

NightOwl-Ultra™

Plug-and-Play Panelized Remote Monitoring System

UL LISTED



DELIVERING INTELLIGENCE FROM FIELD ASSETS

Purpose-Built

Designed for water wells and pump systems, not a generic IoT platform.

Plug & Play

Pre-wired, panel-mounted. Field-ready in minutes.

UL Listed

Safety-certified for North American installations.

Cloud Connected

Cellular telemetry, web dashboard and automated reports.

The NightOwl-Ultra™ is a UL-listed, plug-and-play remote monitoring system engineered specifically for water well and pump applications.

Unlike general-purpose IoT loggers, the Ultra ships as a fully panelized, pre-wired solution, complete with NEMA 4X enclosure, 120VAC power input, and an integrated 24VDC power supply. Connect sensors, power up, and start monitoring. No custom integration required.

The Ultra continuously collects field data and delivers it to the NightOwl cloud platform, where water-system-specific analytics transform raw signals into actionable intelligence, from pump runtime and drawdown curves to fault detection and automated health reports.

Built for drillers, pump companies, water system operators, and Groundwater Conservation Districts across Texas and beyond.

I/O Specifications

Analog Inputs	2 channels, current only (0-20mA, 4-20mA)
Digital Inputs	4 dry contact detection (input to ground), pulse counting enabled on all 4
Modbus Expansion	1 x RS485 port (Modbus RTU)
Control Outputs	2 x ice cube relay, 7A rating (30V/5A, 250V/5A)
Serial Protocol	Modbus RTU / RS485

Power & Enclosure

Input Power	120VAC
Internal Supply	24VDC integrated converter
Enclosure Rating	NEMA 4X
Dimensions (H x W x D)	11.8 in x 11.8 in x 7.4 in
Weight	10.8 lbs
Operating Temp	-40F to 185F
Storage Temp	-40F to 185F
Mounting	Panel / wall mount
Certifications	UL Listed

Applications

- Municipal Water Systems
- Agricultural Irrigation
- Groundwater Conservation Districts
- Rural Water Supply
- Oilfield Water Infrastructure
- Remote Well Monitoring

Connectivity

Cellular	4G LTE, North America (USA, Canada, Mexico)
Carriers	Verizon, AT&T, T-Mobile
Data Protocol	MQTT / HTTPS
Transmission	Scheduled and exception-based
Remote Access	Web dashboard, desktop, tablet, mobile
API / Export	REST API, CSV export
SCADA	Via API / MQTT

Analytics & Intelligence

Pump Runtime	Cycle tracking, start counts, short-cycle detection
Drawdown Analysis	Water level behavior and aquifer health monitoring
Load Profiling	kW, efficiency trends, power factor
Fault Detection	Dry run, voltage anomalies, cavitation indicators
Health Reports	Automated weekly / monthly PDF reports
Alarms	Configurable thresholds, SMS, email, dashboard alerts
Data Logging	5-minute interval (default)

Cybersecurity

Data in Transit	TLS encrypted
Authentication	Hardware-based device authentication
User Access	Role-based access controls
Firmware Updates	Remote over-the-air (OTA)

Data & Software

Data Hosting	Cloud-based
Software Access	Web-based, desktop, tablet, and mobile
Alert Notifications	SMS, email, dashboard alerts
Data Export	CSV
System Health Check	Included