



TECHNICAL Practice

TELECOM SOLUTIONS FOR THE 21ST CENTURY

RC-2A

**Remote Touch
Tone Controller**

April 18, 2001

Control Relay Contacts Remotely



The **RC-2A** Remote Controller provides remote relay operation from any standard Touch Tone telephone.

The controller is designed to be installed either locally or remotely. For local installations the **RC-2A** can be installed in series on any analog communications path, such as analog C.O. lines, analog PABX/KSU stations or **Viking's W-Series Doorboxes**, and will passively monitor for Touch Tone commands.

For off-premise applications, the **RC-2A** will answer analog C.O. lines or PABX/KSU stations after a selectable ring delay. A field programmable access code can also be programmed to prevent unauthorized usage. The **RC-2A** will then allow remote relay operation.

Phone...715.386.8861

Features

- Programmable access code
- Normally open or normally closed relay
- Selectable relay closure times
- Selectable ring delay (1, 2, 6, or 15)
- Easy installation with modular jacks and screw terminals
- Automatic disconnect or return to secure mode after 60 seconds
- One year warranty

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<http://www.vikingelectronics.com>

Made in the U.S.A.

Applications

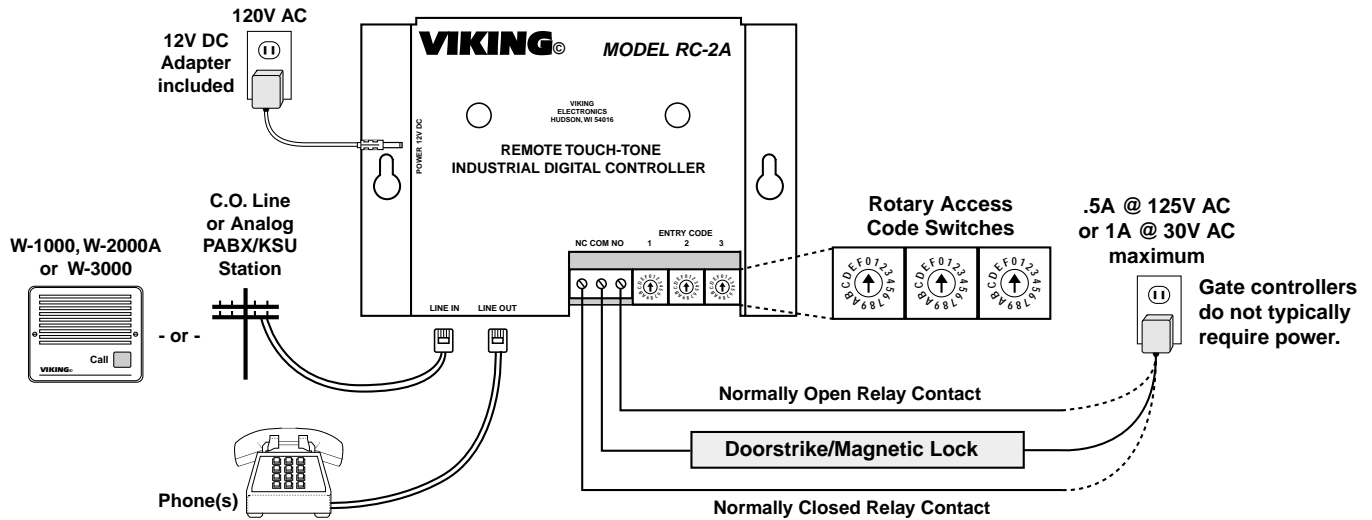
Remote Control of:

- High security building entry
- Heating/cooling equipment
- Pumps and fans
- Security systems
- Gates
- Lighting
- PABX/KSU reset

Specifications

Power: 120VAC / 12VDC 500mA UL listed adapter provided
Dimensions: 133mm x 89mm x 44mm (5.25" x 3.5" x 1.75")
Shipping Weight: .9 kg (2 lbs)
Environmental: 0° C to 32° C (32° F to 90° F) with 5% to 95% non-condensing humidity
Relay Contact Ratings: .5A @ 125V AC/1A @ 30V DC
Connections: (2) RJ-11 jacks and 3 pin screw terminal block

Installation



Legacy Programming

Important: The RC-2A ships by default in the Legacy Programming mode. Optional programming is also available (see **Alternative Programming**). The alternative programming mode dramatically changes the programming and operation of the RC-2A. Use only the programming features described in the respective sections for the programming mode you choose.

A. Security Access Code

Note: An access code should be used, when the RC-2A is used on a line with other equipment that may dial.

1. Setting the Access Code

The RC-2A contains (3) rotary access code switches (see diagram above). Using a small flat blade screwdriver, rotate the white arrow on each switch to the desired access code setting. The code may be any digit 0-9 or "C" (# on a Touch Tone pad). **Note:** For extreme security applications, a special telephone with a 4 x 4 keypad may be used (**Fax Back Document 855**).

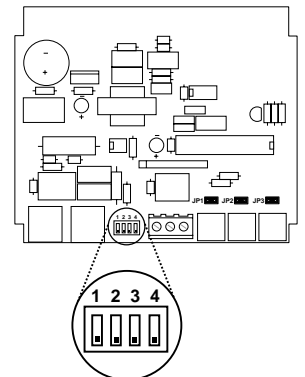
2. Disabling the Access Code

If any rotary access code switch is set to position "D" the access code is disabled. In this case, any call to the RC-2A will have immediate access to activation codes (see section D). **Note:** When the access code is disabled, the setting of DIP switch 3 has no effect (unlimited closures allowed).

B. DIP Switch Settings

DIP switches 1-3 may be used to change the operation of the RC-2A (see chart below).

Switch	OFF	ON
1	Latch commands (10 & 19) are enabled	Latch commands are disabled
2	Ring delay of 15 (no rotary switches set to C) Ring delay of 2 (any rotary switch set to C)	Ring delay of 6 (no rotary switches set to C) Ring delay of 1 (any rotary switch set to C)
3	Unlimited number of closures during access time	One closure per correct access code during access time (no rotary switches set to D)
4	(for future use)	(for future use)



Switch 1: Latch Commands

If this DIP switch is in the ON position, the relay will not be able to be latched (maintained) and command codes 10 and 19 will be ignored.

Switch 2: Ring Delay

The RC-2A answers on the fifteenth ring by default. This can be changed to the first, second or sixth ring by following the instructions above.

Switch 3: Closure Limitations

If this DIP switch is placed in the ON position, only one closure will be allowed during the access.

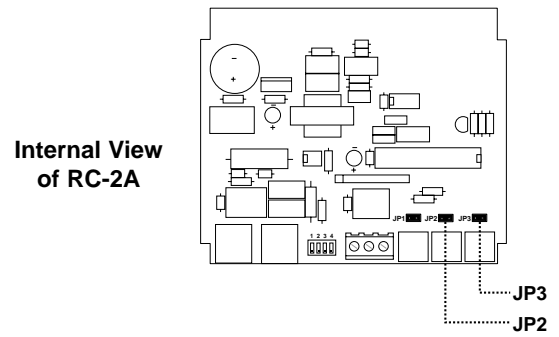
C. JP2 and JP3 Shunt Settings

1. Acknowledgement Tones

To prevent the **RC-2A** from producing acknowledgement tones, remove **JP2** (shown right).

2. Answering (Ring Trip)

To prevent the **RC-2A** from answering the phone line, remove **JP3** (shown right).



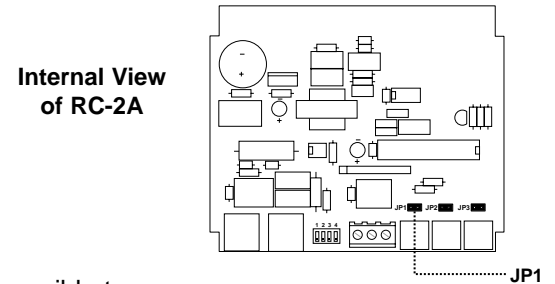
D. Relay Activation Codes

These activation codes are pre-programmed and cannot be changed except when using the **Alternative Programming** mode.

	Enter
To energize relay (two beeps)	10
To de-energize relay (one beep)	19
To energize relay momentarily (.5 seconds) (one beep).....	13
To energize relay while 4 is pressed and for 1 second after (one beep)	14
To energize relay as long as 5 is pressed (.5 seconds minimum) (one beep).....	15
To energize relay while 6 is pressed, and 5 seconds after (one beep).....	16
To interrogate the relay status (two beeps - energized, one beep - de-energized)	1#
To release the phone line (remote only) (three beeps).....	18 or 8

Alternative Programming

Important: With jumper **JP1** removed (shown right), programming and operation are changed dramatically. Please use the following programming sections when **JP1** is removed. All Legacy Programming and Operation become un-usable and you may **ONLY** program and operate the **RC-2A** using the information provided in this section.



A. Security

With **JP1** removed, access to the **RC-2A** is immediate and it becomes possible to program a one, two or three digit relay activation code. No access code is programmable or required to gain access.

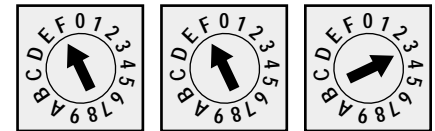
B. Entry Code Switches

The blue access code switches set the relay activation code. This code can make use of any of the digits available on the rotary switches, as long as the user is aware that **D** and **E** can only be entered using a special 4x4 keypad. **Note:** For more information on using the **RC-2A** with a special 4x4 keypad, retrieve **Fax Back Document 855**.

Rotary Switch	Touch Tone
F	Ignore
C	#
B	*
0...9	0...9

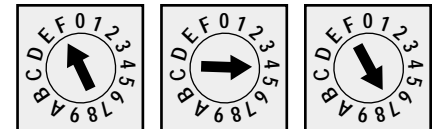
1. Single Digit Relay Activation Code

To program a single digit relay activation code, set any two of the three code switches to F. **Example:** FF3 (shown right).



2. Two-Digit Relay Activation Code

To program a two-digit relay activation code, set any of the code switches to F. The other two switch settings comprise the relay activation code. **Example:** F47 (shown right).



3. Special Character Relay Activation Code

To program the relay activation code to be * or #, set all three code switches to F (shown right). In this case, either a * or # will activate the relay.



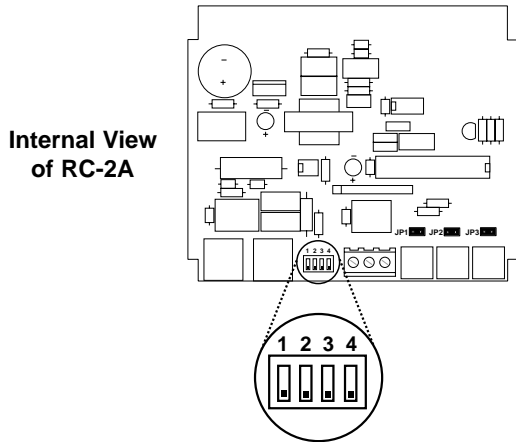
4. Ring Delay

To program the ring delay to 2 instead of the normal 15, set at least one of the code switches to B or C (shown right). **Example:** FFB = "*" as the activation code and 2 as the ring delay.



C. DIP Switch Settings

The bank of 4 DIP switches provides 16 different contact closure times according to the following table.



1	2	3	4	Contact Closure Time
OFF	OFF	OFF	OFF	1/2 second
OFF	OFF	OFF	ON	1 second
OFF	OFF	ON	OFF	2 seconds
OFF	OFF	ON	ON	3 seconds
OFF	ON	OFF	OFF	4 seconds
OFF	ON	OFF	ON	5 seconds
OFF	ON	ON	OFF	6 seconds
OFF	ON	ON	ON	7 seconds
ON	OFF	OFF	OFF	8 seconds
ON	OFF	OFF	ON	9 seconds
ON	OFF	ON	OFF	10 seconds
ON	OFF	ON	ON	30 seconds
ON	ON	OFF	OFF	45 seconds
ON	ON	OFF	ON	1 minute
ON	ON	ON	OFF	5 minutes
ON	ON	ON	ON	10 minutes

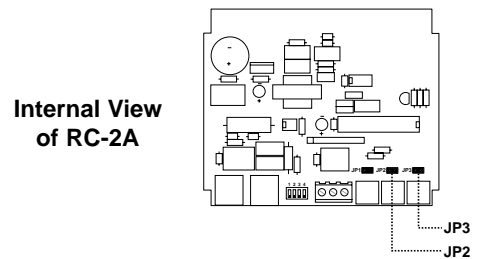
D. JP2 and JP3 Shunt Settings

1. Acknowledgement Tones

To prevent the **RC-2A** from producing any acknowledgement tones remove **JP2** (shown right).

2. Answering

To prevent the **RC-2A** from answering the phone line, remove **JP3** (shown right).



Operation

If the **RC-2A** is programmed to answer a ringing line, it will do so after the selected ring delay. A single acknowledgement tone will be heard, signaling the user that the **RC-2A** has answered the line. If a security code has been programmed, it may be entered at this time and a second confirmation tone will be heard. If the **RC-2A** is not programmed to answer the line, it can passively monitor a communication path for the proper access and/or activation code.

The **RC-2A** provides a contact closure (normally open contacts) remotely via DTMF Touch Tone input over a standard analog C.O. line or PABX/KSU station. When the correct relay activation code is entered, the **RC-2A** produces a closure at the terminal strip followed by a single beep as an acknowledgement tone. If the **RC-2A** is accessed remotely and there is a closure already in progress, the **RC-2A** indicates this by producing two beeps instead of a single beep when it answers. At this point the user may allow the existing closure to continue or start the closure over again by entering the relay activation code.

A. Accessing the RC-2A Remotely

1. Call the **RC-2A** using a Touch Tone phone.
2. When the **RC-2A** answers, a single beep will be heard.
3. If no access code was set, go to step 4. If an access code was set, enter “*” followed by your access code.
4. Enter a one, two or three digit relay activation code (see **Legacy** or **Alternative Programming** section). An acknowledgement tone should be heard.
5. Enter “8” or “18” before hanging up to force the **RC-2A** to release the line. Alternatively, the unit will disconnect if no Touch Tones are detected for 60 seconds.

B. Accessing the RC-2A Locally

1. Establish voice connection with the **RC-2A** by accessing the doorbox or dedicated line.
2. If no access code was set, go to step 3. If an access code was set, enter “*” followed by your access code.
3. Enter a one, two or three digit relay activation code (see **Legacy** or **Alternative Programming** section). An acknowledgement tone should be heard.
4. If an access code was set, enter “8” before hanging up to place the **RC-2A** back into secure mode. Alternatively, the unit will disconnect if no Touch Tones are detected for 60 seconds.

Product Support Line...715.386.8666

Fax Back Line...715.386.4345

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