Contents

Introduction

The V2 family of wireless devices encompasses many different technologies and capabilities because each of the technologies provides advantages that are highly application specific. In trying to choose from the myriad capabilities, it is generally best to start by thinking about what you want to monitor, about how critical that monitoring is, and about which communications strategy best fits your application. Decisions also need to be made about output choices such as audible alarms, etc.

In respect to sensor families, there are some "universal" input devices that can accept any of the Rees Scientific standard sensors including temperature sensors and thousands of different types of sensors using the standard 4-20 mA interface. Because the 4-20 mA interface involves using a separate transmitter and a separate power supply, greater elegance and economy can be achieved by dedicated sensor modules such as the THL family that monitors temperature and humidity, and the DP family that monitors differential pressure, and the In-Box temperature sensor family.

In addition to these families, there is the MPX family which monitors and buffers data from a 16 input wired MPX panel. These are often used to upgrade legacy installations that are wired, and can also be used in new applications where a wired approach can be more reliable than any wireless solution.

And then, our most recent addition to the list of technologies is the chirper family of sensors and base modules. This family provides an economical approach to temperature monitoring by placing inexpensive "chirper" modules in the sensor locations and collecting their signals in a "chirper base" module that provides data buffering services and sends the data back to the Centron.

COMMUNICATIONS TECHNOLOGY CHOICES

Once you have decided on the module families to be used, you will need to pick a technology to bring the data back to the central monitoring system's Centron node. Each technology has its own advantages, and the technologies can all be mixed in a single system.

First, there is the Zigbee technology. Zigbee is very similar to WiFi but is a light weight, more battery friendly technology that was designed specifically for sensor type, relatively low-speed communications. It has the advantage that it will have its own independent battery-backed-up infrastructure that will not be affected by any WiFi network issues. One principal advantage is that most modules can run on battery for approximately a year. The modules that are plugged in to AC power serve as routers for the rest. Zigbee networks are organized around "Coordinators" which are connected to the Centron via USB or Ethernet. The indoor range of Zigbee is very similar to WiFi.

The second technology choice is WiFi. This has the advantage of using existing infrastructure, and can allow you to move equipment to entirely new locations without adding any support infrastructure. While the sensors themselves are a little more expensive than their Zigbee counterparts, the lack of additional infrastructure can make up the difference. It can be terrific when one or two sensors need to be placed far away from the base, or when a chirper base is placed in a far-away equipment room with 16 chirper modules talking to it.

The third technology choice is Ethernet. This has the advantage of being a wired technology with all the reliability that wired implies.

ACCESSORY CHOICES

The last item to be selected is what accessories you want to specify for your modules. Most modules can be supplied with an audible alarm that can signal a problem in a given area. The alarm signaling in this case will signal that one of a group of alarms has been triggered.

Most modules can alternatively be supplied with an output relay. This relay can be used for a variety of complex control functions such as temperature controls, or it can trigger an external alarm based on a group of system alarms.

Most modules can alternatively be supplied with a connection to an Output-8 panel that can control a whole bank of different control points based upon logic programmed into the Centron system.

There are also modules with visual displays that can show exactly what the module is reading. The "universal" input type can also be provided with a local audio-visual alert and a local alert silence button. The local alert is designed to remind people to close the freezer door and allow its temperature to recover before a real alarm is triggered.

V.2 Zigbee Technology

Utilizing Spread Spectrum technology at the transmitter level, Rees Scientific's V.2 Wireless Monitoring System offers collision avoidance, receiver energy detection, link quality indication, clear channel assessment, acknowledgement and security.

A major advantage of the Zigbee technology is its low-power nature allowing most modules to run on battery alone for approximately one year. The other modules, when powered by the buildings AC power serve as both transmitters and as routers allowing you to extend the Zigbee infrastructure hop by hop. Each module can buffer up to 7 days' worth of data. Modules can support the entire range of Rees Scientific sensors. All communications are Spread Spectrum for vastly enhanced communication reliability over older single channel 418 MHz transmission.

V.2 WiFi Technology

Rees Scientific's V.2. WiFi transmitters offer the same great reliability, security, & flexibility you've come to expect from the company you trust. Designed to reduce the overall installation footprint, the WiFi transmitters utilize your existing infrastructure to minimize site impact and get you up and running fast.

Each module can buffer up to 7 days of data. Modules can support the entire range of Rees Scientific sensors.

LCD Displays

View sensor conditions of your unit right from the LCD display module. Many module families support the LCD displays. The displays can support one or two sensors and they can come equipped with a local audio and visual alert that can be silenced from the module with a push of a button. NOTE: the alert is designed to remind the user to close the refrigerator door. It is NOT documented and silencing it does NOT inhibit the Centron system alarm. If the out-of-range condition persists, a documented Centron system alarm will occur along with all of the usual alarm and dial-out options. This is done this way because a silence button provides no indication of who pressed it and inhibiting a real alarm with such a button would be a violation of good practices.

If the audio-visual alert is used, the module will need to be plugged in. This is ideal for health clinics, hospital pharmacies and many other healthcare facilities that house critical commodities in their refrigerators. It works with ReesCloud and on-premises installations.

Zigbee modules without the alert can run on battery.

Communications Options

- WiFi
- Zigbee

NOTE: Requires Presidio Software 3.0 build 1020 or greater.

Universal Transmitter Family

The universal modules are most often used to monitor temperatures ranging between -196 and + 105 Degrees C. This is done best using the TPT series of sensors (please refer to the Sensor portion of the catalog). These modules can also connect to any of the thousands of 4-20 mA sensor modules, many of which are listed in the sensors portion of the catalog. These modules buffer 7 days of data at 5 minute intervals. These work with ReesCloud and on-premises installations.

Communications Options

- WiFi
- Zigbee
- Network Connected

Accessories Options - See Lighting Control and Output section of the catalog

- Local LCD Display with audio-visual alert and silence button (NOTE: Alert is not a system alarm. It is a local alert designed to remind the user to close the freezer door.) Zigbee version can be operated on battery. WiFi version requires power.
- Local Alarm (NOTE: This provides an output annunciator that signals when programmed to do so. It is usually used as an alarm annunciator for a group of inputs such as a lab area or freezer farm.) Modules with Local Alarm require AC Power.
- Output Relay – This can be used to control lights, fans, thermostats, pumps, etc., or to provide output to other alarm systems. Modules with Output Relay require AC Power.
- Output 8 Interface Cable – This is an add-on for a module that should be specified in addition to the module itself. It connects the module to an Output-8 board which then allows the Centron system full programmable control of up to 8 different devices (See Output section of the catalog.). Not supported with display, local alarm, or relay containing modules. AC Power required.

	US Part Module Alone	US Part with Display & Alert	US Part with Local Alarm	US Part with Output Relay
Zigbee				
1 input with Zigbee Radio	V2-U1	V2-U-1DA	V2-U-1-L	V2-U-1-R
2 inputs with Zigbee Radio	V2-U2	V2-U-2DA	V2-U-2-L	V2-U-2-R
4 inputs with Zigbee Radio	V2-U4	Unavailable	V2-U-4-L	V2-U-4-R
WiFi				
1 input with WiFi Radio	V2-U1-WF	V2-U-1DA-WF	V2-U-1-L-WF	V2-U-1-R-WF
2 inputs with WiFi Radio	V2-U2-WF	V2-U-2DA-WF	V2-U-2-L-WF	V2-U-2-R-WF
4 inputs with WiFi Radio	V2-U4-WF	Unavailable	V2-U-4-L-WF	V2-U-4-R-WF
Ethernet				
1 input Ethernet Connected	V2-DIRECT-U1	Unavailable	V2-U1-L-DR	V2-U1-R-DR
2 inputs Ethernet Connected	V2- DIRECT-U2	Unavailable	V2-U2-L-DR	V2-U2-R-DR
4 inputs Ethernet Connected	V2- DIRECT-U4	Unavailable	V2-U2-L-DR	V2-U2-R-DR

Universal Transmitter Family (Continued)

	Non-US Part Module Alone	Non-US Part with Display & Alert	Non-US Part with Local Alarm	Non-US Part with Output Relay
Zigbee				
1 input with Zigbee	V2-U1-EV	V2-U-1DA-EV	V2-U-1-EV-L	V2-U-1-EV-R
2 inputs with Zigbee	V2-U2-EV	V2-U-2DA-EV	V2-U-2-EV-L	V2-U-2- EV-R
4 inputs with Zigbee	V2-U4-EV	Unavailable	V2-U-4-EV-L	V2-U-4- EV-R
WiFi				
1 input with WiFi	V2-U1-WF-EV	V2-U-1DA-WF-EV	V2-U-1-EV-L-WF	V2-U-1-EV-R-WF
2 inputs with WiFi	V2-U2-WF-EV	V2-U-2DA-WF-EV	V2-U-2-EV-L-WF	V2-U-2-EV-R-WF
4 inputs with WiFi	V2-U4-WF-EV	Unavailable	V2-U-4-EV-L-WF	V2-U-4-EV-R-WF
Ethernet				
1 input	V2-DIRECT-U1	Unavailable		V2-U1-R-DR
2 inputs	V2- DIRECT-U2	Unavailable		V2-U2-R-DR
4 inputs	V2- DIRECT-U4	Unavailable		V2-U2-R-DR

Accessories

US 110 VAC Power Supply 6-9V DC 300mA	V2-TRANS
Non-US 230/115 VAC Universal Power Supply 6-9 VDC 300mA	V2-TRANS-EV
Replacement 3.6 Volt Battery	V2-BATT
Output 8 Interface Cable	V2-OUTPUT-CBL

Temperature/Humidity/Light Transmitter Family

Rees Scientific Temperature, Humidity, and Light transmitter. More limited versions are available for ambient temperature only, and for ambient temperature and humidity but no light. These sensors are widely used in animal facilities, as well as in room monitoring. The remote-probe versions can be used in stability chambers and the like. These modules buffer 7 days of data at 5 minute intervals. Works with ReesCloud and on-premises installations.

Communications Options

- WiFi
- Zigbee
- Network Connected

Accessories Options - See Lighting Control and Output section

- Local LCD Display (Zigbee version can be operated on battery)
- Local Alarm NOTE: This provides an output annunciator that signals when programmed to do so. It us usually used as an alarm annunciator for a group of inputs such as a lab area or freezer farm. Modules with Local Alarm require AC Power.
- Output Relay – This can be used to control lights, fans, thermostats, pumps, etc., or to provide output to other alarm systems. Modules with Output Relay require AC power.
- Output 8 Interface Cable – This is an add-on for a module that should be specified in addition to the module itself. It connects the module to an Output-8 board which then allows the Centron system full programmable control of up to 8 different devices (See Output section of the catalog.). Not supported with display, local alarm, or relay containing modules. AC Power required.
- Protective Weather Cover

	US Part Module Only	US Part with Display	US Part with Local Alarm	US Part with Output Relay
Zigbee				
Temperature Only	V2-T	V2-T-D	V2-T-L	V2-T-R
Temperature and Humidity	V2-T/H	V2-T/H-D	V2-T/H-L	V2-T/H-R
Temp, Humidity & Light	V2-T/H/L	V2-T/H/L-D	V2-T/H/L-L	V2-T/H/L-R
Temp & Humidity with Remote Probe	V2-T/H-REM	V2-T/H-D-REM	V2-T/H-REM-L	V2-T/H-REM-R
WiFi				
Temperature Only	V2-T-WF	V2-T-D-WF	V2-T-L-WF	V2-T-R-WF
Temperature and Humidity	V2-T/H-WF	V2-T/H-D-WF	V2-T/H-L-WF	V2-T/H-R-WF
Temp, Humidity & Light	V2-T/H/L-WF	V2-T/H/L-D-WF	V2-T/H/L-LWF	V2-T/H/L-RWF
Temp & Humidity with Remote Probe	V2-T/H-REM-WF	V2-T/H-D-RM-WF	V2-T/H-REM-LWF	V2-T/H-REM-RWF

Temperature/Humidity/Light Transmitter Family

	Non-US Part Module Only	Non-US Part with Display	Non-US Part with Local Alarm	Non-US Part with Output Relay
Zigbee				
Temperature Only	V2-T-EV	V2-T-D-EV	V2-T-L-EV	V2-T-R
Temp and Humidity	V2-T/H-EV	V2-T/H-D-EV	V2-T/H-L-EV	V2-T/H-R
Temp, Humidity & Light	V2-T/H/L-EV	V2-T/H/L-D-EV	V2-T/H/L-L-EV	V2-T/H/L-R
Temp & Humidity with Remote Probe	V2-T/H-REM-EV	V2-T/H-D-RM-EV	V2-T/H-REM-L-EV	V2-T/H-REM-R
WiFi				
Temperature Only	V2-T-WF-EV	V2-T-D-WF-EV	V2-T-L-WF-EV	V2-T-R-WF
Temp and Humidity	V2-T/H-WF-EV	V2-T/H-D-WF-EV	V2-T/H-L-WF-EV	V2-T/H-R-WF
Temp, Humidity & Light	V2-T/H/L-WF-EV	V2-THL-D-WF-EV	V2-T/H/L-LWF-EV	V2-T/H/L-RWF
Temp & Humidity with Remote Probe	V2-T/H-RM-WFEV	V2-TH-D-RMWFEV	V2-TH-RM-LWFEV	V2-TH-RM-RWFEV

Accessories

US 110 VAC Power Supply 6-9V DC 300mA	V2-TRANS
Non-US 230/115 VAC Universal Power Supply 6-9 VDC 300mA	V2-TRANS-EV
Replacement 3.6 Volt Battery	V2-BATT
Output 8 Interface Cable	V2-OUTPUT-CBL

Differential Pressure Transmitter Family

The V2-DP differential pressure sensor is used to measure the difference in pressure between two points. Able to be tucked away in the smallest of spaces, integrating a battery backup, and requiring no wires to be pulled for communicating back to a panel, the V2-DP can be used in situations that were previously impossible. Specific applications are: measuring the pressure difference across an air handler for efficiency, ensuring positive air pressure between a room and hallway, or guaranteeing that a laboratory hood system is working correctly. Buffers 7 days of data at 5 minute intervals. Works with ReesCloud and on-premises installations.

Communications Options

- WiFi
- Zigbee

Accessories Options - See Lighting Control and Output section

- Local LCD Display (Zigbee version can be operated on battery)
- Local Alarm NOTE: This provides an output annunciator that signals when programmed to do so. It us usually used as an alarm annunciator for a group of inputs such as a lab area or freezer farm. Modules with Local Alarm require AC Power.
- Output Relay – This can be used to control lights, fans, thermostats, pumps, etc., or to provide output to other alarm systems. Modules with Output Relay require AC power.
- Output 8 Interface Cable – This is an add-on for a module that should be specified in addition to the module itself. It connects the module to an Output-8 board which then allows the Centron system full programmable control of up to 8 different devices (See Output section of the catalog.). Not supported with display, local alarm, or relay containing modules. AC Power required.

	US Part Module Only	US Part with Display	US Part with Local Alarm	US Part with Output Relay
Zigbee				
Differential Pressure	V2-DP	V2-DP-D	V2-DP-L	V2-DP-R
WiFi				
Differential Pressure	V2-DP-WF	V2-DP-D-WF	V2-DP-L-WF	V2-DP-R-WF

	Non-US Part Module Only	Non-US Part with Display	Non-US Part with Local Alarm	Non-US Part with Output Relay
Zigbee				
Differential Pressure	V2-DP-EV	V2-DP-D-EV	V2-DP-L-EV	V2-DP-R-EV
WiFi				
Differential Pressure	V2-DP-WF-EV	V2-DP-D-WF-EV	V2-DP-L-WF-EV	V2-DP-R-WF-EV

Accessories

US 110 VAC Power Supply 6-9V DC 300mA	V2-TRANS
Non-US 230/115 VAC Universal Power Supply 6-9 VDC 300mA	V2-TRANS-EV
Replacement 3.6 Volt Battery	V2-BATT
Output 8 Interface Cable	V2-OUTPUT-CBL

In Box Temperature Sensor Family

For use inside standard refrigerator and freezers for monitoring temperature range of -30 to 60° C. Each module can buffer up to 7 days' worth of data at a logging rate of every 5 minutes. Works with ReesCloud and on-premises installations.

Communications Options

- Zigbee
-

Accessories Options

- None

Type	Part #
Wireless Ambient Temp Transmitter inside Refrigerators and Freezers	V2-T-REF/FRZ
Replacement 3.6 Volt Battery	V2-BATT

Wired System MPX Interface Family

This module connects a 16 input wired MPX panel into the Centron system. It provides 7 day buffering at 15 minute intervals for all of the 16 wired inputs. Use it to provide a fully wired alternative with the Ethernet connected version. Upgrade older systems to have buffered remote panels and/or failover node capability.

Communications Options

- WiFi
- Zigbee
- Ethernet

Accessories Options - See Lighting Control and Outputs

- Local Alarm NOTE: This provides an output annunciator that signals when programmed to do so. It us usually used as an alarm annunciator for a group of inputs such as a lab area or freezer farm. Modules with Local Alarm require AC Power.
- Output Relay – This can be used to control lights, fans, thermostats, pumps, etc., or to provide output to other alarm systems. Modules with Output Relay require AC power.
- Output 8 Interface Cable – This is an add-on for a module that should be specified in addition to the module itself. It connects the module to an Output-8 board which then allows the Centron system full programmable control of up to 8 different devices (See Output section of the catalog.). Not supported with display, local alarm, or relay containing modules. AC Power required.

	US Part Module Only	US Part with Local Alarm	US Part with Output Relay
Zigbee			
MPX Interface Module	V2-MPX	V2-MPX-L	V2-MPX-R
WiFi			
MPX Interface w/ WiFi	V2-MPX-WF	V2-MPX-L-WF	V2-MPX-R-WF
Ethernet			
MPX Interface w/ Ethernet (240/110 VAC)	V2-MPX-NET	V2-MPX-L-NET	V2-MPX-R-NET

	Non-US Part Module Only	Non-US Part with Local Alarm	Non-US Part with Output Relay
Zigbee			
MPX Interface Module	V2-MPX-EV	V2-MPX-L-EV	V2-MPX-R-EV
WiFi			
MPX Interface w/ WiFi	V2-MPX-WF-EV	V2-MPX-L-WF-EV	V2-MPX-R-WF-EV
Ethernet			
MPX Interface w/ Ethernet (230/110 VAC)	V2-MPX-NET	V2-MPX-L-NET	V2-MPX-R-NET

Accessories

US 110 VAC Power Supply 6-9V DC 300mA	V2-TRANS
Non-US 230/115 VAC Universal Power Supply 6-9 VDC 300mA	V2-TRANS-EV
Replacement 3.6 Volt Battery	V2-BATT
Output 8 Interface Cable	V2-OUTPUT-CBL

Chirper Base Family

This module connects up to 16 chirper modules into a Centron system. It provides 7 day buffering at 15 minute intervals of the chirper module data and picks up the chirper signals on 415 MHz (US) or 433 MHz (Non-US). This system is primarily used for cost savings in slightly less critical applications. The single frequency nature of the 415/433 MHz signals means that interference can cause occasional, generally rare and short offline events. See the catalog section concerning chirper modules. NOTE: each chirper base can accept up to three directly wired universal type inputs. Thus, you can connect up to 3 pieces of critical equipment with standard TPT type sensors, and use the 13 remaining positions for less critical chipper monitored devices.

Communications Options

- WiFi
- Zigbee
- USB
- Ethernet

Accessories

- None

	US Part Module Only	Non-US Part with Local Alarm
Zigbee		
Chirper Base	V2-CH-BASE-ZIG	V2-CH-BSE-Z-EV
WiFi		
Chirper Base	V2-CH-BASE-WF	V2-CH-BSE-WFEV
USB		
Chirper Base	V2-CH-BASE-USB	V2-CH-BASE-USB
Ethernet (Limit 20 per Node)		
Chirper Base (240/115 VAC)	V2-CH-BASE-NET	V2-CH-BASE-NET

Accessories

US 110 VAC Power Supply 6-9V DC 300mA	V2-TRANS
Non-US 230/115 VAC Universal Power Supply 6-9 VDC 300mA	V2-TRANS-EV
Replacement 3.6 Volt Battery	V2-BATT

Zigbee Infrastructure & intermediator Devices

Zigbee USB Coordinator

The V.2 Wireless USB Coordinator serves as an end-point for the V.2 wireless network. It organizes the Zigbee network and provides two way communications between up to 35 modules and the Centron node.

Communications Options

- Zigbee

Type	Part #
Zigbee Wireless USB Coordinator	V2-CRD

Zigbee Infrastructure & intermediator Devices

V.2 Net Zigbee Coordinator

A 4 hour battery backed up network device that will connect V.2 transmitters at remote sites back to a central node over the organization's existing TCP/IP network. Requires an IP address.

Easily monitor sensors on the other side of your facility, across campus, or across country. Works with ReesCloud and on-Premises installations.

Communications Options

- WiFi
- Zigbee

Connection

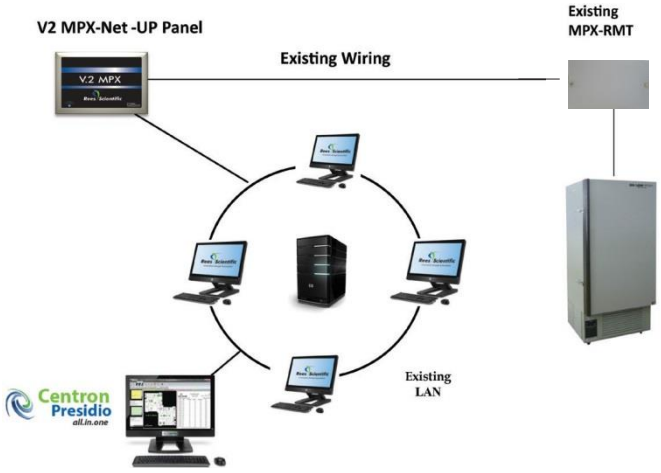
- Requires 120 VAC or 230 VAC power
- Maximum wireless transmission receiver range indoors 300ft
- Ethernet connection required

Type	Part #
Zigbee Net Wireless Coordinator	V2-NET

Zigbee Infrastructure & intermediator Devices

V.2-MPX Transmitter Family – V.2 MPX Net Up & V.2 MPX USB

The V2-MPX-NET-UP and V2-MPX-USB-UP provide data buffering and backup for up to 8 existing MPX panels. Once attached, the buffered panels communicate through a single network or USB connection. This allows for easy communication to both virtualized and non-virtualized Centrons. Ideal for use with upgrading existing hardwired systems to the new Presidio and Enterprise systems.



Communications Options

- Ethernet (1 Ethernet Connection)
- USB

Connection

- 1 Requires Ethernet or USB Connection
- Connected to MPX panels via 3 conductor shielded 22AWG wiring

Type	Part #
Network Connected MPX Interface Panel for up to 8 MPX panels. Requires use of MPX-BOARD modules as needed.	V2-MPX-NET-UP
USB Connected MPX Interface Panel for up to 8 MPX panels. Requires use of MPX-BOARD modules as needed.	V2-MPX-USB-UP
MPX board module (one needed for each MPX panel.)	V2-MPX-BOARD

Chirper Transmitters with Sensors

Order#	Application:
V2-CH-CRYO6	V2 “Chirper” wireless temperature module and probe - for liquid Nitrogen -200 to -125 degrees C with AA size Lithium battery.
V2-CH-T	V2 “Chirper” wireless temperature module -15 to +60 degrees C
V2-CH-T-CRT	V2 “Chirper” wireless temperature module -15 to +60 degrees C. Includes 3 Pt NIST Certificate.
V2-CH-TH	V2 “Chirper” wireless temperature and humidity module. Temperature -15 to +60 degrees C; RH accuracy +/- 3%.
V2-CH-TPT3	V2 “Chirper” wireless temperature module and probe – Type 3 -50 to +30 degrees C with AA size Lithium battery. For use in refrigerators and standard -30 freezers.
V2-CH-TPT3A	V2 “Chirper” wireless ambient temperature module and probe - Type 3 -50 to +30 degrees C with AA size Lithium battery. For use in refrigerators and standard (-30) freezers.
V2-CH-TPT3A-CRT	V2 “Chirper” wireless ambient temperature module and probe - Type 3 -50 to +30 degrees C with AA size Lithium battery. For use in refrigerators and standard (-30) freezers. Includes 3 Pt NIST certificate.
V2-CH-TPT3-CRT	V2 “Chirper” wireless temperature module and probe - Type 3 -50 to +30 degrees C with AA size Lithium battery. For use in refrigerators and standard -30 freezers. Includes 3 Pt NIST certificate.
V2-CH-TPT4	V2 “Chirper” wireless temperature module and probe - Type 4 -90 to +10 degrees C with AA size Lithium battery. For use in -80 ultra low freezers.
V2-CH-TPT4-CRT	V2 “Chirper” wireless temperature module and probe - Type 4 -90 to +10 degrees C with AA size Lithium battery. For use in -80 ultra low freezers. Includes 3 Pt NIST certificate.

Specifications

Universal Transmitter - Zigbee

- Transmitters buffer 7 days of readings history recorded at 5 minute intervals.
- Most sensors in a typical install will be battery powered.
- Transmitters accept any type of Rees Scientific or industry standard input and provide 12 bit analog to digital conversion accuracy.
- 1 input, 2 input and 4 input transmitters available.
- Batteries are monitored in battery-powered units. Low batteries cause low battery alarms, which can dial out.
- AC power loss in routers will cause a power loss alarm which can dial out.
- Can be added to existing systems. A single system can contain wired sensors, Wireless Version 1 sensors, and V.2 wireless sensors.
- Dimensions (enclosure) 3.295 W X 3.295 H X 1.25 D (inches)
- FCC Certified- FCC ID: OUR-XBEE2*
- Transmit Power:
    - +1dBm non-router mode
    - +3dBm router mode
- Capable of connecting to an output, output board, and local alarms.
- Battery Back Up Duration
    - For modules running solely on battery, battery lasts approximately 1 year.
    - Modules connected to AC power will perform as routers for other modules.
    - In a power outage, AC connected modules will continue as routers for 4 hours, then demote to run efficiently on battery power.
    - batteries last approximately 100 hours in the high-draw state that happens during the first 4 hours of a power outage. Thus, these modules are good for about twenty- five power outages with duration of 4 hours or more.
- 6 VDC can be supplied using 120 VAC or 230 VAC power supply. Powered units become routers.
- Each router can service up to 8 battery powered children.
- Maximum wireless transmission receiver range indoors 50 feet with standard radios, up to 200 feet with the high-powered radios

Universal Transmitter - WiFi

Same as specifications for Zigbee version except for:

- Standard: IEEE 802.11b/g/n
- Security: WPA-PSK and WPA2-PSK, WEP-PSK
- Transmit Power: ≤ 15dBm
- Battery backed up. Replaceable battery lasts about 450 hours of total power outage. Power outage causes an alarm which can dial out.
- Requires 6VDC supplied by 120 VAC or 230 VAC power supply included.
- Connects to existing WiFi
- Maximum wireless transmission receiver range indoors 200 feet.

Universal Transmitter - Ethernet

Same as specifications for Zigbee version except for:

- Dimensions (enclosure) 4.625 W X 4.625 H X 2 3/8 D (inches)
- Battery backed up with a rechargeable gel cell system that lasts approximately 4 hours.
- Requires 1 Ethernet connection and IP address.

Temperature, Humidity and Light Transmitter - Zigbee

- Measures Ambient Temperature and Relative Humidity
- Also available with Integrated Light Sensor
- All communications are Spread Spectrum for vastly enhanced communication reliability over older single channel 418 MHz transmission.

- Buffers 7 days of readings history recorded at 5 minute intervals.
- Most sensors in a typical install will be battery powered. Not plugged in batteries last approximately
- 1 year. Plugged in battery runs 4 hours as router. Router mode ~100 hours (twenty-five four + hour power outages).
- 6 VDC can be supplied using 120 VAC or 230 VAC power supply. Powered units become routers.
- Each router can service up to 8 battery powered children.
- Batteries are monitored in battery-powered units. Low batteries cause low battery alarms, which can
- dial out.
- AC power loss in routers will cause a power loss alarm which can dial out.
- Can be added to existing systems. A single system can contain wired sensors, Wireless Version 1
- sensors, and V.2 wireless sensors.
- Dimensions (enclosure) 3.295 W X 3.295 H X 1.25 D (inches)
- FCC Certified- FCC ID: OUR-XBEE2*
- Operating Temperature: -20° to 60° C
- Humidity: 0% to 100% RH non-condensing
- Built-in probe humidity accuracy Typ: 3% RH 20-90% RH, 5% 0-100% RH
- Remote probe humidity accuracy 1.8% 10-90%RH, 4% 0-100% RH,
- Temperature accuracy: Typ: 0.4 Deg. C., resolution 0.1 Deg. C.
- Transmit Power:
  - +1dBm
  - +3dBm router mode
- Maximum wireless transmission receiver range indoors 50 feet with standard radios, up to 200 feet with the high-powered radios
- Capable of connecting to an output, output board, and local alarms.

Temperature, Humidity and Light Transmitter - WiFi

Specifications are the same as Zigbee units with the following differences:

- Standard: IEEE 802.11b/g/n
- Security: WPA-PSK and WPA2-PSK, WEP-PSK
- Transmit Power: ≥ 14dBm
- Require 6VDC supplied by 120 VAC or 230 VAC power supply included.
- Battery backed up. Replaceable battery lasts about 450 hours of total power outage. Power outage causes an alarm which can dial out.
- Connects to existing WiFi
- Maximum wireless transmission receiver range indoors 200 feet.

Differential Pressure Transmitter - Zigbee

- Pressure Range: -2.0 to 2.0 inches Water Column
- Media Compatibility: Air and non-conductive, non-corrosive gases.
- Materials: PBT, glass, silicon, gold, FR4, silicone, epoxy, copper alloy, lead-free solder.
- Pressure Connection: Barbed fitting for 3/16" ID tubing
- Accuracy: 3% of Reading
- Repeatability: 0.5% of Reading
- Operating Temperature: -20°C to 60°C (-4°F to 140°F)
- Transmit Power:
  - +1dBm
  - +3dBm router mode
- Maximum wireless transmission receiver range indoors 50 feet with standard radios, up to 200 feet with the Weight: 0.40 lb (180 g)
- Buffers 7 days of data at 5 minute intervals.
- Capable of connecting to an output, output board, and local alarms.
- Battery backed up. Replaceable battery lasts about 250 hours of total power outage.
- 6 VDC supplied using 120 VAC or 230 VAC power supply included. Powered units are routers.
- AC power loss will cause a power loss alarm which can dial out.

Differential Pressure Transmitter – WiFi

Specifications are the same as Zigbee units with the following differences:

- Standard: IEEE 802.11b/g/n
- Security: WPA-PSK and WPA2-PSK, WEP-PSK
- Transmit Power: ≥ 14dBm
- Require 6VDC supplied by 120 VAC or 230 VAC power supply included.
- Battery backed up. Replaceable battery lasts about 250 hours of total power outage. Power outage causes an alarm which can dial out.
- Connects to existing WiFi
- Maximum wireless transmission receiver range indoors 200 feet.

In Box Temperature Sensor

- Measures Ambient Temperature inside refrigerators and freezers.
- Buffers 7 days of readings history recorded at 5 minute intervals.
- Batteries are monitored in battery-powered units. Low batteries cause low battery alarms, which can dial out.
- Can be added to existing systems. A single system can contain wired sensors, Wireless Version 1
- sensors, and V.2 wireless sensors.
- Dimensions (enclosure) 3.295 W X 3.295 H X 1.25 D (inches)
- FCC Certified- FCC ID: OUR-XBEE2*
- Operating Temperature: -30° to 60° C

MPX Interface Module – Zigbee

- Connects to a Rees Scientific MPX panel to provide communications and buffering.
- Buffers 7 days of readings history recorded at 15 minute intervals.
- Require 6VDC supplied by 120 VAC or 230 VAC power supply included.
- AC power is monitored and can cause a power alarm which can dial out.
- Battery backed up by standard V2 battery and MPX panel rechargeable gel cell system.
- Dimensions (enclosure) 3.295 W X 3.295 H X 1.25 D (inches)
- FCC Certified- FCC ID: OUR-XBEE2*
- Presidio V3.0 or above software.

MPX Interface Module – WiFi

Specifications are the same as Zigbee units with the following differences:

- Standard: IEEE 802.11b/g/n
- Security: WPA-PSK and WPA2-PSK, WEP-PSK
- Transmit Power: ≥ 14dBm
- Battery backed up. Replaceable battery lasts about 450 hours of total power outage. Power outage causes an alarm which can dial out.
- Connects to existing WiFi
- Maximum wireless transmission receiver range indoors 200 feet.

MPX Interface Module – Ethernet

Same as specifications for Zigbee version except for:

- Dimensions (enclosure) 4.625 W X 4.625 H X 2 3/8 D (inches)
- Battery backed up with a rechargeable gel cell system that lasts approximately 4 hours.
- Requires 1 Ethernet connection and IP address.

Chirper Base Module – Zigbee

- Connects to up to 3 wired sensors of the universal type (i.e. TPT sensors, etc.)
- Connects to up to 16 total sensors, all can be chirpers, up to 3 can be wired..
- Buffers 7 days of readings history recorded at 15 minute intervals.
- Require 6VDC supplied by 120 VAC or 230 VAC power supply included.
- AC power is monitored and can cause a power alarm which can dial out.

- Battery backed up by standard V2 battery and MPX panel rechargeable gel cell system.
- Dimensions (enclosure) 3.295 W X 3.295 H X 1.25 D (inches)
- FCC Certified- FCC ID: OUR-XBEE2*

Chirper Base Module – WiFi

Specifications are the same as Zigbee units with the following differences:

- Standard: IEEE 802.11b/g/n
- Security: WPA-PSK and WPA2-PSK, WEP-PSK
- Transmit Power: ≥ 14dBm
- Battery backed up. Replaceable battery lasts about 180 hours of total power outage. Power outage causes an alarm which can dial out.
- Connects to existing WiFi
- Maximum wireless transmission receiver range indoors 200 feet.
- Presidio V3.0 or above software.

Chirper Base Module – Ethernet

Same as specifications for Zigbee version except for:

- Dimensions (enclosure) 4.625 W X 4.625 H X 2 3/8 D (inches)
- Battery backed up with a rechargeable gel cell system that lasts approximately 4 hours.
- Requires 1 Ethernet connection and IP address.

Output Relay Containing Modules

- SPDT output
- Max. contact voltage: 125 VAC, 60 VDC
- Rated load: 0.5 A at 125 VAC; 1A at 24 VDC
- For switching larger loads, use with RELAY-PWR : Max switching capacity: 62.50 VA, 30W
- Relay drops out if AC power to the module is lost

Local Alarm Containing Modules

- Sounds triple beep every 5 seconds when in alarm.
- Can be programmed to signal that at least one sensor in an input group or department is in alarm.
- Requires AC power, will not make sound when module is running on battery.

Zigbee Coordinator - USB

- Connects Directly to Rees Scientific Centron, Satellite or Virtual Node via USB port.
- Communicates bi-directionally with V.2 modules.
- Organizes the Zigbee network, assigning routers, etc.
- Receives power from Node.
- Transmit Power: +3dBm
- Limited to 35 modules maximum.
- FCC Certified- FCC ID: OUR-XBEE2*

Zigbee Coordinator - Ethernet

- Communicates bi-directionally with V.2 modules.
- Organizes the Zigbee network, assigning routers, etc.
- 4 hour rechargeable gel cell battery backup
- LED indicator light
- Connects directly to TCP/IP network
- Dimensions (enclosure) 4.625 W X 4.625 H X 2 3/8 D (inches)
- FCC Certified-FCC ID: OUR-XBEE2*
- Transmit Power: +3dBm

V.2 MPX NET UP / V.2 MPX USB UP

- Designed for in-wall installation with studs on 16” centers
- Able to accommodate up to 8 existing MPX panels. (Expansion boards sold separately Part#V2-MPX-BOARD)
- Battery backed up to collect readings for up to 24 hours
- Buffers MPX panel input data for 7 days at 15 minute intervals.
- Network Type: 10/100 for network type
- USB connection for USB type.
- Dimensions 15”x12.75”x3.4”
- Presidio V3.0 or above software.
- 120VAC @ 0.8 Amps max.

Chirper Sensor Modules

- Communicate with the Chirper Base units.
- Powered by 3 volt coin cell
- Battery is monitored. It causes an alarm which can dial out.
- Transmits on 415 MHz (US) or 433 (Non-US)
- Maximum transmission range indoors 30-50 ft.
- 12 bit A/D conversion.
- Presidio V3.0 or above software.
- Come with attached probes.