RecordGraph

v6.5 Rev 1

Release Description

DATE: 2026-11-02

FEATURE ENHANCEMENTS

- None

CORRECTIONS TO ISSUES

- Minor (T-PRO 4500, T-PRO 2000): Corrected the scaling factor and unit conversion for the 3I0 HV and 3I0 LV channels in RG.
- Minor (T-PRO 4500): Corrected the calculation for the 3I0 TV summation channel to ensure the values are properly displayed.

COMPATIBILITY:

Compatible with records produced by:	B-PRO 4000: v2.1a and below B-PRO 4000 Multi Busbar: v1.2b and below B-PRO 8701: v3.0a and below B-PRO 8700: v4.0a and below F-PRO 4000: v1.0 F-PRO 4500: v1.0 F-PRO 5100: v4.0 and below F-PRO 215: v2.0 and below F-PRO 216: v1.4 and below F-PRO 235: v2.6 and below F-PRO 295: v1.5a and below F-PRO 297: v1.3 and below F-PRO 298: v1.8 and below L-PRO 4500: v2.4 and below L-PRO 4000: v2.6b and below L-PRO 2150: v1.1 and below L-PRO 2100: v5.0a and below M-PRO 2000: v1.0 S-PRO 4001: v2.1 and below S-PRO 4000: v2.1a and below T-PRO 2000: v1.0

	T-PRO 4500: v2.3 and below T-PRO 4000: v1.3a and below T-PRO 8700: v5.0 and below TESLA 4000: v2.4 and below TESLA 4000 Model 4000-A: v1.2 and below TESLA 4000 Model 4000-SV: v1.5 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 v1.1
RecordBase Central Station	v5.8
RecordBase View	v5.8
TESLA Control Panel	v4.3 and below
Relay Control Panel	v3.9 and below
Microsoft Windows	Windows 10 Professional - 64bit Windows 11 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

v6.5 Rev0 – 2025-01-05

- Enhancement: Added different harmonic order limit in harmonic view in order to support IEC 61869-9 defined sample rates.

v6.4 Rev0 – 2025-08-08

- Enhancement: Added support for T-PRO 2000 records.

v6.3 Rev0 – 2025-04-01

- Enhancement: Upgraded to 64 bits application.
- Enhancement: Introduced an Absolute Time view in order to auto time align traces from different records.
- Enhancement: Added support for M-PRO 2000 record files.
- Enhancement: Added support for F-PRO 4500 record files.
- Minor: Fixed issue where THD measurement in Harmonic View is forced to zero if the fundamental value is less than 10% of nominal.
- Minor: Fixed issue where RecordGraph could crash on some particular record file while trying to zoom in on the graph.
- Minor: Fixed issue where RecordGraph could crash when applying a template after deleting multiple opened record files.
- Minor: Fixed issue where existing graph view(s) were closed automatically when a new record was imported or added.
- Minor: Fixed issue where the station name field was showing the serial number data incorrectly when exporting to COMTRADE.

v6.2a Rev1 – 2024-02-01

- Major: (TESLA 4000-SV, TESLA 4000-A): Fixed issue where RecordGraph could crash when opening some TESLA4000-SV or TESLA 4000-A's records.

v6.2 – 2023-01-25

- Enhancement: Added the ability to export ERLPhase product records to COMTRADE 2013.
- Enhancement: Added the ability to view COMTRADER 2013 format records
- Major: (all TESLA models): Fixed issue where External Input channels are displayed as Analog channels instead of Status channels for slow speed records (Swing, CDR) when exported to COMTRADE.
- Major (all TESLA models): Fixed issue where slow speed records (Swing, CDR) were not showing the calculated Sequence and Power channel values properly when sequence channel is set for ACB phase rotation.

- Major: Fixed issue where the Sub-Harmonic view display was not showing the frequency and magnitude values properly.
- Minor (all TESLA models): Fixed issue where the absolute time option was not showing the time value properly.
- Minor: Fixed issue where the existing graph view(s) were closed automatically when a new record was imported or added.
- Minor: Fixed issue where the station name field was showing the serial number data incorrectly when exporting to COMTRADE.
- Minor: Fixed issue where the time values in the exported COMTRADE file were PC local time instead of UTC time.

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v6.1a – 2022-09-02

- Minor: Fixed issue where a time offset was added to the exported COMTRADE records when a df/dt channel is exported along with other low speed channels.
- Minor: Fixed issue where the full channel name cannot be displayed in the RHS view if the name is too long.

v6.1 – 2021-12-17

- Minor: Fixed issue where enumerated channels were not being displayed correctly for TESLA cooperative group records.
- Minor: Fixed issue with RecordGraph Windows installer where it would warn that there was a newer version already installed, even when this wasn't the case.
- Minor: Fixed issue where RecordGraph was unable to calculate derived channels when it was launched on a selected record from RecordBase Admin or RecordBase View.
- Minor: Fixed issue where RecordGraph may exit unexpectedly when exporting a low-speed digital channel to COMTRADE under some conditions.
- Minor (TESLA LITE, TESLA 4000, TESLA 4000-SV, TESLA 4003): Fixed issue where the harmonic amplitudes were incorrectly reported in some views for higher order harmonics.

v6.0 – 2021-07-05

- Enhancement: Added support for displaying the Control Mode status with records from IEDs that support Control Commands.

v5.9a – 2021-03-05

- Minor (T-PRO 4500): Fixed issue where REF IO and REF IR quantities were being incorrectly calculated.

v5.9 – 2021-02-26

- Enhancement •(TESLA 4000-SV): Added support for displaying PTP (IEEE 1588 v2) time synchronization status.
- Minor (TESLA 4000-SV): Fixed issue where External Input, Virtual Input and Logic channels would only be displayed if they had state transitions within the recording.
- Minor (TESLA 4000): Modified the sequence quantities channels list available for export to COMTRADE to match the available channels list of the native format High Speed records.

v5.8 – 2021-01-15

- Enhancement (TESLA 4000-SV): Added support for displaying Virtual Inputs with data types of Dbpos (DPS Double Point Status), Health, Int32, and Int32u in the graphs.
- Enhancement (TESLA 4000-SV): Added the ability to enable/disable the exporting of Data Quality information to CSV.
- Major (all relays): Fixed issue where the digital channel names were not shown correctly when opened with RecordGraph v5.7.
- Minor (TESLA 4000-SV): Fixed issue where the state of non-BOOLEAN Virtual Inputs were incorrectly exported to CSV.
- Minor (TESLA 4000, TESLA 4000-SV): Fixed issue where the Apparent Power Magnitude was being displayed in secondary values instead of primary values.
- Minor (TESLA 4000-SV): Fixed issue where the Data Quality of derived digital channels was offset by one sample relative to the data channel.
- Minor (all): Fixed issue where the default template didn't display digital channels in the graph if the channels were high for the duration of the record.
- Minor (TESLA 4000, TESLA 4000-SV): Fixed issue where the unit of the three phase Apparent Power (VA) was incorrect in the exported COMTRADE record when two lines were summed.
- Minor (TESLA 4000-SV): Fixed issue where the Data Quality of a high speed event derived channel was incorrect in a CSV exported from a combined fault and swing recording. The Data Quality for the same low speed event derived channel was correct.
- Minor (all): Fixed issue where the transitions of digital channels on the graph were displayed up to one half of a sample time (i.e. 0.5/sample rate) away from the actual time of that event. This was a plotting issue only, and did not affect the time stamps shown in the event list.

v5.7 – 2020-11-13

- Enhancement (TESLA 4000-SV): Added support for displaying Data Quality information for record events and for exporting Data Quality information to CSV.
- Enhancement (TESLA 4000-SV): Added support for Virtual Inputs with data types of Dbpos (DPS Double Point Status), Health, Int32, and Int32u. These data types are displayed in event lists and can be exported to CSV.
- Enhancement (all): Added support for displaying GOOSE Virtual Input channels as separate channel groups where previously they were grouped with External Inputs.
- Enhancement (TESLA 4000-SV): Added support for displaying Logic Channel status.
- Minor: Fixed issue where an External Input is displayed as an Analog value after exporting a swing recording to COMTRADE.
- Minor: Fixed issue where the External Input triggers were not derived in the swing recording.

v5.6 – 2020-04-24

- Major: Fixed issue where the harmonic amplitudes were incorrectly reported when viewing ERLPhase native format records from a TESLA 4000. COMTRADE format records were not impacted by this issue.
- Minor: Fixed an issue where a derived channel calculated by RecordGraph was incorrect when it used a summation channel as an input, and that summation channel used a second summation channel with a non-zero angle offset as an input.

- Minor: Fixed an issue where some channels were displayed incorrectly under some conditions when viewing coop records.

v5.5 – 2020-03-02

- Enhancement: Added support for RecordBase Central Station v5.0 (RecordBase Admin) and RecordBase View v5.0.
- Minor: Fixed issue where the time between the cursors isn't shown correctly under some circumstances.
- Minor: Corrected the reverse zone impedance view when it is set as Quadrilateral by applying the reactance tilt angle setting.

v5.4a – 2019-05-03

- Major: Fixed issue where viewing a COMTRADE record in harmonic, subharmonic or impedance view resulted in a crash.
- Minor: Fixed issue where the “Browse” button didn’t work when in the ‘Relay Characteristic Data and Impedance Option’ pop-up window under the impedance view when a COMTRADE file is opened.
- Minor: Fixed issue where some of the settings in the “Relay Characteristic Data and Impedance Option” pop-up window were not displayed according to the selected L-PRO or the T-PRO 4500 setting file when opening a COMTRADE record.
- Minor: Fixed issue where the user could not add an Impedance view when viewing a T-PRO 4500 record with a setting version of 602.

v5.4 – 2019-03-31

- Enhancement: Added the ability to configure the mode in which time is displayed: UTC, Local Time with Daylight Saving Time (DST), or Local Time without DST.
- Enhancement: Added the ability to configure putting records created by the AutoCOMTRADE utility into a Year/Month/Date folder structure when operating in DigSilent mode.
- Minor: Fixed issue where closing a record did not release the PC RAM until the application was closed. This led to excessive RAM usage if many records were opened and closed in the same session.
- Minor: Fixed issue where the time mode shown for the marker didn’t match the time mode shown at the bottom of the screen when viewing Trend records.
- Minor: Fixed issue where RecordGraph couldn’t open COMTRADE files created by some 3rd party tool under certain conditions.
- Minor: Fixed issue that prevented the loading of the L-PRO settings file in the “Relay characteristics and Impedance Options” screen.
- Minor: Fixed issue where the Operating and Restraint channels were not being exported correctly to COMTRADE format starting with RecordGraph v5.3.

v5.3 - 2018-11-06

- Enhancement: Export a single COMTRADE file with all measured and derived channels.
- Enhancement: L-PRO 4500: Added support for the following analog input product variants: 10 CT + 6 VT, 5 CT + 4 VT

- Enhancement: 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.
- Enhancement: T-PRO 4500: Added support for two different CT secondary ratings to support a mix of 1A and 5A CTs.
- Enhancement: T-PRO 4500: Added support for 21 Backup Impedance Protection.
- 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.

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.
- 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.

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 enhancement is desired.

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.