



BLACK BOX®

Guard Your Mission-Critical IT Equipment

AlertWerks Wired and Wireless Intelligent Sensors

1.877.877.2269



BLACKBOX.COM/ALERTWERKS

Protect and Control Your Infrastructure Against Threats - Save Energy and Money

"Sense" for Yourself With Alertwerks Wired and Alertwerks AW3000 Wireless

Perfect for retail, data centers, distributed networks, health/security sites, industry/manufacturing plants, and smart/connected buildings, Black Box AlertWerks Wired and Wireless IoT Gateways and Sensors empower you to monitor, control, and automate environmental conditions in your buildings from next door or miles away, keeping your equipment and premises secure.

AlertWerks also performs predictive maintenance to reduce costs and extend the life of mechanical systems, and controls thermostats, lights, and door access as well.

What is Alertwerks AW3000 Wireless Gateway?

Your modern infrastructure systems can't afford downtime. AlertWerks AW3000 uses LoRaWAN wireless technology to record events on-site and automate actions remotely to defend your critical infrastructure.

By detecting threats and automating corrective actions, this all-in-one-box IoT solution actively monitors conditions in your server room or any room, giving you full control with just a web interface to protect and ensure the stability of your business.

AlertWerks AW3000 Wireless Gateway is the all-in-one-box brain of your IoT system. Link to physical sensors, configure virtual sensors, watch values on your dashboard, and set the gateway to notify you of alarms or perform automatic actions.

Sensors digitize our analog world. Get a physical temperature sensor and connect it to your Gateway.

The embedded Web Interface of AlertWerks Gateway auto-detects the sensor and allows you to configure the sensor, set up dashboards, and watch things happening live. You can also configure notifications and alerts, allowing the AlertWerks system to perform actions automatically or bring the problem to your attention via email. AlertWerks AW3000 enables you to use any LoRaWAN 1.0.x sensor on the market.



Data Centers



Industrial & Manufacturing



Energy



Oil & Gas



Healthcare



Greenhouses

Environmental, Power, and Security Monitoring

Physical Sensors

Connected through LoRaWAN wireless to the all-in-one-box gateway, physical sensors digitize our analog world. Examples are sensors for temperature, humidity, airflow, status of dry contacts, door sensors, motion detection, and more. Because it operates on an open platform, AlertWerks AW3000 enables you to use any LoRaWAN 1.0.x sensor on the market.

Virtual Sensors

By means of IP/IT methods and protocols, you can retrieve information from your systems with low latency. This, for example, can be an SNMP GET command to report the remaining battery capacity percentage of your UPS. Configure a virtual sensor to ping a device, ensuring that an important piece of equipment is online.

Data Collection, Graphing, and Dashboards

AlertWerks AW3000 displays the values of your physical and virtual sensors. Dashboards via HDMI output, from a Web Interface, or using ControlBridge® provide an intuitive overview. All data is stored on an open platform with an accessible SQL database.

Alerts and Notifications

Users can define warning and critical alarm states, as well as notification actions including SNMP traps, SNMP SET commands, e-mails, SMS, sirens, etc. When the measured value exceeds the threshold, it triggers an alarm condition.

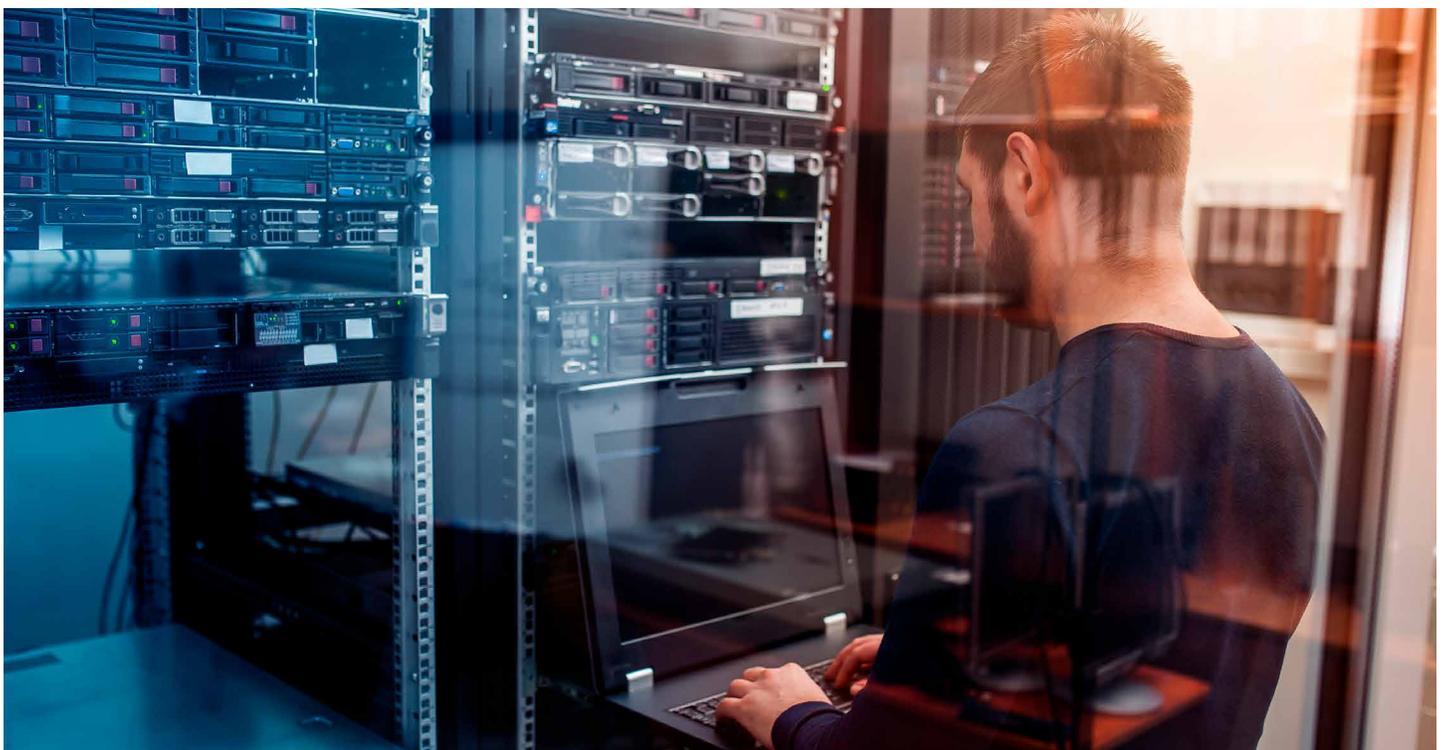
Two Ways to Power

The all-in-one AlertWerks AW3000 box draws power through PoE+ or USB.

Data is Easy to Visualize

Since it is a Linux® device with HDMI Output and USB Ports, AlertWerks AW3000 can connect to a touch monitor to visualize data directly from the unit. There is no command-line editing or Linux knowledge needed, since AlertWerks AW3000 boots directly into a graphical user interface. Monitor the environment with sensors for water, temperature, humidity, airflow, and more. Because it operates on an open platform, AlertWerks enables you to use any LoRaWAN 1.0.x sensor on the market. Monitor or switch AC or DC power, open/close or request status of dry-contacts.

Protect your premises with smoke detectors, motion detectors, sirens, strobe lights, and other security sensors.



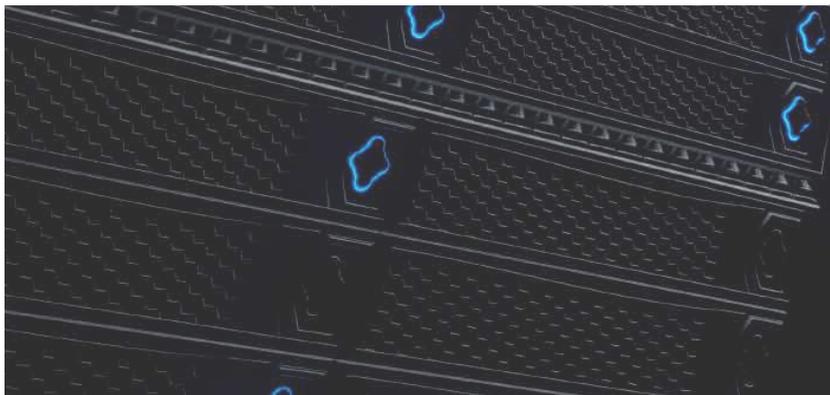
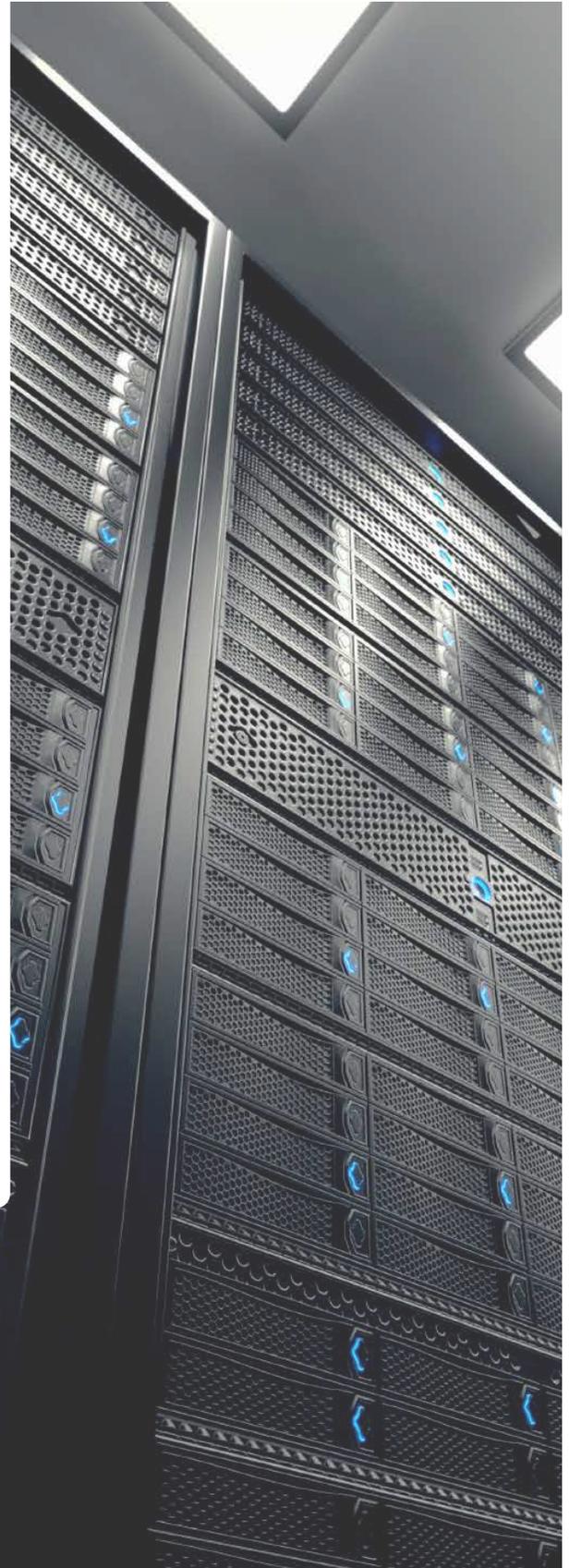
Environmental, Power, and Security Monitoring

Quick Look at Alertwerks AW3000 Benefits

- AW3000 joins physical wireless sensors to the unit
- Incorporates virtual sensors
- Performs notification and actions
- Offers multiple ways of visualization (dashboards)
- Database-driven (SQL) offers redundancy
- Delivered via a fast, limitless, LoRaWAN platform with virtual sensors
- Provides visualization, maps, and floorplans in 2D or 3D
- Features HDMI/USB console
- Supports Wi-Fi® and PoE
- Also accessible locally or remotely from Web browser

Alertwerks AW3000 Wireless Gateway

Feature	Specification
Dimensions (H x W x D)	1.3" x 2.4" x 3.9" (32 x 62 x 99 mm)
Weight	6.3 oz. (180g)
Rating	IP20, 14 to 131°F (-10 to +55°C)
Power	Mini USB (20W) or PoE 802.3at
Connectors	(1) HDMI; (4) USB (1) Audio Out (1) RJ-45 (1) Antenna
CPU/RAM	Quad 1, 4GHz ARM Cortex A53, 1GB RAM
OS	Linux 5.10.60-v7+
GNU/MIT Software	MariaDB, PHP, Apache, SNMPD 5.7.3, gcc, Semtech libloragw
Browsers	Edge/Chrome/FireFox/Safari



Environmental, Power, and Security Monitoring

What is Alertwerks Wired?

AlertWerks Wired enables you to measure environmental values, provide control over your IT and IP systems, and switch things on or off when needed. Using AlertWerks

Wired means knowing what is happening or not happening. Measure temperature in certain rooms to know heating is still on and consuming energy. Monitor humidity to identify water leaks before equipment or infrastructure is damaged. Your IT infrastructure is the heart of your business communication and your goal is to ensure availability of the services your IT provides. Through predictive maintenance, AlertWerks Wired detects faults before they impact your business.

To get started, you need a Gateway. The Gateway is the base unit of your new modern IoT system.

Quick Look at Alertwerks Wired Benefits

- Install gateways and sensors in the data center to eliminate downtime and optimize PUE
- Choose from rackmount and standalone gateway models
- Combines environmental, security, and power monitoring into one solution
- Select from a variety of sensors, ranging from temperature and humidity to power and door security
- Mix and match existing and new sensors to suit your specific requirements
- Easy to setup, plug-and-play with sensors
- Virtual sensors gather data, analyze it, and perform corrective action - automatically
- Connect MQTT to your preferred software via a cloud platform
- Embedded server software reports conditions
- Hosted on gateway, intuitive web-based GUI

- Includes optional management software for multiple systems
- Manages large deployments in the cloud
- Scales up to 500 sensors

Quick Look at Alertwerks Wired Web Interface and System Functionality

- Identifies problems in the data center so you can quickly resolve them
- Measures and reports data via event logs and historical graphs
- Provides local visual and audible alarms
- Sends email, SMS text, and relay control alerts
- Interfaces with virtual sensors, consolidating the entire process to simplify operation
- MQTT outputs link to most business and operation software

Alertwerks Wired Features

Easy Setup and Management

Simple, accurate, and rugged, the AlertWerks monitoring appliance is ready to run right out of the box. Plug the sensors into the RJ-45 ports and they automatically configure and go online, ready to report any status change.

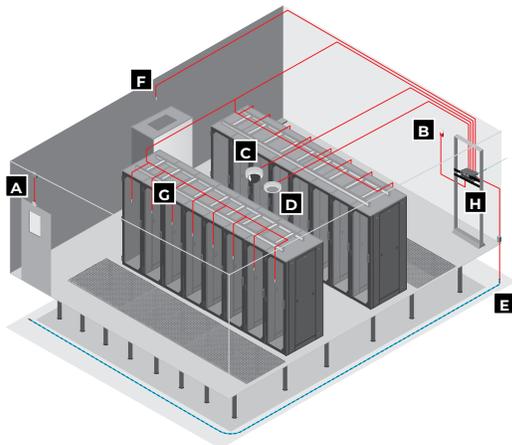
Web-Based Management Interface

A Web-based UI enables access to the gateways over any IP network - even the internet.

Protocols

AlertWerks Wired is a perfect fit for your IT infrastructure. Through SNMP and MQTT, AlertWerks Wired can interact with cloud and centralized software solutions.

Monitoring Gateways and Intelligent Sensors



Key	Description
A	Door Sensor
B	Siren and Strobe Light
C	IP Surveillance
D	Smoke/Fire
E	Rope Water
F	Dual Temperature Humidity
G	Front-Rear Temperature String
H	AlertWerks Gateway



Environmental, Power, and Security Monitoring

AlertWerks Plus Gateways

High-Speed, Intelligent Environmental Monitoring System

- Supports 2 to 8 Intelligent Sensors
- Mounting dependent on unit
- EME160A / EME161A-R2: Desktop or DIN-rail
- EME164A / EME168A: Standard 1U rackmount
- Front and rear thermal mapping for any server cabinet
- (This is only if a sensor is added, not native to the Gateway)
- Optional LCD display
- MQTT Support



EME161A-R2



EME168A

AlertWerks Plus Gateways

Configuration	Software utility for IP setup, then over web browser
Encryption	SL 128 bit (HTTPS)
Environmental	Temperature: -31 to 158° F (-35 to +70° C); Humidity: 20 to 80%, noncondensing
Monitoring and Alarms	Via web browser, email, SNMP trap
Security	SNMP v1/2, optionally license code for v3 available
Protocols Supported (Client)	DHCP, SMTP, (S) NTP, SNMP, MQTT
CE Approval	Yes
Connectors	All: (1) RJ-45 Ethernet 10/100 port; EME164A, EME168A: Basic Expansion Bus (BEB) connector; EME164A, EME160A/EME161A-R2 also: (4) RJ-45 sensor ports; EME168A also: (8) RJ-45 sensor ports
Expansion Port	(1) EXP port for connecting EME164A or EME168A expansion hubs
Power	All: 5 VDC, 3A
Size	EME164A, EME168A: 1.6"H x 18.7"W x 1.9"D (4.1 x 47.5 x 4.9 cm); EME160A / EME161A-R2: 1.3"H x 4.5"W x 2.5"D (3.2 x 11.4 x 6.4 cm)

Product Code	Description
EME160A	2 active Sensor Ports with Ethernet/LAN, Desktop/DIN-Rail
EME160-UC	Unlock License Code for 2 additional Sensor Ports on EME160A
EME161A-R2	4-Port with Ethernet/LAN, Desktop/DIN-Rail
EME164A	4-Port with Ethernet/LAN, Modbus/RS-485 and Expansion Bus Interfaces
EME168A	8-Port with Ethernet/LAN, Modbus/RS-485 and Expansion Bus Interfaces



Environmental, Power, and Security Monitoring

Is Wired or Wireless IoT Right for My Application?

Choosing which is right for your application involves looking closely at your requirements. Here we list a few things to consider when choosing wired or wireless IoT.

Pick AlertWerks AW3000 when:

- No cables are needed or you are not able to pull cables
- You want to view dashboards locally or remotely
- You need to reach long distances (in urban areas 2297 feet [700 meters] through houses and walls - BTW, the world record in an outer area is 434 miles [700 kilometers])
- The sensors must transmit values in intervals or when event (such as door open, water leak, temperature out-of-range) happens
- Price is a factor
- Many hundreds of locations in a site need monitoring

Select AlertWerks Wired when:

- Your installation requires cables
- The number of ports is limited or must be expanded

- The cables have a limited reach (typically less than 328 feet [100 meters])
- Sensors are online all the time (no latency) and you need instantaneous data

Next Steps

Choose a “sense”-ible solution from Black Box. Both AlertWerks Wired and AlertWerks AW3000 Wireless can protect your premises, automate processes, control switches, perform predictive maintenance, reduce costs, enable remote management, and won't keep you up at night wondering if your processes are running smoothly.

Want to learn more? Contact the Black Box Team at **877-877-2269** or info@blackbox.com. We are happy to help you select an AlertWerks product that is best for your application.

Interested, but not ready to call? No problem. You might want to take a look at our case studies and white papers for more information.



Case Study #1: [Taiwan Railway, AlertWerks Wired](#)



Case Study #2: [Shannon Brewing Company, AlertWerks Wired and Wireless](#)



White Paper #1: [Benefits of Using Physical and Virtual Sensors for Automation](#)



White Paper #2: [The Evolution of Intelligent Control Rooms](#)



WHY BLACK BOX?

Black Box® is a trusted IT solutions provider delivering cutting-edge technology products and world-class consulting services to businesses across the globe in every industry. The breadth of our global reach and depth of our expertise accelerate customer success by bringing people, ideas, and technology together to solve real-world business problems.

