AMETEK®
POWER INSTRUMENTS

JEMStar II
Firmware & Software Release

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Introduction

This release is intended for all Meters (ANSI and IEC) and includes changes to firmware and software as shown.

- Firmware
  - New version Register Code
  - New version Service Code
  - New version Metrology Code
  - New version FPGA Code
- Software
  - New version JEMWARE II

Firmware Release Versions

JEMStar II Firmware	New Version	AMETEK Part Number	Replaces Firmware Version	Release Date
JEMStar II Register	06.06.01	1301-486	06.06.00	03/05/24
JEMStar II Service	05.06.01	1301-487	05.05.06	03/05/24
JEMStar II Metrology	1.N	1301-488	1.M	03/05/24
JEMStar II FPGA	4.9.7	1301-489	4.9.6	03/05/24
JEMStar II PQ	9.D	1301-422	9.D	04/03/20

Note: All new meters shipped from the factory will use the above firmware unless advised otherwise.

Software Release Versions

JEMStar II Software	New Version	AMETEK Part Number	Replaces Software Version	Release Date
JEMWARE II Software	2.6.1	1301-485	2.6.0	03/5/24

Firmware / Software Compatibility

New Firmware to Software Compatibility

JEMStar II Firmware	New Version	JEMWARE and JEMREAD Compatibility
JEMStar II Register	06.06.01	JEMWARE II: 2.6.1
JEMStar II Metrology	1.N	
JEMStar II Service	05.06.01	
Power Quality	9.D	JEMREAD: 6.1.0.65
FPGA	4.9.7	

New Firmware is only compatible with the Software versions shown above
New Software is backward compatible with previous firmware versions

Note: All firmware listed above must be installed as a complete set.
(You can't mix some of these new firmware versions with older versions)

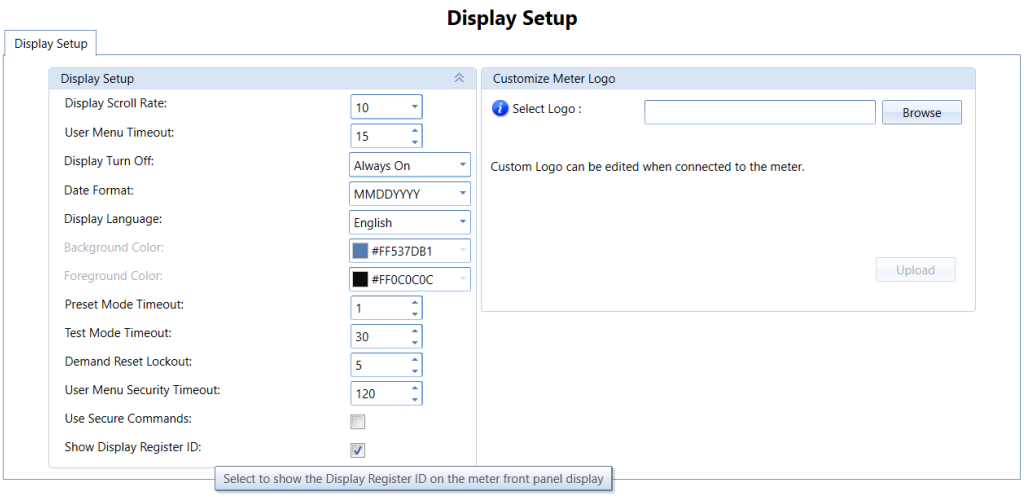
JEMStar II Release Details:

Feature Enhancements:

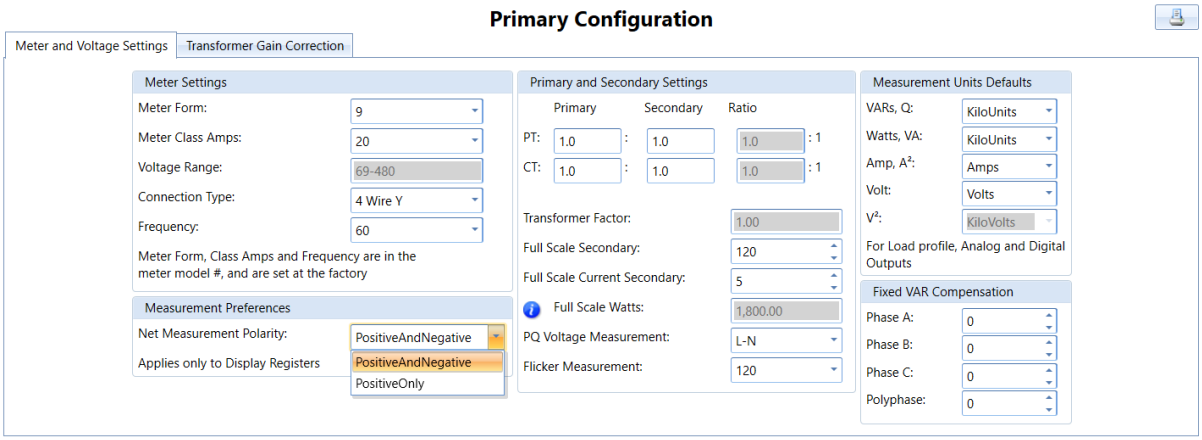
- **Backup register and load profile storage:**
  All register and load profile data will now be backed up at one minute intervals to prevent data loss from battery failure.

- **DLMS Support for future/past date load profile read**

- **Hide Display Register ID Feature:**
  Added a configurable option to the Display Setup. This allows a user to Show or Hide the Display Register ID on the meter front panel. The option id enabled to show the Display Register ID by default. If a user wants to hide the Register IDs, they need to uncheck this option.

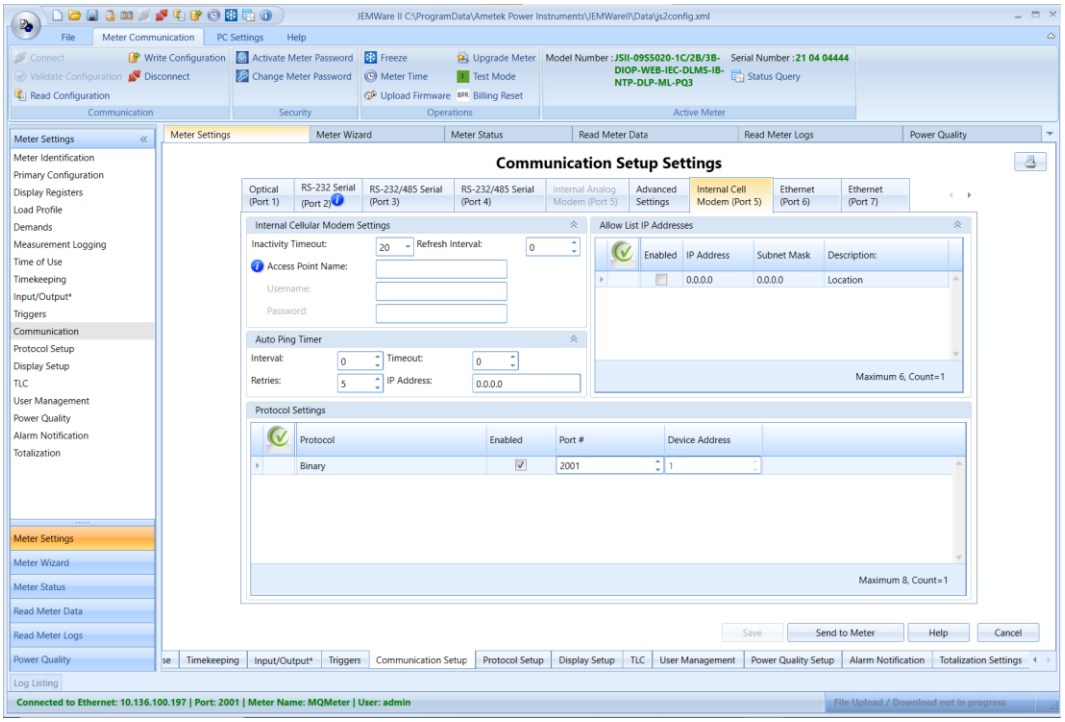


- **Primary Configuration Net Measurement Preferences.**
  Addition of Net Measurement Polarity. Select from PositiveAndNegative or PositiveOnly. The default setting is PositiveAndNegative. The Net Measurement Polarity setting applies only to Display Registers.



- **Internal Cellular Modem Settings:**

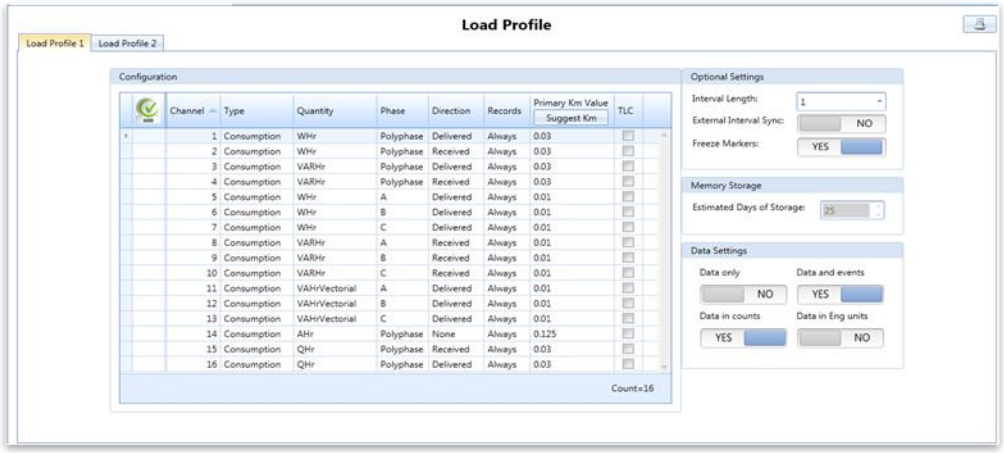
  Addition of Auto Ping Timer settings and addition of Connection refresh Interval.



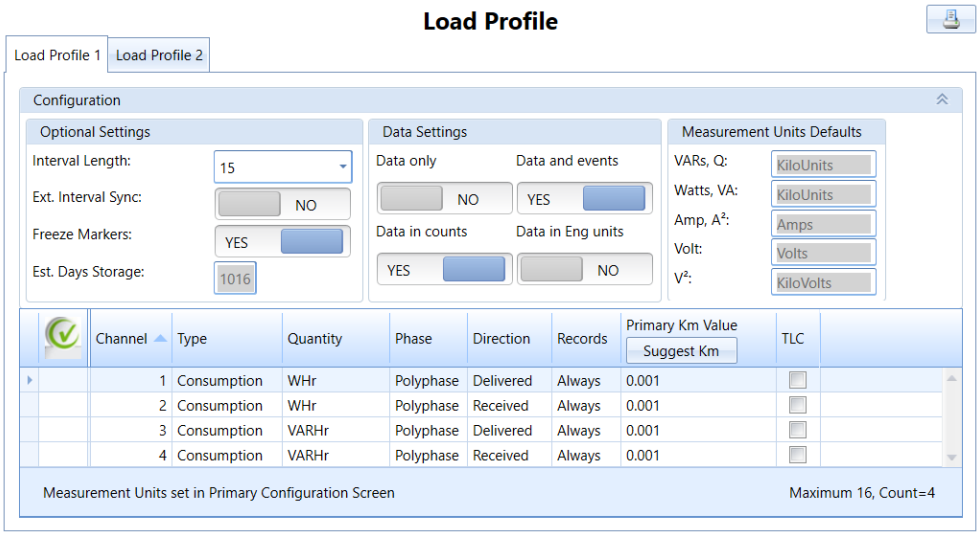
- **Load Profile:**

  Redesign to both Load profile layouts to better support access to load profile channel configuration on laptops. Optional Settings/Memory Storage/Data Settings are now positioned along the top.

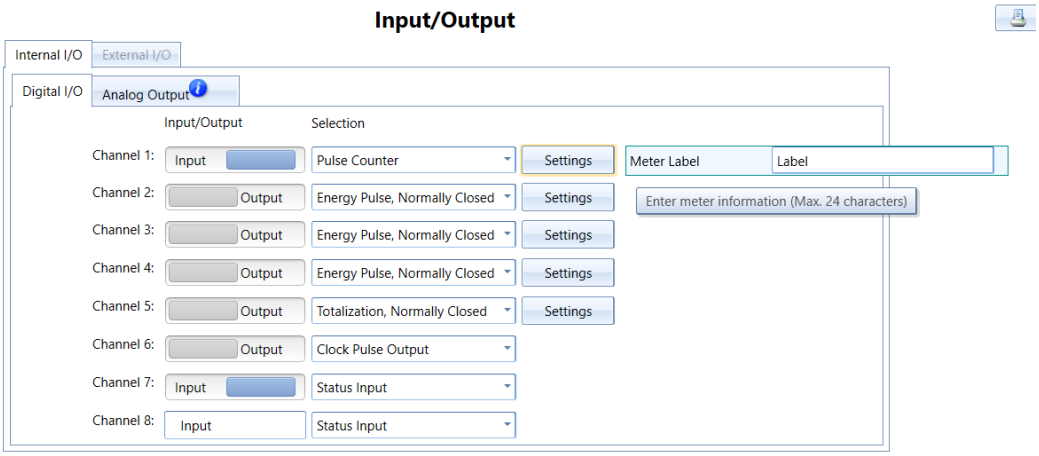
  Before:



After:

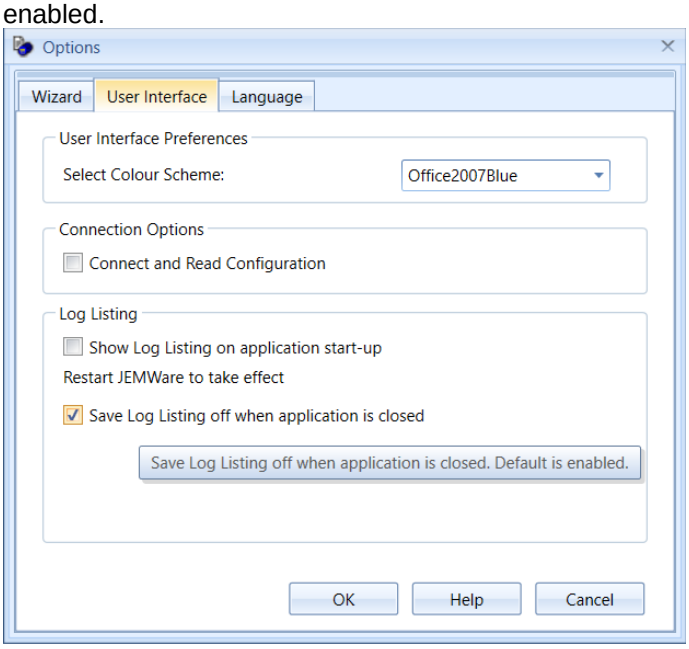


- **Input/Output Settings:**
  Added a meter details field to Pulse Counter under Digital I/O Input channel.

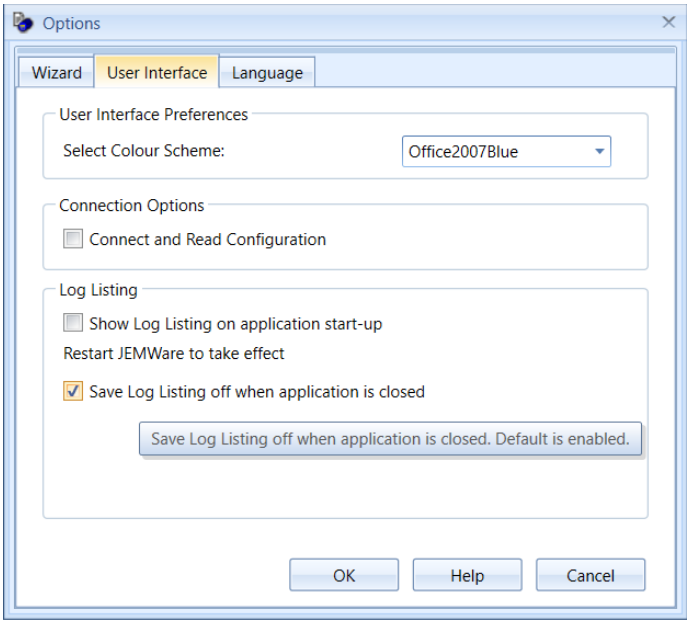


- **Log Listing:**

Connect and Read option:
Connection options added to the Options/User Interface tab. This Connect and Read Configuration option if enabled will read the meter configuration on successful meter connection right after they close/OK the meter connection status. By default, this is not enabled.

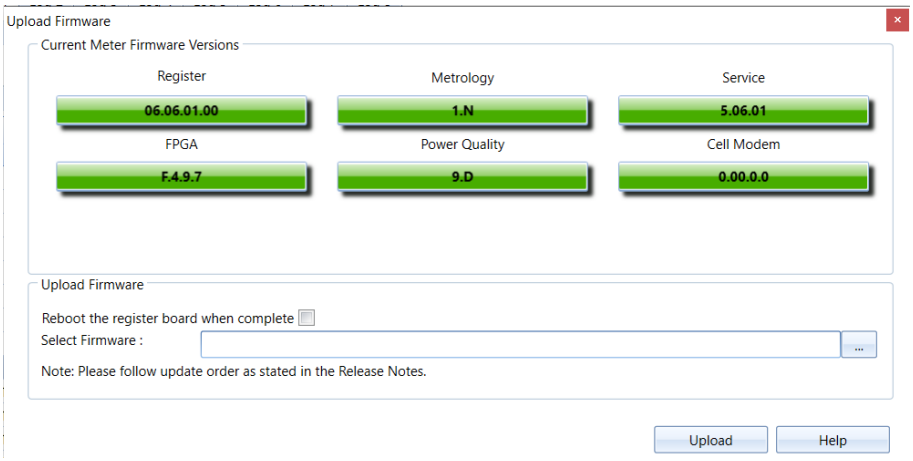


Save off Log Listing option:
As an aid to debugging customer issues, the Log Listing stores Operation/Diagnostics/Errors and Information that will be exported into excel files under the Data/Log folder. This feature is enabled by default, it can be disabled via Options/User Interface tab.

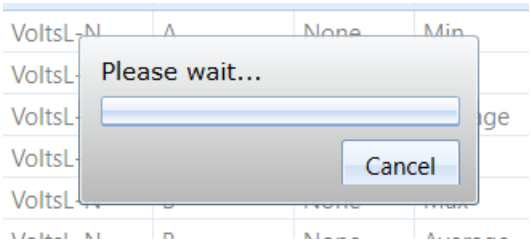


- **Limited Mode:**
  Added a warning to meter connection status if the SW version is less than the FW version. If it is, then the SW will be in limited mode which means a user cannot write a configuration to the meter or change the meter settings. They will only be able to do Read operations.

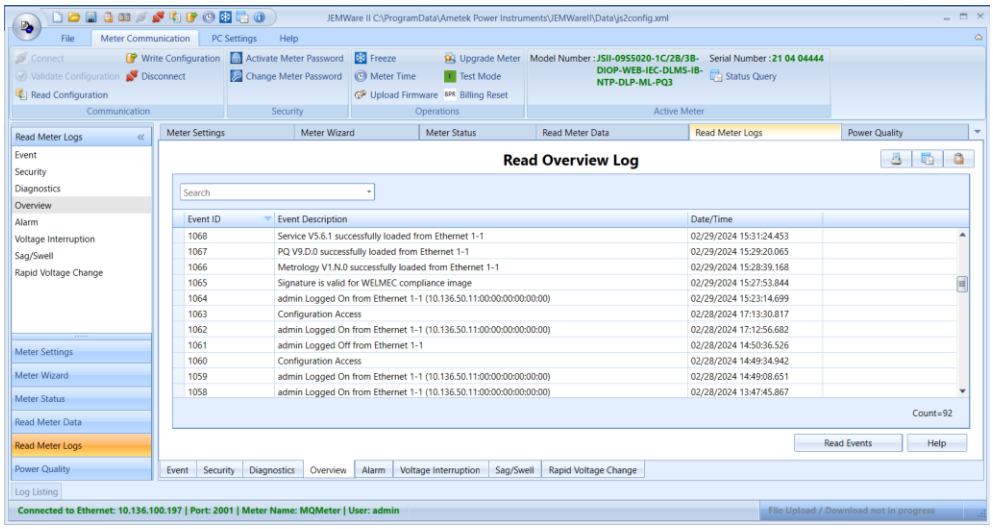
- **Upload Firmware**:
  Changed the order on the dialog so that it matches the web interface and added a label to inform user to reference the release notes.



- **Meter Connection:**
  Added a cancel option to the please wait indicator when attempting to connect to a meter.



- **Read Meter Logs:**
  Added another option to the Read Meter Logs called Overview. This will call 3 commands Read Event/Security and Diagnostic Logs and will display the results all together sorted by Event ID in descending order. This is to give a better overview of the event timelines when analyzing events.



Items Fixed:

- **Modbus/DNP:**
  - Fix DNP mapping issue, index will now start at 0.
  - Fix to an issue configuring Trigger Status selections on Modbus/DNP Binary Inputs.
- **Display Registers:**
  - When adding registers to be shown on the meter front panel screen. The validation for the grouping of 4 registers was incorrectly set at 3.
  - Eliminated JEMWARE II crash when adding display test registers.
  - Added validation to Display Registers Normal/Alt & Test to ensure that the Number of Digits entered must be greater than or equal to the Number of Decimal places. This will highlight the row in red and bring up a warning on saving the grid or when writing the configuration.
- **Triggers:**
  - Removed Pulse count and Input status from the Trigger/Instantaneous trigger under measurement selection.
- **DST issues:**
  - Eliminated the duplicate day lights savings logging issue and extra registration issue.
  - Eliminated issue around DST in load profile when switching to NTP.
- **Cell Modem Time Out:**
  - Improved communications to limit cell modem time out, reference enhancements.
- **Fixed IEC 61850 issue with VARhrs delivered and received**
- **Updated Load Profile/Register Data Types**
  - Updated data types to reduce the likelihood of overflowing the signed 64 bit integer accumulator. This eliminates any accuracy issues seen with larger PT/CT ratios.

- **Clock Pulse Output:**
  - Changes to resync the crystal PPS with an external PPS when the latter becomes available
- **Increase the Metrology-Service serial communications packet timeout.**
  - This prevents metrology communication errors when the system frequency is as low as 42 Hz.

Security Updates: None

Software/Firmware version history

Release	Register	Service	Metrology	PQ	FPGA	JEMWARE	JEMREAD
3/5/2024	6.6.1	5.6.1	1.N	9.D	4.9.7	2.6.1	6.1.0.65
10/5/2022	6.6.0	5.6.0	1.M	9.D	4.9.6	2.6.0	6.1.0.65
3/8/2022	6.5.6	5.5.6	1.L	9.D	4.9.6	2.5.6	6.1.0.65
9/21/2021	6.5.5	5.5.5	1.K	9.D	4.9.6	2.5.6	6.1.0.65
5/31/2021	6.5.5	5.5.5	1.K	9.D	4.9.6	2.5.5	6.1.0.65
3/2/2021	6.5.4	5.5.4	1.K	9.D	4.9.6	2.5.4	6.1.0.56
11/4/2020	6.5.3	5.5.3	1.J	9.D	4.9.6	2.5.3	6.1.0.56
8/24/2020	6.5.2	5.5.2	1.I	9.D	4.9.6	2.5.2	6.1.0.56
4/3/2020	6.5.1	5.5.1	1.H	9.D	4.9.6	2.5.1	6.1.0.56
8/22/2019	6.5.0	5.5.0	1.G	9.C	4.9.6	2.5.0	6.1.0.56
11/30/2018	6.4.6	5.4.6	1.F	9.C	4.9.6	2.4.6	6.1.0.56
7/13/2018	6.4.5	5.4.5	1.F	9.C	4.9.6	2.4.5	6.1.0.56
4/2/2018	6.4.4	5.4.4	1.F	9.C	4.9.6	2.4.4	6.1.0.56
11/7/2017	6.4.2	5.4.2	1.E	9.C	4.9.6	2.4.2	6.1.0.56
5/2/2017	6.4.1	5.4.1	1.D	9.C	4.9.6	2.4.1	6.1.0.44
1/8/2016	6.3.2	5.3.2	1.C	9.B	7.25	2.3.2	6.1.0.44
11/6/2015	6.3.1	5.3.1	1.C	9.B	7.25	2.3.1	6.1.0.44
5/6/2015	6.2.1	5.2.1	1.B	9.B	7.25	2.2.1	6.1.0.44
8/1/2014	6.1.1	5.1.1	1.A	N/A	7.25	2.1.1	6.1.0.44

Meter Upgrades

The new Firmware and Software is compatible with previous meter hardware depending on the vintage. Previous version hardware will be upgraded at the factory free of charge.

Meters with the PQ Option:
This new Firmware and Software Upgrade is compatible with meter serial numbers 15 38 00339 and higher. Meters with serial numbers 14 32 00001 through 15 37 00338 should be returned to the factory to update the Metrology/PQ Board with the latest hardware.

Meters without the PQ Option:
This new Firmware and Software Upgrade is compatible with meter serial numbers 15 17 00178 and higher. Meters with serial numbers 14 32 00001 through 15 17 00177 should be returned to the factory to update the Metrology Board to update the FPGA.

Some new enhancements added are hardware dependant and will require updates to both hardware and firmware which are factory upgradable. Some new features are cost options which can be added through a factory upgrade. All items fixed in the firmware are field upgradable.

Enhancements	Field Upgrade	Factory Upgrade	Cost Option	Notes
PQ Sag/Swell/Outage	X	X		The PQ Features are field upgradable but limited to trigger settings with filters > 100 msec. A factory upgrade is required to capture PQ events <100 msec in duration
Dual Ethernet		X	X	
IRIG-B		X	X	
Optical test pulse-normal mode	X	X		The test pulse is field upgradable but will not start test pulses for approx 30 sec after power up. A factory upgrade is required for test pulses within 10 sec of power up.
External pulse inputs	X			
Modbus/DNP enhancements	X			
Display auto-time out	X			
PQ Ready		X	X	
Option Board Identification		X		
Software Option Upgrade		X		
USB Ready		X		
PQ Options PQ1, PQ2, PQ3	X	X	X	Can upgrade meters equipped with option PQ
Measurement Log	X	X	X	
Items Fixed in Firmware	Field Upgrade	Factory Upgrade	Cost Option	Notes
All Items	X			

Refer to the Upgrade Procedure when updating your meters. (Contact the service group)

Contact AMETEK for questions on upgrading an older version of hardware, firmware or software at:
AMETEK Power Instruments at: +1 (800) 881-4156