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================================================================================
Readme.txt file
================================================================================
FLUKE PowerLog 430-II Advanced Software Version 5.9
Devices currently supported are:
Fluke 434-II firmware V05.02 or later
Fluke 435-II firmware V05.02 or later
Fluke 437-II firmware V05.02 or later
Fluke 438-II firmware V05.02 or later
Actual firmware version at release date is V05.07
Power Log is supported on Windows 8.1 and Windows 10
(32bit and 64 bit version)

================================================================================
Power Log 5.9
================================================================================
Power Log 5.9 Improvements:
+ fixed an issue that caused incomplete printed/pdf reports.
+ fixed an issue that led to wrong data being shown in charts
    for 2-element delta topology.
+ fixed an issue in data managment that caused wrong
    THD and harmonic data to be show for 2-element delta topology.
+ fixed an issue with enable/disable LNG channel fundamental in VA tab
    for 2-element delta topology.
+ fixed an issue that caused PowerLog to show a "common calendar error"
    when loading data from SD-card.
+ fixed an issue that prevented creating EN50160 reports when certain
    limit information was not discovered.
+ fixed an issue that caused incorrect results for "active power" on
    the statistics page.
+ fixed an issue that led to a mismatch in recording duration vs
    available data; data was not imported correctly.
+ fixed a scaling issue with "Energy View" -- data got scaled to MWh when
    kWh should be shown.

Power Log 5.9 Known issues:
- see Power Log 5.8, below.

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Power Log 5.8 Known issues:
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- Restoring tasks from an SD card has to be performed via Task tab of the
   download menu, not via File open menu.
   Opening a TASK.DAT file via the file open menu is not supported.
- Task Backup, does not save tasks on the instrument if there are no
   measurements saved on the instrument
- Partial download gives incorrect timestamps
- With voltage scaling adjusted to measure in mid- or high-voltage systems,
   overdeviation measeurements overflow and results are shown as overload "OL".
================================================================================
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Power Log 5.8 Improvements --- revision 5.7 has NOT BEEN PUBLISHED
==========
- Fixed exported text for languages zh-TW, zh-CN, ru-RU
- Fixed incorrect data on statistics page for language ru-RU
- Fixed export of incorrect status for DC
- Fixed selection for export of "Energy Loss" parameters
- Fixed incorrect data on statistic page for scaled voltages
- Fixed Nominal Voltage in EN50160, GR54149 and GOST33073 reports when voltage
  scaling was used.
- Fixed apparent, reactive, active, forward and reverse energy for 3ph-delta
- Fixed display of events detail in DIP/SWELL page (for CBEMA diagram)
- Fixed "no response" when trying to create GOST report while limits are missing

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Power Log 5.7 Improvements --- revision 5.7 has NOT BEEN PUBLISHED
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- Changed the End-User-License-Agreement to allow for multiple installations
(seats).
- Fixed Energy readings for 3ph-delta topology.
- Added copy button for remote control.
  Clicking the button copies the screen image to clipboard.
- Improved duration display to show only relevant time strings
  Instead of e.g "0m. 0s. 345ms", PL now shows "345ms"
- Fixed legend for Dips & Swells chart
- Corrected text for "total" on Energy tab
- Fixed an issue with hungarian date notation in conjunction with
  special date delimiters
- Added name information to downloaded screens
- Fixed channels display for Power tab
- Fixed transient event selection; clicking on the event in VHA Trend
  used to point to a wrong wave event
- Added VA for IEEE power display
- Changed date / time pickers in download dialogue
- Updated German translation
- Fixed "Select Channels" radio buttons enable/disable in download dialogue
- Updated scaling for energy loss tab
  moved "sources" to the right side of the graph,
  fixed color dialogue,
  fixed cursor tool tip
- Typo in "Motor Analyzer" information
- Fixed downloading of events in logger mode
- Fixed scaling of VAH tab graphs when events are present
- Fixed saving/loading monitor limits to/from .fpqo files
  Used to lose limits requird for GOST reports
- Changed header line of reports to only show the file name, not "Meas xy"
- The download button only becomes enabled when it should. Before, using the cursor
on the
  preview chart could cause the download button to become enabled.
- Fixed exports of status information for harmonics

- Added GOST 33073 reporting (partial)
- Adjusted UI space for German translations
- Changed the PowerLog 430-II EULA to become more permissive
- Improved UI behavior for Overdeviation readings in overload conditions

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Power Log 5.6 Known issues:
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- Restoring tasks from an SD card has to be performed via Task tab of the download menu, not via File open menu.
  Opening a TASK.DAT file via the file open menu is not supported.
- Task Backup, does not save tasks on the instrument if there are no measurements saved on the instrument
- Partial download gives incorrect timestamps
- Exporting interharmonics to .txt file not working
- Date/time conversion in Finnish and Spanish regional setting is giving an error message during download. Changing regional settings to US or other regional setting will fix this will fix this.

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Power Log 5.6 Improvements:
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- Fixed %f, %r and rms conversion for harmonics
- Fixed power trend in PowerWave mode in 3 phase delta topologies
- Fixed importing harmonics data from .fpqo file
  Harmonics scaled to rms are now shown correct
- Fixed power scaling
- Phase identification L1,L2,L3 or A,B,C set identical to the instrument
- Fixed exported values of harmonics
- Scrolling PowerWave improved

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Power Log 5.5.1 Improvements:
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- Fixed EN50160 report generation

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Power Log 5.5 Improvements:
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- Transients wave is now a min/max trace
- Opening a .fpqo file gives the same results as opening direct from SD card
- PowerWave scaling corrected

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Power Log 5.4 Improvements:
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Generic Remarks
- Correct the Statistics tab calculation for Total Power and Total VA
- Corrected Voltage and Current tab and Spreadsheet tab voltage readings for Delta Open Leg configuration

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Power Log 5.3 Known issues:
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- Restoring tasks from an SD card has to be performed via Task tab of the download menu. Not via File open menu. Opening a TASK.DAT file via the file open menu is not supported
- When scrolling to the end of a PowerWave waveform the last portion of the waveform is not displayed correctly
- Task Backup, does not save tasks on the instrument if there are no measurements saved on the instrument

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Power Log 5.3 Improvements:
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New Functions
 - Added Korean language to the UI and Report
 - GOST 32145 reporting for measurements made with Monitor mode using GOST GR32144 template

Generic Remarks
 - Improved Harmonics conversion from %f to %r or rms values and vice versa
 - Fixed calculation of %f harmonics for current if voltage is not measured
 - Fixed Channel labeling for Inrush measurement in Delta configuration
 - Improved export of event data
 - Improved speed for export of data to .TXT file
 - Fixed issues with downloading from V3.x firmware without device information
 - Fixed issues with downloading Events from Fluke 434-II instruments
 - Improved Dips&Swells tab to include Dips and Swells from Fluke 434-II
 - Fixed issues with report function for single phase measurements
 - Fixed issues with Split Phase not downloading Events for phase L2/B
 - Fixed issues with incorrect downloads for Vpp and Watt data
 - Fixed issues with displaying power for L2/B and L3/C for delta configuration
 - Fixed issues with Amp, PF and W download for 3 Phase IT configuration
 - Fixed issues when opening of older *.fpqo files
 - Fixed magnitude for all Power graphs
 - Fixed magnitude for report of Power data
 - Fixed magnitude for Power data in spreadsheet TAB

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Power Log 5.2 Improvements:
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New Functions
 - Added Fluke 438-II to the list of supported models
 - Added new Motor Analyzer tab to support Fluke 438-II
 - Added Vdc and Adc parameters to support new functions in firmware V05.00
 - Added new parameters to Energy Loss Calculator to support firmware V05.00

- Added GOST32145 Report for Monitor mode measurements.
- Added Export of RMS Event profiles to .TXT file
- Added Unicode language support to the installer
- Translated installer to all languages supported by PowerLog
- Added scaling information to Summary tab

User interface improvements
- Model noun of the connected instrument is shown on summary screen and stored in .FPQO file
- Removed Column Total from Spreadsheet tab I there is no data available
- Fixed issues with cursors when activating and deactivating channels
- Fixed multiple popups when communication errors occurred
- Fixed issues when using Display settings > 100%
- Improved harmonics histogram using right axis scale for rms values
- Fixed cursors and cursor labels in harmonic tab
- Reduced the amount of cursor values in harmonics time evolution view to prevent overlapping windows
- Improved Power tab by moving VAharmonics and VAunbalance scaling to the left axis
- Fixed issues with scaling of Wave events
- Fixed scaling issues for PowerWave
- Disabled neutral current channel for 3 wire systems
- Fixed vertical scaling in Inrush mode

Generic Remarks
- Fixed issue when selecting Start Time > Stop Time in Monitor mode
- Fixed issues with "All" and "None" buttons in Export dialog window
- Corrected DLL version information for reading data from USB, WiFi and SD-Card

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Power Log 5.1 Improvements:
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New functions
- Added wireless downloading data using WiFi with the FC-SD 8GB Wireless SD Card. WiFi download is added to the File menu and button bar. To be able to download using Wifi, make sure your instrument is equipped with a FC-SD 8GB Wireless SD Card, connect your computer WiFi connection to the SSID Fluke 430-II <serial number> where serial number is the serial number of your instrument.

Generic remarks
- Fixed displaying Events captured on the instrument prior to the first valid measurement results
- Fixed issues with Cos Phi and DPF showing 99 as min value in spreadsheet
- Fixed issues with Crest Factor not indicating Over Load correctly
- Added Cos Phi, DPF per phase for delta wiring configurations
- Fixed issues with Statistics tab not showing THD values for current
- Fixed Access violation error when downloading measurements with Efficiency Factor measurements

- Fixed issues with Spreadsheet tab filter function when selecting Transients
- Fixed issues with files not being closed
- Fixed issues with timestamp for start of Wave Events

User interface improvements
- PowerLog 430-II now has new improved icons for shortcuts
- Added scaling information for Crest Factor in Voltage and Current tab
- Fixed issues with channel selection for Energy Loss function in download window
- Fixed issues with Statistics tab when selecting Power Harmonics
- Improved scaling for Power Inverter Efficiency tab
- Fixed issues for deselecting THD in Power Harmonics tab
- Fixed issues with progress bar when downloading via USB
- Removed neutral harmonics display when using Monitor function
- Fixed issues with Remote Control when Windows Display Setting is set to 125% or 150%
- Fixed missing k scalar when measuring kilovolts
- Fixed trend scaling issues for several modes
- Corrected labels for Total Power
- Fixed width issues with first column width when printing Spreadsheet tab
- Fixed issues with Time axis when zooming in
- Ctrl+X is assigned to Copy, Ctr+F4 is assigned to Close current window

Data download improvements
- Fixed issues with Transient Events not being downloaded
- Fixed issues when downloading measurements with a large number of events
- Fixed issues when downloading a Monitor measurement with short duration (less than 10 minutes)
- Fixed issues with number of downloaded events not being correct

Report writer improvement
- The report writer shows a Fluke logo as default logo
- Monitor function now includes a report according to the GOST R 54149-2010 standard
- Fixed issues in reports with missing 1/2cycle values

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Power Log 5.0 Improvements:
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Generic remarks
- This version of PowerLog only supports the Fluke 43x series II of instruments.
- PowerLog Classic (Version 4.x) supports the Fluke 1710, Fluke 345, Fluke 1735 and Fluke 43x series I
- File name extensions has changed from .FPQ to .FPQO to distinguish from old files made with previous versions of PowerLog
- PowerLog 5.0 will rename .FPQ files into .FPQO if the measurement

originates from a Fluke 430 Series II instrument

User interface improvements
- Corrected behavior of check boxes. In some situations check boxes were disabled and not be selected
- Corrected drag and drop behavior. Dropping files on PowerLog window now only opens supported file types
- The RMS Event tab title now includes information on event type and includes a timestamp of the event
- Added OL (Overload) indication to Spreadsheet for CF, PF and DPF readings
- Improved spreadsheet tab by adding an empty row between date / time stamped measurement sets.
- added Avg. to u (mu) symbol in statistics tab to explain its meaning
- Fixed issues when changing scaling from %r to %f or to rms in the Harmonic Tab
- Fixed issues with drawing graphs in Harmonics Time Evolution when THD is selected
- Fixed issues with event selection box for Transients function
- Improved display of harmonics. Parameters not measured are shown in gray
- Fixed scaling issues for manual scaling of energy trend
- Fixed issues nonstandard Windows DPI settings (scaling)
- Improved Download preview window when selecting Energy
- Improved entering Demand load current for TDD calculation
- Corrected units for apparent power to VA
- Corrected units for accumulated cost in spreadsheet tab
- Fixed Scaling issues for inrush current
- Fixed issues with automatic scaling
- Fixed issues with neutral trend being zero in RMS Event tab

Data download improvements
- Fixed issues when selecting time window for downloading data
  - Resolved invalid entries due to regional settings
  - Improved resolution for selecting download window
- Resolved timestamp issues when downloading data from a selected time window (partial download)
- Resolved issues with drawing graphs after downloading data
- The download window preview tab now shows more than 32 days of data for long recordings
- Fixed incorrect error messages when opening FLUKE folder from SD Card
- Fixed download issues for Win 8 with large amount of events
- Added download capabilities for events on 434-II
- Fixed issues with screen downloads with wrong index
- Fixed issues when downloading screens if no measurement data is stored
- Fixed issues when downloading waveforms for PowerWave function

New functions
- Added support for Zero Unbalance and Pst parameters to support Fluke 430-II firmware V4.04 and later
- Added support for downloading data from Fluke 430-II via virtual COM ports (For example when using a com port redirector on LAN networks)

- Added option to download event details (Event details show all
  crossings of RMS limit thresholds

Report writer improvement
- Fixed issues with time selection for The Report Writer Assistant of the
  Print report function

Data export improvements
- Improved timestamps in Spreadsheet tab to prevent from double timestamps
- Improved export of data to text file. In some situations the data was
  not aligned properly and columns where misplaced
- Fixed issues when exporting data with Flagging status included
- Fixed exporting of status for Flicker parameters
- Fixed exporting columns that are not measured as zero's
- Exported data now uses data format from Windows settings

File handling improvements
- Improved installer to prevent from invalid scratch disk configuration
  and not being able to open large files
- Resolved issues when writing large files
- Fixed issues when opening empty files
- Added warning message when opening .FPQ files created with earlier
  versions of PowerLog
- Fixed issues when opening files which only contain screens
- Improved available memory gauge in download window to include 16GB
  Scratch disk

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Power Log 4.3.1 Improvements:
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- Fixed connection problems with 430-II and baudrate settings other than
  460800 baud

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Power Log 4.3 Improvements:
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– Fixed downloading problems for 1735
– Fixed scaling errors for 1735
- Several small UI improvements and corrections
- Fixed Wave Event time error of 1 minute
- Corrected Power inverter mode last readings always being 0
- Corrected TDD timestamps
- Added function to calculate Harmonics %, %f and rms
- Corrected parameter mismatch for 430-II
– Fixed Scaling Statistics page and cursors
– Fixed nominal voltage readout on 1735 in Delta configuration
– Summary tab extended with ms timestamps
- Added TDD to printout for Spreadsheet tab
- Corrected FlukeView CSV export format not correct for 430-II
– Fixed 1710 THD download not working

– Corrected last data point for TDD in Spreadsheet
– Fixed missing Statistics percentile values when printing page
- Fixed Harmonic 11 missing from Harmonics display

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Power Log 4.2 Improvements:
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- Compatibility Fluke 430-II firmware
  - Power Log V4.2 is compatible with 430-II Firmware V04.01 and later for USB download.
  - Power Log V4.2 is compatible with 430-II Firmware V03.00 and later for reading measurement data from SD-card directly.
  - PowerLog 4.2 is compatible with Fluke 1735 Firmware V1.10

- Installation
  - If there isn't any other Power Log version already installed, Power Log will be installed in "Power Log 4.2" folder by default
  - If PowerLog is already installed, the installer will suggest installing version 4.2 in the existing folder
    - If the user accepts the existing folder, the installed version of PowerLog will be replaced with version 4.2
    - If the user selects another folder, PowerLog will be installed in the selected directory and both versions of PowerLog will be available

- Generic improvements
  - Fixed issue not being able to open some files
  - Improved Spreadsheet filter for THD and fundamental voltage.
  - Added Current to the Spreadsheet filter
  - Fixed issues with unintended automatic updates of the summary data in FPQ files
  - Fixed issues with incorrect Version numbering
  - Fixed issues with Report generation on larger data files
  - Fixed wrong units shown with K Factor
  - Fixed lock up when opening two FPQ files in the same session
  - Some translations corrected

- Improvements for Fluke 430-II series
  - Improved download of Monitor measurement
  - Fixed errors when trying to download parts of a large recording
  - Improved spreadsheet display and export
  - Fixed parameters displayed not being identical to the instrument
  - Fixed Report now showing all RMS Events
  - Fixed Power Wave showing all zero values for Amp on L3/C in Waveform tab
  - Fixed Power Wave Export waveform creating empty files
  - Added TDD calculation according to IEEE 519 based upon THD measurements and Demand load current entry in Summary tab.
  - CSV export compatible to FlukeView Monitor data view has been added.

- Improvements for Fluke 430-I series
  - Added uploading of limit files in .FVF format
  - Application mode is now displayed in Summary page

- Improvements for Fluke 1710
  - V/V% function added to FL1710 firmware and PowerLog.

- Known Issues
  - Opening multiple files in the same session repeatedly reduces the available memory
  - Efficiency Factor readings in High leg topology may result in unexpected errors
  - When zooming in Power Log, graphs draw a horizontal line preceding the actual measured value. For analysis, take into account that the measured value is at the end of the horizontal line, not at the start
  - Summary screen: when using Monitor Mode on the 430-II, the number of events shown in the Measurement Summary includes all events, including events due to Flicker, Harmonics, Unbalance, etc.
    The Event Summary only shows the events due to dips, swells and interruptions.
  - Events that occur before the first interval is finished are not displayed (430-II series).
  - Cursors are not shown when printing without scaling enabled.
  - Power Harmonics can't be zoomed.
  - Color preferences not always updated.
  - Downloading of several thousands of event profiles may cause error messages.
  - Time selection may cause issues for non-US date and time formats.

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Power Log 4.1 Improvements:
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- Compatibility Fluke 430-II firmware
  - Power Log V4.1 is compatible with 430-II Firmware V04.01 and later for USB download.
  - Power Log V4.1 is compatible with 430-II Firmware V03.00 and later for reading measurement data from SD-card directly.

- Generic improvements
  - Several user interface improvements including:
    Wave Event scrollbar improvement
    Fixed Energy tab UI cut-off
    Fixed Harmonics: Y scale labels
    Improved channels update after changing tab
    Improved automatic numbering for title and filename
    Fixed horizontal zoom issues
    Fixed lock up when switching tabs
    Improved checkbox behavior
    Fixed cursor labels
    Fixed invisible toolbars and invisible windows

      Fixed translation errors
      Fixed issues with 430-II download preview window
      Fixed issues with scrollbar “property out of range”
      Fixed several parameter names and labels
      Fixed printing issues with cursors
  - Improved Statistics tab to include trend zoom settings for evaluation window
  - File path is ‘remembered’
  - Fixed issues with Dips and Swells table not showing all events
  - Improved export of spreadsheet tab to text file
  - User manuals are available via ? (help) menu
  - Improved drag and drop file handling
  - Added mechanism to inform users about updates
  - Fixed Plt timestamps
  - Fixed missing last reading for 430-II Monitor mode
  - Removed export for harmonics >25 for 430-II Monitor
  - Improved Summary tab
  - Fixed number of events not being correct
  - Removed VA Full for 430-II classic power measurements
  - Fixed issues with Spreadsheet - print current page
  - Fixed Efficiency Factor, Logger mode – Graphics are zero
  - Fixed W vs. kW scaling issue with Unbalance Power
  - Improved summary tab for Serial Number and Firmware revision info
  - Fixed incomplete event display
  - Fixed Wave Event export column headers
  - Improved PowerLog un-install
  - Fixed Wave Event timestamps issues for 400Hz
  - Added cleanup for temporarily stxxl files
  - Export files have TAB separation and .TXT extension
  - Improved Event display
  - Fixed PF can Cos Phi selection for 430-II Power and Energy
  - Fixed compatibility issue with 430-II files created with 3.4
  - Fixed issues with old FPQ files and spreadsheet tab
  - Fixed 430-II Dips and Swells and Interrupt timestamps

- Improvements for Fluke 430-II series
  - Fixed SD card error and communication issues
  - Fixed DLL communication problem
  - Improved support for Power Inverter Efficiency mode
  - Improved Monitor mode export
  - Fixed Monitor mode timestamp issues
  - Improved support for High leg configuration showing all four channels
  - Fixed issues for download of energy data
  - Made USB and SD card downloads results identical

- Improvements for Fluke 430 series I
  - Fixed incorrect data download
  - Fixed displaying event data

- Improvements for Fluke 1735
  - Added warning message for 1735 firmware compatibility

  - Corrected scaling for Flex 1735 30/300/6000A
  - Fixed 1735 nominal current display in summary tab

- Improvements for Fluke 1710
-       Improved reporting function

- Improvements for Fluke 345
  - Fixed Energy not shown for 345

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Power Log 4.0.2 Improvements:
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- Compatibility Fluke 430-II firmware
  - Power Log V4.0 is compatible with 430-II Firmware V04.00 and later for USB download.
  - Power Log V4.0 is compatible with 430-II Firmware V03.00 and later for reading measurement data from SD-card directly.

- Bug fixing
  - Fixed "Error decoding final_block" issue when downloading via USB (only 430-II).

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Power Log 4.0 Improvements:
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- Generic improvements
  - Improved Power Log look and feel.
  - File drive database and windowing (allow opening large measurements requires 16GB disk space).
  - Generic speed optimizations.
  - Improved stability and resolved access violation errors.
  - Add information to summary and expanded notes field sizes.
  - Improved file open implementation.
  - Redesigned data export assistant.
  - Open files and folder by dragging them into Power Log window.
  - Zooming, scaling and date selection improvements.
  - Added save images as .PNG option.
  - Added zooming on screens.
  - Updated keyboard shortcuts.
  - Drag files of Fluke folder into Power Log window to open files.
  - Zooming and scaling improvements.
  - Added 24 hour format in date selectors.
  - Zooming and copy/paste of saved screens.
  - QRN file types are no longer supported.
  - Added support for Com port 9 and above.

- Improvements for Fluke 430-II series
  - Support displaying of IEEE 1459 power measurements.
  - Display measurement specific information.
  - New backup and restore tasks functionality.

  - Download measurement improvements with trend preview.
  - Added flagging status to measurements in spreadsheet tab.
  - User feedback while drawing charts.
  - Allows FLUKE folder rename for archiving purpose.
  - Multi Language EN50160 reports.

- Bug fixing
  - Improved Monitor Frequency 10 seconds resolution (for 430-II).
  - Resolved total power clipping (for 430-II).
  - Solved multiple exporting and printing issues.
  - Solved access violating on remote control usage (only 430-II).
  - Improved localization setting and date handling.
  - Fixed Other minor issues.
  - Resolved issues with Statistics tab.
  - Fixed issues when printing the summary page.

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Power Log 3.4.1 Improvements:
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- fixed 2 exporting problems in Delta configuration
- fixed Total load unbalance angle exporting problem

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Power Log 3.4 Improvements:
==========
- New Functionality
  - EN50160 reporting for Fluke 430-II Monitor mode via print report.

- Compatibility Fluke 430-II firmware
  - PowerLog V3.4 is compatible with 430-II Firmware V03.06 and later for USB download.
  - PowerLog V3.4 is compatible with 430-II Firmware V03.00 and later for reading measurement data from SD-card directly.

- Generic improvements
  - Improved stability and fixed access violation errors.
  - User interface improvements and translation improvements.
  - Fixed several cursor issues.
  - Set statistics default parameters.
  - Add publisher Information to Power Log.
  - Improved report scaling and printing.
  - Corrected channels checkboxes not being properly enabled.
  - Corrected Data exporting and saving problems.

- Improvements for Fluke 430-II series
  - Added Unicode folder name support.
  - Add support for Voltage and Current phase angle readings
  - Include Overdeviation, Underdeviation, WPos, WFund, PF, DPF, Cos Phi, Energy Losses parameters in Statistics
  - Support energy loss currency as selected on the instrument

- Added auto screen update in remote control function.
- Add support for multiple instruments.
- Use name of measurement in Power Log.
- Add SD Fluke 430-II to dropdown menu
- Added event download for Monitor mode for 50160 report
- Corrected Monitor mode duration
- Corrected channel labels in Shipboard mode.
- Corrected Min/Max values in Monitor mode.
- Corrected Fluke 43xII Energy loss problems.
- Corrected Fluke 43xII Energy clipping problems.
- Corrected cost trends always showing zero.

- Bug fixing
  - Fluke 1710 and 1735 compatibility problems resolved.
  - Resolved double error messages.
  - Other minor problems are resolved.

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Power Log 3.3 Improvements:
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- Generic improvements:
  - Improved stability and fixed Access violation errors.
  - Fixed memory leakage issues when opening and closing files.
  - Statistics page – default value always displayed.
  - Additional language support for error messages.
  - New direct access Icon for downloading Fluke 430-II data from SD card

- Compatibility Fluke 430-II firmware:
  - PowerLog V3.3 is compatible with 430-II Firmware V03.05 and later for USB download.
  - PowerLog V3.3 is compatible with 430-II Firmware V03.00 and later for reading measurement data from SD card directly.

- New functionality for Fluke 437-II
  - Shipboard mode recordings supported.
  - Support for 400Hz recordings added.

- New functionality for Fluke 430-II
  - Power Wave recordings downloaded.
  - Added events scaling information (firmware versions 3.05 or later).
  - Added measurement name to downloaded data from instrument (replaces default “Recorded data”).
    Added “Save screen as...” option to Screens tab.

- Bug Fixes for Fluke 430-II
  - Fixed timestamp issues.
  - Improved progress bar for download window.
  - Fixed screens downloaded when events is not selected.
  - Improved instrument screen update for remote control.
  - Monitor parameter list now populated correctly.

  - Fixed Download of Monitor mode Events.
  - Fixed Monitor Mode Frequency trend display.
  - Fixed "Access Violation" error when trying to download data from an
  - instrument with no SD Card installed.
  - Checkboxes and radio buttons are only displayed when these parameters are available.

- Summary tab improvements:
  - Fixed number of waveforms displayed.
  - Fixed energy loss count.
  - Added information on Nominal Voltage, Current and Frequency for the
  - 430 Series II (firmware 03.05 onwards).
  - Added instrument serial number For Fluke 430-II.

- Spreadsheet tab improvements:
  - Now displayed in all modes (not just when Voltage and/or Current values are present).
  - Added rapid voltage change event information.

- Statistics tab improvement:
  - Improved layout for “Maximum vales” and “Minimum values” to display complete strings.

- Transients tab improvements:
  - Corrected cursors timestamp.
  - Fixed cursors for VR-1710.

- Harmonics tab improvements:
  - Fixed date error in plot data.
  - Corrected cursor selection of maximum and minimum values.
  - Fixed missing minimum value when moving.
  - Fixed display of measurements which only include THD V or THD A measurements.
  - Fixed issue when opening current harmonics from file.

- Energy Loss tab Improvement:
  - Fixed Vertical scale for left axis.

- Wave Event tab improvements:
  - Fixed 200 msec timestamp mismatch.
  - Fixed timestamp displayed at the title.
  - Fixed Waveform export.
  - Corrected cursor information.
  - Fixed resizing of graphs during minimizing and maximizing of windows.

- RMS Event tab improvements:
  - Fixed timestamp error of first pixel.
  - Fixed resizing of graphs during minimizing and maximizing of windows.

- Print report improvements:

   - Fixed landscape printing error.
   - Enabled harmonics checkbox.
   - VoltagePhN, VoltagePhPh, RMSCurrent, Overdeviation and
   - Underdeviation checkbox added for Fluke 430-II
   - Added all Voltage and Current Statistics.

- Improved color preference window by adding VoltagePhN, VoltagePhPh,
  RMSCurrent, Overdeviation and Underdeviation

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Power Log 3.2 Improvements:
==========
- Supports old .fpq files.
- Supports download from 345, 43x, 1710 and 1735 instruments.
- Supports download of events from 43x-II instruments.
- Several bugs fixed.

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Power Log 3.1 Improvements:
==========
- Support Fluke 434-II and Fluke 435-II.
- Improved Statistics tab.
- Improved Dips and Swells tab

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Power Log 3.0
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 - Version 3.0 was never published

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Power Log 2.9.2 Improvements:
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- Swedish translations fixed.
- Fluke 430 Series communication error corrected
- New FL435 DLL version: 1.8.0.0
- FL345 DLL version: 11/20/2006

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Power Log 2.9 Improvements:
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- Works with COM ports 10 and above
- 1735 works with USB
- New setup window for VR1710 includes turning on/off circular memory,
  setting transient voltage and disabling transients (VR1710 firmware 1.15
  required)
- Download waveforms from Scope and Transients mode
- Fixed blank graphs in print report when left axis not set to automatic
- Harmonic max and min values are now the same for histogram and
  time evolution
- Software registration option added to installer

- Access violation fixed when going between Harmonics histogram and time evolution
- Downloaded filenames are now unique for the 435
- Energy left axis labels corrected
- Added traditional Chinese and Swedish translations
- Can now import company logo into print report
- Add instrument ID to the summary page
- Disable max and min checkboxes in harmonics time evolution
- Event profile graph in report now has a title
- Enable display of distorsion power
- Add display of k factor in harmonics
- Cut, copy and paste working correctly for editing text
- Exported THD values are now the same as displayed values
- Correct problem when saving EMF file
- Downloading speed of 435 increased from 19.2 to 57.6
- New 435 DLL version
- Total energy plots corrected to use average energy
- When printing the spreadsheet, only the columns selected will be printed

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Power Log 2.8.2 Improvements:
==========
- New 435 DLL implemented for 435 firmware 2.09
- Support new data tags from 435, kWh, kVAh and kVARh
- Can now download 435 trend data from volts/amps, dips/swells, harmonics, power energy, flicker, unbalance, inrush and mains signaling.
- All 435 saved screens are now downloaded
- Fixed energy axis labels (Wh, VARh, VAh)
- Multiple downloaded 435 data files now have unique file names
- Add registration link to installer
- Add days to label for interruptions that last more than 1 day
- Fixed access violation when selecting last transient event
- Fixed blank graphs when printing report and axis scaling is manual
- When printing spreadsheet, will now only print selected columns
- THD max values are now the same in harmonics histogram and time evolution

==========
Power Log 2.8.1 Improvements:
==========

- Corrected a problem when trying to download data from a VR1710 when using a Czech PC. COM name for VR1710 corrected.

- Added Slovak translations (same as Czech).

- Enabled min/max/avg checkboxes which were disabled in 2.8.

- Corrected a problem when using cursors and zooming causing an access violation.

==========
Power Log 2.8 Improvements:
==========

- New 435 DLL implemented for 435 firmware 2.09

- Support new data tags from 435, kWh, kVAh and kVARh

- Can now download 435 trend data from volts/amps, dips/swells, harmonics, power energy, flicker, unbalance, inrush and mains signaling.

- All 435 saved screens are now downloaded

- Fixed energy axis labels (Wh, VARh, VAh)

- Multiple downloaded 435 data files now have unique file names

- Add registration link to installer

- Add days to label for interruptions that last more than 1 day

- Fixed access violation when selecting last transient event

- Fixed blank graphs when printing report and axis scaling is manual

- When printing spreadsheet, will now only print selected columns

- THD max values are now the same in harmonics histogram and time evolution

==========
Power Log 2.8.1 Improvements:
==========

- Corrected a problem when trying to download data from a VR1710 when using a Czech PC. COM name for VR1710 corrected.

- Added Slovak translations (same as Czech).

- Enabled min/max/avg checkboxes which were disabled in 2.8.

- Corrected a problem when using cursors and zooming causing an access violation.

==========
Power Log 2.8 Improvements:
==========

- cursor function has been redesigned: switch cursor on/off by double click into the curve area. Cursors will follow the mouse and display time stamps and measurement data accurately.

Note: when viewing large files, PowerLog has to aggregate measurement points so that a campaign fits into the window. In this case, zoom in to a level at which a sceen pixel represents one data item at a maximum for cursor readouts to exactly match the spreadsheet values.

- redesigned legend function. Legends can be switched on/off in the view menu, to give more space to trace data view if no legend is required.

- 1735 min/max results for "power" mode have been added. PowerLog 2.8 requires Fluke 1735 firmware revision 01.06. Please note that upgrading your instrument erases all data from the instruments memory. PowerLog 2.7 must be used to read data from instruments that have a firmware revision prior to V01.06 installed.

- corrected manual scaling: occasionally the scale top value was not displayed.

- in some instances, auto scaling only worked on channel one (Volts&Amps tab) and the other channels were not scaled correctly. Corrected.

- removed unintentional zoom operation when clicking beneath the context menu opened by left-mouse button click on a vertical scale.

- improved zooming in on 1710 transients.

- changed PowerLog's default file extension to ".fpq" instead of ".qrn" Existing .qrn files can still be read.

- improved scaling and cursor readout of F345 "Power Factor" results.

- corrected access violation when trying to export F435 harmonics data.

- corrected a bug that resulted in a wrong number of RMS intervals in reports made from 1710 data.

- corrected counting of events in 1710 data.

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Power Log 2.7.1 Improvements:
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- New translation Turkish

- Revision Code displayed in Window Title Bar

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Power Log 2.7 Improvements:
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- New translations, Czech, Polish, Romanian and Russian

- Zoom level limited to eliminate zooming errors

- Access violations solved when opening multiple data windows

- Translation errors fixed in German and Chinese

- VR1710 Transient scaling corrected

- Added THD to VR1710 Harmonics tab

- 435 and 1735 THD scaling corrected

- Multiple recording intervals in same data set not allowed for VR1710

- When exporting data, events are stored separately to correct file formatting

- Warning added if exporting data to an existing file

- VR1710 channels renamed to L1 and N

- VR1710 non-recording time (intervals without measurements) blocked out on plots

- 345 disconnecting after download fixed

- Context windows displayed at cursor are not covered by main window

- Remove unbalance scale on Frequency/Unbalance tab when Unbalance not available

- More options for plot colors in preferences

- Energy tab labeling corrected for Wye mode

- Improved options for Energy display

- Summary tab window scaling corrected

- Milliseconds added to spreadsheet tab

- Right axis vertical scale disabled when right axis not used

- Print report formatting corrected

- Harmonic histograms reformated to prevent overlapping

- Transient zooming has zoom restore

- Spreadsheet tab scrolling corrected

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Power Log 2.7(.1) Known Issues:
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- COM port used must be COM1 to COM9

- Disconnecting USB cable during communication can create an error

- 1735 event duration calculation not correct

- Deleting a 435 .dat file when 2 .dat files are open causes an access violation

- When exporting harmonics data, blank timestamps are displayed

- Zooming to a blank screen possible on some tabs

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Contacting Fluke
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