

MeshScape®

## 6424 Wi-Stat III-SR

The MeshScape® Wireless Single Switching Relay Thermostat (Wi-Stat III-SR) is designed to retrofit any manual 2 wire Heat Only or Cool Only systems such as mercury switch, space heater thermostat or others.

### Features at a Glance

#### Thermal Zone Features

- 2 wire Heat Only or Cool Only
- Max Voltage: 50 V AC or DC
- Max Current: 1 amp
- Wireless mesh thermostat provides remote monitoring and HVAC control capabilities
- +/- 1° F control accuracy for maximum comfort
- Easy to install; economical retrofit is compatible with and uses the existing thermostat and HVAC pneumatics
- Bi-directional wireless communication
- Occupancy scheduling and monitoring capabilities define and enforce energy policies
- Allows for local thermostat operation within the specified comfort zone
- Override feature allows local operation during scheduled unoccupied periods
- Setback control can continue independent of wireless
- IC- and FCC-compliant hardware modules

#### Wireless Sensor Network Features

- Operates on a license-free 2.4 GHz ISM radio band with 15 user-selectable channels
- Configures as part of a MeshScape network that includes hundreds of wireless devices
- Wireless communication ranges available of at least 750 feet between adjacent devices
- Extensive (1000s of feet) mesh network coverage

### Retrofit Manual On/Off HVAC Thermostat

Wi-Stat III-SR wireless single relay thermostat is designed to retrofit any manual 2 wire Heat Only or Cool Only systems such as mercury switch, space heater thermostat or others. It is a battery powered intelligent energy conservation device that provides remote zone monitoring and control for commercial, industrial, and municipal HVAC environments.

Designed to replace existing manual thermostats, the Wi-Stat III-SR provides Direct Digital Control features, such as remote wireless setpoint control and occupancy scheduling, continuous room temperature, branch line pressure and battery status monitoring, all of which were previously unavailable in HVAC systems. The innovative design of Wi-Stat III-SR completely reshapes manual HVAC controls – it provides centralized controls previously unavailable with manual systems.

### Long Range

The Wi-Stat III-SR transmits at a radio power of 60-mW, allowing for communication distances of at least 750 feet clear line of sight. Meshing capabilities allow for coverage of 1000s of feet.

#### 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](http://www.millennialnet.com)

### MeshScape GO Networking

The Wi-Stat III-SR uses the industrially-proven MeshScape GO networking system which features:

- **Self-administrating network:** 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-Stat III-SR is designed to be part of the MeshScape system, which can be configured to provide either single-site or multi-site monitoring/control via an internet web interface.



The Wi-Stat III-SR is one of a family of Wi-Stats that provide local supervisory control and enable remote monitoring. It overcomes the challenges experienced with point-to-point radios by communicating through a robust wireless mesh sensor network.

### Remote Monitoring/Control Features

The MeshScape Wi-Stat III-SR is designed to interface with any BACnet or Modbus® compatible Remote HVAC Monitoring and Control software application. Millennial Net's Wi-EMS Remote HVAC Monitoring and Control provides a full-featured and easy-to-use 365-day occupancy scheduling calendar that reports, trends, and analyzes energy consumption.

# Wi-Stat III-SR Specifications

Parameter	Value	Unit	Notes
<b>Opto-isolated Output Channels</b>			
Number of channels	1	channel	On / Off control
Maximum voltage	50	V, AC or DC	
Maximum current	1	A	
<b>Temperature Measurement</b>			
Sensor type	Integrated circuit sensor		Low current drain, < 90 uA
Measurement range	-50°F ~ +300°F (-10°C ~ +149°C)	°F (°C)	
Accuracy	±1.00 (±0.56)	°F (°C)	
<b>Power</b>			
Internal batteries	3.6	VDC	Four Lithium AA size batteries
External DC supply	12 maximum	VDC	Through screw terminal
Minimum supply voltage	3.1	VDC	
Estimated battery life	Up to 5	Years	With minimum pneumatic line leakage (w/ Lithium)
<b>Display</b>			
Display type	Liquid crystal		Displays temperature, occupied / set back mode, heat / cool status, battery voltage & wireless connection status; supports set point adjustment, HVAC mode (heat only / cool only) selection, and maintenance mode selection
<b>Radio</b>			
Operating frequency range	2405 ~ 2475	MHz	ISM band
Number of available channels	15		IEEE 802.15.4 channels 11 ~ 25
Channel spacing	5	MHz	
Maximum RF transmit power	18	dBm	
Receiver sensitivity	-95	dBm	At 10 <sup>-5</sup> bit error rate
RF data transmission rate	250	Kbits/sec	
Sampling interval	5 (default)	min	Remotely configurable
Channel agility	Yes		Automatically realigns RF channel when gateway switches to a new channel.
<b>Environmental &amp; Mechanical</b>			
Operating temperature range	14°F to 131°F (-10°C to 55°C)	°F (°C)	
Storage temperature range	-40°F to 185°F (-40°C to 85°C)	°F (°C)	
Dimension	4.75x3.5x1.0 (117x95x25)	in (mm)	
Weight	6	oz	Without Batteries

**Regulatory Compliance**

FCC & IC for unlicensed operation



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