F-PRO 298 Firmware

v1.8

Release Description

DATE: 2024-11-26

FEATURE ENHANCEMENTS

- Cyber Security:
  - None.
- General:
  - Changed the SNTP design to improve relay performance.

CORRECTIONS TO ISSUES

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

COMPATIBILITY:

F-PRO Offliner Software:	v3.1 or above
Relay Control Panel Software:	v3.3 or above
RecordGraph Software:	v6.1 or above
RecordBase Central Station Software:	v5.5 or above
RecordBase View Software:	v5.5 or above
ERL 61850 IED Configurator Software:	v3.5 or above
ICD File Version	v4.0 Rev 04
Setting Version	6
F-PRO 298 User Manual	V1.7 Rev 0

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).

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REVISION HISTORY

v1.7c – 2024-11-07

- Major: Fixed issue where the IED became unresponsive after being in service for a prolonged period when time is synchronized with SNTP time source.
- Major: Fixed issue where the IED became unresponsive when tries to read already saved virtual inputs status during booting or loading setting file.

v1.7b – 2023-05-12

- Enhancements - General:
  - Added the ability to update the Firmware when connected via the rear Network port.
  - Added the ability to download the Syslog file when connected via the rear Network port.
- Major: Fixed issue where the IED became unresponsive after being in service for a prolonged period when time is synchronized with SNTP time source.

v1.7a – 2022-06-24

- Major: Fixed issue where the TRCALH1.GrAlm and TRCALH1.GrWrm status does not change with function pickup and function operate.
- Minor: Fixed issue where the front panel display goes blank when viewing analog input metering, with the metering selection in primary mode, and then initiating a manual trigger using Relay Control Panel or any configured trigger.
- Minor: Fixed issue where “Recording Please Wait” was permanently displayed on the front panel display if the display was on the home screen when a trigger was manually initiated using Relay Control Panel.
- Minor: Fixed issue where the 81U/O & 81R fault log frequency value is incorrectly not showing decimal points, and angles are incorrectly showing decimal points.
- Minor: Fixed issue where the 27/59IT function of the Reset DTL Timer could not be edited in the front panel display.
- Minor: Fixed issue where the front panel display for the 27/59IT function's curve type selection was not in sequence.
- Minor: Fixed issue where the Active Group number was always reported as “1” in the Record Summary and Event List in Record Graph.
- Minor: Fixed issue where the Hysteresis value of the 47IT function was not being saved when being changed using the front panel display.
- Minor: Fixed issue where the Alarm % Th is editable on the front panel display even when the 49 function is disabled.
- Minor: Fixed issue where the Bay Name displayed on the front panel display showed only 16 characters rather than the full 20.
- Minor: Fixed issue where the 37-2 function pickup range was 0.10A to 1.50A instead of 0.05A to 3.20A on front panel display for 1A CT secondary selection.
- Minor: Fixed issue where 67 N-Ph was displayed on the metering screen in Relay Control Panel instead of 67N.

v1.7 – 2022-01-12

- Major: Fixed issue where the 81U/O function hysteresis setting was not being used correctly to reset the function. The setting has been changed from a percentage to a fixed value.
- Major: Fixed issue where the front panel display goes blank when an External Input transition occurs after using the display to view metering data. The IED remains fully operational other than the loss of the display function.
- Minor: Updated the front panel display view and edit options to better align with F-PRO Offliner software.
- Minor: Fixed issue where a Virtual Input was in the on condition after a power cycle or restart when the following sequence of events occurred:
    - A Latch On command was issued to the Virtual Input using DNP, Relay Control Panel, or front panel display.
    - A Pulse On command was issued to the same Virtual Input without sending a Latch Off command first.

v1.6 – 2021-07-05

- Enhancements - Cyber Security:
    - Improved the firmware update process to improve user experience and increase robustness.
    - Removed IP Address setting from the Setting File to prevent the user from inadvertently changing the IP address and losing connection to the IED when changing other settings. The IP Address can be configured via the IED front panel display or the newly added maintenance terminal via USB.
- Enhancements - General:
    - Added the ability to receive MMS Single Point (latched/pulsed) and Double Point (pulsed) control commands (SPC/DPC) from IEC 61850 clients.
    - Added the reporting of control command status in metering, events, and IEC 61850 messages.
    - Added the reporting of Control Mode status in events and IEC 61850 messages.
    - Added the ability to reset the Output Contacts and Target LEDs using ProLogics, External Inputs, Virtual Inputs, Single Point commands or Relay Control Panel.
    - Added the ability to select the Control Mode setting as Local, Remote, or Off, using the front panel display or Relay Control Panel.
    - Added a maintenance terminal to facilitate management of network parameters and utilities, system diagnostics, and restoring default settings. This terminal is accessible via the front panel USB port. Refer to the product manual for details.
- Minor: Fixed issue where the 81U/O function was not being reset correctly per the hysteresis setting.
- Minor: Fixed issue where calibration could not be completed if the IED was configured for 60Hz with active signals on all of the voltage and current channel inputs.
- Minor: Fixed issue where the names for ProLogic metering channels were incorrectly displayed in Relay Control Panel when configuring multiple setting groups.

- Minor: Fixed issue where RecordGraph always displayed SG01 for all ProLogic channels.
- Minor: Fixed issue where the status of Virtual Inputs were reset when the IED was restarted.

v1.5 – 2021-04-19

- Enhancement (Cyber Security): Added support for file transfer using IEC 61850 MMS.
- Enhancement: Enhanced IEC 61850 communication protocol with Edition 2 features.
- Enhancement: Modified the text and setting ranges on the front panel display to match the F-PRO 2000 Offliner settings.
- Major: Fixed issue where External Inputs (EIs) were used incorrectly when selected as ProLogic inputs:
    - Selecting EIs 8 or 13 resulted in these inputs being ignored.
    - Selecting EI 5 resulted in EI 6 being used.
    - Selecting EI 7 resulted in EI 6 being used.
    - Selecting EI 8 resulted in EI 7 being used.
    - Selecting EI 14 resulted in EI 13 being used.
- Major: Fixed issue where the front panel user interface became unresponsive when the 27 function was enabled and the system frequency deviated from nominal by more than 5Hz.
- Minor: Fixed issue where fault records were extended beyond the maximum record length if fault trigger conditions continued to occur before the end of the recording.
- Minor: Fixed issue where AutoRecSt.stVal was indicating the incorrect value when the recloser was in the lead lockout state.

v1.4 – 2019-12-17

- Enhancement: Added a counter to report the number of Auto Reclose (AR) events within the present sequence, and a counter to report the cumulative overall number of AR events.
- Enhancement: Added Fault Locator feature, which can be initiated by the following functions: 50/67, 51/67, 50N/67N, 51N/67N, 64/50SEF, and 64/51SEF.
- Enhancement: Added support for the user to select between the 'Sequence' or 'Quadrature' polarization method when configuring the 67 Phase Overcurrent Directional Element.
- Enhancement: Changed the polarization method used by the 67N and 67SEF functions from Quadrature to Sequence.
- Enhancement: Added support for the user to select the phase for the ‘Synch Voltage Input’.
- Enhancement: Added an additional 'Voltage Difference' check to the 25 Check Synchronization function.
- Enhancement: Added the ability to control Virtual Inputs and LEDs via the front panel.

v1.3 – 2019-07-17

- Critical: Improved syslog file logging after exception is thrown.
- Major: Fixed issue in LCD/HMI where wrong time was displayed when set to Local Time with Daylight Saving Time.
- Major: Fixed issue where an improper modulated IRIG-B was received, due to multiple IED's connected to the port of GPS receiver.
- Major: Fixed issue with the 'DO' drop out timer, the 'DO' reset was not considering the timer setting and was dropping out instantly after the fault was cleared.

v1.2 – 2018-01-02

- Enhancement: Added support for LCD back-light time out after the event popup.
- Major: Fixed issue in VSYNC and ISEF primary value shown in RecordGraph.
- Major: Fixed issue in P/F_GENERAL_LS_TRIP & Sequence change in Fault parameters in IEC103.
- Major: Fixed issue in fault log value of Line voltage in IEC61850.
- Major: Fixed issue in DR, current waveform is not recorded in IN analog current value.

v1.1 – 2018-07-02

- Enhancement: Added support for DNP3.0 protocol.

v1.0 – 2018-06-01

- Initial release.

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.

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**.**