T-PRO 4000 Firmware

v1.3a

Release Description

DATE: 2023-06-30

FEATURE ENHANCEMENTS

- Cyber Security:
  - None.
- General:
  - Added support for minor changes to the Main Processor Board hardware to address supply chain issues. This change has no impact on the functionality of the T-PRO 4000 when compared to the v1.3 Firmware release.

CORRECTIONS TO ISSUES

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

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COMPATIBILITY:

T-PRO Offliner	v1.5 or above
Relay Control Panel	v2.5 or above
RecordGraph	v5.3 or above
ERL 61850 IED Configurator	v2.0 Rev 1 or above
RecordBase Central Station:	v4.1 or above
RecordBase View	v3.2 or above
ICD File Version	v3.0 Rev 01
Setting Version	403
T-PRO User Manual	v1.3 Rev 1 or above

Minor releases, designated with a letter suffix (e.g. v3.1a), maintain the same compatibility as the base version (e.g. v3.1=v3.1a).

REVISION HISTORY

v1.3 - 2019-11-29

- **Enhancement:** Cyber Security: Added a message to the event log for user login attempts.
- **Enhancement:** Cyber Security: Removed “View” user password requirement on the front panel so that users may access read-only parameters without needing to login using a password.
- **Enhancement:** Added support for C37.118-2011 compliant IRIG clock sources.
- **Enhancement:** Added the ability to switch between the target event screen and the menu screens on the front panel display to prevent target events from locking the screen.
- **Enhancement:** Updated the default setting file to disable all Target LED assignments in the Output Matrix.
- **Enhancement:** Optimized event handling on the display to improve performance when the IED is heavily loaded.
- **Enhancement:** Improved ability to recover from cases where the front screen goes blank or is disturbed after extreme transient conditions.
- **Major:** Fixed issue where External Inputs failed to turn on their assigned Target LEDs.

v1.2b - 2017-06-09

- **Enhancement:** Add support for enhanced hardware for production use.

v1.2a - 2015-02-14

- **Enhancement:** Supports IRIG external clock sources compliant with C37.118-2005.
- **Enhancement:** Directional earth fault 67N protection feature addition.
- **Enhancement:** Phase segregated trip information in data recording, accessible through Prologic and Output Matrix.

- **Enhancement:** User interface enhancements for new feature support and general functional improvement.
- **Enhancement:** LED and metering enhancements.
- **Enhancement:** DC removal filter for overcurrent elements.
- **Enhancement:** Dual SNTP time server support.
- **Major:** Corrected date processing when time source is internal clock.
- **Major:** IEC 61850 and DNP communications enhancements and corrections.

v1.2 - Not Released

v1.1 - 2014-05-05

- **Enhancement:** Zig Zag transformer configuration support.
- **Enhancement:** Device GUI enhancements for new feature support and general functional improvement.
- **Major:** Modification to trend metering channel definition structure eliminating potential for unit soft restart under successive setting file loads. Firmware update is recommended.
- **Major:** Adjusted Modbus RTU Communication Protocol scaling factor for Read Holding Registers to compensate for higher turns ratio.

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.

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.

Feature 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 enhancement is desired**.**