



# TECHNICAL Practice

**TELECOM SOLUTIONS FOR THE 21ST CENTURY**

**C-250**  
**Entry Phone Controller  
And Call Router**

November 19, 2008

## Add a Viking Entry Phone to an Existing Phone Line

The **C-250** allows single line telephones or a telephone system to share a phone line with a single Viking entry phone. Tenants may answer an entry phone call, converse with the visitor and let them in with a touch tone command.

The **C-250** also has a built in five number dialer to make an outside call if there is no answer on the inside phone. If the outside call is busy or ring no answer, the **C-250** can call up to four more numbers.

The **C-250** provides a "Call Waiting" tone when the phone line is in use. Tenants may also call out to the entry phone for monitoring purposes.



### Features

- Allows single line telephones or a telephone system to share a phone line with a door entry phone
- House phones ring with C.O. line cadence or distinctive ring when the entry phone is calling
- Built in five number dialer
- Detects busy or ring no answer and goes onto the next number
- Built in door strike relay with 1 or 2 digit commands
- Detects touch tones as fast as 50 milliseconds
- Postal lock input
- Produces "Call Waiting" tones if the entry phone is activated when the house phones are already on a call
- Compatible with these Viking entry phones:
  - Works with any **E Series** or **K Series** of **Viking Phones**
  - Or use with any analog phone

### Applications

- Add an entry phone to your standard home or office phones to provide door communication
- Provide commercial or residential security via two-way handsfree communication at the door or gate
- Connects in series with a single phone line or to a phone system's unused line input (loop start trunk input)

Phone...715.386.8861

<http://www.vikingelectronics.com>

### Specifications

**Power:** 120VAC / 13.8VAC 1.25A, UL listed adapter provided  
**Dimensions:** 133mm x 104mm x 44mm (5.25" x 4.1" x 1.75")  
**Shipping weight:** 0.9kg (2 lbs.)  
**Environmental:** 0°C to 32°C (32°F to 90°F) with 5% to 95% non-condensing humidity  
**Ring Output:** 5 REN, capable of ringing (10) 0.5 REN phones  
**Talk Battery:** 32V DC  
**Relay Contact Rating:** 5A @ 30VDC / 250VAC Maximum  
**Connections:** (12) cage clamp screw terminals

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

# Warranty

## IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT PLEASE CONTACT: VIKING TECHNICAL SUPPORT AT (715) 386-8666

Our Technical Support Department is available for assistance Monday 8am - 4pm and Tuesday to Friday 8am - 5pm central standard time. So that we can give you better service, before you call please:

1. Know the model number, the serial number and what software version you have (see serial label).
2. Have your Technical Practice in front of you.
3. It is best if you are on site.

### RETURNING PRODUCT FOR REPAIR

The following procedure is for equipment that needs repair:

1. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (RA) number. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.
2. Packing: Return equipment in original box or in proper packing so that damage will not occur while in transit. Static sensitive equipment such as a circuit board should be in an anti-static bag, sandwiched between foam and individually boxed. All equipment should be wrapped to avoid packing material lodging in or sticking to the equipment. Include ALL parts of the equipment. C.O.D. or freight collect shipments cannot be accepted. Ship cartons prepaid to:  
**Viking Electronics, 1531 Industrial Street, Hudson, WI 54016**
3. Return shipping address: Be sure to include your return shipping address inside the box. We cannot ship to a P.O. Box.
4. RA number on carton: In large printing, write the R.A. number on the outside of each carton being returned.

### RETURNING PRODUCT FOR EXCHANGE

The following procedure is for equipment that has failed out-of-box (**within 10 days of purchase**):

1. Customer must contact Viking's Technical Support at 715-386-8666 to determine possible causes for the problem. The customer MUST be able to step through recommended tests for diagnosis.
2. If the Technical Support Product Specialist determines that the equipment is defective based on the customer's input and troubleshooting, a Return Authorization (R.A.) number will be issued. **This number is valid for fourteen (14) calendar days from the date of issue.**
3. After obtaining the R.A. number, return the approved equipment to your distributor, referencing the R.A. number. Your distributor will then replace the product over the counter at no charge. The distributor will then return the product to Viking using the same R.A. number.
4. **The distributor will NOT exchange this product without first obtaining the R.A. number from you. If you haven't followed the steps listed in 1, 2 and 3, be aware that you will have to pay a restocking charge.**

### LIMITED WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of one year from the date of purchase from any authorized Viking distributor or 18 months from the date manufactured, whichever is greater. If at any time during the warranty period, the product is deemed defective or malfunctions, return the product to Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI, 54016. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (R.A.) number.

This warranty does not cover any damage to the product due to lightning, over voltage, under voltage, accident, misuse, abuse, negligence or any damage caused by use of the product by the purchaser or others.

**NO OTHER WARRANTIES.** VIKING MAKES NO WARRANTIES RELATING TO ITS PRODUCTS OTHER THAN AS DESCRIBED ABOVE AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

**EXCLUSION OF CONSEQUENTIAL DAMAGES.** VIKING SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO PURCHASER, OR ANY OTHER PARTY, FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED TO THE SALE OR USE OF THE PRODUCT SOLD HEREUNDER.

**EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY.** WHETHER IN AN ACTION BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER LEGAL THEORY, ANY LIABILITY OF VIKING SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT, OR AT VIKING'S OPTION, REFUND OF THE PURCHASE PRICE AS THE EXCLUSIVE REMEDY AND ANY LIABILITY OF VIKING SHALL BE SO LIMITED.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT EACH AND EVERY PROVISION OF THIS AGREEMENT WHICH PROVIDES FOR DISCLAIMER OF WARRANTIES, EXCLUSION OF CONSEQUENTIAL DAMAGES, AND EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY, ARE SEVERABLE FROM ANY OTHER PROVISION AND EACH PROVISION IS A SEPARABLE AND INDEPENDENT ELEMENT OF RISK ALLOCATION AND IS INTENDED TO BE ENFORCED AS SUCH.

### FCC REQUIREMENTS

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the side of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive REN's on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total REN's, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

The plug used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this C-210 does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

If the C-210 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications to maintain uninterrupted service.

If trouble is experienced with the C-210, for repair or warranty information, please contact:

**Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI 54016 (715) 386-8666**

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Connection to Party Line Service is subject to State Tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

### WHEN PROGRAMMING EMERGENCY NUMBERS AND (OR) MAKING TEST CALLS TO EMERGENCY NUMBERS:

Remain on the line and briefly explain to the dispatcher the reason for the call. Perform such activities in the off-peak hours, such as early morning or late evenings.

It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightning strikes and other electrical surges.

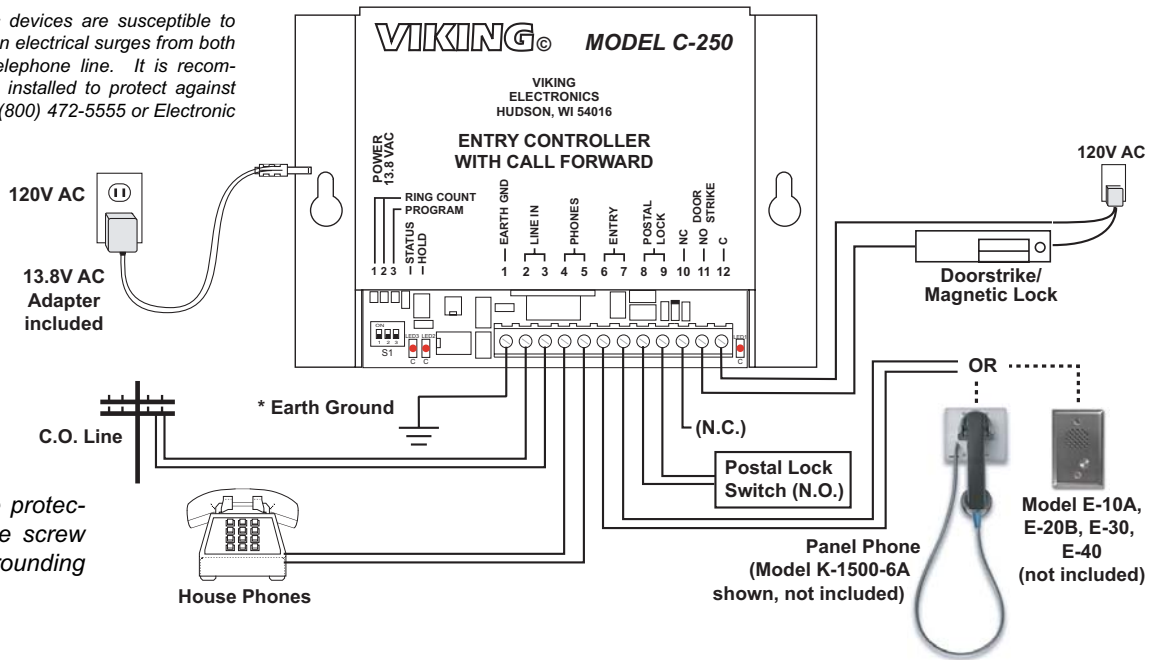
### PART 15 LIMITATIONS

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Installation



**IMPORTANT:** Electronic devices are susceptible to lightning and power station electrical surges from both the AC outlet and the telephone line. It is recommended that a surge protector be installed to protect against such surges. Contact Panamax at (800) 472-5555 or Electronic Specialists Inc. at (800) 225-4876.



\* **Note:** To increase surge protection, fasten a wire from the screw terminal to Earth Ground (grounding rod, water pipe, etc.)

# Programming

## A. Accessing the Programming Mode

The C-250 can be programmed from any Touch Tone phone connected to the house phone port by setting DIP Switch 3 to the ON position. Once off hook, two beeps will be heard signaling that the C-250 is in the programming mode. If a command is entered correctly, 2 beeps will be heard, 3 beeps signal an error. The following table shows the Touch Tone commands for programming the C-250.

## B. Quick Programming Features

	Enter Digits	+	Memory Location
First phone number .....	(1 to 20 digits)	+	#00
Second phone number .....	(1 to 20 digits)	+	#01
Third phone number .....	(1 to 20 digits)	+	#02
Fourth phone number .....	(1 to 20 digits)	+	#03
Fifth phone number .....	(1 to 20 digits)	+	#04
To clear any speed dial number .....	(no digits)	+	#00 to #04
Door Strike Time .....	(00 to 99 sec, 00 = .5 sec, factory 5 sec)	+	#40
Door Strike Code .....	(1 or 2 digits, blank is disable, factory 6)	+	#41
Maximum Call Time .....	(1 to 9 mins, 0 = 30 sec, blank is disable, factory 3 min)	+	#42
Maximum Ring Time .....	(00 to 99 secs, 00 is disable, factory 30 sec)	+	#43
To add a "*" at any point in the dialing string .....			**
To add a "#" at any point in the dialing string .....			#
To add a four second pause at any point in the dialing string .....			*7
To add a one second pause at any point in the dialing string .....			*8
To reset all programming to factory default settings .....			###

When finished programming, hang up the phone and set DIP Switch 3 to the OFF position.

## C. Speed Dial Numbers (Memory Locations #00 to #04)

**Note:** Up to 20 digits can be stored in each dial position. Special features such as one and four second pauses, and Touch Tone \* and # count as a single digit.

The speed dial number stored in location #00 is the first outside number that will be dialed if the door phone goes off hook and the house phone does not answer within the ring count set by the front panel switches. Additional speed dial numbers will be dialed if there is no answer or a busy at the first number. Each number is called only once. If all numbers are called without an answer, a busy signal will be sent to the door phone. To clear a speed dial number position, simply enter a # and the location number, 00 to 04, without any preceding numbers.

## D. Door Strike Time (Memory Location #40)

The value stored in the Door Strike Time is the amount of time the door strike relay will be energized after a correct Touch Tone code is entered or the Postal Lock input is activated. This two digit number can range from 01 to 99 seconds, or enter 00 for 0.5 seconds and is factory set to 5 seconds.

## E. Door Strike Code (Memory Location #41)

The one or two digit code stored in the Door Strike Code is the Touch Tone command that the person being called must enter on their Touch Tone phone in order to actuate the door strike. The code can contain the numbers 1 to 9, 0, \*, # or any two digit combinations. To disable this feature enter #41 without any preceding digits. The code must be entered when the house phone or the remote phone is connected to the door phone. The **C-250** determines which direction the Touch Tone is coming from and only responds to Touch Tones from the called phone.

Some cell phones can only produce fast Touch Tones (< 100 msec). If using one of these phones, program a two digit Door Strike Code. When two digits are programmed, the entry phone will be dropped after the first digit, so the **C-250** can be sure the second digit is coming from the called phone. This code is factory set to 6.

## F. Maximum Call Time (Memory Location #42)

The Maximum Call Time can be used to cut off a call that has rolled over to an outside number. If the call lasts longer than the time programmed, the phone line will be dropped and a busy signal will be sent to the door phone. This is useful if a standard telephone is being used for an entry phone and the handset can be accidentally left off hook. This one digit number can range from 1 to 9 minutes or enter 0 for 30 seconds. To disable this feature enter #42 without any preceding digits. This time is factory set to 3 minutes.

## G. Maximum Ring Time (Memory Location #43)

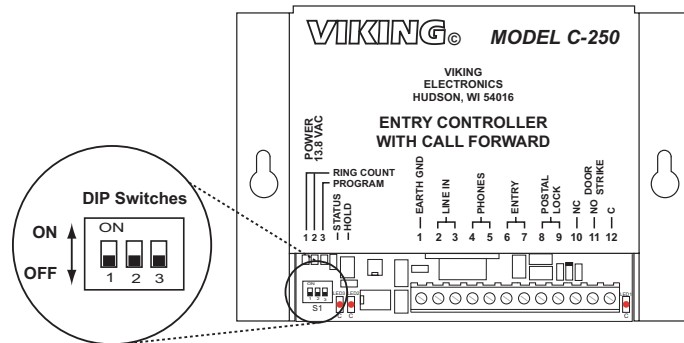
After the **C-250** dials an outside number, it listens to the phone line for busy, ringing, or someone answering the other end. The Maximum Ring Time is used to limit this process in the event that the **C-250** cannot determine if the call has been answered. If the **C-250** cannot determine that the call has been answered within the Maximum Ring Time, the line will be disconnected and the **C-250** will go onto the next speed dial number. This two digit number can range from 01 to 99 seconds and can be disabled by entering #43 without any preceding digits. It is factory set to 30 seconds.

## H. DIP Switch Programming

Switch 1	Switch 2	Ring Count
OFF	OFF	4 (factory setting)
ON	OFF	5
OFF	ON	6
ON	ON	7

Switch 3	Mode Selection
OFF	Normal Operation (factory setting)
ON	Programming Mode



# Operation

Incoming calls will ring directly to the house phones with the standard CO ring cadence. When the door phone goes off hook, the house phones will ring with a distinctive double ring burst signaling it is a door phone call. The first two DIP switches determine how many times the house phone will ring for a door phone call before the call is rerouted using the auto dialing numbers. If no numbers are programmed, the C-250 will send a CPC signal to the door phone in order to cause a hang up. All Viking hands free phones are able to detect the CPC signal and hang up. If the C-250 senses that the door phone has not dropped off, it will send a busy signal. If auto dial numbers are programmed, it will dial the first one and watch for a busy or no answer for the duration of the Maximum Ring time. If this time elapses and the C-250 has not determined the call has been answered, it assumes that the call was not answered and goes onto the next speed dial number. If all numbers are called without an answer, the C-250 will send a CPC signal and try to drop the door phone. The Maximum Call Time is started as soon as the C-250 is done dialing. If this timer elapses, that call is terminated and no further dialing will occur.

If the tenant wants to monitor the door phone, they can pick up any phone in the house and hook flash within 5 seconds. This will cause the C-250 to ring the door phone for the number of times set on the DIP switches. Hook flashes after the 5 second time out will be passed along to the CO line. This is useful for using standard CO call waiting features. If the tenant is on an outside call, and the door phone comes off hook, a call waiting tone will be heard every 30 seconds. The tenant can then hook flash to put the CO call on hold and connect to the door phone. The tenant can then return to the original caller with another hook flash.

Anytime the house phone is connected to the door phone, the tenant can actuate the door strike by entering the door strike code on their Touch Tone keypad. The C-250 determines if the Touch Tones are coming from the house phone or the door phone and only accepts codes from the house phone. Once a valid code is detected, the door strike relay will actuate for the amount of programmed Door Strike time. If an invalid code is entered, wait a few seconds and try again. The C-250 will wait a few seconds after any Touch Tone entered to assure no more tones are coming, then it looks for a code match.

The C-250 also has a connection for an external Postal Lock switch, or a Request to Exit switch. The switch must have a momentary, normally open contact. Once the C-250 detects a contact closure on terminal positions 8 and 9, the door strike will be energized for the amount of programmed Door Strike Time. If the contact is still made after the programmed time is up, the C-250 will re-energize the door strike relay and go through another Door Strike timing cycle.

**Product Support Line...715.386.8666**

**Fax Back Line...715.386.4345**

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