SynapSense® Wireless Mesh ThermaNode® EZ and EZ-H Sensors

specifications

The wireless mesh node shall be a battery-operated wireless device designed for environmental sensor data collection within the facility.

Wireless Mesh Nodes	
ThermaNode® EZ (measures temperature)	99-0944-001IA
ThermaNode® EZ-H (measures temperature and humidity):	99-0944-010IA
Pressure Node™:	99-0331-001IA
Wireless Mesh Gateway	
Gateway:	100-1156-001IA
Gateway with Extended Temperature Range and External Antenna:	100-1156-011
Gateway Mounting Kit:	IOT-A1GMT

technical information

Dimensions:	73.025mm L x 44.45mm W x 23.495mm H (2.875" L x 1.75" W x 0.925" H)
Housing:	ABS Plastic
Packaging:	Includes two AA batteries
Mounting:	Can be mounted with cable ties or by double-sided adhesive strips mounted on a universal clip. Additionally, specially-mounting mechanisms are incorporated for rapid installation on perforated rack doors and on unistrut bars.

key features and benefits

Environmental Data Capture	Provides environmental monitoring and capture of data used as part of a comprehensive solution for optimizing facility operations
Wireless Mesh Network	Serves as one node within an innovative wireless mesh network made up of multiple nodes that "talk" to each other to share environmental monitoring data across the facility
Simple Deployment	Allows wireless placements of nodes at any points, avoiding the cost or time of installing complex or additional connectivity in the facility
Self-Configuring	Self-configures into the existing wireless mesh network structure without needing any complicated configurations by the network administrator
Auto Adjusting Receiver Sensitivity	Adjusts receiver sensitivity to compensate for powerful ambient radio noise from other devices like Wi-Fi, enabling radios to communicate with each other in harsh RF environments
Channel Black-listing	Identifies and avoids radio frequencies that have high levels of RF noise, speeding up data transfer and conserving battery life
Battery Operated	Operates on two AA batteries that provide up to seven years of battery life, cost-effectively powering node over life of the facility
Time Stamped Data	Allows automatic time stamping of each piece of node data to indicate and document the exact time at which data was collected making historical comparisons possible
SmartSend Notifications	Compares data collected every 30 seconds and recognizes temperature deviations outside of specified thresholds, causing override of configured reporting intervals to ensure that potential concerns are identified for quick resolution
Smart-Over-the-Air (SMOTA) Firmware Update	Uses wireless network to transmit hardware firmware updates directly to node without need for physical intervention for simplicity of updates*
128-bit and 256-bit Network Encryption	Encrypts data over the network using a unique 256-bit or 128-bit key to ensure security
Single IP Address Scalability	Allows interconnect ability of up to 400 nodes on a single wireless mesh network gateway thru one single IP address, reducing the need for separate IP ports, IP capital costs, and management overhead

*Performing a firmware upgrade is a specialized process which must involve technical support or a qualified reseller.

applications

The SynapSense® Wireless Mesh ThermaNode® EZ and EZ-H sensors are part of the Panduit® SynapSense® Wireless Environmental Monitoring System which provides a low-cost, easy-to-deploy solution to gather, communicate, and visualize environmental data within your facility for improved reliability, product quality and energy optimization.

The SynapSense® Wireless Mesh ThermaNode® Sensors are battery-operated wireless devices designed for environmental data collection within the facility.

As part of a wireless mesh network, up to 400 sensors can be connected through a single IP address to capture real-time temperature and humidity data across a facility. This data is then used by SynapSoft® Cooling Software to create thermal maps and movies to identify developing hotspots or anomalies, find reclaimable cooling capacity, or simply optimize the efficiency of the cooling overall for tangible ROI.

SynapSense® Wireless Mesh ThermaNode® EZ and EZ-H Sensors

General Specifications

| Specifications	Description
Node Specifications	• 2.4 GHz, ISM unlicensed band • IEEE 802.15.4 MAC.
Data Rate Maximum	• 250 Kbps
Maximum RF Output Power	• 0 dBm
RF Data Range	Typical data center environment: 50 feet (15m); Max 260 feet (80m) open air, line of sight
Battery Life	Five to seven years (typically)
Maintenance and Calibration	No recalibration or maintenance possible
Antenna Type	Internal
Software Requirements	Requires SynapSoft® Version 6.8 or newer Device Manager Software NOTE: LiveImaging, Device Manager, MapSense, and other software features referenced in this document are included within the SynapSoft® Software platform.

ThermaNode® Temperature Sensor

Parameter	Specification
Operating Range	32°F to 140°F (0°C to 60°C)
Accuracy	+0.5°F: 50°F to 110°F +0.3°C: 10°C to 43°C +1.2°F: 32°F to 50°F, 110°F to 140°F +0.7°C: 0°C to 10°C, 43°C to 60°C
Accuracy Over Time*	• After 1 year +0.92°F to 0.88°F (+0.51°C to 0.49°C) • After 2 years +0.99°F to 0.94°F (+0.55°C to 0.52°C) • After 3 years +1.06°F to 0.99°F (+0.59°C to 0.55°C)
Time Constant	• 30 seconds in moving air • 10 minutes in static air

ThermaNode® Humidity Sensor

Parameter	Specification
Operating Range	41°F to 122°F (5°C to 50°C), 10% to 90% RH
Accuracy	+5% RH

Dimensions

1.750 [44.45]

2.914 [74.02]

Top View

.896 [22.76]

Front View
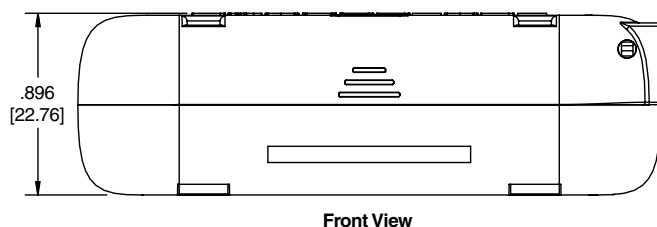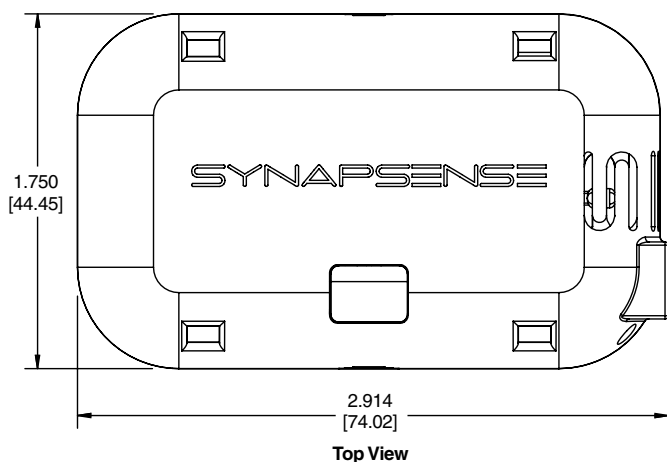
Dimensions are in inches. [Dimensions in brackets are metric.]

For a copy of Panduit product warranties, log on to www.panduit.com/warranty

Visit us at www.panduit.com/synapsense

iai@panduit.com

PANDUIT®