

VIKING

TECHNICAL Practice

TELECOM SOLUTIONS FOR THE 21ST CENTURY

C-1000B

**Door Entry and CCTV
Camera Controller**

April 17, 2006

Add One or Two Doorboxes to an Existing Phone Line and Provide CCTV Camera Control

The **C-1000B** allows single line phones or phone systems to share a phone line with one or two Viking doorboxes or paging amplifiers. The **C-1000B** provides two Touch Tone controlled relays to operate door strikes or gate openers and **provides doorbox triggered CCTV camera switching**.

Viking doorboxes and paging amplifiers can be used on single line, residential or home office applications as well as on fully loaded systems, because they are no longer limited to installation on unused trunk ports.



Features

- Allows two **Viking** doorboxes or **Viking** paging amplifiers to share a single telephone line with a residential or business telephone system
- **Doorbox triggered CCTV camera switching**
- Custom ringing mode allows you to distinguish doorbox calls from C.O. calls
- Compatible with up to two of the following **Viking** doorbox models: **W-1000**, **W-2000A**, or **W-3000**. Alternatively, the Analog PABX/KSU station mode allows compatibility with a single **Viking** handsfree phone (**E-10**, **E-20A**, **E-30**, **K-1700-3** or **1600A** Series)
- Compatible with **Viking's** Single Line Paging Controller, Model **SLP-1**.
- Call waiting tones indicate which doorbox is calling and distinguish a doorbox call from a C.O. line call
- Calls can be placed on hold when visitors call from the doorbox or when paging
- Provides two Touch Tone controlled N.O. or N.C. dry contact closures (5 amp rating) for door strikes or gate openers
- Keyless entry/postal lock input
- Built-in talk battery for "No C.O. Line" applications
- Auxiliary contact output for doorbells, lights, etc.

info@vikingelectronics.com

Applications

- Add one or two **Viking** Doorboxes to your home or office phones
- **Switch between two CCTV cameras automatically when either doorbox is activated**
- Add a **Viking SLP-1** Single Line Paging Controller to provide paging, intercom, loud ringing, door chime and music on hold features
- Provide commercial or residential security via two-way handsfree communication from a door or gate
- Use as a line concentrator (one fax machine or answering machine can answer three lines)

Phone...715.386.8861

<http://www.vikingelectronics.com>

Specifications

Power: 120V AC/13.8V AC 1.25A, UL listed adapter provided
Dimensions: 133mm x 104mm x 44mm (5.25" x 4.1" x 1.75")
Shipping Weight: 0.9 kg (2 lb)
Environmental: 0° C to 32° C (32° F to 90° F) with 5% to 95% non-condensing humidity
Door Strike Relay Contacts: 5A @ 30V DC/250V AC maximum
CCTV/Auxiliary Relay Contacts: .5A @ 125V AC, 1A @ 30V DC
Pulse Dialing Detection: 10 pps
Talk Battery: 28V DC
Maximum Doorbox Power Supply Length: 100 ft, 24 awg wire
Connections: (1) 7 position terminal block and (1) 19 position terminal block

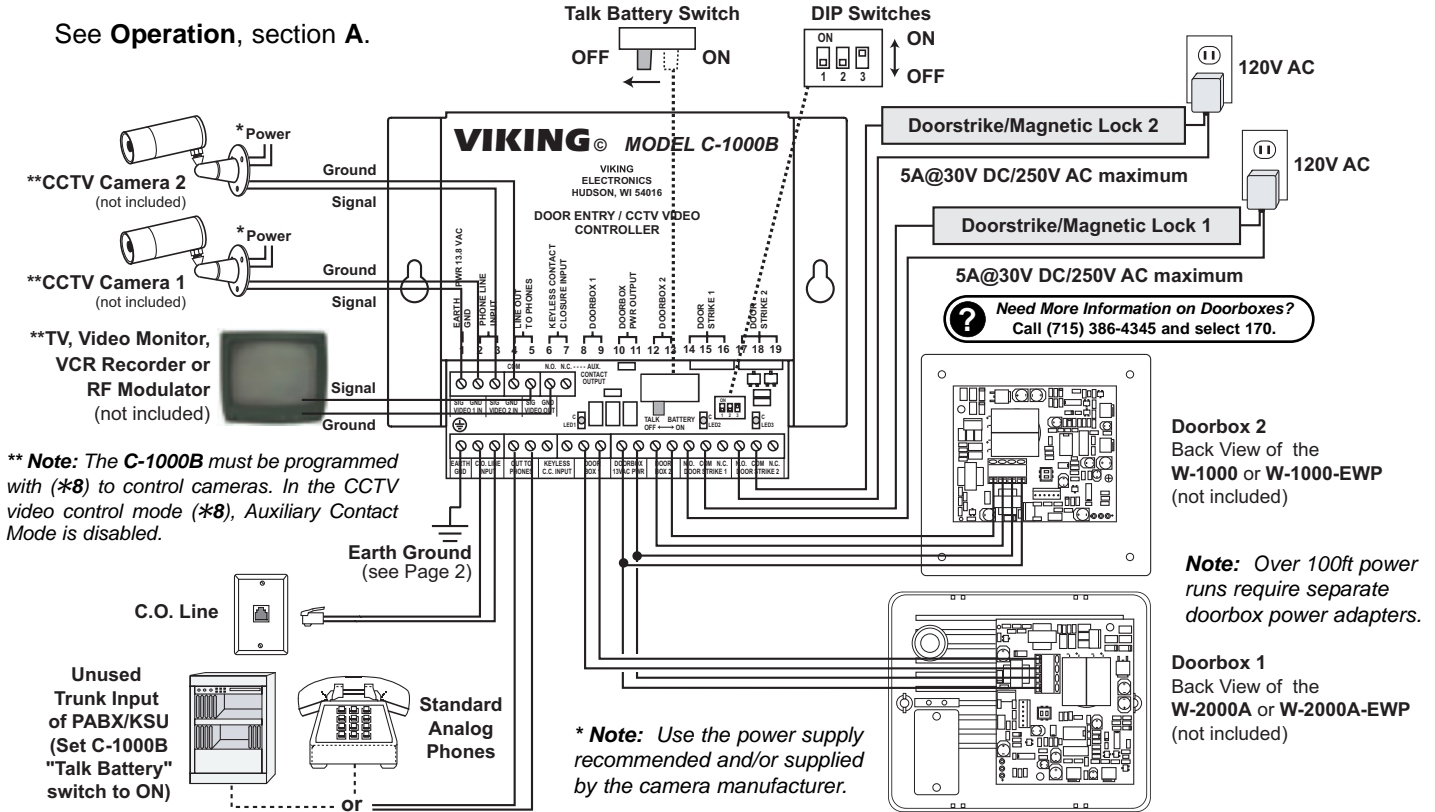
Installation and Applications



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.

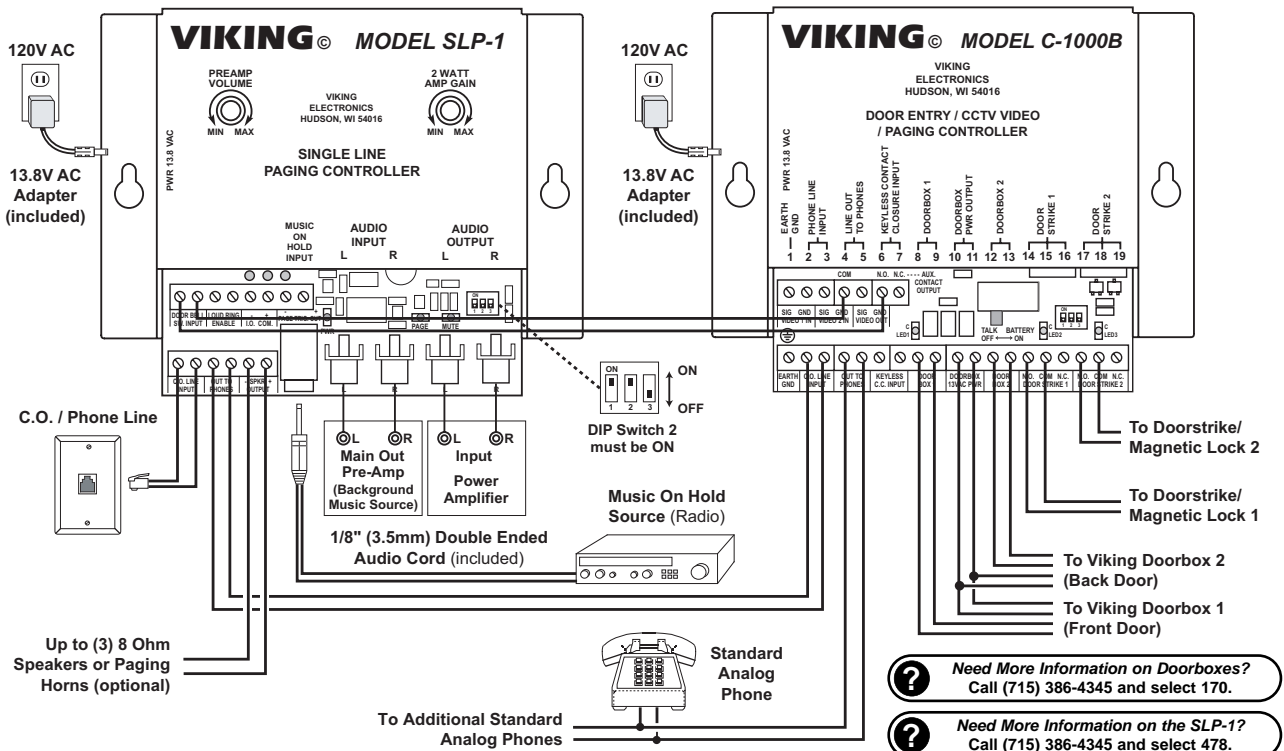
A. One or Two Doorboxes Sharing a Phone Line and Controlling Two Optional Cameras

See Operation, section A.



B. Provide Paging, Doorbox, and Doorstrike Control with Unique Front and Back Door Chimes

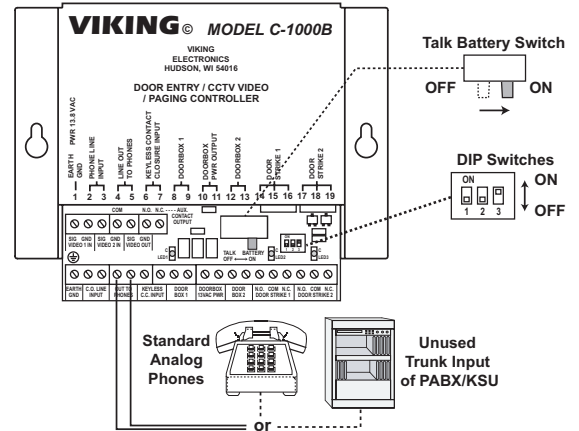
Note: To provide unique front and back door chimes, the C-1000B must be programmed to enable the "Auxiliary Contact Mode" (*7) and have the auxiliary contact programmed for custom ring cadence (12#03). Doorbox ringing can also be disabled by placing the C-1000B in the "Doorbell Mode" (*1). See the C-1000B Technical Practice for programming details. The C-1000B CCTV Video Control Mode can NOT be used in conjunction with unique front and back door chimes. See Operation section I, page 7. If CCTV video control is required, a Viking VC-1000 can be used. The caller's music on hold is limited to 5 seconds while communicating with a doorbox.



C. Using a C-1000B without a C.O. Line

The **C-1000B** can also be used without a C.O. line. This is ideal for connecting the **C-1000B** to an unused trunk/line input of your phone system or connecting to phones used only for doorbox communication.

Step 1.	Connect the power, required doorboxes, and doorstrike outputs (if required) as shown in section A.
Step 2.	Connect an analog phone or unused PABX/KSU trunk port to terminals 4 & 5, "LINE OUT TO PHONES" on the C-1000B .
Step 3.	Be sure the "Talk Battery Switch" is in the ON position.

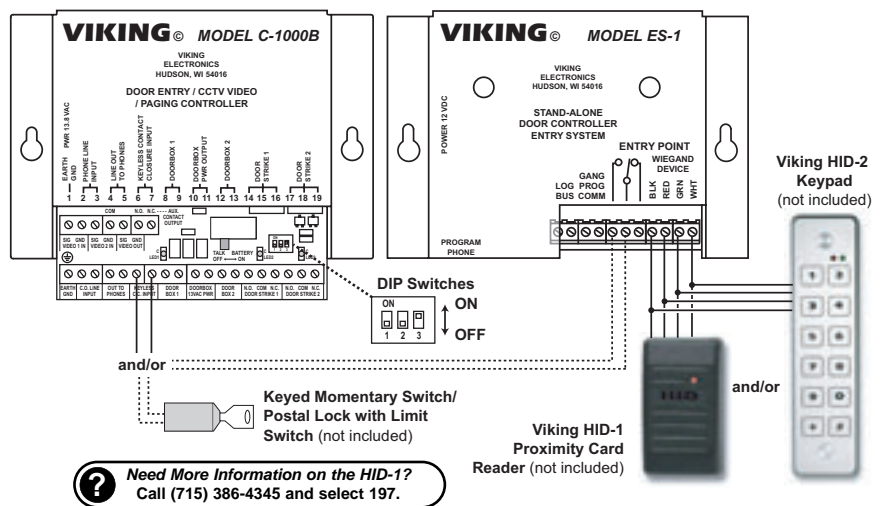


D. Using the C-1000B with Keyless Entry, Proximity Card Reader or a Postal Lock Switch

Step 1.	Connect a device that can provide a momentary contact closure, such as the Viking ES-1 with HID-1 Card Reader or HID-2 Keypad, keyed switch, postal lock with limit switch, etc. to terminals 6 & 7, "KEYLESS CONTACT CLOSURE INPUT".
Step 2.	Connect doorboxes and doorstrike outputs (if required) as shown in section A.
Step 3.	See Operation section A, 5. Keyless Entry/Postal Lock .

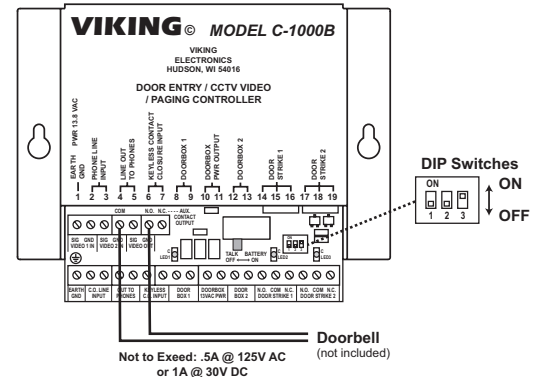
? Need More Information on the **ES-1**?
Call (715) 386-4345 and select 193.

? Need More Information on the **HID-2**?
Call (715) 386-4345 and select 199.



E. Using the C-1000B to Trigger a Doorbell

Step 1.	Connect the doorbell (not included) as shown to the right. Note: The C-1000B will not supply power to the doorbell, a power adapter is necessary.
Step 2.	Connect doorboxes and doorstrike outputs (if required) as shown in section A.
Step 3.	Program the Auxiliary Contact Output as desired (see Programming section B).
Step 4.	See Operation section A, 6. Auxiliary Contacts .



F. Line Concentrator Mode (One Telecom Device Can Answer up to Three Lines)

The **C-1000B** can be used as a line concentrator, allowing up to three separate C.O. lines to connect to one telecom device. For more information: call 715-386-4345 and select **872**.

G. Using the C-1000B with Three Doorboxes and No C.O. Line

The **C-1000B** can be used to control up to three doorboxes. For more information: call 715-386-4345 and select **872**.

H. Using the C-1000B on an Analog Station Port (Analog PABX/KSU Station Mode)

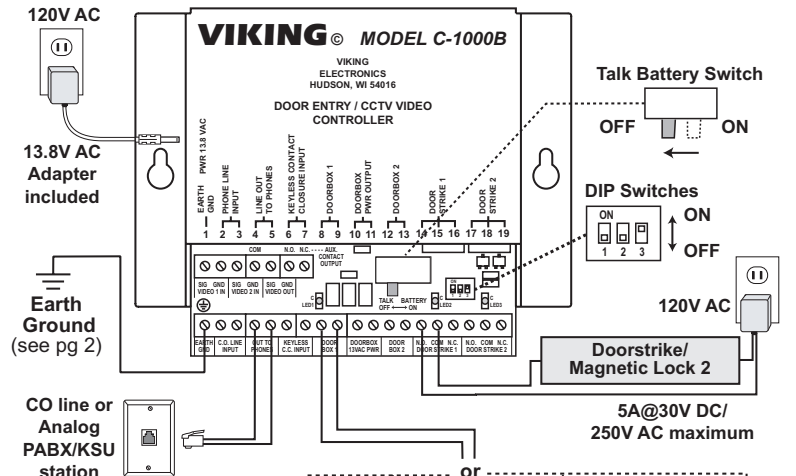
Note: This mode can NOT be used with W-1000, W-2000A or W-3000 doorbells. This application is ideal for connecting the C-1000B to an unused analog station of your phone system. See Programming section F and Operation section A.

Important:

- In this application, only a single door phone is used and *5 must be selected when in programming.
- Do not program the CCTV Video Control Mode (*8) in this application (See Note 2 below). Only Auxiliary Contact Mode (*7) can be used.

Notes:

- The K-1700-3's keypad can be used for extension dialing, etc., but can NOT be used for keyless entry (see Installation and Applications section D).
- If "Switched" camera control is needed (for a switching video RF modulator), connect the camera to "Video 2 In", connect the RF Modulator to "Video Out" and program the C-1000B with "*7" and "11 # 03".
- Once the "Analog PBX/KSU Station Mode" (*5) has been programmed, you are not able to access the programming mode of the C-1000B in the normal fashion. For details, see Programming, Section A.



Need more information on the products shown to the right?
Call 715-386-4345 and enter the fax number below:

Model	Fax #	Description
E-10/E-20A	210	Handsfree Speaker Phone
E-30	212	Vandal Resistant Handsfree Speaker Phone
E-1600A	215	Emergency/Elevator Phone
K-1700-3	157	Handsfree Speaker Phone with Keypad
K-1900-5	317	Touch Tone Dialer



Programming

A. Accessing the Programming Mode

Follow Sections 1 or 2 to program a new C-1000B or any C-1000B that has not been previously programmed into the "Analog PBX/KSU Station Mode" (*5). If the "Analog PBX/KSU Station Mode" has been programmed, follow Sections 3 or 4 to access programming.

Note: If you are not sure how the C-1000B was previously programmed and have difficulty accessing the programming mode by following Sections 1 or 2, follow Sections 3 or 4 in case the C-1000B is currently in the "Analog PBX/KSU Station Mode" (*5).

1. Accessing the Programming Mode Locally (Security Code Bypass Mode)

Step 1.	Disconnect the PHONE LINE INPUT .
Step 2.	Slide the TALK BATTERY switch to the ON position.
Step 3.	Move DIP switch 2 from OFF to ON (see Programming section E).
Step 4.	Come off-hook with a phone connected to terminals 4 & 5, LINE OUT TO PHONES .
Step 5.	A double beep will indicate that you have accessed the programming mode.
Step 6.	You can now Touch Tone program the features listed in section B below.
Step 7.	When finished programming, hang up and move DIP switch 2 to the OFF position.
Step 8.	Slide the TALK BATTERY switch back to the OFF position.
Step 9.	Reconnect line to PHONE LINE INPUT .

2. Accessing the Programming Mode Remotely

Step 1.	Call into the C-1000B from a Touch Tone phone.
Step 2.	Answer the call using the phone (device) connected to terminals 4 & 5, LINE OUT TO PHONES .
Step 3.	From either phone enter * followed by the security code (factory set to 845464 , see Programming section D).
Step 4.	A double beep will indicate that you have accessed the programming mode.
Step 5.	You can now Touch Tone program the features listed in section B below.
Step 6.	When finished, hang up both phones to exit the programming mode

Note: Programming from a cell-phone may not be suitable in areas with weak coverage.

IMPORTANT: Only use Sections 3 or 4 when the C-1000B has previously been programmed into the "Analog PBX/KSU Station Mode" (*5)

3. Accessing the Programming Mode Locally (When *5 mode has been programmed)

Step 1.	Connect a PBX/KSU analog extension (or phone line) to terminals 4 & 5, LINE OUT TO PHONES .
Step 2.	Slide the TALK BATTERY switch to the OFF position.
Step 3.	Move DIP switch 2 from OFF to ON (see Programming section E).
Step 4.	Come off-hook with a phone connected to terminals 8 & 9 DOORBOX 1 .
Step 5.	PBX/KSU dial tone will be heard along with a double beep from the C-1000B to indicate that you have accessed the programming mode.
Step 6.	You can now Touch Tone program the features listed in section B below. (ignore busy signals, reorder tones or intercept messages heard while programming).
Step 7.	When finished programming, hang up and move DIP switch 2 to the OFF position.

4. Accessing the Programming Mode Remotely (When *5 mode has been programmed)

Note: To access programming in this fashion, there must be a PBX/KSU analog extension (or phone line) connected to terminals 4 & 5, **LINE OUT TO PHONES** and the **TALK BATTERY** switch must be set to **OFF**.

Step 1.	From another extension or phone line, call into the PBX/KSU analog extension (or phone line) connected to terminals 4 & 5, LINE OUT TO PHONES .
Step 2.	Answer the call using the phone (or device) connected to terminals 8 & 9, DOORBOX 1 .
Step 3.	From the remote phone enter * followed by the six digit security code (factory set to 845464, see programming Section D).
Step 4.	A double beep will indicate that you have accessed the programming mode.
Step 5.	You can now Touch Tone program the features listed in section B below.
Step 6.	When finished programming, hang up both phones.

B. Quick Programming Features

	Enter Digits - then -	Memory Location
Door strike 1 activation time .5 - 10 seconds (00 = .5 seconds/factory default)	2 digits (00-10) +	#01
Door strike 2 activation time .5 - 10 seconds (00 = .5 seconds/factory default)	2 digits (00-10) +	#02
Security Code (factory set to 845464)	6 digits (0-9) +	#47
Disable special modes (*1 - *6 and *8) listed below (factory default)	*0	
* Doorbell mode	*1	
* Custom ring mode	*2	
* Multiple relay activation mode	*3	
* Paging mode (not for use with SLP-1 , see Programming , Section F)	*4	
* Analog PABX/KSU station mode	*5	
* Inhibit latching commands mode	*6	
Auxiliary contact mode (disables CCTV video control mode, factory default)	*7	
Auxiliary contact activation time .5 - 10 seconds (00 = .5 seconds/factory default).....	2 digits (00-10) +	#03
Auxiliary contact latched while either doorbox is activated	11 +	#03
** Auxiliary contact activated in custom ring cadence	12 +	#03
**CCTV video control mode (disables auxiliary contact mode)	*8	
CCTV Inactive (Idle State) Modes:		
Camera 1 and 2 output disconnected (factory default)	01 +	#04
Output camera 1	02 +	#04
Continue to output video from last camera activated	03 +	#04
Sequenced video from camera 1 and 2 (rotates every 4 seconds)	04 +	#04
To reset to factory settings	###	

* **Note:** Multiple modes may be selected.

** **Note:** Not compatible with Analog PABX/KSU Station mode.

C. Programming Examples

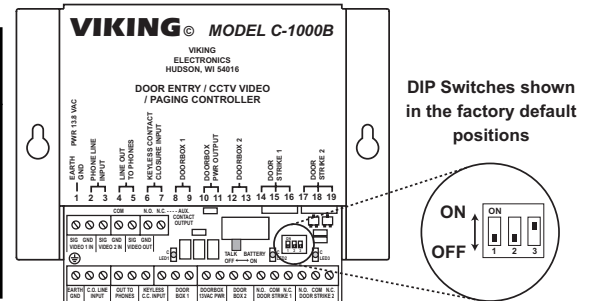
To Program the C-1000B...	Enter
1. ...to set door strike 1 to activate for 3 seconds	03 #01
2. ...to set the auxiliary contacts to activate an external ringer or strobe light in a custom ring cadence while either doorbox is ringing	12 #03
3. ...to have doorboxes ring phones in a custom ring pattern	*2

D. Security Code

This six digit number can be used to access the programming mode. The security code has been factory set to **845464** (V-I-K-I-N-G). It is recommended that you change the security code to a personal 6 digit number. To change the security code, access programming (see **Programming** section **A**). Enter six digits 0-9 followed by **#47**. If you have forgotten your security code, follow the steps in **Programming** section **A, 1. Accessing the Programming Mode Locally**. **Note:** *The security code must be six digits in length and can NOT contain a * or #.*

E. Dip Switch Programming

Switch	Position	Description
1	OFF	Doorstrike Activation = 0.5 seconds (factory setting)
1	ON	Doorstrike Activation = 10 seconds
2	OFF	Normal Mode (factory setting)
2	ON	Security Code Bypass Mode
3	OFF	Line Concentrator Mode
3	ON	Normal Operation (factory setting)



F. Mode Descriptions

Entering these codes while in programming will switch the **C-1000B** into the corresponding mode.

Disable Special Modes (*0): This command disables (clears) all the special modes listed below. Enter this command before programming the rest of the selections to be sure no unwanted modes are set.

Doorbell Mode (*1): In this mode, the ring signal from either doorbox is prevented from going through to the “**LINE OUT TO PHONES**” terminals. This is useful when a conventional door bell is connected to the auxiliary contacts. Now when someone activates a doorbox, the doorbell will chime rather than the phone ringing (see **Programming** section **B**).

Custom Ring Mode (*2): With this mode selected, the ring signal from the device ports are interrupted in a double burst pattern, making it easier to determine if the incoming call is from a doorbox or the C.O. line. **Note:** *Some telephones and phone systems are not compatible with this feature.*

Multiple Relay Activation Mode (*3): If selected, after a door strike command is entered, the phone is switched back to the doorbox port so additional doorstrike (relay activation) commands can be entered. This is useful when letting someone through your gate with the first command then unlocking your front doorstrike with a second command. To return to the call on hold, enter “**#**”.

Paging Mode (*4): This mode is used for basic paging and/or existing installations using a **C-1000B** with Viking paging amplifier models: **PA-2A**, **CPA-7B** or **PI-1**. For more information, retrieve Fax Back Document **872**. This mode is **NOT** for use with model **SLP-1**. For single line paging applications, the **SLP-1** is recommended, see **Installation** section **B** and retrieve Fax Back Document **478**.

Analog PABX/KSU Station Mode (*5): This mode is ideal when installing the **C-1000B** on a phone system that does not have a spare trunk port but does have an unused analog station port. This mode allows any standard (POTS) telephone such as the **E-10**, **E-20A**, **E-30** or **K-1700-3** to be used in place of Doorbox 1. Only one door phone can be used in this mode. When the door phone goes off-hook, a hot-line dialer or ringdown station will call the desired phone system extension. The phone on that extension can then communicate with the door phone and activate doorstrikes as needed. **Note:** *Only a single door phone may be used. Multiple relay activation cannot be used with Viking door phone models **E-10**, **E-20A**, **E-30** or **K-1700-3**.*

Inhibit Latching Commands Mode (*6): In some installations it is critical that the door strike or door actuator not be turned on for long periods of time. To prevent this from happening, enter ***6** when in programming. In this mode, the toggle command (***#**) and the continuous activation command (***1**) are ignored.

Auxiliary Contact Mode (*7): See **Operation** section **6**, page **8**.

CCTV Video Control Mode (*8): In this mode the **C-1000B** allows two CCTV video cameras to be concentrated down to one video signal, by switching to the camera at the zone/entry point being used. When the **C-1000B** detects a doorbox ringing or when a doorbox is monitored, it will connect that camera’s video feed to the video output. When both doorboxes are inactive (idle), the **C-1000B** can be programmed to do one of four operations (see **Operation**, Section **C**, page **8**). **Note:** *The CCTV Video Control Mode (*8) is disabled when using the Auxiliary Contact Mode (*7).*

Operation

A. Doorbox Controller

1. Communicating with the Doorbox

a. Visitor Initiated Call

A visitor pressing the “Call” button will cause the phones connected to the “**LINE OUT TO PHONES**” terminals to ring. Simply answer your phone to converse with the visitor. After answering the call, a single or double beep will be heard in the phone, indicating which doorbox has called - a single beep for doorbox 1 and a double beep for doorbox 2.

b. Monitoring Doorboxes

A doorbox may be monitored from any phone connected to the **C-1000B** by Touch Tone dialing a “**#**” followed by a Touch Tone “**1**” or “**2**” to monitor doorbox 1 or doorbox 2 respectively. This feature is not available for pulse dialing phones. **Note:** *Do not attempt doorbox monitoring while a call is in progress, the call will be disconnected. Note: When monitoring, the auxiliary contact will only work in the **Continuous Mode (11 # 03)**.*

2. Placing C.O. Line Calls on Hold

If a C.O. line call is in progress and a doorbox is activated, a single or double "call waiting" tone will be heard indicating doorbox 1 or doorbox 2 is calling. To place the in-progress call on hold and answer the calling doorbox, simply dial a Touch Tone "#", pulse dial a "2" or hook flash twice.

3. Activating a Doorstrike, Magnetic Lock or Gate Controller

To activate a relay contact, you must be communicating with a doorbox. Touch Tone dial "**", pulse dial a "3" or hook flash three times. Two confirmation tones will be heard and the relay will be activated for the programmed doorstrike activation time. The phone will then be returned to the C.O. line. If a call was in progress, the original caller will be taken off hold to continue the conversation. To return to the original call without activating a relay, Touch Tone dial "#", pulse dial a "2" or hook flash twice.

4. Features

	<u>Touch Tone Commands</u>	<u>* Pulse Dial/Flash Commands</u>
Momentarily activate doorstrike relay 1 or 2	* *	Pulse dial 3 or hook flash 3 times
Continuously activate (latch) doorstrike relay 1 or 2	* 1	
Continuously de-activate (unlatch) doorstrike relay 1 or 2	* 0	
Activate opposite doorstrike relay	* 2	
Toggle relay from last position	* #	
Answer or disconnect a doorbox call	#	Pulse dial 2 or hook flash 2 times
Monitor doorbox 1	# 1	
Monitor doorbox 2	# 2	

Note: When on the C.O. line, if a Touch Tone other than # is entered, any additional Touch Tones in that dial string will be ignored. To regain control of the **C-1000B**, the phone must be momentarily placed on-hook.

* **Note:** Pulse dialing and flash commands are not compatible in the "Multiple Relay Activation" mode.

5. Keyless Entry/Postal Lock

When a momentary postal lock contact closure is made across terminals **6 & 7** (see **Installation** section **D**), the doorstrike 1 contact will activate for the programmed time.

6. Auxiliary Contact Mode (*7)

The auxiliary contacts are a separate set of contacts that can be programmed (see **Programming** section **B**) to activate in different patterns when doorbox 1 or doorbox 2 is activated. A momentary activation, a continuous activation while the doorbox is in use, and a ring cadence pattern are available. **Note:** The auxiliary contact mode (*7) is disabled when using the **CCTV Video Control Mode** (*8).

a. Timed Activation

If an auxiliary contact activation time is programmed (two digits **00-10** followed by **#03**), when either doorbox is activated, the auxiliary contacts will activate for the programmed time (.5 - 10 seconds). This is ideal for operating a doorbell or chime.

b. Continuous Activation

If the auxiliary contact is programmed to continuously activate (**11** followed by **#03**), while either doorbox is ringing or in use, the auxiliary contacts will latch. This is ideal for controlling lights, etc.

c. Ring Cadence Activation

If the auxiliary contact is programmed to custom ring cadence ("**12 #03**") when doorbox 1 is activated, a repeating 1 second on and 3 seconds off contact pattern is generated. If doorbox 2 is activated, a repeating double burst contact pattern is generated with 3 seconds off between patterns. **Note:** Ring cadence activation is not compatible with the Analog PABX/KSU Station mode.

B. Doorbox Triggered CCTV Camera Switching / CCTV Video Control Mode (* 8)

The **C-1000B** allows two CCTV video cameras to be concentrated down to one video signal, by switching to the camera at the zone/entry point being used. When the **C-1000B** detects doorbox ringing or when a doorbox is monitored it will connect that camera's video feed to the video output. This happens in a first come, first serve manner. When both doorboxes are inactive (idle) the **C-1000B** can be programmed to do one of four operations (See **Programming**, Section **B**, Page **6**):

1. Disconnect all cameras so there is no video output. This mode is very convenient when used in combination with a switching video RF modulator (Radio Shack part # 15-1214 or equivalent), which automatically switches the video source in when a video signal is present. A home TV's broadcast/satellite program will be automatically interrupted to show video feed of the arriving guest (see **Installation** section **A**).
2. Connect video feed from camera 1.
3. Remain connected to the camera near the last doorbox activated and continue feeding video, until the other doorbox is activated.
4. Sequence video from both cameras, rotating every 4 seconds.

Note: The CCTV Video Control Mode (*8) is disabled when using the Auxiliary Contact Mode (*7).

Product Support Line...715.386.8666

Fax Back Line...715.386.4345

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