Crestron **RMC3**
3-Series® Room Media Controller
Operations & Installation Guide

CRESTRON®

Regulatory Compliance

As of the date of manufacture, the RMC3 has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.

Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Industry Canada (IC) Compliance Statement

CAN ICES-3(B)/NMB-3(B)

The specific patents that cover Crestron products are listed at patents.crestron.com.

This document was written by the Technical Publications department at Crestron.

Contents

3-Series Room Media Controller: RMC3

Introduction

The Crestron® RMC3 is a compact and cost-effective 3-Series Control System® designed to provide control and monitoring for a single display device, a small AV system, lighting and shading, climate control, security, energy management, and many other specialized applications. Its tiny form factor allows it to be placed just about anywhere with the option to attach it to a flat surface or DIN rail using the mounting bracket provided. It can fit easily behind a video display or above a projector, and provides enough control ports to control the display device along with a screen or lift. Cresnet® and Ethernet connectivity provides full support for the full line of Crestron touch screens, keypads, dimmers, shades, thermostats, and other peripherals. Featuring the 3-Series® control engine, the RMC3 provides a robust, feature-packed controller that is ideal for mass deployment across college campuses, corporate office buildings, museums, MDUs, hotels, and convention centers.

Features and Functions

- Compact and cost-effective control system
- 3-Series control engine
- Exclusive modular programming architecture (MPA)*

(Continued on following page)

* To enable modular programming architecture on the RMC3 requires the purchase of one SW-RMC3-10PROG license. The license enables support for running up to 10 simultaneous programs on a single RMC3. The license is not required if running only one program on the RMC3.

Features and Functions

(Continued)

- Onboard 256 MB RAM and 4 GB flash memory
- Support for external USB flash memory and mass storage devices
- Industry-standard Ethernet and Cresnet wired communication
- XPanel with Smart Graphics™ computer and web-based control
- iPhone®, iPad®, Android™, and Samsung Smart TV® control app support
- Crestron Fusion™ Enterprise Management Software support
- SNMP support
- One RS-232/422/485 COM port with hardware and software handshaking
- Two IR/serial, two relay, and two digital input ports
- Native BACnet®/IP support[1]
- Installer setup via Crestron Toolbox™ or Microsoft® Internet Explorer®[2]
- Backwards compatible to run existing SIMPL programs
- Full Unicode (multilanguage) support
- Increased network throughput and security
- Secure access through Active Directory integration or standalone account management
- Hardware level security using 802.1x authentication
- Built-in web server
- IPv6 ready
- USB On-The-Go port
- Power over Ethernet (PoE) network powered
- Compact, stackable "Integrator Friendly Enclosure (IFE) micro" form factor
- Surface or DIN rail mountable
- Available rack mount and pole mount options (sold separately)

1. License required. The RMC3 supports a maximum of 500 BACnet objects when dedicated for BACnet use only. Actual capabilities are contingent upon the overall program size and complexity.
2. Web-based installer setup requires the Microsoft Internet Explorer web browser running on a Windows® PC.

3-Series Control Systems

The IP based 3-Series platform is engineered from the ground up to deliver a network-grade server appliance capable of faithfully handling everything from lighting and AV system control to total building management.

Crestron 3-Series embodies a distinctively robust, dynamic, and secure platform to elevate system designs to higher levels of performance and reliability. Compared to other control systems, Crestron 3-Series provides a pronounced increase in processing power and speed with more memory, rock solid networking and IP control, and a unique modular programming architecture.

Modular Programming Architecture

Designed for enhanced scalability, the RMC3 affords high-speed, real-time multitasking to seamlessly run multiple programs simultaneously. This exclusive modular programming architecture (MPA)* lets programmers independently develop and run device-specific programs for lighting, shades, HVAC, security, AV, etc., allowing for the optimization of each program and for changes to be made to one program without affecting the whole. Even as a system grows, processing resources can easily be shifted from one 3-Series processor to another without rewriting any code. The end benefit is dramatically simplified upgradability with minimal downtime, whether implementing changes on site or remotely via the network.

Robust Ethernet and IP Control

High-speed Ethernet connectivity enables integration with IP-controllable devices and allows the RMC3 to be part of a larger managed control network. Whether residing on a sensitive corporate LAN, a home network, or accessing the Internet through a cable modem, the RMC3 provides secure, reliable interconnectivity with IP-enabled touch screens, computers, mobile devices, video displays, media servers, security systems, lighting, HVAC, and other equipment—whether on premises or across the globe.

* To enable modular programming architecture on the RMC3 requires the purchase of one SW-RMC3-10PROG license. The license enables support for running up to 10 simultaneous programs on a single RMC3. The license is not required if running only one program on the RMC3.

Control Apps and XPanel

Native to every 3-Series control system, Crestron XPanel technology transforms any laptop or desktop computer into a virtual Crestron touch screen. Crestron control apps deliver the Crestron touch screen experience to iPhone, iPad, and Android devices, allowing safe monitoring and control of the entire residence or commercial facility using the one device that goes everywhere. Even Samsung Smart TV has a Crestron control app available.

Crestron Fusion Enterprise Management

Crestron Fusion provides an integrated platform for creating truly smart buildings that save energy, enhance worker productivity, and prolong the life span of valuable equipment. As part of a complete managed network in a corporate enterprise, college campus, convention center, or any other facility, the RMC3 works integrally with Fusion RV® Remote Asset Management Software to enable remote scheduling, monitoring, and control of rooms and technology from a central help desk. Fusion EM® Energy Management Software enables organizations to reduce energy consumption by tracking real-time usage and automating control of lighting, shades, and HVAC.

SNMP Support

Built-in SNMP support enables integration with third-party IT management software, allowing network administrators to manage and control Crestron systems on the network in an IT-friendly format.

Cresnet

Cresnet provides a dependable network wiring solution for Crestron keypads, lighting controls, thermostats, shades, and other devices that do not require the higher speed of Ethernet. The Cresnet bus offers easy wiring and configuration, carrying bidirectional communication and 24 Vdc power to each device over a simple 4-conductor cable.*

* The **NET** (Cresnet) port on the RMC3 is a 3-pin connector that provides connectivity for Cresnet data only—the port does not provide power. The Cresnet power conductor does not terminate to the RMC3. An external Cresnet power supply is required to provide power for Cresnet devices.

To assist with troubleshooting, the RMC3 includes the Crestron patent-pending Network Analyzer which continuously monitors the integrity of the Cresnet network for wiring faults, marginal performance, and other errors.

Onboard Control Ports

In addition to Ethernet, the RMC3 includes a variety of control ports for interfacing with third-party equipment. A single bidirectional COM port (RS-232/422/485) and two IR ports allow for interfacing with AV devices, small appliances, and other equipment. Two programmable relay ports are provided for controlling projection screens, lifts, power controllers, door strikes, and other contact closure actuated equipment. Two digital input ports enable the integration of occupancy sensors, power sensors, door switches, or anything else that provides a dry contact closure or low-voltage logic signal. Additional control ports, lighting and motor controls, and other types of interfaces can be added easily using Crestron DIN Rail Series lighting and automation modules.

BACnet/IP

Native support for the BACnet/IP communication protocol provides a direct interface to third-party building management systems over Ethernet, simplifying integration with HVAC, security, fire and life safety, voice and data, lighting, shades, and other systems. Using BACnet/IP, each system runs independently with the ability to communicate together on one platform for a truly smart building.*

* License required. The RMC3 supports a maximum of 500 BACnet objects when dedicated for BACnet use only. Actual capabilities are contingent upon the overall program size and complexity.

Power over Ethernet

Using Power over Ethernet (PoE) technology, the RMC3 gets its operating power through the LAN wiring. PoE eliminates the need for a local power supply or any dedicated power wiring. A PoE injector (PWE-4803RU, sold separately) simply connects in line with the LAN cable at any convenient location. Crestron PoE switches (CEN-SW-POE-5 or CEN-SWPOE-16, sold separately) may also be used to provide a total networking solution with built-in PoE.

Integrator Friendly Enclosure

The RMC3 features the Crestron IFE form factor, a compact "Integrator Friendly Enclosure" design that fits almost anywhere and enables a variety of installation options. Its shape allows multiple RMC3s and other IFE compliant devices to be stacked together. Using the included mounting bracket, it can be fastened to any flat surface or snapped onto a standard DIN rail. Rack mount and pole mount options (sold separately) are also available.

Specifications

Specifications for the RMC3 are listed in the following table.

RMC3 Specifications

SPECIFICATION	DETAILS
Control Engine	3-Series; Real time, preemptive multithreaded/multitasking kernel; Transaction-Safe Extended FAT file system; Supports up to 10 simultaneously running programs (license required)[1]
Memory	
DDR3 SDRAM	256 MB
Flash	4 GB
External Storage	Supports USB mass storage devices

(Continued on following page)

RMC3 Specifications (Continued)

SPECIFICATION	DETAILS
Communications	
Ethernet	10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, industry-standard TCP/IP stack, UDP/IP, CIP, DHCP, SSL, IEEE 802.1X, SNMP, BACnet/IP[2], IPv4 or IPv6, Active Directory authentication, web server, SMTP e-mail client, installer setup via Crestron Toolbox or MSIE[3], IEEE 802.3af and 802.3at Type 1 compliant
Cresnet	Cresnet master mode
USB	Supports computer console and USB mass storage devices via USB OTG (On-The-Go) port
RS-232/422/485	For 2-way device control and monitoring; Supports RS-232, RS-422, or RS-485 up to 115.2 kBd with hardware and software handshaking
IR/Serial	Supports 1-way device control via infrared up to 1.2 MHz or serial TTL/RS-232 (0-5 V) up to 115.2 kBd
Power	
Power over Ethernet[4]	IEEE 802.3at Type 1 (802.3af compatible) Class 0 (12.95 W) PoE Powered Device
Default Net ID	02

(Continued on following page)

RMC3 Specifications (Continued)

SPECIFICATION	DETAILS
Environmental	
Temperature	32º to 104º F (0º to 40º C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	17 Btu/h
Construction	
Enclosure	IFE micro form factor, black and blue plastic
Mounting	Freestanding, stackable, surface mount, or 35 mm DIN EN 60715 rail mount; Occupies 8 DIN module spaces (144 mm); Surface/DIN rail mounting bracket included, optional rack mount and pole mount kits sold separately
Dimensions	
Height	1.35 in (35 mm), 1.77 in (45 mm) with bracket
Width	5.04 in (128 mm), 5.36 in (137 mm) with bracket
Depth	2.86 in (73 mm)
Weight	7 oz (180 g)
Available Accessories	
3-Series BACnet/IP Support	3-Series Native BACnet/IP Interface License
CEN-SW-POE-5	5-Port PoE Switch
CEN-SWPOE-16	16-Port Managed PoE Switch
CNSP-XX	Custom Serial Interface Cable
Crestron App	Crestron App for Apple® iOS®

(Continued on following page)

RMC3 Specifications (Continued)

SPECIFICATION	DETAILS
Available Accessories (Continued)	
Crestron App for Samsung Smart TV	Control App for Samsung Smart TV
Crestron Mobile Pro®	Control App for iPhone, iPad, and Android Devices
CSP-LIR-USB	IR Learner
Fusion EM	Energy Management Software
Fusion RV	Remote Asset Management Software
IRP2	IR Emitter Probe
myCrestron	Dynamic DNS Service for Crestron Systems
PLMK-IFE-101	IFE Pole Mount Kit
PWE-4803RU	PoE Injector
RMK-IFE-1U	IFE Rack Mount Kit
RoomView® Express	Remote Help Desk and Resource Management Software
SW-RMC3-10PROG	10 Program MPA Support License for RMC3
XPanel	Crestron Control® for Computers

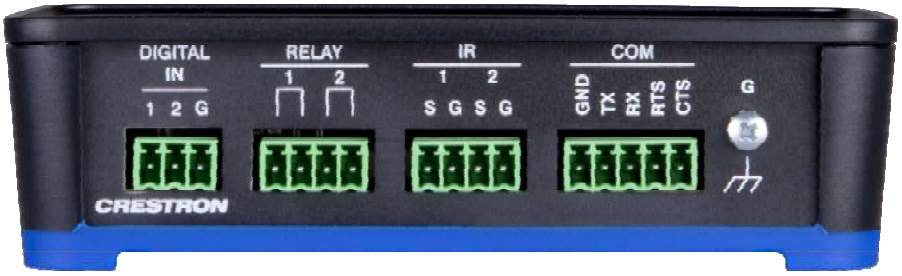
1. To enable modular programming architecture on the RMC3 requires the purchase of one SW-RMC3-10PROG license. The license enables support for running up to 10 simultaneous programs on a single RMC3. The license is not required if running only one program on the RMC3.
2. License required. The RMC3 supports a maximum of 500 BACnet objects when dedicated for BACnet use only. Actual capabilities are contingent upon the overall program size and complexity
3. Web-based installer setup requires the Microsoft Internet Explorer web browser running on a Windows PC.
4. Power over Ethernet does not use or supply Cresnet power.

Physical Description

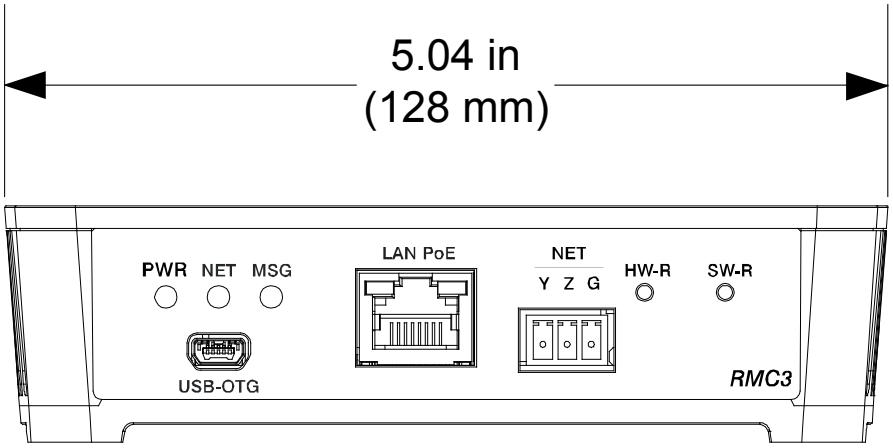
This section provides information on the connections, controls, and indicators available on the RMC3.

RMC3 Physical View (Front)

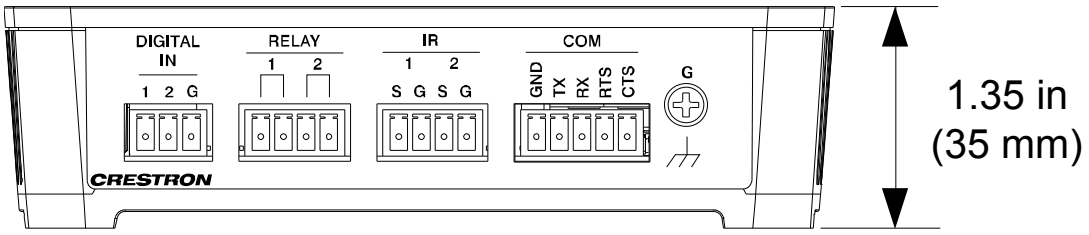
RMC3 Physical View (Rear)



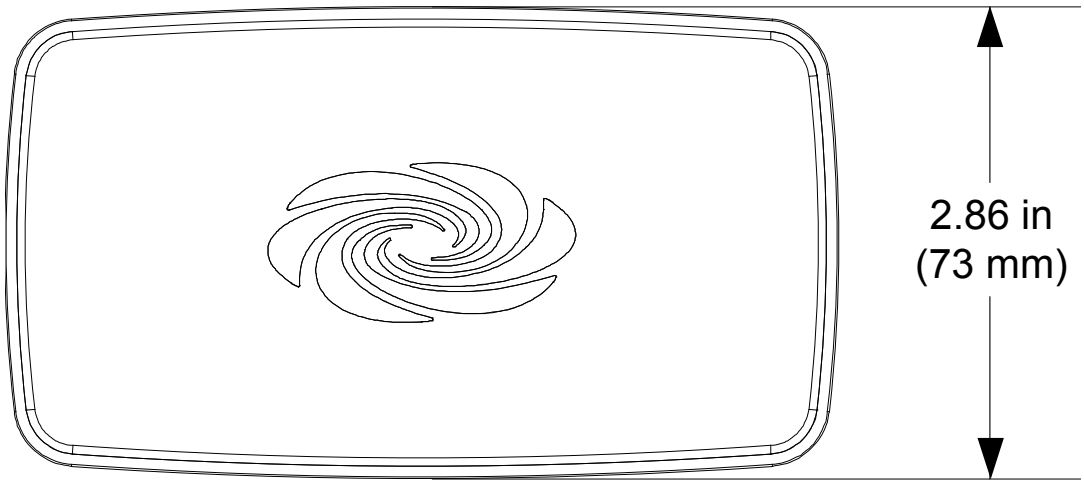
RMC3 Overall Dimensions (Front)



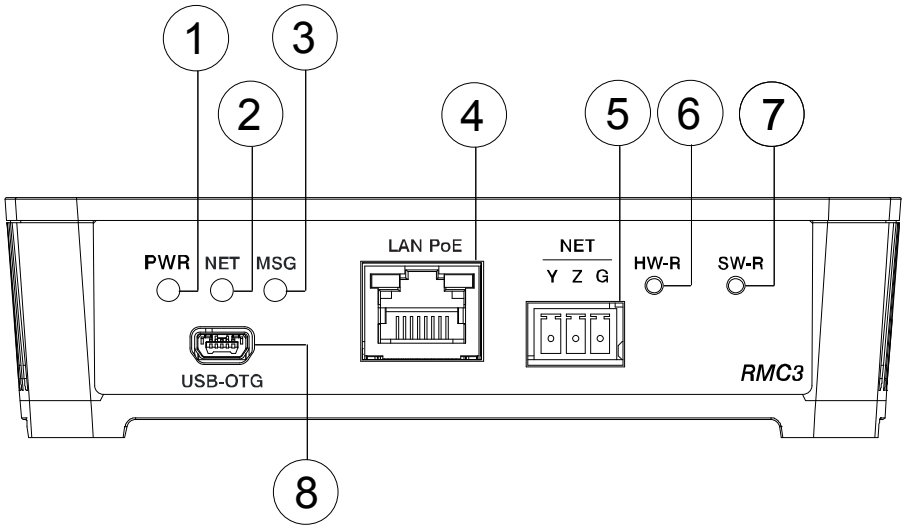
RMC3 Overall Dimensions (Rear)



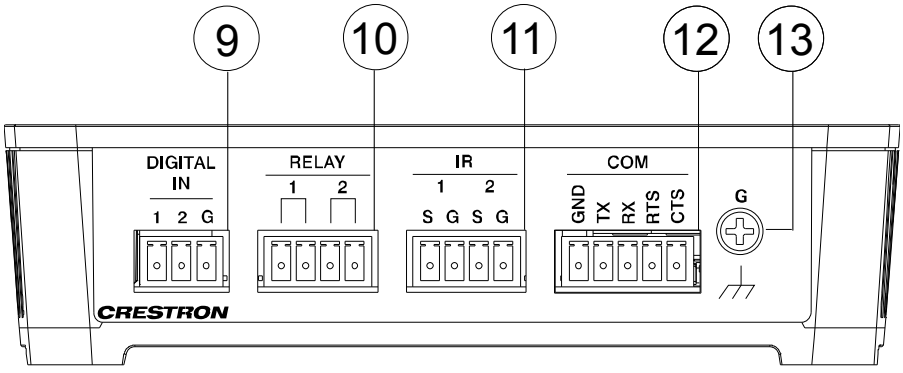
RMC3 Overall Dimensions (Top)



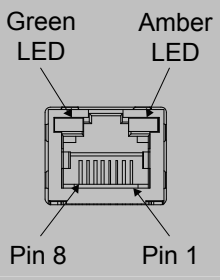
RMC3 Connectors, Controls, and Indicators (Front)



RMC3 Connectors, Controls, and Indicators (Rear)

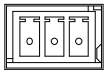
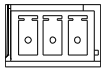


Connectors, Controls, and Indicators

<table>
<tr><th>#</th><th>CONNECTORS[1], CONTROLS, AND INDICATORS</th><th>DESCRIPTION</th></tr>
<tr><td>1</td><td>PWR LED</td><td>(1) Dual-color amber/green LED;
Indicates operating power supplied via PoE;
Amber indicates that device is booting;
Green indicates that device is operating</td></tr>
<tr><td>2</td><td>NET LED</td><td>(1) Amber LED indicates communication with Cresnet system</td></tr>
<tr><td>3</td><td>MSG LED</td><td>(1) Red LED, indicates that processor has generated an error message</td></tr>
<tr><td>4</td><td>LAN PoE[2]
 
</td><td>(1) 8-pin RJ-45 with 2 LED indicators;
10BASE-T/100BASE-TX Ethernet port, Power over Ethernet compliant;
Green LED indicates 100BASE-TX link status;
Amber LED indicates Ethernet activity
<table>
<tr><th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr>
<tr><td>1</td><td>TX +</td><td>5</td><td>N/C</td></tr>
<tr><td>2</td><td>TX -</td><td>6</td><td>RX -</td></tr>
<tr><td>3</td><td>RX +</td><td>7</td><td>N/C</td></tr>
<tr><td>4</td><td>N/C</td><td>8</td><td>N/C</td></tr>
</table></td></tr>
</table>

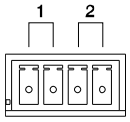
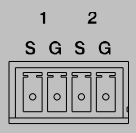
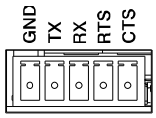
(Continued on following page)

Connectors, Controls, and Indicators (Continued)

#	CONNECTORS[1], CONTROLS, AND INDICATORS	DESCRIPTION
5	NET Y Z G 	(1) 3-pin 3.5 mm detachable terminal block; Cresnet master port (data only, no power[3]) **Y**: Data **Z**: Data **G**: Ground
6	HW-R Button	(1) Recessed miniature push button for hardware reset (reboots the processor)
7	SW-R Button	(1) Recessed miniature push button for software reset (restarts the SIMPL program)
8	USB-OTG 	(1) USB Type Mini-AB female, USB OTG port for computer console and USB mass storage devices (6 ft A male to Mini-B male cable and A female to Mini-A male adapter, included)
9	DIGITAL IN 1-2 1 2 G 	(1) 3-pin 3.5 mm detachable terminal block comprising (2) digital inputs (referenced to GND); Input voltage range: 0-24 Vdc; Logic threshold: ≥2.0 Vdc 0/low, ≤1.1 Vdc 1/high Input impedance: 2.2 kΩ pulled up to 5 V

(Continued on following page)

Connectors, Controls, and Indicators (Continued)

#	CONNECTORS[1], CONTROLS, AND INDICATORS	DESCRIPTION
10	RELAY 1-2 	(1) 4-pin 3.5 mm detachable terminal block comprising (2) normally open, isolated relays; Rated 1 A, 30 Vac/Vdc; MOV arc suppression across contacts
11	IR 1-2 	(1) 4-pin 3.5 mm detachable terminal block comprising (2) IR/Serial output ports; IR output up to 1.2 MHz; 1-way serial TTL/RS-232 (0-5 V) up to 115.2 kBd
12	COM 	(1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232/422/485 port; Up to 115.2 kBd; Hardware and software handshaking support
13	G 	(1) 4-40 screw, chassis ground lug

RS-232	RS-422	RS-485
GND	GND	GND*
TX	TX-	TX-/RX-
RX	RX+	Not Used
RTS	TX+	TX+/RX+
CTS	RX-	Not Used

1. Interface connectors for **NET, DIGITAL IN 1-2**, **RELAY 1-2**, **IR 1-2,** and **COM** ports are provided with the unit.
2. The pinout table indicates signal connections. Power (dc) applied by Ethernet power sourcing equipment (PSE) can connect to signal pins or N/C pins.
3. The **NET** (Cresnet) port on the RMC3 is a 3-pin connector that provides connectivity for Cresnet data only—the port does not provide power. The Cresnet power conductor does not terminate to the RMC3. An external Cresnet power supply is required to provide power for Cresnet devices.

Setup

Network Wiring

When wiring the Cresnet/Ethernet network, consider the following:

- Use Crestron Certified Wire.
- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

CAUTION: Insufficient power can lead to unpredictable results or damage to the equipment. Use the Crestron Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

For networks with 20 or more devices, use a Cresnet Hub/Repeater (CNXHUB, sold separately) to maintain signal quality.

For more details, refer to "Check Network Wiring" on page 29.

Identity Code

NOTE: The latest software can be downloaded at www.crestron.com/software.

Net ID

The Net ID of the RMC3 has been factory set to **02**. The Net ID is defined as the "Master" control system on the Cresnet network and cannot be changed.

IP ID

The IP ID is set within the RMC3's IP table using Crestron Toolbox. For information on setting an IP table, refer to the Crestron Toolbox help file.

Installation

The RMC3 can be mounted onto a flat surface or standard DIN rail using the included mounting bracket. The RMC3 is shipped with the mounting bracket attached. For surface mounting instructions, refer to "Surface Mounting" below. For DIN rail mounting instructions, refer to "DIN Rail Mounting" on page 18.

Rack mount and pole mount kits (sold separately) are also available as mounting options. For rack mount instructions, refer to the Crestron RMK-IFE-1U IFE Rack Mount Kit Installation Guide (Doc. 7627). For pole mount instructions, refer to the Crestron PLMK-IFE-101 IFE Pole Mount Kit Installation Guide (Doc. 7615). The manuals are available at www.crestron.com/manuals.

Ventilation

The RMC3 should be used in a well-ventilated area. The venting holes should not be obstructed under any circumstances.

To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the table of specifications. Consideration must be given if installed in a closed area since the operating ambient temperature of the environment may be greater than the room ambient temperature. Contact with thermal insulating materials should be avoided on all sides of the unit.

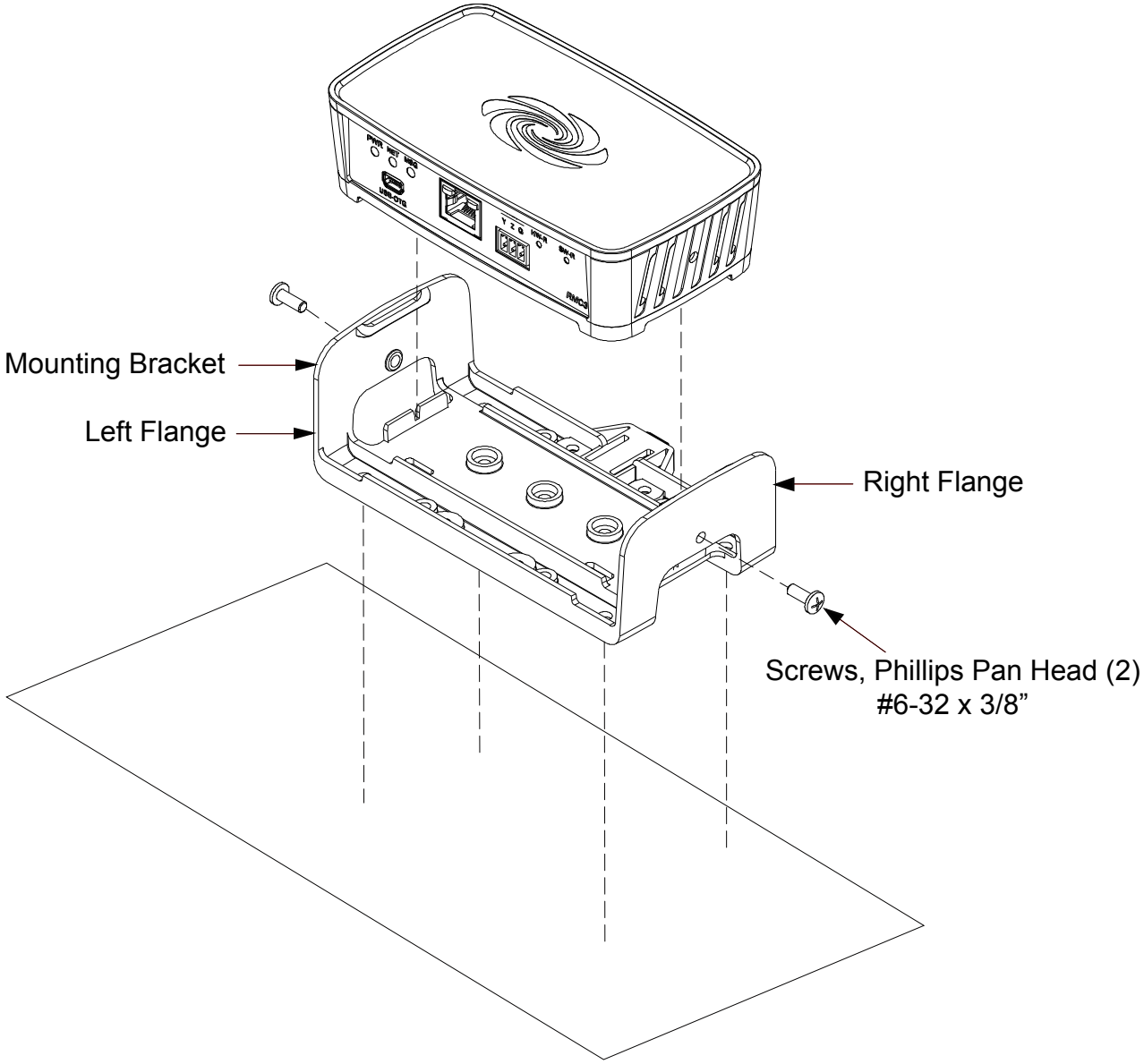
Surface Mounting

The RMC3 can be mounted horizontally or vertically onto the top or bottom of a flat surface.

To mount the RMC3 onto a flat surface, perform the following steps (refer to the illustration on the next page):

1. Detach the RMC3 from the mounting bracket by pulling the left and right flanges of the bracket outward to release the tabs that hold the RMC3 in place.
2. Attach the mounting bracket to the flat surface using the four mounting holes (one hole in each corner of the bracket) and the appropriate mounting screws (not included).
3. Align the slots on the bottom of the RMC3 with the RMC3 mounting tabs of the bracket, and then press the RMC3 into the bracket until the RMC3 snaps into place.
4. (Optional) Secure the RMC3 in the mounting bracket by using the two included #6-32 x 3/8" Phillips pan head screws and the hole on the left and right sides of the assembly.

Surface Mounting



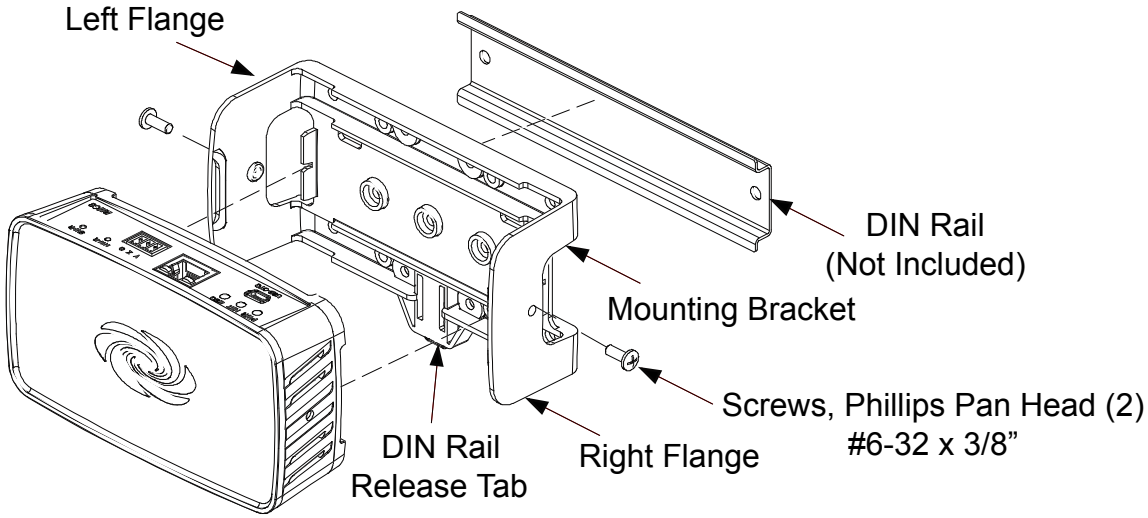
DIN Rail Mounting

The RMC3 can be mounted onto a DIN rail.

To mount the RMC3 onto a DIN rail, perform the following steps (refer to the illustration below):

1. Detach the RMC3 from the mounting bracket by pulling the left and right flanges of the bracket outward to release the tabs that hold the RMC3 in place.
2. Using a flat-head screwdriver, pull the DIN rail release tab downward.
3. Position the DIN rail mounting tabs (located on the rear of the bracket, not shown in the illustration) over the top edge of the DIN rail, and then push the DIN rail release tab upward to lock the mounting bracket onto the rail.
4. Align the slots on the bottom of the RMC3 with the RMC3 mounting tabs of the bracket, and then press the RMC3 into the bracket until the RMC3 snaps into place.
5. (Optional) Secure the RMC3 in the mounting bracket by using the two included #6-32 x 3/8” Phillips pan head screws and the hole on the left and right sides of the assembly.

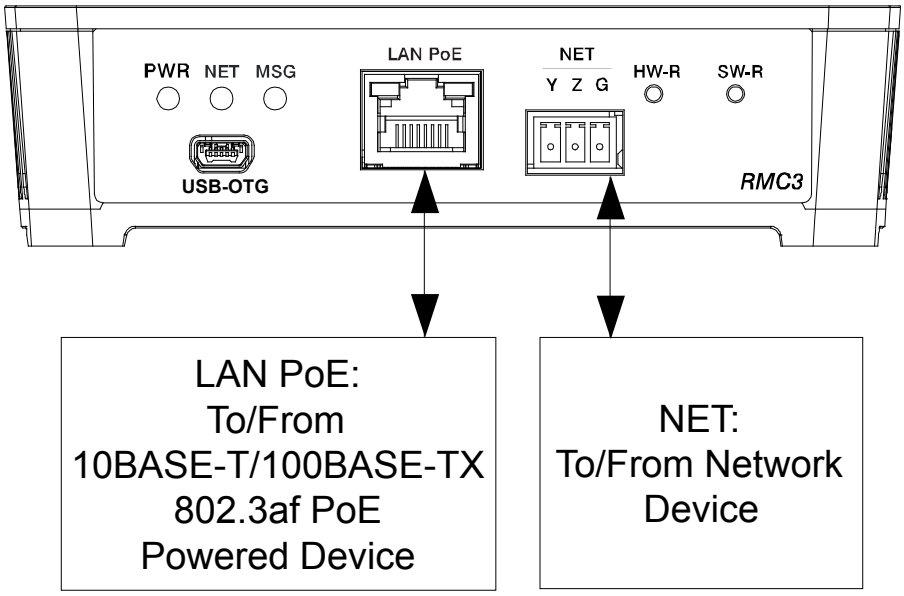
DIN Rail Mounting



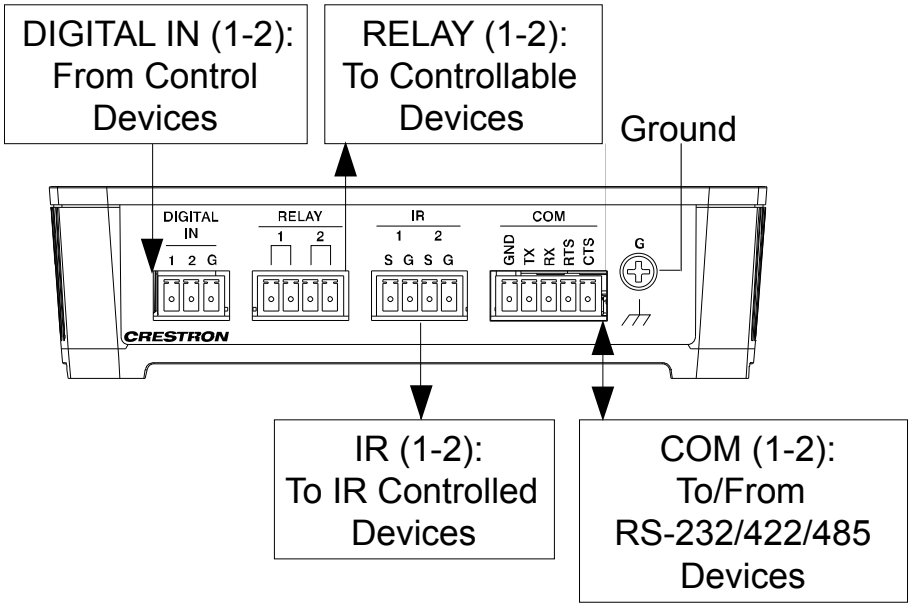
Hardware Hookup

Make the necessary connections as called out in the illustrations that follow.

Hardware Connections for the RMC3 (Front)



Hardware Connections for the RMC3 (Rear)



NOTE: Ensure that the unit is properly grounded by connecting the chassis ground lug to an earth ground (building steel).

NOTE: To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the table of specifications.

Additional Configuration

The RMC3 can be configured from a web browser. For details, refer to "Online Configuration" on page 24.

Uploading and Upgrading

Crestron recommends using the latest programming software and that each device contains the latest firmware to take advantage of the most recently released features. However, before attempting to upload or upgrade it is necessary to establish communication. Once communication has been established, files (for example, programs or firmware) can be transferred to the control system (or device). Finally, program checks can be performed (such as changing the device ID or creating an IP table) to ensure proper functioning.

NOTE: Crestron software and any files on the website are for authorized Crestron dealers and Crestron Service Providers (CSPs) only. New users must register to obtain access to certain areas of the site (including the FTP site).

Establishing Communication

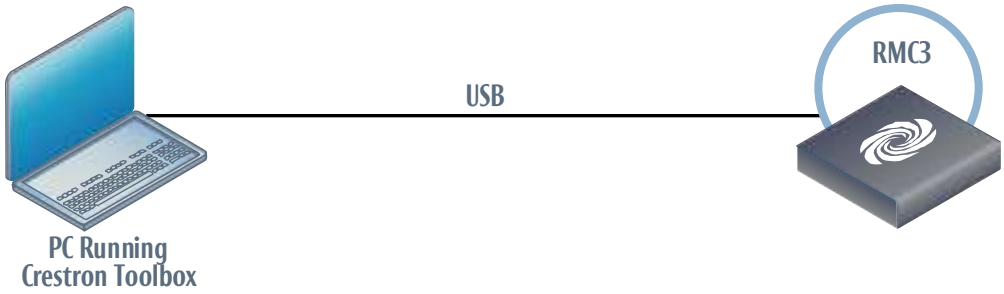
Use Crestron Toolbox for communicating with the RMC3; refer to the Crestron Toolbox help file for details. There are two methods of communication: USB and TCP/IP.

USB

NOTE: Required for initial setup of Ethernet parameters.

NOTE: Required for loading projects and firmware.

USB Communication



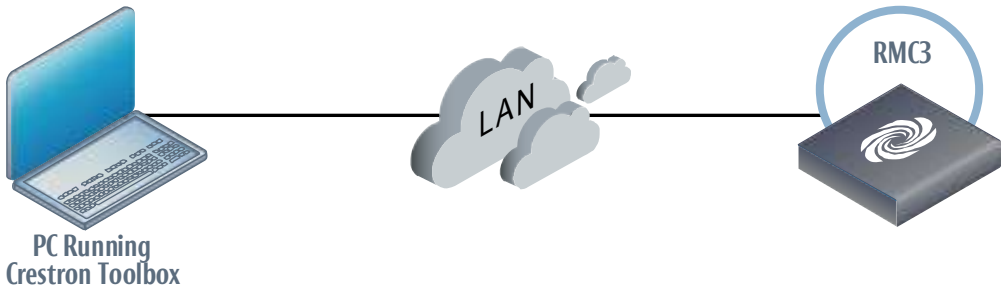
The **USB-OTG** port on the RMC3 connects to the USB port on the PC via the included Type A to Mini-B USB cable:

1. Click **Tools | System Info**.
2. Click the icon.

3. For *Connection Type*, select *USB*. When multiple USB devices are connected, identify the RMC3 by entering "RMC3" in the *Model* text box, the unit's serial number in the *Serial* text box, or the unit's hostname (if known) in the *Hostname* text box.
4. Click **OK**. Communications are confirmed when the device information is displayed.

TCP/IP

Ethernet Communication



The RMC3 connects to PC via Ethernet:

1. Use the Device Discovery Tool (click the icon) in Crestron Toolbox to detect all Ethernet devices on the network and their IP configuration. The tool is available in Toolbox version 1.15.143 or later.
2. Click on the RMC3 to display information about the device.

Programs and Firmware

Program or firmware files may be distributed from programmers to installers or from Crestron to dealers. Firmware upgrades are available from the Crestron website as new features are developed after product releases. One has the option to upload programs via the programming software or to upload and upgrade via the Crestron Toolbox. For details on uploading and upgrading, refer to the Crestron Studio™ help file, SIMPL Windows help file, or the Crestron Toolbox help file.

Crestron Studio / SIMPL Windows

If a Crestron Studio (or SIMPL Windows) program is provided, it can be uploaded to the control system using Crestron Studio (or SIMPL Windows) or Crestron Toolbox.

Firmware

Check the Crestron website to find the latest firmware. (New users must register to obtain access to certain areas of the site, including the FTP site.)

Upgrade RMC3 firmware via Crestron Toolbox.

1. Establish communication with the RMC3 and display the "System Info" window.
2. Select **Functions | Firmware…** to upgrade the RMC3 firmware.

Configure for Operations

Before setting up the RMC3, the time and time zone need to be set. The RMC3 can also be further configured using a web browser.

Set Date and Time

1. Establish communication with the RMC3 as described in "Establishing Communication" on page 21.
2. In Crestron Toolbox, select **Functions** | **System Clock…**.
3. Set the date and time.

Online Configuration

The RMC3 can be configured using the built-in web-based setup tool.

1. Using Internet Explorer, navigate to http://xxx.xx.xx.xxx/setup where xxx.xx.xx.xxx is the IP address of the control system.

   NOTE: The web-based setup tool is only accessible from Internet Explorer.

   NOTE: If a security warning is displayed, click **Install** to continue.

   The control system's splash screen is displayed.

Splash Screen

2. Click **Setup** to display the "RMC3 Setup" menu.

"RMC3 Setup" Menu

The "RMC3 Setup" menu displays the IP address, hostname, and MAC address of the device. It also allows access to various setup and programming screens. The "RMC3 Setup" menu contains buttons for **Ethernet Setup**, **Application Setup**, **Input/Output Control**, **Diagnostics**, and **About** as shown in the illustration on the previous page.

3. Click one of the following options:

   - **Ethernet Setup** configures the RMC3's Ethernet settings and displays DHCP, hostname, IP address, subnet mask, default router, domain, and MAC address settings.

     ⇒ Click **Advanced Settings** to specify DNS servers, web server settings, and SSL settings.

     ⇒ Click **MyCrestron Dynamic DNS** to configure the myCrestron.com Dynamic DNS service.

     ⇒ Click **Ethernet Diagnostics** to test Ethernet communications.

     ⇒ Click **Reboot** to reboot the RMC3.

   - **Application Setup** selects programs to be loaded on startup and controls which programs are running.
   - **Input/Output Control** configures the COM ports, operates the relays, and monitors the digital inputs.
   - **Diagnostics** displays information about the connected devices, hardware configuration, and error logs.
   - **About** displays firmware information.

4. Click the  icon to return to the previous screen.

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

RMC3 Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Device does not function.	Device is not communicating with the network.	Use Crestron Toolbox to poll the network. Verify network connection to the device.
	Device is not receiving power from a Crestron power source.	Use the provided Crestron power source. Verify connections.
MSG LED illuminates.	A hardware or software failure exists.	Verify that hardware configuration matches software configuration. Use Crestron Toolbox to display the error log.
Compilation errors RLCMCVT166 and RLCMCVT177 occur.	Poor analog versus serial signal definition exists in the SIMPL Windows program.	Confirm properly defined signal definition in the program.

(Continued on following page)

RMC3 Troubleshooting (Continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
System locks up.	Problem may be due to various causes.	Hold down **SW-R** button on control system front panel to bypass program and communicate directly with processor. Refer to "Troubleshooting Communications" in the Crestron 3-Series Control System Reference Guide (Doc. 7150) at www.crestron.com/manuals for more details.
Cresnet device does not respond.	Device is not wired correctly.	Verify Cresnet wiring.
	Improper NET ID is used.	Verify that device ID matches NET ID in the program.
Device loses functionality due to electrostatic discharge.	Device is improperly grounded.	Check that all ground connections have been made properly.
A/V system device does not respond.	IRP2 or serial port is not placed properly.	Verify placement of IRP2 (hold phosphor card under IRP2 while pressing button) and tighten serial cables.
	Wrong IR/serial port is used.	Verify that proper IR or serial port is defined.
	Serial cable is not wired correctly.	Verify that serial cable is wired correctly for RS-232, 422, 485.

Check Network Wiring

Use the Right Wire

To ensure optimum performance over the full range of the installation topology, use Crestron Certified Wire only. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

Calculate Wire Length

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy chained on the run, the Cresnet power usage of each network unit to be daisy chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is run from a Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be used in the following equation to calculate the cable length value on the equation's left side.

Cable Length Equation

$$L < \frac{40{,}000}{R \times P}$$

Where: L = Length of run (or chain) in feet
R = 6 Ohms (Crestron Certified Wire: 18 AWG (0.75 mm^2))
or 1.6 Ohms (Cresnet HP: 12 AWG (4 mm^2))
P = Cresnet power usage of entire run (or chain)

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 18 AWG Crestron Certified Wire and drawing 20 watts should not have a length of run more than 333 feet (101 meters). If Cresnet HP is used for the same run, its length could extend to 1250 feet (381 meters).

NOTE: All Crestron certified Cresnet wiring must consist of two twisted pairs. One twisted pair is the **24** and **G** pair and the other twisted pair is the **Y** and **Z** pair.

Strip and Tin Wire

When daisy chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

Use of a Cresnet Hub/Repeater (CNXHUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 3000 feet (914 meters).

Reference Documents

All documents mentioned in this guide are available from the Crestron website.

List of Related Reference Documents

DOCUMENT TITLE
3-Series Control Systems Reference Guide
PLMK-IFE-101 IFE Pole Mount Kit Installation Guide
RMK-IFE-1U IFE Rack Mount Kit Installation Guide

Further Inquiries

To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or, for assistance within a particular geographic region, refer to the listing of Crestron worldwide offices at www.crestron.com/offices.

To post a question about Crestron products, log onto Crestron's Online Help at www.crestron.com/onlinehelp. First-time users must establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the RMC3, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact an authorized Crestron dealer. Only authorized Crestron dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

Crestron Limited Warranty

Crestron Electronics, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron is not liable for any claim made by a third party or made by the purchaser for a third party.

Crestron shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

Crestron software, including without limitation, product development software and product operating system software is licensed to Crestron dealers and Crestron Service Providers (CSPs) under a limited non-exclusive, non-transferable license pursuant to a separate end-user license agreement. The terms of this end user license agreement can be found at www.crestron.com/legal/software_license_agreement.

Crestron Electronics, Inc.
15 Volvo Drive Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7576
www.crestron.com

Operations & Installation Guide – DOC. 7558B
(2037346)
01.14
Specifications subject to
change without notice.