

Firmware upgrades

Schneider Electric recommends upgrading to the latest firmware version. Download the latest firmware upgrade package (.zip file) from www.se.com.

Benefits of upgrading to the latest firmware:

- Improve performance (for example, optimize processing speed)
- Enhance existing features and functions
- Add new functionality
- Comply with updated industry standards
- Strengthen cybersecurity

Refer to the relevant sections in this chapter for the correct upgrade method based on your meter model and firmware version. The following table outlines the applicable methods:

NOTE:

- Before starting the upgrade, verify that the target firmware version is compatible with your meter and that its version number is higher than the current firmware.
- To downgrade the firmware version, refer to the **Firmware Release Notes** included in the firmware package (.zip file) available at www.se.com.

Meter models, firmware versions, and upgrade methods

Meter model	Firmware version	Compatible firmware version	Applicable upgrade method
PM5560 / PM5562 / PM5562MC / PM5563 / PM5580	2.x.y	2.5.x or earlier	FTP server (Refer Firmware upgrade using FTP server, page 219)
	2.5.x to 2.9.9	4.x.y or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220)
	4.x.y or later	4.x.y or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220) Webpages (Refer Upgrading the meter using the webpages, page 222)
PM5570 / PM5660 / PM5760	3.1.x	3.2.9 or earlier	FTP server (Refer Firmware upgrade using FTP server, page 219)
	3.2.9 or earlier	6.x.y or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220)
	6.0.x or later	6.0.x or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220) Webpages (Refer Upgrading the meter using the webpages, page 222)
PM5650	2.11.x	2.12.9 or earlier	FTP server (Refer Firmware upgrade using FTP server, page 219)
	2.12.9 or earlier	4.10.x or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220)
	4.10.x or later	4.10.x or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220) Webpages (Refer Upgrading the meter using the webpages, page 222)
PM5561	10.6.X	10.9.9 or earlier	FTP server (Refer Firmware upgrade using FTP server, page 219)
	10.9.9 or earlier	12.x.y or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220)
	12.0.x or later	12.0.x or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220) Webpages (Refer Upgrading the meter using the webpages, page 222)

Meter models, firmware versions, and upgrade methods (Continued)

Meter model	Firmware version	Compatible firmware version	Applicable upgrade method
PM5661 / PM5761	11.0.x	11.2.9 or earlier	FTP server (Refer Firmware upgrade using FTP server, page 219)
	11.2.9 or earlier	14.x.y or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220)
	14.0.x or later	14.0.x or later	Firmware Upgrade Tool (Refer Upgrading the meter using the Firmware Upgrade Tool, page 220) Webpages (Refer Upgrading the meter using the webpages, page 222)

Firmware upgrade methods

Meter upgrade requirements for FTP server

NOTE: To know the applicable firmware upgrade method for your meter model with firmware version, refer to table Meter models, firmware versions, and upgrade methods, page 217.

NOTE: Refer to Restoration of temporarily disabled configuration settings in webpages, page 244 to know availability of these features on your meter model.

There are some requirements to consider before you upgrade your meter's firmware.

In order to upgrade the meter, you need to:

- Be connected to the meter using Ethernet.

NOTE: It is recommended that you change the IP Address Acquisition Mode to Stored during the firmware upgrade. If the mode is set to DHCP, the IP address might change during the upgrade, which will result in a loss of communications with the meter.
- Make sure the meter's FTP server is enabled.
- Have Product Master credentials to login to the meter's FTP server. The FTP server uses the same user accounts as the meter's webpages.
- Download the latest upgrade files from www.se.com. The upgrade files include:
 - *App2.out*: this file contains the files needed to upgrade the code and initialization files that run the Ethernet communications.
 - *PM5xxx_vx.y.z.fwa* (where xxx is your meter model and x.y.z is the specific firmware version): this file contains all the files needed to upgrade other meter components, such as the meter's operating system, language files and webpages.
 - *PM5500StartUpgrade.shtml*

Save these files to a location you can access from the computer you use to perform the upgrade.

NOTE: After you use the FTP meter upgrade process, you can no longer use DLF3000 software to upgrade the meter.

NOTE: The PM5561 meter model running on firmware version 10.6.3 or later and PM5661 / PM5761 meter models running on firmware version 11.0.x or later can be upgraded to a compatible higher firmware version. The firmware upgrade (successful or unsuccessful) is limited to 10 attempts in PM5561 / PM5661 / PM5761. Any further attempt to upgrade is blocked.

Firmware upgrade using FTP server

NOTE: To know the applicable firmware upgrade method for your meter model with firmware version, refer to table Meter models, firmware versions, and upgrade methods, page 217.

NOTE: Refer to Restoration of temporarily disabled configuration settings in webpages, page 244 to know availability of these features on your meter model.

NOTE: The firmware upgrade process for PM5561 / PM5661 / PM5761 meter models cannot be performed when MID/MIR lock is enabled. You need to remove the MID/MIR lock using the meter display (Refer to Locking or unlocking the PM5561 / PM5661 / PM5761, page 234) to perform the firmware upgrade process.

You can upgrade the meter's firmware, language files, webpages and Ethernet communications card using the meter's internal FTP server.

Your meter, Ethernet card and accessories do not operate normally during firmware upgrade, and your meter's digital outputs may change state during a firmware upgrade.

WARNING

UNINTENDED OPERATION OR METER DAMAGE

- Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Do not turn off power to the meter while the firmware upgrade is in progress.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

This example walks through upgrading your meter using Windows Explorer to access the meter's FTP server. You can also use other FTP clients, such as FileZilla.

1. Open Windows Explorer and connect to your meter by entering `ftp:\\<meter IP address>` replacing `<meter IP address>` with the IP address of the meter you want to upgrade.
2. Enter a Product Master **Username** and **Password** when prompted.
The FTP server appears, containing the folders `fw` and `www`.
3. Open another instance of Windows Explorer and navigate to the location where you saved the firmware upgrade files.
4. Copy the `PM5500StartUpgrade.shtml` file and paste it into the `www` folder on the meter's FTP server.
5. Copy the `App2.out` and `PM5xxx_vx.y.z.fwa` files and paste them into the `fw` folder on the meter's FTP server.

NOTE: If a file with the same name already exists on the meter, you are prompted to confirm whether or not you want to replace that file. Click **Yes** (to replace that one file) or **Yes to All** (to replace all files).

NOTE: If you have added a large number of custom files (such as webpages) to the meter's FTP server, there may not be enough memory on the meter's Ethernet communications card to paste the files, and you may receive an error when you try to paste the files. You may need to temporarily move some of these custom files before proceeding.

6. Exit Windows Explorer after the file copying is complete.

7. Open your browser and enter `http://<meter IP address>/PM5500StartUpgrade.shtml` to trigger the upgrade, where `<meter IP address>` is replaced with your meter's IP address.
Enter your login credentials when prompted.
NOTE: Accessing this webpage restarts the meter's Ethernet communications card, which initiates the upgrade process. It might take a minute or two while the meter's Ethernet communications card is reset and the upgrade initialized.
From the `PM5500StartUpgrade.shtml` page, you are redirected to a firmware upgrade status page where you can view information about the upgrade process.
NOTE: If the status page indicates that one of the upgrade processes failed, restart the upgrade process from the beginning by reconnecting to the meter's FTP server, recopying the files then following the rest of the procedure.

Upgrading the meter using the Firmware Upgrade Tool

Use the *Firmware Upgrade Tool* to upgrade the meter. Firmware upgrade helps to improve the meter performance, enhance existing features and functions, add new functionality, and strengthen the cybersecurity.

Prerequisites:

- Refer to the table *Meter models, firmware versions, and upgrade methods*, page 217 to know the applicable firmware upgrade method for your meter model and firmware version.
- Download the latest compatible firmware upgrade package (.zip) from www.se.com.
- Use the latest *Firmware Upgrade Tool* included in firmware upgrade package.

NOTICE
PERMANENT EQUIPMENT DAMAGE Always use the <i>Firmware Upgrade Tool</i> version provided with the compatible firmware upgrade package. Failure to follow these instructions can result in irreparable damage to your meter.

- PC running with Windows 10 or later, connected to the meter through Ethernet cable.
- Uninterrupted power supply to the meter's control power input and stable Ethernet communication.
- ION Setup configuration tool.
- Login credentials for both ION Setup and the meter webpages.

Preparing the meter for firmware upgrade:

Follow these recommendations to prepare the meter for a safe and successful firmware upgrade:

NOTICE

PERMANENT EQUIPMENT DAMAGE

- Do not interrupt the auxiliary control power during the upgrade.
- Ensure stable Ethernet communication to avoid any potential firmware corruption or incomplete firmware upgrade.
- Ensure Internet Control Message Protocol (ICMP) is enabled on the network. Do not power cycle the meter if the upgrade is unsuccessful or ICMP is disabled.
- Avoid changing configuration settings or performing write operations during the upgrade.

Failure to follow these instructions can result in irreparable damage to your meter.

- The *Firmware Upgrade Tool* version 3.6 or earlier supports one meter at a time, while version 3.8 or later supports up to 10 meters simultaneously.
- The upgrade supports up to eight TCP connections for read operations. More than eight TCP connections may cause the upgrade to be unsuccessful.
- For PM5561 / PM5661 / PM5761 meter models, disable the MID/MIR lock using the meter display before upgrading (Refer to *Locking or unlocking the PM5561 / PM5661 / PM5761*, page 234).
- For *Firmware Upgrade Tool* version 3.6 or earlier, always connect the meter directly to the PC.
- Do not rename any file names.

To upgrade the meter using the *Firmware Upgrade Tool*:


1. For IPv4, if the meter is connected to the network and the IP method is set to **DHCP**, **BOOTP**, or **Default**, disconnect the meter from the network and set the IP method to **Stored**. For IPv6, set the IP method to **Stored** or **Default**.
2. Set the port number to **80** (HTTP) or **443** (HTTPS) using the webpages or ION Setup.
3. Ensure the PC and meter are on the same IP domain and verify communication (example, by running a ping test).
4. Open the *Config.csv* file from the *Firmware Upgrade Tool* folder.
5. Edit the *Config.csv* file in *Notepad*. Enter the meter configuration in the following format (no brackets or spaces after commas):

<IP Address>,<Modbus Slave ID>,<Web-master username>,<Web-master password>,<Product-Master username>,<Product-Master password>

Example: 192.168.0.10,255,user1,pass1,user2,pass2




NOTE: Ensure the *Config.csv* file contains only one line and ends with the **Product-Master** password. Do not include spaces, dots, commas, or special characters.

TIP: Use the sample *Config.csv* file provided in the *Firmware Upgrade Tool* package as a template.


6. Run *PM5000fwupgrade.exe* file to open the *Firmware Upgrade Tool*.
7. Navigate to **File > Open** or select the  icon to choose the *Config.csv* file.
8. Check the .csv file for the meter IP, slave ID, usernames, and passwords.

NOTE: Review the displayed information, including IP address, current firmware version, product name, and upgrade status (**Firmware upgrade applicable**).

RECOMMENDATION: If the status does not show **Firmware upgrade applicable**, check the connection and the *Config.csv* file details.

9. Navigate to **Tools > Select Firmware** or select the  icon to choose the firmware file to upload.
10. Select the  icon to browse and choose the latest firmware file (.sedp).
Result: The .sedp firmware file path and version are displayed in the tool bar.
11. Navigate to **Tools > Upload Firmware** or select the  icon to upload the firmware to the meter.
12. Read the pop-up message and select **Yes** to proceed.
Result: The tool disables all options during the upgrade. The **Status** column shows the upgrade progress. After completion, the tool displays a status message **Upgrade Completed. Double click here to open webpage.**
RECOMMENDATION: Confirm that firmware upgrade is successful in the tool and verify that the meter is operational. Wait for one minute before upgrading the next meter.
13. (Optional) Refer to the following table for the troubleshooting steps if you encounter any problem during the upgrade:

Problem	Possible solution
Meter stops responding during the upgrade.	Wait for other meters to finish. Verify the firmware upgrade status by opening the webpage. For an unsuccessful upgrade, close and reopen the tool, and then retry the upgrade without power restarting the meter.
One or more meters fail during mass upgrade.	Wait for five minutes, then retry the upgrade without powering off the meter. If the diagnostic message continues, please contact Schneider Electric Technical Support for assistance.

14. (Optional) Select the  icon to save the upgrade logs to a local repository for technical assistance if:
 - The upgrade is unsuccessful.
 - The meter does not power up normally.
 - Ethernet communication is not established.**NOTE:** The logs are stored automatically in the **Logs** folder under the **Application** path.
15. Navigate to **File > Exit** to close the *Firmware Upgrade Tool*.

Upgrading the meter using the webpages

Use the webpages to upgrade the meter. Firmware upgrade helps to improve the meter performance, enhance existing features and functions, add new functionality, and strengthen the cybersecurity.

Prerequisites:

- Refer to the table *Meter models, firmware versions, and upgrade methods*, page 217 to know the applicable firmware upgrade method for your meter model and firmware version.
- Download the latest compatible firmware upgrade package (.zip) from www.se.com.
- PC running with Windows 10 or later, connected to the meter through Ethernet cable.
- Uninterrupted power supply to the meter's control power input and stable Ethernet communication.
- Login credentials for meter webpages.

Preparing the meter for firmware upgrade:

Adhere to the following recommendations for preparing meter for firmware upgrade:

NOTICE**PERMANENT EQUIPMENT DAMAGE**

- Do not interrupt the auxiliary control power during the upgrade.
- Ensure stable Ethernet communication to avoid any potential firmware corruption or incomplete firmware upgrade.

Failure to follow these instructions can result in irreparable damage to your meter.

- The upgrade (successful or unsuccessful) is limited to 25 attempts for PM5561 / PM5562 / PM5562MC / PM5661 / PM5761 meter models. Further attempts are blocked.
- For PM5561 / PM5661 / PM5761 meter models, disable the MID/MIR lock using the meter display before upgrading (Refer to *Locking or unlocking the PM5561 / PM5661 / PM5761*, page 234).

To upgrade the meter using the webpages:

1. Log in to the meter webpages.
2. Navigate to **Maintenance > Upgrade > Firmware**.
3. Select the **Browse** button in the **Firmware Upgrade** section.

Result: The **Choose File Open** dialog box opens.

4. Choose the `.sedp` file from the firmware release package.
5. Select the **Upgrade** button.

Result: A pop-up message **Do you want to apply the firmware upgrade now? The product will be restarted and all users will be disconnected from the application** opens.

6. Select **Yes** to start the firmware upgrade.

NOTE:

- The meter checks the firmware compatibility and verifies the digital signature.
- The upgrade may take five minutes or more, depending on network speed.
- After a successful upgrade, the meter may take up to 40 seconds to resume communication.

7. Navigate to **Maintenance > Upgrade > Upgrade Status** to check the last firmware upgrade status.

RECOMMENDATION: After the upgrade, allow the meter to remain in the erasing state for one minute. Do not restart the meter or disconnect the Ethernet cable during this time.

8. (Optional) Refer to the following table for the troubleshooting steps if you encounter any problem during the upgrade:

Problem	Possible solution
The diagnostic message The firmware upgrade failed. The selected firmware is either invalid or corrupted. appears during the firmware upgrade.	Select Close on the pop-up message. Delete the firmware package from the PC, download it again from www.se.com and retry the upgrade. If the issue persists, contact Schneider Electric Technical Support for assistance.
The upgrade is unsuccessful, the meter does not power up, or Ethernet communication fails.	Contact Schneider Electric Technical Support for assistance.
The upgrade is interrupted or remains unresponsive for more than five minutes.	Remove the auxiliary control power from the meter and restore it after 10 seconds. If the meter powers up normally and establishes Ethernet communication, retry the upgrade. If the issue persists, contact Schneider Electric Technical Support for assistance.

Technical assistance

Visit www.se.com for support and assistance with lost passcodes or other technical problems with the meter.

Make sure you include your meter's model, serial number and firmware version in your email or have it readily available if calling Technical Support.