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AMETEK Power Instruments JEMStar II High Accuracy Revenue Meter Firmware and Software Release



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Introduction

This release is intended for all JEMStar II 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
- Software
 - New version JEMWARE II

Firmware Release Versions

| JEMStar II Firmware | New Version | AMETEK Part Number | Replaces Firmware Version |
|----------------------|-------------|--------------------|---------------------------|
| JEMStar II Register | 06.06.03 | 1301-486 | 06.06.01 |
| JEMStar II Service | 05.06.03 | 1301-487 | 05.06.01 |
| JEMStar II Metrology | 1.O | 1301-488 | 1.N |
| JEMStar II PQ | 9.D | 1301-422 | 9.D |
| JEMStar II FPGA | 4.9.7 | 1301-489 | 4.9.7 |

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

If you are a current cell modem customer, factory assistance is required to update your meter. Please contact AMETEK Power Instruments for upgrade support.

Software Release Versions

| JEMStar II Software | New Version | AMETEK Part Number | Replaces Software Version |
|---------------------|-------------|--------------------|---------------------------|
| JEMWARE II Software | 02.6.3 | 1301-466 | 2.6.1 |

Firmware / Software Compatibility

New Firmware to Software Compatibility

| JEMStar II Firmware | New Version | JEMWARE and JEMREAD Compatibility |
|----------------------|-------------|-----------------------------------|
| JEMStar II Register | 06.06.03 | JEMWARE II: 2.6.2 |
| JEMStar II Metrology | 05.06.03 | |
| JEMStar II Service | 1.O | JEMREAD: 6.1.0.65 |
| Power Quality | 9.D | |
| 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:

- Support for worldwide CAT 1 Cellular Modem**
 JEMStar II now supports the use of the CAT 1 cellular modem band allowing global access to the “under glass” cell modem offering.
- HHF Support within JEMWARE II**
 HHF files are now available to be extracted from the JEMStar II meter using JEMWARE II. These files can be accessed by any form of connection available within the JEMStar II. Option location within JEMWARE II below:

- Line Loss Compensation Expansion**
 The JEMStar II now offers an expansion on the loss compensation offered within JEMWARE II. A new settings tab is now available, allowing the user to include Line Loss Calculations to another degree of accuracy compared to previous versions. New screen below:

Loss Compensation

| | Phase A | Phase B | Phase C |
|------------------------|---------|---------|---------|
| Line Resistance (Ohms) | 0 | 0 | 0 |
| Line Reactance (Ohms) | 0.0 | 0.0 | 0.0 |
| Charging VARs | 0.0 | 0.0 | 0.0 |

Line Resistance: Enter the total DC resistance (Ω) of the lines between the transformer secondary and the CT primary

Line Reactance: Enter the Line Reactance

Charging VARs: Enter the Charging VARs

Note: The Line Loss entry is not required for JEMWARE II to calculate Transformer Loss Compensation

- **Instantaneous Measurements Now Available Via Web Page**

The JEMStar II now offers instantaneous measurements to be displayed via a web browser for remote viewing of the meter's current status. New screen below:

- **IP Address Additional Help Information Included**

Communication Setup Settings

| Protocol | Enabled | Port # | Device Address |
|-------------|-------------------------------------|--------|----------------|
| Binary | <input checked="" type="checkbox"/> | 2001 | 1 |
| DLMS | <input type="checkbox"/> | 4059 | 1 |
| Binary | <input checked="" type="checkbox"/> | 2001 | 1 |
| DNPSlave | <input type="checkbox"/> | 20000 | 1 |
| Binary | <input checked="" type="checkbox"/> | 2001 | 1 |
| Binary | <input checked="" type="checkbox"/> | 2001 | 1 |
| ModbusSlave | <input type="checkbox"/> | 502 | 1 |

Maximum 12, Count=7

- **Summation**

The JEMStar II now gives the user the ability to create summation channels to add/subtract various measurements. You can create up to 16 different summation formulas each with up to 8 measurements. These Summation values can be used in:

- Display Registers
- Load Profile
- Input/Output
- Modbus and DNP Communication Protocols

Summation Settings

| Summation 9 | Summation 10 | Summation 11 | Summation 12 | Summation 13 | Summation 14 | Summation 15 | Summation 16 |
|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Summation 1 | Summation 2 | Summation 3 | Summation 4 | Summation 5 | Summation 6 | Summation 7 | Summation 8 |

| ID | Type | Quantity | Phase | Direction | LC | Add/Subtract |
|----|-------------|----------|-----------|-----------|--------------------------|--------------|
| 1 | Consumption | VARHr | Polyphase | Q1 | <input type="checkbox"/> | Add |
| 2 | Consumption | VARHr | Polyphase | Q2 | <input type="checkbox"/> | Add |

Maximum 8, Count=2



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Items Fixed:

- **IP Forwarding Disabled as Default Setting**
- **Watchdog Improvements**

The “Watchdog” program used with the JEMStar II has been improved within the service processor to eliminate the need for users to have to manually power cycle the meter in the event of the service processor entering into an unrecoverable state. This process will restart the service processor in order to eliminate the communication hold up.

Software/Firmware Version History

| Release | Register | Service | Metrology | PQ | FPGA | JEMWARE | JEMREAD |
|------------|----------|---------|-----------|-----|-------|---------|----------|
| 9/15/2025 | 6.6.3 | 5.6.3 | 1.O | 9.D | 4.9.7 | 2.6.3 | 6.1.0.65 |
| 3/21/2025 | 6.6.1 | 5.6.2 | 1.N | 9.D | 4.9.7 | 2.6.1 | 6.1.0.65 |
| 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 Power Instruments for questions on upgrading an older version of hardware, firmware or software at: +1 (800) 881-4156 or +1 (585) 263-7700