

# **SMARTSENSORS**<sup>TM</sup>



# MONITOR YOUR DATA CENTER WITH PLUG-AND-PLAY SENSORS

Raritan's SmartSensors are a comprehensive set of sensors that monitor the environment within a data center. They are engineered to facilitate easy deployment while providing the most accurate data and insight into your operation. The advanced feature set allows for easy deployment, clear identification of hot spots, and better airflow management. SmartSensor models are available for monitoring temperature, humidity, airflow, air pressure, water/leaks, contact closures, proximity detection, vibration and more.

Environmental data collected by the sensors can be sent to DCIM monitoring software to provide a complete picture of data center conditions at the rack, aisle, and facility level. Real-time alerts of potential threats in your environment are also sent to administrators for fast resolution.

With Raritan's SmartSensors, adding environmental monitoring to your existing infrastructure is easier and more cost-effective than ever before. They set the new standard for easy data center deployment with its plug-and-play connection to any Raritan power device including PX Intelligent Rack PDUs, Smart Rack Controllers, PX Inline Meters, Rack Transfer Switches, and Branch Circuit Monitors.

### PRE-INTEGRATED WITH RARITAN PX iPDUS, DCIM SOFTWARE

A seamless solution that works out-of-the-box with PX Intelligent PDUs and Power IQ® DCIM monitoring software.



### EASY COMPLIANCE WITH ENVIRONMENTAL STANDARDS

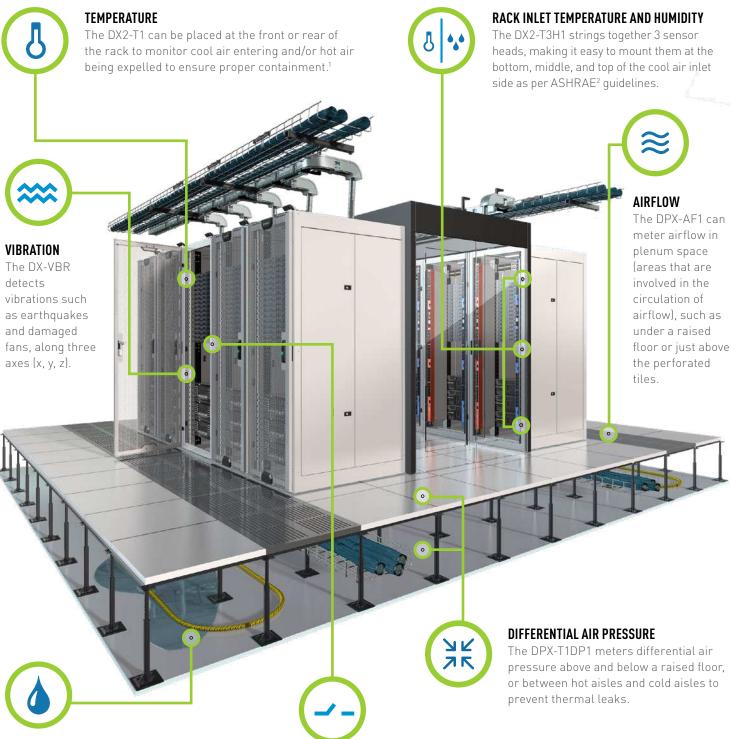
Environment sensors are one of the most useful tools needed to accurately report on all critical environmental conditions impacting your IT equipment and to make decisions to comply with ASHRAE standards.

Raritan's SmartSensors facilitate the collection of crucial environmental data and provide a more efficient deployment and management experience by pushing data into any DCIM or BMS software, through the Xerus™ Technology platform embedded in Raritan power solutions.

### SMARTSENSOR BENEFITS

- Accurate monitoring of various conditions in your environment: temperature, humidity, airflow, air pressure, water leaks, and vibrations
- Easy deployment with scalable sensor technology
- Save on cooling by confidently raising data center temperatures
- Check airflow and air pressure to and from racks to prevent hot spots and bypass recirculation
- Improve data center uptime by receiving environment alerts to prevent hot spots, bypass airflow, and recirculation
- Make smarter rack management decisions based on factual environmental insights
- Easily install plug-and-play sensors without disrupting operations
- Improve field response-time to alerts with status LEDs
- Support for customizable configuration with bus/single technology

### SENSORS FOR YOUR DATA CENTER



#### WATER/LEAK

The DPX-WSF-KIT, DPX-WSC-35-KIT, and DPX-WSC-70-KIT sensors monitor leaks on the floor, around an area, on liquid cooled racks, and can detect condensation.

### **CONTACT CLOSURE**

DX2-CC2 dual contact closure is used with third party sensors, and integrates with data center smoke detectors to monitor risky conditions and aggregate data through Raritan's Xerus Technology Platform.

 $<sup>^{\</sup>rm 1}$  Additional temperature and humidity sensor options are available.

<sup>&</sup>lt;sup>2</sup> The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) recommends measuring the cool air entering IT equipment near the bottom, in the middle, and near the top of each IT rack.

### **INNOVATIVE FEATURES**

# RJ45, REMOVABLE SENSOR HEADS

If sensor accuracy diminishes, you don't need to remove the entire sensor; just replace the sensor head to maintain a high degree of accuracy.

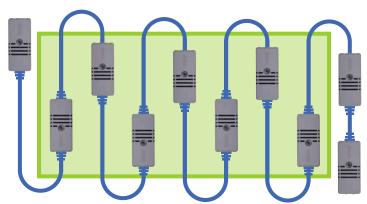


### **LED INDICATOR**

LED light that visually alerts technicians when temperature thresholds are exceeded.

### SINGLE BUS/STRING TECHNOLOGY

Offering the highest flexibility of deployment by any Cat5/6-type cable connection, the SmartSensor allows you to cascade up to 32 sensors through a single bus. The SmartSensor makes it easy to instrument entire rows of your data center with different types of sensors through a single control device.





### HIGH-ACCURACY AND HIGH-RELIABILITY METERING

All SmartSensors benefit from the latest, most high-tech metering components. SmartSensor delivers the highest metering accuracy at +/-0.5°C for temperature sensors, +/-2.5% for relative humidity.

# POWER IQ® DCIM MONITORING SOFTWARE

Environment data collected by SmartSensors can be sent to Power IQ $^{\odot}$  DCIM monitoring software, which allows you to confidently raise ambient temperatures and adjust the fan speed in CRAHs and CRACs to increase your energy savings and get the most out of your cooling systems.

Additionally, users can compare the data from sensors to the environmental envelope of a psychrometric chart to ensure that adequate cooling is where it needs to be, proper operating conditions have been maintained, and that they are in compliance with corporate, vendor, or utility guidelines and requirements.

#### Power IQ allows you to:

- See hot spots at-a-glance
- Know when to increase/decrease temperature set points
- Know how much to humidify
- Easily manage to ASHRAE standard thermal envelopes
- Simplify how you manage airside economization
- Customize and add your own thermal envelopes

Learn more at www.raritan.com/poweriq



## **SMARTSENSOR MODELS**

Part Number	Description	Range	Accuracy
DX2-T1	Single temperature sensor, field replaceable sensor module, RJ-45 connector	-20°C to 20°C 20°C to 70°C	+/- 2°C +/- 0.5°C
DX2-T1H1	Single combo temperature and humidity sensor, field replaceable sensor modules, RJ-45 connector	-20°C to 20°C 20°C to 70°C 0% RH to 100% RH	+/- 2°C** +/- 0.5°C** +/- 5% /RH***
DX2-T2H2	2x DX2-T1H1. Single combo temperature and humidity sensor, field replaceable sensor modules, RJ-45 connector	-20°C to 20°C 20°C to 70°C 0% RH to 100% RH	+/- 2°C** +/- 0.5°C** +/- 5% /RH***
DX2-T3H1	1x DX2-T1h1 + 2x DX2-T1. Dual combo temperature and humidity sensors, field replaceable sensor modules, RJ-45 connector	-20°C to 20°C 20°C to 70°C 0% RH to 100% RH	+/- 2°C** +/- 0.5°C** +/- 5% /RH***
DX2-AF1*	Single airflow sensor, RJ-45 connector	N/R	N/R
DX2-T1DP1*	Single combo differential air pressure and temperature sensor, RJ-45 connector	N/R	N/R
DX2-CC2	2 Contact Closure Sensor for connection and management 3rd party sensors (Smoke, sound, etc.)	N/R	N/R
DX2-WSF-KIT*	Floor water/leak sensor, RJ-45 connector	N/R	N/R
DX2-WSC-35-KIT*	11.5ft (3.5m) rope water/leak sensor, RJ-45 connector	N/R	N/R
DX2-WSC-70-KIT*	23ft (7.0m) rope water/leak sensor, RJ-45 connector	N/R	N/R
DX-VBR	Vibration sensor that detects acceleration along three axes (x, y, z). RJ-45 connector	0 to 13.86g	+/- 0.1g
	DX2-T1  DX2-T2H2  DX2-T3H1  DX2-AF1*  DX2-AF1*  DX2-CC2  DX2-WSF-KIT*  DX2-WSC-35-KIT*	DX2-T1H1 Single combo temperature and humidity sensor, field replaceable sensor modules, RJ-45 connector  DX2-T2H2 2x DX2-T1H1. Single combo temperature and humidity sensor, field replaceable sensor modules, RJ-45 connector  DX2-T3H1 1x DX2-T1h1 + 2x DX2-T1. Dual combo temperature and humidity sensors, field replaceable sensor modules, RJ-45 connector  DX2-AF1* Single airflow sensor, RJ-45 connector  DX2-T1DP1* Single combo differential air pressure and temperature sensor, RJ-45 connector  DX2-CC2 2 Contact Closure Sensor for connection and management 3rd party sensors (Smoke, sound, etc.)  DX2-WSF-KIT* Floor water/leak sensor, RJ-45 connector  DX2-WSC-35-KIT* 11.5ft (3.5m) rope water/leak sensor, RJ-45 connector	DX2-T1H1 Single temperature sensor, field replaceable sensor module, RJ-45 connector  DX2-T1H1 Single combo temperature and humidity sensor, field replaceable sensor modules, RJ-45 connector  DX2-T2H2 2x DX2-T1H1. Single combo temperature and humidity sensor, field replaceable sensor modules, RJ-45 connector  DX2-T3H1 1x DX2-T1H1 2x DX2-T1. Dual combo temperature and humidity sensors, field replaceable sensor modules, RJ-45 connector  DX2-T3H1 1x DX2-T1H1 2x DX2-T1. Dual combo temperature and humidity sensors, field replaceable sensor modules, RJ-45 connector  DX2-T3H1 1x DX2-T1H1 2x DX2-T1. Dual combo temperature and humidity sensors, field replaceable sensor modules, RJ-45 connector  DX2-T3H1 1x DX2-T1H1 2x DX2-T1. Dual combo temperature and humidity sensors, field replaceable sensor modules, RJ-45 concector  N/R  DX2-T3H1 Single airflow sensor, RJ-45 connector  N/R  DX2-T1DP1* Single combo differential air pressure and temperature sensor, RJ-45 connector  N/R  DX2-T1DP1* Floor water/leak sensor, RJ-45 connector  N/R  DX2-WSF-KIT* Floor water/leak sensor, RJ-45 connector  N/R  DX2-WSC-35-KIT* 11.5ft (3.5m) rope water/leak sensor, RJ-45 connector  N/R  N/R

### Visit www.raritan.com/SmartSensor or Call 1.800.724.8090 for more information.



<sup>\*\*</sup>when humidity is 20%-60% RH
\*\*\*when temperature is at 25°C