

## 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 / PM5563 / PM5580	2.X.Y	2.9.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 204)
	2.5.X to 2.9.9	4.0.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 206) <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 208)
PM5570 / PM5660 / PM5760	3.1.X	3.2.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 204)
	3.2.9 and earlier	6.0.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 206) <b>NOTE: If the meters are upgraded to their target firmware version, you cannot go back (downgrade) to their source firmware version.</b>
	6.0.X and above	6.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 208)
PM5650	2.11.X	2.12.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 204)
	2.12.9 and earlier	4.10.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 206) <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 208)
PM5561	10.6.X	10.9.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 204)
	10.9.9 and earlier	12.0.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 206) <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 208)
PM5661 / PM5761	11.0.X	11.2.9 and earlier	FTP server (Refer Firmware upgrade using FTP server, page 204)
	11.2.9 and earlier	14.0.X and above	Firmware upgrade tool (Refer Firmware upgrade using firmware upgrade tool, page 206) <b>NOTE: If the meters are upgraded to their target firmware version, you cannot go back (downgrade) to their source firmware version.</b>
	14.0.X and above	14.X.Y and above	Webpages (Refer Firmware upgrade using webpages, page 208)

## 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 203.

**NOTE:** Refer to Restoration of temporarily disabled configuration settings in webpages, page 228 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 203.

**NOTE:** Refer to Restoration of temporarily disabled configuration settings in webpages, page 228 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 lock is enabled. You need to remove the MID lock using the meter display (Refer to Locking or unlocking the PM5561 / PM5661 / PM5761, page 219) 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 203.

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)).
- Latest firmware upgrade tool which is included in firmware upgrade package.

<b>⚠ CAUTION</b>
<b>POTENTIAL FOR PRODUCT DAMAGE AND IRRECOVERABLE</b> Always use the firmware upgrade tool version which is available with the compatible firmware upgrade package. <b>Failure to follow these instructions may result in product being damaged and irrecoverable.</b>

- 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.
- Meters configured with STATIC IP under **Stored** method.
- ION Setup configuration tool.

## Firmware upgrade using 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 203.

**NOTE:** The firmware upgrade process for PM5561 / PM5661 / PM5761 meter models cannot be performed when MID lock is enabled. You need to remove the MID lock using the meter display (Refer to [Locking or unlocking the PM5561 / PM5661 / PM5761](#), page 219) to perform the firmware upgrade process.

**NOTE:** For this firmware upgrade method to be successful, do not change the file names.

<b>⚠ CAUTION</b>
<b>POTENTIAL FOR PRODUCT DAMAGE AND IRRECOVERABLE</b> Do not disrupt the auxiliary control power when the firmware upgrade is in progress. <b>Failure to follow these instructions may result in product being damaged and irrecoverable.</b>

If the meter is connected to network and configured with STATIC IP address, proceed to [Step 2, page 207](#).

If the meter is connected to network and configured in DHCP mode:


- Disconnect the meter from the network.
  - Switch the IP method to **Stored**.
  - Connect the PC directly to the meter.
1. Configure the meter HTTP port number to 80 using the webpage (**Settings > Advanced Ethernet Settings**) or through ION Setup.

2. Check that the IP domain of the PC is set to same as meter, and that the meter is communicating with the PC (for example, by running a ping test).
3. Open the **Config.csv** file which is part of the firmware upgrade tool package.
4. Modify the **Config.csv** file in **Notepad** and enter the meter's configuration in below order without the <> brackets and without any spaces around 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 one line text, and the last character of this line is the Product-Master password without space, dot, comma etc.**


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

5. Save and close the **.csv** file
6. Double click the **PM5000fwupgrade.exe** to open the firmware upgrade tool.
7. Select **File > Open** OR click the  icon.
8. Browse and select the updated **Config.csv** file. The tool displays the details entered in **config.csv** file. Proceed to next step if the details mentioned as follows match:

- IP Address (modified in the **.csv** file)
- Current firmware version of the meter
- Product name
- Status (Example: **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. Select **Tools > Select Firmware** OR click the  icon.
10. Click  to browse and select the latest firmware file (**.sedp**).  
Selected firmware file (VX.Y.Z.**sedp**) details will be displayed.

11. Select **Tools > Upload Firmware** OR click the  icon.
12. A warning message displays. Make sure that you read and understand the message. Select **Yes** to proceed or **No** to cancel upgrade process.  
The firmware upgrade process starts. Depending on several factors like network speed etc., the firmware upgrade process of the meter can take about 10 minutes or more.  
After the firmware upgrade process is completed, the status message displays **Device upgrade success**.
13. Login to the webpage with the user credentials to find the latest upgraded firmware version in the **Home** tab under the **Device Identification** window.
14. If the error message **Device upgrade failed** is displayed during the firmware upgrade process:
  - a. 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.

15. If the firmware upgrade process is interrupted or becomes unresponsive (more than 10 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.

## 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 203.

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 203.

**NOTE:** The firmware upgrade process for PM5561 / PM5661 / PM5761 meter models cannot be performed when MID lock is enabled. You need to remove the MID lock using the meter display (Refer to *Locking or unlocking the PM5561 / PM5661 / PM5761*, page 219) to perform the firmware upgrade process.

<b>⚠ CAUTION</b>
<b>POTENTIAL FOR PRODUCT DAMAGE AND IRRECOVERABLE</b>
Do not disrupt the auxiliary control power when the firmware upgrade is in progress.
<b>Failure to follow these instructions may result in product being damaged and irrecoverable.</b>

**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 running on firmware version 12.0.X or later and PM5661 / PM5761 meter models running on firmware version 14.0.X or later can be upgraded to a compatible higher firmware version. The firmware upgrade (successful or unsuccessful) is limited to 25 attempts in PM5561 / 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.