



RecordGraph

v5.3

Release Description

FEATURE ENHANCEMENTS

- Export a single COMTRADE file with all measured and derived channels.
- L-PRO 4500: Added support for the following analog input product variants: 10 CT + 6 VT, 5 CT + 4 VT
- L-PRO 4500 and T-PRO 4500: Added support for the following External Input and Output Contact product variants, 8 in + 8 out, 16 in + 16 out, 16 in + 24 out, 24 in + 32 out.
- T-PRO 4500: Added support for two different CT secondary ratings to support a mix of 1A and 5A CTs.
- T-PRO 4500: Added support for 21 Backup Impedance Protection.

CORRECTIONS TO ISSUES

- **Major:** Fixed issue where the secondary to primary scaling for the 3V0 channels was performed incorrectly for L-PRO.
- **Minor:** Fixed issue where the 50BF event didn't show phase information for T-PROs.



COMPATIBILITY:

Compatible with records produced by:	B-PRO 4000: v2.0 and below B-PRO Multibus: v1.1 and below B-PRO 8701: v3.0 and below B-PRO 8700: v4.0 and below F-PRO 4000: v1.0 F-PRO 5100: v4.0 and below F-PRO 215: v1.9 and below F-PRO 216: v1.2 and below F-PRO 235: v2.4 and below F-PRO 295: v1.4 and below F-PRO 297: v1.1 and below F-PRO 298: v1.1 and below L-PRO 4500: v2.0 and below L-PRO 4000: v2.5 and below L-PRO 2150: v1.1 and below L-PRO 2100: v5.0 and below S-PRO 4001: v2.0 and below S-PRO 4000: v1.0 T-PRO 4500: v2.0 and below T-PRO 4000: v1.2 and below T-PRO 8700: v5.0 and below TESLA 4000: v2.0 and below TESLA 3000: v2.7 and below TESLA 2000: v4.1 and below TESLA 4003: v1.0 TESLA LITE: v1.1 and below IO Expansion v1.0
Microsoft Windows	Windows 7 Professional Windows 10 Professional

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

v5.2a - 2018-09-05

- **Major:** Corrected the calculation of derived current IN for F-PRO 215 and F-PRO 216.
- **Major:** Fixed an issue where the primary mode measurement of derived current IN used the Phase VT ratio instead of the Phase CT ratio for F-PRO 235, F-PRO 297 and F-PRO 298.

v5.2 - 2018-04-13

- **Enhancement:** Changed high speed, CDR, swing, and trend record and event log filenames and file formatting to meet NERC PRC-002-2 requirements.
- **Enhancement:** Increased the number of supported frequency triggers to 12.
- **Enhancement:** Added 87N differential view.
- **Enhancement:** Added support for B-PRO Multibus
- **Enhancement:** Added support for L-PRO 4500
- **Enhancement:** Added support for T-PRO 4500
- **Enhancement:** Added support for F-PRO 298
- **Major:** Fixed issue with crashing when calculating Power Factor derived channels on any records.
- **Minor:** Fixed issue where the template could not be saved when used with Windows 10.
- **Minor:** Corrected the calculation of Winding Currents for T-PRO IEDs.
- **Minor:** Removed the restriction of only allowing phase A, B or C identification in Phasor view for T-PRO IEDs. This allows the user to add HV 3I0 and LV 3I0.

v5.1b - 2017-09-28

- **Enhancement:** Added support for COMTRADE record naming convention compliant with DigSILENT PowerFactory Monitor (PFM) software.

v5.1a - 2017-05-25

- **Major:** Correct issue where export to CSV fails from records that contain inputs from any of the following:
 - Model 401025 – 1A/5A CT Input Module
 - Model 401026 – 69Vac PT Input Module
 - TESLA LITE CT Inputs

v5.1 - 2017-03-31

- **Enhancement:** df/dt derived channel calculation added to CDR (Continuous Data Recording) record export to CSV, COMTRADE and PTI formats.
- **Enhancement:** Power Factor derived channel calculation added for CDR and Swing record export to CSV, COMTRADE and PTI formats.

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- **Enhancement:** Option provided to select Time Tag (UTC or local time) in CDR, Swing and Fault records exported to CSV.
- **Enhancement:** Add support for the F-PRO 297 Feeder Protection Relay
- **Enhancement:** TESLA derived channel calculations cached in RAM instead of being appended to the source record to preserve the original record unmodified.
- **Major:** Correct issue where df/dt derived channel could not be exported from a Swing record.
- **Minor:** Corrected issue with Swing records where all channels were exported even if only a few channels were selected.

v5.0 - 2016-12-18

- **Enhancement:** Add compatibility with records created by units that support leap second.

v4.9 - 2016-06-08

- **Enhancement:** Initial release of the RecordGraph as a stand-alone Windows installer.
- **Enhancement:** Initial release of the RecordGraph User Manual.
- **Enhancement:** Added sub-harmonic calculations using 5Hz resolution to provide more accurate results when analyzing records with a shorter duration of transients. The user can select either 1Hz (1s) or 5Hz (0.2s) resolution.
- **Enhancement:** Added a user selectable option to enable or disable a high pass filter to remove the sub-harmonic components of a waveform, allowing more accurate representation of the fundamental and harmonic components.
- **Enhancement:** Added an option for the user to choose the reference channel for phase angle calculations in the Phasor and Symmetrical Component views.
- **Enhancement:** Added support for viewing and saving setting files corresponding to ERL records.
- **Enhancement:** Added the ability to open records by double clicking on them.
- **Major:** Corrected issue with accuracy of TSHD (Total Sub-Harmonic Distortion) calculation.
- **Major:** Corrected issue with RG crashing when displaying the harmonic measurement of a record with a sampling rate of 384 samples per cycle.
- **Minor:** Corrected issue with the R-X plot being shown one cycle later than the corresponding sampled data.
- **Minor:** Corrected issue where COMTRADE export selection is unavailable for a T-PRO 4000 trend record.
- **Minor:** Corrected issue where the serial number of the IED is not displayed in the Template Tool Tip information.
- **Minor:** Corrected issue where Watt/Var reading is displayed with incorrect polarity on high speed recordings.
- **Minor:** Corrected issue where positive sequence current channels were not included in a low speed COMTRADE export.

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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.

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