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Arnowa Battery Fire Risk Detection Sensor

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Detect battery risk conditions early and act before they escalate.

The Arnowa Battery Fire Risk Detection Sensor provides continuous visibility of early indicators, enabling operators to identify, assess, and respond to potential battery failures in real time across EV and other stationary battery environments. It enables early detection of conditions that can lead to thermal runaway, allowing action before incidents occur.

Built for Early Detection and Control

Battery risk conditions begin as subtle, measurable changes in gases, particulates, and environmental factors. These early-stage signals are often not visible but indicate developing instability within battery systems.

The Arnowa system is engineered to capture these signals with precision, providing reliable visibility into evolving conditions before they escalate into critical events.

Detect . Analyse . Act

01

Sense

Multi-parameter sensors continuously monitor gas, particulate, temperature, and environmental conditions to detect early-stage battery fire risk signals.

02

Transmit

Real-time data is transmitted to Arnowa's Analytics Platform, ensuring immediate visibility of developing conditions.

03

Analyse & Predict

Advanced analytics, AI and predictive models identify abnormal patterns and forecast potential failure conditions.

04

Alert

Automated alerts provide operators with a critical window to act before escalation into thermal events or fire incidents.

Detecting Risks Before They Occur

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Arnowa's integrated solution continuously monitors key parameters associated with battery behaviour, including particulate levels, temperature, and humidity.

By analysing deviations, thresholds and emerging patterns across these parameters, the system identifies abnormal conditions linked to battery degradation and instability.

This enables early-stage detection of risk conditions well before visible signs or failure events occur, providing a critical window for intervention

From Detection to Decision

Sensor data is transmitted in real time to a central dashboard, where it is visualised and analysed to support action.

- Live visibility across assets and locations
- Trend analysis to identify emerging risk patterns
- Predictive insights to flag potential failure conditions
- Automated alerts to enable timely intervention

This enables operators to move from passive monitoring to proactive risk management and intervene before escalation into thermal events or battery fire incidents.

Operational Impact -The Arnowa Advantage

Early-stage visibility enables proactive control and risk reduction.

- Detect early-stage battery risk conditions and intervene before thermal escalation or fire events
- Improve safety across solar battery, EV and other stationary battery infrastructure
- Enable faster, informed operational response
- Reduce potential damage, downtime, and operational disruption

Designed for Deployment

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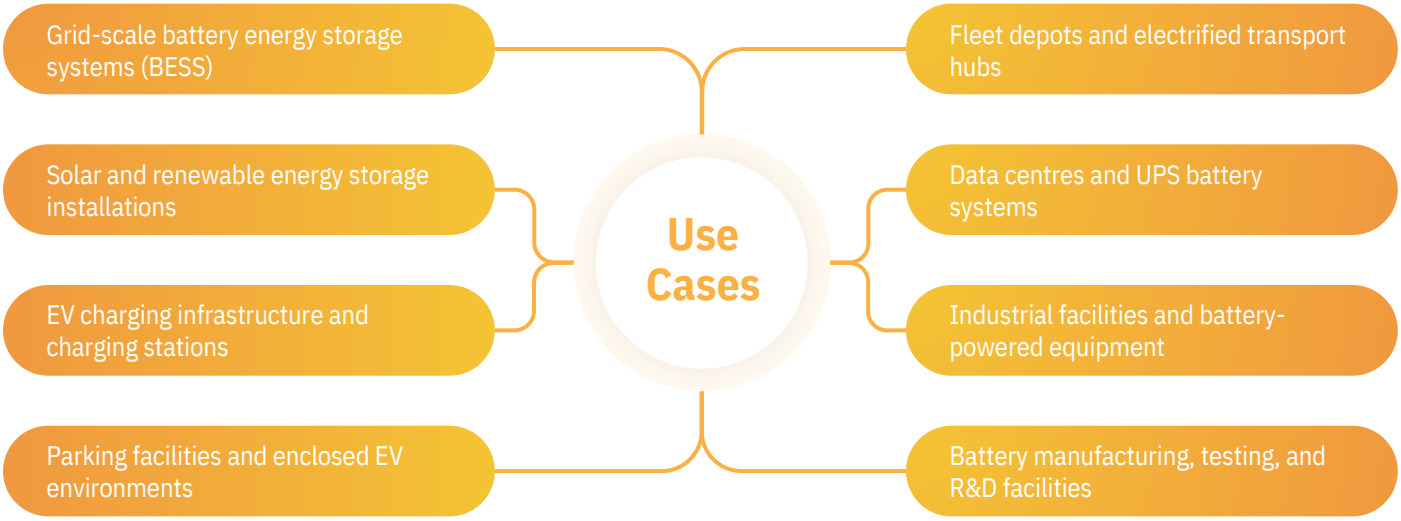
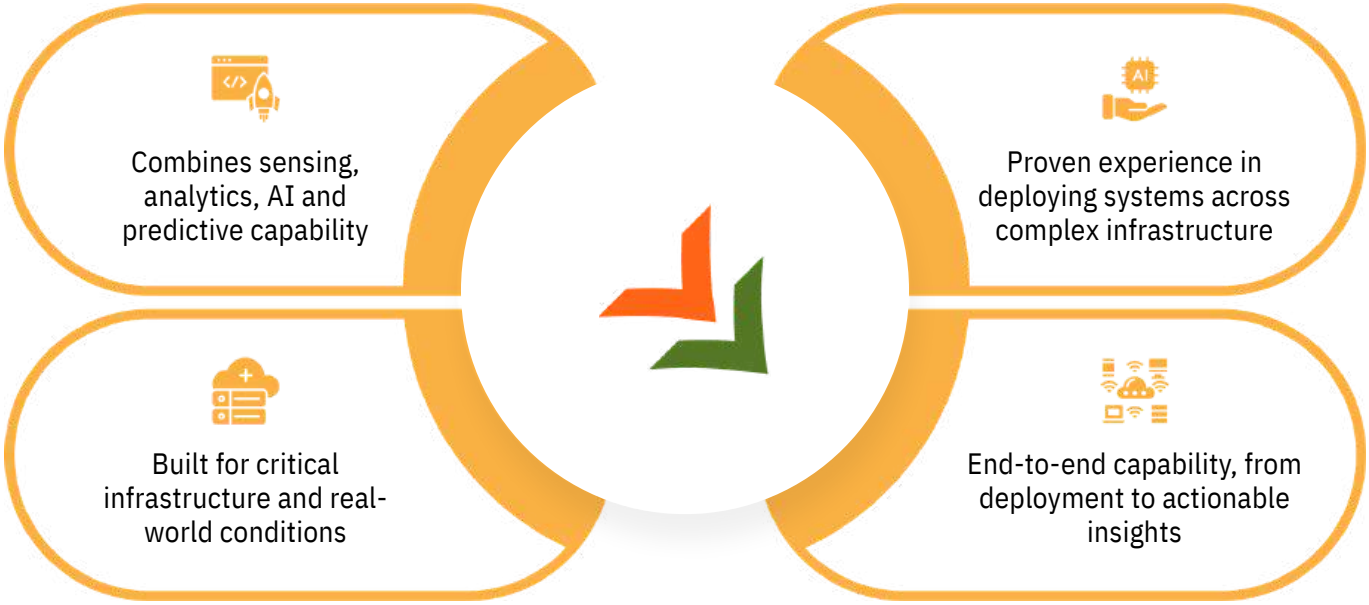
The sensor is designed for consistent performance across real-world environments. Its compact form factor and low power requirements enable scalable deployment across EV charging stations, parking facilities, fleet depots, and stationary battery systems such as solar and energy storage installations.

It ensures stable operation, reliable data capture, and long-term performance under varying temperature and humidity conditions.

Use Cases



Why Arnowa



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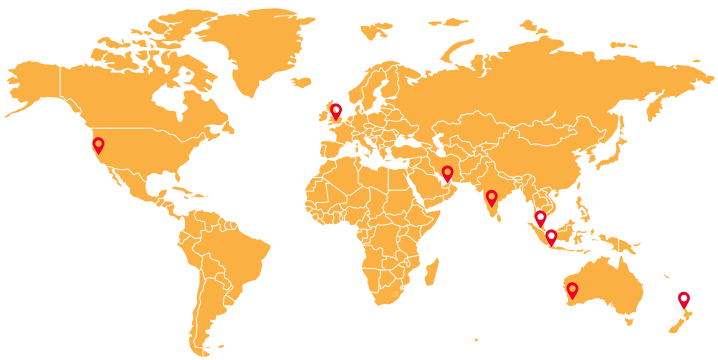

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INDUSTRIAL BATTERY FIRE RISK DETECTION SENSOR

System Specifications

Parameter	Measurement resolution	Range of measurement	Accuracy
CO2	1ppm	400ppm~5000ppm	±3%+50ppm or ±10%
CH2O	1 $\mu g/m^3$	0μg~2000$\mu g/m^3$	±10%
TVOC	1 $\mu g/m^3$	0μg~5000$\mu g/m^3$	±25%
PM2.5	1 $\mu g/m^3$	0μg/m3~999$\mu g/m^3$	±10%or±10
PM10	1 $\mu g/m^3$	0μg/m3~1000$\mu g/m^3$	±10%or±10
Temperature	0.1°C	-40℃~100℃	±1℃
Humidity	0.4%	0~100%	±3%RH
Source Voltage	5.0±0.2VDC		
Current	≤500mA		
Warm-up time	2 minutes (TVOC needs to be warmed up)		
Operating Temperature	0°C~50℃		
Operating Humidity (Non- Condensing)	≤95%RH