

RK1

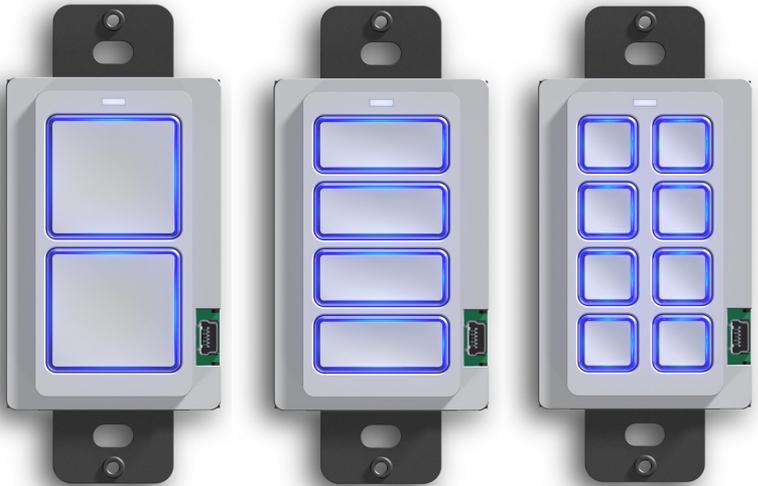
In-Wall Universal Controller



RK1

Operation & Installation Guide

v1.0



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 and (2) this device must accept any interference received, including interference that may cause undesired operation.

SAFETY SUGGESTIONS

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

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 an RTI approved power supply.

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 power receptacles and at the point at which they exit from the unit.

Nonuse Periods. Unplug the power supply from the outlet when the unit is to be left unused for a long period.

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.

Cleaning. The unit should be cleaned only as recommended in the operating guide.

Servicing. Do not attempt any service beyond that described in the operating guide. 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 does not appear to operate normally or exhibits a marked change in performance.

LIMITED WARRANTY

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. Causes other than product defects, including lack of skill, competence or experience of user.
5. Shipment of this product (claims must be made to carrier).
6. 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 *RK1* needs service, please contact Remote Technologies Incorporated by telephone, fax or e-mail for return information.

Please do not return products to RTI without return authorization.

DISCLAIMER

All rights are reserved. No part of this document may be photocopied, reproduced, or translated without the prior written notice of Remote Technologies Incorporated.

The information contained in this document is subject to change without notice. Remote Technologies Incorporated shall not be liable for errors or omissions contained herein or for consequential damages in connection with the furnishing, performance, or use of this guide.

Microsoft and Windows are registered trademarks of Microsoft Corporation. Other brands and their products are trademarks or registered trademarks of their respective holders.

RK1, It's Under Control, TheaterTouch, and the RTI logo are trademarks of Remote Technologies Incorporated.

Contents

- Federal Communications Commission Notice ----- i
- Safety Suggestions ----- ii
- Limited Warranty ----- iii
- Disclaimer -----iv
- Contents----- v**
- Chapter 1. Welcome-----1**
 - Compatibility Note-----1
 - Unpacking and Inspection -----2
 - Product Contents -----2
 - Software Requirements -----2
- Chapter 2. Introduction -----3**
 - Features-----3
 - Important Notes -----4
 - Cleaning -----5
 - Getting Started -----5
 - Keypad Reference -----6
- Chapter 3. Operation-----7**
 - The Interface-----7
 - Button Labels -----7
- Chapter 4. Installation & Programming -----9**
 - Master/Slave Operation ----- 10
- Chapter 5. Troubleshooting----- 11**
 - Unit Does Not power on----- 11
 - USB Communication Problems ----- 11
 - IR Code Problems ----- 11

Chapter 6. Service and Support -----	13
Updates and New Products-----	13
Contacting Remote Technologies Incorporated -----	13
RTI Technical Support -----	13
Specifications -----	15

Chapter 1. Welcome

Thank you for purchasing the *RK1* in-wall universal controller. The *RK1* is a customizable keypad designed for flush-mount installations in walls or cabinets. It provides a self-contained control system for controlling audio/video components, lights, or other electronic systems in the home. Sized for a single gang electrical box, the *RK1* incorporates fully-programmable buttons which can be custom labeled with text and symbols. In addition to custom labels, the backlight for each button can be configured to display almost any desired color.

The *RK1* can directly control almost any audio/video component, lighting system, etc. up to 1000 feet away using its infrared output port. Programming is easy and convenient thanks to the Windows® based TheaterTouch Designer™ software.

Because RTI's remote control products are sold only through professional installers/programmers, and never directly to consumers, it is our philosophy to not incorporate programming capability directly into our products. Instead, we are committed to providing our dealers with the hardware and software tools that allow them to create re-usable programming databases and templates in the most efficient and reliable way possible.

The *RK1* can be used as a stand-alone device or as part of an expandable central control system. When used with the available RTI accessory devices, the *RK1* is capable of infrared routing, relay control, power sensing, and RS-232 communications for advanced control.

COMPATIBILITY NOTE

The *RK1* and *TheaterTouch Designer* software are compatible with infrared (IR) commands with carrier frequencies between 15KHz and 460KHz, as well as those commands that do not use a carrier. This covers virtually all of the remotes that exist to date.

UNPACKING AND INSPECTION

After unpacking your new *RK1* universal system controller, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the *RK1* and packing materials for signs of damage. Report any damage to the carrier immediately. Report any equipment malfunctions to Remote Technologies Incorporated or an authorized Remote Technologies Incorporated distributor.

PRODUCT CONTENTS

Contents within the box include the following items:

- One (1) *RK1* universal system controller
- One (1) Set of button labels
- One (1) Operation & Installation guide

SOFTWARE REQUIREMENTS

The recommended minimum system requirements needed to run the *TheaterTouch Designer* software are as follows:

- Windows 98SE[®], Windows ME[®], Windows 2000[®], Windows XP[®] or later version.
- A free USB port.
- At least 64 Megabytes of RAM.
- At least 100 Megabytes of free disk storage.

Chapter 2. Introduction

FEATURES

The *RK1* provides superior quality and reliability as well as these specific features:

- Use any standard Decora® type faceplate.
- Fits in single gang outlet box.
- Three different cover plate colors available.
- Two, four or eight assignable/programmable button models available.
- User-definable backlight color.
- Open architecture allows control of virtually anything.
- Easy to use Windows® based software for programming and customization.*
- Adjustable backlight brightness.
- Light sensor for automatic backlight level.
- IR output port drives up to 1000 feet of wire.
- Completely customizable, programmable, and upgradeable.
- Optional 'Voltage' and 'Video' power sensing modules.
- Optional interface for RS-232 controlled equipment.
- Non-volatile Flash memory stores your program even when power is lost.
- Easy-to-use Windows based software for programming and customization.
- Field upgradeable firmware.
- USB Programming.

IMPORTANT NOTES

Please read these important notes about the *RK1*:

- The *RK1* should be placed in an area where it is around normal room temperature (between 60°F to 90°F).
- Avoid installing the *RK1* in a location where it can come in contact with direct sunlight.
- Do not install the *RK1* directly adjacent to thermostats. Heat generated by the *RK1* may affect temperature measurement.
- Do not use sharp objects on the buttons. It is designed to operate with a touch of your finger.
- Do not let the *RK1* get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the *RK1* to smoke, dust, or vibrations. The display may be damaged from excessive shock or vibration.
- Only use the power supply that is specified for the *RK1*. Using the wrong type of power supply may result in damage.
- Do not disassemble the unit. Service of the *RK1* should be performed by authorized personnel only.

CLEANING

Occasional cleaning may be required, depending on use.

To clean your *RK1*, lightly dampen a lint-free cloth with a glass cleaner or mild detergent, and wipe the buttons, surrounding bezel, and faceplate.

GETTING STARTED

The *RK1* is turned-on by simply applying power to it. RTI provides two power supply solutions which are sold separately:

Single Unit Power Supply

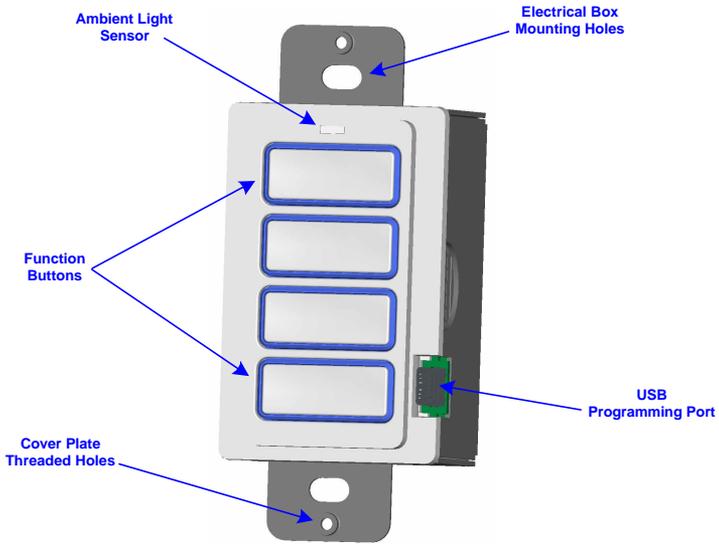
- 16VDC, 1.6Amp
- Provides power for up to six *RK1*'s
- Part Number: **40-210285-22**

CB-4 Connecting Block

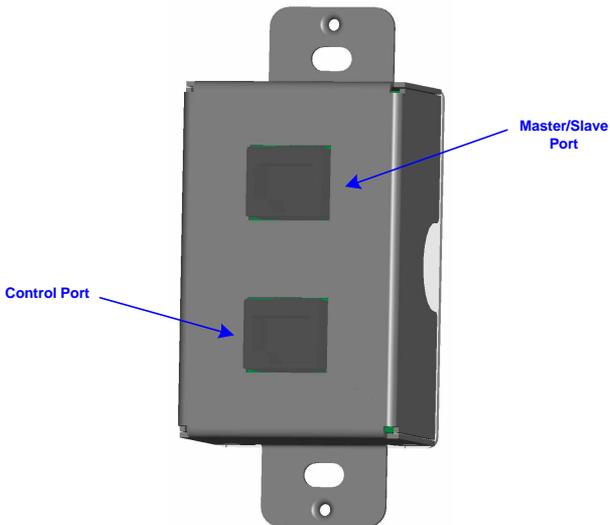
- Includes 16VDC, 4.3Amp power supply
- Provides power for up to sixteen *RK1*'s
- Provides a convenient connection hub
- Part Number: **10-210052-11**

The *RK1* will enter an idle mode after a programmed time of inactivity. After entering idle mode, the *RK1* is activated by touching any button.

KEYPAD REFERENCE



Front View



Rear View

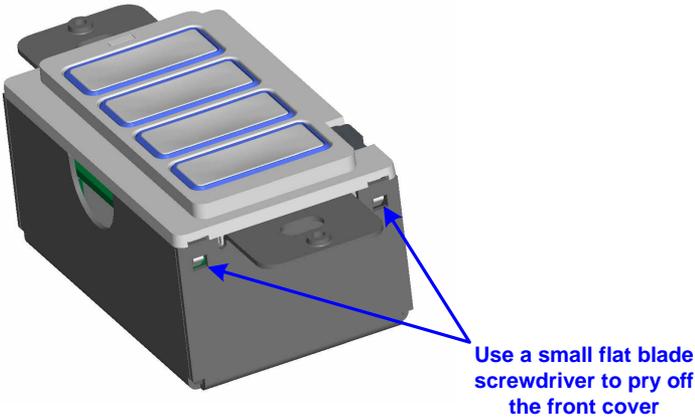
Chapter 3. Operation

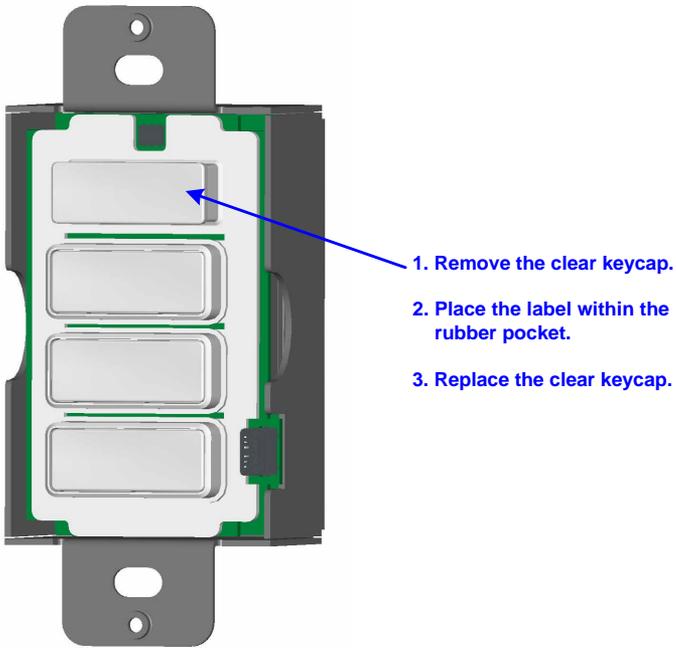
THE INTERFACE

The *RK1* is a flexible, programmable interface. In the most basic configuration, the RK1 buttons can each be used to execute a single function or “scene”. If more functionality is required, the buttons can execute complex macros, jump to other “pages”, and change backlight colors to provide status feedback. This level of customization allows almost any type of user interface functionality to be created.

BUTTON LABELS

The *RK1* includes a set of labels for attaching to the face of each button. The label sheets include a wide variety of function names that are appropriate for most common scenarios. The procedure for attaching these labels is as follows:



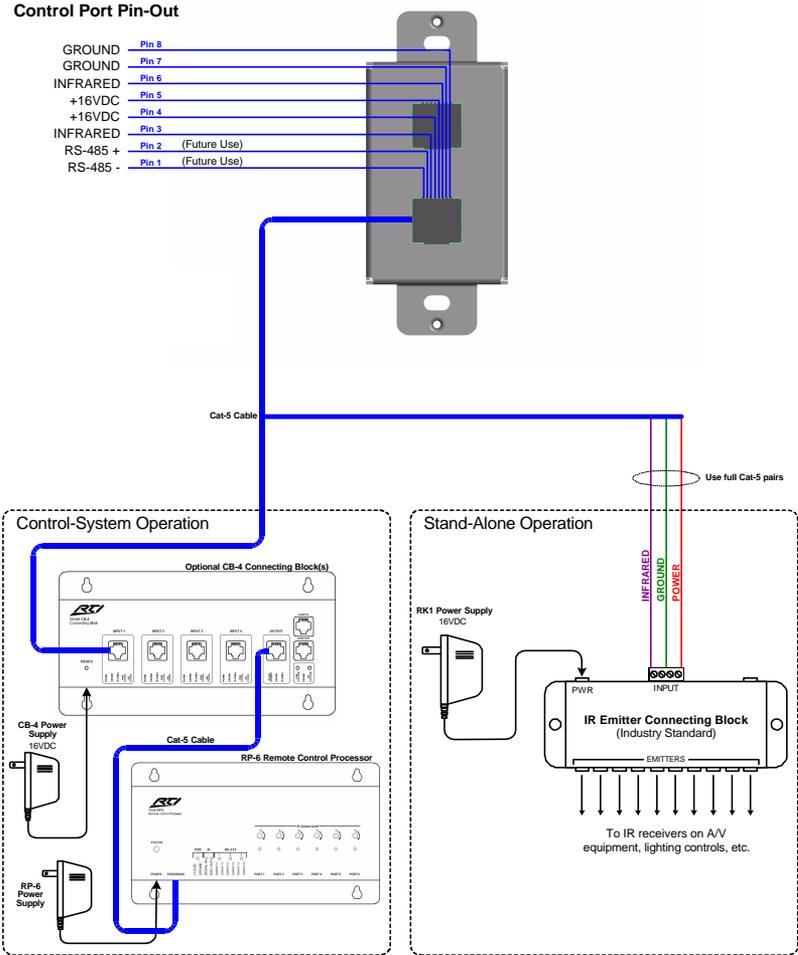


Repeat the steps above for each button, and then replace the front cover.

Chapter 4. Installation & Programming

The *RK1* is designed for flush-mount installations in walls or cabinets. It requires an available mounting depth of 2.0 inches (50mm) from the front surface of the wall. Normally, the *RK1* is mounted in a standard single-gang electrical box or mud-ring.

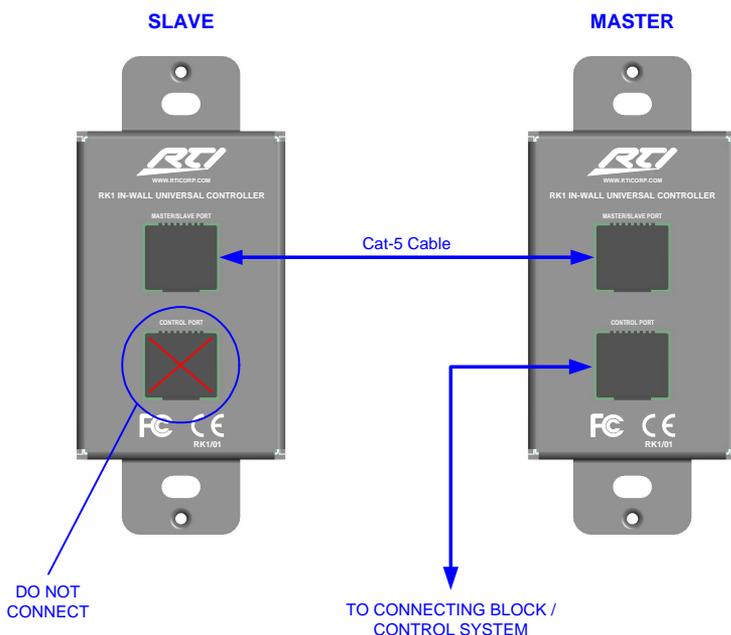
RK1 Basic Wiring Connections



MASTER/SLAVE OPERATION

Two *RK1* units can be connected together using a Cat-5 patch cable between the Master/Slave ports on each unit. This allows two keypads to sync with each other so they behave like one larger keypad. Any combination of two, four, or eight button *RK1* units can be connected together.

When configured in this way, only the master unit should be connected via the Control port (for power, IR, etc.). The slave unit will derive power and communications from the master:



When two *RK1* units are operating in this master/slave mode, please note the following:

- The ambient light sensor is disabled in the slave unit. In order to keep the backlight on the two units the same brightness, the slave unit will derive light level measurements from the master.
- Only the master unit should be programmed.

Chapter 5. Troubleshooting

If you are having problems with your *RK1*, please read these troubleshooting tips before contacting technical support.

If you continue to have problems, see Chapter 6 for more information on contacting RTI technical support.

UNIT DOES NOT POWER ON

Make sure the external power supply is properly connected to the *RK1*, and it is functioning properly.

Make sure the RJ-45 plug is attached properly to the Cat-5 cable.

Make sure power is applied to the correct connector on the back of the unit (the Control Port, NOT the Master/Slave port).

USB COMMUNICATION PROBLEMS

Verify that your PC is running Windows® 98SE or higher.

Verify that the *RK1* is present in the Human Interface Devices section of the Device Manager within the Windows® Control Panel.

Make sure you are using the programming cable that was supplied by RTI and that both ends are connected securely.

Make sure the PC detects the presence of the *RK1*. If it doesn't, unplug the USB cable, wait for about ten seconds, and plug it in again.

If the download fails after some data has been transferred, try re-sending the program.

IR CODE PROBLEMS

If you are using an IR repeater system, make sure it is working correctly with the original OEM remote. If not, you will need to troubleshoot the IR repeater system.

If you are still having problems, try adjusting the IR code “Minimum Repeats” value in the *TheaterTouch Designer* programming software.

If the IR code is executed inside a macro that contains multiple IR codes, try inserting a small time delay before the problem code. If there already is a delay, try increasing it.

Chapter 6. Service and Support

UPDATES AND NEW PRODUCTS

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

www.rticorp.com

CONTACTING REMOTE TECHNOLOGIES INCORPORATED

For general info, you can contact RTI at:

Remote Technologies Incorporated

Tel. (952) 253-3100

Fax (952) 253-3131

info@rticorp.com

www.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 RTI product, contact RTI at:

(952) 253-3137

support@rticorp.com

www.rticorp.com/support

For questions regarding **Service or Repair** of your RTI product, contact RTI at:

(952) 253-3136

service@rticorp.com

www.rticorp.com/service

Please do not return products to RTI without return authorization.

Specifications

Power	9 - 16 VDC, 0.3 Amp max
Power Management	Adjustable backlight brightness/power down time
Buttons	Fixed: 2, 4, or 8 User-changeable labels
Backlight	RGB-LED User-definable color
Infrared Output Port	200mA output Drives up to 1000 feet (300 meters) of wire
Operating Temperature	+32 °F to +122 °F (0 °C to +50 °C)
Operating Humidity	5% to 95% non-condensing
Total System Memory	64K Bytes Flash (non-volatile)
Device Capability	Total number of devices is limited only by memory
Macro Capability	Unlimited steps allowed in a single macro Total number of macros is limited only by memory Macro capability on every button
Communications	USB programming port
Enclosure	Formed steel, black powder coat

Front Cover	High-impact molded ABS plastic
Front Plate	Purchased separately (Decora Type)
Mounting	Mounts into standard single gang electrical box
Dimensions (H x W x D)	4.1 in (104mm) x 1.8in (46mm) x 1.7 in (43mm)
Total Depth in Wall	1.7 in (43 mm) Plus Cables
Weight	4 oz (113g)
Warranty	One Year (Parts & Labor)

All specifications are subject to change without notice.

It's Under Control®



Remote Technologies Incorporated

**7651 Anagram Drive
Eden Prairie, MN 55344**

Tel: 952-253-3100

Fax: 952-253-3131

www.rticorp.com