MeshScape®

6424 Wi-Zone

The 6424 MeshScape® Wireless Zone Sensor (Wi-Zone) Measures and Communicates Temperature and Relative Humidity as a Node in a Self-Forming and Self-Healing Wireless Network

Features at a Glance

- MeshScape-compatible wireless sensor node
- Operates on a worldwide and license-free 2.4 GHz ISM radio band with 15 user-selectable channels
- Battery-powered end node
  - Complete wireless operation
  - Low power consumption for extended use
- Factory-installed temperature and relative humidity sensors
- Battery-pack for completely wireless operation
- Low power and configurable duty cycling
- CE- and FCC-compliant hardware module
- RoHS-compliant
- Indoor/Outdoor enclosure is easy to mount

Wireless Zone Sensor

The 6424 MeshScape Wireless Zone Sensor, Wi-Zone, is ideal for retrofit or new installations and is designed for purposes such as HVAC monitoring and control, energy management, environmental monitoring, and storage or refrigeration condition monitoring. The Wi-Zone is a MeshScape 6424 End Node with factory-installed temperature and relative-humidity sensors.

Zone Sensing Where It's Needed

The Wi-Zone can be placed wherever sensing a thermal zone's environmental conditions is most advantageous in order to monitor HVAC and control applications. The Wi-Zone is designed to consume minimal amounts of energy and to enable battery-powered operation with configurable duty cycling, allowing for optimal battery life. Since the Wi-Zone is a wireless device, there is no need to run signal wires for control and monitoring.

Typical Applications

The Wi-Zone is ideal for indoor and outdoor temperature and relative humidity sensing. When used in conjunction with a MeshScape Wireless Thermostat (Wi-Stat) within the same thermal zone, the Wi-Stat can be configured to include the Wi-Zone temperature input for improved temperature uniformity within the zone.

Long Range

The Wi-Zone transmits at a radio power of 60-mW, allowing for communication distances of at least 750 feet clear line of sight.

Try it for yourself
Setting up a wireless mesh network is fast and easy. The MeshScape self-forming and self-healing network is designed for rapid deployment and easy operation.

For more information, visit **www.millennialnet.com**

MeshScape GO Networking

The Wi-Zone uses the industrially-proven MeshScape GO networking system, which employs patented Persistent Dynamic Routing™ (PDR) techniques to form a self-configuring wireless mesh network. PDR uses a node-initiated network formation to enable efficient topology discovery and facilitates network re-formation (required in ever-changing RF environments) by applying "best route" information. With MeshScape, you can deploy industrial-class wireless mesh networks that are:

- **Self-administrating:** a self-forming and self-healing mesh network requires no administration
- **Robust:** a network that ensures multi-route, reliable data transmission over extensive distances
- **Responsive:** a network that quickly adapts to changes in topology and radio frequency (RF)
- **Power efficient:** can run for years on a single battery set
- **Scalable:** with the application, can scale to hundreds of wireless nodes with minimal overhead
- **Low latency:** very short network data delivery times

The Wi-Zone is designed to be part of the MeshScape GO LAN-based system, which can be configured to provide either single-site monitoring/control via a local PC or multi-site monitoring/control via an internet web interface.

The Wi-Zone is ideal for indoor or outdoor temperature and relative humidity sensing. The indoor/outdoor enclosure is easy to mount.

Remote Monitoring/Control Software Features

The MeshScape Wi-Zone is designed to interface with any Modbus®- or MeshScape-compatible Remote Monitoring and Control software application, such as Millennial Net's Wi-EMS. The Wi-EMS is a full-featured and easy-to-use Wireless Energy Management System that provides all the tools you need to report, trend, and analyze energy consumption.

Millennial Net

© 2011 Millennial Net, Inc. All rights reserved. Persistent Dynamic Routing™ is a trademark, and Millennial Net® and MeshScape® are registered trademarks of Millennial Net, Inc. Modbus is a trademark or registered trademark of Schneider Automation Inc. All other trademarks are property of their respective owners. Information is subject to change. US Patent No. 7522563, 7948930, 8098615 as part of Millennial Net's wireless mesh network.

2011-DS-EM-6424002Tv003

285 Billerica Road
Chelmsford, MA 01824
Tel.: (978) 569 1921
info@millennialnet.com
www.millennialnet.com

MeshScape®

6424 Wi-Zone Specifications

Parameter	Value	Unit	Notes
Power			
External DC supply	4.5 ~ 30	VDC	
Internal batteries	4.5	VDC	Three AA size batteries
Expected battery life	5	Years	Alkaline batteries, 5 minutes transmission interval; battery life reduces with shorter transmission intervals
Temperature Measurement			
Measurement range	-40 ~ +55	°C	
	-40 ~ +131	°F	
Repeatability	±0.1 (±0.18)	°C (°F)	
Accuracy	±0.5 (±0.9)	°C (°F)	In 20 °C (68 °F)~ 30 °C (86 °F) range
	±1.4 (±2.5)	°C (°F)	At -10 °C (-14 °F) and +55 °C (131 °F)
	±2.0 (±3.6)	°C (°F)	At -40 °C (-40 °F) and +90 °C (194 °F)
Response time	5 ~ 30	Seconds	
Humidity Measurement			
Measurement range	0 ~ 100	% RH	
Repeatability	±0.1	% RH	
Accuracy	±3	% RH	For 20 ~ 80% RH
	±3 ~ ±5	% RH	For 0 ~ 20% & 80 ~ 100% RH
Response time	4	Seconds	
Radio			
Operating frequency range	2405 ~ 2475	MHz	ISM band
Available Communication Channels	15		IEEE 802.15.4 channels 11 ~ 25
Channel spacing	5	MHz	
Maximum RF transmit power	18 (63)	dBm (mW)	
Receiver sensitivity	-95	dBm	At 10^{-5} bit error rate
RF data transmission rate	250	Kbits/sec	
Environmental & Mechanical			
Operating temperature range	-40 ~ +55	°C	
	-40 ~ +131	°F	
Storage temperature range	-40 ~ +85	°C	
	-40 ~ +185	°F	
Dimension	118x69x25.4	mm	
Nema Enclosure	160x90x60	mm	
Weight	3.3	oz	Excluding batteries
Nema Enclosure	9.7	oz	Excluding batteries
Regulatory Compliance			
FCC, IC & CE for unlicensed operation			

Millennial Net

© 2011 Millennial Net, Inc. All rights reserved. Persistent Dynamic Routing™ is a trademark, and Millennial Net® and MeshScape® are registered trademarks of Millennial Net, Inc. Modbus is a trademark or registered trademark of Schneider Automation Inc. All other trademarks are property of their respective owners. Information is subject to change. US Patent No. 7522563, 7948930, 8098615 as part of Millennial Net's wireless mesh network.

2011-DS-EM-6424002Tv003

285 Billerica Road
Chelmsford, MA 01824
Tel.: (978) 569 1921
info@millennialnet.com
www.millennialnet.com