

Changelog — v1.1.0-beta.30

Generated October 21, 2026

Changelog

All notable changes to this project will be documented in this file.

The format is based on [Keep a Changelog](#).

[Unreleased (1.1.0-beta.30)]

Added

- **MonitorLayout** (`app/layouts/monitorlayout.py`) — New live-monitor page featuring a circular hydrogen gauge (`GaugeFace`), profile-dependent measurand cards (`MeasurandCard`), custom painted icons (`MeasurandIcon`), and hydrogen-unit resolution from the device's `H2_UNITS` selector. Rendered for both MVP and full UI profiles. (`d1f20ef8`)
- **MainWindow.show_monitor()** (`app/layouts/mainlayout.py`) — New method that switches to `MonitorLayout` and syncs nav selection to `monitor_button`. (`d1f20ef8`)
- **MainWindow.show_legacy_chart()** (`app/layouts/mainlayout.py`) — Guards access to `ChartLayout` behind a USB-adapter-connected check; `show_chart()` now delegates to `show_monitor()`. (`d1f20ef8`)
- **MonitorLayout.configure_for_device()** and **MonitorLayout.clear_data()** — Wired into `MainWindow._apply_device_updates()` and `_on_device_connected()` alongside existing chart-layout equivalents. (`d1f20ef8`)
- **usb_adapter_status_changed slot** (`app/layouts/mainlayout.py`) — Automatically switches to `MonitorLayout` when the USB RS-485 adapter disconnects while `ChartLayout` is active. (`d1f20ef8`)
- **Unit tests for MonitorLayout** (`app/layouts/tests/test_monitorlayout.py`) — Initial test suite covering monitor page construction and update behaviour; parametrized test verifying the `OIL_TEMP` measurand uses the label "Liquid Temperature" in both UI profiles. (`d1f20ef8`, `a8581a00`)
- **CombinedDataLogDownloadThread** (`app/helpers/worker_threads.py`) — New `QThread` subclass that downloads both the customer CSV report and the verbose HLD diagnostics file for the same date range in a single operation, emitting `stage`, `progress`, `finished`, and `error` signals. Supports Modbus and DNP3 protocols. (`9ae19b22`)
- **"All days" download checkbox** (`app/layouts/downloadlayout.py`) — A `QCheckBox` labelled "All days" lets users download the complete available data history (`max_days=None`); a status label confirms when the mode is

active. (9ae19b22)

- **Unit tests for CombinedDataLogDownloadThread** (app/helpers/tests/test_combined_datalog_download.py) — Covers Modbus and DNP3 protocols for both bounded (max_days=7) and unbounded (max_days=None) date ranges. (9ae19b22)
- **_raise_if_cancelled() helper** (app/drivers/dnp3_python_driver.py) — New method on `_DNP3DriverBase` that raises `ConnectionAbortedError` immediately when `_cancel_event` is set, enabling fine-grained cancellation checks throughout the serial probe and connect sequence. (ab878e36)
- **test_cancel_during_serial_probe_aborts_probe** — Verifies that a cancellation signal during serial port reading raises `ConnectionAbortedError` and correctly closes the serial port context manager. (ab878e36)
- **test_cancel_at_probe_handoff_is_not_cleared_before_stack_start** — Verifies that a cancellation raised during `_probe_serial_port()` propagates through `connect()` without being cleared by the base class, and that `DNP3Manager` is never instantiated. (ab878e36)
- **test_raw_reconnect_refreshes_group110_without_requiring_application_data** (app/drivers/tests/test_dnp3_python_driver.py) — Validates that a raw-serial reconnect issues an explicit Group 110 scan regardless of the `_require_application_data` flag. (34a4c95d)
- **pydnp3 visitor mock stubs** in `test_dnp3_python_driver.py` — Adds `dnp3_python`, `dnp3_python.dnp3station`, and `dnp3_python.dnp3station.visitors` module stubs so the driver's direct visitor fallback path is exercised in tests. (ab878e36)
- **UI profile pseudo-integration test suite** (device-profiles/tests/test_ui_profile_integration.py) — Exercises every field in `mvp_ui_profile.yaml` and `full_ui_profile.yaml` against every resolved model profile across all five connection paths (Modbus serial/TCP, DNP3 serial/serial-TCP/TCP) using deterministic mock wire values. Reports `missing_mapping`, `unexpected_mapping`, `invalid_format`, and `invalid_length` failures without opening a real device connection. (3f2ef3d6)
- **README.md documentation for pseudo-integration coverage** (ui-data-profiles/README.md) — Documents how to run `pytest device-profiles/tests/test_ui_profile_integration.py` and describes the failure categories it reports. (3f2ef3d6)
- **H2Scan logo PNG asset** (app/ui/h2scan_logo_white.png) — New PNG image replacing the previous SVG logo used in the UI. (28d70106)
- **publish_wheels CI job** (pipelines/build-dnp3-python-wheels.yml) — Collects Windows, macOS arm64, and macOS x86_64 wheel artifacts after successful build jobs and publishes them as the versioned `dnp3-python-wheels` Universal Package to the `internal-tools` Azure Artifacts feed. (af68d228)
- **UniversalPackages@0 download steps** in `azure-pipelines.yml`, `build-decoder.yml`, `build-dnp3-python-wheels.yml`, and `test-macos-signing.yml` — All pipeline jobs now pull the latest `dnp3-python-wheels` package from the `internal-tools` feed before installing application dependencies. (af68d228)
- **Build-process architecture diagram** (docs/build-process.drawio) — New draw.io diagram illustrating the full HY-LINK build and release process across feature, develop, release, and main/master branch lanes.

(69271830)

- **ApproveReleaseDocs agentless job** (pipelines/azure-pipelines.yml) — Replaces the deployment: ReviewReleaseDocs environment gate with a ManualValidation@0 task running on a server pool; pauses the build after documentation generation so reviewers can commit edits to the branch before resuming. (9f059b80)
- **test_rs485_termination_visibility_uses_resolved_profile** (app/layouts/tests/test_configurationlayout.py) — New integration-style test verifying that RS485_TERMINATION widget visibility is False for the 5X3X model and True for X6X00X and X8X00X. (862e4dcc)
- **Connection-settings persistence per protocol/transport mode** (app/layouts/circle_layout.py) — _connection_settings_by_mode dict, _read_connection_settings(), _restore_connection_settings(), and _connection_mode_key() methods added; settings are saved before switching mode and restored (with defaults for fields not previously visited) after the switch. (f909ca87)
- **test_connection_settings_are_retained_independently_for_each_mode** (app/layouts/tests/test_connectionlayout.py) — Full-widget integration test that exercises mode switching across Modbus/DNP3 and serial/TCP combinations and asserts field values are preserved per mode. (f909ca87)
- **test_disconnect_keeps_connection_form_values** (app/layouts/tests/test_connectionlayout.py) — Verifies that show_connection() does not call reset_connection_fields when invoked without reset_fields=True. (f909ca87)

Changed

- **MainWindow.show_chart()** (app/layouts/mainlayout.py) — Now delegates to show_monitor() instead of displaying ChartLayout directly; the legacy chart is only shown when the USB adapter is connected via the new show_legacy_chart() method. (d1f20ef8)
- **MainWindow._apply_device_updates()** — chart_layout.update_table(payload) is now guarded by config.usb_adapter_connected; monitor_layout.update_values(payload) is called unconditionally for non-manual update types. (d1f20ef8)
- **_DNP3DriverBase.connect() signature** (app/drivers/dnp3_python_driver.py) — Added optional clear_cancel_event: bool = True keyword argument; when False, the method does not call _cancel_event.clear(), preserving cancellation state across the serial probe/connect handoff. (ab878e36)
- **DNP3SerialDriver.connect()** — Calls _raise_if_cancelled() before _probe_serial_port() and then calls super().connect(clear_cancel_event=False) so a cancellation raised during the probe is not silently cleared before the OpenDNP3 stack starts. (ab878e36)
- **Group 110 integrity-poll guard** (app/drivers/dnp3_python_driver.py) — Removed the _require_application_data gate; Group 110 is now always scanned explicitly when it is not already present in the SOE cache, ensuring post-raw-reconnect reads do not return stale or empty values. (34a4c95d)
- **BaseLayout._start_connect_thread() and _cancel_connection()** (app/layouts/baselayout.py) — Removed the _CONNECT_THREAD_JOIN_TIMEOUT_MS constant and all blocking thread.wait() calls; the UI now immediately shows a "Connection still stopping" message without blocking the event loop. (ab878e36)

- **Download page button consolidation** (`app/layouts/downloadlayout.py`) — The separate "Download Device Diagnostics" button has been removed; the "Download Data Log" button now triggers `CombinedDataLogDownloadThread`, downloading both the CSV and HLD files in one operation. (9ae19b22)
- **DownloadLayout.download_datalog()** — Refactored to derive `max_days` from the all-days checkbox state (`None` when checked), prompt for a single CSV path, derive the HLD path from the same base name, and delegate to `CombinedDataLogDownloadThread`. (9ae19b22)
- **DiagnosticsDownloadThread error emission** (`app/helpers/worker_threads.py`) — Added missing `self.error.emit(str(exc))` call in the exception handler so download errors are properly surfaced to the UI. (9ae19b22)
- **H2Scan logo in BaseLayout** (`app/layouts/baselayout.py`) — Updated to load `h2scan_logo_white.png` instead of `h2scan_logo_white.svg`. (6e38b296)
- **MOISTURE_PCTRH and PressureGauge_unit display formats** (`ui-data-profiles/full_ui_profile.yaml`, `ui-data-profiles/mvp_ui_profile.yaml`) — Changed from `"%.8f"` to `"%.3f"` to match the precision contract enforced by the new pseudo-integration tests. (3f2ef3d6)
- **cibuildwheel build selectors** (`pipelines/build-dnp3-python-wheels.yml`) — Dropped `cp38-*` from `CIBW_BUILD` on Windows and macOS x86_64 jobs; Python 3.8 wheels are no longer produced. (78a76d8f)
- **test_write_octet_string_raw_verify_mismatch_raises_ioerror** — Renamed to `test_write_octet_string_serial_does_not_verify_against_stale_cache` and updated to assert that `read` is never called and the serial write completes successfully, reflecting the removal of the post-write readback verification. (34a4c95d)
- **Release branch promoted to true RC branch** (`pipelines/GitVersion.yml`, `pipelines/azure-pipelines.yml`, `pipelines/release-pipeline.yml`) — Release branch is now the authoritative release-candidate branch per gitflow, preventing QA review from burning tagged release versions. (69271830)
- **FinalizeDocs pipeline stage condition** (`pipelines/azure-pipelines.yml`) — Replaced `or(succeeded('ReviewReleaseDocs'), skipped('ReviewReleaseDocs'))` with `in(dependencies.ReviewReleaseDocs.result, 'Succeeded', 'Skipped')` to fix a bad condition expression that could cause downstream jobs to be skipped incorrectly. (6e37a2b5, da31e5fa)
- **ReviewReleaseDocs job converted from deployment to job** (`pipelines/azure-pipelines.yml`) — The PDF-rendering step is now a plain agent job (not a deployment job) that depends on both `Documentation` and the new `ApproveReleaseDocs` agentless job; removes the `strategy.runOnce.deploy` wrapper. (57c03636)
- **Release-pipeline documentation updated** (`pipelines/release-pipeline.yml`) — Replaced references to the `Release Notes Review` environment gate with a description of the new agentless `ManualValidation` approach. (9f059b80)
- **Build-process diagram updated** (`docs/build-process.drawio`) — Diagram cells updated to reference `ManualValidation` instead of `Release Notes Review` approval. (9f059b80)
- **Device profiles updated** for models `5X3X`, `X5000XGASX`, `X5000XOILX`, and `X5846X` — per-firmware YAML overlays and base profiles revised as part of the monitor page upgrade. (b8080fd8, 0eee8bd0)

- **OIL_TEMP measurand label renamed to "Liquid Temperature"** across `full_ui_profile.yaml`, `mvp_ui_profile.yaml`, `gen5_yaml_parser_Version2.c`, `mb_profile_parser.c`, `generate_hyguard_yaml.c`, `docs/HY-LINK_Owners_Manual.md`, and `ui-data-profiles/README.md`. (a8581a00)
- **MainWindow.show_connection() signature** (`app/layouts/mainlayout.py`) — Changed first positional parameter from `reset_fields: bool = True` to `_checked: bool = False` with a new keyword-only `reset_fields: bool = False`; `disconnect` no longer resets the connection form by default. (f909ca87)
- **CircleLayout.reset_fields()** (`app/layouts/circle_layout.py`) — Now clears `_connection_settings_by_mode` in addition to refreshing the serial port list, so a deliberate reset returns all fields to defaults. (f909ca87)
- **test_show_connection_uses_full_page_blue_background** renamed to `test_show_connection_uses_full_page_background` and updated to assert the background is set to `BLACK` (not `BLUE`). (f909ca87)
- **Release notes** (`docs/releasenotes.md`) — Condensed to a clean single-version format for 1.1.0-beta.25; prior version history removed from the file. (6925caf0)
- **Automated documentation check-ins** for v1.1.0-beta.6, v1.1.0-beta.12, v1.1.0-beta.18, v1.1.0-beta.22, and v1.1.0-beta.25 — Updated `docs/changelog.md`, `docs/releasenotes.md`, and `docs/stakeholdersummary.md`. (2d2489d9, 851f9447, 30f1b16b, 437fbd2b, d2fb7ce0)
- **Automated documentation check-in for v1.0.0** — Updated main-branch

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[v1.0.0] – 2026-09-10

Added

- **macOS code signing and notarization support** — `app/utility.spec` now reads `APPLE_CODESIGN_IDENTITY` from the environment and passes it to PyInstaller's `codesign_identity` parameter on macOS builds. (9064711f)
- **Apple Developer ID certificate download in CI** — Replaced `InstallAppleCertificate@2` tasks with `DownloadSecureFile@1` steps for both the Developer ID Application (.p12) and Developer ID Installer (.p12) certificates; keychain creation, import, and unlock are now performed in a subsequent bash step in both `azure-pipelines.yml` and `build-decoder.yml`. (62e42291)
- **App Store Connect API key download in CI** — A `DownloadSecureFile@1` step retrieves `AuthKey_5265B3G297.p8` for use by `xcrun notarytool`. (9064711f)
- **Signing identity resolution step in CI** — A bash script extracts the exact Developer ID Application and Developer ID Installer subject strings from the agent keychain and exports them as pipeline variables `APPLE_CODESIGN_IDENTITY` and `APPLE_INSTALLER_IDENTITY`. (9064711f)

- **macOS installer signing** — A `productsign` step signs the built `.pkg` with the Developer ID Installer identity and validates the result with `pkgutil --check-signature`. (9064711f)
- **Notarization and stapling** of the macOS installer package and DMG using `xcrun notarytool submit --wait`, `xcrun stapler staple`, and `xcrun stapler validate` in both `azure-pipelines.yml` and `build-decoder.yml`. (9064711f)
- **Keychain cleanup step** (`security delete-keychain`) with `condition: always()` removes the temporary signing keychain after the build finishes in both pipelines. (9064711f)
- **Signed macOS app-bundle verification** — `codesign --verify --deep --strict` run against `Hy-Link.app` and `HY-LINK-Decoder.app` immediately after `PyInstaller`. (9064711f)
- **Build and notarize locally** documentation added to `app/README-macOS.md` (section 4.3), covering `xcrun notarytool store-credentials`, `build-macos.sh`, stapling, and verification. (9064711f)
- **Apple App Signing variable group** linked in both `azure-pipelines.yml` and `build-decoder.yml`; pipeline variables converted to explicit `- name: / value: list` form. (1438ba61)
- **Manual macOS signing/notarization validation pipeline** (`pipelines/test-macos-signing.yml`) — standalone pipeline that builds, signs, notarizes, and publishes a test set of macOS artifacts independently of the main pipeline. (62e42291)
- **HY-LINK Owner's Manual** (`docs/HY-LINK_Owners_Manual.md`) — first-draft production manuscript covering all six application pages, connection procedures for Modbus and DNP3 over serial/TCP/gateway, platform-specific serial-port guidance, live monitoring, configuration, download, and settings. (01ee91a0)
- **GitVersion configuration** (`pipelines/GitVersion.yml`) for deterministic semantic versioning in CI; updated so `main` branch correctly inherits version numbers. (01ee91a0, 21f92f07)
- **X6X00X device family firmware overlay profiles** — per-firmware YAML files (`3_38_A.yaml`, `3_56_A.yaml`, `3_71_A.yaml`, `3_75_A.yaml`, `4_16_IH.yaml`, `4_19_IH.yaml`, `5_1_A.yaml`, `5_1_H.yaml`) and `base.yaml` added under `device-profiles/profiles/models/X6X00X/`. (8640d772, 0d4e01d8, 46f88c68)
- **Firmware-version overlay profiles for 5X3X, X5000XGASX, X5000XOILX, X5846X** — per-firmware YAML files (`3_38_A.yaml`, `3_56_A.yaml`, `3_71_A.yaml`, `3_75_A.yaml`, `4_16_IH.yaml`, `4_19_IH.yaml`, `5_1_H.yaml`) added under each model directory. (a283b34c, 46f88c68)
- **UsbSerialDevice dataclass and find_usb_serial_devices() function** (`app/helpers/usb_device_monitor.py`) — detects USB serial adapters by VID/PID using `pyserial`'s `list_ports`. (ab824603, 2a9bb9c7)
- **UsbSerialDeviceMonitor Qt class** (`app/helpers/usb_device_monitor.py`) — polls serial-port enumeration on a configurable interval and emits `device_connected`, `device_disconnected`, and `devices_changed` signals. (ab824603, 2a9bb9c7)
- **USB adapter hot-plug monitoring in MainWindow** — `_usb_monitor` instantiated at startup when `USB_ADAPTER_VID` and `USB_ADAPTER_PID` are configured; `_on_usb_adapter_connected` / `_on_usb_adapter_disconnected` slots propagate adapter status to `config`. (ab824603, 2a9bb9c7)

- **Unit tests for UsbSerialDeviceMonitor** (`app/helpers/tests/test_usb_device_monitor.py`) — covering VID/PID filtering and hot-plug signal emission. (ab824603, 2a9bb9c7)
- **ConnectThread.stopped signal** (`app/helpers/worker_threads.py`) — emitted unconditionally at the end of `run()` so the UI can release a reference to a cancelled thread. (ab824603, 2a9bb9c7)
- **ReadValuesWorker._stop_event** (`app/helpers/worker_threads.py`) — `threading.Event` used to interrupt `time.sleep()` calls in the poll loop immediately on `stop()`. (ab824603, 2a9bb9c7)
- **switch_to_dnp3() function** (`g5dlog/python/g5dlog/protocol_switch.py`) — issues CLI SDNP and `rst` commands over a raw Modbus connection to switch a device from Modbus to DNP3, then waits for the warm reset to complete. Exported via `g5dlog/__init__.py`. (ed163b8f)
- **ProtocolSwitchWorker DNP3 branch** (`app/helpers/worker_threads.py`) — when `point_name == "SWITCH_TO_DNP3"`, the worker acquires a `datalog_connection(restore_protocol=False)` and calls `switch_to_dnp3()`. (ed163b8f)
- **Device.datalog_connection(restore_protocol=False) mode** (`device-profiles/device_abstraction/device.py`) — when `False`, the context manager calls `close_raw_io()` and `disconnect()` instead of `end_raw_io()`. (ed163b8f)
- **ProtocolDriver.close_raw_io()** (`device-profiles/device_abstraction/protocols/base.py`) — new optional no-op method that closes the raw serial port without reconnecting the managed transport. (ed163b8f)
- **DNP3SerialDriver.close_raw_io()** (`app/drivers/dnp3_python_driver.py`) — closes `_raw_serial` without calling `end_raw_io()`. (ed163b8f)
- **ModbusRtuDriver.close_raw_io()** (`app/drivers/modbus_rtu_driver.py`) — closes `_raw_serial` without reconnecting `pymodbus`. (ed163b8f)
- **ModbusDriver.close_raw_io()** (`device-profiles/device_abstraction/protocols/modbus_driver.py`) — closes the `pymodbus` client without reconnecting. (ed163b8f)
- **g5dlog/python/uv.lock** — lock file added for the g5dlog Python package. (ed163b8f)
- **ModbusRtuDriver.cancel()** (`app/drivers/modbus_rtu_driver.py`) — calls `disconnect()` to unblock a blocked `pymodbus` call when the connection attempt is cancelled. (b17b5ffa)
- **ProtocolDriver.cancel()** (`device-profiles/device_abstraction/protocols/base.py`) — default implementation that calls `disconnect()`, giving all drivers a cancellable abort path. (b17b5ffa)
- **ModbusDriver.cancel()** (`device-profiles/device_abstraction/protocols/modbus_driver.py`) — closes the client so a blocked `pymodbus` call can return. (b17b5ffa)
- **ConnectThread._raise_if_cancelled()** (`app/helpers/worker_threads.py`) — raises `ConnectionAbortedError` if `_cancelled` is set; inserted at every blocking point in `run()`. (b17b5ffa)
- **DataType.DATE enum member** (`device-profiles/device_abstraction/models.py`) — `DATE = "date"` added so date registers have a distinct first-class type. (37723bb9)
- **WriteGroup dataclass** (`device-profiles/device_abstraction/models.py`) — new `@dataclass` with `group_id`, `pre_write`, and

`post_write` fields for write sequences bracketed by auxiliary operations. (37723bb9)

- **DataPoint.write_group field** (`device-profiles/device_abstraction/models.py`) — optional `WriteGroup` reference added to `DataPoint`. (37723bb9)
- **ProtocolSwitchWorker** (`app/helpers/worker_threads.py`) — new `QObject`-based background worker that executes a protocol-switch command, sleeps for the warm-reset interval, then emits `finished` or `error`. (18cd2339)
- **ConfigurationLayout.start_protocol_switch()** (`app/layouts/configurationlayout.py`) — new `action_mode = "protocol_switch"` dispatch path; runs `ProtocolSwitchWorker` off the UI thread with a modal indeterminate `QProgressBar` dialog. (18cd2339)
- **WriteGroup support in profile resolver** (`device-profiles/device_abstraction/profile_resolver.py`) — `_parse_write_group()` helper added; `write_group` propagated to synthetic string and combined `DataPoint` objects. (18cd2339)
- **CollapsibleSection.prepare_for_display()** (`app/layouts/collapsible_layout.py`) — forces geometry resolution so expanded sections render at their natural height before the page becomes visible. (6e06ec12)
- **ConfigurationLayout.prepare_for_display()** (`app/layouts/configurationlayout.py`) — delegates to each child `CollapsibleSection.prepare_for_display()` and activates the top-level layout. (6e06ec12)
- **ReadValuesWorker.initial_ready signal** (`app/helpers/worker_threads.py`) — emitted after the first full poll cycle completes so `MainWindow` can defer UI activation until real data is available. (6e06ec12)
- **MainWindow._on_initial_ready()** (`app/layouts/mainlayout.py`) — closes the progress dialog, calls `configuration_layout.prepare_for_display()`, and sets connection status only after the first values are displayed. (6e06ec12)
- **cancellation_callback parameter** added to `download_customer_report_dnp3_file()`, `download_diagnostics_dnp3_file()`, and `read_dnp3_file()`. (f3800478)
- **Cancel button references** (`_download_cancel_button`, `_diag_cancel_button`) stored on `DownloadLayout` so they can be disabled immediately on click. (f3800478)
- **ConnectionLayout._position_circle()** and `resizeEvent` override — dynamically centres the connection circle over the page content area. (f3800478)
- **Custom PyInstaller hook for cryptography** (`app/pyinstaller_hooks/hook-cryptography.py`, `app/pyinstaller_hooks/_init_.py`) — controls OpenSSL dynamic library bundling to prevent runtime version-mismatch errors. (70a50201, b32eb8a3)
- **app/pyinstaller_hooks/runtime-dyld.py** — macOS runtime hook that prepends `Contents/Frameworks` to `DYLD_LIBRARY_PATH` at startup. (f67c58bc)
- **Windows Inno Setup installer** (`installers/windows/setup.iss`). (27d5eac4, 5d371376)

- **macOS PKG installer** (installers/macos/Distribution.xml, installers/macos/component.plist). (27d5eac4, 5d371376)
- **EULA document** (installers/eula.rtf). (27d5eac4, 5d371376)
- **Application version number** displayed in the main window. (27d5eac4, 5d371376)
- **Human-readable device error status and mode** surfaced in the UI. (27d5eac4, 5d371376)
- **macOS application icon** (app/HY-LINK_icon.icns) added/updated. (27d5eac4, 5d371376)
- **DNP3SOEHandler._group110_decoded event** (app/drivers/dnp3_python_driver.py) — signalled after Group 110 byte extraction completes (including deferred background decode) so `get_octet_string()` does not return before data is ready. (1e327715)
- **_is_native_octet_value() helper** (app/drivers/dnp3_python_driver.py) — detects opaque pydnp3 wrapper objects by module/class name to gate safe deferred decoding. (1e327715)
- **Deferred Group 110 decode thread** (app/drivers/dnp3_python_driver.py) — when byte extraction fails inside the OpenDNP3 callback, a daemon thread decodes outside the callback to prevent I/O thread blockage. (1e327715)
- **ChartLayout.configure_for_device()** (app/layouts/chartlayout.py) — removes monitor fields absent from the resolved device profile, pruning plot lines, legend entries, format map, `valid_if` map, and measurand list. (70a589ae)
- **ChartLayout._format_map** and **ChartLayout._format_value()** — per-key `display_format` map populated at init; used to format monitor values. (70a589ae)
- **ConfigurationLayout.configure_for_device()** (app/layouts/configurationlayout.py) — applies the connected device profile after connection, refreshes enum widgets, and triggers visibility re-evaluation. (70a589ae)
- **ConfigurationLayout._refresh_enum_widgets()** — re-populates `QComboBox` widgets from the post-connection resolved profile. (70a589ae)
- **Model-specific device profiles** added: 503X/base.yaml, 6X/base.yaml, X5000XGASX/base.yaml, X5000XOILX/base.yaml, X5846X/base.yaml. (70a589ae, f89fd825)
- **SinceLatestRelease scribble flag** support added to pipeline documentation generation. (70a589ae)
- **Percent, elapsed, and remaining fields** added to datalog and diagnostics download modals. (a283b34c)
- **DNP3 Group 110 (OctetString) write support** via `SelectAndOperate` — `_calc_dnp3_crc()`, `_build_dnp3_serial_frame()`, `_build_dn`

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The format is based on Keep a Changelog.

[v0.4.2] — 2026-06-02

Fixed

- **Documentation files corrected** (docs/changelog-main.md, docs/changelog.md, docs/releasenotes-main.md, docs/releasenotes.md, docs/stakeholderssummary-main.md, docs/stakeholderssummary.md): restored all six documents to their correct state after they were corrupted/duplicated during pipeline tinkering. Removed duplicate content blocks, stale scribble:processed-tags comment artifacts embedded mid-document, and a truncated ## Unreleased (0.4.0-59) section that had been appended verbatim. Promoted the Unreleased (0.4.1-34) heading to [v0.4.1] and relocated misplaced entries to their correct release sections. ([7145a82a], [50c71146])
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[v0.4.1] — (pre-release; automated build 2026-06-01)

Documentation check-in committed by HY-LINK Build Pipeline. ([9e7b752a])

Added

- **DNP3 Group 110 (OctetString) write support** via SelectAndOperate: added `_calc_dnp3_crc()`, `_build_dnp3_serial_frame()`, and `_build_dnp3_g110_write()` helpers in `app/drivers/dnp3_python_driver.py` for constructing raw DNP3 serial frames with CRC-16/DNP and Group 110 application-layer WRITE packets. ([5d89fd2f], [8c8684a6])
- **`_make_octet_data()` helper** with six fallback construction strategies (`OctetData(raw)`, `RSlice`, `WSlice`, `Buffer.GetWSlice`, `Buffer.__setitem__`, `OctetData(bytearray)`) to build `opendnp3.OctetData` from raw bytes across all known pydnp3 build variants. ([5d89fd2f], [8c8684a6])
- **`DNP3SerialDriver._write_group110_raw()` and `_next_raw_app_seq()`**: raw-mode Group 110 write path with per-instance application-layer sequence counter (`_raw_app_seq`). ([5d89fd2f], [8c8684a6])
- **`DNP3SerialDriver.write()` override** to route Group 110 / string-typed points through the raw serial path instead of the OpenDNP3 stack. ([5d89fd2f], [8c8684a6])
- **`pipelines/build-decoder.yml`** — New dedicated Azure Pipelines build pipeline for the HY-LINK Decoder with three jobs (`Documentation`, `BuildWindows`, `BuildMacOS`), `PyInstaller` builds, `ArtifactSigning@1` Windows code signing, ZIP/DMG packaging, and pipeline artifact publication (`Hy-Link-Decoder-windows`, `Hy-Link-Decoder-macos`, `Hy-Link-Decoder-docs`). ([3e4fca34])
- **`pipelines/release-pipeline-decoder.yml`** — New YAML release pipeline for the HY-LINK Decoder replacing the corresponding Classic pipeline stages. ([3e4fca34])
- **`pipelines/release-pipeline.yml`** — New YAML release pipeline for the main Hy-Link application replacing the Classic pipeline. ([3e4fca34])
- **`preReleaseLabel` field** added to the `Generate build-metadata.json` PowerShell step in `pipelines/azure-pipelines.yml`

and pipelines/build-decoder.yml. ([3e4fca34])

Changed

- **All DNP3 writes now use SelectAndOperate instead of DirectOperate:** Gen5/HY-LINK firmware silently drops single-frame DIRECT_OPERATE (FC=5); the two-step SELECT (FC=3) + OPERATE (FC=4) sequence is now used for all write types (binary, analog float/double/int32/int16, and Group 110 OctetString). Updated `_WriteResult` docstring accordingly. ([5d89fd2f], [8c8684a6])
- **DNP3SerialDriver.begin_raw_io() no longer flushes the serial input buffer:** preserves pending bytes so that a RESET_LINK_STATES handshake emitted by the outstation immediately after OpenDNP3 disconnects is not discarded, preventing Group 70 Open File request timeouts. ([5d89fd2f], [8c8684a6])
- **DNP3 write error messages** updated from "DNP3 direct-operate for point index ... timed out/failed" to "DNP3 write for point index ... timed out/failed". ([5d89fd2f], [8c8684a6])
- **pipelines/azure-pipelines.yml — git tagging step:** tag format changed from `$(fullSemVer)` to `v$(MajorMinorPatch)` (e.g. v0.4.1) to fix GitVersion pickup for official release tags. ([addab245], [734dc254], [ceccd6a6], [8717a13e])
- **pipelines/azure-pipelines.yml — doc commit message:** updated to "[Automated] Checking in documentation for v\$(Build.BuildNumber) [skip ci]". ([8717a13e])
- **pipelines/azure-pipelines.yml CI trigger — exclude path:** corrected exclusion path from `documentation/**` to `docs/**`. ([cff3191f])
- **pipelines/azure-pipelines.yml CI trigger — pipelines/** include path:** added to path include list. ([c2969638])
- **pipelines/release-pipeline.yml — pipeline source name** corrected from 'Hy-Link Build' to '\pipelines\HY-LINK'. ([8fd5ebe8], [ffee773a])
- **pipelines/release-pipeline.yml — all Buildstash upload steps:** `versionComponentExtra` renamed to `versionComponentMeta`; `vcHost` changed from `azure-repos` to `bitbucket`; macOS platform identifier changed from `mac` to `macos`. ([ffee773a], [3ee44424])
- **pipelines/release-pipeline.yml — release package assembly:** Markdown release notes (.md) removed from the release package; only `releasenotes.pdf` is now included. `metadataArtifacts` updated accordingly. ([ffee773a])
- **pipelines/release-pipeline.yml / pipelines/release-pipeline-decoder.yml:** JSON path escaping fixed — backslashes in Windows paths are now doubled (\\) to prevent parse failures. ([9ee30346], [e172d34e])
- **pipelines/release-pipeline-decoder.yml:** `metadataArtifacts` variable populated and passed to all `BuildstashUpload@1` steps; macOS platform changed from `mac` to `macos`; `vcHost` changed from `azure-repos` to `bitbucket`. ([e172d34e])
- **pipelines/build-decoder.yml — setup comments** simplified: removed stale Bitbucket access token expiry

warning and pruned one-time Azure DevOps setup instructions. ([ed3349fa])

- **pipelines/azure-pipelines.yml — BuildWindows and BuildMacOS jobs:** removed pyinstaller ... hld_decoder.spec build steps and the corresponding DMG staging line; HY-LINK Decoder is now built exclusively by build-decoder.yml. ([3e4fca34])
- **PR triggers:** disabled (pr: none) on both pipelines/azure-pipelines.yml and pipelines/build-decoder.yml; builds now fire only on pushes to main or develop. ([51b770d9], [c2969638], [62e74f56], [1c4c19dd])

Fixed

- **DNP3 Group 110 writes:** dnp3_file_transfer.py and protocol_switch.py corrected to handle OctetString writes using the new SelectAndOperate-based path. ([5d89fd2f], [8c8684a6])
- **configurationlayout.py —** minor layout/UI bug fixes. ([5d89fd2f], [8c8684a6])
- **pipelines/azure-pipelines.yml — git push tag:** git push origin corrected to use v\$(MajorMinorPatch) instead of \$(fullSemVer), fixing a build error at the tagging step. ([addab245], [734dc254], [cecccd6a6])

[v0.4.0] — 2026-05-21

Added

- **pipelines/release-pipeline.json —** Validated JSON export (v1) of the Azure DevOps Classic Release Pipeline for Hy-Link. Defines three environments (Dev Testing, QA Testing, Full Release) with steps to rehydrate build-metadata.json, read release notes, package platform artifacts, and upload to Buildstash via BuildstashUpload@1. Secret variable BSKEY declared in the pipeline definition; approvers must be configured on QA Testing and Full Release environments after import. ([c70eaf5a])
- **Generate build-metadata.json PowerShell step** in pipelines/azure-pipelines.yml: emits a structured JSON file containing GitVersion variables (major, minor, patch, preReleaseTag, semVer, fullSemVer, sha, shortSha, branchName, commitDate), Azure DevOps build context (sourceBranch, sourceVersion, repoName, repoUrl, buildId, buildNumber), and a ciTimestamp (ISO 8601). Written to \$(Build.ArtifactStagingDirectory)/docs and published as part of the Hy-Link-docs artifact so the release pipeline can rehydrate version variables without re-running GitVersion. ([c70eaf5a])
- **Package Windows executables as ZIP PowerShell step:** all .exe files in \$(Build.ArtifactStagingDirectory) are compressed into Hy-Link-windows-\$(fullSemVer).zip before the artifact is published. ([c70eaf5a])
- **app/hld_decoder.spec —** New PyInstaller spec file for the HY-LINK-Decoder application with platform-specific icon selection (.ico on Windows, .icns on macOS), hidden-import collection for g5dlog and device_abstraction submodules, and a macOS onedir+COLLECT+BUNDLE block. ([99902071], [bf867f9c])
- **app/HY-LINK_Decoder_icon.ico / app/HY-LINK_Decoder_icon.icns —** Application icons for the HY-LINK Decoder on Windows and macOS respectively. ([23efbd59])

- **macOS DMG packaging step** in Azure Pipelines (BuildMacOS job): both .app bundles staged and packaged into a compressed read-only DMG via `hdiutil create -format UDZO`, preserving POSIX execute permissions that zip archives strip. ([e47c3025])
- **.metadata_never_index sentinel file** written to the DMG staging folder to prevent Spotlight from acquiring a lock on the source directory during `hdiutil` image creation. ([bf867f9c])
- **DownloadPipelineArtifact@2 step** added to both BuildWindows and BuildMacOS jobs: downloads the Hy-Link-docs artifact generated by the Documentation job before PyInstaller runs, ensuring freshly generated `releasenotes.md` is bundled. ([c73082ba])
- **PublishPipelineArtifact@1 step** in the Documentation job: generated Markdown docs (including `build-metadata.json`) published as the Hy-Link-docs pipeline artifact. ([b4b64a5f], [c70eaf5a])
- **Separate Documentation job** in Azure Pipelines: documentation generation, version tagging, and git commit-back steps extracted from BuildWindows into a dedicated job that runs first on windows-latest; BuildWindows and BuildMacOS both declare `dependsOn: Documentation`. ([dabe7c05])
- **CopyFiles@2 staging step** sets `OverWrite: true`. ([dabe7c05])
- **sys import** added to `app/layouts/infolayout.py`. ([3be2bd68])
- **ReadValuesWorker.queue_manual_read_keys()** (`@pyqtSlot(list)`) and **_consume_manual_read_keys()** added to `app/helpers/worker_threads.py` for priority one-shot device reads; `_pending_manual_keys: set[str]` initialised in `__init__`. ([8a0876a1])
- **Cancel button** added to `ConfigurationLayout` alongside the Save button; both buttons enabled together on edit and disabled together after a device refresh or discard. Cancel triggers a manual re-read of all edited keys via `queue_manual_read_keys`. ([8a0876a1])
- **Dual documentation baseline strategy** in Azure Pipelines: `*-main.md` baseline files written only by `main` branch builds. ([e687502a])
- **docs/releasenotes-main.md, docs/changelog-main.md, docs/stakeholdersummary-main.md** — initial `-main` baseline documents seeded with content through v0.3.0. ([97f2733d])
- **docs/releasenotes.md, docs/changelog.md, docs/stakeholdersummary.md** — initial baseline documents seeded with historical entries through v0.3.0. ([1059a56f])
- **GitVersion integration:** `gitversion-setup@4` and `gitversion-execute@4` tasks added to `pipelines/azure-pipelines.yml`; build number format set to `$GitVersion_FullSemVer`. ([278c5d08], [34057bca], [f7f8a536])
- **replacetokens@7 task:** injects `#{fullSemVer}#` token into `app/utility.py` at build time so the displayed version matches the computed SemVer. ([278c5d08])
- **Scribble documentation tasks:** `UniversalPackages@0` download of `scribble-tasks` feed package plus three `DotNetCoreCLI@2` build invocations for Release Notes, Changelog, and Stakeholder Summary. ([34057bca], [854c3912])

- **Git tagging step:** creates an annotated tag and pushes it to origin when `taggedRelease` is `true`. ([854c3912])
- **Doc commit-back step:** fetches latest, stages `./docs`, and pushes generated Markdown back to the source branch via a bot identity. ([854c3912], [2c7738f3], [d67ec0f2])
- **Pipeline parameters block:** `writeReleaseNotes`, `writeChangelog`, `writeStakeholderSummary` (boolean, default `true`). ([854c3912])
- **develop branch** added to CI trigger. ([5978564b])
- **app/utility.py:** `TOOL_VERSION` changed from hard-coded `'0.0.1'` to the `#{fullSemVer}#` replace-token. ([1b36e94a])
- **InfoLayout** (`app/layouts/infolayout.py`): Info page now displays `docs/releasenotes.md` via `setMarkdown()` with a `FileNotFoundError` fallback. ([7c827084], [97f2733d])
- **g5dlog/python/g5dlog.egg-info/SOURCES.txt:** `g5dlog/dnp3_file_transfer.py` added to the egg-info manifest. ([e87bb12b])

Changed

- `**\pipelines/`

All notable changes to this project will be documented in this file.

The format is based on Keep a Changelog.

[v0.4.1]

Added

- **DNP3 Group 110 (OctetString) write support** via `SelectAndOperate`: added `_calc_dnp3_crc()`, `_build_dnp3_serial_frame()`, and `_build_dnp3_g110_write()` helpers in `app/drivers/dnp3_python_driver.py` for constructing raw DNP3 serial frames with CRC-16/DNP and Group 110 application-layer WRITE packets. ([5d89fd2f], [8c8684a6])
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[v0.4.0] — 2026-05-21

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- **pipelines/release-pipeline.json** — Validated JSON export (v1) of the Azure DevOps Classic Release Pipeline for Hy-Link. Defines three environments (Dev Testing, QA Testing, Full Release) with steps to rehydrate build-metadata.json, read release notes, package platform artifacts, and upload to Buildstash via BuildstashUpload@1. Secret variable BSKEY declared in the pipeline definition; approvers must be configured on QA Testing and Full Release environments after import. ([c70eaf5a])
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compressed into `Hy-Link-windows-${fullSemVer}.zip` before the artifact is published. ([c70eaf5a])

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- **docs/releasenotes-main.md, docs/changelog-main.md, docs/stakeholderssummary-main.md** — initial `main` baseline documents. ([97f2733d])
- **docs/releasenotes.md, docs/changelog.md, docs/stakeholderssummary.md** — initial baseline documents. ([1059a56f])
- **GitVersion integration:** `gitversion-setup@4` and `gitversion-execute@4` tasks added to `pipelines/azure-pipelines.yml`;

build number format set to `$GitVersion_FullSemVer`. ([278c5d08], [34057bca], [f7f8a536])

- **replacetokens@7 task:** injects `#{fullSemVer}#` token into `app/utility.py` at build time so the displayed version matches the computed `SemVer`. ([278c5d08])
- **Scribble documentation tasks:** `UniversalPackages@0` download of `scribble-tasks` feed package plus three `DotNetCoreCLI@2` build invocations for Release Notes, Changelog, and Stakeholder Summary. ([34057bca], [854c3912])
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- **g5dlog/python/g5dlog.egg-info/SOURCES.txt:** `g5dlog/dnp3_file_transfer.py` added to the egg-info manifest. ([e87bb12b])
- **preReleaseLabel field** added to the `Generate build-metadata.json` PowerShell step in `pipelines/azure-pipelines.yml` and `pipelines/build-decoder.yml`. ([3e4fca34])

Changed

- **pipelines/azure-pipelines.yml — Buildstash removed from build pipeline:** Buildstash publishing is now handled exclusively by the release pipeline. The build pipeline produces artifacts and `build-metadata.json`; the release pipeline consumes them. ([c70eaf5a])
- **taggedRelease variable logic:** simplified from `containsValue(parameters.releaseBranches, ...)` to `eq(variables['Build.SourceBranchName'], 'main')`. ([c70eaf5a])
- **Artifact names stabilised:** `Hy-Link-docs-${fullSemVer}` → `Hy-Link-docs`; `Hy-Link-windows-${fullSemVer}` → `Hy-Link-windows`; `Hy-Link-macos-${fullSemVer}` → `Hy-Link-macos`. Full version is carried inside `build-metadata.json`. ([c70eaf5a])
- **app/utility.py — application data directory:** `Config.EXE_DIR`, `Config.LOG_DIR`, and `Config.REPORT_DIR` now resolve under `~/Documents/HY-LINK` via `os.path.expanduser` instead of `QDir.currentPath()`; directories created with `os.makedirs(..., exist_ok=True)`; `QDir` import removed from this path. ([d62fb120])
- **app/helpers/utilitylogger.py — UtilityLogger.LOG_DIR** migrated from `QDir.currentPath()` to `~/Documents/HY-LINK/logs`; `QDir` import removed. ([d62fb120])

- **app/utility.py — splash-screen version rectangle:** version label now right-aligned and 50 % of card width wide to prevent clipping of longer pre-release strings. ([83d6db1d])
- **app/layouts/infolayout.py — releasenotes.md** opened with `encoding='utf-8-sig'` to handle the UTF-8 BOM emitted by the documentation pipeline. ([666e8367])
- **app/hld_decoder.spec / app/utility.spec — macOS builds** switched from `onefile+BUNDLE` to `onedir+COLLECT+BUNDLE`, eliminating `hdiutil: resource busy` failures. ([bf867f9c])
- **Azure Pipelines — BuildWindows / BuildMacOS:** both jobs now check out with `fetchDepth: 0` and `fetchTags: true` to give `GitVersion` full history. ([fb8bb3c2])
- **Azure Pipelines — Windows publish targetPath:** corrected from `$(Build.ArtifactStagingDirectory)/win-x64` to `$(Build.ArtifactStagingDirectory)`. ([64bd9dc3])
- **Azure Pipelines — git add scope in commit-back step:** narrowed from malformed `./docs -- '!app/utility.py'` to `./docs`. ([d62fb120])
- **Azure Pipelines — macOS publish target:** changed from the whole staging directory to the single `Hy-Link-macos-$(fullSemVer).dmg` file. ([e47c3025])
- **app/utility.spec — fixed parent_dir** reference for `docs/releasenotes.md`; replaced invalid `os.path.dirname(self.config.PARENT_DIR)` with `spec-local parent_dir`. ([a5ee6d64])
- **Pipeline structure:** top-level `pool / steps` replaced by a `jobs:` block; macOS support added as a separate `BuildMacOS` job. ([99902071])
- **ModbusRtuDriver.connect()** error message now includes the configured COM port name (`self._com_port`) rather than the internal `pymodbus comm_params.port`. ([8a0876a1])
- **Field border colour semantics** updated across `ConfigurationLayout` and `CircleLayout`: orange border → required field is empty; yellow border → field is dirty/edited but not yet saved; red border → save failed. ([8a0876a1])
- **ConfigurationLayout._on_update_values()** unified date and non-date fields through `_apply_format()`, removing the special-cased `UTC datetime.fromtimestamp` path. ([8a0876a1])
- **ConfigurationLayout._format_dict** now stores all `display_format` values (including `date_mmddyyyy`) instead of excluding them. ([8a0876a1])
- **ConfigurationLayout._on_field_edited() and _on_combo_edited()** now enable both Save and Cancel buttons together; combo boxes get a yellow border on edit. ([8a0876a1])
- **_on_update_values()** resets combo-box and line-edit styles and disables both Save and Cancel buttons after values are refreshed from the device. ([8a0876a1])
- **Chart legend entries** are now hidden when a polled value is falsy/empty (not only on `ValueError`). ([8a0876a1])

- **ReadValuesWorker main loop** now processes queued manual read keys at the start of each iteration, pausing periodic polling while the explicit re-read executes. ([8a0876a1])
- Removed unused `QIcon` import from `configurationlayout.py` and `chartlayout.py`. ([8a0876a1])
- Removed hard-coded `monitor_selected.svg` icon override set in `ChartLayout.__init__`. ([8a0876a1])
- `ipaddress` field border colour in `CircleLayout` changed from yellow to orange (empty-field indicator). ([8a0876a1])
- Scribble tasks: `ScribbleCommitScope` changed from `LatestOnly` to `All`; `ScribbleBaselineFile` now uses the branch-strategy-aware `$(scribbleBaselineSuffix)` variable. ([e687502a])

Removed

- **releaseBranches pipeline parameter** removed; `taggedRelease` logic now depends solely on the `main` branch check. ([c70eaf5a])
- **app/drivers/tests/test_dnp3_gec_driver.py** — deleted the 531-line GEC DNP3 driver unit-test suite; the GEC driver is superseded by `dnp3_python_driver`. ([23efbd59])

Fixed

- macOS `.app` bundle crash on launch caused by working directory being `/` (not writable); resolved by always directing logs and reports to `~/Documents/HY-LINK`. ([83d6db1d], [d62fb120])
- macOS DMG creation failure (`hdiutil: resource busy`) caused by Spotlight indexing locking the staging folder during image creation; suppressed via `.metadata_never_index`. ([bf867f9c])
- Release notes Info page displaying garbled characters due to a UTF-8 BOM in pipeline-generated files; fixed by opening `releasenotes.md` with `encoding='utf-8-sig'`. ([666e8367])
- PyInstaller bundling a stale `releasenotes.md` because build jobs ran before the `Documentation` job pushed updated files; resolved by downloading the docs pipeline artifact before invoking PyInstaller. ([c73082ba])
- `app/utility.spec` referenced `self.config.PARENT_DIR` (invalid in spec scope); replaced with spec-local `parent_dir`. ([a5ee6d64])
- Version string on the splash screen truncated for longer pre-release version numbers; corrected by right-aligning the version rectangle and sizing it to 50 % of the card width. ([83d6db1d])
- `git add path glob ./docs -- '!app/utility.py'` was malformed on the Windows agent; simplified to `./docs`. ([d62fb120])
- `InfoLayout` (`app/layouts/infolayout.py`): corrected path to `releasenotes.md` so the file resolves correctly relative to the application bundle. ([3fe99fe5])
- `app/layouts/infolayout.py`: replaced tab indentation with spaces in the `try/except` block reading `releasenotes.md`, resolving an `IndentationError` at runtime. ([d508bd56])

Added

- `ReadValuesWorker.queue_manual_read_keys()` (`@pyqtSlot(list)`) and `_consume_manual_read_keys()` to support one-shot device reads that take priority over the periodic poll loop. ([64c9015f], [a8435785])
- **Cancel button** to `ConfigurationLayout` that triggers a manual re-read of all edited keys from the device to discard unsaved changes. ([64c9015f], [a8435785])
- Indeterminate `QProgressBar` shown alongside the Save button while a save operation is in progress. ([a8435785])

Changed

- `ModbusRtuDriver.connect()` error message now includes the configured COM port name (`self._com_port`) rather than the internal pymodbus `comm_params.port`. ([64c9015f], [a8435785])
- **Field border colour semantics** updated across `ConfigurationLayout` and `CircleLayout`:
 - Orange border → required field is empty.
 - Yellow border → field is dirty/edited but not yet saved.
 - Red border → save failed for that field. ([64c9015f], [a8435785])
- `ConfigurationLayout._on_update_values()` unified date and non-date fields through `_apply_format()`, removing the special-cased UTC `datetime.fromtimestamp` path; local timezone is now used for `date_time` formatting. ([64c9015f], [a8435785])
- `ConfigurationLayout._format_dict` now stores all `display_format` values (including `date_mmddyyyy`) instead of excluding them. ([a8435785])
- `ConfigurationLayout._on_field_edited()` and `_on_combo_edited()` now enable both Save and Cancel buttons together. ([a8435785])
- `_on_update_values()` resets combo-box and line-edit styles and disables both Save and Cancel buttons after values are refreshed from the device. ([a8435785])
- Chart legend entries are now hidden when a polled value is falsy/empty (not only on `ValueError`). ([a8435785])
- Settings page advanced-settings panel is now hidden by default behind a collapsed `QWidget`. ([b9604f12], [a8435785])
- **Settings button** is now always visible (pre-connection); visibility toggling removed from `BaseLayout.handle_connection_status()`. ([b9604f12])

- Polling interval and log-rate fields on the Settings page now display units labels. ([64c9015f])
 - Removed unused `QIcon` import from `configurationlayout.py` and `chartlayout.py`. ([a8435785])
 - Removed hard-coded `monitor_selected.svg` icon override set in `ChartLayout.__init__`. ([a8435785])
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[v0.2.0] — 2026-05-11

Added

- **DNP3 support** via `dnp3-python` (`pydnp3`) library — `DNP3TcpDriver`, `DNP3SerialDriver`, and `DNP3UdpDriver` (stub) in `app/drivers/dnp3_python_driver.py`. ([3f9bba27], [4184c0cc])
- `_SOEHandler` (`ISOEHandler`) stores last-received values for each (GroupVariation, index) pair; supports binary inputs, analog inputs/outputs, counters, binary output status, and OctetStrings (Group 110). ([3f9bba27])
- `_decode_octet_string()` helper for decoding DNP3 Group 110 OctetString values to Python strings. ([4184c0cc])
- `_gvid_for_point()`, `_gvcls_for_gvid()`, `_parity_const()`, `_stopbits_const()` helpers for DNP3 group/variation resolution. ([3f9bba27])
- Channel listener and application wrapper objects stored as instance attributes to prevent Python GC from destroying C++ wrappers while OpenDNP3 still holds raw pointers. ([3f9bba27])
- DNP3 connect timeout increased to 30 s (from 10 s) to accommodate slow Disable-Unsolicited outstation responses. ([3f9bba27])
- **Dnp3Diagnostic** C# tool (`tools/Dnp3Diagnostic/`) for testing DNP3 connections independently of the UI. ([3f9bba27], [4184c0cc])
- `g5dlog` datalog download library: `download_customer_report`, `download_diagnostics`, `DatalogDownloadThread`, and `DiagnosticsDownloadThread` fully wired with real connections and progress callbacks. ([3f9bba27])
- `dnp3_python-0.2.3b2` pre-built wheels for Windows (cp38–cp312) and macOS (arm64 / x86_64, cp38–cp312) bundled under `app/wheel/`. ([3f9bba27])
- `DatalogDownloadThread` and `DiagnosticsDownloadThread` now emit an initial `progress(0, 0)` signal at download start to show an indeterminate bar immediately. ([3f9bba27])
- `_LoggerStream` redirects `stdout/stderr` from `g5dlog` download calls to the application logger. ([3f9bba27])
- `g5dlog` DNP3 file-transfer support (`dnp3_file_transfer.py`) and `protocol_switch` helpers. ([3f9bba27])
- Unit tests for `dnp3_python_driver` (`app/drivers/tests/test_dnp3_python_driver.py`). ([3f9bba27], [4184c0cc])
- `Gen5/base.yaml` and `Gen5/gen5_Version2.yaml`: added full DNP3 point map (`binary_inputs`, `analog_inputs`, `analog_outputs`, `octet_strings`). ([c10c740e])

- `Device.datalog_connection()` now wraps `begin_raw_io()` / `end_raw_io()` in try/except with structured logging. ([c10c740e])
- `ModbusDriver.connect()` now raises `ConnectionError` on failure (was a silent no-op). ([c10c740e])

Changed

- `dnp3_python_driver` supersedes the GEC (`dnp3_gec_driver`) implementation. ([4184c0cc])
- `dnp3-python` version pinned to 0.2.3b2 (downgraded from 0.3.0b2) for cross-platform wheel availability. ([3f9bba27])
- Azure Pipelines: Python version changed to 3.12 (from 3.13) for `dnp3-python` compatibility. ([3f9bba27])
- `g5dlog` parser field names and read order corrected to match C `dlprintOps.c`; many field keys renamed. ([3f9bba27])
- Old archived DNP3 driver files removed (`app/drivers/archive/`). ([3f9bba27])

Fixed

- DNP3 analog output (Group 40) and analog input (Group 30) data points now correctly merge DNP3 index/group into the existing `DataPoint` rather than creating duplicate stubs. ([c10c740e])
- `ModbusDriver.end_raw_io()` closes and reconnects the pymodbus client to restore clean Modbus state after a raw CLI session. ([c10c740e])
- `ModbusDriver.connect()` now raises `ConnectionError` on failure (was a silent no-op). ([c10c740e])

[v0.1.1] — 2026-05-11

Added

- `StateToolButton` (`app/helpers/statetoolbutton.py`) — a `QToolButton` subclass that tracks `checked` state and switches icons on hover, press, and toggle. ([ce102b83])
- `StateToolButton.changeIcons()` method to swap all three icon states at runtime. ([ce102b83])
- `BaseLayout._sync_nav_selection()` in `MainWindow`: synchronises the checked state of all navigation `StateToolButtons` when switching pages. ([ce102b83])
- `ui_ready` signal on `MainWindow`; window is hidden during startup layout construction to eliminate flash-of-unrendered-content. ([ce102b83])
- Warmup layout sequence (`_warmup_next_layout`) pre-renders all layouts off-screen before the window is shown. ([ce102b83])

- Splash screen constructed from `Hy-Link_splash.svg` SVG template with dynamically painted application name, version, and copyright text. ([7fc3d30c])
- `SaveConfigurationWorker` moved to `app/helpers/worker_threads.py`; removed duplicate definition from `configurationlayout.py`. ([7fc3d30c])
- `SerialPortComboBox` subclass refreshes available serial ports on `showPopup()`. ([7fc3d30c])
- `CircleLayout._line_has_required_value()` and `_update_connect_button_state()` validate all required fields before enabling the Connect button. ([7fc3d30c])
- `DownloadLayout` disables the Download button when the "Number of Days" field is empty. ([7fc3d30c])
- `ConfigurationLayout` now runs `SaveConfigurationWorker` on a `QThread` with indeterminate `QProgressBar` feedback and per-field red-border error marking. ([7fc3d30c])
- `closeEvent` in `MainWindow` prompts to save only when `CONNECTION_STATUS` is `True`. ([7fc3d30c])

Fixed

- The active page's navigation button now correctly shows the selected/highlighted state. ([ce102b83])
- Fixed the Connect/Disconnect button icon not updating correctly when connection state changed. ([7fc3d30c])
- The "unsaved changes" prompt on close is no longer shown when no device is connected. ([7fc3d30c])

[v0.1.0] — 2026-05-11

Added

- Initial release of the Hy-Link desktop application.
- Device connection via Modbus RTU (serial/RS-485) and Modbus TCP.
- Configuration page: read and edit device parameters defined in a YAML data profile, with collapsible sections, background-threaded saves, and field-level error reporting.
- Monitor page: real-time chart and tabular view of sensor measurements polled at a configurable rate; CSV/Excel export.
- Download page: datalog CSV download, application log ZIP export, and device diagnostics download — all with background-threaded progress indicators.
- Settings page: polling rate control.
- Info page: version history and help content.

- Splash screen displayed during application startup.
- Automated Azure DevOps build pipeline producing a signed Windows executable (Hy-Link.exe) on every push to main.
- YAML-driven device abstraction and profile system for the Gen5 sensor family.
- g5dlog library integration for datalog download, CRC verification, CSV parsing, and archive obfuscation/deobfuscation.