

# Installation and Operation Guide



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## FEDERAL COMMUNICATIONS COMMISSION NOTICE

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 the 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.



## DECLARATION OF CONFORMITY (DOC)

The Declaration of Conformity for this product can be found on the RTI website at: [www.rticorp.com/declaration](http://www.rticorp.com/declaration)

### SAFETY SUGGESTIONS

**Read Instructions.** Read all safety and operating instructions before operating the unit.

**Retain Instructions.** Keep the safety and operating instructions for future reference.

**Heed Warnings.** Adhere to all warnings on the unit and in the operating instructions.

**Follow Instructions.** Follow operating instructions and instructions for use.

**Heat.** Keep the unit away from heat sources such as radiators, heat registers, stoves, etc., including amplifiers that produce heat.

**Power Sources.** Connect the unit only to a power supply of the type described in the operating instructions, or as marked on the unit.

**Power Cord Protection.** Route power supply cords so that they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to the cords at plugs, at convenient receptacles, and at the point at which they exit from the unit.

**Water and Moisture.** Do not use the unit near water—for example, near a sink, in a wet basement, near a swimming pool, near an open window, etc.

**Object and Liquid Entry.** Do not allow objects to fall or liquids to be spilled into the enclosure through openings.

**Servicing.** Do not attempt any service beyond that described in the operating instructions. Refer all other service needs to qualified service personnel.

**Damage Requiring Service.** The unit should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit does not appear to operate normally or exhibits a marked change in performance.
- The unit has been dropped or the enclosure has been damaged.

#### WARNING!

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,  
DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE.**

## LIMITED WARRANTY AND DISCLAIMER

Remote Technologies Incorporated warrants its products for a period of one (1) year from the date of purchase from Remote Technologies Incorporated or an authorized Remote Technologies Incorporated distributor.

This warranty may be enforced by the original purchaser and subsequent owners during the warranty period, so long as the original dated sales receipt or other proof of warranty coverage is presented when warranty service is required. Except as specified below, this warranty covers all defects in material and workmanship in this product. The following are not covered by the warranty:

Damage resulting from:

1. Accident, misuse, abuse, or neglect.
2. Failure to follow instructions contained in this Guide.
3. Repair or attempted repair by anyone other than Remote Technologies Incorporated.
4. Failure to perform recommended periodic maintenance.
5. Causes other than product defects, including lack of skill, competence or experience of user.
6. Shipment of this product (claims must be made to the carrier).
7. Being altered or which the serial number has been defaced, modified or removed.

Remote Technologies Incorporated is not liable for any damages caused by its products or for its failure of its products to perform, including any lost profits, lost savings, incidental damages, or consequential damages.

Remote Technologies Incorporated is not liable for damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation, commercial loss, any claim made by a third party or made by you for a third party.

Remote Technologies Incorporated's liability for any defective product is limited to repair or replacement of the product, at our option.

If your RCM-12 Relay Control Module needs service, please contact Remote Technologies Incorporated by telephone, fax or E-mail for return information. **Please do not return products to Remote Technologies Incorporated without return authorization.**

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## **CHAPTER 1 | WELCOME**

### **Thank you for using the RCM-12 Relay Control Module.**

The RCM-12 provides twelve individually addressable relays for controlling everything from window coverings to screen lifts. Adjustable device IDs allow up to ten RCM-12 Modules to be used in larger projects. Each relay can be triggered from RTI in-wall or handheld controllers, RTI control processors or even third party infrared repeater systems. Each relay is single pole – double throw. This allows them to be wired for normally open, normally closed or toggle configurations.

Before using the RCM-12, please read and follow all of the instructions in this guide.

### **IMPORTANT NOTES**

Please read these important notes about the RCM-12:

- The RCM-12 should be placed in an area where it is around normal room temperature (between 50° F to 90° F).
- Do not let the RCM-12 get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the RCM-12 to smoke, dust, or vibrations.
- Use only the power supply that is provided with the RCM-12. Using the wrong type of power supply may result in permanent damage.
- Do not disassemble the unit. Service and repair should be performed by an authorized technician only.
- RCM-12 relays should not be used to switch high voltage AC power.

### CHAPTER 1 | PRODUCT CONTENTS

Contents within the box include the following items:

- One (1) RCM-12 Relay Control Module
- One (1) Operation Guide
- One (1) 12VDC 1A Power supply

### UNPACKING AND INSPECTION

After unpacking your new RCM-12 Relay Control Module, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the RCM-12 and packing materials for signs of damage. Report any damage to the carrier immediately. Report any equipment malfunctions to RTI or an authorized RTI distributor.

## CHAPTER 2 | FEATURES

The RCM-12 provides superior quality and reliability as well as these specific features:

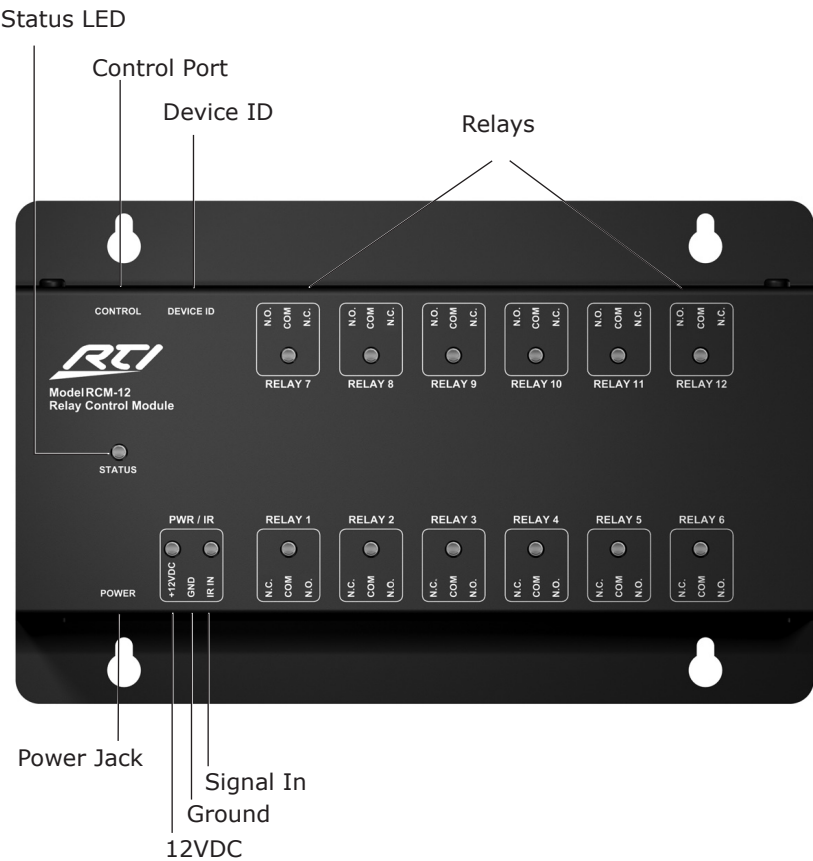
- Twelve individually addressable relays.
- Relays capable of switching up to 28VDC@5A.
- Discrete set of IR codes and an IR input allows relays to be triggered from virtually any IR programmable system.
- Control port for connection to a touchpanel connecting block.
- Relays can be used in a normally open, normally closed or toggle configuration.
- Relays create a “dry contact.”
- Programmable momentary relay hold times.
- Adjustable device ID for installations that require more than twelve relays.
- Sturdy steel construction.
- 12VDC power supply included.

### NOTE

RCM-12 relays should not be used to switch high voltage AC power.

CHAPTER 2 | FEATURES

RCM-12 REFERENCE



## CHAPTER 3 | INSTALLATION

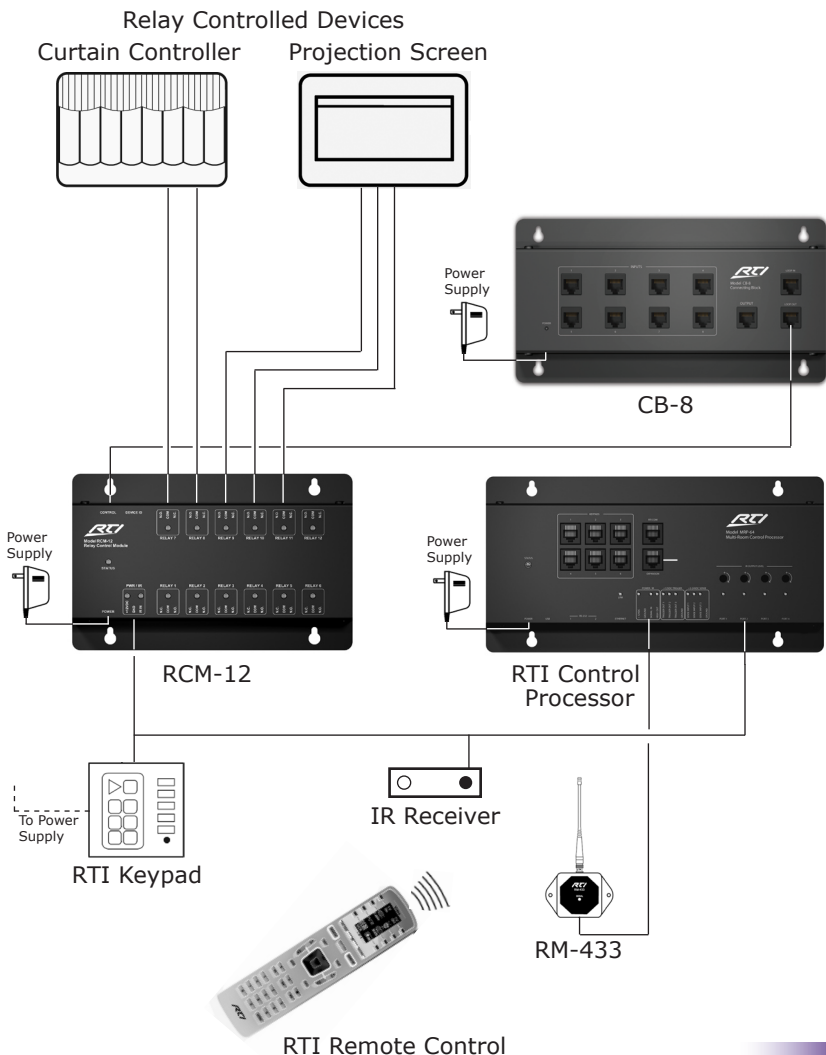
### MOUNTING

The RCM-12 can be located on a secure, flat surface or mounted horizontally or vertically using the four mounting holes at the corners of the enclosure.

### POWERING THE RCM-12

- **AC Adapter:** Connect the included AC adapter to the power jack on the RCM-12.

### CONNECTION EXAMPLE



## CHAPTER 3 | INSTALLATION

### CONTROL INPUTS

- IR Input – Connect the IR Signal and Ground leads from your RTI in-wall controller, RTI Control Processor or third-party IR repeater system to the RCM-12 IR In and Ground terminals.
- Control Port – Connect a Cat-5 cable from the Output, Loop In or Loop Out port on an RTI touchpanel connecting block (CB4/CB8) to the RCM-12 Control Port.

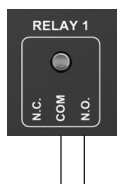
**Note 1:** This method of controlling the RCM-12 will require the use of an RTI touchpanel set to Standalone Output Mode.

**Note 2:** It is *not* possible to control an RCM-12 by wiring directly to the expansion port of an RTI Control Processor or to an Input on a Touchpanel Connecting Block (CB4/CB8).

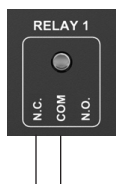
### WIRING RELAYS - Contact Closure

The relays of the RCM-12 are Single Pole – Double Throw. This allows each relay to be wired for Normally Open, Normally Closed or Toggle configurations.

Normally Open  
Wiring

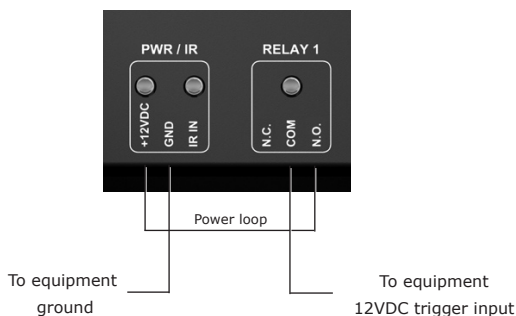


Normally Closed  
Wiring



### WIRING RELAYS - 12VDC Trigger

**WARNING:** Do not wire the RCM-12 to the Input on an RTI Touchpanel Connecting Block (CB4/CB8). In this configuration the RCM-12 will have 16VDC delivered to it, even if it is locally powered from the 12VDC power supply. Therefore the terminal marked 12VDC will actually be delivering 16VDC which may damage your equipment.



## CHAPTER 4 | OPERATION

### DEVICE ID

The RCM-12 Device ID dial adjusts to allow up to 10 RCM-12 modules to be used in the same system. Use a screwdriver to adjust.

### IR CODES

Each Device ID has a discrete set of IR codes as described below:

To affect all relays, use one of the following IR codes:

- All Off – Turns all relays off (all relays set to make contact between Common and Normally Closed).
- All On – Turns all relays on (all relays set to make contact between Common and Normally Open).

For each relay there is an IR code for:

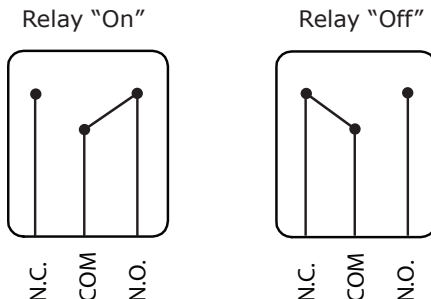
- Off (relay set to make contact between Common and Normally Closed)
- On (relay set to make contact between Common and Normally Open)
- Toggle (toggles relay between ON and OFF - contact between Common and Normally Closed or Common and Normally Open)

For each relay there is an IR code that will turn the relay On, Off or Toggle the current state for the times listed below:

- 100ms
- 2 sec
- 250ms
- 5 sec
- 500ms
- 10 sec
- 1 sec

### INTERNAL RELAY STATUS

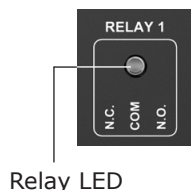
- Sending an "On" command will illuminate the Relay LED red and contact is made between the N.O. and Com terminals.
- Sending an "Off" command will turn off the Relay LED and contact is made between the N.C. and Com terminals.



### CHAPTER 4 | OPERATION

#### RELAY LED

The relay LED will illuminate red if a relay “On” command is received (contact is made between the N.O. and Com terminals). For a momentary “On” command, the LED will be illuminated red for the duration of the hold time.



#### STATUS LED

The RCM-12 Status LED:

- Will illuminate green if the RCM-12 receives a valid RCM-12 IR command that has the correct device ID. The Status LED will stay green for the duration of a momentary relay control command.
- Will illuminate red if the RCM-12 receives a valid RCM-12 IR command that does not have the correct device ID.



## CHAPTER 5 | SPECIFICATIONS

Power Supply	+12VDC, 1A
Infrared Input	Compatible with industry-standard repeaters and receivers.
Relays	Twelve, 28 VDC@5A max load, normally open and normally closed
Control Port	RS-485/IR/Pwr Device
Device IDs	Ten, rotary switch
Mounting	Wall-mount or free standing
Dimensions (W x H x D)	8.25 in (209mm) x 1.3 in (33mm) x 5.2 in (132mm)
Weight	2 lb. (907g)
Warranty	One Year (Parts & Labor)

All specifications subject to change without notice.



## CHAPTER 6 | TROUBLESHOOTING

If you are having problems with your RCM-12 Relay Control Module, please read the information below before contacting technical support.

If you continue to have problems, see Chapter 7 for more information on contacting RTI technical support.

### RCM-12 FUNCTION

- Status LED will be green when a valid code is received.
- Relay LEDs will illuminate when a relay is "On".
- Double check to make certain that the Normally Open/Closed state is correct.
- Make sure the device ID is set correctly.
- Make sure the RCM-12 is powered.



## **CHAPTER 7 | SERVICE AND SUPPORT**

For news about the latest updates, new product information, and new accessories, please visit our web site at:

[www.rticorp.com](http://www.rticorp.com)

### **CONTACTING RTI**

For general info, you can contact RTI at:

Tel. (952) 253-3100

Fax (952) 253-3131

[info@rticorp.com](mailto:info@rticorp.com)

### **RTI TECHNICAL SUPPORT**

At RTI, customer service and satisfaction is an utmost priority. If you are encountering any problems or have a question about your RTI product, please contact RTI Technical Support for assistance.

RTI provides technical support by telephone, fax or e-mail. For the highest quality service, please have the following information ready, or provide it in your fax or e-mail.

- Your Name
- Company Name
- Telephone Number
- E-mail Address
- Product model and serial number (if applicable)

If you are having a problem with hardware, please note the equipment in your system, a description of the problem, and any troubleshooting you have already tried.

If you are having a problem with software, please note what version you have installed, the operating system on your PC, a description of the problem, and any troubleshooting you have already tried.

If you are calling about a software or programming question or problem, please be at your computer when you place your call. This will considerably speed up the troubleshooting process.

For technical support or assistance with your RCM-12, software, or accessories, contact RTI at:

(952) 253-3137

[support@rticorp.com](mailto:support@rticorp.com)

[www.rticorp.com](http://www.rticorp.com)

For questions regarding service or repair of your RCM-12, contact RTI at:

(952) 253-3136

[service@rticorp.com](mailto:service@rticorp.com)

[www.rticorp.com](http://www.rticorp.com)

**Please do not return products to RTI without return authorization.**

### CHAPTER 7 | SERVICE AND SUPPORT

#### Shipment of RCM-12 for Service

RTI will pay all labor and material expenses for all repairs covered by this product's warranty. If necessary repairs are not covered by warranty, or if a unit is examined which is not in need of repair, you may be charged for the repairs or examination.

If it is necessary to ship the RCM-12 Relay Control Module for service:

- Please pack it securely (we suggest that it be insured).
- Do not include accessories such as power cords or manuals unless instructed to do so.

You must pay any shipping charges incurred in getting your RCM-12 Relay Control Module to RTI. RTI will pay reasonable return shipping charges via a carrier of our choice to any destination within the United States if the repairs are covered under warranty.

A copy of the original dated sales receipt must be provided whenever warranty service is required. You will need this receipt to establish the date of purchase.

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*It's Under Control®*



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