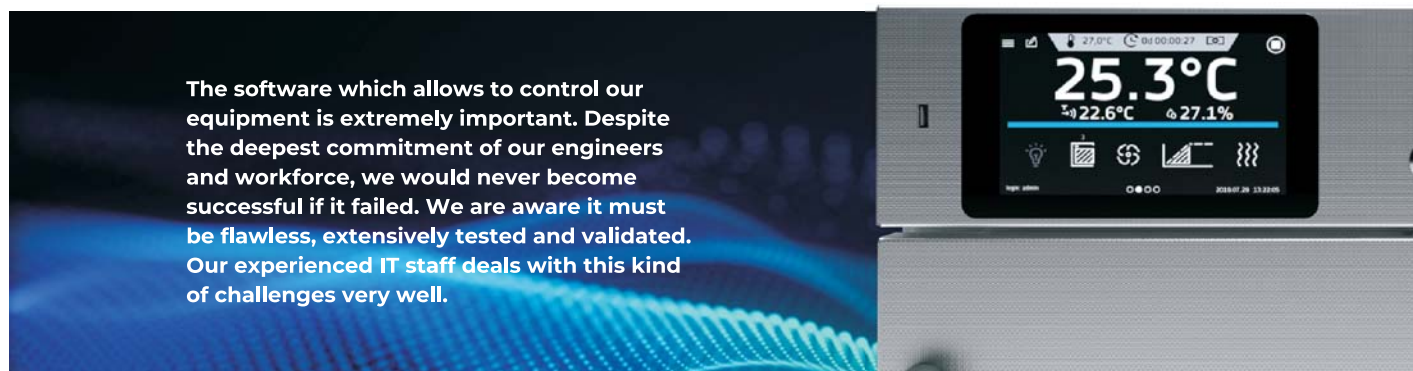**INNOVATIVE CONTROLLERS
AND MODEL CHARACTERISTICS**

Smart PRO

Smart PRO controllers are direct followers to the TOP+ controllers and will be available for the KK climatic chambers, IL cooled incubators, SL drying ovens, CL laboratory incubators, as well as the ST cooled incubators, CHL laboratory refrigerators, ZL laboratory freezers and ZLN-UT ultra-low freezers. Smart PRO has a microprocessor-based PID temperature controller with a large (7") colour touch panel and intuitive and user-friendly software.

The software which allows to control our equipment is extremely important. Despite the deepest commitment of our engineers and workforce, we would never become successful if it failed. We are aware it must be flawless, extensively tested and validated. Our experienced IT staff deals with this kind of challenges very well.

Getting started

During the first boot, the Smart PRO controller will automatically ask if you want to save the "Download" folder (instruction manual and additional LabDesk software) on the USB flash drive.
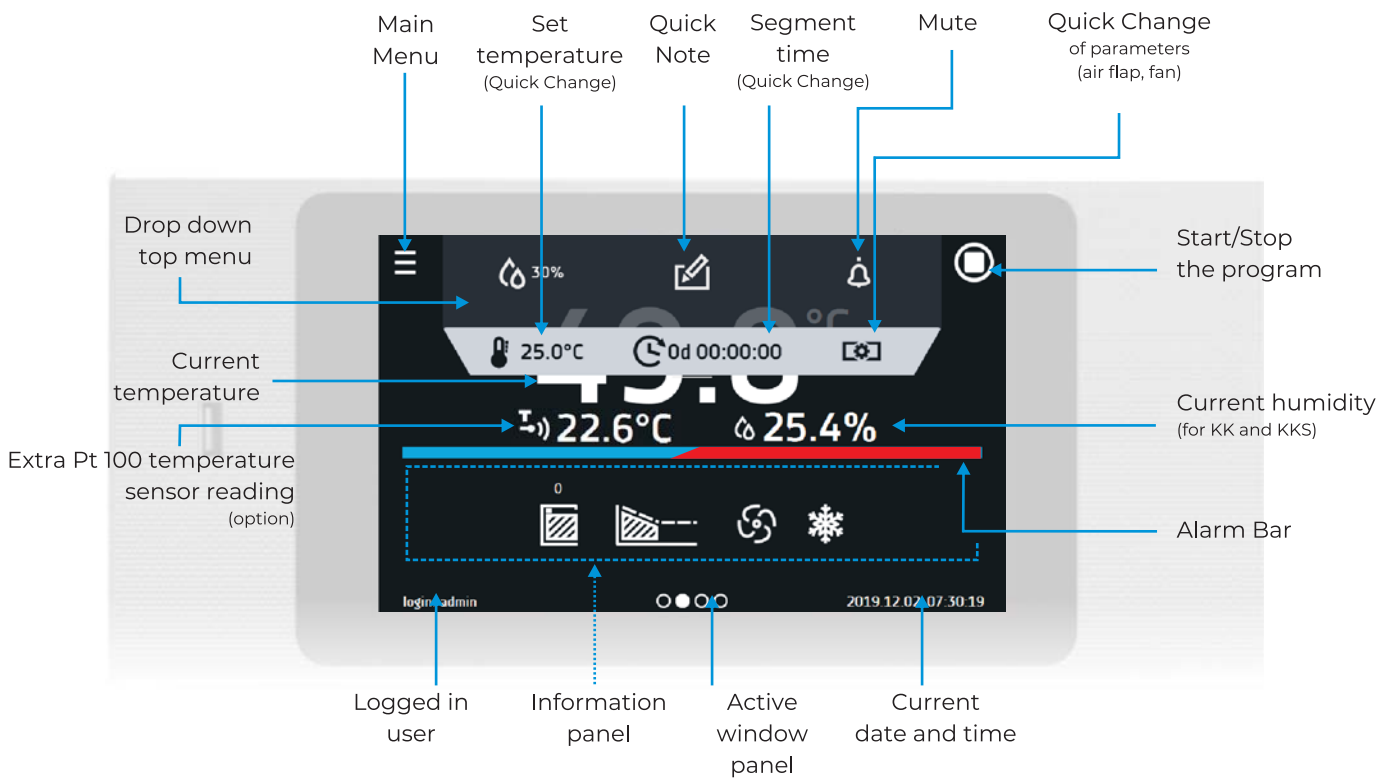

Types of accounts and their limits

Smart PRO controllers have several types of user accounts.

Super Admin - this account has not limits. It has access to the program managament menu and to all settings.

Admin - it has access to program management menu, where you can create or edit programs, check their statitistics, check the event history and information about the system.

User – it has access to programs shared to him by other users and run them, check statistics, event history and system information. The user cannot create his own programs/schedules and stop those he did not start himself. The program started by the user can be stopped by the Super Admin.

7" colour touch panel Smart PRO guarantees intuitive and comfortable operation

Main Menu

Set temperature (Quick Change)

Quick Note

Segment time (Quick Change)

Mute

Quick Change of parameters (air flap, fan)

Drop down top menu

Start/Stop the program

Current temperature

Current humidity (for KK and KKS)

Extra Pt 100 temperature sensor reading (option)

Alarm Bar

♦ 30%

🖊

🔔

⬛

🌡 25.0°C   🕐 0d 00:00:00   ⬛

T⁻» 22.6°C   ♦ 25.4%

0

login admin   ○●○○   2019.12.02 07:30:19

Logged in user

Information panel

Active window panel

Current date and time

Advantages of the Smart PRO controller

- large (7"), clear, full colour touch screen
- LAN, USB ports and WiFi for communication and data transfer
- multi-segment time and temperature programs
- overview of data in tabular and graphic form
- visual and audible alarm
- administration functions for easy management
- password protected log-in
- internal memory for programs and data storage
- operating with gloves on
- event registry with user notifications
- LabDesk software and instruction manual for direct download
- Alarm Bar – instant visual information about chamber status
- Quick Note – user can save text notes (50 characters) in Smart PRO controller memory
- Quick Change of parameters: temperature, humidity, time, air flap and fan (according to model)

Touch screens of the Smart and Smart PRO controllers can be operated with latex gloves!

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Quick Note - GLP supporting feature

Quick Note - while operating the equipment, the user can save messages in the memory, for example, about inserting a new sample or about any changes etc. To enter the message the user must be logged-in. The entered notes can be seen in the event log, they are symbolized by a green envelope icon.
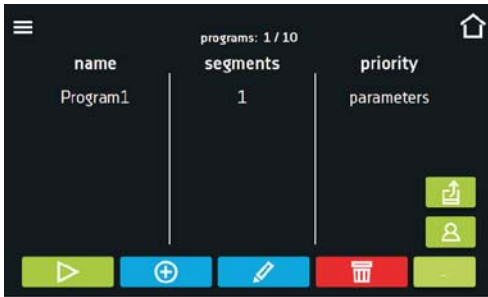

Quick Note advantages

- support Good Laboratory Practice
- messages saved in Smart PRO events log
- can be shown on reports in LabDesk software
- internal information in laboratory
- control/supervision of the process

Example:
When new samples have been put inside the chamber,
the user may add the Quick Note that includes date and time.
The information is recorded in the event log.

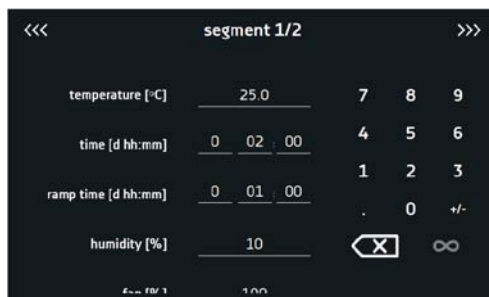## Programming Smart PRO in 4 steps logged as: Admin

Step 1

Tap "programs" icon in main menu to enter Programs screen. Here you can manage your programs and also upload them from a USB flash drive.

Step 2

Tap "+" icon to add a new program, then insert the program name, the number of segments etc. Tap blue segment icon to configure segments.

Step 3

Configure all segments using numeric keypad. To move onto the next segment slide the segments number or tap arrows.
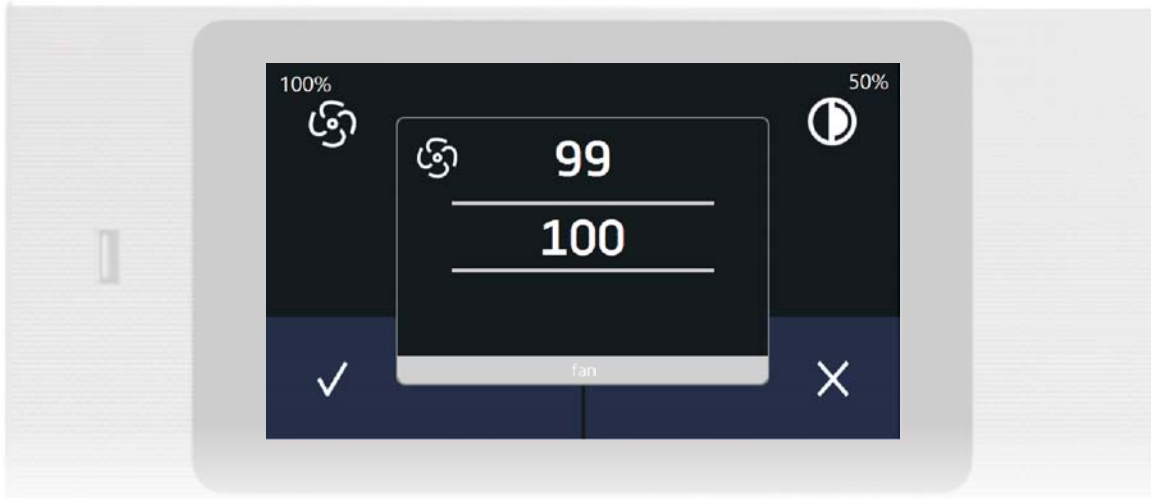

Step 4

Check all your settings in the summary and tap save. Your program is ready to use.

Programming via LabDesk

You can create programs in LabDesk software and load them to Smart PRO controller via LAN cable, WiFi or using a USB flash drive.

Quick Change - quick and easy change of parameters

Quick change of the set parameters is only possible in the program started by the same user.

Temperature - you can change temperature settings.
The temperature cannot be lower than under temperature protection +2°C and higher than over temperature protection -2°C.

Fan - allows to control the fan speed between 0% to 100% (according to chamber type).

Air flap - allows you to control the opening of the air flap between 0% to 100% (according to chamber type).

Time - you can change program/segment time by scrolling the number of days, hours and minutes. Time can be set from 1 minute to 365 days, 23 hours and 59 minutes.
There is also a possibility to display time in two ways:
- elapsed time of the program/segment
- remaining time of the program/segent.

You can also set continuous operation by pressing the icon of infinity.

Touch screen unlocking

To avoid accidental program switch off or change of the settings, e.g. when cleaning the screen, a screen lock function has been introduced.
If you touch a locked display a panel with circles will pop up.
You need to swipe a blue circle into the white one in order to unlock the screen.

Alarm bar and e-mail notifications

When an alarm goes off, you can hear a beeping sound. The display frame and alarm bar flash red.
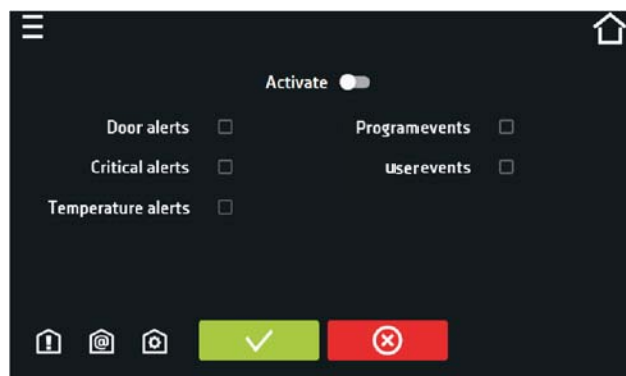

Alarm codes

- Door alerts – door ajar alarms
- Critical alerts – critical alarms (eg. sensors malfunction)
- Temperature alerts – under / over temperature alarms
- Humidity alerts – under / over humidity alarms (KK/KKS)

E-mail notifications

Smart PRO controller was equipped with an E-mail notification function. The user with Super Admin permissions can set and activate e-mail notification reports for up to 3 e-mail adresses.

- Door alerts – door ajar alarms
- Critical alerts – critical alarms (eg. sensors malfunction)
- Temperature alerts – under / over temperature alarms
- Program events – information on programs (eg. adding, edition, deletion of a program)
- User events – information on user edition settings (adding, edition, deletion of a user)

Smart4lab.eu – error codes report

Various types of alarms and warnings may appear during the chamber operation. The Smart and Smart PRO controllers display the type of the alarm / malfunction. You can see the QR error code when click on "details". Now with your smartphone, you can easily go to our website https://smart4lab.eu and check what the code refers to and what you need to do to deal with an unexpected alarm, malfunction or error.

Smart graph

The Smart PRO controller allows to generate graphs from the records in the data register. For units equipped with two sensors (eg. climatic chambers with temperature and humidity sensor) you are able to see both graphs at the same time. To display one graph only tap twice on the one you wish to see in detail.

To enlarge a fragment of the graph press anywhere on the graph and swipe both right and down at the same time. By swiping left you can return to the normal size of the graph.

Icon based controller

We created over 150 types of icons to make your work more comfortable and easy. It also makes the Smart & Smart PRO controllers entirely intuitive.

Information panel icons

Operating icon is only visible when:
chamber is heating, cooling or defrosting function is on.

Internal light is switched: ON / OFF

Rotating icon shows that the fan is running when program is active. Icon is stopped when the program is off or when the fan is defect (only ILP).

6   6

Closed door, open door. The number above the icon presents open door counter, press the icon to cancel the counter. The counter is also cancelled by turning off the unit.

2019.04.05 14:30

Activated schedule or start delay.
The program will start at the set date/time.

2019.04.05 14:30

Activated schedule – the program will stop at the set date/time.

Ramp status: Chamber is currently cooling down or heating up to reach set temperature.
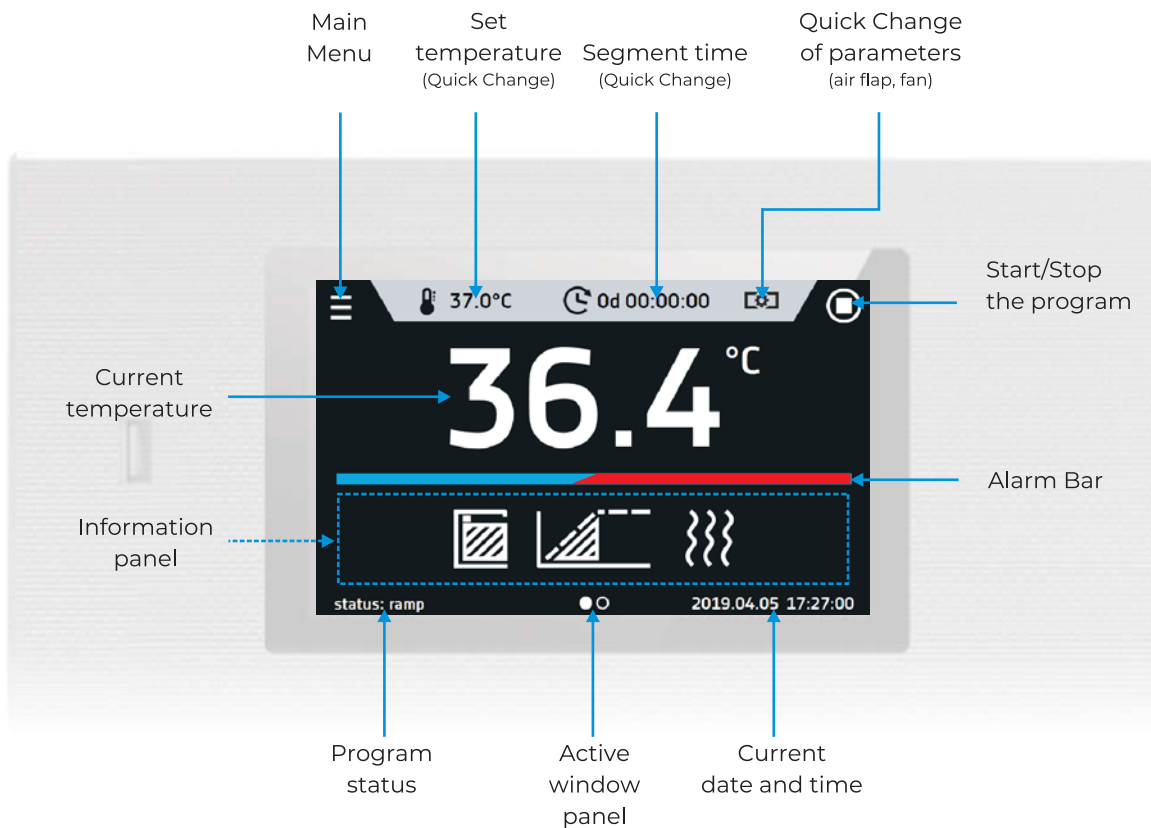
Set temperature is reached.

Smart - Smart PRO simplified version

In the 3rd quarter of 2019 we launched the Smart controller which is a direct successor of the BASIC and STD (standard) controllers, currently found in the ST cooled incubators, CHL laboratory refrigerators, ZL laboratory freezers, ZLN-UT ultra-low freezers, as well as the IL cooled incubators, CL laboratory incubators, SL drying ovens and SR laboratory sterilizers.

Main Menu — Set temperature (Quick Change) — Segment time (Quick Change) — Quick Change of parameters (air flap, fan)

Start/Stop the program

Current temperature

36.4 °C

Alarm Bar

Information panel

status: ramp   2019.04.05 17:27:00

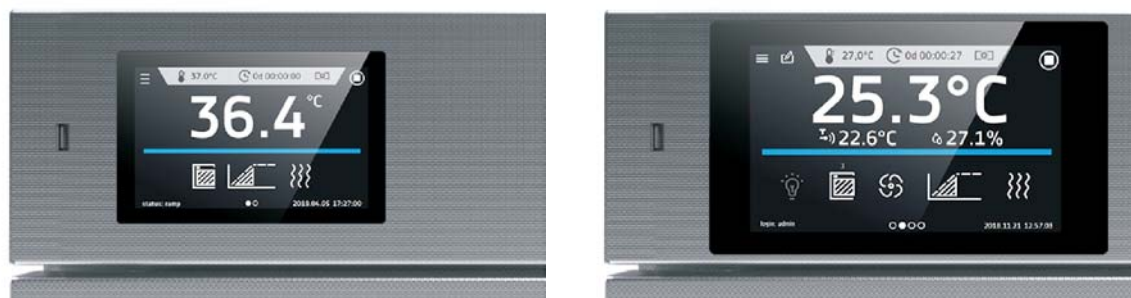Program status — Active window panel — Current date and time

Advantages of the Smart controller

- 4,3", clear, full colour touch screen
- USB and LAN ports for data download
- multi-segment time and temperature programs
- internal memory for programs and data storage
- operating with gloves on
- event registry
- visual and audible alarm
- instruction manual for direct download
- Quick Change of program parameters: temperature, time, fan, air flap (according to model)
- Alarm Bar - instant visual information about chamber status

Touch screens of the Smart and Smart PRO controllers can be operated with latex gloves!

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Smart vs. Smart PRO comparison

Controller	Smart	Smart PRO
Display	4.3" + touch screen	7" + touch screen
Network	LAN	LAN and Wi-Fi
USB	YES saving registration data saving events	YES saving registration data saving events uploading programs
Keypad	Numeric	Alphanumeric
Languages	PL, EN, RU, CZ, IT, PT, UA, FR, ES	PL, EN, RU, CZ, IT, PT, UA, FR, ES
Main Screen	Dashboard (all relevant data visible from one main window)	Dashboard (all relevant data visible from one main window)
Users	-	5
Users account types	-	User / Admin / Super Admin
Programs	5	40
Program name	Free number assigned	Any
Priority	Parameters	Parameters, time
Segments	6	100
Light control	Only ON/OFF (FOT)	YES (FIT)
Schedule	-	10 schedules
Data registry	max. 10,000 measurement data stored for a maximum of 6 months	max. 10,000 measurement data stored for a maximum of 12 months
Events registry	YES	YES
Statistics	YES - only the current cycle	YES - from every segment and program cycle
Temp. protection class	1.0 or 2.0 (3.1, 3.2, 3.3 - option)	3.1 or 3.2 or 3.3
Quick Note	-	Ability to enter user text notes
Graph	-	YES
Mail notifications	-	Alarm notifications
Unit name	Fixed (serial number)	Editable
Alarm Bar	YES	YES
Quick Change	YES	YES
Software for PC	LabDesk (option)	LabDesk