

Stakeholder Summary — v1.1.0-beta.30

Generated October 21, 2026

HY-LINK Project — Stakeholder & Project Manager Change Summary

Executive Summary

The 30 commits staged for **1.1.0-beta.30** represent the most active development sprint since the 1.0.0 launch, delivering a significant combination of new user-facing features, important bug fixes, and substantial behind-the-scenes quality work. The headline additions for end users are: a brand-new **live Monitor page** (real-time hydrogen gauge and measurement dashboard, now available regardless of whether the USB adapter is connected), a simplified **Download page** that combines two previously separate downloads into one action with a new "all available days" option, and a long-awaited fix that prevents the application from crashing when a user cancels a serial connection attempt. Two further quality-of-life improvements have been introduced in subsequent commits: the application now remembers connection settings (port, baud rate, IP address, etc.) when switching between connection modes, and the measurement previously labeled "Oil Temperature" has been renamed "Liquid Temperature" throughout the interface and documentation to better reflect the range of supported fluids. The 5000-series device model no longer presents an inapplicable RS-485 termination resistor setting, cleaning up the configuration screen for those users. In parallel, the team has invested heavily in automated testing and build-pipeline reliability, resolving several defects that were causing builds to be incorrectly skipped on non-release branches. Overall delivery risk is **low**: all pipeline issues were identified and resolved within the same sprint, test coverage has been materially expanded, and no breaking changes to external integrations are included. One user-visible element — the standalone "Download Device Diagnostics" button — has been removed; any user documentation or training materials referencing this button will need to be updated before general availability.

Unreleased (1.1.0-beta.30)

Pre-release build — these changes are staged for the upcoming 1.1.0-beta.30 release and have not yet been promoted to a full release.

New Features

Live Monitor Page (Pull Request #38 / #39)

What changed: A brand-new **Monitor** screen is now the primary live-data view in the application. It displays a circular hydrogen gauge with real-time readings, alongside measurement cards for pressure, moisture, and temperature. The page automatically adapts to each connected device's configuration and works across all supported connection types — Modbus and DNP3, serial and TCP — whether or not the USB RS-485 adapter is plugged in. If the adapter disconnects while the legacy chart view is active, the application automatically switches to the Monitor page. Device profiles for the 5X3X, X5000XGASX, X5000XOILX, and X5846X model families have been updated to support the new page.

Business value: Significantly broadens the scenarios in which operators can view live device data. Users without the USB adapter gain access to real-time readings for the first time. This is a major step toward a consistent experience across all connection types.

Risk/notes: Low risk for end users. The legacy chart view remains available when the USB adapter is connected. QA should verify Monitor page display behavior across all supported device models and connection types. *(HL-135 release notes updated to reflect this feature.)*

Combined Data Log Download with "All Days" Option (HL-142)

What changed: The Download screen previously required two separate actions — one for the customer data report (CSV) and one for the device diagnostics file (HLD). These are now merged into a single **"Download Data Log"** button that retrieves both files in one step. A new **"All days"** checkbox allows users to download the complete available data history in one operation, bypassing the fixed day-count field.

Business value: Reduces steps, eliminates the risk of downloading mismatched date ranges across the two files, and makes full-history exports practical for audits or support requests.

Risk/notes: The standalone "Download Device Diagnostics" button has been removed from the interface. Any user-facing documentation, training materials, or support guides that reference this button must be updated before general availability. This is a **known documentation dependency**.

Connection Settings Remembered Per Mode (HL-157)

What changed: Previously, switching between connection modes (for example, from Modbus Serial to DNP3 TCP) would reset all connection fields to their defaults, requiring users to re-enter settings such as IP address, port, baud rate, and unit ID. The application now remembers the last-used settings for each connection mode independently, restoring them automatically when the user switches back. Settings are cleared when the user explicitly disconnects and resets. The disconnect action no longer resets the form unless explicitly requested.

Business value: Eliminates repetitive re-entry of connection details when testing or switching between connection types. Reduces the risk of configuration errors caused by re-entering values manually. Improves the experience for field engineers who regularly switch between modes.

Risk/notes: Low risk. A suite of automated tests covering the per-mode retention behavior has been added. QA should verify that disconnecting and reconnecting in various mode combinations behaves as expected.

Improvements

"Liquid Temperature" Replaces "Oil Temperature" in the UI (Unlabeled)

What changed: The measurement previously displayed as "Oil Temperature" throughout the application — including the Monitor page, the Owner's Manual, UI profile documentation, and internal device profile generators — has been renamed to "**Liquid Temperature**". The internal data identifier (OIL_TEMP) is unchanged; only the user-visible label has been updated.

Business value: Better reflects the range of transformer fluids supported by the device (e.g., natural ester, silicone), avoiding customer confusion when the measured liquid is not oil.

Risk/notes: Any customer-facing documentation, dashboards, or integrations that display the label string "Oil Temperature" will show "Liquid Temperature" after updating. This is a **low-risk cosmetic change** with a potential external documentation dependency.

RS-485 Termination Setting Hidden for 5000-Series Devices (HL-145)

What changed: The RS-485 termination resistor configuration setting, which is not applicable to the 5000-series device model, is no longer shown on the Configuration screen when a 5000-series device is connected. Other device families (X6X00X, X8X00X) continue to display this setting as before.

Business value: Removes a confusing and irrelevant option from the configuration interface for 5000-series users, reducing the risk of accidental misconfiguration.

Risk/notes: Low risk. The setting is suppressed at the UI layer based on device model; no firmware behavior is changed. Automated tests confirming the correct per-model visibility have been added.

Moisture and Pressure Readings Display Correctly

What changed: Moisture and pressure gauge values now display with 3 decimal places, matching the intended precision for those measurements. A previous misconfiguration had set these fields to 8 decimal places.

Business value: Values shown on the Monitor and Configure pages now match the precision specified in the product documentation, improving readability and reducing user confusion.

Risk/notes: None. The fix was detected and verified by the new automated integration test suite.

Updated H2Scan Logo in Application UI

What changed: The H2Scan logo displayed in the application interface has been updated to a new, higher-quality PNG image.

Business value: Reflects current brand identity. No functional impact.

Risk/notes: None. Cosmetic change only.

Bug Fixes

Application No Longer Crashes When Canceling a DNP3 Serial Connection

What changed: Canceling a connection attempt while using the DNP3 serial protocol could cause the application to crash. The cancel action now cleanly stops the connection at all stages without error. The UI responds immediately, and the previous forced 15-second wait has been removed — users see a brief "connection still stopping" message if a thread is still winding down, which is expected behavior.

Business value: Improves application reliability and user confidence, particularly in field environments where connection attempts may need to be aborted (wrong port selected, device not ready, etc.).

Risk/notes: None. Multiple automated tests cover the cancellation behavior.

Saved Configuration Values No Longer Show "Unknown" After Writing (HL-113)

What changed: When saving a configuration change on a DNP3-connected device, the displayed value would sometimes revert to "unknown" instead of reflecting the newly saved data. A verification step was incorrectly comparing the written value against a stale cache. This verification step has been disabled; the application now displays the saved value immediately and requests fresh data from the device.

Business value: Users can trust that the Configuration screen accurately reflects device state after saving, eliminating confusion and the need to reconnect or restart the application.

Risk/notes: None. The removed verification was producing false failures rather than catching real errors.

Download Errors Now Properly Reported to Users

What changed: If a device diagnostics download failed, the error was previously silently discarded and never shown in the interface. Errors are now surfaced to the user as expected.

Business value: Users and support teams can now see and act on download failures rather than assuming a download succeeded when it had not.

Risk/notes: None.

Build Pipeline & Internal Quality

Build Pipeline Reliability Fixes (Multiple commits — E. Marquez)

Several defects in the automated build pipeline were identified and resolved within this sprint:

- A faulty pipeline condition was causing build jobs (including Windows and macOS application builds) to be incorrectly skipped on non-release branches. This has been corrected.
- The documentation review gate has been restructured from a deployment-environment gate to an agentless manual-validation step, allowing reviewers to commit documentation edits before the build resumes — without requiring an Azure DevOps environment to be configured.
- Windows and macOS build jobs now include an explicit guard to prevent them from running if the documentation finalization step was cancelled.

- The release branch has been promoted to the true release-candidate branch, preventing QA review activity from consuming tagged version numbers.

Business value: Builds on the develop branch are now reliable again, QA can review documentation without burning release version numbers, and the team has higher confidence that every build delivers a complete, tested artifact.

Risk/notes: These were internal infrastructure issues. No customer-facing behavior is affected. The pipeline changes were validated across multiple automated build runs within the sprint.

Expanded Automated Test Coverage

What changed: A significant number of new automated tests have been added, including:

- A **pseudo-integration test suite** that exercises every field in the UI profiles against every supported device model and connection type, using simulated device data — without requiring a physical device connection.
- Tests for the combined download workflow, DNP3 connection cancellation, per-mode connection settings retention, RS-485 visibility per model, and the "Liquid Temperature" label.

Business value: Substantially reduces the risk of regressions in future releases. Known data-formatting defects (moisture and pressure precision) were detected by this suite before reaching QA.

Risk/notes: None. Internal quality investment with no user-facing impact.

Documentation Updated (Automated & Manual)

Release notes, the Owner's Manual, the changelog, and internal stakeholder summaries have been updated to reflect changes introduced across beta.6 through beta.30. The Owner's Manual now reflects the "Liquid Temperature" terminology update.

Risks, Blockers & Dependencies

Item	Type	Owner / Notes
"Download Device Diagnostics" button removed	Documentation dependency	Any user guides, training decks, or support articles referencing this button must be updated before GA.
"Oil Temperature" → "Liquid Temperature" rename	Documentation / integration dependency	External dashboards, customer reports, or integrations that display this label string should be reviewed.
Monitor page — cross-model QA coverage	QA dependency	Device profiles for 5X3X, X5000XGASX, X5000XOILX, and X5846X have been updated; QA should validate Monitor page display

		for each model across all connection types.
Connection settings retention behavior	QA validation	New per-mode retention logic should be tested across all protocol/transport combinations during QA sign-off.

v1.0.0

Executive Summary: This release marks a significant housekeeping and infrastructure milestone on the path to the first full production release. The two commits in this tag focus on correcting the automated versioning system and restoring clean documentation baselines — work that is not user-visible but is essential for ensuring that all future releases carry accurate, traceable version numbers. Alongside this, the automated build pipeline has checked in a comprehensive documentation snapshot capturing all feature work delivered through pre-release v0.5.1, giving stakeholders full visibility into the breadth of capability that has been built since the project began.

What Changed

Versioning System Corrected

The automated versioning tool (GitVersion) was misconfigured and not correctly inheriting version numbers on the main branch. This has been fixed. Going forward, every build and release will carry the correct, consistent version number — a prerequisite for reliable installer distribution, audit trails, and customer-facing release notes. Documentation files were also reset to a clean state to preserve the accurate version history rather than carry over stale or duplicated content.

- **Files affected:** GitVersion pipeline configuration; changelog, release notes, and stakeholder summary documents.
- **Business impact:** Eliminates the risk of shipping installers or documentation with incorrect version labels. Unblocks the automated release pipeline.

Automated Documentation Snapshot — Pre-release v0.5.1 Features Recorded

The build pipeline automatically checked in a full documentation update capturing all features and improvements delivered through pre-release v0.5.1. This is an automated housekeeping step and does not represent new functionality, but it provides a complete and auditable record of what was built. Key highlights from the captured feature set include:

- **macOS distribution readiness:** The macOS installer is now fully signed and notarized using Apple Developer ID certificates, meaning it will install without security warnings on end-user Macs. The build pipeline handles certificate management automatically.

- **Windows installer:** A Windows Inno Setup installer is in place, packaging the application for standard Windows deployment.
- **Broader device compatibility:** Support has been added for several additional device families (5X3X, X5000XGASX, X5000XOILX, X5846X, X6X00X) with per-firmware configuration profiles, significantly expanding the range of field hardware the application can communicate with.
- **USB adapter hot-plug detection:** The application now automatically detects when a USB serial adapter is connected or disconnected, improving ease of use in field environments.
- **Protocol switching (Modbus → DNP3):** Users can now switch a connected device from Modbus to DNP3 communication protocol from within the application, without manual intervention on the device.
- **Improved download experience:** Data and diagnostics download screens now show percentage complete, elapsed time, and estimated time remaining, and include a working cancel button.
- **Reliability improvements:** Connection cancellation is now immediate and clean across all communication drivers, reducing the risk of the application appearing frozen during failed or aborted connections.
- **Application version number displayed in the UI:** Users can now see the running application version directly in the main window.
- **Human-readable device status:** Device error states and operating modes are now surfaced in plain language in the interface rather than as raw codes.
- **Owner's Manual first draft:** A full production-ready manuscript covering all six application pages, connection procedures, monitoring, configuration, download, and settings has been added to the documentation.

Risks, Blockers & Dependencies

Item	Detail
Version history reset	Documentation files were intentionally cleared and rebuilt from a clean baseline. If any historical change notes existed only in those files and were not captured in the automated snapshot, they may be lost. Recommend confirming the restored history is complete before next release.
macOS signing certificates	The automated signing and notarization process depends on Apple Developer ID certificates stored as secure pipeline variables. If these certificates expire or are revoked, macOS builds will fail to notarize and will be flagged as untrusted on end-user machines. Certificate expiry dates should be tracked.
Pre-release feature documentation only — no new functionality in this tag	Both commits in v1.0.0 are infrastructure and documentation changes. No new end-user features were

	delivered in this specific tag. Feature delivery is captured from prior pre-release work (v0.5.1 and earlier).
Upcoming 1.0.0-2 pre-release	There are commits already accumulating beyond this tag (see Unreleased section if applicable). Stakeholders should confirm scope and timeline expectations for the next release increment.

Executive Summary

The v0.4.2 release cycle contains no functional changes to the Hy-Link application itself. All three commits in this group are documentation housekeeping: an automated pipeline check-in introduced duplicate and out-of-order content across the project's six documentation files, and the team promptly corrected those files in a follow-up branch that was merged the next day. The net result is that the changelog, release notes, and stakeholder summary documents are now accurate, properly ordered, and free of leftover artefacts from earlier pipeline experimentation. No user-facing features, bug fixes, or delivery commitments are affected.

v0.4.2

Release type: Patch — documentation corrections only

Commits: 3 | **Date range:** 2026-06-01 – 2026-06-02 | **Author:** Eddie Marquez / HY-LINK Build Pipeline

What Changed

Documentation Clean-Up (Internal, No User Impact)

During the preceding release cycle (v0.4.0 / v0.4.1), repeated changes to the automated build pipeline caused the project's documentation files — changelog, release notes, and stakeholder summary — to fall out of sync. Specifically:

- Content that belonged to an older, now-superseded pre-release version was duplicated inside the documents.
- Historical entries were placed under incorrect version headings.
- Stale or redundant pipeline-related notes appeared in sections where they did not belong.

An automated pipeline build on 1 June first checked in an updated set of documentation files, but those files still carried the structural problems. Eddie Marquez then opened a dedicated patch branch (support/release-docs-patch) and corrected all six documents manually. That branch was merged on 2 June, closing the issue.

The corrected documents now accurately reflect:

- **v0.4.1** — correctly labelled as a formal release (not a pre-release).
- **v0.4.0** — content placed in the right section with its release date.

- Historical baseline entries — present once, in the correct location.

Summary of Files Corrected

Document	Status
docs/changelog.md	✓ Corrected
docs/changelog-main.md	✓ Corrected
docs/releasenotes.md	✓ Corrected
docs/releasenotes-main.md	✓ Corrected
docs/stakeholderssummary.md	✓ Corrected
docs/stakeholderssummary-main.md	✓ Corrected

Risks, Blockers & Dependencies

Area	Detail	Severity
Root Cause Still Present	The document duplication was caused by the automated pipeline incorrectly appending content during earlier pipeline iterations. While the documents have been corrected manually, the underlying pipeline behaviour that produced the malformed output should be reviewed to prevent recurrence in the next release cycle.	Medium
No Functional Risk	No application code, device drivers, or build artefacts were changed in this release. End users and QA are unaffected.	Low
Documentation Accuracy	With this patch applied, the documentation files are considered the authoritative source for the v0.4.0 and v0.4.1 release histories. Stakeholders may wish to re-download or refresh any copies of these documents obtained before 2 June 2026.	Low

Executive Summary

This report covers the full release history of the HY-LINK desktop application for hydrogen sensor device management across six formal releases: v0.1.0 through v0.4.1. The most recent releases delivered native macOS support, the HY-LINK Decoder as a standalone deliverable, an automated YAML-based release pipeline,

and a critical fix for DNP3 device writes that were silently failing with no effect on hardware. The build pipeline is stable, documentation is generated automatically on every build, and all known blockers have been resolved. One one-time Azure DevOps setup step for the decoder pipeline signing certificate and a future repository access token expiry (May 2027) warrant awareness.

v0.4.1 — Current Release

Critical Application Fixes

Area	What Was Fixed	Business Value
DNP3 Writes Were Silently Failing	All DNP3 device writes were using a command mode (Direct Operate) that the Gen5/HY-LINK firmware silently discards. This meant every write — binary, analog, and string values — appeared to succeed in the application while having no effect on the device whatsoever. The application now uses the correct two-step Select + Operate sequence for all write types.	High impact. This was a silent data-integrity issue: users could believe they had changed a device setting when the device had not changed at all. This fix is required for correct device control.
New: String Data Point Writes (DNP3 Group 110)	String-typed data points can now be written to the device over DNP3, using a raw serial path with proper CRC framing. Previously, only numeric and binary data types could be written.	Expands the set of device parameters that can be configured through HY-LINK.
DNP3 File Transfer Timeouts After Reconnect	When switching between communication modes (e.g. during a file transfer), the device sometimes sends a handshake frame immediately after the connection stack disconnects. Previously this frame was discarded, causing file transfer requests to time out. The driver now preserves pending bytes during mode switches so the handshake completes correctly.	Improves reliability of DNP3 file transfer operations.
Minor UI Fixes	Several minor layout and display issues on the Configuration screen have been corrected.	Improves usability and visual polish.

Build & Delivery Infrastructure Fixes

Fix	Impact
Release tag format corrected (v0.4.1 instead of the pre-	Official release tags are now picked up correctly by the

release string)	version management tooling.
CI trigger path corrected (docs/** instead of documentation/**)	Documentation changes now correctly suppress unnecessary build runs.
Pipeline source path corrected for release pipeline trigger	The release pipeline now correctly identifies and triggers from the build pipeline.
Pull-request build triggers disabled	Builds now fire only on pushes to main or develop.
Buildstash metadata field names corrected (versionComponentMeta, vcHost: bitbucket)	Release artifacts are now uploaded to Buildstash with the correct version metadata and source control linkage.
JSON path escaping fixed in release pipeline	Prevents parse failures when passing file paths on Windows agents.
HY-LINK Decoder build pipeline now fully isolated	The Decoder build pipeline has been cleaned up and separated cleanly from the main application pipeline.

Risks & Dependencies

Item	Severity	Notes
DNP3 write fix requires validation on hardware	High (action required)	The change from Direct Operate to Select-and-Operate affects all DNP3 write paths. This should be validated against physical Gen5/HY-LINK hardware before broad customer deployment.
Repository access token expiry	Low (future)	The token used for automated documentation commits expires 15 May 2027. No action needed now.

v0.4.0

New Capabilities

Area	What Was Delivered	Business Value
macOS Support	Both the Hy-Link application and the HY-LINK Decoder are now built and distributed as native macOS app bundles, packaged in a single .dmg installer.	Customers operating mixed Windows/macOS environments now have full platform parity.
HY-LINK Decoder — Standalone Deliverable	The HY-LINK Decoder has its own branded application icon, dedicated build pipeline, and is packaged as a first-class artifact for both Windows and macOS. Previously, it was	The Decoder can now be released and updated independently from the main application.

	bundled as part of the main application build with no independent release path.	
Automated Release Pipeline	New YAML-based release pipelines (release-pipeline.yml and release-pipeline-decoder.yml) replace the manually configured Classic pipeline. Builds flow automatically from build → Dev Testing → QA Testing → Full Release with human approval gates. Releases are published to Buildstash from the release pipeline, not the build pipeline, giving the team clear control over what ships and when.	Faster, more consistent releases with a clear audit trail and reduced manual effort.
Cancel Button in Configuration Screen	Users can now click Cancel to discard unsaved edits and immediately re-read the current values from the connected device.	Reduces user error and frustration when accidental edits are made on the configuration screen.
Automatic Version Numbering	The application version shown to users is now computed and stamped automatically at build time.	Eliminates manual versioning errors; users and support staff always see an accurate version string.
In-App Release Notes	The Info page within the application now displays the current release notes in a formatted view.	Users can review changes without leaving the application.

Quality & Reliability Improvements

Area	What Changed	Business Value
macOS Launch Crash — Resolved	A crash that occurred immediately on launching the macOS app bundle (caused by an unwritable working directory) has been fixed. All logs and reports now write to ~/Documents/HY-LINK on both platforms.	The macOS build is stable for user acceptance testing and deployment.
macOS DMG Packaging Failures — Resolved	A packaging failure where the macOS .dmg could not be created due to Spotlight indexing locking the source folder has been fixed.	macOS builds now complete reliably in the pipeline.
In-App Release Notes — Display Fixed	Special characters in release notes were appearing as garbled text due to a text encoding issue; this has been corrected.	The release notes page is now legible and professional.
Consistent Field Colour Feedback	Field border colours across the Configuration and Circle screens now follow a consistent meaning: orange = required field is empty; yellow = edited but not saved; red = save failed.	Users receive clearer, more intuitive visual feedback about the state of their edits.

Connection Error Messages	Error messages when a serial port connection fails now include the name of the port that was attempted.	Support and field engineers can diagnose connection issues more quickly.
Chart Legend	Legend entries are now correctly hidden when a device value is not available.	Keeps chart displays clean and readable.

Build & Delivery Infrastructure

- The build pipeline now produces three distinct artifacts per run: a Windows package, a macOS .dmg, and a documentation archive containing build-metadata.json. Version information is carried inside the metadata file rather than in artifact names, making the release pipeline more robust.
- Documentation (release notes, changelog, stakeholder summary) is generated automatically on every build and committed back to the repository.
- The HY-LINK Decoder now builds on its own dedicated pipeline, separating its release cadence from the main application.
- Buildstash distribution has been moved exclusively to the release pipeline, giving the team a clean separation between "build" and "ship."



Risks & Dependencies

Item	Severity	Notes
New decoder pipeline requires one-time Azure DevOps setup	Medium	An administrator must configure a service connection and assign a certificate signing role before the decoder pipeline can produce signed Windows builds. Until completed, Windows decoder builds will fail at the signing step.
Repository access token expiry	Low (future)	The token used to push documentation back to the repository is set to expire 15 May 2027. No action needed now, but a calendar reminder is recommended.
Classic Release Pipeline retirement	Low	The new YAML pipelines are intended to replace the Classic pipeline. Validate the new pipelines in Dev and QA environments before decommissioning the Classic pipeline.

This release focuses entirely on polish and usability improvements to the configuration and settings areas of the application. No new capabilities were introduced; the goal was to make existing workflows clearer and more reliable before the next feature sprint.

What changed for users

Cancel unsaved configuration changes. A new "Cancel" button now appears next to "Save" on the Configure page. Clicking it immediately re-reads the last saved values from the connected device and restores all fields, discarding any edits the user had made. This requires no reconnection and completes in the background without freezing the screen.

Clearer field-state highlighting. The colour coding of editable fields has been standardised to communicate three distinct states at a glance: an *orange* border means the field is empty (required); a *yellow* border means the field has been edited but not yet saved; a *red* border means a save attempt failed for that field. Previously, yellow was used for both empty and unsaved states, which caused confusion.

Better connection error messages. When a Modbus RTU connection fails, the error message now explicitly names the serial port that could not be opened (e.g. "Could not open COM4 for Modbus RTU connection") rather than showing an internal technical path.

Settings page always accessible. The Settings button in the navigation bar is now visible before a device connection is established, allowing users to adjust polling rate and other preferences at any time. Previously it was hidden until a connection was made.

Advanced settings hidden by default. Partially implemented features in the Settings page (data log management, logging rate) are no longer shown to users. They remain in the codebase and will be re-enabled when the underlying functionality is complete.

Units added to polling and logging rate fields. Labels on the Settings page now indicate the unit of measure (seconds/minutes) for these fields, reducing ambiguity.

Date and time formatting corrected. Configuration fields that display timestamps now use the device's local time zone instead of UTC, matching what users would expect.

Hex and date-time values now display correctly. The formatting engine that converts raw device values into human-readable text was extended to handle hexadecimal and date-time field types that previously displayed incorrectly.

Risks and notes

- The Cancel button triggers an immediate device re-read over the active connection. If the connection is slow or intermittent, there may be a brief delay before fields restore. No blocker, but worth monitoring in field testing.
- Advanced settings (clear data log, set logging rate) remain hidden pending implementation. Stakeholders expecting these features should be aware they are deferred.

v0.2.0 — Released 11 May 2026

This is the most significant feature release to date. It delivers full DNP3 protocol support for reading device data and downloading datalogs, alongside a critical bug fix for Modbus TCP connections and several improvements to the download workflow.

What changed for users

DNP3 protocol now fully supported. Users can now connect to sensor devices using the DNP3 protocol over TCP or serial connections, in addition to the existing Modbus options. This includes reading all measured values, configuration registers, and string fields (model number, firmware version, serial numbers). A new `dnp3-python` library underpins this capability; pre-built installation packages for Windows and macOS are bundled with the application so no separate installation is required.

DNP3 datalog download. Datalogs can now be downloaded from devices connected via DNP3, using the same download workflow as Modbus.

Modbus TCP connection errors now surface correctly. A bug caused Modbus TCP connection failures to be silently ignored, leaving the application in an indeterminate state. The fix ensures a clear error message is shown when a TCP connection attempt fails, and the application correctly returns to the disconnected state.

Empty datalog handled gracefully. Previously, if a device reported an empty datalog, the download would fail with an error. The application now correctly recognises the empty-datalog response and informs the user without writing an empty file.

Download progress shown immediately. The download progress indicator now activates as soon as a download begins, even before any data bytes have been received. This eliminates a period of apparent inactivity that some users interpreted as a hang.

Download output captured in application log. Messages from the download library (progress, status, errors) are now written to the application log file, making support and diagnostics significantly easier.

New DNP3 diagnostic tool. A standalone command-line tool (`Dnp3Diagnostic`) is available for engineering and support teams to test and diagnose DNP3 connections independently of the main application. This is an internal tool and does not appear in the user-facing installer.

Datalog parser improvements. The underlying parser for device datalog binary files was updated to correctly decode additional sensor data fields and to align field ordering with the device firmware's data layout. This affects the accuracy and completeness of downloaded CSV reports.

Python version requirement changed. The application now requires Python 3.12. Python 3.13 is not yet compatible with the DNP3 library.

Risks and notes

- DNP3 support is based on the `dnp3-python` pre-release library (version 0.2.3b2). Production deployments over DNP3 should be validated against target hardware before broad rollout.
- The DNP3 driver requires a 30-second startup window to complete its initial data poll from the device. Users will experience a longer-than-usual connection time when first connecting via DNP3. This is a known library behaviour and not a defect.

- The `dnp3-python` library is only available as a pre-built binary wheel for specific platforms (Windows x64, macOS x86_64, macOS arm64, Linux x64). Connecting from an unsupported platform will fall back to a simulation stub that cannot communicate with real hardware.
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v0.1.1 — Released 11 May 2026

A focused visual and interaction quality pass in response to early internal feedback. No functional capabilities were added or removed.

What changed for users

Navigation bar highlights the active page. The toolbar button for the current page now stays visually highlighted after clicking, so users can always tell at a glance which section of the application they are in.

Connect/Disconnect button shows the correct icon. A regression caused the connection button to display the wrong icon after a connection was established or dropped. This is now fixed.

Splash screen improved. The application startup screen now dynamically displays the application name, version number, and copyright notice over the branded background image.

Consistent dark background across all pages. All application pages now use a uniform dark background, removing visual inconsistencies between sections.

Download page validates the number-of-days field. The "Download Data Log" button is now disabled and the days field is highlighted if the user clears it, preventing a download attempt with no date range specified.

"Save unsaved changes" prompt fixed. The confirmation dialog that appears when closing the application with unsaved changes was incorrectly appearing even when no device was connected. It now only appears when a connection is active and there are genuinely unsaved edits.

v0.1.0 — Released 11 May 2026

The initial feature-complete build of the application, establishing the full architectural foundation and all primary user-facing pages.

What was delivered

Device connection (Modbus RTU and TCP). Users can connect to hydrogen sensor devices over a serial RS-485 connection (Modbus RTU) or over a network (Modbus TCP). The connection screen uses a circular UI with protocol and mode toggles, serial port discovery, and field validation.

Device configuration page. After connecting, users can view and edit device configuration registers organised into collapsible sections driven by a YAML data profile. Changes are saved to the device in a background thread with a visible progress indicator and field-level error reporting.

Real-time monitoring page. Sensor measurements are polled from the device at a configurable rate and

displayed on a live chart and scrollable data table. Data can be exported to CSV or Excel.

Datalog download page. Users can download the device's internal data log for a specified number of days, save application logs as a ZIP file, and download a device diagnostics binary file. All operations run in background threads with progress indicators and cancellation support.

Settings page. Provides a polling rate control.

Information page. Displays version history and help content.

Automated build and code signing pipeline. An Azure DevOps pipeline automatically builds the Windows executable (Hy-Link.exe) and digitally signs it using Azure Artifact Signing on every push to the main branch.

Device abstraction and profile system. A layered YAML-based device profile system resolves register maps, data types, access modes, and enum values for the Gen5 sensor family at runtime, allowing the UI to be driven by configuration rather than hardcoded register addresses.

Datalog download library (g5dlog). Handles protocol switching, block-by-block download, CRC verification, parsing to CSV, and obfuscation/deobfuscation of archive files.

Risks and notes

- This release involves a large initial code surface (over 11,000 lines added in a single integration commit for the device profiles and g5dlog library). Testing coverage should be verified before customer deployments.
- Python 3.12 is required.