REMOTE INFRASTRUCTURE MANAGEMENT (RIM–1000)

KEY FEATURES

- Remote monitoring of sensors and devices in your data centers and equipment rooms

- Configurable with expansion cards for a large number of sensor inputs

- Provides one integrated view of all facility equipment

- Accepts inputs from a wide range of environmental sensors and facility equipment

- Stores data internally, so there is no need for additional equipment or software to store or access data

- Provides a single web-based interface for accessing and reviewing all data

- Monitors user-set thresholds and sends SNMP traps, email or SMS alarm notifications for events

- Provides Modbus, BACnet and SNMP output for integration with other facility management systems

APPLICATIONS

- Continuous environmental, power and security monitoring in your data centers and equipment rooms
- Interconnectivity with other building management systems
- Use to monitor a row of high-density cabinets in a data center, a small computer room or to monitor multiple RIM-1000s in single or multiple sites from a single web-based interface

USE WITH

- CPI Cabinet and Enclosure Systems
- CPI Rack Systems
- CPI Wall-Mount Systems

RELATED ACCESSORIES

- CPI Aisle Containment Solutions
- CPI Thermal Management Solutions
- CPI Cable Management Products
- CPI Power Management Products
- CPI Electronic Locking System
- CPI Power Management Tool
- CPI eConnect® PDUs

RIM-1000
Available in a 1U or 2U
rack-mount chassis

The Remote Infrastructure Management (RIM-1000) System from Chatsworth Products (CPI) provides remote monitoring of sensors and devices in your data centers and equipment rooms. RIM-1000 creates a critical early warning system that monitors conditions in your facility and notifies you when conditions change, so you can take immediate action. It also collects and stores sensor data for analysis to help you troubleshoot issues and optimize site conditions.

RIM-1000 is a 19"EIA rack-mount appliance available in a 1U or 2U chassis with a 24VDC or 48VDC power supply. It is a standalone device with internal flash storage that hosts its own web pages. No additional software is required. Use a web browser to access RIM-1000 and view data or configure sensors. You can set a threshold for each input. The web interface summarizes device and sensor input conditions with color-coding and displays the physical location of devices and sensors on a floor plan or map. When thresholds are crossed, RIM-1000 sends an SNMP trap, an email or SMS alarm notification. Alarms and Event History are also summarized on separate tabs for easy review and acknowledgement. Logs can be manually downloaded for detailed review or archiving. In addition to monitoring sensors and devices, the webpage also provides links for up to 32 other RIM-1000s and 10 additional IP addresses that can be used for viewing web cams or websites, so you can view all systems from a single RIM-1000 webpage. Alternately, RIM-1000 can provide Modbus, BACnet or SNMP output for integration with other facility management systems.

RIM-1000 supports analog sensor, digital sensor, Modbus, SNMP and BACnet/IP inputs for monitoring a wide range of site equipment and conditions. The RIM-1000 can monitor up to 32 devices and 1000 registers of Modbus data (Modbus, SNMP or BACnet/IP) collected from facilities equipment through the system's network, RS-232 or EIA-485 ports. It can also be configured for direct branch circuit monitoring (BCM) when used with the Veris Industries H663 Series BCMs for current monitoring at the electrical panel board. The basic model also includes eight configurable inputs and two relay (NO/NC) outputs. The configurable inputs can be used to attach and monitor external analog (4-20mA) or digital (dry contact NO/NC) sensors or to display the collected Modbus data (Modbus, SNMP, BACnet/IP) on the system's web interface home page. The basic model is expandable with your choice of additional input/output or input-only expansion cards. The 1U model supports one expansion card. The 2U model supports four expansion cards. The input/output expansion card (A) provides 12 additional configurable analog (4-20mA, 0-5VDC, 0-10VDC) or digital (dry contact NO only) inputs with eight additional relay (NO/NC) outputs. The input-only expansion card (C) provides 24 additional configurable digital (dry contact NO/NC) inputs. When omitted, expansion card slots can be used as virtual inputs for monitoring additional Modbus data from the home page (24 virtual inputs per card slot). Select from several pre-configured models or add expansion cards as required to meet your specific requirements.

See inside for product details or contact CPI Technical Support for configuration assistance.

CPI

**CHATSWORTH
PRODUCTS**

SPECIFICATIONS

- Includes:
  - 1 x RIM-1000
  - 1 x Power Supply with 24VDC models only
  - 1 x Rack-mount brackets
- Power:
  - 1U, 24VDC Model: 24VDC (±10%), 1A max., external power supply included
  - 1U, 48VDC Model: 36-72VDC, 0.5A max., power input terminal block
  - 2U, 24VDC Model: 24VDC (±10%), 2.5A max., external power supply included
  - 2U, 48VDC Model: 36-72VDC, 1.25A max., power input terminal block
- Grounding: External ground point for chassis and EIA-485 ground
- Inputs:
  - Analog/Digital: 8 Configurable as 4-20mA (12-bit A/D conversion) or Dry Contact NO/NC (<25mA)
  - Keypad: Standard 3x4; 3000VAC RMS optically isolated; 20 User Access Codes (also accessible via phone/DTMF through modem)
- Outputs:
  - Relay: 2 Dry Contact, Form C, 1A @ 24VDC, 0.5A resistive @ 120VAC (controllable via user programmable logic)
  - Sensor/Accessory Power: 24VDC (±10%) @ 300mA max. (power for external sensors and/or devices)
- Expansion Cards:
  - 1U model accommodates 1 expansion card
  - 2U model accommodates up to 4 expansion cards
  - 24VDC model requires 24VDC expansion cards
  - 48VDC model requires 48VDC expansion cards
  - Expansion Card A: 12 analog (jumper selectable for 4-20mA, 0-5VDC or 0-10VDC) or digital normally open (NO) dry contact inputs (non-isolated, individual ground only); and 8 Form C Relay Outputs, 1A @ 24VDC, 0.5A resistive @ 120VAC. 48VDC model accepts only 1 Card A.
  - Expansion Card C: 24 digital normally open or normally closed dry contact inputs, 3000VAC RMS optically isolated (common or individual ground)
- Communication Ports:
  - Ethernet: 10/100BaseT, RJ45 connector; 500VAC RMS isolation
  - RS-232: DB9 female connector; 9600 baud; 3000VAC RMS optically isolated; 15kV ESD protection
  - EIA-485 (selectable as RS-232): Two-wire half duplex; terminal block (selecting RS-232 switches to DB9 male connector); 1200, 2400, or 9600 baud configurable; 3000VAC RMS optically isolated
  - Modem (RJ11 Telco; ordered separately): V.34bis/33.6 kbps; DTMF capable; PPP-enabled; FCC Part 68 approved; 1500VAC RMS isolation barrier; 2100V peak surge protection
- Protocols:
  - TCP/IP; UDP/IP; ICMP/IP; FTP; NTP: IPv4
  - HTTP/HTML; SNPP; Telnet: 1.1/4.0; up to 10 URL links to other IP addressable cameras/devices; Webpages comply with Rehabilitation Act of 1973, sections 504 and 508, US Dept. of Education (website accessibility for computer users with disabilities)
  - SNMP: V1: MIB-2 compliant; NMS Manageable with Get, Set, and Traps; V2c: Traps or Informs
  - SMTP (email): Supports Client Authentication (plain and login); compatible with ESMTP Servers
  - Modbus: RTU transmission protocol; function codes: Slave - 03; Master - 01,02,03,04

- Protocols:
  - Modbus/IP: Modbus Slave; TCP/IP transmission protocol; Reads up to 628 registers and converts to SNMP and BACnet
  - BACnet/IP: Reads up to 106 instances and converts to SNMP and Modbus
  - Terminal Emulation: VT100 compatible
  - TAP (Pager): Telocator Alphanumeric Protocol v1.8
- Alarm Notification
  - Pager (With Optional Modem) – Optional: 15 text, numeric, or alphanumeric pager numbers; each digital and analog alarm (HighLimit and LowLimit) can notify any 5 of the 15 pagers
  - Email (Ethernet, With Optional Modem through PPP): 8 email recipients; email sent on Alarm and Return To Normal; each alarm can notify any or all of the 8 email recipients
  - SNMP Traps (Ethernet): V1 and V2c: 4 Trap IPs/Community Strings
  - Escalation (with Optional Modem): Additional notification to 1 of the 15 pager numbers when the initial page results in a Failure To Acknowledge status
- Health Check/Self-Monitoring: Self resetting; captured in Event Log
- Internal Hardware:
  - Real Time Clock: Battery backed; ±1.53 min/month accuracy
  - Memory: 16MB RAM; 128K NVRAM; 16MB Flash
- Logging Capabilities:
  - Alarm Log: Last 256 Alarms
  - Event Log: Last 100 Events (e.g., Acknowledgement By Code, System Boot, Page Successful, etc.)
  - Web User Access Log: Last 100 HTML Accesses (User, Date, and Time)
  - Digital Status Log: Last 100 Digital Status entries
  - Trending of Analog Inputs: 244 entries per time frame, per channel. High, low, and average values logged over specific minutes, hours, and days.
  - Extended Trending (Analog Inputs): 3,840 entries over 32 inputs, physical or over Modbus. Logging at defined, user-selectable intervals.
- Login Security:
  - Web Browser Access (Ethernet, Modem, PPP): 1 Administrator plus 7 users individually selectable for Read Only, Read/Write or Administrator
  - Terminal Emulation Access (Modem): 1 Administrator (password for Modem access)
- Front Panel Interface: 1 on/off power switch. Red and green LEDs indicate status, network link, network activity, and modem activity
- Operating/Storage Environment:
  - Operating temperature: 32° to 158°F (0° to 70°C).
  - Humidity: 5% to 95% RH, non-condensing
  - Altitude: 15,000ft (4,572m) max.
  - Storage temperature: -40° to 185°F (-40°C to 85°C)
- Dimensions and Weight:
  - 1U model: 1.8"H x 16.8"W x 7.9"D (46mmH x 427mmW x 201mmD); 6 lb (2.72 kg)
  - 2U model: 3.5"H x 16.8"W x 7.9"D (89mmH x 427mmW x 201mmD); 10 lb (4.54 kg)
- Mounting: 19"EIA, rack-mount brackets included; wall mount brackets available (sold separately)
- Certifications:
  - CE
  - ETL listed: conforms to UL 61010A-1, EN 61010 Certified to CAN/CSA C22.2 NO. 1010.1
  - RoHS compliant

Rear View of RIM-1000 chassis

ORDERING INFORMATION

Remote Infrastructure Management (RIM-1000) System – 24 VDC Models		
Part Number	**Description (Rack Space, Input Power, Inputs, Outputs, Expansion Cards)**	**Shipping Weight lb (kg)**
60101-001	1U, 24VDC, 8 configurable analog or digital NO/NC inputs, 2 relay outputs, 1 open expansion card slot, black	11 (5.0)
60101-002	1U, 24VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 10 relay outputs, no open expansion card slots, black	11 (5.0)
60101-003	1U, 24VDC, 8 configurable analog or digital NO/NC inputs, 24 digital NO/NC input, 2 relay outputs, no open expansion card slots, black	11 (5.0)
60101-004	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 2 relay outputs, 4 open expansion card slots, black	16 (7.3)
60101-005	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 10 relay outputs, 3 open expansion card slots, black	16 (7.3)
60101-006	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 24 digital NO/NC inputs, 2 relay outputs, 3 open expansion card slots, black	16 (7.3)
60101-007	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 24 digital NO/NC inputs, 10 relay outputs, 2 open expansion card slots, black	16 (7.3)
60101-008	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 24 configurable analog or digital NO inputs*, 18 relay outputs, 2 open expansion card slots, black	16 (7.3)
60101-009	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 48 digital NO/NC inputs, 2 relay outputs, 2 open expansion card slots, black	16 (7.3)
60101-010	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 48 configurable analog or digital NO inputs*, 34 relay outputs, no open expansion card slots, black	16 (7.3)
60101-011	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 96 digital NO/NC inputs, 2 relay outputs, no open expansion card slots, black	16 (7.3)
60101-012	2U, 24VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 72 digital NO/NC inputs, 10 relay outputs, no open expansion card slots, black	16 (7.3)

Note: The 12/24/48 configurable analog or digital NO inputs in these models are configured for a 4-20mA input, but can be manually reconfigured to 0-5 VDC or 0-10 VDC inputs by changing jumper settings on the expansion card.*

Remote Infrastructure Management (RIM-1000) System –48 VDC Models		
Part Number	**Description (Rack Space, Input Power, Inputs, Outputs, Expansion Cards)**	**Shipping Weight lb (kg)**
60102-001	1U, 48VDC, 8 configurable analog or digital NO/NC inputs, 2 relay outputs, 1 open expansion card slot, black	11 (5.0)
60102-002	1U, 48VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 10 relay outputs, no open expansion card slots, black	11 (5.0)
60102-003	1U, 48VDC, 8 configurable analog or digital NO/NC inputs, 24 digital NO/NC input, 2 relay outputs, no open expansion card slots, black	11 (5.0)
60102-004	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 2 relay outputs, 4 open expansion card slots, black	16 (7.3)
60102-005	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 10 relay outputs, 3 open expansion card slots, black	16 (7.3)
60102-006	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 24 digital NO/NC inputs, 2 relay outputs, 3 open expansion card slots, black	16 (7.3)
60102-007	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 24 digital NO/NC inputs, 10 relay outputs, 2 open expansion card slots, black	16 (7.3)
60102-008	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 48 digital NO/NC inputs, 2 relay outputs, 2 open expansion card slots, black	16 (7.3)
60102-009	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 96 digital NO/NC inputs, 2 relay outputs, no open expansion card slots, black	16 (7.3)
60102-010	2U, 48VDC, 8 configurable analog or digital NO/NC inputs, 12 configurable analog or digital NO inputs*, 72 digital NO/NC inputs, 10 relay outputs, no open expansion card slots, black	16 (7.3)

Note: The 12/24/48 configurable analog or digital NO inputs in these models are configured for a 4-20mA input, but can be manually reconfigured to 0-5 VDC or 0-10 VDC inputs by changing jumper settings on the expansion card.*

ACCESSORIES

RIM-1000 includes a number of connections for external sensors and several relay outputs. However, you can add expansion cards to the RIM-1000 to provide additional connections for external sensors and additional relay outputs. When selecting an expansion card, check your RIM-1000 to be sure there is an open expansion card slot and be sure to match the input voltage of your RIM-1000 (24 VDC or 48 VDC). RIM-1000 can also be fitted with an internal modem to provide a phone connection to the unit. Every RIM-1000 includes a built-in Ethernet connection. The modem provides a second, alternate method for access and to send alarms. Finally, RIM-1000 includes brackets for rack-mounting the device into a 19"EIA rack or cabinet, but wall-mount brackets are also available if you wish to hang the RIM-1000 on a wall.

60103-001

Expansion Cards for the Remote Infrastructure Management (RIM-1000) System		
Part Number	Description	Shipping Weight lb (kg)
60103-001	Expansion Card A, for 24 VDC or 48VDC RIM-1000, 12 configurable analog or digital NO inputs*, 8 relay outputs	1 (0.5)
60103-002	Expansion Card C, for 24 VDC RIM-1000, 24 digital NO/NC inputs	1 (0.5)
60103-003	Expansion Card C, for 48 VDC RIM-1000, 24 digital NO/NC inputs	1 (0.5)

Note: The 12 configurable analog or digital NO inputs on Expansion Card A are configured for a 4-20mA input, but can be manually reconfigured to 0-5 VDC or 0-10 VDC inputs by changing jumper settings on the expansion card prior to installation.*
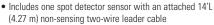
60105-001

Accessories for the Remote Infrastructure Management (RIM-1000) System		
Part Number	Description	Shipping Weight lb (kg)
60104-001	Internal Modem for the RIM-1000, for pager and PPP/dialup connections	1 (0.5)
60105-001	Wall-Mount Bracket, Black	1 (0.5)

External Sensors

The RIM-1000 is designed to be vendor neutral and will aggregate information from a wide variety of sensors and equipment. RIM-1000 accepts inputs from a wide range of environmental sensors and facility equipment, including digital dry contact (NO/NC), analog (4-20mA, 0-5VDC, 0-10VDC), Modbus, SNMP and BACnet/IP inputs, allowing you to monitor critical facilities equipment, like CRAC/CRAH units, UPSes, BCMs, ATSes and generators. For convenience, CPI offers a small range of sensors to monitor environmental and security conditions within and around your server cabinets and network cabinet racks. For other sensors, CPI recommends Veris Industries (www.veris.com), Building Automation Products, Inc. (www.bapihvac.com) or Dwyer Instruments, Inc. (www.dwyer-inst.com).

Leak Spot Detector

Leak Spot Detector is used to detect liquid in a specific spot, such as, inside of a condensation drip pan. The Spot Detector features a small enclosure with adjustable probes. It can be attached to a flat surface and submerged in water. Leak Spot Detector attaches to one of the digital inputs on the RIM-1000.

- Includes one spot detector sensor with an attached 14'L (4.27 m) non-sensing two-wire leader cable
- Solid State Output: 12-36VAC @ 0.01A min., 0.1A max. or 18-36VDC @ 0.01A min., 0.1A max.
- Operating Temperature: 32°F to 122°F (0°C to 50°C)
- Operating Humidity: 5% to 95% RH, non-condensing
- Maximum Altitude: 15,000 ft (4,572m) max.
- Storage Temperature: -4°F to 158°F (-20°C to 70°C)
- Dimensions: 2.0"H x 1.5"W x 1.0"D (51 mm H x 39.4 mm W x 25.4 mm D)
- Weight: 4 oz. (105 g)
- Material: Plastic housing; color: Black
- Certifications: CE; ETL listed: conforms to UL 61010-1, EN 61010-1, RoHS compliant

Part Number	Description	Shipping Weight lb (kg)
60109-001	Leak Spot Detector, with 14'L (4.2 m) cable	1 (0.5)

J-Clips For Leak Detection Sensor Rope

Use J-Clips to install Leak Detection Sensor Rope. J-Clips are constructed of durable nylon with an adhesive backing for easy and secure installation.

- Operating Environment (Adhesive): -4°F to 122°F (-20°C to 50°C)
- Size: 1.1"H x 1"W x 0.5"D (28 mm x 25 mm x 12 mm)
- Weight: 0.3 lb (0.1 kg)
- Material: UL94 V-1, RMS-05 Nylon; color: White

Part Number	Description	Shipping Weight lb (kg)
60109-006	J-Clips, Pack of 10	1 (0.5)
60109-007	J-Clips, Pack of 50	1 (0.5)

Note: Use J-Clips (ordered separately) to install Leak Detection Sensor Rope.

Leak Detection Controller Kit

60109-002

Leak Detection Controller Kit is a single zone leak detection controller that monitors up to 300 feet (91 meters) of Sensor Rope (sold separately). The kit is used to detect a leak in a specific area by forming a perimeter barrier, for example, around pumps, chillers, boilers, water control valves, chilled water piping and air conditioner condensation pans. The controller will sound an audible alarm and flash an LED when a leak or cable break is detected. It has two relay outputs so leak and cable fault conditions can be remotely monitored with the RIM-1000. Leak Detection Controller Kit attaches to two of the digital inputs (leak/cable fault) on the RIM-1000.

- Includes one leak detection controller, one 15'L (4.57 m) leader cable for attaching Sensor Rope(s), a 10'L Sensor Rope, and End of Line terminator for the Sensor Rope and a 5VDC power supply
- Power: Isolated 5VDC (±10%) @ 100mA max., requires an external power supply (included)
- Inputs: One Sensor Rope connection, requires a leader cable (included), supports 300' (90 m) of Sensor Rope
- Output: Two Form C Alarm Relays (leak and fault); 1A @ 24VDC, 0.5A resistive @ 120 VAC; configurable as supervised or non-supervised
- Leak alarm response time <20 seconds (10 seconds typical), set leak sensitivity high [.5" (13 mm) wetted], medium [2" (51 mm) wetted], low [6" (152 mm) wetted]
- Alarm Notification: Audible Alarm, 85dB @ 10cm (min); Visible Alarm, Bi-color LED; relay output
- Audible Alarm: For cable break or leak detected (can be disabled)
- LED Indicator: Green for normal, Flashing orange for cable fault, Flashing Red for Leak detected
- Push Button Switch: Push to silence alarm, hold (5 sec) to test, reset, clear
- Operating Temperature: 32°F to 122°F (0°C to 50°C)
- Operating Humidity: 5% to 95% RH, non-condensing
- Maximum Altitude: 15,000 ft (4,572m)
- Storage Temperature: -4°F to 158°F (-20°C to 70°C)
- Dimensions: 4.4"H x 2.7"W x 1.38"D (112 mm x 69 mm x 35 mm)
- Weight: 3 oz. (85 g)
- Material: Plastic housing; Color: White
- Certifications: CE; ETL listed: conforms to UL 61010-1, EN 61010-1, RoHS compliant

Part Number	Description	Shipping Weight lb (kg)
60109-002	Leak Detection Controller Kit, 10 ft (3 m) Sensor Rope, Power Supply	1 (0.5)

Note: Order additional Sensor Rope separately. Leak Detection Controller Kit will support up to 300' (90 m) of Sensor Rope.

ACCESSORIES

Leak Detection Sensor Rope

The Sensor Rope detects the presence of water. The Sensor Rope is constructed of a strong, durable, non-conductive polymer to reduce false alarms, while remaining highly flexible for easy placement around equipment. Sensor Ropes attach to the RIM-1000 through the Leak Detection Controller Kit. Sensor Ropes are available in three lengths. Connect Sensor Ropes end-to-end to extend length.

- Plenum Rating: CL2P (UL)
- Sheer Strength: >180 lb (>81.65 kg)
- Cut Through Resistance: >40 lb (>18.14 kg) with .005" (0.127 mm) blade
- Abrasion Resistance: 60 cycles per UL 719
- Operating Temperature: 32°F to 167°F (0°C to 75°C)
- Operating Humidity: 5% to 95% RH, non-condensing
- Maximum Altitude: 15,000 ft (4,572m)
- Storage Temperature: -22°F to 185°F (-30°C to 85°C)
- Size: Rope not >0.25" (6.35 mm) diameter
- Connector: 4 pin, 0.96" (24.38 mm) diameter
- Weight: .02 lb/ft (29.74 g/m)
- Material: Composite polymer
- Color: Orange/Black

Part Number	Description	Shipping Weight lb (kg)
60109-003	Sensor Rope, 10 ft L (3.0 m)	1 (0.5)
60109-004	Sensor Rope, 25 ft L (7.6 m)	1 (0.5)
60109-005	Sensor Rope, 50 ft L (15.2 m)	3 (1.4)

Note: Sensor Rope attaches to the RIM-1000 through the Leak Detection Controller Kit (ordered separately). Leak Detection Controller Kit will support up to 300' (90 m) of Sensor Rope. Use J-Clips (ordered separately) to install Leak Detection Sensor Rope.

Smoke Detector

Surface-mount, wired, photoelectric smoke detector with two-piece construction that allows pre-wiring of the installation base with plug-in head. Smoke Detector requires external power from RIM-1000 or an external power supply and attaches to one of the digital inputs on the RIM-1000.

- Input Power: 12/24V non-polarized (nominal); 8.5V (minimum); 35V (maximum); (order a power adapter separately)
- Maximum Ripple Voltage: 30% peak-to-peak of applied voltage
- Standby Current: 50µA maximum average
- Sensitivity: 2.5%/ft nominal
- Alarm Contact Ratings: 0.5A @ 30V AC/DC
- Maximum Alarm Current: 20mA @ 12V, 23mA @ 24V
- Operating Temperature Range: 32°F to 120°F (0°C to 49°C)
- Operating Humidity Range: 0 to 95% RH, non-condensing
- LED indicators: Red and Green indicate power up, normal, out of sensitivity, and alarm conditions
- Mounting: 3.5" octagonal back box, 4" octagonal back box, single-gang back box, 4" square back box with a plaster ring, direct mount to ceiling/wall
- Input Terminals: 14 to 22 AWG
- Size: 2.0"H x 5.3" diameter (51 mm x 127 mm diameter)
- Weight: 6.3 oz (178 g)
- Material: Housing, plastic
- Color: White

Part Number	Description	Shipping Weight lb (kg)
60113-001	Smoke Detector	1 (0.5)

Note: Requires an external power supply.

Temperature Sensor, No Display

Flush-mount temperature sensor with a low-profile design that mounts on a single-gang junction box. This sensor requires external power from RIM-1000 or an external power supply and attaches to one of the analog inputs on the RIM-1000.

- Operating Temperature: 50°F to 95°F (10°C to 35°C)
- Input Power: 4-20mA mode: loop powered 24VDC only or 0-10VDC mode: 3-wire, observe polarity, 12-30VDC or 0-5VDC mode: 3-wire, observe polarity, 12-30VDC/24VAC
- Output: 4-20mA mode: 2-wire, not polarity sensitive (clipped and capped); 0-5VDC/0-10VDC mode: 3-wire, polarity sensitive
- Transmitter Type: Solid-state, integrated circuit
- Accuracy: ±1°F (±0.5°C) typical
- Size: 4.8"H x 2.8"W x 0.5"D (122 mm x 72 mm x 13 mm); mounting hole spacing 3.2" (82 mm)
- Material: Housing, ABS plastic; color: White

Part Number	Description	Shipping Weight lb (kg)
60111-001	Temperature Sensor, No Display, 50°F to 95°F (10°C to 35°C)	1 (0.5)

Note: Requires an external power supply.

Temperature Sensor, With Display

Wall-mount temperature sensor with a three-digit LCD display and jumper-selectable temperature monitoring range. This sensor requires external power from RIM-1000 or an external power supply and attaches to one of the analog inputs on the RIM-1000.

Power Fail Monitor

Power Fail Monitor plugs into a standard 120 VAC NEMA 5-15 outlet to monitor for power loss. Secures to the outlet to ensure it is not accidentally disconnected and signals power loss through a Form C output relay. Power Fail Monitor attaches to one of the digital inputs on the RIM-1000.

- Input: NEMA 5-15 plug, 3-prong (with ground)
- Power: 120 VAC @ 15mA
- Output: Relay, 1 Dry Contact, Form C; 10A @ 120 @ 30 VDC
- Operating Temperature: 32°F to 122°F (0°C to 50°C)
- Operating Humidity: 5% to 95% RH, non-condensing
- Maximum Altitude: 15,000 ft (4,572 m)
- Storage Temperature: -4°F to 158°F (-20°C to 70°C)
- Size: 3.5"H x 2.375"W x 2.25"D (89 mm x 60 mm x 57 mm)
- Weight: 0.21 lb (0.01 kg)
- Material: Housing, plastic; color: Black

Part Number	Description	Shipping Weight lb (kg)
60110-001	Power Fail Monitor, with 120 VAC, 15A connection	1 (0.5)

ACCESSORIES

Temperature and Humidity Sensor, No Display, 3% Accuracy RH

Wall-mount temperature and humidity sensor with 3% accuracy for relative humidity accuracy, switch selectable temperature monitoring range and switchable relative humidity or dew point measurement. This sensor requires external power from RIM-1000 or an external power supply and attaches to two of the analog inputs on the RIM-1000.

- Operating Temperature Range: -20°F to 140°F (-28.9°C to 60°C)
- Operating Dew Point Range: -20°F to 140°F (-28.9°C to 60°C); 0°F to 100°F (-17.8°C to 37.8°C); 40°F to 90°F (4.4°C to 32.3°C); or -4°F to 140°F (-20°C to 60°C), switch selectable
- Operating Humidity Range: 0-100% RH noncondensing
- Input Power: 4-20mA mode: loop powered 10-35VDC.
- Output: 4-20mA mode: 2-wire, switch selectable for RH or dew point, switch selectable for normal or reverse output
- Output Temperature Range: -20°F to 140°F (-28.9°C to 60°C); 0°F to 100°F (-17.8°C to 37.8°C); 40°F to 90°F (4.4°C to 32.3°C); or -4°F to 140°F (-20°C to 60°C), switch selectable
- Response Time: 15 seconds
- Humidity Sensing Element: Capacitance polymer
- Humidity Accuracy at 25°C from 20-80%RH: ±3% typical
- Humidity Hysteresis: 1%
- Repeatability ±0.1% typical
- Drift: <1% RH/year
- Temperature Limits: -40° to 140°F (-40°C to 60°C)
- Storage Temperature: -40°F to 176°F (-40°C to 80°C)
- Compensated Temperature Range: -4°F to 140°F (-20°C to 60°C)
- Temperature Accuracy: ±0.9°F @ 72°F (±0.3°C @ 25°C) typical
- Size: 4.5"H x 3.4"W x 1.4"D (114 mm x 87 mm x 50 mm)
- Weight: 0.3 lb (0.14 kg)
- Material: Housing, polycarbonate; color: White
- Certifications: CE

Part Number	Description	Shipping Weight lb (kg)
60111-006	Temperature and Humidity Sensor, No Display, 3% Accuracy RH, Selectable Temperature Range -20°F to 140°F (-28.9°C to 60°C); 0°F to 100°F (-17.8°C to 37.8°C); 40°F to 90°F (4.4°C to 32.3°C); or -4°F to 140°F (-20°C to 60°C)	1 (0.5)

Note: Requires an external power supply.

Magnetic Door Sensor

The Magnetic Door Sensor is a surface-mounted, wired, magnetic proximity sensor used to detect when a door is opened and closed or when a cover panel is attached or removed. The Magnetic Door Sensor is designed for quick and easy installation as well as a long life (4 million operations). Magnetic Door Sensor attaches to one of the digital inputs on the RIM-1000.

- Contact Ratings: 3.0W max. @ 30 VDC or 30 VAC max. @ 0.3A max.; 1.0 msec. max. operate time (including bounce); 1.0 Amp max. carry current
- Contact Resistance: 100 mOhm max. initial
- Dielectric Strength: 200 VDC min.
- Electrical Circuit: SPST NO (contact Form A). Reed switch opens when magnet is removed from proximity. Contacts are held closed when magnet is in actuation range.
- Operating Temperature Range: -40°F to 212°F (-40°C to 100°C)
- Operating Distance/Alignment: 1.25" (31.8 mm) make gap; Operate (make) points are nominal values with ±10% tolerance. Release points are 110% to 150% of the operating points.
- Size: 2.5"H x 1.25"W x .625"D (63.5 mm x 31.8 mm x 15.9 mm)
- Material: Housing, plastic; color: White

Part Number	Description	Shipping Weight lb (kg)
60115-001	Magnetic Door Sensor	1 (0.5)

Temperature and Humidity Sensor, With Display, 3% Accuracy RH

Wall-mount temperature and humidity sensor with 3% accuracy for relative humidity accuracy, a three-digit LCD display, switch selectable temperature monitoring range and switchable relative humidity or dew point measurement. This sensor requires external power from RIM-1000 or an external power supply and attaches to two of the analog inputs on the RIM-1000.

- Operating Temperature Range: -20°F to 140°F (-28.9°C to 60°C)
- Operating Dew Point Range: -20°F to 140°F (-28.9°C to 60°C); 0°F to 100°F (-17.8°C to 37.8°C); 40°F to 90°F (4.4°C to 32.3°C); or -4°F to 140°F (-20°C to 60°C), switch selectable
- Operating Humidity Range: 0-100% RH noncondensing
- Input Power: 4-20mA mode: loop powered 10-35VDC.
- Output: 4-20mA mode: 2-wire, switch selectable for RH or dew point, switch selectable for normal or reverse output
- Output Temperature Range: -20°F to 140°F (-28.9°C to 60°C); 0°F to 100°F (-17.8°C to 37.8°C); 40°F to 90°F (4.4°C to 32.3°C); or -4°F to 140°F (-20°C to 60°C), switch selectable
- Response Time: 15 seconds
- Humidity Sensing Element: Capacitance polymer
- Humidity Accuracy at 25°C from 20-80%RH: ±3% typical
- Humidity Hysteresis: 1%
- Repeatability ±0.1% typical
- Drift: <1% RH/year
- Temperature Limits: -40° to 140°F (-40°C to 60°C)
- Display: three-digit LCD, jumper-selectable, °F or °C.
- Storage Temperature: -40°F to 176°F (-40°C to 80°C)
- Compensated Temperature Range: -4°F to 140°F (-20°C to 60°C)
- Temperature Accuracy: ±0.9°F @ 72°F (±0.3°C @ 25°C) typical
- Display: three-digit LCD, switch-selectable, °F or °C, and switch selectable for %RH or dew point
- Size: 4.5"H x 3.4"W x 1.4"D (114 mm x 87 mm x 50 mm)
- Weight: 0.3 lb (0.14 kg)
- Material: Housing, polycarbonate; color: White
- Certifications: CE

Part Number	Description	Shipping Weight lb (kg)
60111-007	Temperature and Humidity Sensor, With Display, 3% Accuracy RH, Selectable Temperature Range -20°F to 140°F (-28.9°C to 60°C); 0°F to 100°F (-17.8°C to 37.8°C); 40°F to 90°F (4.4°C to 32.3°C); or -4°F to 140°F (-20°C to 60°C)	1 (0.5)

Note: Requires an external power supply.

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ACCESSORIES

Motion Detector

The Motion Detector is a surface-mounted, wired, passive infrared motion detector designed for wall-to-wall coverage across a wide temperature range. When wall-mounted around 10 feet (3 meters) high, Motion Detector covers a cone-shaped area with a maximum span of about 60 feet (18.2 m) and a maximum range of about 50 feet (15.2 meters). Motion Detector requires external power from RIM-1000 or an external power supply and attaches to one of the digital inputs on the RIM-1000.

- Input Power: 9.5 VDC to 14.5 VDC
- Maximum Ripple Voltage: 3 V peak-to-peak @ 12 VDC
- Standby Current: 15 mA @ 12 VDC
- Current in Alarm: 18 mA @ 12VDC
- Contact Rating: 100mA @ 24VDC
- Alarm Contact Resistor in Common: 10 Ohm, 0.25W
- Operating Temperature Range: -4°F to 140°F (-20°C to 60°C)
- Operating Humidity Range: 0 to 95% RH, non-condensing
- RF Immunity: 50V/m from 0.01 to 1,200 MHz
- Static Immunity: 8kV Contact, 15kV Air
- Transient Immunity: 2.4 kV @ 1.2 joules
- White Light Immunity: 20,000 Lux @ Device
- Walk Detection Speed: 0.5 to 10 ft/s (0.15 to 3 m/sec)
- Alarm Duration: 2 to 3 seconds
- Coverage Angle: 90° Minimum
- Mounting Height Range: 6 to 10.5 ft (1.8 to 3.2 m)
- Mounting: direct mount to wall
- Size: 3.0"H x 2.5"W x 1.87"D (89 mm x 64 mm x 48 mm)
- Material: Housing, plastic
- Color: White

Part Number	Description	Shipping Weight lb (kg)
60114-001	Motion Detector	1 (0.5)

Note: Requires an external power supply.

CHATSWORTH PRODUCTS