



TECHNICAL Practice

TELECOM SOLUTIONS FOR THE 21ST CENTURY

RC-3

**3 Relay Remote Touch
Tone Controller**

February 22, 2010

Control 1 to 9 Relays Remotely



The **RC-3** also features a built in pulse dialer activated by a contact closure from an alarm system, temperature sensor, etc. The **RC-3** will dial the number up to three times sending alert tones indicating an emergency.

The **RC-3** enables a standard Touch Tone phone to control up to 3 maintained ON, maintained OFF, or momentary relay contacts from a remote location. The **RC-3** is fully user programmable and uses non-volatile E² memory.

Up to three **RC-3**'s can be daisy chained on the same line to control up to nine relays.

The **RC-3** features switchable 12V talk battery allowing easy installation on the trunk port. In addition, the unit can be connected directly to a C.O. line or analog PABX/KSU station.

Phone...715.386.8861

Features

- User Touch Tone programmable
- Non-volatile E² memory
- 12 digit alarm activated pulse dialer
- 6 digit security code (to access programming)
- 6 digit access code (disable or enable for additional control security)
- Switchable 12V talk battery
- Relay interrogation tones
- Programmable relay time delays
- Cascade up to three RC-3's to control up to nine relays
- Programmable ring delay before answering
- Status LED's for relays 1, 2, 3 and the answer relay
- One power adaptor can power up to three units

Applications

Remote Control of:

- High security building entry systems
- Door strikes and gates in conjunction with doorboxes (W-1000, etc.)
- Signs, lights, cameras, sprinklers, motors
- Other contact controlled equipment
- Can also be used as an emergency dialer for alarm systems, etc.

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Specifications

Power: 120V AC/12V DC 500mA UL listed adapter provided

Shipping Weight: 0.54 kg (1.2 lbs)

Dimensions: 133mm x 89mm x 44mm (5.25" x 3.5" x 1.75")

Environmental: 0°C to 32°C (32°F to 90°F) with 5% to 95% non-condensing humidity

Pulse Dialing Speed: 10 pps

Talk Battery Output: 12V DC minimum (15V nominal)

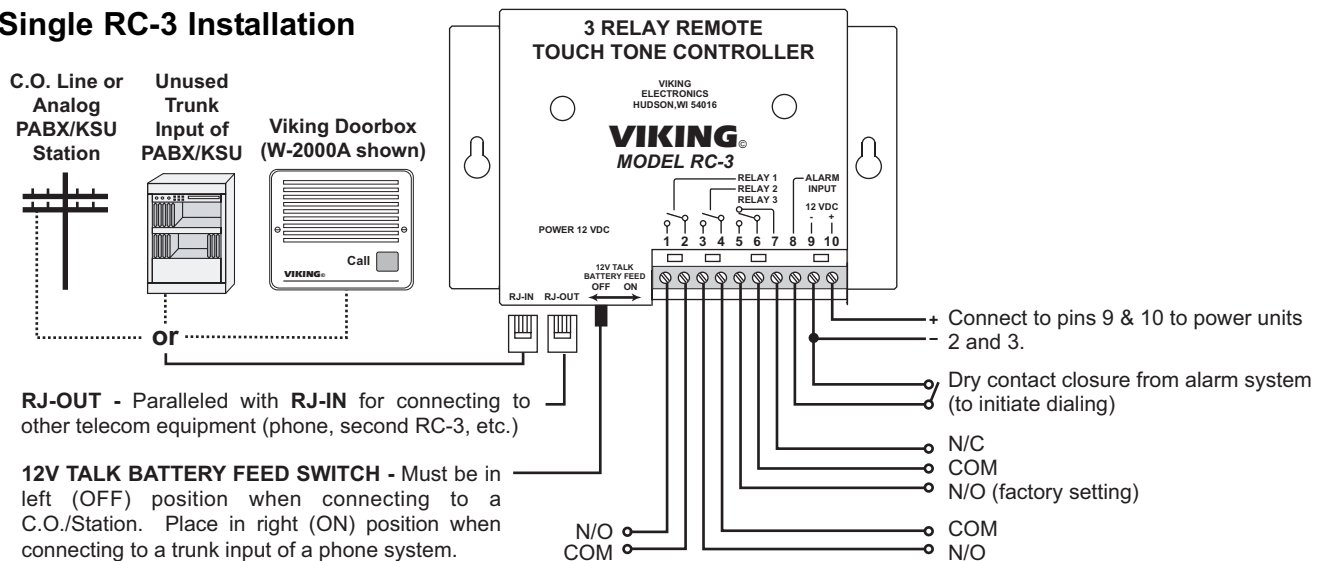
Relay contact ratings: .5A @ 125V AC/1A @ 30V DC

On hook time between alarm dialing: 2.5 seconds

Connections: (2) RJ11 jacks, 10 position screw terminal strip

Installation

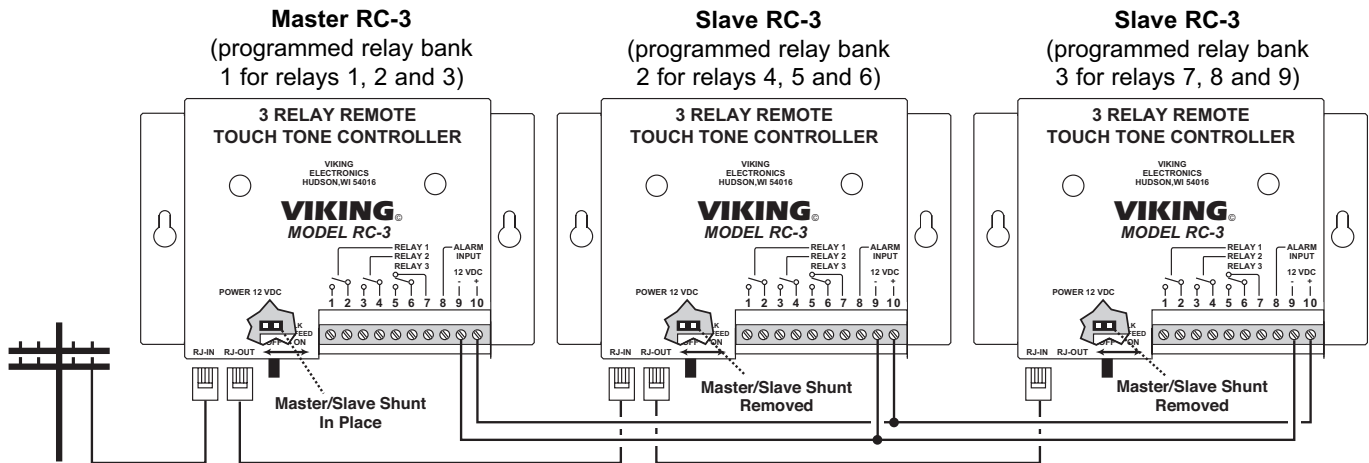
A. Single RC-3 Installation



B. Expanding To Control From 4 to 9 Relays

Two or three **RC-3's** can be daisy chained to the same line to control 1 to 9 relays. One "master" **RC-3** can power up to two "slave" **RC-3's** by daisy chaining power from terminals 9 and 10. The master/slave shunt should be removed from each slave unit. This will disable each slave's ring detection and will also reduce the total REN loading on the line.

Note: Each unit must be programmed separately before connecting to the same line (see **Programming**), and must be programmed with the same access code. Battery Feed switches on the slave units must be in the "OFF" position.



Programming

A. Entering the Programming Mode

1. To Locally Program the RC-3 (without connecting the unit to a telco line)

- Connect a Touch Tone phone to the **RJ-OUT** jack.
- Place the **BATTERY FEED** switch in the **ON** position.
- Come off hook.
- Enter * and the security code (factory set to 845464).
- Two beeps should be heard. You are now in the programming mode.

2. To Remotely Program the RC-3

- Place the **BATTERY FEED** switch in the **OFF** position.
- Connect the **RJ-IN** jack to your C.O. line or analog PABX/KSU extension.
- Call into the unit.
- When the unit answers, two beeps should be heard.
- Enter * and the security code (factory set to 845464).
- Two beeps should be heard. You are now in the programming mode.

Note: Upon entering the programming mode (or after a power outage without battery back-up), all relays will return to their programmed state.

B. Security Code

The Security Code number allows the user/installer to change the unit's programming. To enter your own Security Code, follow the steps below:

1. Enter the programming mode (see section **A** above), two beeps should be heard.
2. Enter your new 6-digit security code (**0-9**), then "**#22**", two beeps should be heard.

Your personal Security Code number is now programmed. The Security Code can be reprogrammed as often as needed (see **Programming**, section **C**). **Important:** The Security Code and the Access Code can **NOT** be the same!

C. Quick Programming Features

	Enter Digits	-then-	Memory Location
Set Relay 1 to normally closed			*1
Set Relay 2 to normally closed			*2
Set Relay 3 to normally closed (terminals 5 & 6)			*3
Set Relay 1 to normally open (factory setting)			*4
Set Relay 2 to normally open (factory setting)			*5
Set Relay 3 to normally open (terminals 5 & 6, factory setting)			*6
Timed relay activation (2 digits = 01-09 x .5 sec or 6 digits = 00-08 hrs, 00-59 min, 00-59 sec)	2 or 6 digits	then	#1 + 1-3
Alarm pulse dial number entry	0-12 digits	then	#00
To add a 4 second pause at any point in the alarm number dialing string			*7
Alarm dialing enabled (factory setting)			**
Alarm dialing disabled			*0
Ring delay before answering (1 to 31 rings, factory set to 2)	01-31	then	#21
Security Code (for entering programming), 6 digits, 0-9 (factory set to 845464)	6 digits	then	#22
Access Code, 6 digits, 0-9 (factory set to 123456)	6 digits	then	#23
Enable Access Code (factory setting)			*8
Disable Access Code			*9
Set relay bank number (when using two or three RC-3 's on the same line)	*#	then	1, 2 or 3
Halt and start command over			##

D. Confirmation Beeps During Programming

There are three types of beeps during programming. A double beep indicates a valid entry. A single beep followed by a double beep indicates an invalid entry or error. Four beeps indicates either 20 seconds have elapsed from the last Touch Tone entered or the wrong Security Code was entered. When programming remotely, the **RC-3** will output four beeps then hang up if the 20 second Touch Tone time out is exceeded or the wrong security code is entered, you must then re-call the unit and re-enter programming. If you are programming locally, you can re-enter programming simply by re-entering * and your Security Code.

E. Programming Examples

To Program...	Enter Digits
...Relay 1 for a timed activation of 1.5 seconds	03, #1, 1 (two beeps)
...Relay 3 for a timed activation of 5 hours, 17 minutes and 39 seconds	05, 17, 39, #1, 3 (two beeps)
...the RC-3 to pulse dial 9, 4 second pause, 555-1234 when a contact closure is made on the Alarm terminals across 8 and 9	9, *7, 5551234, #00 (two beeps) ** (two beeps)
...your access code to 543210	543210, #23 (two beeps) *8 (two beeps)

Operation

A. Immediate Access Mode

Go off hook on the C.O. line or access the trunk port of your phone system that the **RC-3** is connected to. With the Access Code disabled you can now immediately enter the Touch Tone commands for controlling the **RC-3**'s relay outputs (see **Operation**, section **C** below). **Note:** If the time between key strokes exceeds 20 seconds, four beeps will be heard but you may continue to enter commands.

B. Remote Access Mode

Call the **RC-3** from a remote location. The unit will answer and give two beeps after the programmed ring delay (see **Programming** section **C**). Enter a * and the six digit Access Code (if enabled), two beeps should be heard for the correct Access Code entry. You can now enter the Touch Tone commands for controlling the **RC-3**'s relay outputs. **Note:** You can continue to enter Touch Tone commands as long as the time between key strokes does not exceed 20 seconds. If you exceed 20 seconds, four beeps will be heard and the unit will hang up.

C. Relay Commands

To use the **RC-3**'s relay commands, enter the relay number (1-3 for a single unit or 1-9 for multiple units) then enter one of the following commands:

	Relay	Enter
To activate a relay continuously (latch)	1-9	1
To de-activate a latched relay	1-9	0
To activate a relay momentarily (timed activation - factory set to 5 seconds))	1-9	2
To interrogate relay status (one beep = de-activated, two beeps = activated)	1-9	3

D. RC-3 Commands

To control the **RC-3**'s operation, enter one of the following commands:

	Enter
To force the RC-3 to hang-up (four beeps)	01
To start a timed activation for all relays (two beeps)	02
To halt and remove the last digit entry (three beeps)	#
To disable the alarm dialing sequence and force the RC-3 to hang-up (four beeps)	#

E. Confirmation Beeps During Operation

There are four types of beeps you will hear while controlling the **RC-3**. A single beep should be heard after de-activating relays, two beeps after activating relays, three beeps after a "halt" command or incorrect entry (error), and four beeps if 20 seconds have elapsed between Touch Tone commands or a forced hang-up command is entered.

F. Alarm Dialing (Loop start C.O./Centrex line and PABX station applications only)

The **RC-3** can be used as an emergency dialer, activated by a continuous contact closure between terminals 8 & 9. Five seconds after the closure is made, the **RC-3** will pulse dial (10 pps) the programmed number, hold the line for approximately two minutes, then hang up and repeat this sequence two more times. This sequence can be halted by entering a Touch Tone # locally or at the dialed location. The **RC-3** will output a single beep every 5 seconds while the alarm is set (Terminals 8 & 9 are closed), indicating the alarm condition. The **RC-3** requires a minimum of a 5 second reset or open between terminals 8 and 9 before initiating a second alarm dialing sequence. **Note: The RC-3 will not initiate a alarm dialing sequence during user operation or programming. Therefore, a continuous contact closure is recommended. Due to the RC-3's 12 digit (maximum) alarm dialing number, the RC-3 should not be placed behind a PABX when long distance dialing is required.**

G. Relay and Answer LED's

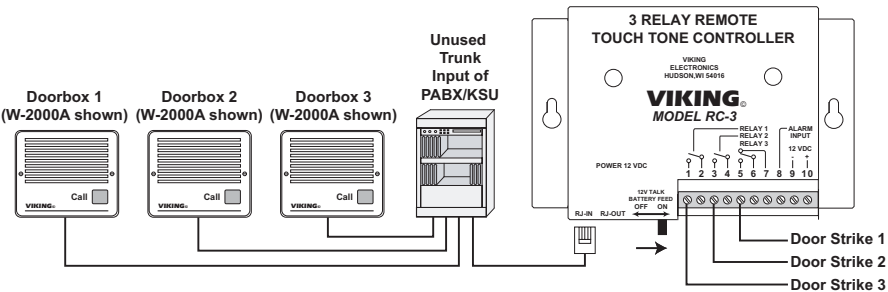
The relay status LED's are labeled RELAY 1, RELAY 2, RELAY 3 and light whenever relays 1, 2 or 3 are closed. The fourth LED is labeled ANSWER. This LED lights when the RC-3 has answered or seized the line and will flash during alarm dialing.

H. Operating Examples

Description	Enter Digits
1. Latching relay 2 from a remote location with the access code programmed to 123456 and enabled	(two beeps) *123456 (two beeps) 2 1 (two beeps)
2. Starting the timed activation of Relay 3 locally, with the RC-3 on an unused trunk input of your phone system, access code disabled	3 2
3. Remotely stop the RC-3 from calling you (three times if not disabled) during an alarm sequence	(answer phone) # (four beeps) (hang up)

Other Applications

The **RC-3** can remotely control three door strikes from any station on your PABX. After verbal confirmation from the door-box, the person on the control phone simply has to access the trunk or station connected to the **RC-3**, then enter the relay activation code for that door strike.



Product Support Line...715.386.8666

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