What's new – July 2020

This document summarizes the advances in Power and Energy Monitoring System offers released in July. It also provides instruction on how to apply new and updated features.

What's in This Document

What's new overview

Firmware and ION Setup

All advances in this release are available in the latest meter firmware upgrade version 3.0.0 and the latest version of ION Setup.

Cybersecurity

- User accounts – In keeping with our ongoing efforts to provide enhanced cybersecurity, we have implemented secure password storage in the device using cryptographic protection.

- Legacy security support – Standard security mode has been removed. Legacy security support is an interim solution for users that provides backwards capability with older software communicating with the meter using ION protocol.

- Password changes using the display – The ability to change meter passwords using the display has been removed.

- Modbus Access options – Use the new None option in the ION Setup security configuration drop-down list to disable access to the built-in Modbus map.

Communications

- We've introduced a new security control by removing HTTP and providing only secure protocol options when accessing the meter's web server.

- The number of Modbus Master Map modules have increased from 20 to 40.

- The number of Modbus master device modules has increased from 64 to 128.

Installation and commissioning

Support for new Low Voltage Current Sensor (LVCS) meter hardware option.

Product documentation

- A new upgrade procedure for meter firmware is available.
- A new KB article for meter firmware is available.

Firmware upgrades

Meter firmware v3.0.0

New and updated meter firmware features in version 3.0.0 (V003.000.000) apply to:

- ION9000 series meters
- PM8000 series meters
- ION7400 series meters

Go to www.se.com and download the firmware upgrade ZIP file. To find the ZIP file you want to use, search for your meter type and v3.0.0 Firmware and Associated Files.

NOTICE
UNSUPPORTED FILE TYPE
Do not upgrade to firmware version 3.0.0 or later if you need to downgrade the meter in the future.
Failure to follow these instructions can result in loss of firmware downgrade functionality.

ION Setup

New and updated features are available in the latest version of ION Setup. ION Setup is a free configuration tool for your meter that allows you to remotely configure your meter's features over Ethernet or serial communications.

Go to https://www.se.com/en/download/document/ION_Setup_Latest_Release/ to get the latest version of ION Setup.

Cybersecurity

User accounts

In keeping with our ongoing focus of providing enhanced cybersecurity, we have:

- Implemented secure password storage in the device using cryptographic protection. Together with other controls in your network and physical perimeter security, secure password storage helps prevent unauthorized access to the meter.
- Removed the ability to change meter passwords using the display.

Legacy security support

Legacy security support is an interim solution for users that use Standard security mode and is the default setting for new meters. It provides backwards compatibility with older software communicating with the meter using ION protocol.

If Standard security was used before upgrading meter firmware to v3.0.0, Legacy security support is enabled.

If Advanced security was used before upgrading meter firmware to v3.0.0, Advanced security is enabled.

It is recommended to use Advanced security mode.

Legacy security support username	Legacy security support password	Legacy security support password range	Legacy security support password limit
User1	• Same password used before upgrade to firmware version 3.0.0., or • 0 (zero) for new meters.	0 to 99999999	8 characters

Switch ION Setup into Advanced mode to setup multiple user accounts for meters using Legacy security support: Open ION Setup > Ctrl + click on the meter to select it.

Setting up Advanced security

Meter security has strong user login and privilege management and password complexity.

Security capability	Description
User credentials and password robustness	Use a single account to access the meter with a numeric password for login.
	Use multiple user accounts with alphanumeric passwords for login and configuration changes.
	Password strength feedback using ION Setup.
User account lockouts and timeouts	Define user account lockout criteria after unsuccessful login attempts and define session timeout length.
User privileges	User accounts with variable permissions to read access, test mode or configuration privileges.
Webpages	Disable or enable webpages for viewing meter data online using a web browser (Active Web Server).
Configuration	Disable or enable ability to configure the meter using: • Modbus communications programming or allow read-only viewing. • The Display. • Meter webpages (Web Server programming).
	Disable and enable time synchronization.
	Password required for configuration changes using the display or communication protocols.
Cybersecurity event logs and reports	Set-up cybersecurity event logs and alarms using event priorities.

Required for this procedure:

- Meter connection using ION Setup.
- Login credentials.
- Security configuration access privileges.

1. Open ION Setup > select the meter > **Setup Assistant**.

2. **Security** > **Security Mode** > **Edit**. The Open Security Configuration file dialog box opens.

3. Select the default **advanced.scf** security configuration file.

4. Click **Open**. If prompted, click Yes to use Advanced security.

5. On the Security Options dialog box:

   – Select or clear **Active Web Server** to enable or disable the ability to view meter settings online using webpages.

   – Select or clear **Allow Web Server programming** to enable or disable the ability to change meter settings using webpages.

   – Select or clear **Allow Front Panel programming** to enable or disable the ability to change meter settings using the display.

   – Select from the **Modbus Access** drop-down list:

     • **None** – Disables built-in Modbus map access.

     • **Read/Write** – Enables configuration of basic metering parameters using only Modbus communications protocol.

     • **Read Only** – Enables ability to read metering parameters using only Modbus communications protocol. This option is enabled by default.

6. Click **Next** to go through Setup Assistant screens and select the security options you want.

   – See "Passwords", page 4 for recommendations.

   – See "Managing user account lockouts and timeouts", page 7 for details about lockouts after unsuccessful login attempts and ION protocol session timeouts.

   – See "Managing user accounts", page 6 for details about adding users and assigning privileges.

   If an option is grayed out, it is not available with your meter type or firmware.

7. Click **Finish**. A Confirmation message box opens.

8. Click **Yes**. The Save As dialog box opens.

9. Save the file with a unique file name to avoid overwriting default Security Configuration Files.

10. Click **Exit**.

Cybersecurity configuration

Security configuration settings selected in ION Setup are applied to the meter and can be saved as a Security Configuration File (.scf). The security log file (SECURITY.LOG) contains the history of Security Configuration Files saved from ION Setup.

The security log and Security Configuration Files are saved to the C:\ProgramData \Schneider Electric\ION Setup\Security folder.

> **NOTE:** The security log file can be changed by anyone with access to the ProgramData folder.

Recommendations to optimize cybersecurity in a protected environment:

• Use Advanced Security mode.

• Store your meter's Security Configuration File (.scf) in a protected location.

• Revenue-lock the meter, confirm it is revenue-locked and use anti-tamper sealing points before putting the meter into service. This helps prevent unauthorized access to the meter, parameter values and settings.

Passwords

Recommendations to optimize cybersecurity in a protected environment:

• Document and store passwords and usernames in a protected location.

• Change the default password of 0 (zero) to help reduce unauthorized access. Default account settings are often the source of unauthorized access by malicious users.

- View the Device Configuration Checklist to quickly determine if the default password is used:
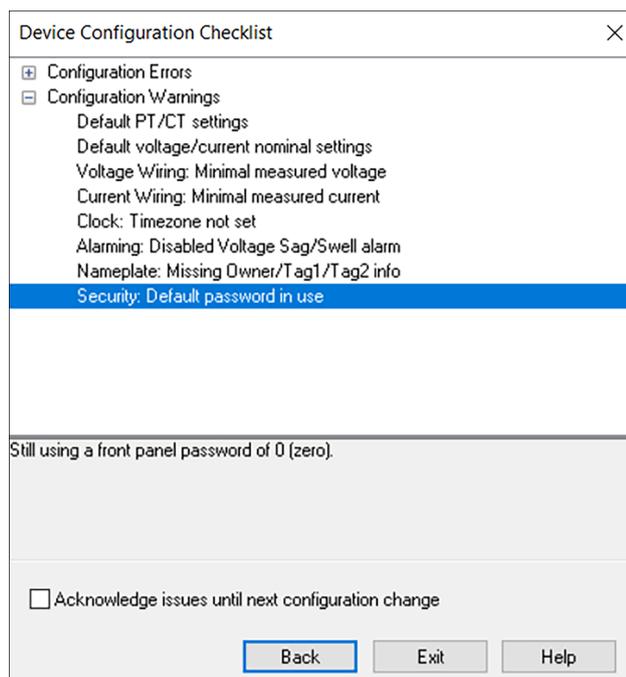
- Use Advanced security mode.
- Use complex passwords or passphrases with a minimum length of six characters.
- Follow user account management tasks as described by your organization or contact your network administrator, for example, maximum password age or history policies.

Changing a password

Required for this procedure:

- Meter connection using ION Setup.
- Login credentials.
- Security configuration access privileges.

NOTICE
DATA LOSS
Record your device's user and password information in a secure location.
Failure to follow these instructions can result in equipment damage.

1. Open ION Setup > select the meter > **Setup Assistant**.

2. **Security** > **Security Mode** > **Edit**. The Open Security Configuration file dialog box opens.

3. Select the Security Configuration File (.scf) that contains the current meter settings and click **Open**. The Security Options dialog box opens.

   NOTE: Open the security log file to determine the .scf file you want. See "Cybersecurity configuration", page 4 for more information.

4. Select a user.

5. Click **Next** to navigate to the **Define individual users/passwords** screen. Select each user and assign passwords.

   NOTE: Select the Show password checkbox to display the user password after it's been changed.

6. Click **Finish**. A Confirmation message box opens.

7. Click **Yes**. The Save As dialog box opens.

8. Save the Security Configuration File (.scf) with a unique file name to avoid overwriting default Security Configuration Files.

You can also change the password using ION Setup Diagnostics tool, Security Options Module using ION Setup Advanced Mode, Power SCADA Operation and Power Monitoring Expert.

Managing user accounts

User privileges can be modified. Users can be added or removed at any time. The maximum number of users is 50.

Required for this procedure:

- Meter connection using ION Setup.
- Login credentials.
- Security configuration access privileges.

NOTICE

DATA LOSS

Record your device's user and password information in a secure location.

Failure to follow these instructions can result in equipment damage.

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1. Open ION Setup > select the meter > **Setup Assistant**.

2. **Security** > **Security Mode** > **Edit**. The Open Security Configuration file dialog box opens.

3. Select the Security Configuration File (.scf) that contains the current meter settings and click **Open**. The Security Options dialog box opens.

    NOTE: Open the security log file to determine the .scf file you want. See "Cybersecurity configuration", page 4 for more information.

4. Click **Next** to navigate to the **Define individual users/passwords** screen.

5. Select each user and assign individual permissions:
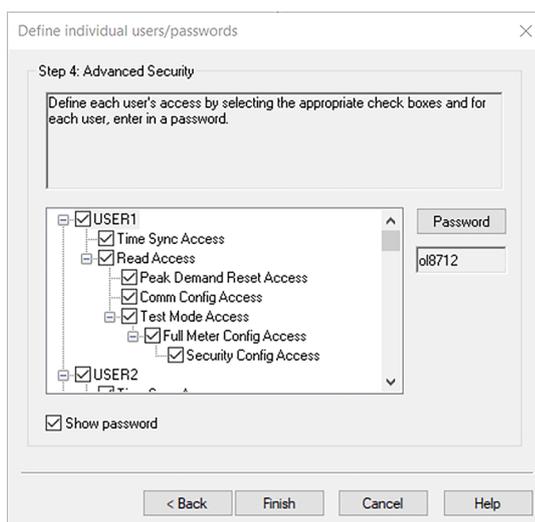
Permission level	Description
Time Sync Access	Set the meter's time and time synchronization parameters.
Read Access	View parameters, except security configuration.
Peak Demand Reset Access	Reset peak demand values.
Comm Config Access	Configure communication settings.
Test Mode Access	Switch the meter to test mode, if available with your meter type.
Full Meter Config Access	Configure meter settings.
Security Config Access	Configure security settings.

6. Click **Finish**. A Confirmation message box opens.

7. Click **Yes**. The Save As dialog box opens.

8. Save the Security Configuration File (.scf) with a unique file name to avoid overwriting default Security Configuration Files.

9. Click **Exit**.

Managing user account lockouts and timeouts

If a user account is locked out, that user can still access the device by entering the correct credentials over a different protocol and communications method. Lockout is applied to each user, protocol and connection type, including webpages. For example, serial and Ethernet protocols are locked out separately.

User account lockouts and timeouts options include:

- Lockout after unsuccessful login attempts.
- Session timeout for ION protocol only.
- Lockout duration.

Required for this procedure:

- Meter connection using ION Setup.
- Login credentials.
- Security configuration access privileges.

1. Open ION Setup > select the meter > **Setup Assistant**.

2. **Security** > **Security Mode** > **Edit**. The Open Security Configuration file dialog box opens.

3. Select the Security Configuration File (.scf) that contains the current meter settings and click **Open**. The Security Options dialog box opens.

   NOTE: Open the security log file to determine the .scf file you want. See "Cybersecurity configuration", page 4 for more information.

4. Click **Next** to navigate to the Select protocol lockout options screen:
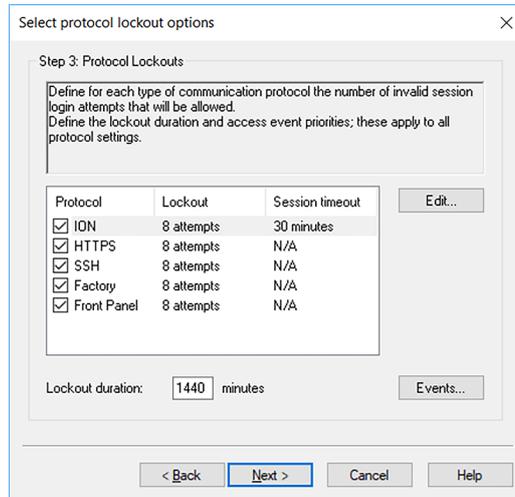
5. Select each protocol and click **Edit** to change lockout and session timeout values for:

   – Protocol lockout after unsuccessful login attempts.

   – Session timeout for ION protocol only. This is configurable because there is no login and logout action for ION protocol sessions.

6. Enter a value for the **Lockout duration** for user lockout occurrences.

7. Click **Finish**. A Confirmation message box opens.

8. Click **Yes**. The Save As dialog box opens.

9. Save the Security Configuration File (.scf) with a unique file name to avoid overwriting default Security Configuration Files.

Setting up Advanced security troubleshooting

Some users could experience software access issues after enabling Advanced Security mode. Resolve software access issues using these troubleshooting steps:

Meter state	Example behavior	Solution – follow tasks in the order listed
New meter	Login credentials are unknown.	• Verify that you are using the newest version of ION Setup. • Enter Username: User1 and Password: 0 [zero].
Meter recently upgraded to firmware v3.0.0	Using EcoStruxure™ Power Monitoring Expert or ION Enterprise software and after password is entered, access is not granted.	• Verify that you are using the newest version of ION Setup. • Verify you are using meter firmware v3.0.0. • Configure software meter security settings. • Enter meter username: User1 and Password: [password used before upgrade to firmware v3.0.0].
	Using Vista™ software and after password is entered, access is not granted.	Go to www.se.com and search for support to get assistance with troubleshooting.

	Using EcoStruxure™ Power SCADA Operation software.	Go to www.se.com and search for support to get assistance with troubleshooting.
	Incorrect credentials are entered multiple times and a lockout occurs.	Wait until lockout duration is over and account is not locked out. If a user account is locked out, that user can still access the device by entering the correct credentials over a different protocol and communications method.
	Login credentials are unknown.	• Verify that you are using the newest version of ION Setup. • Enter meter username: User1 and Password: [password used before upgrade to firmware v3.0.0].

Modbus

Use the new **None** option in the ION Setup security configuration options drop-down list to disable access to the built-in Modbus map. Other options in the drop-down list have been made clearer, so choosing between them is easier:

- **None** – Disables built-in Modbus map access.
- **Read/Write** – Enables configuration of basic metering parameters using only Modbus communications protocol.
- **Read Only** – Enables ability to read metering parameters using only Modbus communications protocol. This option is enabled by default.

Disabling and enabling meter configuration methods

Limiting configuration methods, such as Modbus, webpages and the display, and providing read-only access reduces the attack surface.

Required for this procedure:

- Meter connection using ION Setup.
- Login credentials.
- Security configuration access privileges.

1. Open ION Setup > select the meter > **Setup Assistant**.

2. **Security** > **Security Mode** > **Edit**. The Open Security Configuration file dialog box opens.

3. Select the Security Configuration File (.scf) that contains the current meter settings and click **Open**. The Security Options dialog box opens.

    NOTE: Open the security log file to determine the .scf file you want. See "Cybersecurity configuration", page 4 for more information.

4. On the Security Options dialog box:

   – Select or clear **Active Web Server** to enable or disable the ability to view meter settings online using webpages.

   – Select or clear **Allow Web Server programming** to enable or disable the ability to change meter settings using webpages.

   – Select or clear **Allow Front Panel programming** to enable or disable the ability to change meter settings using the display.

   – Select from the **Modbus Access** drop-down list:

      • **None** – Disables built-in Modbus map access.

      • **Read/Write** – Enables configuration of basic metering parameters using only Modbus communications protocol.

      • **Read Only** – Enables ability to read metering parameters using only Modbus communications protocol. This option is enabled by default.

5. Click **Next** .

6. Click **Finish**. A Confirmation message box opens.

7. Click **Yes**. The Save As dialog box opens.

8. Save the Security Configuration File (.scf) with a unique file name to avoid overwriting default Security Configuration Files.

9. Click **Exit**.

Communications

HTTPS

We've introduced a new security control by removing HTTP and providing only secure protocol options when accessing the meter's web server. Use:

• **HTTP With redirect to HTTPS**. This option is selected by default.

• **HTTPS**.

• **Disabled**.

Changing web protocol settings

Web protocol settings	Description
HTTPS With HTTP Redirect	Redirects all HTTP requests to use HTTPS.
HTTPS	Allows only secure access and encrypted communications between the client computer and the meter's internal web server hosting webpages.
Disabled	Turns off the meter's web functionality and blocks all access to the meter's web server.

1. Open ION Setup > select the meter > **Setup Assistant**.

2. **Communications** > **Advanced Ethernet** > **Protocols** tab.

3. Select the **Web** protocol and click **Edit**.

4. Select a web protocol setting.

5. Change the default Assigned Port Numbers for **HTTP**(redirect) and **HTTPS**. This requires appending the changed port number for HTTP or HTTPS access to the meter's webpages, for example: <meter IP address>:<changed http or https port number>.

Product documentation

New support resources are available on www.se.com.

Upgrade procedure

PowerLogic upgrade meter firmware to v3.0.0_7EN72-0206-00

To find product documentation, go to www.se.com and search for the document.

KB article

HEP meter v3.0.0 firmware FAQ: user accounts and Legacy security support

To find KB articles, go to www.se.com > **Support** > **Browse FAQs** > search for the topic.