TESLA 4000-A Firmware

v1.3a

Release Description

DATE: 2026-10-30

FEATURE ENHANCEMENTS

- Cyber Security:
  - None.
- General:
  - Added support for storage upgrade to a higher memory size.

CORRECTIONS TO ISSUES:

- Cyber Security:
  - None.
- General:
  - None

COMPATIBILITY

TESLA Control Panel Software:	V4.4 and above
RecordGraph Software:	v6.3 and above
ERL 61850 Configurator Software:	V4.1 Rev 0 and above
RecordBase Central Station Software:	v5.7 and above
RecordBase View Software:	v5.7 and above
ICD File Version:	v1.01 Rev 03
Setting Version:	702
TESLA 4000 Model 4000-A User Manual	v1.2 Rev 4
Network Redundancy Module Firmware:	v1.1 and below
Security Notification System User Guide	v1.01 Rev 1

Minor releases, designated with a revision or letter (e.g. v3.4 Rev 1 or v3.4a), maintain the same compatibility as their base version (e.g. v3.4 Rev 0 or v3.4).

ERLPhase Power Technologies Customer Support Contact Information

support@erlphase.com +1 (204) 477-0591 Option 1 www.erlphase.com

REVISION HISTORY

v1.3 - 2025-08-08

- Feature Enhancements:
  - Added support for new hardware variants (A5 and A7) with 8 and 12 analog input channels.
  - Improved GOOSE trigger processing during unit startup sequence.
- Corrections to Issues:
  - Major: Fixed issue where PMU data will incorrectly report nominal frequency of 60 Hz if TESLA is configured as 50 Hz system frequency.
  - Major: Fixed issue where PMU Data Source ID code is incorrectly set to 0, which caused openPDC communication issue.
  - Minor: Fixed issue where the Beh data object under DVI.LLN0 shows an illegal value when the fault locator is triggered.

v1.2 - 2025-04-04

- Feature Enhancements:
  - Added support for Group Record Trigger mode. This feature allows cross-trigger and records combine from up to 8 units which can be mixed between TESLA 4000 and TESLA 4000-A recorders.
  - Enhanced chatter detection feature to include analog trigger chatter detection and user configurable chatter threshold.
  - Enhanced storage alarm to include storage retention days as an additional alarm trigger condition.
  - Enhanced CDR recording to include DC inputs.
  - Added support for 64 GB and 1TB storage drive.
  - Added support for new IEC 61850 Logical Node LCCH to supervise each Ethernet port's communication status.
  - Added ability to transmit Boolean virtual inputs in the PMU digitals.
- Cyber Security:
  - Updated default rbcs user's role to support event collection.
- Corrections to Issues:
  - Major: Fixed issue where CDR data may occasionally get corrupted after setting load with CDR related setting change.
  - Major: Fixed issue where low speed and CDR recording may show wrong calculation for the calculated channels when the associated current input level is very low.
  - Minor: Fixed issue where the current input angle goes to zero when its magnitude is less than 5% of nominal on a 1A nominal CT.
  - Minor: Fixed issue where a couple of summation and sequence channels may incorrectly operate on ROC trigger.
  - Minor: Improved PMU Analog THD accuracy when signal level is low.

v1.1 - 2024-05-01

- General:
  - Made improvements to meet certification requirements of PMU to the latest Synchrophasor standards IEEE C37.118.1a™-2014, IEC/IEEE 60255-118-1-2018. The certification is available at this link. https://standards.ieee.org/products-programs/icap/certification-registry/
  - Major: Fixed issue where the CDR data got erased and over-written when data accumulated to more than 50% of expected retention period.

v1.0a - 2022-10-21

- General:
  - Minor: Fixed issue with the configuration of network ports 410 and 411 when the LAN Redundancy Selection order option is 0 (no redundancy). This production related fix does not affect any units shipped to customers.
  - Minor: Fixed issue where the Reinitialize and Check/Repair Storage maintenance commands on the Maintenance > Storage Memory screen did not work.

v1.0 – 2022-09-02

- Enhancement: This is the first firmware release of the TESLA 4000 Model 4000-A recorder for general availability. Enhancements over Model 4000 include:
  - High speed Transient recorder sampling rates of up to 512 samples/cycle for all 36 channels.
  - Low speed Swing recorder sampling rate of 2 samples/cycle.
  - Enhanced IEC 61850 communication protocol with Edition 2 features.
  - Support for PTP (IEEE 1588) time synchronization.

CLASSIFICATION OF CHANGES MADE

The issues fixed in software / firmware upgrades are classified as defined below. While the decision to upgrade installed products is the user's, these classifications provide a guideline for the need and priority of the upgrade.

Enhancement: Feature enhancements add a capability or extend existing capabilities of the product. Upgrades for such changes need be made only if and when that feature

Critical: Critical changes fix issues/problems that prevent the basic operation of the device and have no workaround. Critical changes merit a product upgrade as soon as possible, if that

function is being used under the conditions causing the issue

Major: Major changes fix problems that prevent the basic operation of the device but do have a workaround. Any major changes merit a product upgrade as soon as possible if the function is being used under the conditions causing the issue and a workaround is not acceptable.

Minor: Minor changes fix non vital issues that do not prevent the basic operation of the device and may or may not have a workaround. Product upgrades for such changes are not necessary unless they apply to and are needed by the user.