Thermo Scientific
Smart-Vue Wireless Monitoring Solution

For 434 MHz regions

obsessive is SMART

Non-stop, wireless monitoring of critical parameters,
secure logging of data, and early warning alerts.
It's that smart.

Thermo
SCIENTIFIC

with so much at stake

obsessive is SMART

Let's not just talk about vials, or tubes, or even in general terms about samples. Let's talk about what they represent. They represent the promise of your research. They represent hope – for an answer, for a breakthrough, or maybe even for a cure. They represent a life's work. So there's no question that you're going to be obsessive about security. That just makes sense. **Thermo Scientific™ SmartVue™ wireless monitor solutions** can help put your mind at ease.

- REFRIGERATORS
- FREEZERS
- INCUBATORS
- TEMPERATURE CONTROL
- ENVIRONMENTAL CHAMBERS
- CLEAN ROOMS
- OVENS / CO_2 INCUBATORS

For more information please visit **www.thermoscientific.com/smart-vue**

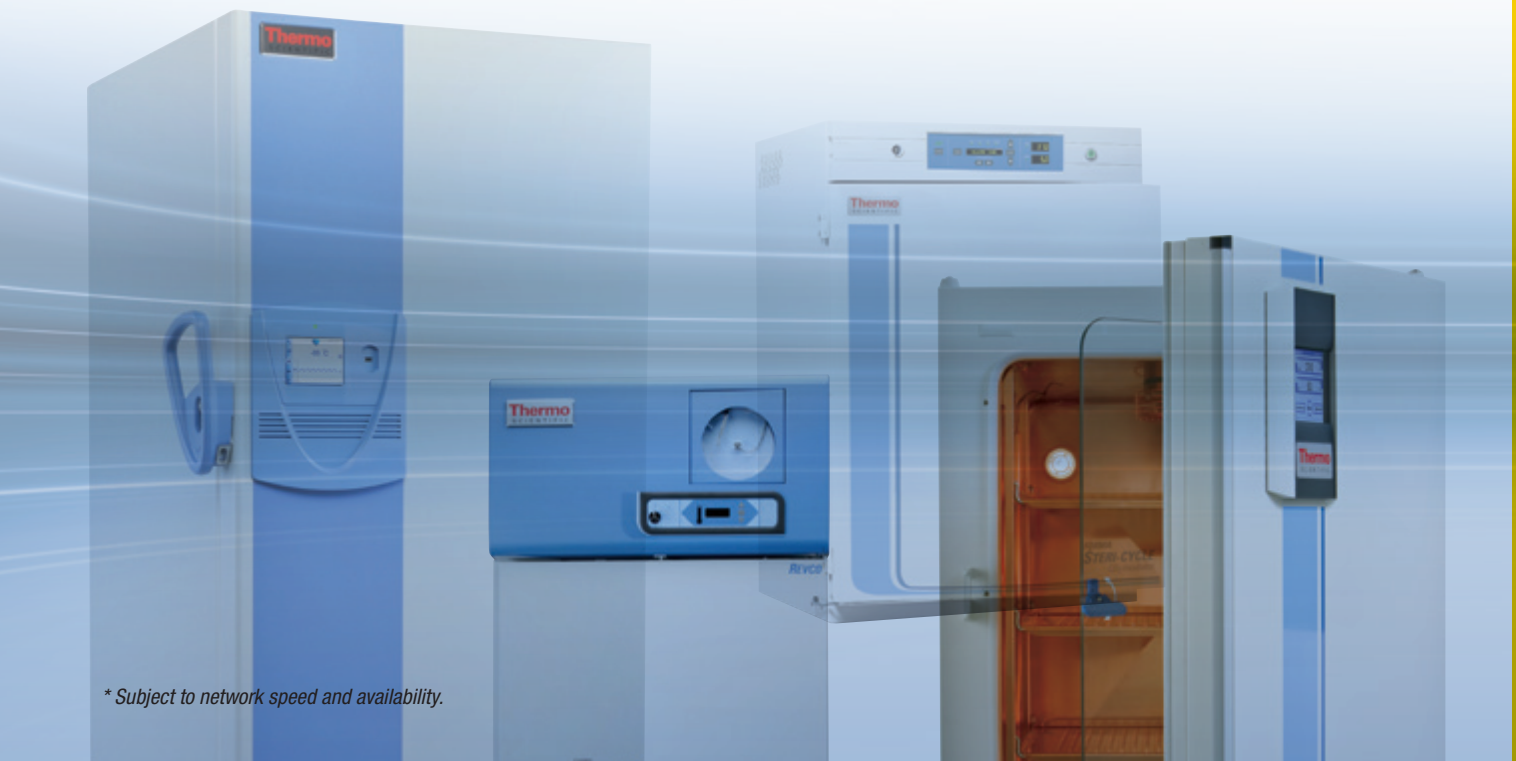
vue point

Peace of mind matters

You have enough to worry about. Trust your lab monitoring to us. We know your equipment and understand the critical nature of your work. Our innovative technologies can ease your concerns when you can't be in the lab.

Smart-Vue Wireless Monitoring Solution gives you 24/7 monitoring of critical lab equipment parameters and instant notifications* about any potential threats.

All data is continuously monitored and securely logged to assist with regulatory compliance. You don't tolerate compromise in your lab. Neither does Smart-Vue.



** Subject to network speed and availability.*

vigilant is SMART

Continuous, 24/7/365 real-time monitoring of critical parameters, with intelligent data logging using globally recognized radio frequency transmissions

- Temperature
- Relative humidity
- CO_2 concentration
- Differential pressure
- 4-20 mA output
- Alarm relay/dry contacts

Easy-to-read display of monitored set points directly on module

Immediate notification* by means of your preferred alert method

Including:

- Audible/visual siren
- Telephone
- Email
- Text message
- Fax

Battery operation allows continual monitoring even during power outages

For more information please visit **www.thermoscientific.com/smart-vue**

** Subject to network speed and availability.*

scalable is SMART

- Single solution that can grow with you to save time and money
- Smart-Vue software can run one lab or an entire enterprise – whether across the street, or across the globe
- Easily expandable, allowing new equipment to be added to the existing system
- Compatible with multiple brands and types of laboratory equipment

painless is SMART

- Easy to install, use, and maintain
- Simple relocation – maintaining network configurations – without the inconvenience and cost associated with rewiring

Accessible via the Internet… anytime, anywhere*

** Subject to network speed and availability.*

intuitive is SMART

What exactly is Smart-Vue, and how does it work?

Smart-Vue protects the quality of your samples by continuously monitoring equipment conditions and will remotely notify you if conditions for sample integrity are compromised.* In addition, Smart-Vue's data logging capabilities assist with compliance to with FDA, GxP and other regulatory requirements.

Features and benefits of Smart-Vue:

- Wireless monitoring, alerting you remotely in the event of a power or mechanical failure
- Alert systems including real-time and visual alarms on the module
- Configurable data-logging, transmission cycles and upper/lower limits
- On-board single parameter module memory for up to 3,000 readings (1,500 + 1,500 for dual modules)
- Automatic alarms for out-of-bounds conditions and technical problems
- Easy-to-read LCD display with latest reading, alerts, signal strength and battery level
- Fully integrated with Smart-Vue Client / Smart-Vue Server software suite
- 3.6V Lithium, replaceable battery (3600 mA)
- Mounting kit with plastic holder, magnet, screws, cable ties, plastic cable holders and Velcro™
- Type: CE EN 300-220-1, FCC, EN12830, IC (Industry Canada), WPF (India), CMIIT (China)

Determining the right Smart-Vue solution:

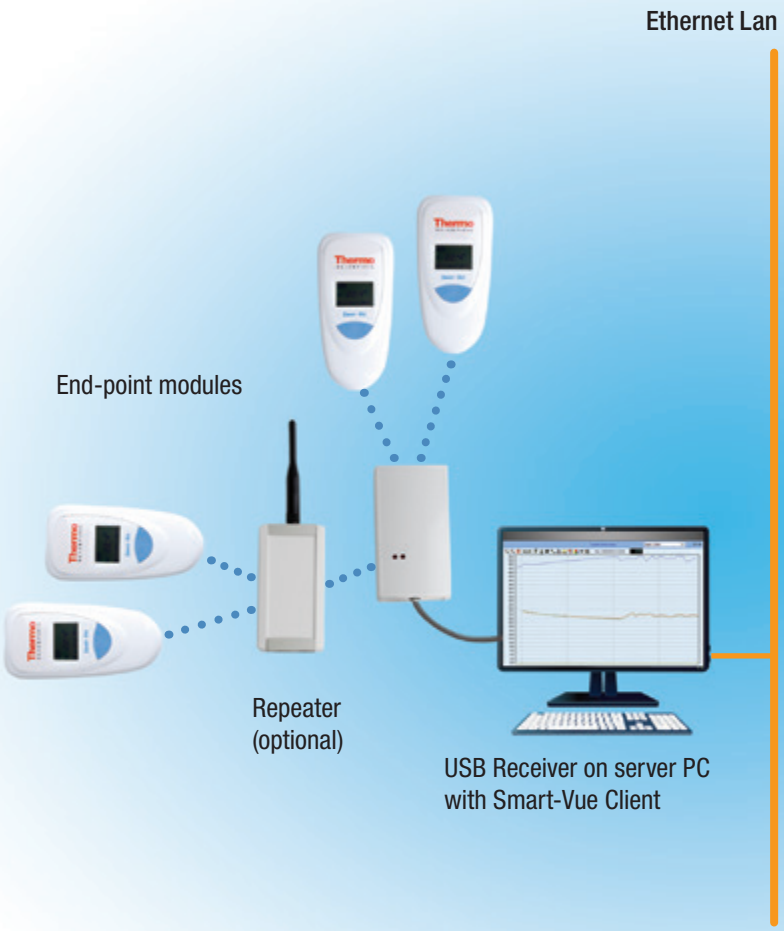
- Smart-Vue wireless monitoring solutions are available for both USB and network receivers
- Consult your sales representative for the Smart-Vue solution that's right for your lab
- Choose from multiple end-point module and sensor combinations operating in the Industrial Scientific and Medical (ISM) band for specific Radio Frequencies (RF)

What Smart-Vue can monitor for your lab:

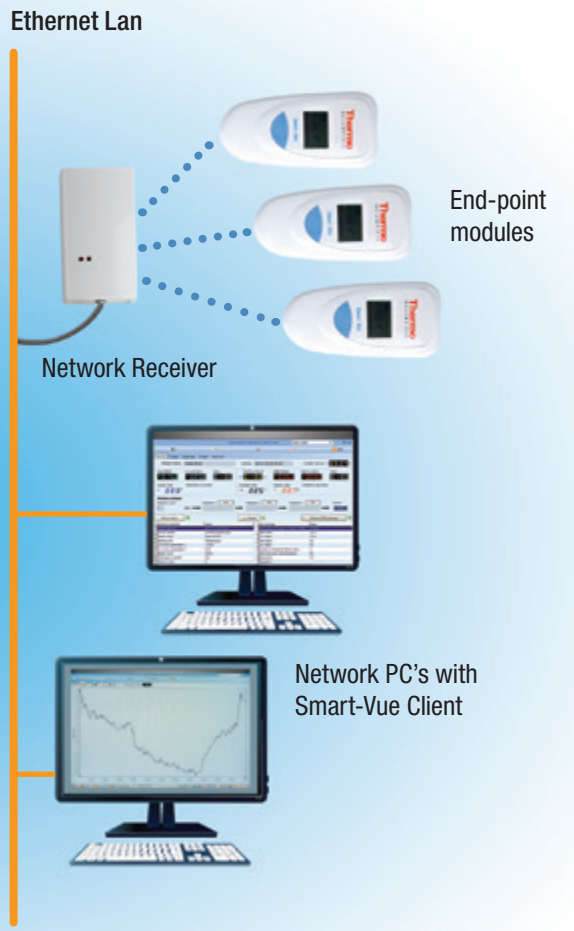
Ambient monitoring	Temperature with internal or external sensor (177cm / 70 in.); Temperature and RH with external sensor (80cm / 32 in.)
Ultra-low temperature freezers	-100°C to +150°C
Auto-cascade ultra-low temperature freezers	-155°C to -100°C
LN_2 / cryo storage freezers	-196°C to -100°C
Refrigerators	0°C to 8°C (single, double and triple door)
Freezers	-20 to -30°C, -40°C
Refrigerator / freezers combinations	-30°C to 8°C; per chamber (i.e. top / bottom, left / right)
Cold rooms	-30°C to 8°C; -40°C or colder
CO_2 incubators	Ambient to +100°C, +120°C and humidity: 0 to 100% RH non condensing, temperature/CO_2 with single probe
Water baths	Ambient to +100°C
Drying ovens / kilns	Ambient to +350°C
Differential pressure	-500 to +500 Pa
4-20 mA current loop	4 to 20 mA; device with a 4-20 mA self powered output
Open / closed state	Dry alarm contact

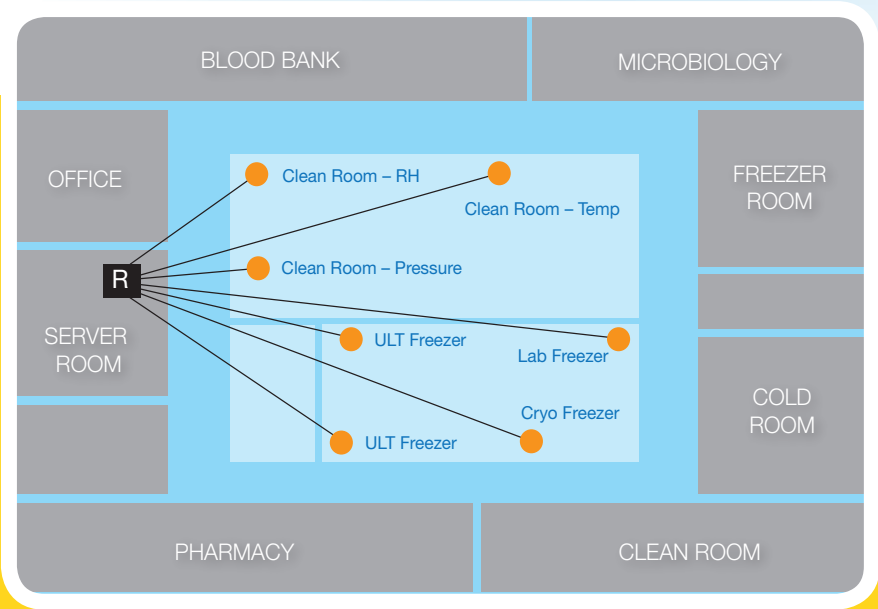
** Subject to network speed and availability.*

Smart-Vue architecture for USB receivers:



Smart-Vue architecture for Network receivers:





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Custom is critical

Every lab has unique needs. Smart-Vue has a range of configurations and applications for all kinds of highly controlled environments.

simple is SMART

Intelligent plug & play simplicity

- An installation wizard in the software walks you through the installation process, reducing time and getting Smart-Vue up and running – faster.
- Optional Service Discovery Protocol (SDP) automatically detects new sensors when installed, making it easy to add new equipment to your monitoring network. SDP enables every module to send a signal to the receiver and identify the most efficient route of communication based on RF signal strength.
- Software dashboard enables easy monitoring of multiple sensors on a single screen.
- Smart-Vue system displays the current alarm status as well as maximum, minimum and average sensor readings over the last 24 hours.
- Intelligent modules feature internal memory capacity up to 3000 points, incorporating uninterruptible power to ensure continuous data logging even in the event of power outages and loss of signal strength.

Intuitive Dashboard

- Simplifies daily usage
- Quickly export reports to Microsoft™ Excel™, Word™ or Adobe™ PDF formats with just a click for auditing purposes
- Easily annotate charts
- Flexible creation of graphs summarizing data from individual or multiple sensors
- Visual depiction of RF signal strength as monitored by each module
- Upload customer floor plans and site pictures

Flexible Operation

- Flexible operating platform
- Check sample status anytime, anywhere
- User-defined measurement and transfer periods
- Handles variations caused by door opening/closing

Precise Monitoring

- Integrated alarm system accurately safeguards high/low set points. Notifications are transmitted to the Smart-Vue server, permanently logged as required for auditing purposes and multimedia signals are sent immediately to prompt corrective action.*
- Continuous collection of equipment parameters – temperature, relative humidity, CO_2 concentration, differential pressure, 4-20mA output, & alarm relay/ dry contacts.*
- Self-monitoring system activates should data point exceed high/low setpoints.*
- Immediate notification by means of your preferred alert method.* Options include Smart-Vue audible/visual siren, telephone, fax, email, text, or printed report.

Data Traceability & Security

- Secure, customized levels of user access
- Audit trails
- Archived alarms
- Password protection
- Assists with conformance to a growing body of regulatory standards including 21 CFR part 11
- Secure digital transmission and data back-ups

Numerous Configuration Capabilities

- Combines RF and TCP/IP network technologies
- Share equipment data over entire network instantly*
- Download simple Smart-Vue client software to visualize equipment data readings from any workstation

** Subject to network speed and availability.*

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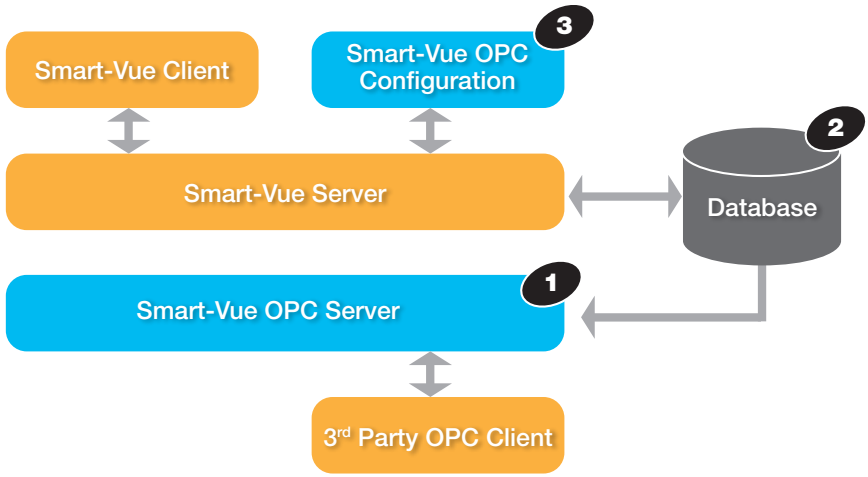
connectivity is SMART

Smart-Vue and OPC client software applications

Object Linking and Embedding for Process Control (OPC) Foundation is an industry consortium that creates and maintains standards for open connectivity of industrial automation devices and systems and enables hardware devices and/or software applications to transfer data. OPC is an interface specification for process control and automation applications, facilitating interoperability between OPC client applications and OPC servers. The OPC software provides an interface to the information collected by Smart-Vue Server. This tool enables you to access selected Smart-Vue data directly from within OPC software applications.

- The Smart-Vue OPC server (1) provides an interface to the Smart-Vue server database (2) without having to pass through the Smart-Vue client application.
- The Smart-Vue OPC configuration application (3) communicates through Smart-Vue server to publish selected information from the database.



Features

- Publishes Smart-Vue Server data properties for use by OPC client software applications to be used by building management systems in hospitals, pharmaceutical, laboratories

  > End-point modules, receivers, groups

- Complete Smart-Vue system hierarchy presented for point-and-click configuration
- Secure configuration tool for MS Windows runs on Smart-Vue Server computer or networked client computer
- Prints status report of published fields

vue point

Security matters

The **Secure OPC configuration** application lets you choose which Smart-Vue sensor properties to publish for OPC clients.

service is SMART

That's why we're pleased to offer these services for your laboratory equipment:

Installation and training | Validation | Service plans

Protecting your investment

To improve your laboratory's efficiency, you should be free to focus on your work, not burdened with managing instrument service. We provide a complete portfolio of customized, integrated and innovative services and support solutions designed to help you improve productivity, reduce total cost of ownership and ensure compliance throughout your laboratory – from instrument and equipment acquisition to disposition. Let our expertise complement yours.

Explore all the new ways to protect your instruments and equipment at **unitylabservices.com**

Support Plans | Parts and Consumables | Training, and more

Unity Lab Services
Part of Thermo Fisher Scientific

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- ISO 17025
- CE
- FCC
- IC (Industry Canada)
- WPF (India)
- CMIIT (China – radio frequency)
- EMC
- Electrical Safety

Compliance comes first

Smart-Vue was designed with compliance in mind. Automatic and continuous data logging creates permanent record of readings, alarms and acknowledgements which assists with compliance to SOP, cGxP and 21 CFR part 11 among other standards Smart-Vue delivers the continuous monitoring, secure data logging and automatic audit trails required for regulatory compliance.

For a detailed outline of our protocols and field validations, specification sheets are available upon request by calling **+1-866-984-3766** or emailing: **LPG. presales@thermofisher.com**

For more information visit
www.thermoscientific.com/smart-vue

Laboratory Refrigerators and Freezers

Model No.	Description
For Ambient Temperature	
SV206-103-LSB	Wireless radio module system, internal temperature probe, range: +10°C / +50°C, calibrated at 23°C. PACKAGE CONSISTS OF: module with internal sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware.
For 2 or 3 Door Refrigerator, Cold Room or -40°C Freezers	
SV204-103-LSB	Wireless radio module system, external temperature probe 3.5 meters in length, range: -40°C to +80°C, calibrated at -30°, -15°, 0°, 20°, 40°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, flat extension cable.
SV204-303-LSB	Wireless radio module system, dual temperature probe 3.5 meters in length, range: -40°C to +80°C, calibrated at -30°, -15°, 0°, 20°, 40°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, flat extension cable.
SV205-303-LSB	Wireless radio module system, dual external temperature probe, range: -40°C to 120°C, (for incubators / water baths) calibrated at -30°, -60°, 80°, 100°, 105°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, flat extension cable.
For Single Door Refrigerator or Freezer, Cold Room	
SV203-103-LSB	Wireless radio module system, external temperature probe, 1 meter in length, range: -40°C to +80°C, calibrated at -30°, -15°, 0°, 20°, 40°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, flat extension cable.
SV203-303-LSB	Wireless radio module system, dual external temperature probe, 1 meter in length, range: -40°C to +80°C, calibrated at -30°, -15°, 0°, 20°, 40°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, flat extension cable.
For Clean Room	
SV208-103-LSB	Wireless radio module system, internal differential pressure sensor, range: -500 to +500 Pa., calibrated at 0 to 100 Pa with 10 Pa steps. PACKAGE CONSISTS OF: module with internal sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware.
For Incubators, Stability Cabinets, Clean Rooms	
SV207-103-LSB	Wireless radio module system, external dual temperature/RH sensor -40°C to +100°C, 0-100% RH, calibrated at 23°C and 50% RH PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, temperature/RH flat extension cable.
SV207-303-LSB	Wireless radio module system, external dual temperature/RH sensor-40°C to +100°C ,0-100% RH, calibrated at 23°C and 50% RH. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting kit, sensor mounting kit, temperature/RH flat extension cable (total cable length 2 meters).
For Monitor 4-20 mA Analog Output Signal	
SV209-103-LSB	Wireless radio module, 4 - 20 analog input, 2 wires at 2.9 meters in length: black and yellow (ground and signal), calibrated on five points: 4, 8, 12 16 and 20 mA. PACKAGE CONSISTS OF: module, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware.
For Monitoring Any Alarm Contact	
SV212-503-LSB	Wireless radio module, dry contact input, 1 x 2 wires and 2.9 meters in length: black and yellow. PACKAGE CONSISTS OF: module, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware.
For Ambient Temperature, Repeater Modules	
SV100-503-LSB	10mW repeater module, with universal (100v/240v) power supply, wall mounting holder with Velcro, CD-ROM with Smart-Vue client software drivers and user manuals.
SV105-503-LSB	Wireless radio module system for ambient temperature, repeater, internal temperature probe, range: +10°C to +50°C PACKAGE CONSISTS OF: module, internal sensor, 3.6V lithium battery, 5V power adapter, mounting holder with Velcro.
Receivers	
SV106-506-LSB	POE TCP/IP, RJ45, 25mW receiver, with universal (100v/240v) power supply, LAN cat. 5 cable, wall mounting holder with Velcro, CD-ROM with software drivers and user manuals.
SV103-506-LSB	USB 1.0 or 2.0, 10mW receiver, with Velcro, CD-ROM with Smart-Vue client software, software drivers and user manuals.
SV103-507-LSB	USB 1.0 or 2.0, 10mW receiver, with Velcro, CD-ROM with software drivers and user manuals.
SV104-506-LSB	TCP/IP, RJ45, 10mW receiver, with universal (100v/240v) power supply, LAN CAT 5 cable, wall mounting holder with Velcro, CD-ROM with software drivers and user manuals.
SV103-519-LSB	USB 1.0 or 2.0, 10mW receiver, with Velcro, CD-ROM with Smart-Vue client software, software 2.0 license up to 20 sensors, software drivers and user manuals.
SV103-520-LSB	USB 1.0 or 2.0, 10mW receiver, with Velcro, CD-ROM with Smart-Vue client software, software 2.0 license up to 49 sensors, software drivers and user manuals.
SV103-521-LSB	USB 1.0 or 2.0, 10mW receiver, with Velcro, CD-ROM with Smart-Vue client software, software 2.0 license up to 99 sensors, software drivers and user manuals.
SV103-522-LSB	USB 1.0 or 2.0, 10mW receiver, with Velcro, CD-ROM with Smart-Vue client software, software 2.0 license unlimited sensors, software drivers and user manuals.
Audible and Visual Alarms	
SV500-501-LSB	Local RF audible and visual alarm. Package consists of: universal (100v/240v) to 12 volt power supply, 3.6V lithium battery, Velcro and hardware.
Power Supply	
SV501-500-LSB	Power supply, 100v/240v to 6 VDC for CO2 system. Comes with four inter-changeable wall plug configurations.
SV501-502-LSB	Power supply, 100v/240v to 12 VDC for audio/visual alarm device. Comes with four inter-changeable wall plug configurations.
SV501-501-LSB	Power supply, 100v/240v to 5 VDC for repeater or receiver. Comes with four inter-changeable wall plug configurations.
Voice and Fax Alert	
SV509-500-LSB	Voice and fax alert, USB 1.0 or 2.0 powered, fits standard RJ11 telephone line.

Laboratory Refrigerators and Freezers (continued)

Model No.	Description
Client Server Software Upgrade from Smart-Vue 1.0 to 2.0	
SV623-500-LSB	Smart-Vue client server software upgrade from version 1.0 to version 2.0 up to 20, sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV624-500-LSB	Smart-Vue client server software upgrade from version 1.0 to version 2.0, up to 49 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV625-500-LSB	Smart-Vue client server software upgrade from version 1.0 to version 2.0, up to 99 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV626-500-LSB	Smart-Vue client server software upgrade from version 1.0 to version 2.0, unlimited sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
Client Server Software	
SV602-500-LSB	OPC Server for Smart-Vue provides OPC connectivity to connect your 'Smart-Vue' system to any OPC compliant client software such as a Building Management System. CD-ROM includes OPC Driver for Smart-Vue Server user manuals, installation guide.
SV603-500-LSB	Smart-Vue client server software version 2.0, up to 20 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides
SV604-500-LSB	Smart-Vue client server software version 2.0, up to 49 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV605-500-LSB	Smart-Vue client server software version 2.0, up to 99 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV606-500-LSB	Smart-Vue client server software version 2.0, unlimited sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV607-500-LSB	Smart-Vue client server software version 2.0, upgrade from 20 to 49 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV608-500-LSB	Smart-Vue client server software version 2.0, upgrade from 20 to 99 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV609-500-LSB	Smart-Vue client server software version 2.0, upgrade from 20 to unlimited sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV610-500-LSB	Smart-Vue client server software version 2.0, upgrade from 49 to 99 sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV611-500-LSB	Smart-Vue client server software version 2.0, upgrade from 49 to unlimited sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
SV612-500-LSB	Smart-Vue client server software version 2.0, upgrade from 99 to unlimited sensors with software drivers for all system receivers and repeaters, and user manuals / quick installation guides.
Accessories	
SV503-500-LSB	3.6v lithium battery, 3600 mA - for modules (Package of 2)

For Ultra-Low Temperature Freezers

Model No.	Description
SV200-103-LSB	Wireless radio module system, external PT100 temperature probe (100mm x 3mm), range: -100°C to +150°C, calibrated at -80°, -40° and 0°C. PACKAGE CONSISTS OF: Module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit.

For Cryogenic Storage

Model No.	Description
SV201-103-LSB	Wireless radio module system, external 3 wire PT100 temperature probe (150mm x 3mm). Range: -200°C to +50°C, calibrated at -196°, -80° and 0°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit.

For CO_2 Incubators, Water Baths, Stability Cabinets & Clean Rooms

Model No.	Description
For CO_2 Incubators	
SV210-103-LSB	Wireless radio module system, external dual sensor, temperature and CO_2, range: 0°C to +50°C, 0 - 10% CO2, calibration at 37°C, 5% CO_2. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium back-up battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, universal (100v/240v) power supply.
For Incubators and Water Baths	
SV205-103-LSB	Wireless radio module system, external temperature probe, range: -40°C to +120°C, calibrated at 30°, 60°, 80°,100°, 105°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, flat extension cable.
For Incubators, Stability Cabinets, Clean Rooms	
SV207-103-LSB	Wireless radio module system, external dual temperature/RH sensor, range: -40°C to +100°C, 0 - 100%RH. Calibrated at 23°C and 50%RH. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit, temperature/RH flat cable.

For Ovens

Model No.	Description
SV202-103-LSB	Wireless radio module system, external 3 wire, PT100 temperature probe. Range: +100°C to +350°C, calibrated at 100, 200 and 350°C. PACKAGE CONSISTS OF: module, external sensor, 3.6V lithium battery, mounting holder with Velcro, magnet and hardware, sensor mounting kit.

Ordering information continues on the next page.

Thermo Scientific Smart-Vue Ordering Information

FREQUENCY: **434MHz**

Services

Model No.	Description
SV-INST-TRAING	Installation and training bundle for Smart-Vue monitoring system. Four hour user/admin and maintenance training for up to 10 people. 1 PT basic hardware/software installation (zone 1 travel charge included).
SV-INST-byPNT	Hardware installation fee for each additional Smart-Vue monitoring point. Comes with basic software connectivity and configuration.
SV-CALIBRTN1	Initial one point NIST calibration service per analog monitoring sensor. (zone 1 travel charge included).
SV-CALIBRTN2	Additional NIST calibration service for analog type Smart-Vue sensors by MON or measurement point.
IOQPCKE89003674	IQOQ field validation service for Smart-Vue wireless monitoring system. Refer to specification sheet E89003674 for a detailed list of tests and deliverables.
IOQDOCE89003674	IQOQ protocol for Smart-Vue wireless monitoring system.

Thermo Scientific
Smart-Vue Wireless Monitoring Solution

Wireless, Tireless

Think non-stop sample safeguarding—24/7/365 even in the event of power or mechanical failure

- State-of-the-art wireless monitoring of critical equipment parameters
- Safeguarding for your critical, and irreplaceable, research samples
- Datalogging that assists with compliance to regulatory requirements such as FDA and GxP
- Instant wireless notification in the event sample integrity is threatened
- Intelligent data logging using globally recognized radio frequency transmissions

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