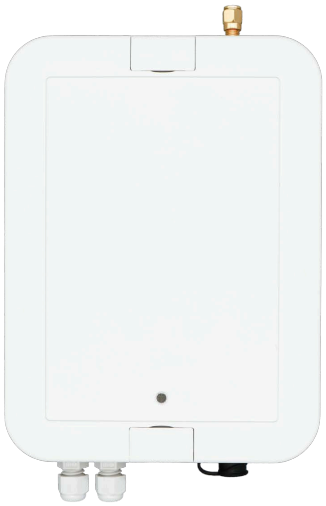
PRODUCT DATASHEET

CHESTER Current

Machine utilization and equipment health from non-invasive current sensing — clamp split-core probes around existing cables and retrofit any machine in minutes, not months.

REFERENCE NUMBER HPD.260706.08-R1 **DATE** July 6, 2026



Up to 4	Li-Ion	< 180 µA	IP67
split-core current probes	backup battery option	idle consumption	enclosure rating

Why integrators pick it

- **Non-invasive installation**
  Split-core current transformers clamp around existing cables — no rewiring, no production downtime, no electrician needed for installation.
- **Up to 4 channels**
  Monitor up to four independent machines or circuits simultaneously — AC and DC — from a single device.
- **Real-time activity detection**
  Automatically detects machine on/off states, idle periods, and production cycles — the raw material for accurate OEE calculation.
- **Anomaly alerts**
  Unusual current patterns reveal equipment degradation before failures occur — the entry point to predictive maintenance.

Where it fits

CHESTER Current turns any machine into a monitored asset without touching its controls: actual-versus-planned production time across the shop floor without an MES integration, current-draw patterns that flag bearing wear and motor degradation before breakdowns, per-machine energy consumption for cost allocation and ESG reporting, and digitization of legacy equipment with no PLC access or protocol support — clamp on and start collecting data immediately.

Split-core CTs up to 4 × AC/DC current probes → **CHESTER Current** sampling + aggregation, calibration → **LPWAN** LTE-M / NB-IoT / LoRaWAN → **HARDWARIO Cloud** device management, decoding → **Your OEE stack** REST API / callbacks

From motor cable to utilization dashboard — the probes convert magnetic flux to a differential voltage; the device samples, aggregates (min/max/average/median), and reports timestamped batches.

The current probes are powered from a software-controlled 5 V boost converter only during the measurement cycle, so CHESTER Current runs as a genuinely low-power device on its primary battery — the measurement interval sets the battery lifespan. Channels are calibrated with two-point linear interpolation to read out directly in amps; when devices are ordered together with the probes, HARDWARIO performs the channel calibration for you. On demand, channels can also be configured for single-ended voltage measurement. Local commissioning and firmware updates run over Bluetooth Low Energy from a phone with HARDWARIO Manager.

Technical specification

MEASUREMENT

Current channels	Up to 4 — non-invasive AC/DC measurement via split-core current probes (DCCT)
Probe ranges[1]	10 A / 100 A / 300 A / 1 000 A / 1 500 A maximum current
Voltage channels	Up to 4 single-ended channels (on demand); combined current + voltage channels never exceed 4
Probe power	Software-controlled 5 V boost converter — probes powered only during the measurement cycle
Calibration	Two-point linear interpolation per channel; average (DC) or RMS (AC) mode

CONNECTIVITY

Cellular	LTE-M / NB-IoT
LoRaWAN	Supported — network mode selectable in configuration
Local access	Bluetooth Low Energy — configuration and firmware updates via HARDWARIO Manager
Antenna	External via SMA antenna pigtail

POWER

Power supply	Battery, or mains with backup battery (Current Z)
Primary battery	Lithium cell 3.6 V, 7 700 mAh
Backup battery (Current Z)	Rechargeable Li-Ion, 3.7 V, 3 350 mAh
Idle consumption	< 180 µA
Peak consumption	< 250 mA

ENVIRONMENT & MECHANICAL

Operating temperature	−20 to +60 °C
Storage temperature	−30 to +70 °C
Ingress protection	IP67
Dimensions	130 × 175 × 45 mm

[1] Ranges are specified for DC. For AC, multiply the maximum expected current by 1.42 (square root of two) to verify the probe fits within the limit.

Ordering information

Three application variants cover the common deployment scenarios: **CHESTER Current** runs fully on its primary battery; **CHESTER Current Z** adds mains powering with a rechargeable backup battery and power-outage event reporting; **CHESTER Current 1W** adds external DS18B20 1-Wire temperature sensors. Split-core current probes are ordered separately, matched to each machine's current range.

Ordering code	Description
CHESTER-M-CGLS	CHESTER mainboard — LTE-M/NB-IoT, LoRaWAN, BLE, GNSS
CHESTER-K1-1C-2C-3C-4C	4× differential input module + 5 V boost for current probes (occupies slots A and B)
CHESTER-Z1	Backup module — DC 6–28 V input + rechargeable Li-ion cell (Current Z variant)
CHESTER-E2-LP	Enclosure with SMA antenna pigtail

COMPLIANCE

CE UKCA

CHESTER Current conforms to the Radio Equipment Directive 2014/53/EU — including the EN 18031-1 cybersecurity requirements mandatory since August 2025 — and the RoHS Directive 2011/65/EU, and to the equivalent UK statutory requirements. The built-in radio modules additionally carry FCC certifications for the US market.

Declaration of Conformity: HDC.260706.07

Scope a machine-monitoring pilot

A CHESTER Current evaluation unit clamps onto a representative production cell and feeds run/idle/stop timelines to your platform in an afternoon. Tell us about the machines — current ranges, phases, where the data should land — and we will configure a pilot kit that matches it, probes calibrated and ready to clip on.

→ **Read the developer documentation**

→ **Learn more about the CHESTER platform**

ABOUT HARDWARIO

HARDWARIO a.s. designs and manufactures industrial IoT devices in Liberec, Czech Republic. Founded in 2016 and listed on the Prague Stock Exchange, the company does more than 80 % of its business through its partners.

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