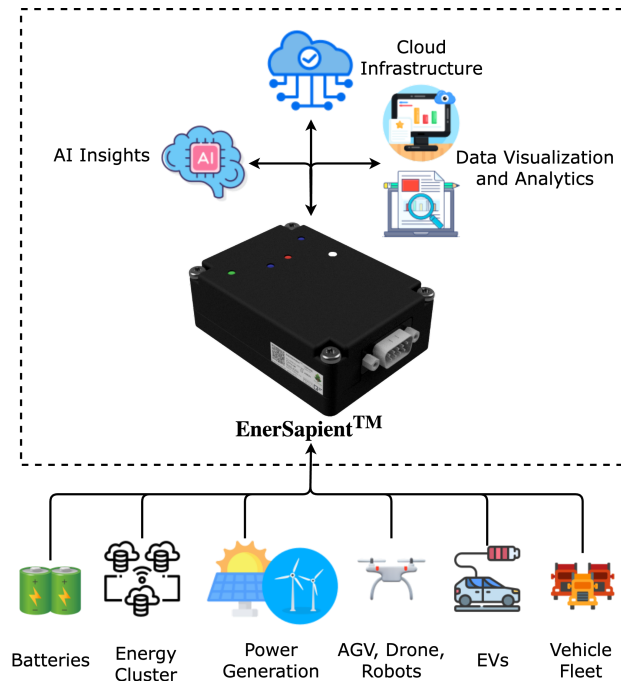


Modular, All-in-One Energy Intelligence System; purpose-built for integrators, installers, EV fleet operators, dealers and OEMs

Fully equipped to support AI-driven ecosystem - offered as **Pulse** and **Vision**, each connected with **QuantaCloud**

Seamlessly integrates energy systems with the cloud - enabling real-time monitoring, data visualization, and system optimization - from field to fleet, from microgrid to mobility

Suitable for Battery Energy Storage Systems (BESS), health monitoring, diagnostics, and optimized operations in renewables, microgrids, and industrial IoT



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Fully-integrated cloud connected solution



Access detailed reports on system health, performance and uptime



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Real-time Data and Actionable Insights



Remotely control, monitor and optimize your system with ease



Boost your Return on Investment through intelligent performance optimization



Agentic oversight and predictive system behavior

Complete specifications for both **EnerSapient™ Pulse** and **Vision** models are provided below

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Overview

Type	All-in-One Energy Intelligence System
Models	EnerSapient™ Pulse; EnerSapient™ Vision
Interface	DB9 Connector as per CiA DS102 (CAN Physical Layer) RJ45 Connector with custom pinouts (Modbus Physical Layer)
Cloud	QuantaCloud by QuantaFlare
AI Support	Proprietary Remote AI integration available (Vision)
Communication Protocols Supported	CAN bus, Modbus RTU over RS485, Modbus TCP/IP over Ethernet and Wi-Fi, Bluetooth Dual Mode
Wireless Connectivity	Wi-Fi (802.11b/g/n), 4G LTE module (Vision)
Power Consumption	0.1W (Pulse) , 0.7W (Vision) max

Features at a glance

Feature	Pulse	Vision
Local SQLite logging	✓	✓
Cloud sync, Real-time visualization	✓	✓
CANbus	✓	✓
Modbus TCP/IP over Wi-Fi	✓	✓
Modbus RTU over RS485 & TCP/IP over Ethernet	✗	✓
Bluetooth Data Collection	✗	✓
Data saved on cloud	✓ (Limited)	✓
Micro SD logging	✗	✓
GPS location tracking	✗	✓
AI/analytics engine	✗	✓
4G LTE connectivity	✗	✓
Offline data storage	✗	✓
Monthly system reports	✗	✓
Custom Dashboards	✗	✓



Under the Hood

Processor	ESP32 Dual-core Xtensa® 240 MHz MCU
Data Logging	On-board SQLite database, configurable stream logging
On-Board Storage	300 KB internal storage (expandable to 3 MB, optional)
SD Card Storage	Internal SD card, up to 32 GB (micro-SD) (Vision)
GPS Tracking	Internal GPS tracking module (UART-based) (Vision)
Functionality	Online by default, offline support available (Vision)
Security	Secure Boot, TLS for cloud upload, API key authentication

Communication Support

CAN bus	11-bit/29-bit ID, up to 1 Mbps, ISO 11898-2 compliant. Protocol support: J1939/FMS, CANopen, NMEA 2000, OBD2, CAN FD, UDS
Modbus RTU over RS485	RTU proxy (Client/Server), Client mode, Half-duplex, up to 10 Mbps
Modbus TCP/IP over Ethernet	Client mode, up to 10 concurrent sessions (more achievable sequentially), 10/100 Mbps (10/100Base-T) Ethernet ; complies with IEEE 802.3 standard
Modbus TCP/IP over Wi-Fi	Client mode; connects over 2.4GHz Wi-Fi (802.11 b/g/n), supports WPA-PSK security, up to 10 concurrent sessions (more connections achievable sequentially)
Bluetooth	Dual Mode (Classic + BLE); supports wireless configuration, diagnostics, and communication with compatible systems

Mounting and Environmental Conditions

Dimensions	2.5 in. (L) x 2.25in. (W) x 1 in. (H) (Pulse) 3.5 in. (L) x 2.6 in. (W) x 1.2 in. (H) (Vision)
Operating Temperature	-10°C to +60°C
IP Rating	IP41
Mounting	Wall or Panel mount with supplied screws. See Manual
Location	Indoors
Mass	2 lb

Certification and Compliance

Certifications	CE, FCC, RoHS (pending)
EMC Compliance	EN 61000-6-2, EN 61000-6-4 (pending)