WHAT'S NEW

Meet the HG1v4

A guide for owners of the HG1 v2

The HG1v4 is a **drop-in hardware replacement** for the v2 — same DIN-rail footprint, same 24 V DC supply, same HART and Modbus wiring. It keeps everything that made the original HG1 a dependable HART-to-Modbus gateway, and adds four significant capabilities: a full on-device web interface, native HART multiplexer support, free secure remote access from anywhere, and automatic over-the-air firmware updates. This summary is aimed at existing customers — here's what to expect if you are upgrading or evaluating the v4.

Web-based configuration

Set up, commission and diagnose from any browser — no Windows software required.

HART multiplexer support

Pepperl+Fuchs KFD2-HMM-16 multiplexer — up to 16 field transmitters per gateway.

Free remote access

Reach the web UI, HART modem and Modbus data from anywhere — no VPN, no inbound ports, no subscription.

Over-the-air updates

Firmware releases arrive automatically. Cryptographically signed with automatic rollback.

DROP-IN

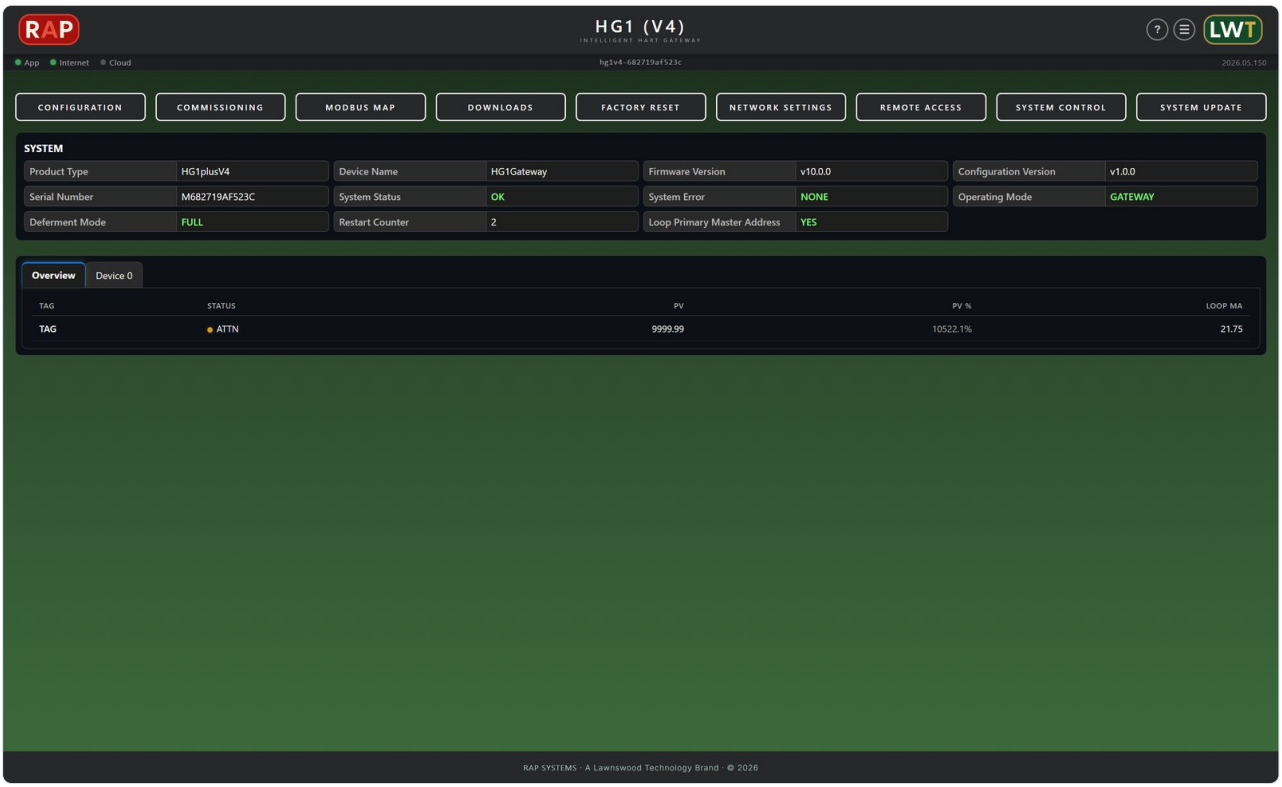
The HG1v4 fits where the v2 fits. Same DIN-rail footprint, same 24 V DC power, same HART loop and Modbus wiring — no panel changes, no re-terminations, no re-labelling. Power it up in place, browse to the device, and you are live.

What's new in v4

NEW

On-device web interface

The v4 is configured and operated entirely from a web browser. Every task — adding HART devices, editing Modbus registers, commissioning transmitters, running diagnostics, updating firmware — is available in the UI on the device itself. No Windows software, no COM ports, no vendor tool chain to install on the engineer's PC.



The Home page in a web browser — a status tile, a tab per HART device with live variables, and quick links to configuration, commissioning and updates.

NEW

HART Multiplexer support (KFD2-HMM-16)

One HG1v4 can act as HART master for a Pepperl+Fuchs KFD2-HMM-16 multiplexer — up to **16 field transmitters per gateway** across the MUX's channel bank. The web UI's Scan Devices tool discovers what the KFD2 sees on its loops and imports the transmitters you tick. Commissioning, Modbus mapping, and remote access all work the same as in standard gateway mode.

NEW

Free secure remote access — opt-in, from anywhere

When enabled, every networked feature — the web UI, the HART modem (via the virtual COM port tool), Modbus TCP, firmware updates — is reachable from anywhere in the world through an integrated secure tunnel, **free of charge — no subscription and no per-device fees**. Traffic is carried over TLS with a trusted, publicly-signed HTTPS certificate — no self-signed warnings, no certificate management on your side. The gateway makes an outbound connection only, so there are no firewall ports to open and no VPN to run.

Disabled by default. For sites that don't want their device exposed at all, remote access stays off and the gateway is reachable only on the local network. When the operator chooses to enable it from the web UI, two strong role-based passwords are **securely generated on the device** and shown **once** for safe capture — they are not recoverable afterwards:

- **Operator** — view live data, run diagnostics and export configuration.
- **Engineer** — full edit rights over configuration, commissioning and firmware.

Remote access can be **revoked at any time** from the same page, immediately closing the tunnel and invalidating both credentials.

Remote access is provided at no additional charge and requires no subscription. It is opt-in per device and requires the gateway to have outbound internet access. Service terms may change for future products or releases.

NEW

Over-the-air firmware updates

The gateway periodically checks a signed download channel and notifies the operator when a new release is available. Updates are applied to a redundant root partition, so a failed update automatically rolls back to the previous working image. A choice of **stable** and **beta** channels lets you opt in to early access when you want it.

NEW

Basic HART commissioning from the web UI

A dedicated Commissioning page in the web UI covers the everyday setup actions — setting the transmitter Tag, Descriptor, Message and Date; changing the polling address; trimming zero and span; and issuing standard HART universal and common-practice commands. Fields are automatically hidden or shown based on what each device actually supports, so you don't need a device-specific host tool for routine work.

Not a replacement for PACTware, FieldCare or SIMATIC PDM. For DD/FDT-based configuration — advanced calibration, method wizards, vendor-specific diagnostic screens — keep using those tools; the HG1v4 exposes a HART modem over USB serial or a virtual COM port so they work exactly as before.

NEW

Guided Modbus register-map generation

A new Modbus Map page in the web UI lets you generate a **minimal map** tailored to the actual transmitters you have connected, a **custom map** hand-built to match an existing host system, or a **legacy-compatible map** that preserves v2-style register addressing for drop-in replacement. Preview the map before saving; the gateway restarts with the new layout in seconds.

NEW

HG1Discover — redesigned Windows companion

HG1Discover is an all-new Windows app with the Lawnswood Technology look and feel. It finds HG1v4 gateways on the local network, opens the on-device web UI in one click, and pushes signed firmware bundles when you'd rather not wait for the OTA channel. Installer available from the Downloads page.

NEW

Machine-readable data endpoints (JSON / XML / CSV)

Live process data, device status and the running Modbus map are available as static files under `/live/` — `data.json`, `status.xml`, `dbexport.json` and `mbmap1.csv`. Any HTTP client works: `curl`, PowerShell, Python `requests`, a browser tab, or an existing SCADA HTTP driver. The same endpoints are reachable locally on the LAN and remotely through the secure tunnel, so dashboards, historians and asset registers can pull data from field devices without any custom protocol work.

NEW

Ready for the EU Cyber Resilience Act and equivalent security-by-design regimes

v4 was designed from the start around the security-by-design expectations set by the EU Cyber Resilience Act (CRA) and the industrial-automation standard **IEC 62443**, which is the framework most UK, US and international asset owners specify against. Firmware is signed and installed to a standby A/B partition with automatic rollback on boot failure; remote access is an outbound TLS-only tunnel with no inbound ports; SSH is disabled for interactive login; and every release ships with published notes and a version-pinned update channel. A published vulnerability-disclosure policy and per-release Software Bill of Materials (SBOM) will follow ahead of the September 2026 and December 2027 CRA milestones — giving asset owners a clear path to CRA-compliant procurement and to the equivalent obligations emerging in the UK (Cyber Security and Resilience Bill) and US (federal SBOM / SSDF procurement rules).

> **NOTE** **Legacy Windows PC tools no longer required**
>
> **HGx Configure**, **Modbus Editor** and **HGx View** are v2-era Windows applications and do not support the HG1v4 — there is nothing to install and nothing to replace them with for day-to-day operation. Every setup task, including editing the Modbus map, is handled through the on-device web interface from any browser. **HG1Discover** takes over the network-discovery and firmware-push role that HGx View used to fill. PACTware, FieldCare and SIMATIC PDM continue to work through the HART modem or via the HG1VspManager virtual COM port.

What's changed since v2

Feature	HG1 v2	HG1v4
Configuration tool	Windows PC software	On-device web UI (any browser)
HART topology	Direct multi-drop loop	Direct loop or KFD2 multiplexer (up to 16 devices)
Remote access	Requires LAN / VPN	Integrated secure outbound tunnel
Firmware updates	Manual, USB / serial	Automatic OTA (or push from HG1Discover)
User accounts	Single access level	Operator and Engineer roles
Modbus map editing	CSV via PC tool	Web UI generator + CSV export/import
Mounting / power / HART wiring	DIN-rail, 24 V DC, unchanged — existing panel installations swap in.	

Under the hood

v4 is a full platform refresh, not a spin of the v2. New silicon, new power-path hardware, new operating system and a rewritten HART timing engine that eliminates the periodic polling stalls seen on earlier hardware.

- **Microchip SAM9X60 industrial system-on-module** — 600 MHz ARM CPU on a factory-integrated module from US-headquartered Microchip Technology, with published long-lifecycle supply commitment for industrial designs. Full industrial temperature range −40 °C to +85 °C.
- **Improved RS-485 serial isolation** — higher working-voltage isolation on the Modbus RS-485 port, giving better immunity to ground-loop noise and common-mode transients on long field runs.
- **On-board supercapacitor — clean shutdown on power loss** — a supercapacitor keeps the gateway alive long enough to close open files, flush pending writes and shut down cleanly if 24 V DC is cut unexpectedly. No flash-filesystem corruption, no half-written configuration.
- **Redundant A/B firmware partitions** — every OTA update is written to a standby partition and only activated after a successful boot. A failed update automatically rolls back to the previous working image.
- **Expanded diagnostics surface** — live HART-bus status, per-transmitter statistics and last-poll timing available directly in the web UI, so field troubleshooting no longer requires an oscilloscope or a laptop full of protocol analyser tools.

What stays the same

- Core HART-to-Modbus gateway functionality — the same reason you bought a v2.
- HART modem access for PACTware, FieldCare, SIMATIC PDM — over direct serial or virtual COM port.
- Modbus RTU, TCP, and Encapsulated RTU — simultaneous multi-client support.

- Primary and secondary master roles, multi-drop loops, and device-template based custom command support.
- Rugged DIN-rail form factor and low-power 24 V DC operation.

Coming soon

Planned features on the HG1v4 roadmap. All will be delivered as free over-the-air updates to installed gateways — no additional hardware, no return-to-base.

COMING **Native cloud connectors — Azure IoT Hub & AWS IoT Core**

Direct, on-device connection to **Microsoft Azure IoT Hub** and **AWS IoT Core**. Configure device credentials in the web UI, pick the HART variables and Modbus registers you want to publish, and the gateway streams data into your existing cloud telemetry pipeline — no field-side gateway PC, no separate edge broker.

COMING **MQTT broker publishing — open IIoT integration**

Publish live process data to any **MQTT** broker (Mosquitto, HiveMQ, EMQX, cloud MQTT services) with configurable topics, QoS, retained messages and TLS. Bring HG1v4 gateways into existing Industrial IoT platforms, Node-RED flows, home-grown historians, or any tool that speaks MQTT.

Where next

Product Datasheet

Technical specifications, mechanical drawing and full capability overview.

`downloads.lawnswoodtechnology.com/ hg1v4/HG1v4-Datasheet.pdf`

Quick Start Guide

Five steps to power-on, connect, and reach the web UI for the first time.

`downloads.lawnswoodtechnology.com/ hg1v4/HG1v4-QuickStart.pdf`

Full User Manual

Every page of the web UI, every setting, plus commissioning and troubleshooting.

`downloads.lawnswoodtechnology.com/ hg1v4/HG1v4-Manual.pdf`

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