

SENTINEL™ PRO

Integrated transformer IoT monitor that turns grid data into operational intelligence



Sentinel PRO combines transformer health monitoring with advanced power-quality measurement in one connected platform. Paired with GRIDSCAN® hydrogen sensors and H2cloud, it gives utilities fleet-wide visibility into hydrogen, voltage, current, harmonics and other critical conditions that can contribute to transformer failure.

INTEGRATED INTELLIGENCE



TRANSFORMER HEALTH & POWER QUALITY

Continuously monitors dissolved hydrogen across the fleet to catch the first signs of a developing fault.

DISTURBANCE ANALYSIS



FIND THE ROOT CAUSE

Identify issues from variable generation or other disturbances.

ADVANCED POWER QUALITY



GRID INTELLIGENCE

Sentinel combines granular power quality data like voltage, current and harmonic distortion with additional information like hydrogen, moisture and pressure.

CENTRALIZED VISIBILITY



FLEET-WIDE MONITORING

Modbus and DNP3 connectivity integrate directly into SCADA, IoT platforms and OEM transformer monitoring or multi-gas DGA systems, and aggregates data through H2cloud.

BUILT FOR THE FIELD



RUGGED AND RELIABLE

Rated for hot, cold, salt water and submersible conditions; built to operate reliably wherever the fleet is deployed.

GRID-READY PLATFORM



BUILT FOR MODERN NETWORKS

Built for the full operating life of the assets it protects, cutting the ongoing cost of fleet-wide monitoring.



POWER & COMMUNICATION

- 12–24 VDC voltage input
- 10 W max power consumption
- 3-wire RS-485 (Modbus, DNP3), 5-pin M16 connector for power and communication
- Dynamic data log storage

RATED FOR HARSH ENVIRONMENTS

- IP67, marine-rated (C5M equivalent)
- Rated for hot, cold, salt water and submersible conditions

H2scan brings situational intelligence to hydrogen-critical environments. Continuous monitoring, self-calibration and zero false alarms turn hydrogen data into operational confidence with fewer interruptions, less downtime, and more momentum.

SENTINEL™ PRO

Sentinel PRO delivers the multi-parameter intelligence utilities need. Manage power quality and transformer health with predictive, real-time data delivered seamlessly to optimize operations with a complete, integrated solution.

SPECIFICATIONS

Dimensions	240 x 134 x 55 mm (9.44 x 5.27 x 2.16 in)
Communications	Global availability on cellular: 3G, 4G, LTE, NB-IoT Optional - Modbus/TCP, "Last Gasp" alert in case of interruption, internal secure storage 60+ days data
IP Rating	IP67, for both indoor and outdoor applications
Installation	Neodymium magnetic attachment, wall/pole mount bracket, Din-rail

VOLTAGE MEASUREMENT

Nominal Voltage	240 VAC @ 50 Hz/ 110 VAC @ 60 Hz
Operating Limits	87 VAC to 264 VAC @ 50 Hz 99 VAC to 121 VAC @ 60 Hz
Device Burden	10 VA (without accessories) 30 VA (with accessories)
External PSU	Not required
Measurement Range Limits	0 VA to 400 VAC
Voltage Connections	Ground mount: G clamp, voltage test lead, fused carrier, etc., pole mount: fused insulation piercing clamp (IPC)

CURRENT MEASUREMENT

DGA Compatibility	H2scan GRIDSCAN 5000 or 6200
Phases	3P + N
Current Ranges	100 A, 600 A, 3000 A, 6000 A
Input Ratio	22.5 mV/kA
Accuracy	Class 0.5
Safety Category	1000 V CAT III, 600 V CAT IV
Product Standards	CE, IP67, RoHS 2.0

STANDARDS

ENA TS 48-5, EN 55011, EN 60529, EN 61000, EN 61010, 2014/30/EU, 2014/35/EU, 2014/53/EU

POWER QUALITY FUNCTIONS

Power quality measurements comply with EN 61000-4-30 Class S

Voltage Measurements	Frequency (10 second average), Flicker (Pst and Pit), Supply voltage dips and swells, Voltage interruption, Supply voltage unbalance, Voltage harmonics (50th), Voltage inter-harmonics, Rapid voltage change, voltage phase angle, VRMS (1 cycle), VRMS (10/12 cycle), voltage waveform buffer with a sample rate of 5120 Hz
Repeatability	Neutral current can be directly measured, Current harmonics (40th), Current inter-harmonics, Current unbalance, Current phase angle, IRMS (1 cycle), IRMS (10/12 cycle), Current waveform buffer with a sample rate of 5120 Hz

Total Voltage Harmonic Distortion, Total Current Harmonic Distortion, Voltage Under and Over Deviation, Current Under and Over Deviation

ADDITIONAL MONITORING

Power Quality Measurement	High speed sampling of 480V (and below) three phase voltage and current using non-intrusive Rogowski coils Calculation, presentation and storage of Power Quality metrics that include Active & Reactive Power, Frequency, Total Harmonic Distortion, Dips, Brown-Outs, and Voltage and Current excursions
Power Quality Voltage Monitoring	Supply interruption (<80%), Low voltage (<94%), High voltage (>110%)
Power Quality Current Monitoring	Undercurrent (<1% rated current) Over-current (>100% rated current)
Transformer Health Monitoring	Low cost IoT modem that provides regulated power to the GRIDSCAN Hydrogen Sensor. Sentinel also delivers the transformer Hydrogen Dissolved Gas Analysis (DGA) and oil temperature to our centralized H2cloud™ application for alerting, trending and analysis.

