Critical Things®

Ekko Sense

EkkoAir

Wireless Cooling Duty Sensor

- **Real-time cooling performance insights**
- **Secure wireless connectivity with 128-bit AES encryption and physical airgaps**
- **Manufacturer-agnostic wireless sensor**
- **Rapid installation to a wide range of cooling systems**

At a time when data centers face the challenge of supporting increased high-density workloads and adjusting to AI compute requirements, it's essential that operations teams are able to track their cooling performance in real-time.

The EkkoAir Wireless Cooling Duty Sensor delivers this with real-time tracking of cooling duty performance in kWc for any CRAC/AHU unit. EkkoAir is a manufacturer-agnostic sensor that is able to collect data from DX, chilled water and free air units, providing operations teams with a much greater understanding of cooling performance and potential cooling anomalies.

EkkoAir's ability to collect cooling load data in real-time helps teams to gain additional insights into thermal performance across individual rooms as well as broader enterprise estates using EkkoSense's EkkoSoft Critical visualization and analytics software.

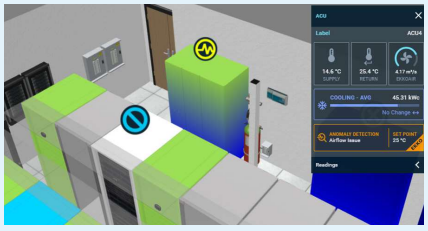
EkkoAir machine learning data combines with readings from EkkoSensor IoT rack-mounted sensors to deliver a much greater understanding of cooling performance and potential anomalies and help teams stay on top of their escalating workloads and sustainability tasks.

The EkkoAir Wireless Cooling Duty Sensor is also essential for benchmarking cooling power savings as part of the EkkoSense DCOP Data Center Optimization Process.

EkkoAir wireless cooling duty sensors can be deployed in just moments, and transmit data at configurable intervals of between 30 seconds and 10 minutes. Like our EkkoSensors, EkkoAir wireless units use 128-bit AES encryption before transmitting cooling duty data to EkkoHub wireless data receivers.

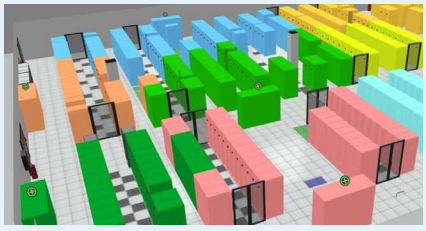
EkkoAir enables...

EkkoSoft® Critical 8



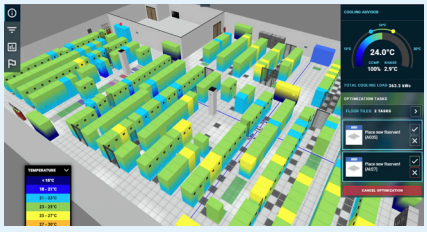
Cooling Anomaly Detection

EkkoAir provides the return and supply temperature and RH readings that help EkkoSense's Cooling Anomaly Detection feature to determine whether M&E equipment such as CRACs are drifting from control setpoints and demonstrating any abnormal changes in performance.



Zone of Influence

EkkoAir's cooling data enables Zone of Influence, a core EkkoSense feature that provides data center operations teams with unique, real-time insight into the relationship between groups of IT racks and specific cooling units.



Cooling Performance

Combining EkkoAir's real-time cooling duty data with rack-level thermal measurements provides data center teams with dynamic insights into their true thermal performance and capacity utilization for increased resiliency.

Images show actual software footage

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Ekko Sense

Unique, manufacturer-agnostic wireless sensor for real-time cooling duty performance.

EkkoAir Wireless is housed in a standard DIN rail mount enclosure with two compact temperature and humidity sensors that connect via small cables. Sensors can be fixed in position using screws or cable ties. The humidity-sensing element is protected with a PTFE membrane to avoid measurement errors caused by dust build-up. Single or three phase fan current measurements are made using standard millivolt output current transformers. An opto-isolated 12V-24V AC input is provided. This can be used to monitor the operating status of the CRAC/AHU.

The EkkoAir Wireless cooling duty sensor transmits data at configurable intervals of between 30 seconds and 10 minutes. Data can either be transmitted as an instantaneous value, or as the average from multiple measurements spaced evenly throughout the transmit interval. This ensures that changes to AHU/ CRAC operating conditions between transmissions are captured.

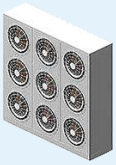
Application examples

Example EkkoAir placements for air side monitoring


Room CRAC units (DX)

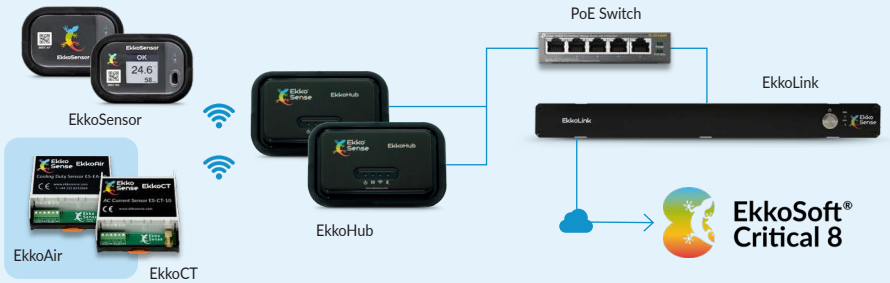

Room CRAH units (CW)


In-row cooling systems (DX/CW)


Adiabatic cooling / fan-wall systems


Active rear-door cooling systems (DX/CW)

Position in EkkoLink architecture



Secure 128-bit AES encryption

EkkoSoft direct mode for Edge support

Integration with existing 3rd party systems

Modbus
BIX SNMP
Comprehensive integration capabilities for complete data center coverage

Technical specifications

Operating temperature range
0°C to 40°C (32°F to 104°F)

Operating humidity range
5% to 95% RH

Measuring temperature range
0°C to 60°C (32°F to 140°F)

Measuring humidity range
0% to 100% RH

Temperature accuracy
±0.2°C typical (±0.4°F)

Relative humidity accuracy
±2% typical

RF data link
GFSK 250bit/s 868.3MHz
(ES-EA-10) or 923MHz (FS-EA-10)

Operating range (from EkkoHub)
> 20m (21yds)

Power supply
12V to 24V AC or DC or internal battery

Internal battery (if not powered externally)
Replaceable LS14500 AA size Lithium Thionyl Chloride

Battery life
> 3 years (transmitting once every two minutes an average of measurements at 30s intervals)

Current transformer inputs
Compatible with 333mV output current transformers rated between 1A and 1000A

Housing
ABS 70mm wide (4 DIN), 74mm high, 46mm deep (2.8”x2.9”x1.8”) (53.5mm/2.1” including DIN rail)

Sensors
30mm (1.2”) diameter, 10mm (0.4”) deep, supplied with 3m (118”) cable

Antenna connection
SMA female connector

Sensor, power and CT connections
Screw terminals

Core regulatory approvals
CE marked:
Radio - EN 300 220-2 V3.1.1, FCC CFR 47 Part 15C, ISED RSS-247
EMC - EN 61326-2-1, EN 55032, EN 301489-3, FCC CFR 47 Parts 15.107 and 15.109
Safety - Safety - IEC 62368

Approved countries
Australia, Brazil, Canada, Chile, China, Columbia, European Union, Hong Kong, India, Japan, New Zealand, Saudi Arabia, Singapore, South Africa, South Korea, UAE, UK, USA, Vietnam.

Bring the power of EkkoSense AI to your critical facilities

www.ekkosense.com | info@ekkosense.com | UK Headquarters: +44 (0) 115 678 1234
North America: 1-833-921-3335 | Germany: +49 89262025276 | Australia: +61 2 8358 0031

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