

## Firmware upgrades

Upgrade your meter's firmware for the following reasons:

- Improve meter performance (e.g., optimize processing speed)
- Enhance existing meter features and functions
- Add new functionality to the meter
- Achieve compliance to new industry standards
- Enhance meter Cybersecurity

**NOTE: Based on your meter model and firmware version, refer to the appropriate sections of this chapter for the firmware upgrade procedure as shown in table below:**

### Meter models, firmware versions and firmware upgrade methods

Meter models	Source firmware version	Target firmware version	Firmware upgrade method via
PM5560 / PM5562 / PM5562MC / PM5563 / PM5580	2.X.Y	2.9.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 210)
	2.5.X to 2.9.9	4.0.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 212) <b>NOTE: If the meters are upgraded to their target firmware version, you cannot go back (downgrade) to their source firmware version.</b>
	4.0.X and above	4.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 215)
PM5570 / PM5660 / PM5760	3.1.X	3.2.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 210)
	3.2.9 and earlier	6.0.X and above	Firmware upgrade not supported. Contact Schneider Electric Technical Support for help.
	6.0.X and above	6.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 215)
PM5650	2.11.X	2.12.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 210)
	2.12.9 and earlier	4.10.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 212) <b>NOTE: If the meters are upgraded to their target firmware version, you cannot go back (downgrade) to their source firmware version.</b>
	4.10.X and above	4.10.Y and above	Webpages (Refer Firmware upgrade using webpages, page 215)
PM5561	10.6.X	10.9.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 210)
	10.9.9 and earlier	12.0.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 212) <b>NOTE: If the meters are upgraded to their target firmware version, you cannot go back (downgrade) to their source firmware version.</b>
	12.0.X and above	12.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 215)
PM5661 / PM5761	11.0.X	11.2.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 210)
	11.2.9 and earlier	14.0.X and above	Firmware upgrade not supported. Contact Schneider Electric Technical Support for help.
	14.0.X and above	14.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 215)
PM5570L / PM5660L / PM5760L	6.0.X and above	6.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 215)

## 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 firmware upgrade methods, page 209.

**NOTE:** Refer to Restoration of temporarily disabled configuration settings in webpages, page 236 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](http://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 firmware upgrade methods, page 209.

**NOTE:** Refer to Restoration of temporarily disabled configuration settings in webpages, page 236 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 226) 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.

## Meter upgrade requirements for firmware upgrade tool

**NOTE:** To know the applicable firmware upgrade method for your meter model with firmware version, refer to table Meter models, firmware versions and firmware upgrade methods, page 209.

Following are the pre-requisites required for firmware upgrade:

- Latest compatible firmware upgrade package (download the latest firmware upgrade package from [www.se.com](http://www.se.com)).
- Latest firmware upgrade tool which is included in firmware upgrade package.

### **NOTICE**

#### **PERMANENT EQUIPMENT DAMAGE**

Always use the firmware upgrade tool version which is available with the compatible firmware upgrade package.

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

- PC with Windows 10 and above operating system connected to meter via Ethernet cable.
- Uninterrupted power supply to the control power input of the meter, with stable Ethernet communication.
- Meters configured with STATIC IP under **Stored** method.
- ION Setup configuration tool.

## Firmware upgrade using firmware upgrade tool

### **NOTICE**

#### **PERMANENT EQUIPMENT DAMAGE**

- Do not interrupt the auxiliary control power during the firmware upgrade.
- Ensure stable Ethernet communication during the upgrade process to prevent any potential firmware corruption or incomplete firmware upgrade.
- Ensure ICMP is enabled in the network for the firmware upgrade. If ICMP is not enabled in the network and the firmware upgrade was initiated but unsuccessful, do not power cycle the meter.
- Always connect the meter directly to the PC for the firmware upgrade tool with version 3.6 and earlier.

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

**NOTE:**

- To know the applicable firmware upgrade method for your meter model with firmware version, refer to table [Meter models, firmware versions and firmware upgrade methods](#), page 209.
- The firmware upgrade tool with version 3.6 and earlier supports only one device at a time and the firmware upgrade tool with version 3.8 and later supports up to 10 devices at a time during the upgrade process.
- For the firmware upgrade method to be successful, do not change the file names.
- During the firmware upgrade process, all configuration settings and write operations must be stopped.
- The firmware upgrade process can support up to eight TCP connections for read operations. If there are more than eight TCP read connections, the firmware upgrade may be unsuccessful.
- Ensure the firmware upgrade is successful in the tool and verify that the meter is in operational state. After completing the upgrade, wait for one minute before proceeding to the next meters for upgrade process.
- If any meter stops responding, wait until all other meters have completed their upgrade. Then, verify by opening the webpage. For unsuccessful meter upgrades, close and reopen the tool, and then retry the upgrade without power restarting the meter.
- If the meter is connected to network and configured in DHCP mode:
  - Disconnect the meter from the network.
  - Switch the IP method to **Stored**.
- If the meter is connected to network and configured with STATIC IP address, proceed to [Step 2](#), page 213.
- For PM5561 meter model with firmware versions 10.7.3 or 10.8.2, if the FTP server is **Disabled**, you need to **Enable** the FTP server through the meter display.
- 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 226) to perform the firmware upgrade process.

1. Configure the meter as per the following requirements:
  - HTTP port number to 80 using the webpage (**Settings > Advanced Ethernet Settings**) or through ION Setup OR
  - HTTPS port number to 443 using the webpage (**Settings > Communication > Advanced Ethernet Settings**) or through ION Setup
2. Check that the IP domain of the PC is set to same as that of the meter and ensure that meter is communicating with the PC (for example, by running a ping test).
3. Open the **Config.csv** file included in the firmware upgrade tool package.
4. Modify the **Config.csv** file in **Notepad** and enter the meter's configuration in the following order without the <> brackets and spaces after the commas:  
 <IP Address>,<Modbus Slave ID>,<Web-master username>,<Web-master password>,<Product-Master username>,<Product-Master password>


**NOTE:** Before saving the **Config.csv** file, ensure that the file contains only a single line of text, and that the last character of this line is the **Product-Master** password with no spaces, dots, commas, or other characters.

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

**NOTE:** A sample **Config.csv** file is available in the tool package. You can modify its contents, save, and use it.


5. Select the **PM5000fwupgrade.exe** to open the firmware upgrade tool.

**NOTE:** Ensure that you are using the latest version of the firmware upgrade tool for the firmware upgrade.

6. Navigate to **File > Open** OR select the  icon to choose the **Config.csv** file.
7. Check the **.csv** file for the device IP, slave address, username, and password details.
8. Before proceeding, ensure to review the information displayed by the firmware upgrade tool, which includes the IP address, current firmware version, product name, and status (**Firmware upgrade applicable**).

**NOTE:** If the firmware upgrade tool displays status message other than **Firmware upgrade applicable**, recheck the connection, meter, and the details provided in **Config.csv** file.

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**). 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 connected device.

12. A pop-up message will be displayed. Make sure that you read and understand the message. Select **Yes** to proceed with the upgrade process.

During the firmware upgrade process, all the options in the window will be disabled until the upgrade is completed and the device status is displayed in the **Status** column.

After the firmware upgrade process is completed, the tool will display a status message **Upgrade Completed. Double click here to open webpage**.

**NOTE:** During a mass upgrade, if any of the 10 devices encounter an unsuccessful upgrade, wait for five minutes before retrying the firmware upgrade process without powering off the meter. If the diagnostic message continues, please contact Schneider Electric Technical Support for assistance.

13. Select the  icon to save the upgrade logs to a local repository for technical assistance if:
  - The firmware upgrade process is unsuccessful.
  - The meter does not power up normally.
  - Ethernet communication is not established.

**NOTE:** Upgrade logs are stored automatically in the **Application** file path in the **Logs** folder.

14. Navigate to **File > Exit** to close the firmware upgrade tool.

## Meter upgrade requirements for webpages

**NOTE:** To know the applicable firmware upgrade method for your meter model with firmware version, refer to table Meter models, firmware versions and firmware upgrade methods, page 209.

Following pre-requisites are required for firmware upgrade:

- Latest compatible firmware upgrade package (Download the latest firmware upgrade package from [www.se.com](http://www.se.com)).

- PC with Windows 10 and above operating system connected to meter via Ethernet network.
- Uninterrupted power supply to the control power input of the meter, with stable Ethernet communication.

## Firmware upgrade using webpages

**NOTE:** To know the applicable firmware upgrade method for your meter model with firmware version, refer to table *Meter models, firmware versions and firmware upgrade methods*, page 209.

**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 226) to perform the firmware upgrade process.

### NOTICE

#### PERMANENT EQUIPMENT DAMAGE

Do not interrupt the auxiliary control power during the firmware upgrade process.

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

**NOTE:** Meter firmware includes a digital signature which helps ensure authenticity.

1. Click **Maintenance > Upgrade > Firmware**.
2. In the **Firmware Upgrade** section, click **Browse** button.  
The **Choose File Open** dialog box opens.
3. Select the **.sedp** file from the firmware release folder.
4. Click **Upgrade** button.  
The 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.
5. Click **Yes** to apply the firmware upgrade.  
**NOTE:** The device will check the firmware compatibility before upgrade.  
Depending on several factors like network speed etc., the firmware upgrade process of the meter can take about 5 minutes or more.  
After successful firmware upgrade, the meter can take up to 40 s to resume communication.
6. After the firmware upgrade process, navigate to **Maintenance > Upgrade > Upgrade Status** to check the last firmware upgrade status of your meter.
7. If the error message **The firmware upgrade failed. The selected firmware is either invalid or corrupted.** is displayed during the firmware upgrade process:
  - a. Click the **Close** button on the pop-up message.
  - b. Delete the downloaded copy of the latest firmware upgrade package from the PC. Download the package from [www.se.com](http://www.se.com) again and retry the firmware upgrade process. If the same issue occurs, contact Schneider Electric Technical Support.

8. If the firmware upgrade process is interrupted or becomes unresponsive (more than 5 minutes have elapsed since beginning the upgrade process and the meter has not finished the upgrade attempt):
  - a. Remove the auxiliary control power to the meter and restore it after 10 s. If the meter powers up normally and is able to establish Ethernet communication, retry the firmware upgrade process.

If the firmware upgrade process is unsuccessful or if the meter does not power up normally or if the Ethernet communication is not established with the meter, contact Schneider Electric Technical Support.

**NOTE:** The PM5561 meter model applicable for firmware version 12.0.X and above, PM5562 / PM5562MC meter models applicable for firmware version 4.3.5 and above, and PM5661 / PM5761 meter models applicable for firmware version 14.0.X and above can be upgraded to a compatible higher firmware version. This firmware upgrade (successful or unsuccessful) is limited to 25 attempts in PM5561 / PM5562 / PM5562MC / PM5661 / PM5761. Any further attempt to upgrade is blocked.

## Technical assistance

Visit [www.se.com](http://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.