

ABH-100-S

Single-use transport logger · The one-way compliant record

ABH-100 family – Offline & transit loggers · Data logger datasheet

Sealed single-use logger for pharma transport and vaccine transit — starts logging, holds the evidence, and hands over a signed PDF on a USB plug-in.

2 channels	IP65	LED indication	278,528 readings	Battery: ≈0.8 yr (calc.)
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Specifications

Product type	Offline · single-use
Sensing channels	2 — Temperature · Humidity
Temperature	SHT41 on-board · −40...+125 °C · ±0.2 °C typ / ±0.4 °C max (0–65 °C)
Humidity	SHT41 · ±1.8 %RH typ
Measurement accuracy	±0.2 °C typ · ±0.4 °C max (0–65 °C) on-board SHT41
Display & indication	LED status indicator (green = OK · blinking red = excursion · solid red = fault)
Connectivity	Offline — no radio (IATA-simple)
Power	CR2032 lithium coin cell (220–225 mAh)
Battery life	≈0.8 yr (calculated, spec-compliant logging at firmware defaults; ≈0.6 yr worst-case temperature) — Sealed for the trip
Memory	8 MB MX25R6435F · 278,528 readings · separate never-erased audit region
Sample interval	300 s default · 1 s minimum
Enclosure	88.2 × 69.9 × 16.8 mm · Healthcare-grade disinfectant-resistant PC/ABS · UL94 V-0 · white
Ingress protection	IP65 (design target)
Mounting	Keyhole (2×) + bonded 10×2 mm magnets
Operating band	−20 to +60 °C (cell-limited band)
Firmware & transport	Signed .abhfw packages · dual-bank A/B · RSA-2048 · trial boot with automatic rollback · MQTT over TLS 1.2+ with per-device credentials (mTLS supported) · X.509 identity
Factory identity	ABH-[model]-[YYWW]-[5-digit sequence] — factory identity written to the ID EEPROM
Local indication	LED status indicator (green = OK · blinking red = excursion · solid red = fault)
End of trip	USB harvest into the platform, or read the signed PDF directly

Applications

Single-use transport & distribution	Cheapest compliant record for one-way pharma trips — no radio, IATA-simple, signed PDF on arrival.
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Part of the Abhilekh platform

One 80 × 50 mm 4-layer platform PCB — 145 parts, single-sided SMT — becomes 20 SKUs by BOM selection and a SKU record in the on-board ID EEPROM.

Firmware updates	Signed .abhfw packages · dual-bank A/B · RSA-2048 · trial boot with automatic rollback
Data transport	MQTT over TLS 1.2+ with per-device credentials (mTLS supported) · X.509 identity
Offline evidence	Plug an offline logger into a PC and it enumerates a FAT16 drive with README.TXT, DATA.CSV and an ECDSA P-256-signed REPORT.PDF — a self-verifying trip record.
Calibration	Probe channel templates live in the ID EEPROM; the platform tracks NIST-traceable calibration certificates, due dates and reminders per probe.
Certification roadmap	EN 12830:2018 — temperature recorders · CE — RED / EMC / safety · FCC Part 15 · WHO PQS E006 — vaccine cold chain · IEC 61010-1 / IEC 62368-1 · UN 38.3 / IEC 62133-2 — cells & packs — targets, not held certificates

The ABH line is at the design-frozen, pre-production stage: every enclosure has passed generated fit-check geometry (791/791 checks, 20/20 SKUs) and every battery-life, drop, thermal and IP figure shown is a calculated or simulated design estimate — measured values replace them as validation hardware runs. Regulatory marks above are the certification roadmap, not held certificates.

Neodrics Technologies · Vadodara & Gandhinagar, Gujarat, India · info@neodrics.com · <https://neodrics.com>