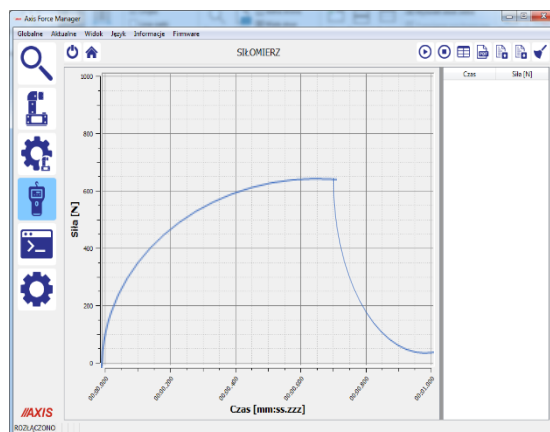




FORCE MANAGER

USER MANUAL

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1. FORCE MANAGER program description

The program is used to operate force gauges and dynamic stands manufactured by AXIS Sp. z o. o. The program offers communication with force gauges both via serial ports and via the network.

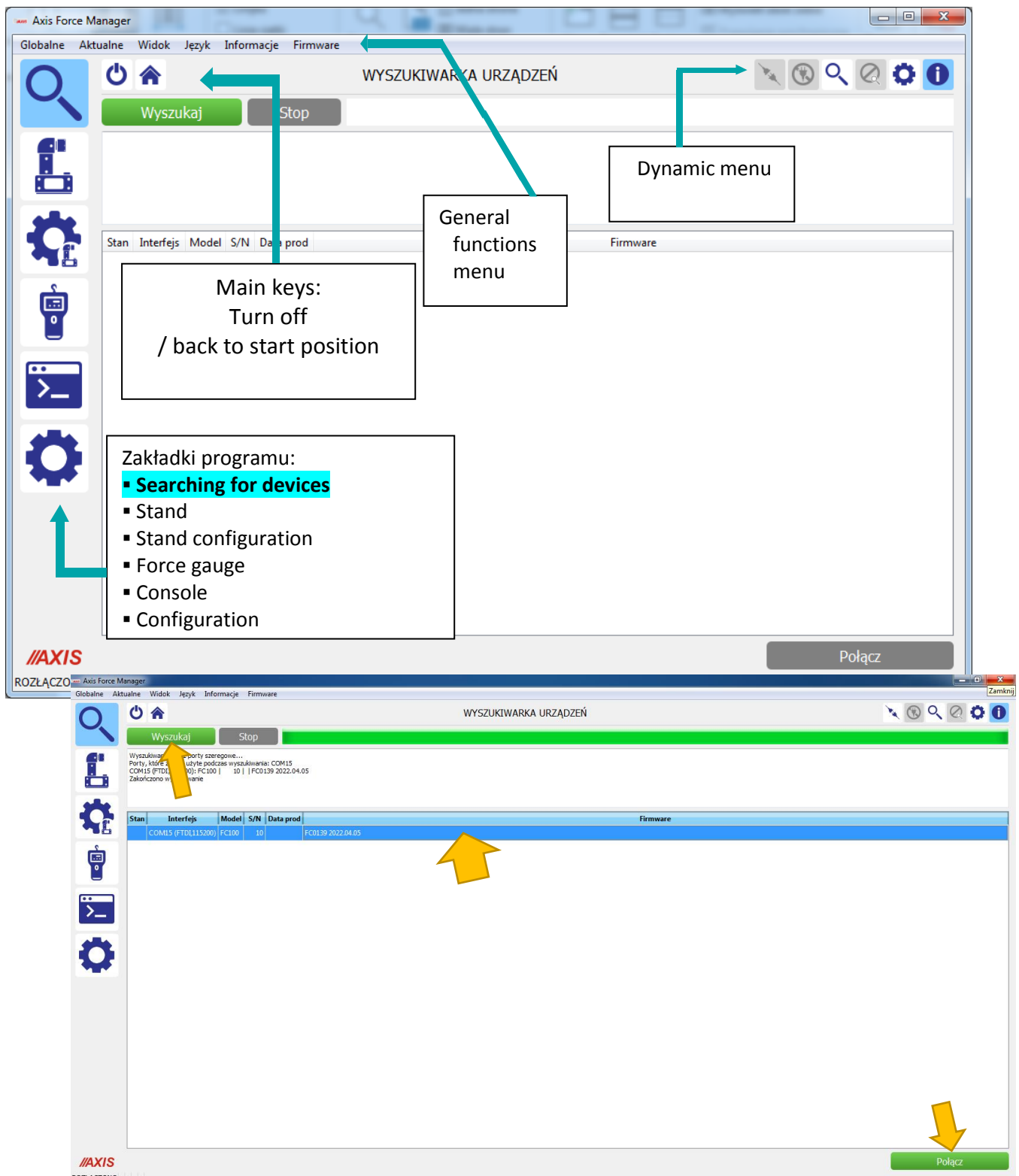
The basic functions offered by the program are:

- Searching for active communication ports
- Automatic stand Control
- Automatic stand configuration (reading and uploading motion programs)
- Creating force vs. time and displacement graphs
- Recording and export of collected data
- Console/terminal for direct communication with a automatic stand or force gauge
- Configuration

Each of the above functions has a separate tab. The required tab is selected using the icons on the left side of the screen.

1.1 Device Finder Tab

The tab is used to search for devices and connect/disconnect from them. The most common way is to connect a computer to a automatic stand that receives data from the dynamometer using a separate connection. The dynamometer icon on the left is then inactive. Another solution is to connect to a dynamometer. The Automatic stand and Automatic stand Configuration icons are then inactive.



At the top of the screen are the following menus:

- General functions menu facilitating current operations: Global, Current, View, Language, About
- Main Keys Menu: Emergency Stop/Back to Home
- Search Management Icon Menu

Global function has the same options as *the Main Keys Menu* . The

Current function has the same options as *the Dynamic Icon Menu* .

The View function allows you to change the visible fields in the program.

The Language function allows you to select English or Polish. The

About function contains general information about the program, including the program version.

Additionally, in the central part of the screen there are:

Button  - start searching for device

The green button at the top of the screen. It is used to start [the search procedure](#) .

While the search procedure is in progress, the button is disabled.

Button -  Stop

The button at the top of the screen next to the start search button. It is used to stop the search procedure.

The button is only enabled while the search procedure is in progress and the search stop procedure is not active.

Search progress bar 

The bar at the top of the screen, next to the stop search button.

The bar shows the progress [of the search procedure](#) .

Search Details Field

Scrollable text field showing the log of the search procedure.

It is cleared before each search.

Table of found devices

A table that lists the devices found during the last search procedure.

It is cleared before each search.

Contains columns:

- Status - if the program is connected to the device it displays CON , otherwise blank
- Interface – displays at which address the device is connected
- Model - Device model
- S/N - Serial number of the device
- Prod date - device production date
- Firmware - Firmware number

Call button /

 Połącz

 Rozłącz

Button at the bottom of the screen used to request a connection/disconnect.

The appearance of the button may change depending on the program status, and its function changes as its appearance changes.

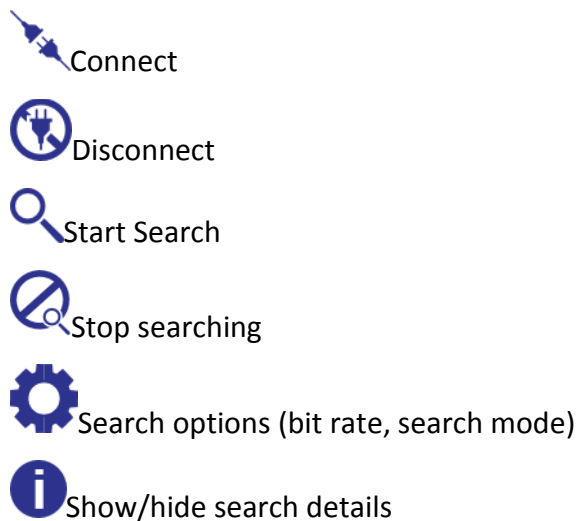
There are 2 possible button states:

1. Pre-connection state - *Green color* - The button is used to establish a connection
2. Status during a call - *Red color* - The button is used to disconnect

As the state changes, the text displayed on the button changes.

If it is not possible to request a connection/disconnection at a given moment, the button is disabled - it turns *gray* .

Dynamic Icon Menu



Connection request

To connect to a device, the user has several options:

1. You can select the device and click the *Connect icon* from *the Icon Menu*
2. You can select the device and click *the Connect Button* at the bottom of the window
3. You can double click on the desired device in the table

If the user requests a connection to a device while the search procedure is still in progress, the procedure is stopped and the program will attempt to connect after the search procedure has been stopped.

Disconnect request

To connect to a device, the user has several options:

1. You can click the *Disconnect icon* from *the Icon Menu*
2. You can click *the Connect button* at the bottom of the window
3. Can double-click the left mouse button on the currently connected device in the table

Switching between devices

If the program is connected to a device and the user wants to connect to another one available on the list, he can:

1. Manually disconnect and connect
2. Double-click the device you want to connect to - the program will automatically disconnect from the currently connected device and start trying to connect to the desired device

Unavailable devices

A case that may occur when dealing with a network device

There is a chance that during the search the program will find a device whose current configuration will prevent you from connecting to it.

In this case, it will be displayed in *the table of found devices* , but it will not contain all the information.

the Model column will show *Unavailable!*

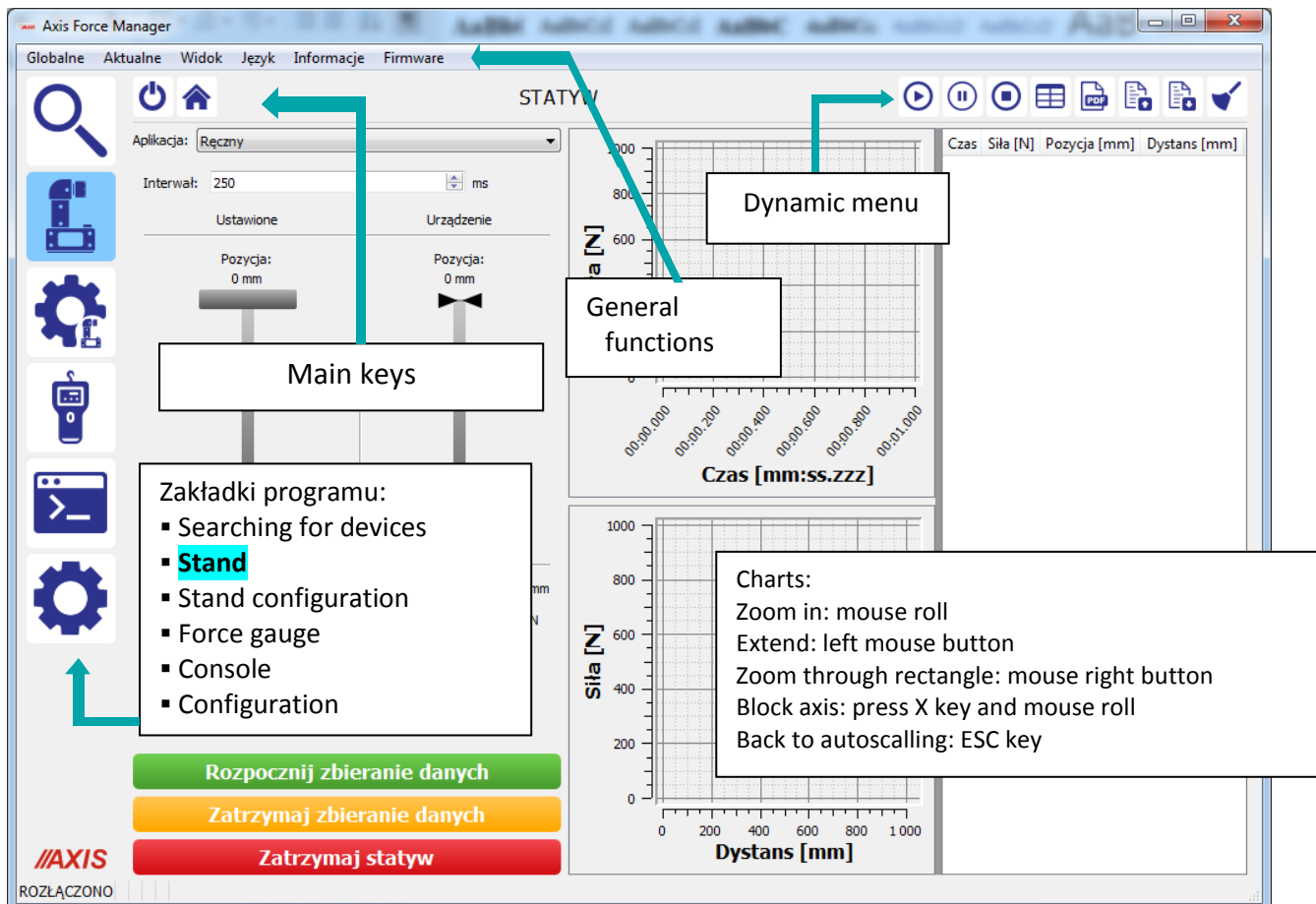
Connection to such a device is possible provided that its network settings are changed beforehand.

After requesting a connection, the program will display a dialog box in which the user will be able to make appropriate changes to the parameters that prevent the connection.

If the user accepts the changes, the program will proceed to changing the network settings and, if successful, will attempt to connect to the device.

1.2 Automatic stand Tab

In the Automatic stand tab, the program shows the current automatic stand drive settings and graphs of readings from the connected dynamometer. A force-time and force-distance graph is drawn.



In the *Application*: field, you can select *Peak*, *Cycles*, *Steps*, *Advanced*, or *Manual mode*.

Interval field allows you to select the frequency at which the stand sends data to the computer. We recommend that this frequency be the same or close to the frequency set in the dynamometer.

For *Peak*, *Cycles*, *Steps*, and *Advanced*, a *Profile* option appears, which allows you to select a movement program from the automatic stand memory.

When the device is connected, the Data Collection key or the Start icon will populate the graphs with data from the automatic stand.

NOTE: The Automatic stand tab only allows you to select the type of work and start collecting data. If you want to add a new motion program or modify the motion program in the automatic stand memory, switch to the next tab, i.e. Automatic stand Configuration .

Dynamic Icon Menu



Start reading



Aborting the operation



Stopping the operation



Measurement Context Settings



PDF export



Saving data to a CSV file



Load data from file

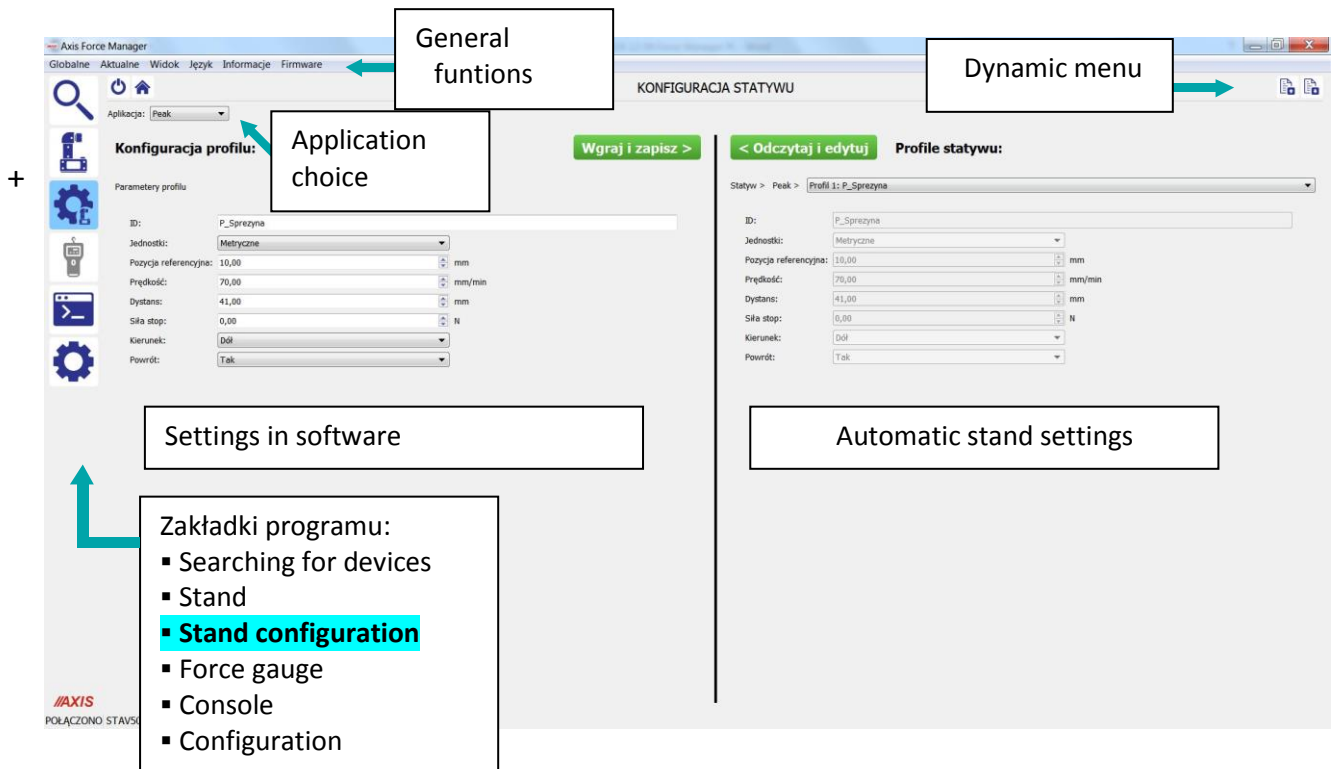


Data clearing

1.3 Automatic stand Configuration Tab

The tab allows you to conveniently set the automatic stand movement parameters.

In the *Application:* field, you can select *Peak*, *Cycles*, *Steps*, and *Advanced modes*.



The tab user interface is divided into two parts:

- Left side: Editable field - Profile configuration with key *Upload* (to automatic stand) and *save*
- Right side: Information field - Stand profiles with key *Read* (from automatic stand) and *edit*. On this page we select the profile from the automatic stand memory that we want to change/replace.

Changing the motion program from the automatic stand memory step by step:

- Select *Applications* (*Peak*, *Cycles*, *Steps* or *Advanced*)
- On the right side, select the Automatic stand Profile you are interested in
- Select *Read and Edit*
- On the left side, edit the setting of the previously selected profile
- Select *Upload and Save*

Icon Menu Options



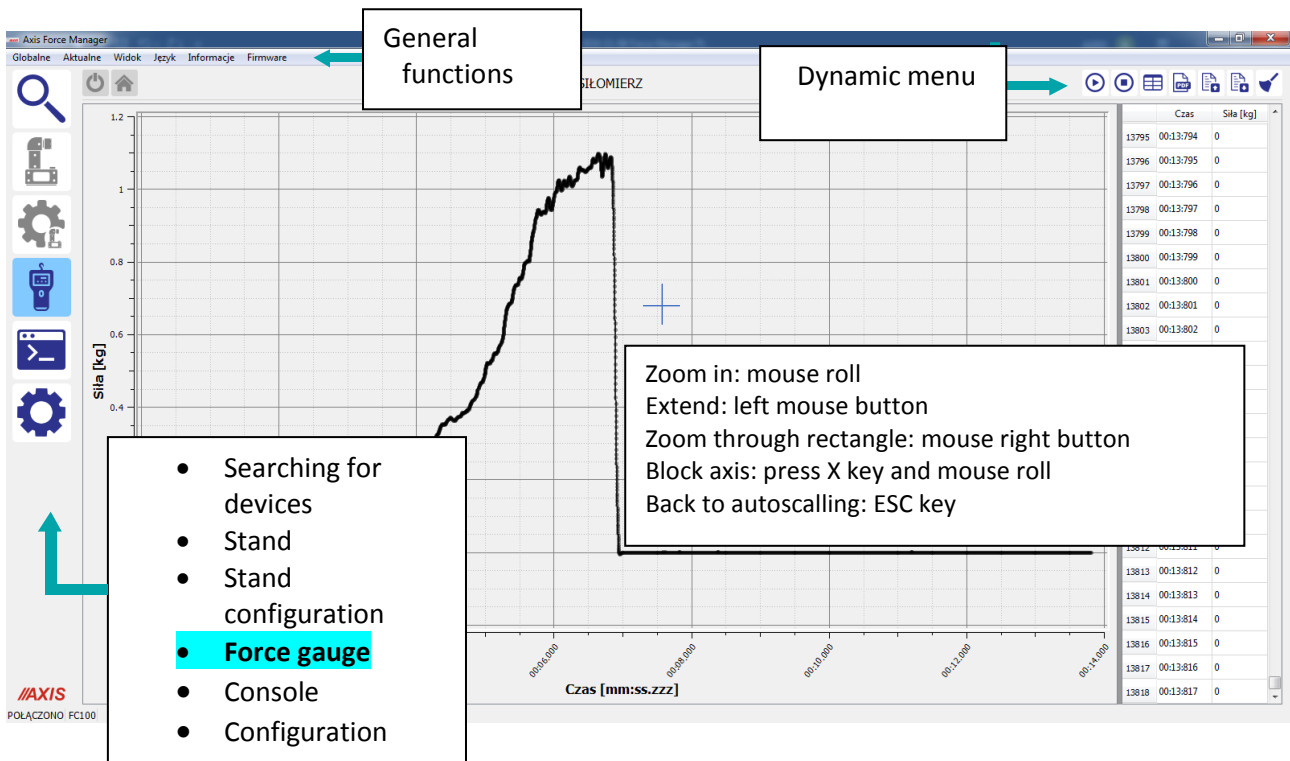
Saving workspace to file



Load workspace to file

1.4 Force Gauge Tab

The tab contains a graph of the dynamometer readings as a function of time.



To get a chart, it is most convenient to use the icon  - Start reading. The obtained graph scales automatically. To scale the graph, use the hint field that appears when you stop the mouse. Stretching the graph horizontally or vertically is done by pressing the X key several times, which will lock one of the coordinate axes (and make it gray) and will allow you to smoothly stretch the graph using the mouse wheel.

Dynamic Icon Menu



Start/continue reading



Stopping the operation



Measurement Context Settings



Export to pdf file



Data saving in CSV format



Reading data from a CSV file



Clearing the chart and results table

NOTE: It is not possible to read individual force measurement results.

Data manipulation

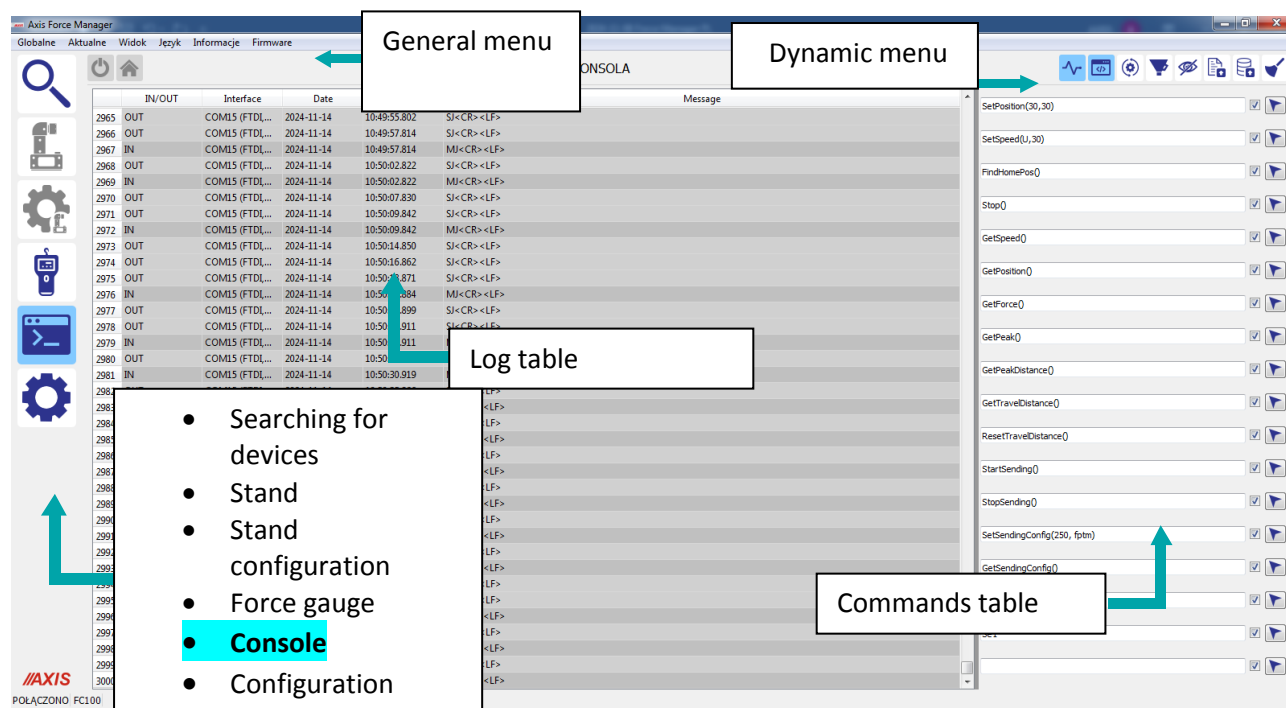
The user does not have the option to modify the data.

Removal

Deleting the entire graph and all data read from the dynamometer is done using the icon  .
Data deletion is preceded by a warning.

1.5 Console Tab (for technicians and installers)

The Console (terminal) tab is used to display device communication logs and to send commands directly.



The screen is divided into:

- Log table (central part)
- List of commands to send (on the right)

Log table

Table containing logs from communications with devices.

Contains 5 columns:

- IN/OUT - information whether the message is incoming or outgoing
- Interface - containing information about the interface on which communication takes place
- Date - Log date
- Time - Log Time
- Message - message content

In addition to the information in the IN/OUT column, incoming and outgoing messages can be distinguished by the colors of the row:

- Outgoing messages - light gray color
- Incoming messages - dark gray color

List of commands

A list containing widgets with example commands that can be sent to the device.

Each command on the list can be edited. There is an option to restore them to their initial state.

For each command there is one widget from the list:

Command List Widget

It consists of 3 elements:

- Command text field - what message is to be sent
- Checkbox CR LF - specifies whether the program should add CRLF at the end of the command
- Send button - requests sending of the command

Icon Menu Options



Toggle automatic connection check



Toggle log formatting using CRLF



Restore command list to default state



Log filtration



Toggle column visibility



Saving logs in CSV format



Raw log recording



Clearing logs

Toggle automatic connection check

the function on/off [automatic connection check](#)

Toggle log formatting using CRLF

Toggles the log table formatting mode between no formatting and CRLF formatting

Restore command list to default state

Restores the command list to its default values.

Saving logs in CSV format

Saves logs to a file in *.CSV format

Raw log recording

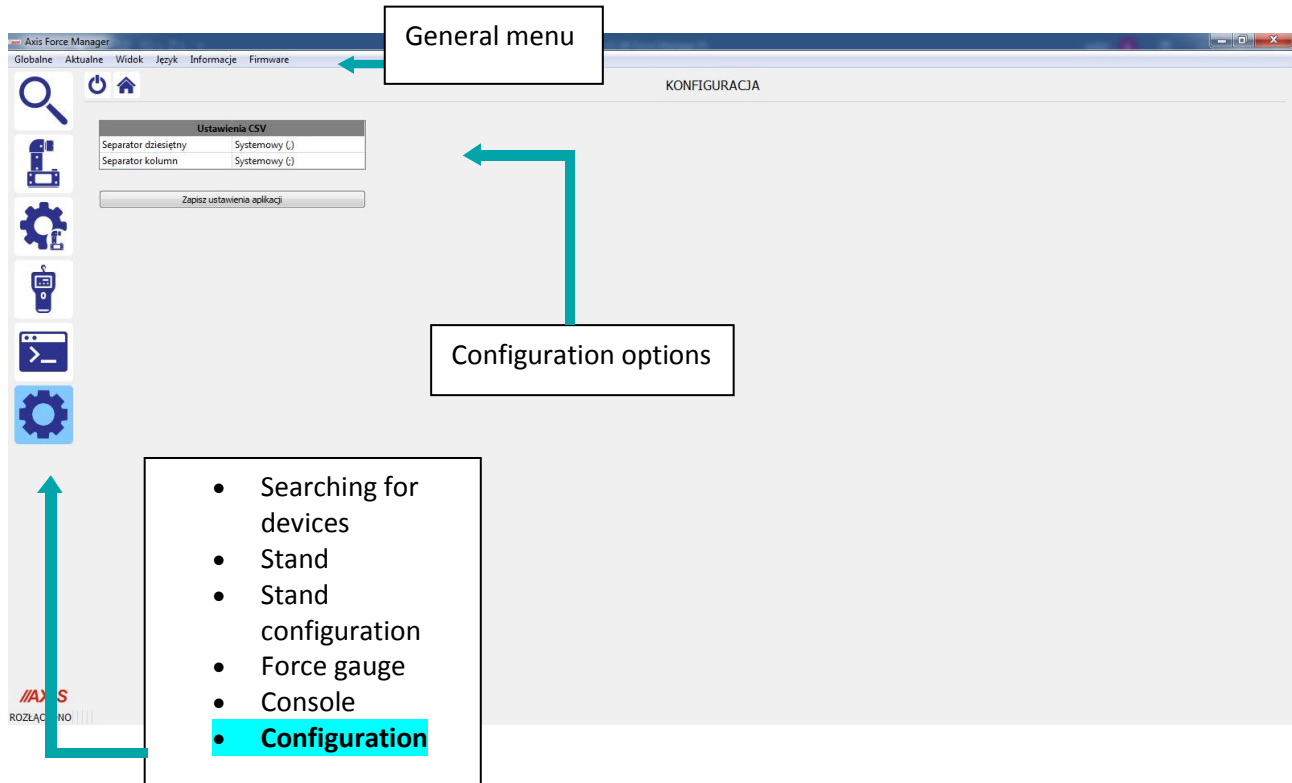
Only saves the content of incoming messages.

Clearing logs

Clears the logs, warning you with a message that the operation cannot be undone.

1.6 Configuration Tab

Configuration tab is used to select the characters that separate data when transferring files.



Configuration data:

- Decimal separator
- Column separator

It is recommended to select system options (, and ;)