User Manual
JIPA JUMP MKH

SERVICING

Table of Contents

1 USER SETTINGS SCREEN

The device user settings screen can be recalled by pressing the setting button
on the start screen.

The user settings screen enables the following settings:

- change of language of the multifunction device
- setting of a pre-set amount of water
- permission to use shower during water filling
- locking of the chef's recipe list for possible changes and deactivation of the manufacturer's pre-set algorithms
- transfer of HACCP records and recipe list to a USB flash drive
- acoustic signal setting
- manual shower switch-off
- viewing HACCP records on the device
- network connection settings of the device
- setting service parameters (available after log-in of an authorized user)
- setting the date and time on the device
- uploading a new program to the device using a USB flash drive

Some settings are described in the User Manual. Only other user settings or settings accessible after logging in to the service level will be described below.

1.1 Transfer of service records to a USB flash drive

To transfer service records to a USB flash drive, it is necessary to log in to service level 1 and plug the USB flash drive into the USB port on the front panel of the multifunction device.

The system recognizes the connected USB flash drive and automatically displays the USB transfer screen. You can also go to this screen by pressing [⚙] and selecting the screen with the [USB] button at the bottom.

⚠ **Restriction for USB media connected to the multifunction device: USB transfers only work for FAT32 formatted USB flash drives. NTFS or exFAT file system is not supported!**

[USB icons] button to switch to the screen for the transfer to/from a USB flash drive
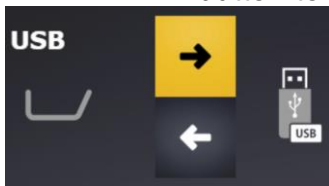
[USB screen icon] transfer of HACCP records and a recipe list from the multifunction device to a USB flash drive
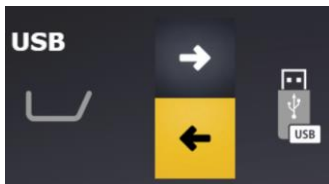
[USB screen icon] transfer of a recipe list from a USB flash drive to the multifunction device

[USB icons] indication of transfer start to/from a USB flash drive

[USB icons] indication of unsuccessful/successful recognition of a plugged in USB flash drive

[START STOP icons] button to start/stop transfer to/from a USB flash drive

[USB icons] indication of successful transmission/unsuccessful transmission with an error

 request button to transfer a recipe list to a USB flash drive

 button to transfer a recipe list from a USB flash drive to the device; the transferred recipes will be added after existing recipes

 button to transfer a recipe list from a USB flash drive to the multifunction device, all recipes in the device will be deleted and replaced with the transferred recipes from the USB flash drive

 button to request transfer of service records from the multifunction device to a USB flash drive

To transfer files using a USB flash drive:

- plug in a USB flash drive into the USB port on the front panel of the multifunction device

- choose the direction of the transfer from the multifunction device to/from a USB flash drive from/to the multifunction device

- choose the requirements for the files to be transferred. In the case of transfers from a USB flash drive to the multifunction device, it is necessary to choose the manner in which the transferred recipes will be added to the device, i.e., whether they will be added after the existing recipes or will delete and replace the existing recipes. In the case of service records, select the number of months of service record history to be transferred to the USB flash drive .
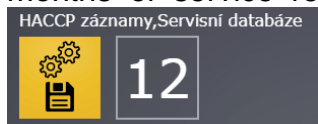
- press the transfer start button

- automatic transfer completion and disconnection of the USB flash drive (the button disappears)

- after the transfer is completed, the result of the file transfer is displayed in case of successful transfer of all files or in case of transfer with error (the required files are not present in the device)

A JIPA folder and a subfolder with the pan serial number will be created on the USB

flash drive which will contain:

• HACCP records in Excel files (CSV format) by individual months (HACCP directory)

• Service records in Excel files (CSV format) by individual months (ServHACCP directory)

• Error records in Excel files (CSV format) by individual months (Errors directory)

• Saved settings of parameters, options, and other device variables in the VarList.var file (Doc directory)

• Stored service diagnostic records of the central unit manufacturer in the debug_info.zip file (Doc directory)

• chef's recipes from the device (CookerRecipe directory)

The recipe list is not saved in the JIPA/UPLOAD folder, as it is in the case of the level of a non-logged-in operator (chef), but in the folder for the corresponding serial number! If it is necessary to transfer the recipe list between individual devices, you need to log out of the service level and transfer the recipe list to the USB flash drive again at the operator (chef) level!

1.2 Change of Hotline information

Hotline information is stored in the PLC in the file Hotline.png in the form of a PNG image with a resolution of 1280x800 px.

Hotline information is changed according to the following procedure:

1. Copy the Hotline.png image to the USB drive in the directory JIPA/UPLOAD/
2. Plug the USB flash drive into the device
3. After loading the USB flash drive, choose the transfer direction from the USB to the device
4. Select the Hotline option and press the Start button
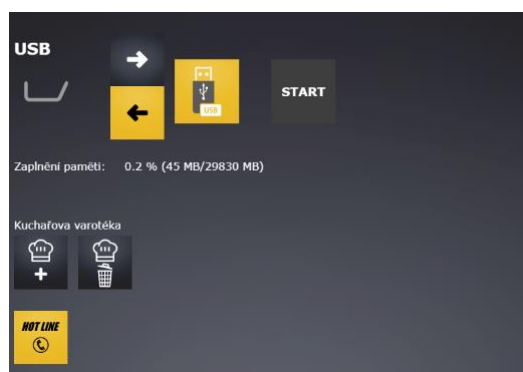
5. After the transfer is finished, restart the device's power supply.

1.2.1 Uploading a new program via a USB flash drive

A new program is distributed via program files (packages) that have the following format:

```
PAN42 v0-2-00000-00000 PROG_PCKG 2022-05-23_12-38-43.TTR
```

- Pan41 – single-pan device
- Pan42 – two-pan device

Uploading a new program via a USB flash drive:

1. Copy the program file (package) to the USB flash drive into the Teco/Update/ directory
2. Turn off cooking
3. Log in to service level 1 and take a picture of the values of service parameters 1
4. Plug the USB flash drive into the device
5. After the USB drive is loaded, the USB transfers screen will show information about the new program at the bottom:
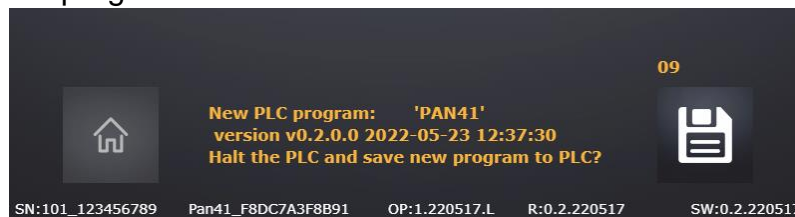
6. Press the program upload button

7. After confirming the program upload, the PLC stops, which is displayed on the operation panel (maximum 2 minutes).
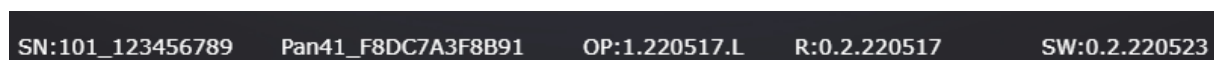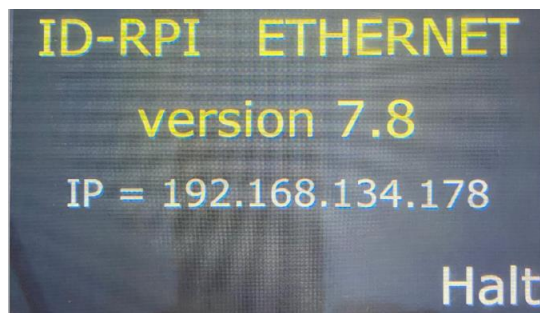
8. Check the new version of the program and all service parameters according to the photographed parameters and correct if necessary.

The countdown to press the record button is shown above the button. After the time expires, the record option disappears and the device power supply needs to be restarted. In the Teco/Update/ directory, it is possible to have both program files (packages) Pan41, Pan42 at the same time.

1.3 Viewing records of faults and changes to service parameters in the device

In the multifunction device, not only HACCP records can be viewed on the operating panel (the description is given in the User Manual) but also records of malfunctions

and changes to service parameters in the device. Press the view button to display the HACCP records view screen, and if logged in to service level 1, the button

to view fault and parameter change records will be displayed and enabled .

In the top header there are the column descriptions:

- date and time of the occurrence/disappearance of the fault or change to a service parameter

- item SET/RES/PAR for the occurrence/disappearance of a fault or a change to a service parameter

- fault or service parameter index

- item E/W if it was a fault or warning, item 556 -> 558 means change to a service parameter from value 556 to value 558

At the bottom, information about the open monthly fault record file and browsing control buttons is displayed:

- 06/22 is an identification of a month in an open monthly file of fault records

- 000-100 % is the range at which the records from the monthly record file are

displayed on the screen

- [↑] button to load previous fault records. If records from the beginning of the file are displayed, the next previous monthly record file opens, if any.

- [↓] button to load the following fault records. If records from the end of the file are displayed, the next following monthly record file opens, if any.

- [⌂] button to return to the HACCP record viewing screen

1.3.1 Setting up Ethernet network communication

Viewing and setting PLC Ethernet communication interfaces is done in the Ethernet screen which is switched to from the User Settings screen with [icon].
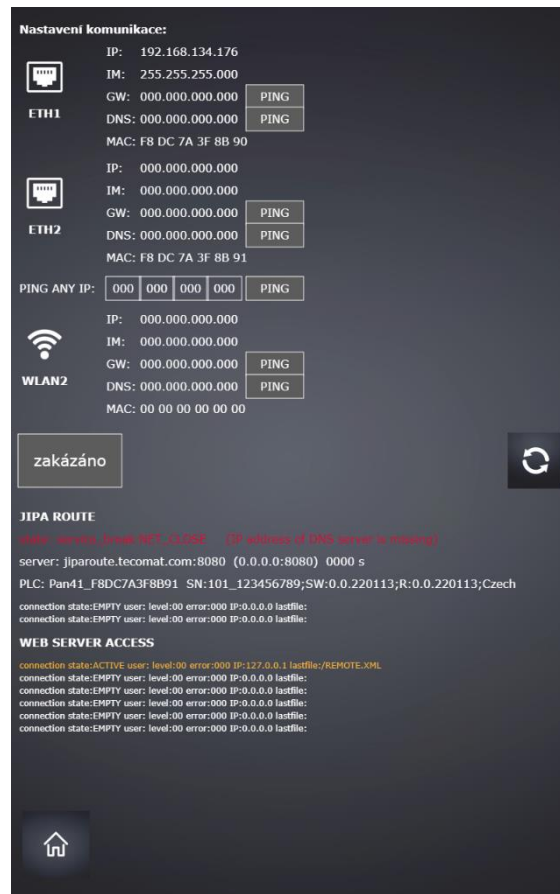
The following information is displayed for each network interface ETH1, ETH2 and WLAN2:

- IP – IP address of network interface
- IM – network interface mask
- GW – gateway of the network interface and the verification button of the PING

command to the IP address of the network interface gateway

- DNS – domain name server of the network interface and verification button of the PING command to the IP address of server domain name of network interface
- MAC – unique MAC address of network interface

If only zeros are shown for the corresponding interface, the interface is disconnected.

By pressing or automatically every minute, the settings of all PLC interfaces are reloaded. The button must be pressed, for example, after connecting the device to the customer's Internet network or after plugging in the USB Wifi adapter into the USB slot of the PLC CP-2005.

The IP address field of the general PING command to IP address is used to verify the availability of any IP address. After pressing the button, an indication of testing in progress (3 dots) will appear to the right of the button, and after a few seconds the result of the availability test will appear. In the case of an available IP address, OK:(00.001 s) will be displayed where the response time of the tested IP address is indicated in parenthesis. In the case of an unavailable IP address, Err:(No answer!) will be displayed with the reason for the unavailability in parentheses. The above description applies to all PING commands on the screen.

1.3.2 Wifi connection settings

The WLAN2 interface of the central unit for a wireless network can be used if it is plugged into a USB Wifi adapter. The central unit supports USB Wifi adapters which are intended for devices with the Linux operating system (see the documentation for Tecomat Foxtrot 2 programmable devices here https://www.tecomat.cz/download/get/txv00450_01/164). It is not possible to guarantee the support of all manufactured devices that support Linux, therefore the following description only refers to the specific type of USB router CONNECT IT CI-232 Mini. After plugging in the Wifi adapter and restarting the device's power supply, a WLAN2 channel is created.

By default, Wifi connection is disabled.
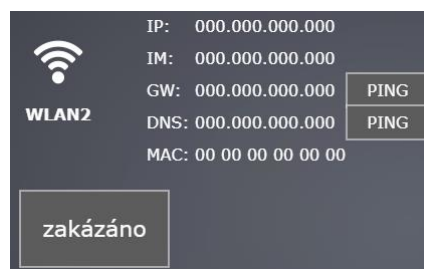
By pressing the Wifi interface enable button, two setting options will appear:

- Client – the device will connect to the existing wireless network
- HotSpot – the device will create its own wireless network to which the viewing device (mobile phone, tablet, etc.) will connect

For both setup options, enter the network name (SSID) and password for the network, and for the HotSpot option, also enter the network channel number and

choose a hidden network. The password must contain at least 8 characters.

The Hotspot setting set the IP address of WLAN2 interface to 192.168.011.001.
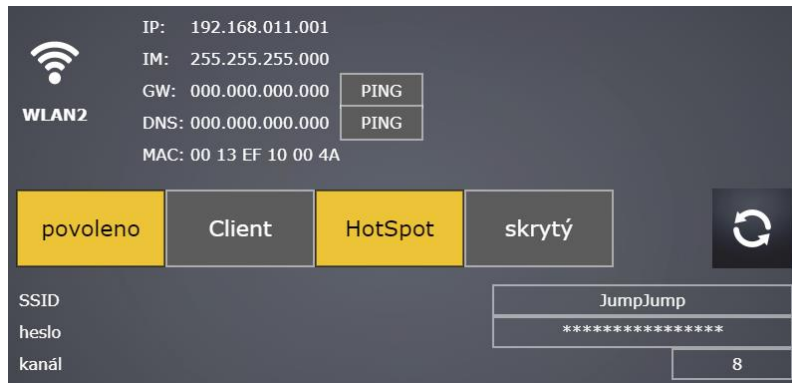
The Client setting is done by entering the network name and password into the wireless network and pressing the button . Changes are marked in yellow.
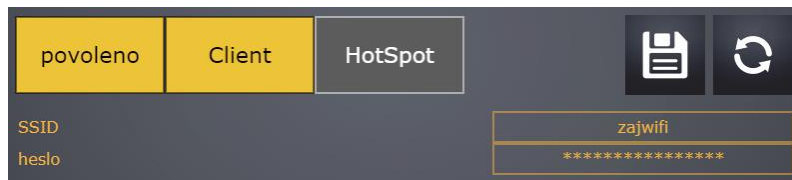
In order for the changes to the settings to take effect, it is necessary to restart the power supply of the device after saving the settings. If the SSID and password are entered correctly, the wireless network will set the IP address of the WLAN2 interface.
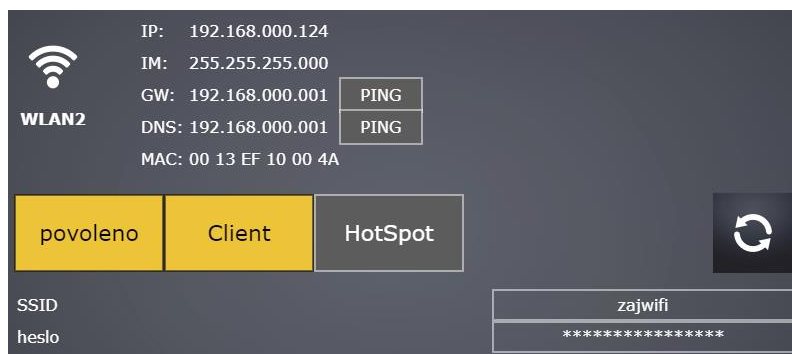
1.3.3 JipaRoute service status information

The JipaRoute service is used to connect remote device management using the Internet. The multifunction device can be connected to the Internet either by connecting the Internet cable to the ETH2 socket at the input of the power supply cable to the device or by using a Wifi adapter connected to a wireless Internet network in the Client mode.
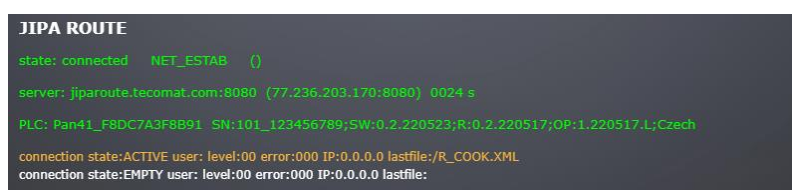
The Ethernet screen displays the following information about the status of the JipaRoute service in the PLC:

- Line 1: service connection status + controller status in the PLC + description of the last error that occurred

  green font – JipaRoute service connected, red font – connection error

- Line 2: JipaRoute server name (including port) + IP address of the server on which the router is running (including port) + controller timer. The timer counts down to zero, and after the timer ends, it tests the availability of the JipaRoute service on the specified server

  green font – JipaRoute service connected, white font – connection error

- Line 3: a unique PLC name used for identification on the JipaRoute service portal (in the device, the name is composed of the device type Pan41/Pan42 and the MAC address of the ETH2 interface) + description of the PLC which includes the serial number of the device, the program version loaded in the device, algorithm version, operating panel version and language in the device

  green font – JipaRoute service connected, white font – connection error

- Line 4, 5: status of user connection to PLC web server using JipaRoute service. The maximum number of connections via the JipaRoute service is 2 simultaneous connections.

The status of the user's connection to the PLC web server using a local network or using a Wifi adapter connected in Hotspot mode is displayed at the bottom of the screen (WEB SERVER ACCESS). The maximum number of connections using a local network or using a Wifi adapter connected in Hotspot mode is 6 simultaneous connections. If the viewing device (mobile phone, tablet, laptop, etc.) is connected to the web server, the corresponding line is green. After disconnecting the viewing device, the connection remains active for approximately 2 minutes before the connection is released.

2 CONNECTION TO THE MULTIFUNCTION DEVICE

2.1 Accessing the screen displayed on the device panel

The current screen can be displayed through:

- access from a local network

- mobile application connection

- remote control using the JipaRoute service

The screen only shows the status of the currently displayed screen on the device panel without the ability to control the device.

2.1.1 Accessing the screen displayed on the device panel via a local network

The condition for displaying the current screen using the local network is to connect the multifunction device via the ETH2 interface to the local network and to assign an IP address from the DHCP server. The IP address assigned to the ETH2 interface can be found in the Ethernet network communication settings screen which is switched to

from the User Settings screen using the switch [icon]. The IP address can also be found on the CP-2005 central unit upon pressing the MODE button and scrolling with the down button.

After connecting, you need to start a web browser (Google Chrome, Internet Explorer, etc.) on your computer and enter the assigned IP address and the page name "r_cook.xml" in the address field, e.g., in the form 192.168.1.88/r_cook.xml (192.168. 1.88 is the IP address assigned by the DHCP server) or in the form jump.local/. When entered correctly, a login dialog will appear:

The user and password fields should be left empty and the Login button must be pressed. After pressing Login, the current panel screen will show up.
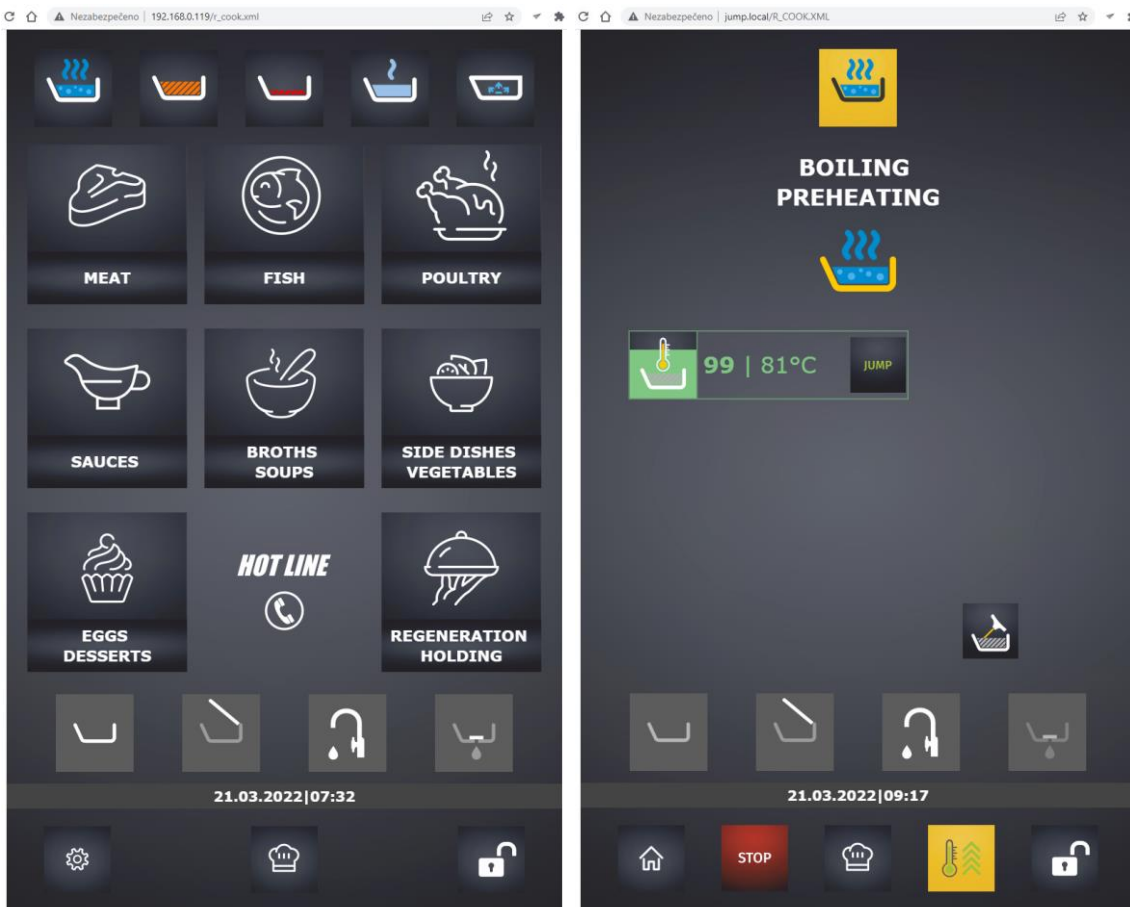
2.1.2 Accessing the screen displayed on the device panel by connecting a mobile app to the device using a Wifi-adapter

1. Plug the Wifi adapter into the device's USB socket.

2. Set Wifi to the HotSpot mode. Wifi adapter settings can be done in the Ethernet network communication settings screen, which is switched to from the User Settings screen using the switch .

3. On the mobile device, start an app that can read the QR code. If the app is not pre-installed on the mobile device by default, an app that is freely availableon the Play Store or AppStore can be installed.

4. After starting the app, you need to read the QR code to connect to the JumpJump device and press the "Connect" option. The parameters of connection to the JumpJump device are retrieved only once on the mobile device:
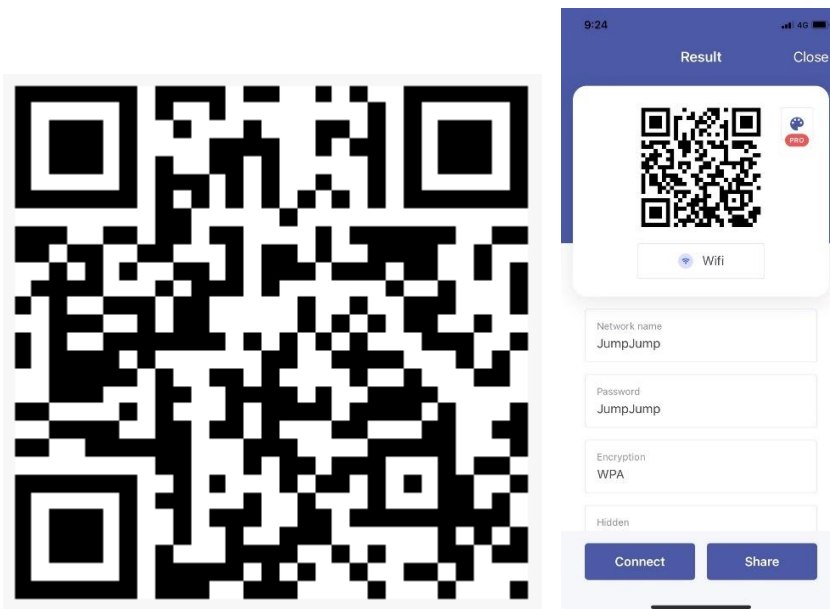
5. A successful connection to the Jump device can be verified in the Wifi connection parameters:
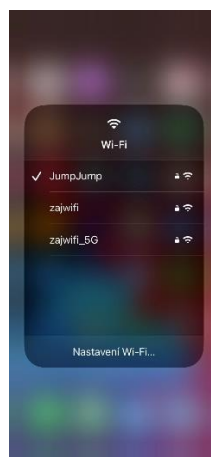
6. On the mobile device, open an Internet browser application (e.g., Google Chrome) and enter 192.168.11.1 in the address bar. After correct entry, the current screen will be displayed on the device.
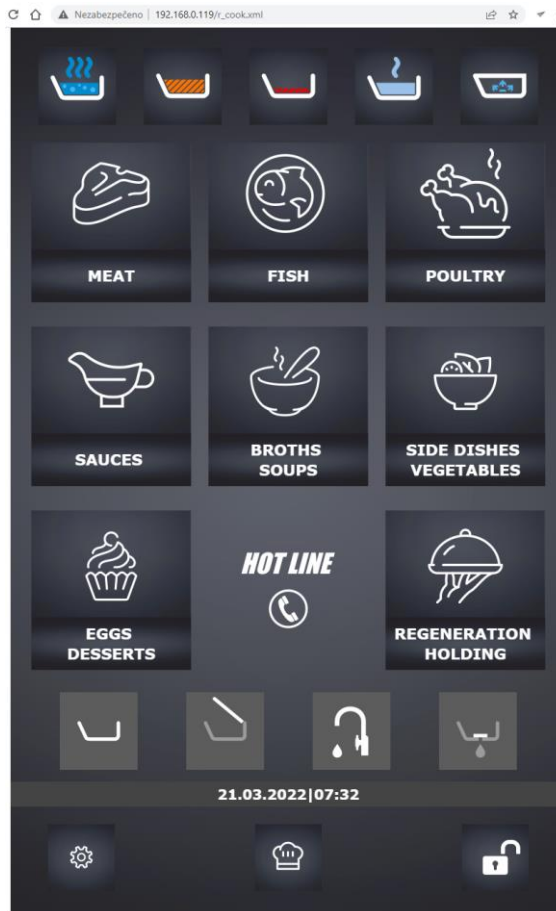
7. A QR code reader is no longer needed to further connect the mobile application to the JumpJump device as the Wi-Fi network settings are usually stored in the mobile device and it is only possible to switch from the current network to the JumpJump network in the Wi-Fi adapter settings.

2.1.3 Accessing the screen displayed on the device panel using a remote admin connection

Before actually connecting to the device, you must first log in to the JipaRoute service with your browser. The following needs to be entered in the address bar of the browser: http://jiparoute.tecomat.com:61682/. A service login dialog will then appear in your browser. On the right side of the screen, you can choose a different language for the login dialog.

The explanation of each field is as follows:
- **User name –** username to login to the JipaRoute service
- **Password –** user password to login to the JipaRoute service (the login name and password must be registered on the JipaRoute account)
- **PLC name –** PLC name registered on the JipaRoute account.

If the PLC name is not entered (the "PLC name" field remains empty), then the service server offers another page with a selection of PLC systems that are registered for the logged-in user:

The green-coloured line means that the PLC system is currently connected to the service (it is online). The red-coloured line indicates that the PLC system is not currently available via the JipaRoute service (it is offline, not connected). The currently selected PLC system has blue colour background. Click on the PLC name to select the system you want to connect to. Press the "Select" button to connect to the selected PLC system. The login dialog of the web server of the selected PLC will show up (the same as in the case of logging in from the local network), press the Login button.

3 SERVICE PARAMETERS

Control of the multifunction device using common functions and basic device settings is accessible without the need to log in. To set other parameters of the multifunction device, it is necessary to switch to the user setting window by pressing the setting button ⚙ in the home screen and pressing the user login button ⚙ at the bottom right. If the user is not logged in, login can also be done on the cooking screen by pressing the cooking mode icon 〜. After pressing the user login button, one of the service codes must be entered. There are 3 security service levels in the system:

- Service level 1 – service technician

- Service level 2 – production

- Service level 3 – supervisor
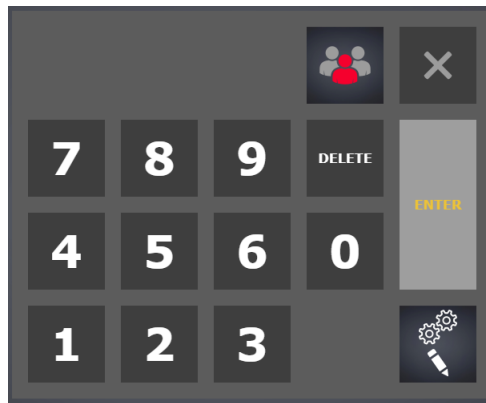
The numerical service codes for individual security levels are stored by the device manufacturer. After successful login, the system will automatically go to the default service screen of the logged in level.

In the user settings window, the signal of the logged in operator is displayed:

Press the appropriate service level to display the selected service level. The user logs out by pressing [x] or turning off the power of the multifunction device.

The list of service screens is:

- Service level 1 – Parameters

- Service level 1 – Measuring

- Service level 1 – PLC

- Service level 1 – Service control (disabled if any cooking is in progress)

- Service level 1 – Service control – Pressure (disabled if any cooking is in progress)

- Service level 1 – Touch layer test

- Service level 2 – Parameters

- Service level 3 – Parameters

After logging in Service level 1 or pressing [1], the first service screen Service level 1 – Service control (in case no cooking is in progress) or Service level 1 – Measurement (in case some cooking is in progress) shows up.

After logging in Service level 2 or pressing [2], the service screen Service level 2 – Parameters shows up.

At the bottom of the service screen, there are the following control buttons:

- switches to service screens

- button to return to the user settings screen

- switches to screens of Service level 1,2,3

- touch layer testing screen

- the button to save the settings to the SD card (applies to Service level 1) or the button with confirmation to save the current parameters to the factory settings and save this setting to the SD card (applies to Service level 2)

- button to load settings from the file on the SD card (valid for Service level 2)

- confirmation button to delete the list of recipes and all entries in the device (applies to Service level 2). The current number of log files stored on the device is displayed above the button.

- At the lower edge of the service screens there is the serial number of the device, the name of the device (Pan41 or Pan42 and the MAC address of the device), the version of the operating panel and its MAC address, the version of the algorithms and the version of the program in the device.

Service level 1 has access to Service level 1 screens only, Service level 2 has access to Service level 1 and 2, Service level 3 has access to Service level 1, 2 and 3.

Service texts are available in Czech, English, German for Service level 1 and 2 only. If a language other than Czech and German is selected in the device, the service texts are displayed in English. Service texts in level 3 are in Czech only.

3.1 Service level 1 – Parameters

Serial number

The serial number of the multifunction device is a 20-character text in which capital letters, numbers and underscores can be entered. The program automatically replaces the entered space with an underscore. Serial numbers are determined by the manufacturer. The serial number is entered in the format NNNPP_xxxxxxxxx, where NNN is the numerical designation of the device (101, 151, 201, 251), PP is the designation of the device type (DS, DM, DL, P, F, etc.) and xxxxxxxxx is the order number in which the device is manufactured. The serial number is empty after uploading a new program. Once entered correctly, the corresponding service parameters of the given type of the device are filled in. The serial number of the device is indicated in the header of HACCP records, service records and in the stored service settings.

The pan types in the system are:

1. 101DS (2x29L)
2. 101DM (2x49L)
3. 101DL (2x70L)
4. 101F (75L)
5. 101 (100L)
6. 101P (100L)

7. 151 (150L)

8. 151F (110L)

9. 151P (150L)

10. 201F (150L)

11. 201 (200L)

12. 251 (250L)

Water: the maximum pan volume

The parameter of the maximum pan volume is important to avoid exceeding the amount of water when filling the pan.

Water: number of impulses per 1 litre

Water is poured into the pan through a flow meter which is connected to a counter in the system. The amount in litres is shown on the cooking screen and it is converted from the impulses read, depending on this parameter. Factory default setting is 442 pulses/litre for 101DS and 522 pulses/litre for other types.

Water: number of impulses per 1 second

The parameter of the number of impulses in 1 second is used to calculate the time delay of the safety closing of the water in the event that the flow meter stops working or the water valve is left closed without entering the desired amount, or the device pan may overflow for some other reason. Factory default setting is 21 pulses/second for 101DS and 47 pulses/second for other types.

Water: maximum water filling time

The previous water filling parameters are used to calculate the maximum opening time of the water valve which is calculated according to the formula:

$$ClosingDelay = PanVolume * ImpulseCountPerLitre / ImpulseCountPerSecond$$

If the water valve is open for longer than the calculated delay, the valve is closed regardless of the actual or desired amount of water, even in the service mode.

Cover: maximum travel time, maximum end position signal time (single-pan device only)

Maximum cover drive travel time and maximum cover end position signal time for the detection of faults 061-065. The detection of drive travel faults and end position faults 061-065 can be switched off by selecting enable/disable. The factory default settings are 35s and 10s.

Pan: maximum travel time, maximum time of end position indication

Maximum pan drive travel time and maximum pan end position indication time for the detection of faults 071-080. For the pan drive, the maximum times of tipping or levelling respectively for fast speed (when controlling the pan in the home screen) and slow speed (when controlling the pan in the cooking screen) are set. The detection of drive travel faults and end position faults 071-080 can be switched off by selecting enable/disable. The default factory setting of the maximum pan end position indication time is 1 s. The factory default setting of the maximum pan travel time is:

1. 101DS (20 s, 15 s, 20 s, 15 s)

2. 101DM (27 s, 25 s, 43 s, 35 s)

3. 101DL (27 s, 25 s, 43 s, 35 s)

4. 101F (28 s, 27 s, 60 s, 56 s)

5. 101 (28 s, 27 s, 60 s, 56 s)

6. 101P (28 s, 27 s, 60 s, 56 s)

7. 151 (24 s, 22 s, 50 s, 45 s)

8. 151F (24 s, 22 s, 50 s, 45 s)

9. 151P (25 s, 22 s, 53 s, 46 s)

10. 201F (24 s, 22 s, 50 s, 45 s)

11. 201 (24 s, 22 s, 50 s, 45 s)

12. 251 (25 s, 22 s, 55 s, 46 s)

Stopper: maximum temperature for opening

Exceeding the maximum temperature in the pan is detected before the stopper is opened. If the temperature is higher than the specified parameter, the stopper will not
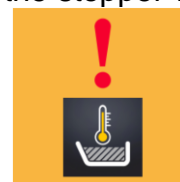
open after pressing the button and a warning will be displayed . The factory default value is 100°C.

Stopper: maximum travel time

Maximum travel time of the stopper drive to detect faults 081-090. The detection of drive travel faults 081-090 can be switched off by selecting enable/disable. The factory default value is 8 s.

Baskets: maximum travel time

Maximum travel time of the basket drive to detect faults 091-095. The detection of drive travel faults 091-095 can be switched off by selecting enable/disable. The factory default value is 20 s.

Pressure relief valve: maximum travel time (in pressure equipment only)

Maximum travel time of the pressure relief valve to detect faults 040-041. The detection of pressure relief valve travel faults 040-041 can be switched off by selecting enable/disable. The factory default value is 8 s.

Altitude

The boiling temperature depends on the current altitude. If an altitude other than the default is specified, the pan control temperature is recalculated based on the pan altitude entered. To the left of the entered altitude, the difference from the measured temperature in the pan is displayed. The factory default settings are 240 meters above sea level.

Temperature units in °F

Selection of showing temperature in degrees Celsius or Fahrenheit. If the option is on, the temperature control inside the system is in degrees Celsius and only the displayed

value is converted to degrees Fahrenheit. The factory default setting for this option is degrees Celsius.

Power limitation

If it is necessary to limit the input power of the device, it is possible to switch on the power limitation option and the heating of the multifunction device works at a maximum percentage of 80% input power. The factory default setting is 80%.

Consumption optimization: disconnect/connect

When the multifunction device is connected to the system of electricity consumption optimization, it is necessary to turn on the service option of the consumption optimization connection. The device turns off the heating in the event of an active signal from a power supplier. The factory default settings is the signal disconnected.

Optimizing the consumption: signal is NO/signal is NC

When the multifunction device is connected to the system of electricity consumption optimization, it is necessary to turn on the service option of switching on the consumption optimization and choose whether the signal is NO (normally open) or NC (normally closed). The factory default settings is the NO signal.

Consumption optimization: Deep-frying mode, frying prohibited/permitted

When the multifunction device is connected to the system of electricity consumption optimization, it is necessary to turn on the service option of switching on the consumption optimization and choose, through this option, whether the consumption optimization is also applied in the deep-frying mode or frying mode. The default factory setting is that the consumption optimization is not applied in the deep-frying and frying modes respectively, i.e., optimization is disabled.

3.2 Service level 1 – Measurement
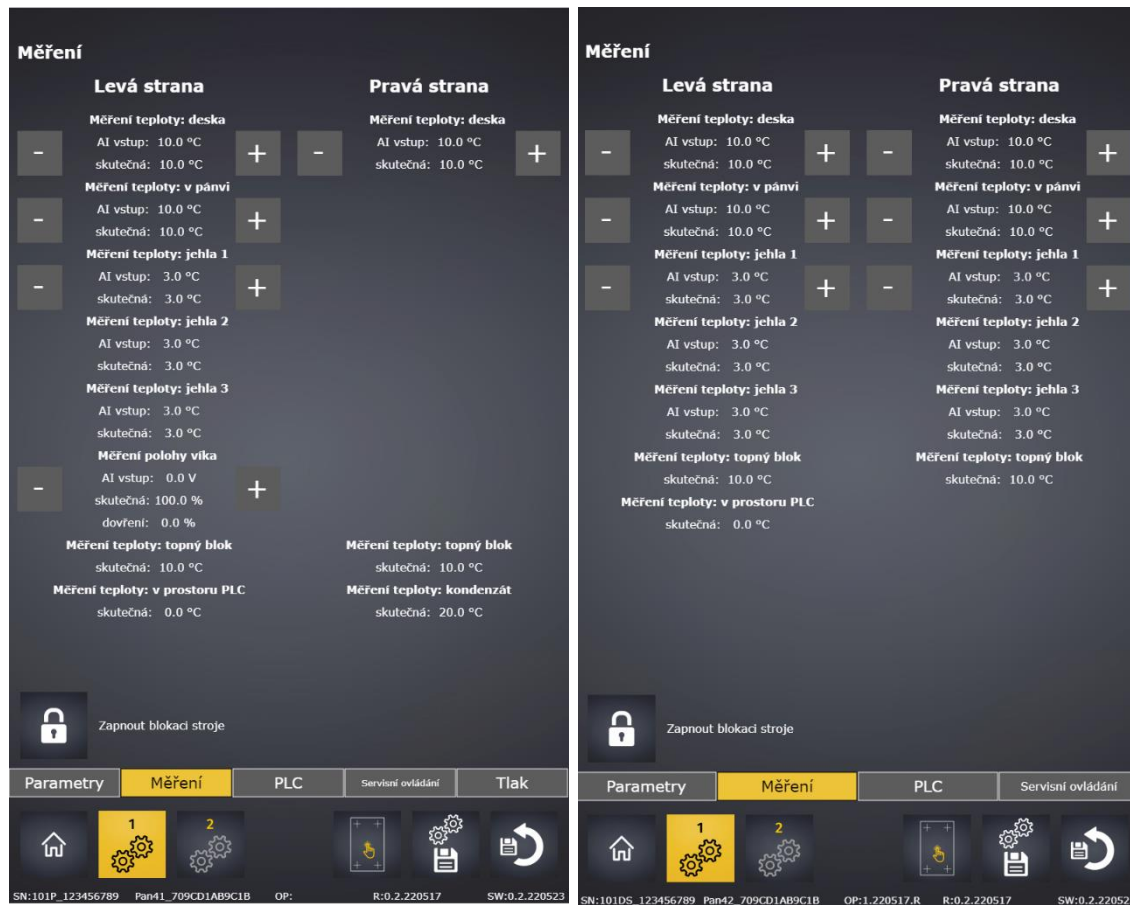
To set the parameters and calibrate the measurement, it is necessary to go to the parameter window ⚙ from the initial screen, log in at least a Service level 1 user and switch to the Measurement screen.

3.2.1 The procedure for the initial setup and calibration of measurements - non-pressure devices

1. Enter the serial number of the device.

2. Choose the default temperature units (if the option is not active, the units are °C).

3. Calibrate the water flow meter and fill in the parameters Water: number of impulses per 1 litre and Water: number of impulses per 1 second.

4. Set the maximum fluid temperature to open the stopper.

5. Set whether the cooking temperature recalculation according to the entered altitude should be applied. If the option is active, you must enter the altitude where the new device will be installed.

6. To calibrate the position of the closed cover (only in single-pan devices):

   a. Close the cover completely.

   b. If it is no longer possible to activate the closing command and the cover

is not completely closed, press [−] and repeat closing the cover.

c. If there is too much stress on the cover structure when closing the

   cover, press [+], open the cover and repeat closing the cover.

d. For two-pan devices, repeat the process for both covers.

7. Perform temperature calibration of plate 1,2:

   a. In the empty cold basin of the device, measure the temperature of the bottom with an accurate touch thermometer, preferably at the points of placement of the thermocouples for measuring the temperature of plate 1.

   b. Use [−] and [+] to set the temperature measurement of plate 1 so that the bottom black value shows the temperature measured by the touch thermometer.

   c. Use the same procedure to perform plate 2 temperature calibration

   d. In a pressure device, the maximum plate temperature calibration variance is 1.2 within +/- 3°C of the measured temperature

8. To calibrate pan temperatures and needle temperatures:

   a. Pour cold water into the empty pan of the device and, after the temperature has stabilized, measure the temperature of the sensor in the pan and of the needle dropped in the water with an accurate touch thermometer.

   b. Use [−] and [+] to set the temperature in pan 1 and temperature of needle 1 so that the lower black value shows the temperature measured by the touch thermometer.

   c. For two-pan devices, repeat the process for pan temperature 2 and needle temperature 2.

   d. The default temperature calibration step is 0.5 °C.

   e. In a pressure device, the maximum temperature calibration variance in the pan is 1.2 within +/- 3°C of the measured temperature

9. Temperatures of heating block 1,2, temperature inside PLC, and condenser temperature are not calibrated.

10. Save the performed measurement calibration with the [⚙💾] button in the Service level 1 screen.

3.2.2 *Initial setup and calibration of measurements – non-pressure devices*
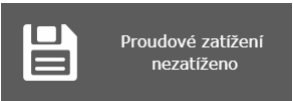
For the initial parameter setting and measurement calibration of a pressure device, initial calibration for a non-pressure device must first be performed.
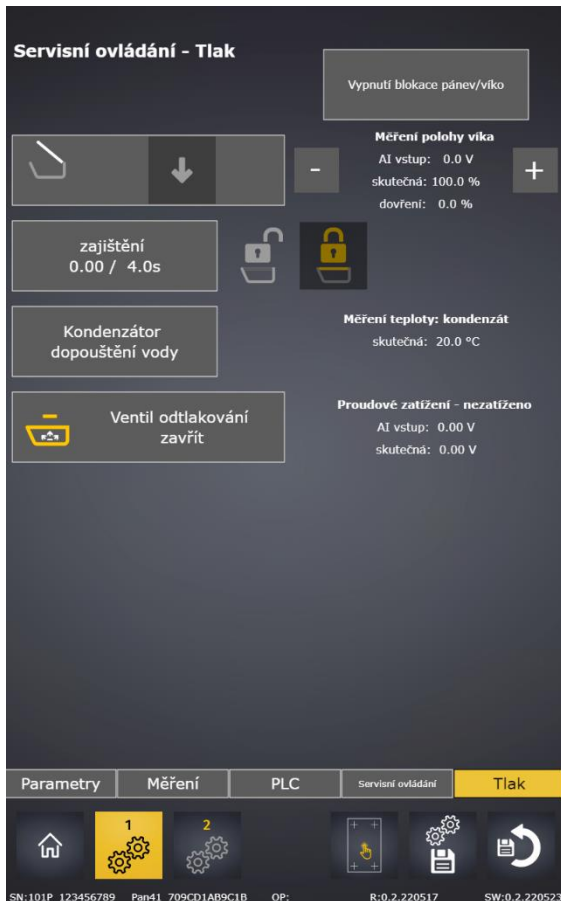
The following additional settings and calibrations are required for pressure equipment:

11. Press the service button for locking the cover to select the locking test and test the mechanical locking of the cover up to the desired current load. The recommended locking time is 2-3 s. Next to the button, the unlocked and locked statuses of the sensors are displayed. The cover is unlocked with the cover closing button .

12. To calibrate the current load of the source in an unloaded state, i.e., at rest without any command. In the upper line there is the value of the existing current load in V, in the bottom line there is the value of the load in the unloaded state at the last calibration. If the difference between the values is greater than 0.05 V, warning 208 is detected. Calibration is done by pressing the button and this will remove the warning and the button signalling. After each PLC power restart, the device will automatically test whether the current load value is between 2.35-2.75V and if the value is within this range, the current load calibration will be performed automatically and pressure pan service option will automatically be turned on.

Alert 208 is detected for the pressure pan also if no current load is connected

and the input shows 0 V.

13. Perform the pressure relief valve closing test and visually check that the pressure relief ball valve is closed with the cover open. The repeated command to the pressure relief valve can only be activated after a minimum time of 20 s has elapsed.

14. With the service button for opening the water supply valve to the condenser, the water supply can be opened independently of the mode.

3.2.3 Service level 1 – Measuring – Device blocking
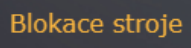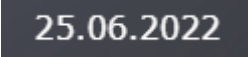
The multifunction device can be blocked on this Measurement screen on a certain date by long pressing the button and then confirming the activation of the device blocking . After turning on the blocking of the device, the blocking date is automatically set to a date shifted by 30 days from the current date.

The device screen displays information about the device being blocked:

- green signalling of turning on the blocking of the device when the date has not been exceeded and the device can be used without limitation. An alarm is displayed next to the date and time on the start screen or the cooking screen .

- red signalling of device blocking active when the date has been exceeded and heating is blocked in the device. At the same time, Alert 211 is detected.

- the date until which the device will operate without limitation .

- eight-digit code for unblocking the device .

To receive an unblock code, it is necessary to contact the manufacturer of the device. According to the received code, the device can be unblocked for a specified number of days from the blocking date or the device can be unlocked permanently. The code is entered in the white field and confirmed with the Enter button.

3.3 Service level 1 – PLC

Information to the PLC central unit

The first line contains more detailed information about PLC CP-2005, i.e., FW type and version (2.2.051), specifications of the central unit (F2x CP2005 11NSNN.01), serial number of the central unit (MO 0112), the program turn in ms is indicated in brackets.

The next lines show the firmware of the individual connected peripheral modules IB-1301, OS-1401 and IT-1605.

Full error code

The full code of the last occurred error, intended for easy reading of the last error that occurred by the parent system. An overview of error codes is given in the manual of the relevant PLC type.

Internal error code

The first byte of the code of the last error that occurred. When a PLC internal error (system register S34) is detected, an alert in the range 501-755 is detected and indicated that corresponds to the sum of the number 500 and an internal error code in the range 001-255.

Edition number of the user program

Each MFP program version of the multifunction device has the form X.Y.YYMMDD where X.Y. is the program version and YYMMDD is the build date of the program. After the version, there is the exact date and time of program version compilation and designation of the program type Pan41 or Mr.42 respectively is shown. The next line

shows the date and time the program was uploaded to the device.

Options for enabling individual cooking modes

An option to allow the mode to be used on the device. If the option is off, the mode will not appear among the mode buttons at the top of the cooking screen, and it is not possible to turn on an algorithm that contains a step with the corresponding disabled cooking mode. The factory default setting of the options is enabled, Delta T mode is disabled.

Settings for sending email messages from the device

Upon pressing , a window will show with settings for sending mail messages from the device.
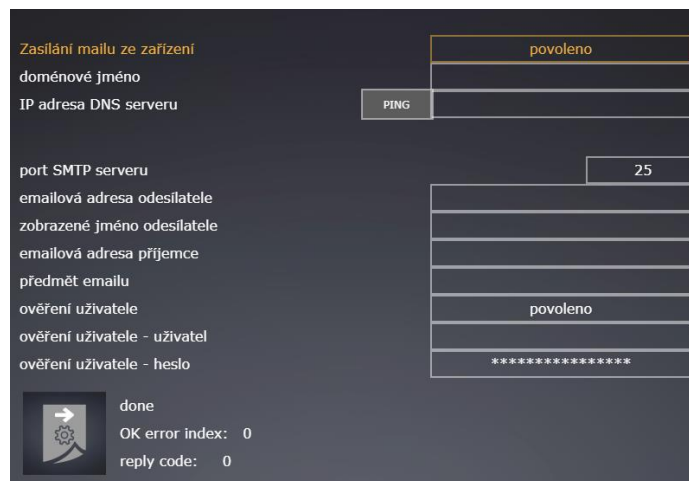
In initial settings, the sending of email messages from the device is forbidden. After pressing allow sending, you need to fill in all the necessary information to set up sending messages. Parameter settings must be consulted with the administrator of the

Internet network to which the device is connected (ETH2). The button can be used to send a check email message from the device. After correct communication settings, an email will be sent from the device when a fault occurs in the device, and the email sent will include the fault index and the date and time of the fault.

The button switches back to the PLC information window.

3.4 Service level 1 – Service control

The service control screen is used to test the functionality of the multifunction device (e.g., when commissioning a new device, diagnosing a faulty function, in the event of a malfunction, etc.). The service control is only accessible when cooking is not in process.
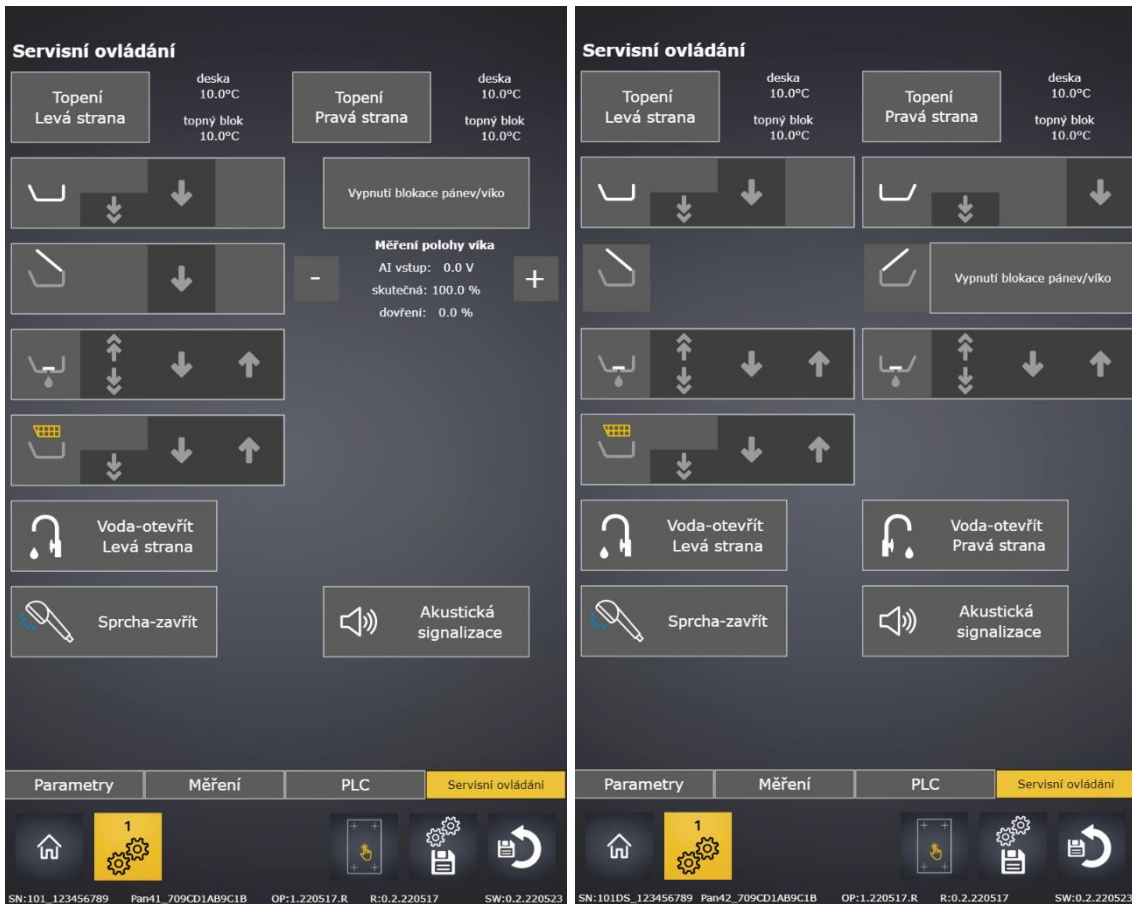
Heating

The service buttons for turning on the left and right halves of the heating in the device turn on the heating independently of the selected mode. However, if the emergency temperature of 270 °C (plate, heating block) is exceeded, the heating is also switched off in the service control.

Next to the buttons for turning on the heating, the current temperatures of the plate and the heating block in the respective half are displayed.

Pan

With the service button for levelling and tilting the pan, you can test the control of the pan regardless of the conditions for the movement of the pan. Service control is

possible either by a permanent command which is turned off by pressing

the command again, or by a command for the duration of holding the button

 .

Pan movement is enabled in the service control if the cover is open, otherwise the pan command is blocked. This blocking can be turned off with the Pan/Cover Lockout button where the other pan control buttons will also be displayed with an exclamation

mark .

 When the blocking is off, the service buttons of the pan control are not blocked by anything! If the button is turned on when non-fulfilment of conditions is indicated **, the device may be destroyed!**

The pan/cover blocking off button will automatically turn off when the device is powered on. In a two-pan device, the pan control is analogous for the left and right pans.

Cover

With the service button for opening and closing the cover, it is possible to test the control of the cover independently of the conditions for the movement of the cover in a single-pan device. Service control is possible either by a permanent command to open

 which is turned off by pressing the command again, or by a command for the

duration of holding the button . Permanent movement of the cover down in the service control is not allowed.

Cover movement is enabled in the single-pan device if the pan is levelled, otherwise the cover command is blocked. The blocking can be turned off with the Pan/Cover Lockout button where the other cover control buttons will also be displayed with an

exclamation mark .

 When the blocking is off, the service buttons of the cover are not blocked by anything! If the button is turned on when non-fulfilment of conditions is indicated **, the device may be destroyed!**

The pan/cover blocking off button will automatically turn off when the device is powered on. The cover movement speed in the service mode is maximal. To the right of the cover control buttons, the cover position measurement calibration is displayed to check the current cover position and calibrate the measurement.

In the two-pan device, the covers are only manually operated, so only the cover position indications are shown.

Stopper

With the service button for opening and closing the stopper, you can test the control of the stopper regardless of the conditions for the movement of the stopper. Service

control is possible either by a permanent command which is turned off by pressing the command again, or by a command for the duration of holding the button

. In the service control, the stopper can be operated with the service

buttons without restrictions.

In a two-pan device, the pan control is analogous for the left and right pans.

Baskets

With the service button for extending and retracting the baskets, you can test the control of the baskets regardless of fulfilling the conditions for the movement of the baskets. Service control is possible either by a permanent command which is turned off by pressing the command again, or by a command for the duration of holding the button .

For buttons that turn on a permanent control command , the cover must be open and the pan levelled to avoid damaging the cover or pan device. **The service buttons which activate the control command only for the duration of the button pressing are not blocked by anything! If the button is turned on when non-fulfilment of conditions is indicated , the device may be destroyed!**

In a two-pan device, the basket control is analogous for the left and right pans.

Water

The water opening service button can be used to open the water independently of the mode. The service opening is only switched off when the maximum plate temperature is exceeded while filling with water or when the water is shut for safety reasons after it has been open for a long time.

In a two-pan device, the water control is analogous for the left and right pans.

Shower

The shower valve is permanently open if the following conditions are met:

- the shower shut-off button is not pressed by the cook in the user settings window

- the shower shut-off service button in the service control window is not pressed

- no deep-frying memory, there is no memory of the deep-frying process in either of the pans in a two-pan device

- water is not being filled. In the user settings window, the blocking of the shower when filling with water can be turned off.

If the conditions for opening the shower are not met, an alarm is displayed on the start screen and on the cooking screen .

In the service mode, the shower valve is open by default when the specified conditions

are met, and the shower valve can be tried to be closed with the shower shut off service button.

Acoustic signalling

The acoustic signal service button can be used to test the signal without the selected mode and temperature.

3.4.1 Service level 1 – Service control – Pressure

The Pressure service control screen is used to test the functionality of the pressure multifunction device. The service control is only accessible when cooking is not in process.
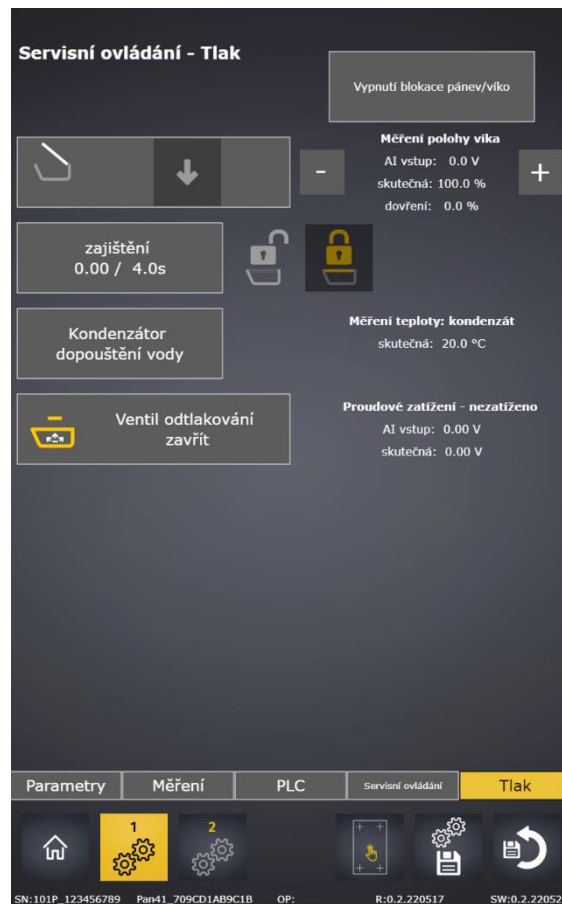
Cover

In a pressure pan, it is necessary to set and test the correct locking and unlocking of the cover, which is why the standard cover service control (see above) is shown in the first line of the Pressure service window. The next line shows the cover lock button. When it is pressed and the lock lever is rotated, the upward movement of the cover is automatically activated until the cover is fully locked.

Before using the button**, it is necessary to have the right connection of the current load otherwise the device may be destroyed!**

After securing the cover in the service mode, the service command for opening the cover cannot be used. If the correct combination for unlocking the cover is fulfilled in

the pressure pan (inactive secured signal , active unlocked signal) then the service command cannot be used to open the cover.

> **When the pan/cover blocking is turned off in the service control window, the service buttons , which activate the cover control command only for the time the button is pressed, are not blocked by anything! If the button is turned on when non-fulfilment of conditions is indicated , the device may be destroyed!**

To unlock the cover, the cover close button is used which closes the cover and unlocks and automatically releases the hooks.

Condenser – water adding

The button can be used to test the opening of the water valve to the condenser in the service mode.

The current water temperature in the condenser is displayed to the right of the button. The temperature inside the space is used only to check the functionality of the sensor, the temperature is not adjusted in any way.

Pressure relief valve

The pressure relief valve closing service button performs a valve closing test regardless of whether the valve closing conditions are met. When testing, it is necessary to visually check that the pressure relief ball valve is closed with the cover open. The re-command to the pressure relief valve can only be activated after a minimum time of 20 s has elapsed, which is signalled on the button.

Calibration of the current load

Calibration of the current load of the source is done in an unloaded state, i.e., at rest without any command. In the upper line there is the value of the existing current load in V, in the bottom line there is the value of the load in the unloaded state at the last calibration. If the difference between the values is greater than 0.05 V, warning 208 is

detected. Calibration is done by pressing the button and this will remove the warning and the button signalling. After each PLC power restart, the device will automatically test whether the current load value is between 2.35-2.75V and if the value is within this range, the current load calibration will be performed automatically and pressure pan service option will automatically be turned on.

Alert 208 is detected for the pressure pan also if no current load is connected and the input shows 0 V.

3.5 Service level 2

3.5.1 Service level 2 – Parameters 2

Pressure pan (in the single-pan device only)

The option to activate the pressure vessel is selected when a new pressure vessel is put into operation. To turn on the option, it is necessary to connect all the equipment and measurements necessary for the operation of the pressure pan (current measurement in the power source, steam flow sensor, control of the pressure relief valve, minimum water level in the condenser, sensor for locking and unlocking the cover, control of the output of water adding to the condenser, water temperature in the condenser). By default, the option is disabled, i.e., the device is set as non-pressurized.

Pan: tilting speed fast

Pan tilting speed when controlling the pan on the home screen. The tilting speed is controlled by changing the 24V supply to all the control drives of the device. **The source control is possible in the range of 0-5 V, therefore the value of the tilt speed must not be set to more than 50%!** The factory default setting for fast tilting speed is 50%.

Pan: tilting speed with open drain

Pan tilting speed at pan tilting pulse with the stopper open. The tilting speed is controlled by changing the 24V supply to all the control drives of the device. **The source control is possible in the range of 0-5 V, therefore the value of the tilt speed must not be set to more than 50%!** The factory default setting for tilting speed is 35 %.

Pan: tilting speed slow

Pan tilting speed when controlling the pan on the cooking screen. The tilting speed is controlled by changing the 24V supply to all the control drives of the device. **The source control is possible in the range of 0-5 V, therefore the value of the tilt speed must not be set to more than 50%!** The factory default slow speed setting is 27% or 35% for 101DM,101DL.

Pan: pan tilt pulse with drain open

The duration of the pan tilting pulse with the stopper open when the pan tilts at the pan tilt speed. The factory default pulse setting is set according to the pan type: 0.6 s for 101DS, 2,3 s for 101DM,101DL and 1.6 s for single-pan device.

Cover: position of cover complete closing confirmation (only in single-pan devices)

The cover position at which the command to close the cover is turned off for safety reasons and it is necessary to close the cover completely with the special complete

cover closing button shown ![button]. The factory default setting for position of complete closing confirmation is 20 %.

Cover: the difference above the complete closing position (only in single-pan devices)

The value of the cover position which signals the closed position for the cover if it is not possible to close the cover drive to the end position. The factory default setting is 0 %.

Input power limit: limits the percentage of output power

If it is necessary to limit the input power of the device, it is possible to switch on the input power limitation option (Service 1 – Parameters) and the heating of the multifunction device works at maximum percentage of input power 80 %. The factory default setting is 80%.

Remote control – logout

The time delay for the service technician to log out of the service access which can be used to download service data and use a new version of the program. The factory default value is 600 s.

Operation time, consumptions

To diagnose the operation of the multifunction device, the system calculates the device's switch-on times in individual modes and the heating elements' switch-on times.

- total device power-on time (calculated continuously while the device is on)
- total time on mode – Cooking
- total time on mode – Deep-frying
- total time on mode – Frying
- total time on mode – Gentle cooking
- total time on mode – Pressure cooking (pressure devices only)

- total heating element switch-on time – left half, right half

- water meter 1, 2

Two water meters are introduced in the system to measure water consumption in the multifunction device. Both water meters increase the number of impulses by the current number of impulses from the flow meter.

The switch-on time or water meter can be reset by pressing the button .

3.5.2 Service level 1.2 – Touch layer test
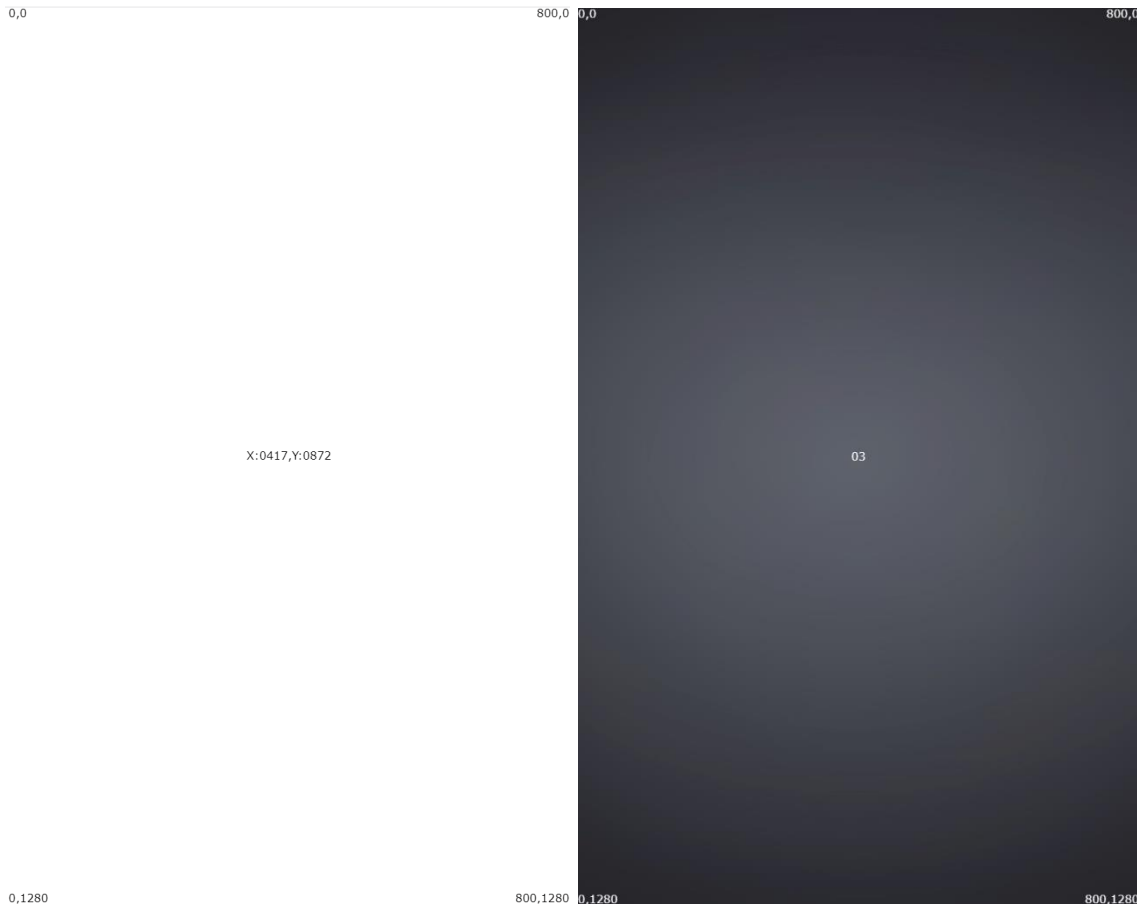
The correct setting of the touch layer of the operating panel is necessary for the proper functioning of the control of the multifunction device. There is a touch layer test screen to verify proper function . After touching any point on the test screen, the coordinates of the pressed place are displayed in the middle of the screen. In this way, you can move your finger across the screen to test the entire touch screen. The correct corner coordinates are provided in each corner. If the coordinates do not correspond, the panel computer must be reinstalled.

If the touch layer testing is finished and no point is pressed, the system will automatically switch to the previous service screen after 5s. If the time starts counting down when the panel is pressed, the touch layer is not working properly and needs to be repaired by the manufacturer.

3.5.3 Service level 1,2 – Parameter change

After changing a service parameter, the change is signalled in yellow, with the original factory setting value displayed in white to the left of the current changed value:

Press the reset button to reset to factory default settings. If it is necessary to set this new value as the factory value, it is necessary to log in to service level 2, press

the button to save the current parameters to the factory settings and confirm

the saving . At the same time as the save, the system settings will also be saved to the SD card.

3.5.4 Deleting the chef's recipe list and all database entries

To delete the chef's recipe list and all records, you need to log in to service level 2.
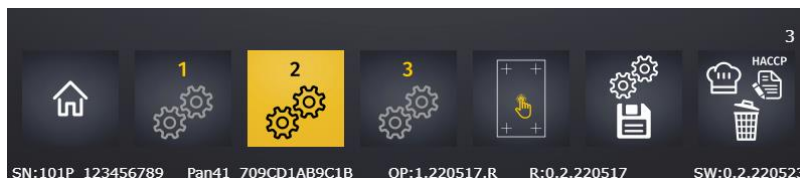
Deletion is done by long pressing the button and short pressing confirmation

 above the delete button. Database records will begin to be saved in new files.

 If the recipe list and all records are deleted, the files cannot be recovered!

4 FAULTS

4.1 004–010 PLC faults

The control system of the multifunction device consists of a programmable controller (PLC) and peripheral units connected to the PLC. Based on diagnostics of the state of the control system modules, the following faults are detected for the device:

- fault 004 – fault of the central unit
- fault 006 – fault of 0 address module (IB-1301 – digital inputs)
- fault 007 – fault of 1 address module (OS-1401 – digital outputs)
- fault 008 – fault of 2 address module (IT-1605 – temperature measurement)
- fault 009 – fault of 3 address module (IT-1605 – temperature measurement).

For single-pan non-pressurized devices, only one IT1605 module is used and therefore fault 009 is not detected. 2 IT1605 modules are used for pressure equipment and two-pan devices and therefore fault 009 is detected.

- fault 010 – fault of 0 address module (IB-1301 – digital inputs). The fault is only detected for pressure equipment with the function of optimizing the consumption of electrical energy turned on.

Information on the PLC central unit can be found on the manufacturer's website www.tecomat.cz.

4.2 025-039 Measurement faults

4.2.1 Plate temperature measurement

Plate temperature is measured by K-type thermocouples under the pan plate for both the left and right halves of the pan in a single pan unit. When one of the measurement circuits is interrupted or disconnected, warning 125 or 126 is detected and cooking is not blocked. If both warnings 125 and 126 are detected, fault 025 is signalled and cooking is stopped and blocked.

In a two-pan device, plate temperature is measured by K-type thermocouples under the pan plate for both the left and right pans. When one of the measurement circuits is interrupted or disconnected, fault 025 is signalled for the left pan, or fault 026 for the right pan respectively, and cooking is blocked in the pan concerned.

4.2.2 Measuring the temperature of the heating block

Heating block temperature is measured by K-type thermocouples inside the heating block for both the left and right halves of the pan in a single pan unit. When one of the measurement circuits is interrupted or disconnected, warning 127 or 128 is signalled and cooking is not blocked. If both warnings 127 and 128 are detected, fault 027 is signalled and cooking is stopped and blocked.

Heating block temperature is measured by K-type thermocouples inside the heating block for both the left and right pans in a two-pan device. When one of the measurement circuits is interrupted or disconnected, fault 027 is signalled for the left pan, or fault 028 for the right pan respectively, and cooking is blocked in the pan concerned.

4.2.3 Temperature measurement inside PLC

The temperature inside PLC (cold end temperature) is measured by a Ni1000 thermocouple at each IT1605 module used in the device wiring. For single-pan non-pressurized equipment only one IT1605 module is used. Two IT1605 modules are used for pressure equipment and two-pan devices. When one of the measurement circuits is interrupted or disconnected in area 1, fault 029 is detected. When one of the measurement circuits is interrupted or disconnected in area 2, fault 030 is detected.

4.2.4 Pan temperature measurement

The pan temperature is measured by a K-type thermocouple inside on the pan wall. When the measurement circuit is interrupted or disconnected, fault 031 is signalled.

Two pan temperature readings are displayed for a two-pan device. When the measurement circuit is interrupted or disconnected in the left pan, fault 031 is signalled,

and fault 032 is signalled when in the right pan.

4.2.5   033,036,133-138 Needle (probe) temperature measurement

Needle temperature in both single and two-pan devices is measured by a total of 3 K-type thermocouples located in the external needle (probe). When one of the measurement circuits is interrupted or disconnected, warning 133, 134 or 135 is detected and cooking is not blocked. If all warnings 133, 134 and 135 are detected, fault 033 is signalled and cooking is stopped and blocked.

Needle 2 temperature in a two-pan device is measured by a total of 3 K-type thermocouples located in the external needle 2 (probe). When one of the measurement circuits is interrupted or disconnected, warning 136, 137 or 138 is detected and cooking is not blocked. If all warnings 136, 137 and 138 are detected, fault 036 is signalled and cooking is stopped and blocked.

Faults 133–138 are not shown on the display, they are only recorded in the service records.

4.2.6   039 Condenser temperature measurement (pressure equipment only)

The condenser temperature is measured by a K-type thermocouple inside the condenser. When the measurement circuit is interrupted or disconnected, fault 039 is signalled.

4.3   050–051,152-154 Other signal faults

4.3.1   050–051 Thermostat

Exceeding the emergency temperature is monitored by an external thermostat which is connected to the digital inputs of the basic PLC module. If the input signal is disconnected at the input, fault 050 is detected.

Exceeding the emergency temperature in a two-pan device is monitored by an external thermostat in each pan which are connected to the digital inputs of the basic PLC module. If the input signal of thermostat 1 of the left pan is disconnected at the input, fault 050 is signalled. If the input signal of thermostat 2 of the left pan is disconnected at the input, fault 051 is signalled.

4.3.2   152 Power supply fault

TA2 power supply fault number 152 will only be detected in a single-pan device if none of the 3 end positions of the pan, cover and basket drives is evaluated. This state is not possible because when the cover moves, the pan needs to be levelled, and conversely when the pan drive moves, the cover has to be open.

4.3.3   153–154 Heating fault

Heating fault 153 or 154 is detected if, after switching on cooking, the temperature of the plates or the temperature of the heating block does not rise by more than 5 °C in 3 minutes. The fault is most often detected when the QA2 or QA3 circuit breaker is switched off. The faults are only detected when the plate temperature is less than 60 °C.

4.4 040–041,061-095 Drive faults

For cover, pan, stopper, baskets and pressure relief valve drives (in pressure pan only), open and closed position input signals (tilted/straightened, down/up) are connected to the digital inputs. Based on the state of these signals and the setting of the maximum travel time and the maximum time of the end position signal, the following faults are detected for the above-mentioned drives:

- The drive did not reach the open position. The fault is detected when the open command is active for longer than the maximum travel time and opening is not signalled.
- The drive did not travel from the open position. The fault is detected when the open command is active for longer than the maximum time of the end position signal and opening is still signalled.
- The drive did not reach the closed position. The fault is detected when the close command is active for longer than the maximum travel time and closing is not signalled.
- The drive did not travel from the closed position. The fault is detected if the close command is active for longer than the maximum time of the end position signal and closing is still signalled.
- Fault of limit switches. The fault is detected if both the open signal and the closed signal are active at the same time.

For the pan drive, the maximum times of tipping or levelling respectively for fast speed (when controlling the pan in the home screen) and slow speed (when controlling the pan in the cooking screen) are set.

The maximum end position signal times are not evaluated for the stopper, basket and pressure relief valve drives (in the pressure vessel only).

4.4.1 066 Cover position error when command is on

In a single-pan device and an electrically operated cover, the position of the drive is measured. If the control command is on and stops measuring the drive position (position change value is less than 0.05%) for more than 3 seconds, fault 066 is detected.

Fault 66 is not reported:

- in service control mode
- in the end position of the closed cover
- In the end position of open cover or at a cover position greater than 99.9%

4.5 042–046, 208 Pressure equipment faults

4.5.1 042 Steam flow fault when pressure relief valve is open (pressurized equipment only)

Steam flow fault 042 is detected when the following conditions are met:

- The pressure relief valve is open
- Active steam flow sensor not evaluated (sensor lights up)
- Pressure cooking is in progress

- Pressure cooking mode is selected

- Pan temperature is greater than 99 °C during pressurization or greater than 105 °C during depressurization

The stated conditions must be met for 10 s.

4.5.2   043,044 Fault of locking/unlocking signals

In the correct state, the locking/unlocking signal is always activated by a maximum of only one of the sensors. The locking/unlocking signal fault 043 is detected in the pressure device if pressure cooking mode is selected and both locking and unlocking signals are active.

The locking/unlocking signal fault 044 is detected in the pressure device if the pressure-cooking mode is selected, the cover is locked or the pressure cooking is started and the combination of locking/unlocking signals (locked active and unlocked inactive) is not correct.

If the fault 043 or 044 is detected during pressurization, it can only be acknowledged after the temperature drops below the safe temperature for unlocking and the steam flow sensor must not be active at the same time.

4.5.3   045 Steam flow sensor fault outside pressurization

Steam flow sensor fault outside pressurization 045 is detected when the following conditions are met:

- Pressure cooking mode is selected

- Pressure cooking has not been started

- The cover is closed

- Active steam flow sensor is evaluated (sensor doesn't light up)

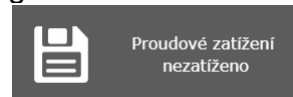The stated conditions must be met for 10 s.

4.5.4   046 Emergency maximum temperature in the condenser

Fault 046 is detected in the pressure device when the temperature in the condenser exceeds 90 °C. The fault is detected if the pressure-cooking mode is selected, in other modes it is detected if the cover of the pan is closed. The fault is not detected if there is a temperature measurement fault in the condenser.

4.5.5   208 Current load calibration fault

Calibration of the current load of the source is done in an unloaded state, i.e., at rest without any command. If the difference between the values is greater than 0.05 V,

warning 208 is detected. Calibration is done by pressing the button and this will remove the warning and the button signalling. After each PLC power restart, the device will automatically test whether the current load value is between 2.35-2.75V and if the value is within this range, the current load calibration will be performed automatically and pressure pan service option will automatically be turned on.

Alert 208 is detected for the pressure pan also if no current load is connected and the input shows 0 V.

4.6 200–999 Other faults

4.6.1 200–205 Emergency maximum temperatures

The emergency maximum temperature is detected when the temperature of the heating block exceeds 270 °C (200,201) or when the plate temperature exceeds 270 °C (202,203), the emergency maximum temperature of the cold end is detected when the temperature in the PLC space exceeds 60 °C (204,205).

Faults 200-205 are not shown on the display, they are only recorded in the service records.

4.6.2 209 Full SD card in PLC

HACCP records, service records, fault records and basic device settings are stored on the SD card in the PLC. The SD card full fault is detected when the SD card is more than 90% full or when the total SD card capacity is 0 bytes.

If the capacity of the SD card is exceeded by more than 90%, a warning will be displayed every 10 minutes .

4.6.3 211 Device blocking

Fault 211 is displayed when red signalling of active blocking of the device is displayed Blokace stroje when the date has been exceeded and heating is blocked in the device. To receive an unblock code, it is necessary to contact the manufacturer of the device.

4.6.4 212–213 Fault to insert the needle into the pan

Fault to insert the needle into the pan 212 or 213 is detected when the following conditions are met:

- the difference between the average temperature of the probe and the temperature of the plate is greater than 80 °C for a period longer than 60 s

- cooking is on

- the control mode according to the probe is selected

Faults 212, 213 are not shown on the display, they are only recorded in the service records.

4.6.5 501-755 Internal error code

The first byte of the code of the last error that occurred. When a PLC internal error (system register S34) is detected, an alert in the range 501-755 is detected and indicated that corresponds to the sum of the number 500 and an internal error code in

the range 001-255.

- S34.7 = 1 (code>= 128) - serious error, the execution of the user program stops, the PLC goes into HALT mode and blocks the outputs

- S34.7 = 0 (code <128) - other errors not seriously affecting the control itself, the user program continues to work, these errors can be handled by the user using this system registry

- 0 – no-fault condition

- 2 – serial communication error

- 7 – error checking remanent zone

- 8 – exceeding the first cycle time monitoring limit

- 9 – faulty RTC circuit system time

- 16 – division by zero

- 19 – the table instruction above the notebook has exceeded its scope

- 20 – the source block of data was defined outside the scope of the notebook, data or table

- 21 – the target block of data was defined outside the scope of the notebook or table

- 32 – a violation of the user program was detected during the continuous check

- 80 – the central unit does not support user instruction services

- 81 – the central unit does not support the requested service for user instructions

- 112 – errors when changing the user program online

- 128 – user program errors

- 129 – errors in the peripheral system

- 130 – communication errors with extension frames

- 131 – serial channels error

- 160 to 175 – errors in the peripheral system

5 REMOTE CONTROL

The multifunction device can be controlled remotely using an Internet connection. A precondition for using remote control of the device with CP-2005 is to connect the device (ETH2 interface) to the Internet or to the customer's intranet (within a building).

5.1 Remote control using the JipaRoute service

5.1.1 JipaRoute service description

If the device is connected to the Internet, remote control is carried out using the JipaRoute service. The JipaRoute service is used for PLC remote control through the Internet. The PLC system must be connected to the Internet, no public IP address and

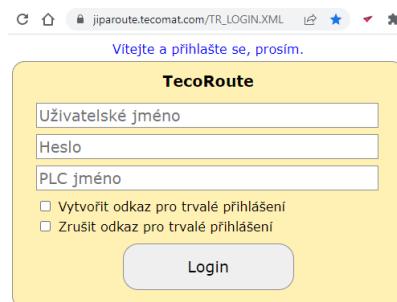additional hardware (except a router) are needed.
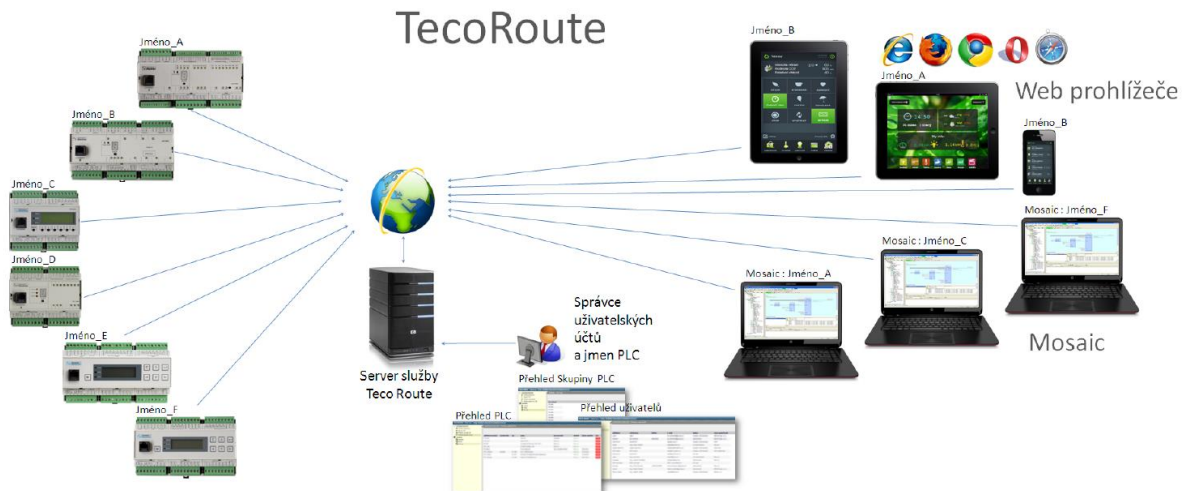
The PLC system is installed at the customer's location and connected to a local Ethernet network with Internet access (like a regular office computer). In the PLC of the multifunction device, unique JipaRoute service credentials are preset for each device.

With these data, the PLC logs itself into the JipaRoute service server. This makes it remotely accessible from a web browser. The web browser first connects to the server with the JipaRoute service, which, after verifying the login data and selecting the PLC, connects it to the selected PLC system.

No additional technical means is required for remote access to the PLC system. All you need is a regular Internet connection (e.g., a home or business router). The public IP address of the router is not needed and the need to set up the router is eliminated in the vast majority of cases. Remote access via JipaRoute will remain the same even if you change your Internet connection provider or change your router. In addition, the PLC system is connected to a local network that is not accessible from the Internet, which reduces the risk of attack to

PLC by hackers.

5.1.2 How to connect remote control to the multifunction device

Before actually connecting to the device, you must first log in to the JipaRoute service with your browser. The following needs to be entered in the address bar of the browser: http://jiparoute.tecomat.com:61682/. A service login dialog will then appear in your browser. On the right side of the screen, you can choose a different language for the login dialog.

The explanation of each field is as follows:

- **User name –** username to login to the JipaRoute service

- **Password –** user password to login to the JipaRoute service (the login name and password must be registered on the JipaRoute account)
- **PLC name –** PLC name registered on the JipaRoute account.

If the PLC name is not entered (the "PLC name" field remains empty), then the service server offers another page with a selection of PLC systems that are registered for the logged-in user:


The green-coloured line means that the PLC system is currently connected to the service (it is online). The red-coloured line indicates that the PLC system is not currently available via the JipaRoute service (it is offline, not connected). The currently selected PLC system has blue colour background. Click on the PLC name to select the system you want to connect to. Press the "Select" button to connect to the selected PLC system. The login dialog of the web server of the selected PLC will show up (the same as in the case of logging in from the local network), press the Login button.

5.2 Remote-control screens

After pressing Login and logging in to the PLC web server, the screen that is displayed on the device panel will appear. The device cannot be controlled using this screen, it is only possible to monitor the cooking status of the device.
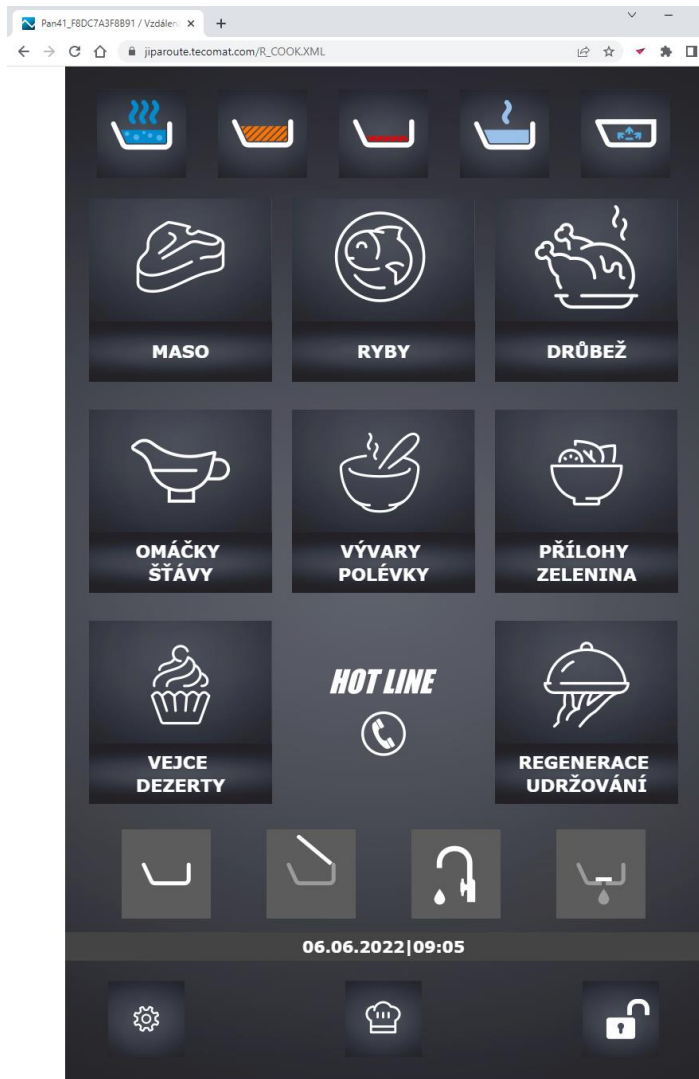
5.2.1 Screen for downloading HACCP records

By pressing anywhere on the displayed screen, the display of the current screen will be expanded to include a screen for additional possibilities of using remote control. Pressing anywhere on the displayed left current screen again will hide the extended view and only the current panel screen will be displayed.
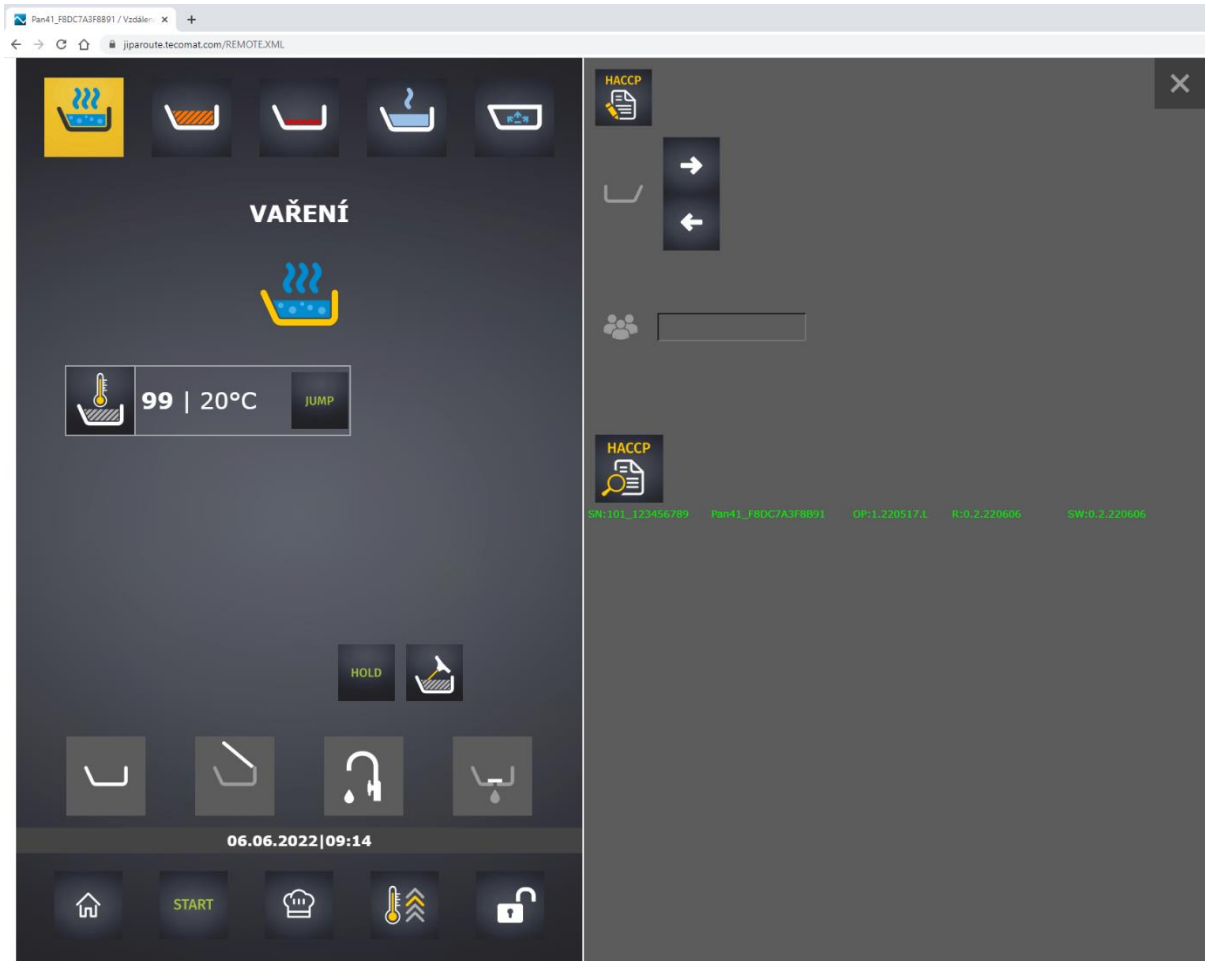
In the basic level of remote control, the user can perform the following actions:

- Save monthly files of HACCP records for the last 2 months from PLC to PC by

  pressing

- Save the chef's recipe list from the device to a remote-control computer
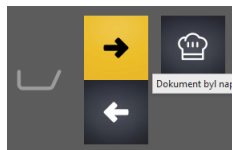
   by pressing . The recipe list is saved to a computer in the CookerRecept.zip file.

- Save the chef's recipe list in the CookerRecept.zip file from the remote-control
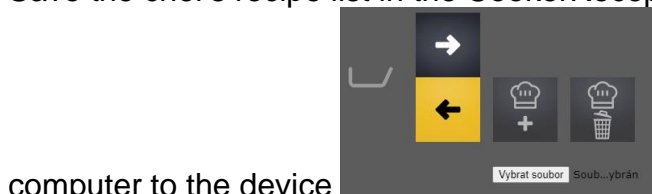
  computer to the device by pressing (the

  transferred recipes will be added after the existing recipes) or (all the recipes in the device will be deleted and replaced by the transferred recipes from the USB flash drive).

- View HACCP records of the device

- Log out of remote control with the button

The description of the operation of the listed activities is the same as on the multifunction panel and is described in the operator's manual.

On the middle line of the extended screen there is the serial number of the device, the name of the device (Pan41 or Pan42 and the MAC address of the device), the version of the operating panel, the version of the algorithms and the version of the program in the device.

5.2.2 Remote control – service technician

To log in as a remote-control user at service technician level, fill in **Service** in the login field and press to confirm. After a successful login at the service technician level, a remote-control window will appear with available information and options.
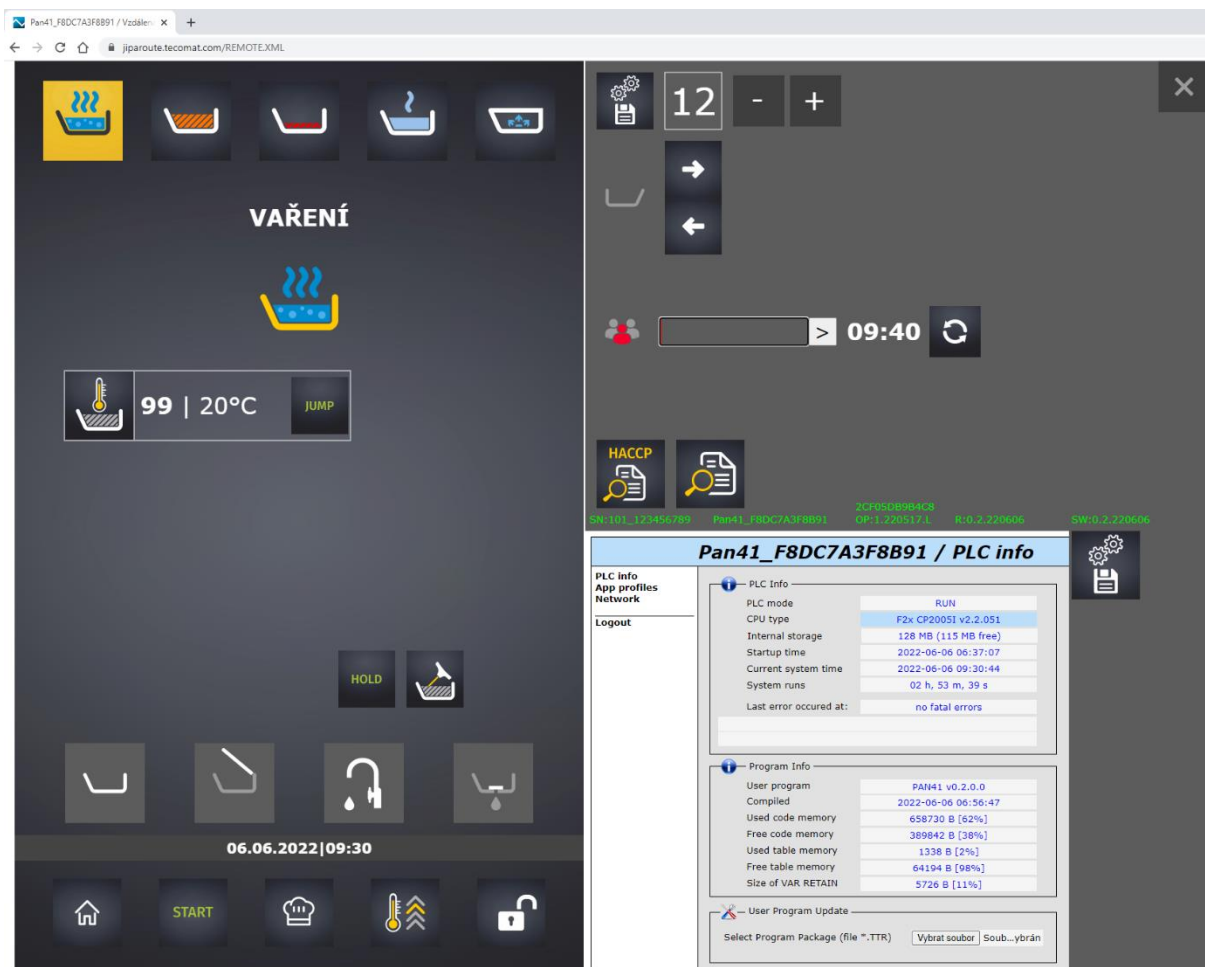
Next to the login field, there is a 10-minute countdown until the user is automatically logged out of the service technician level. The countdown can be reset to the default

10 minutes with the button .

A user in the service technician level has the ability to perform the following actions:

- Save monthly HACCP record files, last year's service records and fault records from PLC to computer, save settings of parameters, options and other device variables in VarList.var file, and save central unit manufacturer's service diagnostic records in debug_info.zip file

- Save the chef's recipe list from the device to a remote-control computer by pressing . The recipe list is saved to a computer in the CookerRecept.zip file.
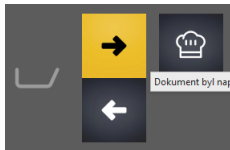
- Save the chef's recipe list in the CookerRecept.zip file from the remote-control computer to the device by pressing (the transferred recipes will be added after the existing recipes) or (all the recipes in the device will be deleted and replaced by the transferred recipes from the USB flash drive).

- View HACCP records of the device

- View the device's fault logs

- Upload a new version of the program to the device
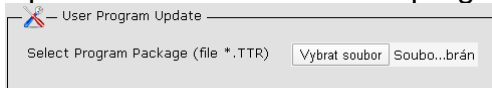
- Log out of remote control with

The description of the operation of the listed activities is the same as on the multifunction panel and is described in the operator's manual.

5.2.3 *Remote control - access to service records (logs)*

All the important service diagnostic records of the manufacturer of the central unit are stored in the file debug_info.zip which is downloaded automatically after downloading

the data from the device by pressing

Individual logs can also be accessed separately. After logging in to the PLC web server with the Login button, you need to enter the address in the notebook field http://jiparoute.tecomat.com/LOGS/. Once entered, a list of individual service logs on the device will appear which are important when communicating with service support or the PLC manufacturer. Click on the underlined links to download log files important for analyzing a possible problem with the central unit.

5.2.4 Uploading a new program to the multifunction device

Uploading a new program to the multifunction device is allowed after the service technician logs in to remote control.

Before uploading a new program into an existing multifunction device, it is necessary to save the current device settings using the button to the right of the PLC info window!

The new program to CP-2005 is distributed using program files (packages) that are described above. A new program is uploaded to the central unit of the multifunction device by selecting the program file on the computer and pressing the OK confirmation button.
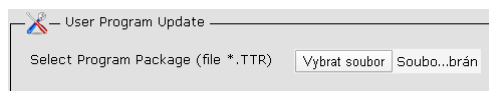

Using remote control, a different type of program (Pan41, Pan42) than was in the device before playback can be uploaded to the multifunction device! It is important to carefully check the selected program type before uploading!

Before confirmation, a confirmation dialog will appear on the screen of the remote-

control computer (JipaRoute confirmation on the left, intranet confirmation within the building on the right).
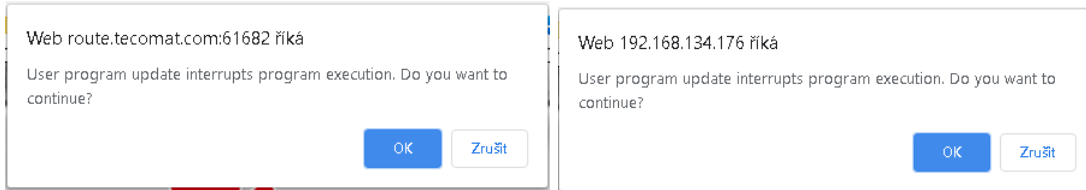
While uploading a new program to the multifunction device, the program process stops for some time and disconnects at the point of communication between the PLC and the operation panel. The stop of the PLC is signalled on the remote-control computer screen (signalling by the JipaRoute service on the left, signalling by the intranet network within the building on the right).
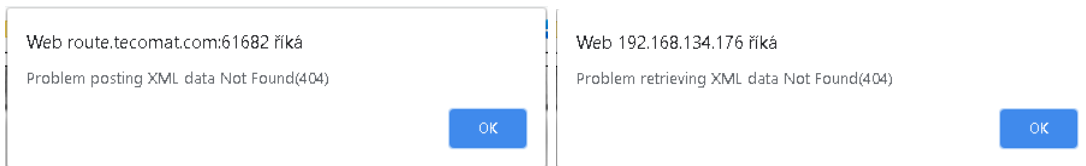
If the signalling does not appear after the package was selected and confirmed, the program has not been uploaded in the PLC correctly. After uploading the program to the device, you need to check the program version in the PLC system info on the right of the remote-control screen (User program and Compiled items).
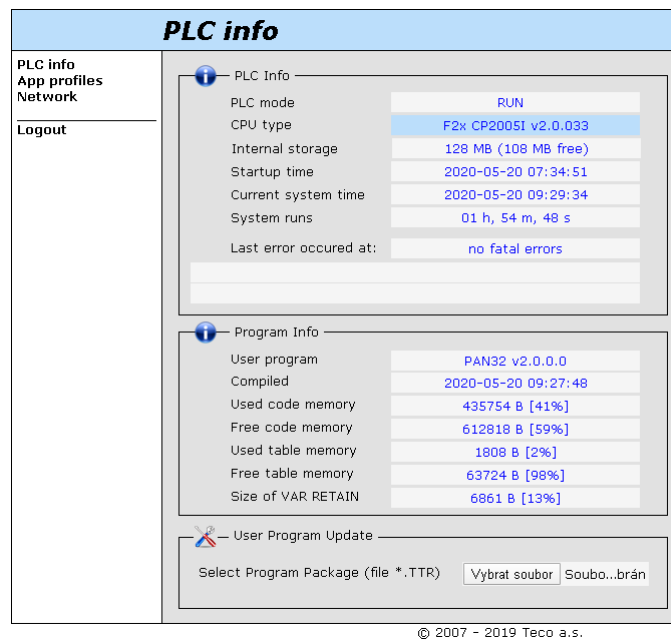
The program can also be checked in the expanded window in the middle. A change to the program in the device is registered in the service records of the device.