Webpage

PLC410, PLC500, PLC500MC

Application Note

Application Note

PLC410, PLC500, PLC500MC

Document: 10010166064

Revision: 01

Publication Date: 01/2025

The information below describes the reviews made in this manual.

Version	Revision	Description
1.4.2	R01	Inclusion of the PLCs models PLC410 and PLC500MC.
1.0.0	R00	First Edition.

CONTENTS

1 INTRODUCTION

This Application Note aims to provide information regarding the access and use of the Webpage of WEG PLCs, models PLC410, PLC500 and PLC500MC. The functions and details presented in this note may change slightly due to the development and updating of the products.

Initially, it is necessary to establish communication between the PLC and the Computer. To achieve this communication, correct configuration of the network and the devices involved is essential. Please follow the steps below.

1.1 STEP 1: CONNECTING VIA ETHERNET OR USB

PLCs can be connected to the Computer through the Ethernet or mini USB ports. Figure 1.1 shows the possible connection locations of the PLCs to the Computer. In Figure 1.1(a), the PLC500 is shown with the ETH1, ETH2, and USB2 ports, and in Figure 1.1(b), the PLC410, which uses the ETH and USB ports.

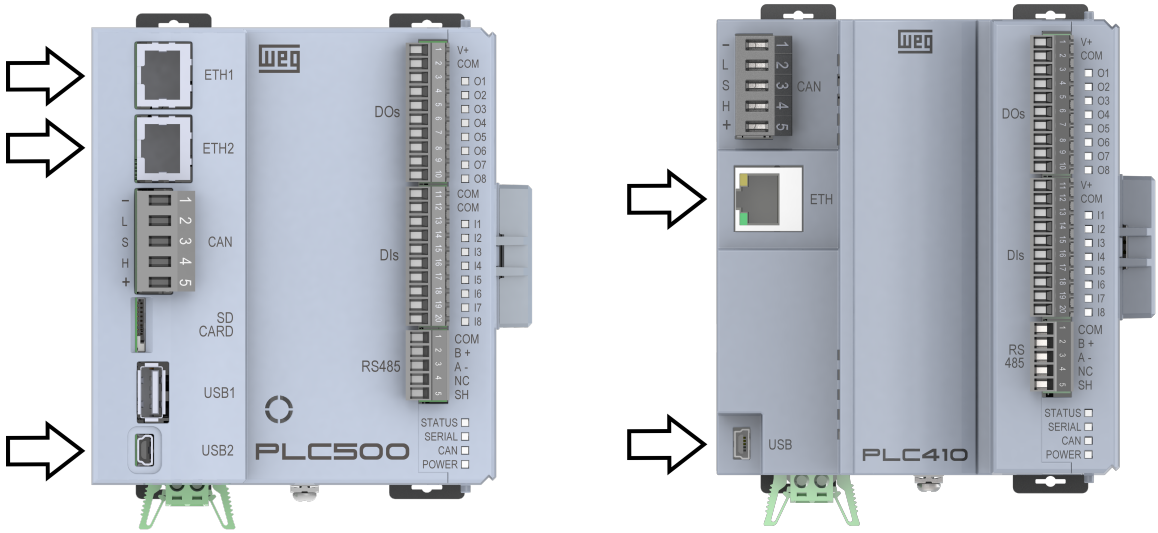


Figure 1.1: *Possible PLC connections to the Computer. (a) PLC500. (b) PLC410.*

- Connect the PLC to the Computer using one of the Ethernet or mini USB ports. For more details on these connections, consult the specific documentation of each in the product User Manual.

1.2 STEP 2: CONFIGURING THE COMPUTER

The Computer must be configured with a static IP within the same network used by the PLC connection. The default IP addresses of the communication ports are shown in Table 1.1.

Table 1.1: *Default addresses for the communication ports.*

Connection (PLC410)	Connection (PLC500)	Default IP Address
ETH	ETH1	192.168.1.10
-	ETH2	192.168.2.10
USB	USB2	192.168.234.234

NOTE!

The IP addresses of the Ethernet ports can be modified through the **Setup** tab found in the **Codesys** software. Therefore, the IP to access the webpage may differ from the default values. The IP of the mini USB port is fixed and cannot be modified.

- Go to **Network & Internet Settings** and select the desired interface.

> **NOTE!**
>
> To use the USB/USB2 interface, install the **WEG USB-Ethernet Driver**, available on the PLC500 product page at the WEG website.

- Open the **Properties** of the connection and double-click **Internet Protocol Version 4 (TCP/IPv4)**.
- Select **Use the following IP address**. Set the Computer's IP address to 192.168.1.X (ETH/ETH1), 192.168.2.X (ETH2), or 192.168.234.Y (USB/USB2), where X is any integer from 1 to 255 except 10, and Y is any integer from 1 to 255 except 234. Leave the Subnet Mask at its default value (255.255.255.0).

With this configuration, the PLC will be ready to be accessed through the webpage. Figure 1.2 shows the screens for configuring the Computer's network.

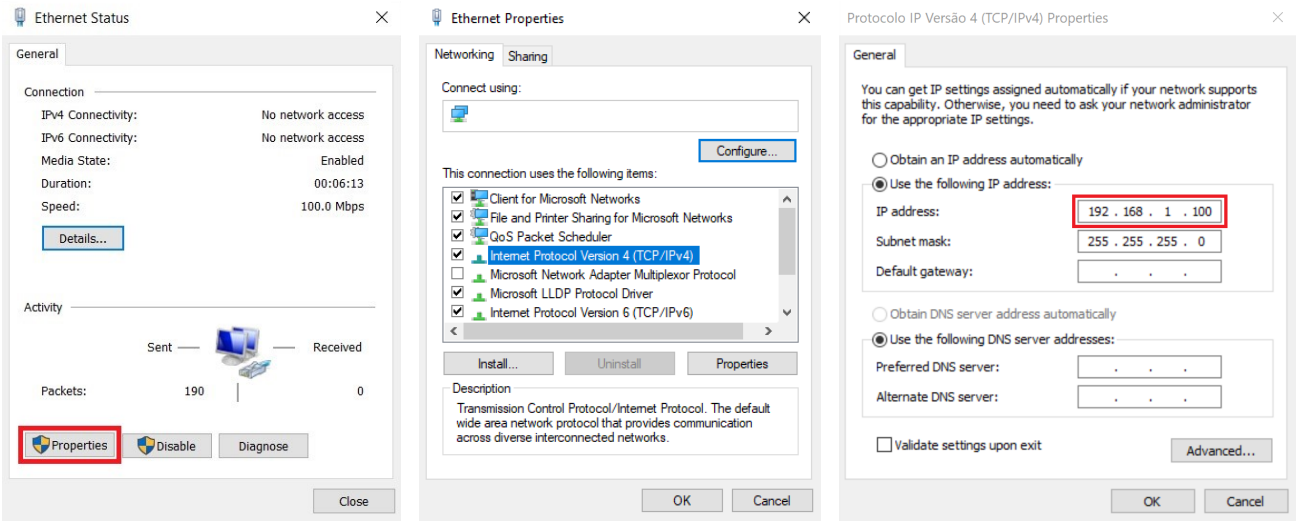


Figure 1.2: *Computer IP address configuration.*

1.3 STEP 3: ACCESSING THE WEBPAGE

- Open a web browser and enter the respective IP of the connection in the address field and press **Enter**. Figure 1.3 shows an example accessing the webpage through the ETH/ETH1 connection.

Figure 1.3: *Web browser address bar.*

- If the network configuration is correct, the **Login** screen of the product's webpage will open, as shown in Figure 1.4. The initial credentials of the product are:
  - Username: weg
  - Password: weg

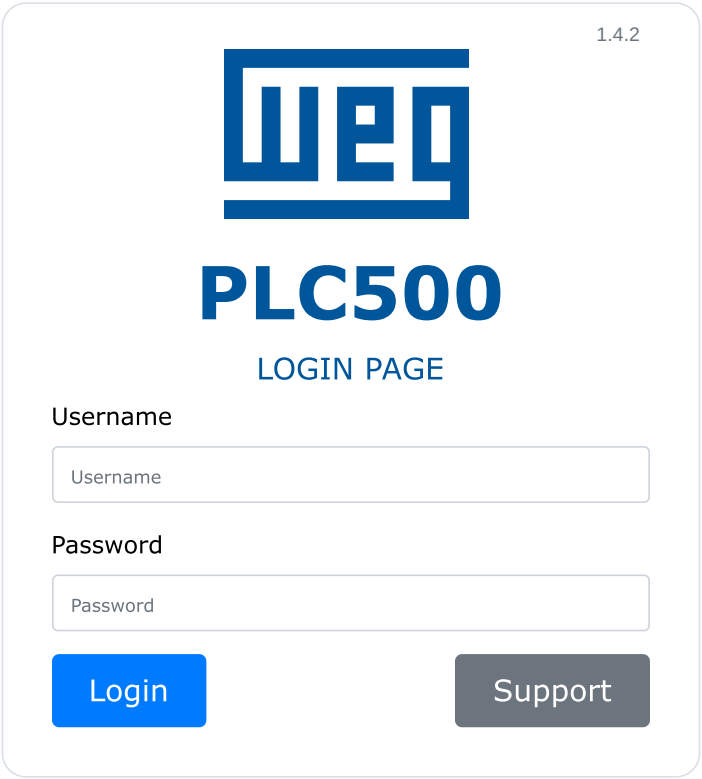


Figure 1.4: *Webpage Login screen.*

ATTENTION!
For security reasons, it is recommended to change the **Username** and **Password** after the first login.

- After logging in, the user can navigate through the **Status**, **Configuration**, **Visualization**, and **Administration** menus. Detailed information on each menu of the webpage can be found in the following chapters of this Application Note.
  - **Status Page**
  - **Configuration Page**
  - **Visualization Page**
  - **Administration Page**

2 STATUS PAGE

The **Status Page** goals to display general information about the PLC, show the current network configurations, and identify the connection of external devices such as SD cards, USB drives, etc. Figure 2.1 shows the Status Page of the webpage.

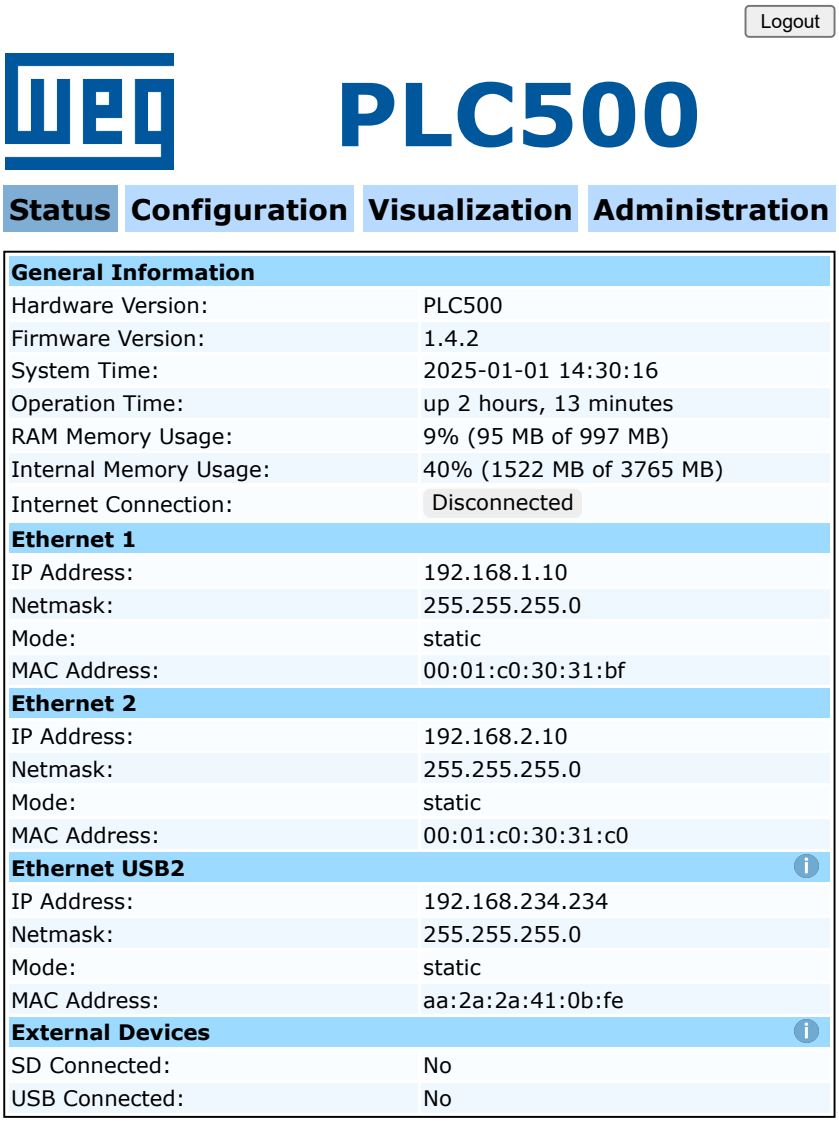


Figure 2.1: *Status Page.*

2.1 GENERAL INFORMATION

- **Hardware Version**: Product hardware version.
- **Firmware Version**: Current firmware version of the product.
- **Codesys Version**: Minimum recommended Codesys version.
- **System Time**: Date (day-month-year) and current system time of the PLC's operating system.
- **Operating Time**: Elapsed time since the last power-up of the product.
- **RAM Memory Usage**: Percentage of RAM memory used, current value used, and total value.
- **Internal Memory Usage**: Percentage of internal memory used, current value used, and total value.
- **Internet Connection**: Internet connection status (Connected/Disconnected).

2.2 NETWORK INFORMATION

- **IP Address**: Unique address assigned to the device to allow communication on an internal or external network.
- **Netmask**: Provides the range of available IP addresses and specifies a mask to divide these networks. Its default value is 255.255.255.0.
- **Mode**: Static (the IP is manually configured and will not be changed by the network) or DHCP (dynamic - the IP is assigned dynamically by the network).
- **MAC Address**: Unique numerical identifier used to distinguish a physical device from others on a network. It cannot be changed.

NOTE!

The number of network interfaces shown on the webpage depends on the availability of networks on each product.

2.3 EXTERNAL DEVICES

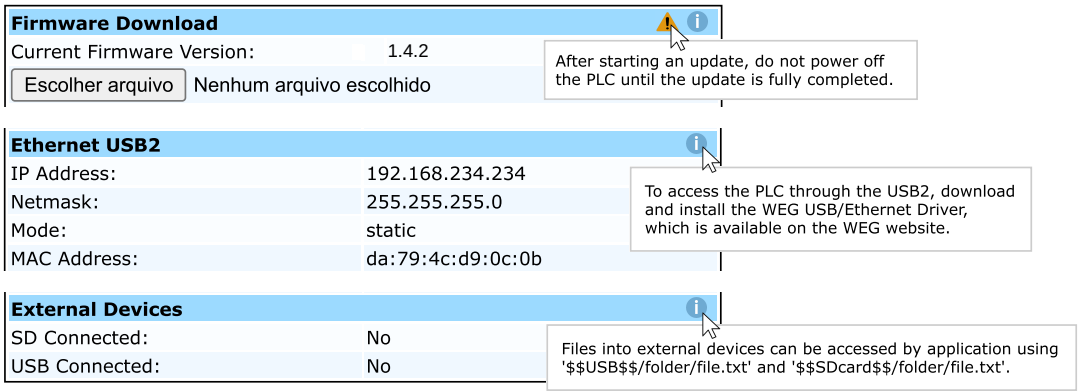
- **USB Connected**: "Yes" (a USB device is connected) or "No" (no USB device is connected).
- **SD Connected**: "Yes" (an SD card is connected) or "No" (no SD card is connected).

NOTE!

The Status Page is read-only and is updated every second.

NOTE!

While navigating through the product's webpage, you may find information icons (ⓘ) and alert icons (⚠). Hovering over these icons will display a description, as shown below:



NOTE!

The **Logout** button is always available in the top right corner of the webpage.

3 CONFIGURATION PAGE

The **Configuration Page** of the webpage can be used to view and edit the device's date and time, temporarily change the IP, change the FTP server settings, restore factory data, reboot the product, and change the username and password for webpage access. Figure 3.1 shows the Configuration Page of the webpage.

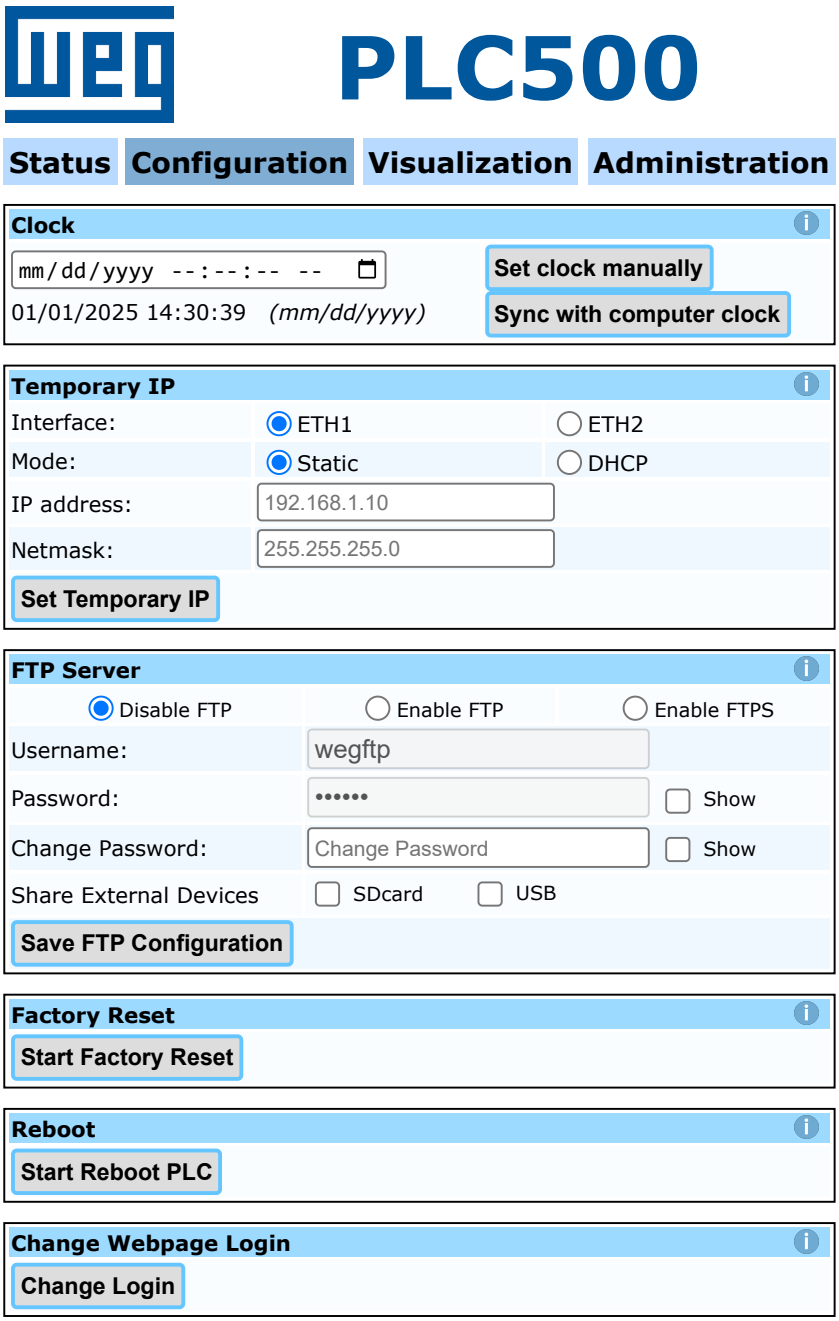


Figure 3.1: *Configuration Page.*

3.1 CLOCK ADJUSTMENT

In the **Clock** field, it is possible to adjust the PLC's date and time. There are two ways to make these adjustments:

- For manual adjustment, select a date and time and click on **Set clock manually**.
- To synchronize the PLC's date and time with your computer, click on **Sync with computer clock**.

3.2 TEMPORARY IP

In the **Temporary IP** field, it is possible to temporarily adjust the PLC's IP address. To do so, follow these steps:

- Select the desired interface and enter the **IP** and **Netmask** in the corresponding fields.
- Click **Set Temporary IP** to apply the new settings to the network interface.

> **ATTENTION!**
>
> The IP settings defined through the webpage are temporary.
>
> Any network configuration made via the webpage will be overwritten each time the CODESYS application starts.
>
> To ensure that the desired IP configuration is retained, **make the changes directly in the CODESYS application**.

3.3 FTP SERVER

In the **FTP Server** field, it is possible to change the PLC's FTP/FTPS server settings. After configuring the server, click **Save FTP Configuration** to apply the changes.

- The default credentials for the FTP/FTPS server are:
  - Username: wegftp
  - Password: wegftp

Files exchanged through the FTP/FTPS server are located in the **ftp** folder of Codesys and can be used in the application. Figure 3.2 shows the location of this folder through the Codesys software.

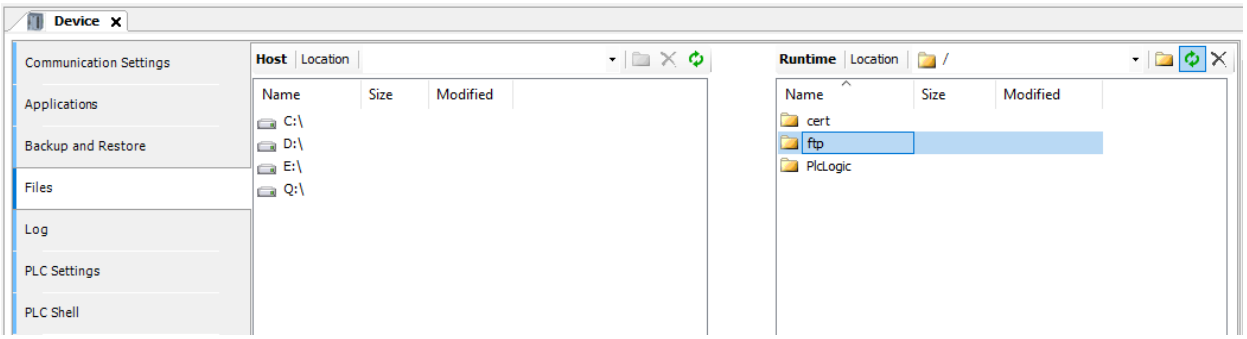


Figure 3.2: *Accessing the ftp folder via Codesys.*

It is also possible to access external media, such as USB devices and SD cards connected to the PLC, through the Codesys ftp directory. To do this, enable these options in **Share External Devices**, selecting the specific device to be made available. Figure 3.3 shows the SDcard and USB folders made available on the ftp server.

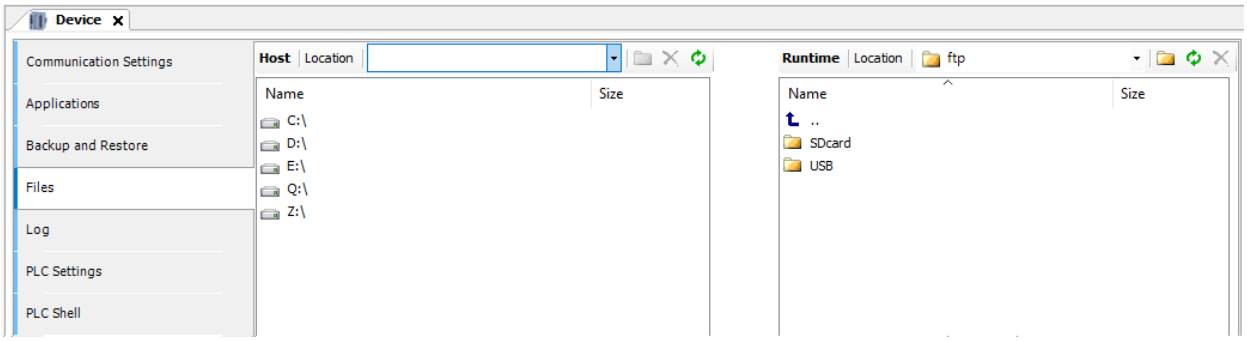


Figure 3.3: *Access to external media through the ftp directory via Codesys.*

3.4 RESTORE FACTORY DATA

In the **Factory Reset** field, it is possible to restore the product's factory data. To do this, follow the steps below:

- Click **Start Factory Reset**. A confirmation screen will be displayed. Click **OK** to start the restoration or **Cancel** to cancel the operation.

Figure 3.4 shows the confirmation screen for restoring factory data.

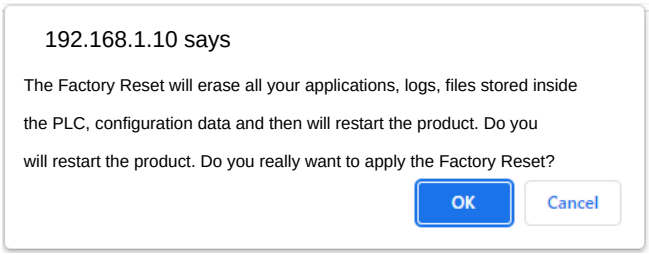


Figure 3.4: *Confirmation screen for restoring factory data.*

ATTENTION!

When performing a **Factory Reset**, all Codesys applications, logs, files located inside the PLC, and network settings will be **deleted**. The product will automatically restart after these operations are completed.

3.5 REBOOT THE PRODUCT

The **Reboot** option allows the product to be restarted directly from the webpage, eliminating the need to physically access the device.

3.6 CHANGE WEBPAGE USERNAME AND PASSWORD

In the **Change Webpage Login** field, it is possible to change the username and password of the PLC's webpage. Changing the default login and password is important to ensure the security and privacy of user data, preventing unauthorized access by third parties.

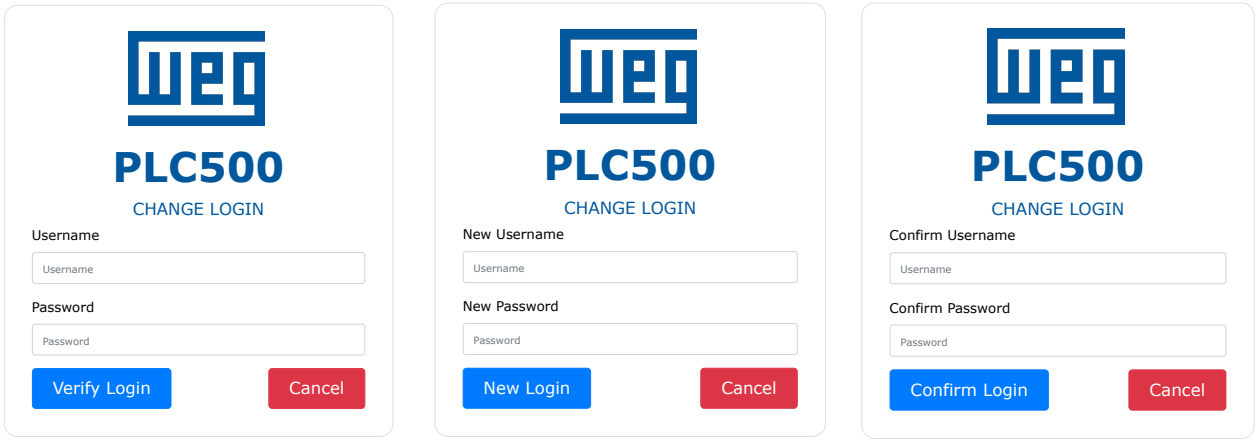
To change the webpage credentials, follow the steps below:

- Click on **Change Login**.
- The screen in Figure 3.5(a) will open. Enter the current username and password, and click on **Verify Login**.
- Next, the screen in Figure 3.5(b) will open. Enter the new username and password, and click on **New Login**.

- Finally, re-enter the new credentials and click on **Confirm Login**, as shown in Figure 3.5(c).

After changing the credentials, the login screen will load automatically.

Figure 3.5 shows the screens used for credential changes.



(a) (b) (c)

Figure 3.5: *Screens for credential changes.*

ATTENTION!

To ensure the security of access to the product, it is **essential to change the username and password** after the first login.

In case of a lost password, it is possible to **reset the credentials** through CODESYS via the PLC Shell, or perform a *Factory Reset* of the product via SmartMedia or PLC Shell. For more information, refer to the product manual.

4 VISUALIZATION PAGE

The **Visualization Page** is a graphical representation of the states of the digital inputs and outputs present in the PLCs, which include PWM and Encoder inputs. When an digital input or output is in a high state, the respective LED will turn green. Otherwise, the LED will remain off. The update rate for this page is 200 ms.

Figure 4.1 shows the Visualization Page. In this figure, it can be observed that DO5 and DO7 are activated, DI6 is energized, and DI3 is configured as an Encoder.

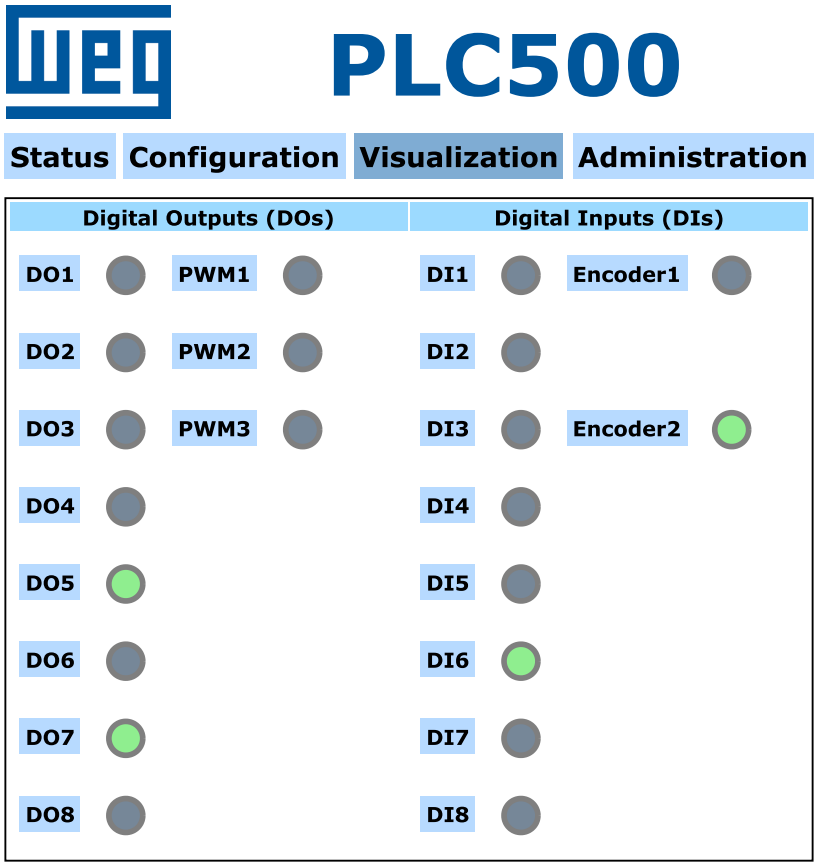


Figure 4.1: *Visualization Page.*

4.1 DESCRIPTION

- **DI (Digital Input)**: DI1 to DI8.
- **Encoder**: Converts motion into an electrical signal that can be read by the PLC. There are two Encoder instances in the PLCs. Encoder1 uses DI1 and DI2. Encoder2 uses DI3 and DI4.
- **DO (Digital Output)**: DO1 to DO8.
- **PWM (Pulse Width Modulation)**: The first three digital outputs can be configured as PWM. The LEDs will turn green if the output is configured and enabled.

NOTE!

By default, the digital inputs and outputs are configured as DIs and DOs. To change the configuration to Encoder or PWM, use the **Codesys** software.

5 ADMINISTRATION PAGE

On the **Administration Page**, the user can update the product's firmware, download a new application to the PLC, and upload system logs. At the end of the page, there is a summary of the latest features added and improvements made. Figure 5.1 shows the product's Administration Page.

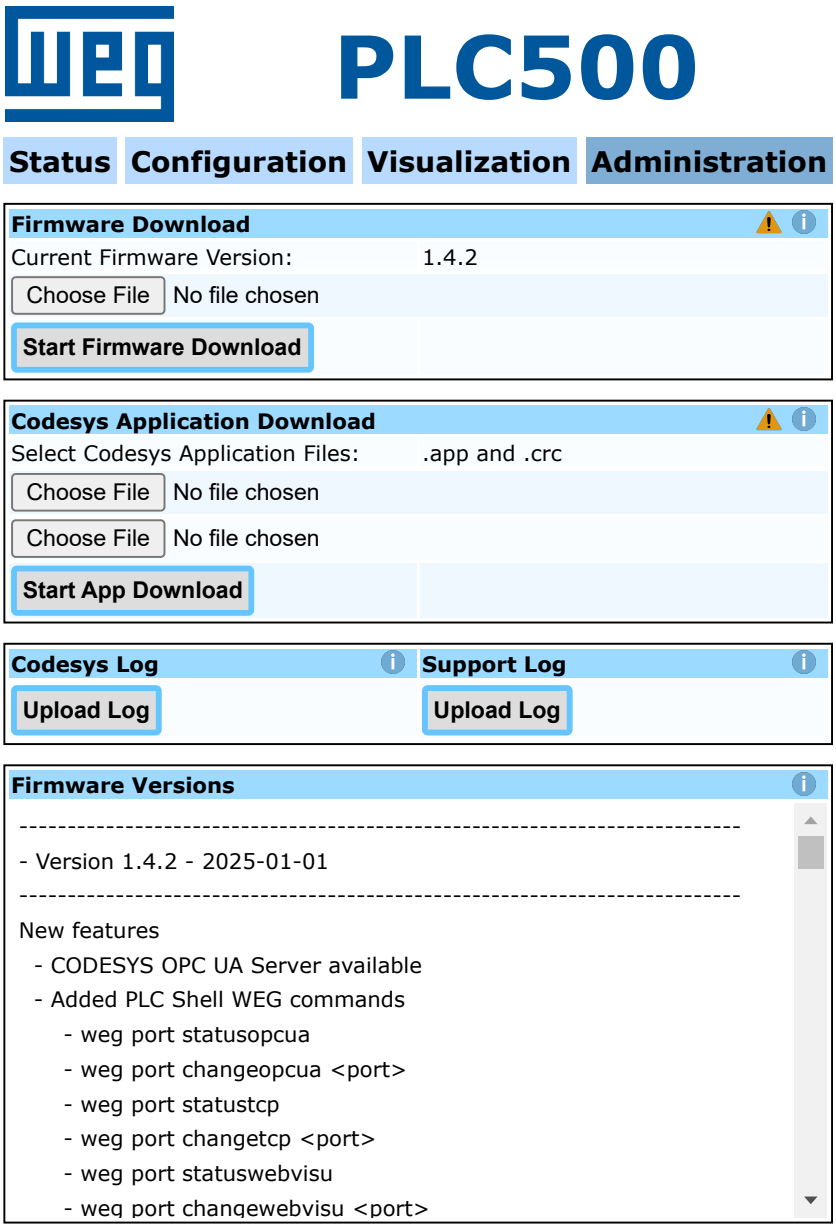


Figure 5.1: *Administration Page.*

5.1 FIRMWARE UPDATE

Firmware updates are important to improve device performance, add new features, fix bugs, and protect the product from security vulnerabilities.

To perform a firmware update, follow the steps below:

- Access the WEG website and download the latest available firmware version. Figure 5.2 shows the **Download Center** page, where the available firmware update files and WEG product packages for Codesys can be found.

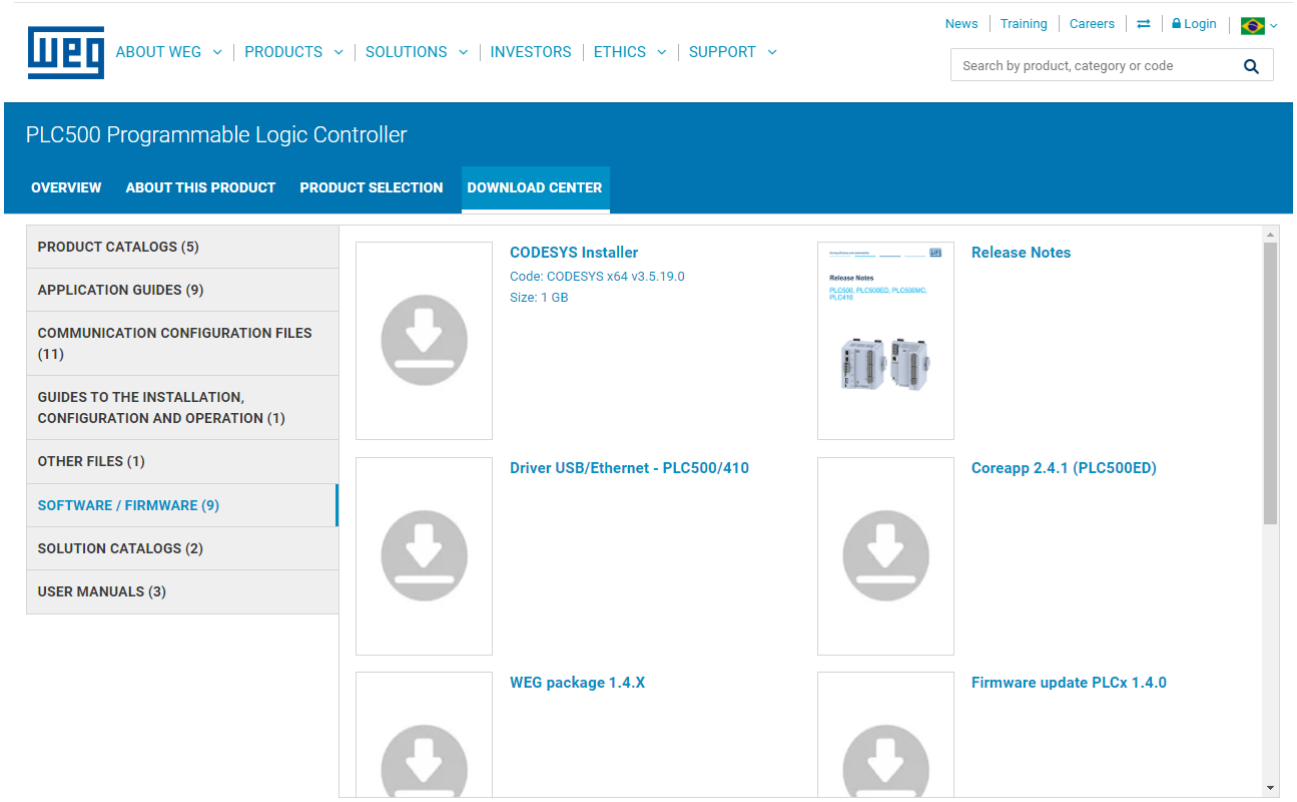


Figure 5.2: *Download Center from the WEG website.*

- Click on **Choose File** and select the firmware file downloaded to your computer.
- Click on **Start Firmware Download**. A confirmation screen will be displayed. Click **OK** to start the update or **Cancel** to abort the operation. Figure 5.3 shows the firmware update confirmation screen.

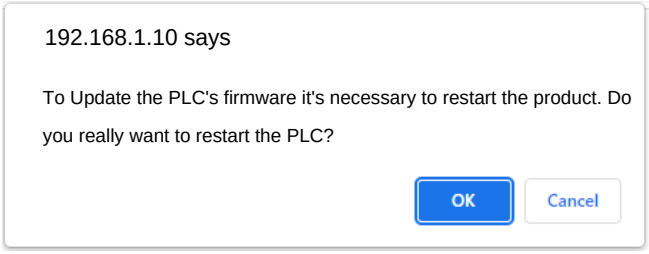


Figure 5.3: *Firmware update confirmation screen.*

- If a valid firmware file was chosen, the product will restart. Otherwise, a message will appear on the webpage indicating the problem encountered. To confirm that the update has been completed, access the webpage again and check the current firmware version.

ATTENTION!

After clicking **Start Firmware Download**, the product will restart. The firmware update process may take a few minutes.

ATTENTION!

The version of the application loaded onto the product must always be compatible with the firmware version. Otherwise, the application will not run, and the STATUS LED will blink red. In this case, update the application and reload it onto the product.

5.2 DOWNLOAD A NEW APPLICATION

In the **Codesys Application Download** field, it is possible to download a new application to the product directly via the webpage, without needing to connect the PLC to the Codesys software.

Two files are required for this process: a **.app** file and a **.crc** file. To generate them, use the **Online > Create Boot Application** option in Codesys, as shown in Figure 5.4.

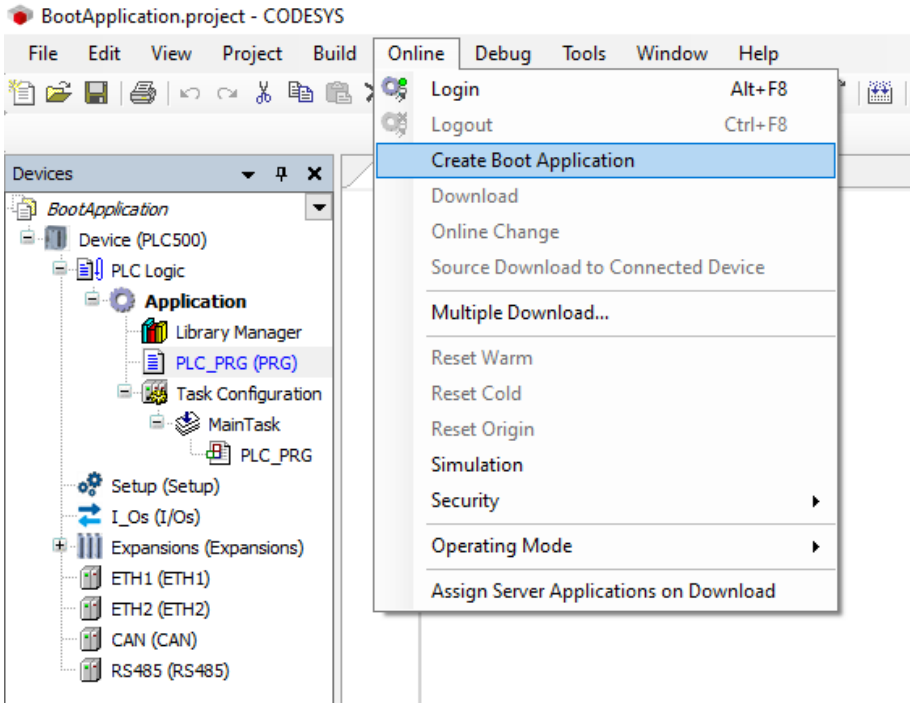


Figure 5.4: *Create boot application files in Codesys.*

ATTENTION!

Do not rename the generated **.app** and **.crc** files, and ensure that the device version in the Codesys application is compatible with the target PLC. Otherwise, the application will not run.

To download an application, follow these steps:

- Click on **Choose File** and select the **.app** and **.crc** files of the application.
- Click on **Start App Download**. A confirmation screen will be displayed. Click **OK** to confirm the application upload or **Cancel** to abort the operation. Figure 5.5 shows the application upload confirmation screen.

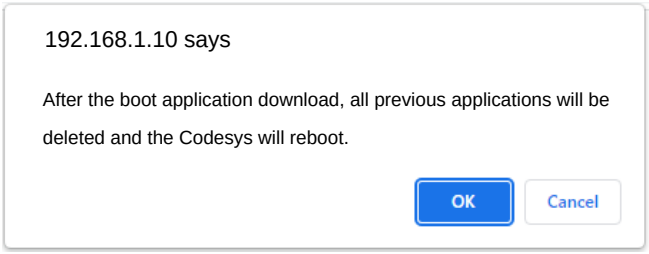


Figure 5.5: *Application upload confirmation screen.*

Once the files are uploaded, all previous applications will be deleted, and the PLC will restart.

5.3 RETRIEVE SYSTEM LOGS

In the **Codesys Log Upload** field, system log files can be retrieved. Two options are available:

- **Codesys Log**: These are Codesys logs, accessible by the user.
- **Support Log**: These are encrypted system logs, available only to technical support.

Both logs can be downloaded by the user by clicking the respective **Upload Log** button.

5.4 UPDATE HISTORY

In the **Firmware Versions** field, a detailed history containing information about the latest firmware updates, with new features, improvements, and fixes for each version, can be found.

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