Controller v2.10.0-1142 Release Notes

New Features:
- A configuration backup is periodically sent to the cloud when applicable.
- A process to facilitate replacing a Controller using data it has already sent to the cloud when applicable.
- Discharge and charge logs are now sent to the cloud when applicable.

Improvements:
- When a Controller's cloud keepalive is disabled, the snapshot request button on the cloud will be disabled.
- The default ohmic schedule interval for a Powershield 8 system is now 4 weeks.

Bug Fixes:
- Upgrading to this version will resolve any problems activating HTTPS if the Controller was manufactured with v2.4.0 or earlier.
- Ohmic measurements will now be consistently taken for remaining batteries when the mSensors for a string are disconnected.

Controller v2.9.1-1138 Release Notes

Bug Fixes:

- Interruption of configuration backup no longer causes a locked configuration

Controller v2.9.0-1137 Release Notes

Improvements:
- Impedance is disabled by default for new NiCad strings.

Bug Fixes:
- Current calibration screen will no longer show spurious comms errors in rare situations.
- TRP fast temperature alarm will no longer raise when the ambient temperature sensor is unplugged after a block temperature rise.
- Negative symbol should correctly display in locales that use a comma separator when the value is negative and rounds to zero.
- Event log messages for cloud settings changes now correctly show if a cell modem will be used.
- A Controller that had its time changed such that there are timestamps in the continuous logs which are earlier than the first and last row of that log file will now successfully import into Link.
- The "clear" button on the Sensor Comms Stats page will no longer be clickable if not logged in.
- Sensor Comms Stats table filter will no longer allow a negative value where it is not appropriate.

- The y-axis on measurement graphs will no longer display the same value for multiple ticks when all the battery values are exactly the same.
- Alarms page limit popup will no longer display for measurement error alarms.
- Alarm filter fixed for Device Comms Error alarms.
- Sensor replacement with a hub that is a newer model than the one being replaced will now correctly show any newly supported measurements without needing to restart the Controller.
- Modbus and SNMP documentation will no longer be cached by the web browser for 24 hours.

Controller v2.8.3-1134 Release Notes

Improvements:
- New system alarm which detects D.0 stepping CPUs.
- New advanced LAN setting (ARP ignore) to improve compatibility with rare network environments.

Controller v2.8.2-1123 Release Notes

Improvements:
- SNMP Traps can now be configured to send to more than one destination.

Bug Fixes:
- Fix the small chance the Controller will crash when making an API request while a configuration backup/template is being downloaded.

Controller v2.8.1-1100 Release Notes

New Features:
- Support for QA-5 cpu module.

Controller v2.8.0-1032 Release Notes

New Features:
- Support for SNMPv3.

Improvements:
- Measurements screen graphs now rescale when values leave the y-axis range
- WiFi country code can now be searched for by keyboard.
- Cloud: button to re-send configuration to the cloud.
- Cloud: keepalive is on by default and can be disabled in cloud settings.
- CT Calibration table is now sorted by string name.
- System configuration is now re-sent to the cloud following a backup restore.

Bug Fixes:
- Upgrade display no longer gets stuck on 'upgrading' even though the upgrade is actually complete.
- Fixing the default sort display on a variety of tables; measurement logs, alarm and alarm history.
- Limits and Inputs page now correctly disable edits controls when not logged in.
- Edit limit panel form validation improvements.
- No longer show a validation error when attempting to set the date after 2017-01-01.
- String State Unknown and Device Comms Error no longer show a misleading value in the alarms screens.
- Log Duration filter on the measurement logs screen no longer shows decimal places.
- String state thresholds diagrams now scale correctly when viewed on a phone

Controller v2.7.0-1032 Release Notes

New Features:
- Support for Gen5 Hubs.
- Support for alternative Q7 Module on the Controller LX.

Bug Fixes:
- Fixed generating a Configuration Report after a hub's current sensor has been calibrated.

Controller v2.6.0-1002 Release Notes

New Features:
- Support for Gen4 Hubs.

Bug Fixes:
- Fixed generating a Configuration Report on systems that are set to show temperatures in Fahrenheit.

Controller v2.5.0-975 Release Notes

New Features:

- Hub relays can now be configured as alerts.
- The Controller buzzer can be configured as an alert and can be muted from the Controller UI.
- Alert Relays can be tested manually.

Improvements:
- Alerts configuration; alarm and string selection improvements.
- TRP settings are displayed regardless of TRP being active or not.

Security Improvements:
- NIST security recommendations for SSL/TLS
- Improved validation for WiFi settings
  .

Bug Fixes:
- Measurement log download will now convert temperature measurements units.
- Various limits are now correctly removed when a string's settings are changed in a way that would remove that limit.
- A corrupted, timestamp in the first row of a measurement log file will no longer break measurement log download.
- Some TRP limit settings will now correctly come into affect immediately after changing them.
- Alerts configuration; alarm selection no longer shows alarms that should not be there.
- Alerts configuration; an error will no longer occur when a blank delay is specified.
- Fixed validation for new strings' block count.
- String state settings now lists strings in alphabetical order.
- Ohmic baselines graph will now display correctly after many strings are deleted.

Controller v2.4.1-10 Release Notes

Security Improvements:

• Upgrade Nginx to 1.20.1

Controller v2.4.0-918 Release Notes

New Features (Not for general use):
- Support for Dual CT Hubs.

Improvements:
- New strings default to having 1 ambient temperature.

Bug Fixes:

- "Restore Complete" event now correctly appears in the event log after restoring a backup.
- An active TRP signal relay no longer shows briefly as inactive when the page is loaded.
- Controller cloud client now better handles restoring of a backup from a different controller.
- System log download now correctly includes some system logs.

Controller v2.3.1-879 Release Notes

New Features:
- New disk health measurement and system alarm.
- Restore a backup created by the Controller Service App.

Security Improvements:
- Improved validation for SNMP and NTP settings.
- Renewed shell access key.

Improvements:
- Added generic current transducer options.
- NiCad string voltage options updated.
- MX Controllers will repair file systems at startup.

Bug Fixes:
- User supplied limits when creating a string are no longer ignored.
- Unable to map NiCad strings.

Controller v2.3.0-841 Release Notes

Security Improvements:

- Configuration changes via API requests require user to be logged in.
- Web UI jQuery library has been upgraded to v3.5.1

Improvements:

- Diagnostic logging can be enabled from the *System Log Download* page and is off by default.
- Operating system logging has been reduced.
- String groups can be split up into individual strings.
- An event log message will be added when a Controller is restarted.

Bug Fixes:

- Manufacturing date being off by a day in certain situations.
- Event log download will now match the filter used on screen.
- Extra alarms will no longer raise when restoring a backup or template.

Controller v2.2.0-797 Release Notes

New Features:
- PowerShield Cloud support via LAN or Cellular Modem
- WiFi support
- Create and review 'Key Limits' as part of string settings setup

Security Improvements:
- Installer password must be a minimum of 6 characters long
- Recover screen on Service Port only
- Modbus is disabled by default (Note: a Controller upgraded from an earlier release will still have Modbus enabled)
- SNMP is disabled by default (Note: a Controller upgraded from an earlier release will still have SNMP enabled)
- HTTP options support removed
- HTTP cookies SHA-1 no longer used

Improvements:
- String State logic changes to further reduce excessive Charge/Discharge recording for environments with significant current spikes, removing the need for String State Timings
- Ohmic measurements, including baselines can now be started for a string when another string is in progress
- ModbusTCP merge writes setting added
- ModbusTCP handles multiple queries in a single packet
- Controller's serial number and manufacturing date displayed on System page
- Controller can be restarted from the system page
- Voltage readings below 10v display to 3 decimal places
- Relay configuration added to configuration report
- Charge/Discharge logging default parameters have changed (NOTE: This will change the parameters of controllers that have been left with default settings)
- Time duration limits are now shown as days, hours and minutes instead of seconds
- Alarms which have been orphaned now are given an estimated lower time
- USB Backup contains measurement logs in the same format as the Web interface measurement log download
- USB Backup now contains files so that it can be imported into Link v4.3 or later
- String State Threshold changes are added to the event log
- WiFi settings changes are added to the event log

Bug Fixes:
- Controller MX relays no longer toggle on power up
- Clicking "Force Ohmic Baseline Measurements" on the Ohmic Baseline screen will no longer miss out some strings in certain circumstances

- Setting an ohmic baseline now sets a permanent baseline instead of temporary baseline
- ModbusTCP and RTU now returns zero instead of a random value for blocks that have not been mapped or do not exist
- ModbusRTU cards no longer show as Not Available after a string is deleted
- Modbus returns correct ripple voltage
- Event log csv download will now succeed when there are more than 1000 events
- Configuration report will no longer fail if current calibration has not been completed
- Configuration report shows correct error values for ohmic baselines instead of NaN
- A Hub relay will clear immediately when TRP alarms are cleared
- CSV downloads will no longer have unnecessary zero bytes which was resulting in large files
- Correct capacity for monthly measurement log storage
- LCD will no longer intermittently show 'None' alarms when modbus tcp is overloaded
- Relay configuration string list is now sorted
- EMIO-220S RS485 cards are detected
- Duration alarms no longer have a raise time

Controller v2.1.1-667 Release Notes

Bug Fixes:
- ModbusTCP responds with correct Unit Identifier.
- Modbus maximum request size increased to 125 registers.

Controller v2.1.0-601 Release Notes

New Features:
- HTTPS. The Controller's web UI can now be configured to only be accessible over HTTPS.
- NTP (Network Time Protocol) Support.
- A Controller can now configure mSensors and Hubs to be spares.

Improvements:
- Offline import for Link. Data is saved to the USB/SD Card when performing a USB backup.
- Changing a limit will no longer interrupt ohmic measurements.
- Service Port IP address now shows on the Controller LX LCD.

Bug Fixes:
- Ohmic in progress banner will no longer disappear and reappear when a small string is having its ohmic measurements taken.

Controller v2.0.1-499 Release Notes

New Features:
- Support for new Controller MX

Improvements:
- Small strings now have a delay between impedance measurements to allow them to cool down.
- Alarm search when configuring alerts has been improved.
- Sensor Replacement can now replace old hub models with new hub models.
- ModbusRTU speed of 9600 has been added.
- Service Port IP address is set to 169.254.30.1

Bug Fixes:
- Network settings subnet mask validation fixed for Internet Explorer.
- Device Comms Error alarms can now correctly be mapped to a relay for specific strings instead of always mapping to all strings.

Controller v1.3.2-371 Release Notes

Improvements:
- Network > Modbus speed setting now offers baud rates 9600 and 28800.

Bug Fixes:
- Continuous and discharge log files will be written to after restoring a configuration template.

Controller v1.3.1-328 Release Notes

New Features:
- String state timing can be used to avoid excessive string state changes when in an environment with current spikes.
- Backup - Configuration Template. A template can be created to quickly deploy to other similar Controllers.
- The password for the Installer user can be changed.

Improvements:
- Port 2 Modbus library change to improve port 2 communication robustness.
- Security improvements, closed Redis port and require key to SSH into Controller.
- String groups' names can be changed.
- Time zone database updated.
- Diagnostic download now includes more server logs.
- Backup and diagnostic download files are now encrypted.
- Backup now includes all measurement logs.
- LCD displays correct temperature units and ambient temperature values

Bug Fixes:

- Ohmic Measurement Error alarm will no longer raise when ohmic readings are made on small strings.
- Daily log files no longer have a row from the next day in them.
- Ambient Median Temperature will no longer display as ERR on the overview screen when the string is configured to have no ambient temperature sensors.

Controller v1.2.0-265 Release Notes

New Features:
- Thermal Runaway Protection (TRP)
- Configuration Report
- Hysteresis for String State Thresholds

Improvements:
- Improved defaults for String State Thresholds
- Improved defaults for limits: String Current, Block Temperature, Block Temperature Variation, Ohmic Rise, Ambient Temperature Variation, Ambient-Block Differential
- Network adapter MAC address shows in LAN network settings page
- Alarm History page now shows alarm times in region agnostic format
- Improved direction information popup on the CT calibration page
- Modbus settings speed and stop bits use choices are limited to valid values
- Measurement Logs page will function with up to 50,000 log files

Controller v1.1.2-181 Release Notes

New Features:
- Allow mapping of TRP Hubs

Improvements:
- Better handling of Modbus errors

Bug Fixes:
- Fix issues with LCD display of values
- Fix broken links in Upgrade page
- Replace instances of the text 'Powershield Controller' with 'Controller'

Controller v1.1.1-162 Release Notes

New Features:

- Include Modbus User Guide Rev C

Improvements:
- Better Modbus TCP connection handling

Bug Fixes:
- Fix incorrect version number when software changed
- A factory reset will no longer turn unbranded mode off.
- Unbranded mode will no longer show the Powershield logo in the browser tab or bookmarks.
- String delete process has been improved to avoid system problems in rare circumstances.

Controller v1.1.0-149 Release Notes

New features:
- Sensor Replacement
- Recovery Mode
- SNMP Traps
- Unified Error Codes:
    - Error codes are displayed instead of ERR now
    - Error codes are consistent across different sensors

Improvements:
- Ohmic Baselines: Outliers uses ticks instead of flags
- Mapping and Detect: Improved reliability in noisy environment, UI improvements (including legend)
- Measurements Page: System Alarms indicator
- Measurements Page: String Alarm counts
- Software Update: Improved UI
- Limits: Changing a limit will no longer stop in-progress ohmic jobs
- System Diagnostic Download: Available to Installers now
- Alarm History: finer grained alarm duration display
- Event Log: more event messages (ohmic baseline operations)
- Restore: improved backup file error detection
- LCD network status 'Not connected' message added*
- SNMP MIB now available via SNMP configuration page
- Added system name to title bar
- Added support for new Hub (internal model type 19, new measurement status registers)

Bug fixes:
- Remove Log files when a string is deleted
- Fixed dim Alarm LED on Controller front panel however an additional hardware fix can also be required
- Fix measurement log roll-over time (local time 11:59pm)
- Fix Modbus RS-485 settings

- Fix partial ohmic limits API call (this affects Link when downloading limits)
- Fix when impedance schedule is off API call does not return impedance devices (this affects Link when adding a system and Link is determining the measurement types available)

*LCD network status is not guaranteed to be in sync with the physical connection status due to the operating system behavior.