

Telecommunication Peripheral Products

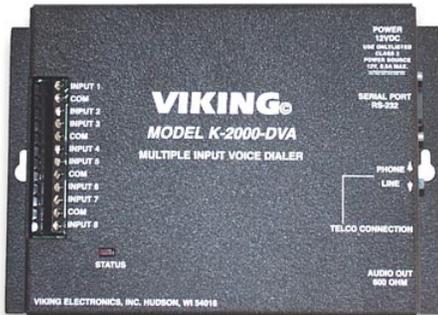
## Technical Practice

**K-2000-DVA**

Multi-Input Voice  
Dialer/Announcer

May 22, 2000

### Voice Alarm Dialing or Store Caster Announcements from up to Eight Inputs



Viking's **K-2000-DVA** is a fully programmable multi-input, multi-number auto dialer and digital announcer, designed for emergency and non-emergency message notification. The **K-2000-DVA** has eight dry contact inputs which when tripped will sequentially dial up to 8 different phone numbers and play a recorded message corresponding to the input tripped.

The **K-2000-DVA** can store up to seven 16 digit phone numbers and one 32 digit phone number (for use with pagers) per input for a total of up to 64 different numbers. This unit is capable of local or remote recording of up to 8 different messages (one message per input), with a total recording time of one minute.

The **K-2000-DVA** can also be configured as a store caster (no dialing), for on-site promotional or assistance announcements.

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### Features

- Non-volatile memory (no batteries required)
- Stores up to (7) 16-digit numbers and (1) 32 digit phone number per input (64 total)
- 60 total seconds of record time
- Programmable message repeat counter
- Programmable lap counter for dialing groups of phone numbers
- Eight programmable normally open/closed inputs
- Programmable ring delay for remote programming and alarm polling
- Pager compatible
- Remote security and access codes
- Programmable store caster mode
- CPC break detection
- Local or remote programming and recording
- RS-232 port for programming via a P.C.
- Compatible with the **RC-2A** and **RC-3** remote DTMF controllers

### Applications

#### Alarm Dialer

- Security/burglar/fire alarm notification
- System alarm or equipment malfunction notification
- Environmental warning notification
- Automatic telephone messaging paging

#### Store Caster

- Provide assistance or promotional announcements in department stores, grocery stores, hardware stores, gas stations, etc. "Customer assistance needed in aisle 13..."

### Specifications

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

**Dimensions:** 187mm x 127mm x 45mm (7.37" x 5.0" x 1.75")

**Shipping Weight:** .68 Kg (1.5 lbs)

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

**Talk Battery:** 13V DC

**Touch Tone Dialing:** 120 ms on/off

**CPC Detection Time:** 320 ms minimum

**Message Record Time:** 60 seconds

**Sampling Rate:** 64 K (equivalent)

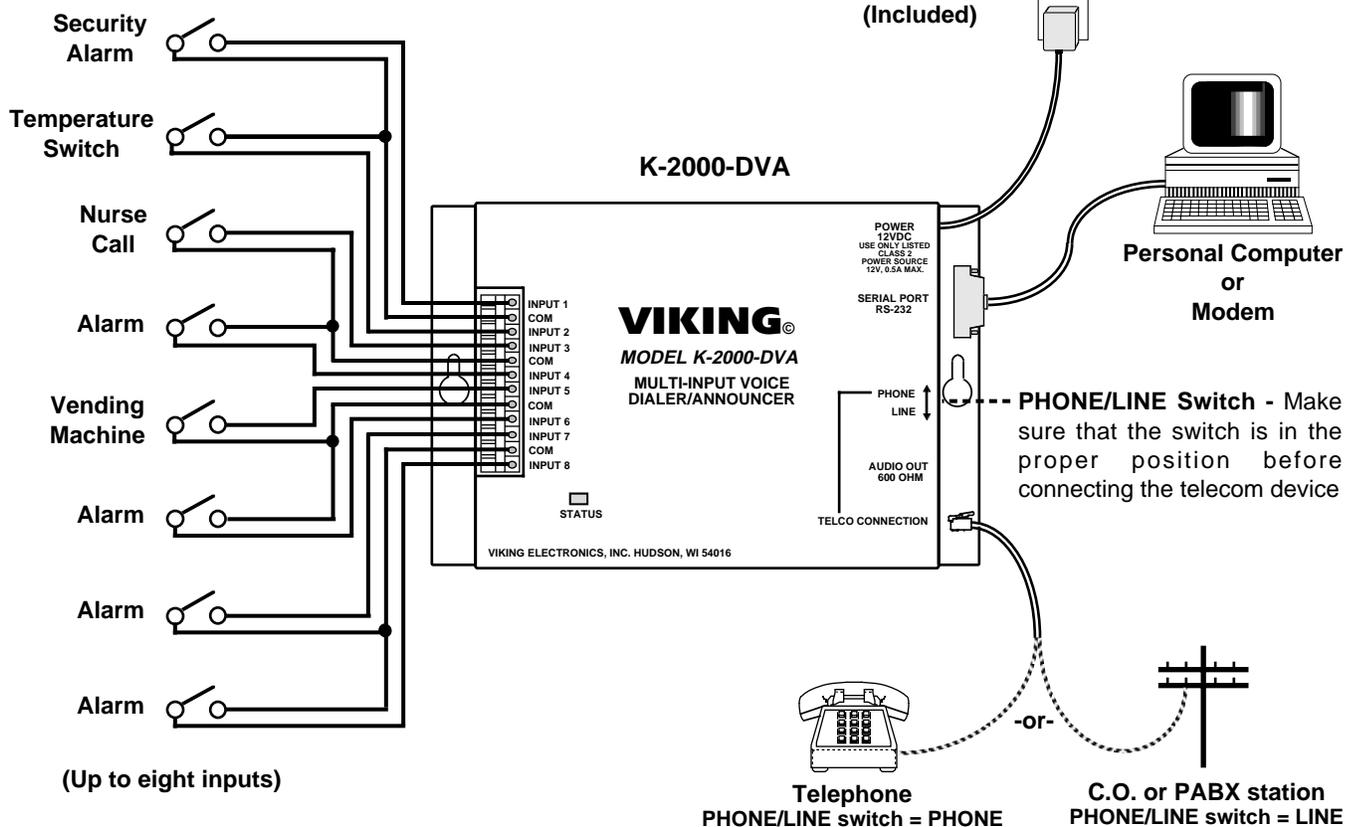
**Momentary Trigger Input:** 100 ms minimum normally open/normally closed

**Connections:** (2) RJ11 jacks for 600-ohm audio output and telephone line/phone, (1) 9 pin RS-232, (1) 12 position screw terminal block for dry contact trigger inputs

# Installation

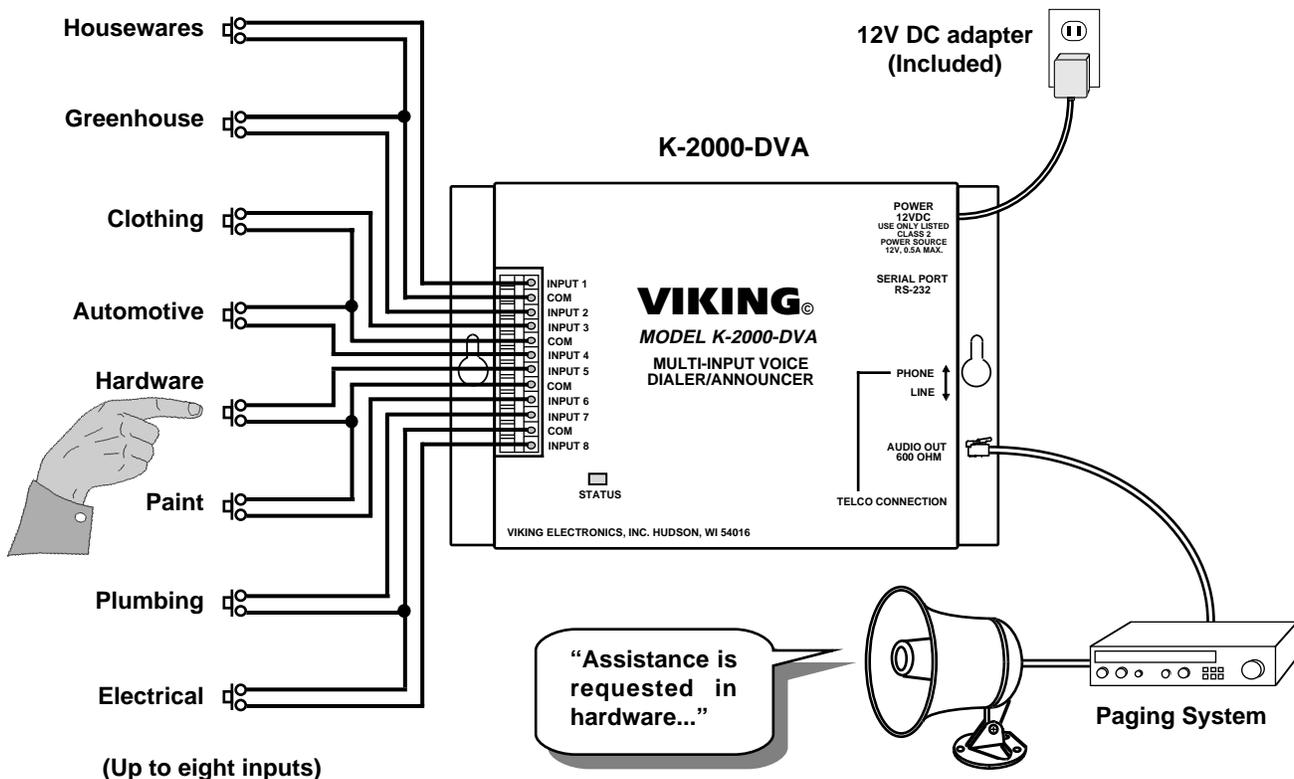
## A. Alarm Dialer

Examples:



## B. Store Caster

Examples:



# Touch Tone Programming

## A. Definitions

**Access Code:** A six digit code required for polling the **K-2000-DVA** for inputs that were triggered

**Input Trigger:** An input which when defined as normally closed or open and either momentary or continuous closures, causes the **K-2000-DVA** to start dialing and/or playing messages. Inputs are considered triggered if their contacts are closed/opened for at least 100ms. **Note:** *Once reset, the inputs must remain idle for 6 seconds before they can be re-triggered.*

**Lap Counter:** A counter used for determining the number of times all phone numbers assigned to an input should be dialed (programmable from 01 - 99) .

**Message:** One of eight user recorded announcements associated with each of eight contact inputs (maximum combined record time is 60 seconds).

**Message Repeat Count:** The number of times a message is repeated per call (programmable from 01 - 99).

**Pager Number:** A number up to 32 digits long which can be used to dial pagers (no message is played) and can be assigned to be the first or last phone number dialed.

**Ring Delay:** The number of rings the **K-2000-DVA** waits before answering an inbound call.

**Security Code:** A programmable six digit code required for entering programming.

**Status LED:** The Status LED provides a visual indication of operation. The LED is normally "on" and will turn "off" momentarily with Touch Tones dialed. The LED will remain "off" after answering, during programming or while programming via a P.C..

**Store Caster:** A mode where the **K-2000-DVA** plays messages only (no dialing).

### Factory Default Settings:

Security code default = 845464 (V-I-K-I-N-G)

Access code default = 123456

Ring delay default = 1

Dialer Mode default = Enabled

Store Caster Mode default = Disabled

Lap counter default = 1

Message Repeat Count default = 1

Pager Number default = No

Contact Input default = Momentary Closure

Phone Numbers = Unprogrammed

Pager Number Order default = First

## B. Entering the Programming Mode

### 1. Local

1. Move the **PHONE/LINE** switch on the **K-2000-DVA** to the **PHONE** position (see **Installation** section **A.**) and plug a phone into the **TELCO CONNECTION** port.
2. After taking the phone off hook, wait for two beeps.
3. Enter programming by entering a **\*** and the six digit security code (factory default is 845464); two beeps should be heard.

**Notes:** *The security code must be entered within 20 seconds otherwise the **K-2000-DVA** will time out and attempt to hang up. Once in programming, if 20 seconds elapse without Touch Tones being entered, the **K-2000-DVA** will automatically exit programming and attempt to hang up.*

4. Program as shown in **Programming** sections **C. - H.**
5. To manually exit programming, hang-up.

### 2. Remote

1. Move the **PHONE/LINE** switch on the **K-2000-DVA** to the **LINE** position (see **Installation** section **A.**) and attach a C.O. line or analog PABX/KSU extension to the **TELCO CONNECTION** port.
2. Call into the **K-2000-DVA** on that line. The unit will answer after the set ring delay (see **Programming** section **E.**).

**Note:** *For security purposes, the **K-2000-DVA** does not provide any feedback after it has answered.*

3. Enter programming by entering a **\*** and the six digit security code (factory default is 845464); two beeps should be heard.

**Note:** *The security code must be entered within 20 seconds otherwise the **K-2000-DVA** will time out and hang up. Once in programming, if 20 seconds elapse without Touch Tones being entered, the **K-2000-DVA** will automatically exit programming and hang up.*

4. Program as shown in **Programming** sections **C. - H.**
5. To manually exit programming, hang-up.

### C. Programming the Security Code

**Important:** Do NOT set the **security** and **access** codes the same.

1. Enter programming (see section B).
2. Enter a six digit security code (digits **0-9**) followed by **#91**. Two beeps indicate that the security code has been accepted. Three beeps indicate that an error has been made.

### D. Programming the Access Code

**Important:** Do NOT set the **security** and **access** codes the same.

1. Enter programming (see section B).
2. Enter a six digit access code (digits **0-9**) followed by **#92**. Two beeps indicate that the security code has been accepted. Three beeps indicate that an error has been made.

### E. Programming the Ring Delay, Lap Counter and Store Casting or Dialer Function

1. Enter programming (see section B).
2. Enter a single digit (**1-9**) for the ring delay [**D**]. -----
3. Enter a single digit, (**0**) for dialer mode or (**1**) for store caster [**M**]. -----
4. Enter two digits (**01-99**) for the lap counter [**LC**]. -----
5. Enter **#93**. -----
6. Two beeps indicate that the parameters have been accepted. Three beeps indicate that an error has been made.

**D M LC #93**

**Note:** If store casting is enabled, all phone numbers programmed and the lap counter are ignored.

### F. Entering Phone Numbers

Up to eight phone numbers are allowed per input. The first phone number is capable of holding 32 digits and the last seven are capable of holding 16 digits. Each phone number can contain digits **0-9**, **\***, **#**, or four second pauses.

**Note:** There is a priority scheme involved when acting on triggered inputs. Input 1 is the highest priority and input 8 is the lowest priority. When pending triggered inputs or simultaneous triggered inputs occur, the **K-2000-DVA** always looks for the next trigger to act on starting from input 1.

1. Enter programming (see section B).
2. Enter the digits (or pauses) and a **# + XY** (**X** = input contact # 1-8 and **Y** = phone number memory position 1-8). Two beeps indicate that the parameters have been accepted, three beeps indicate that an error has been made.
3. Programming examples for entering phone numbers:

Programming the K-2000-DVA to...	Enter Digits
1. ...dial 555-1212 (for input 1, dialing position 3)	<b>5551212 #13</b>
2. ...dial pager number 555-5555, pause, 1234567890 (for input 2, dialing position 1)	<b>5555555 *7 1234567890 #21</b>

- a. To program a single **\***, enter a **\* \***.
- b. To program a **#**, enter a **\* #**.
- c. To program a four second pause, enter a **\* 7**.

**Note:** The double digit codes (**\* \*** etc.) occupy only **ONE** memory digit position.

### G. Programming the Input Specific Parameters

There are five programmable parameters per input. Each parameter consists of 6 digits and a two digit location.

1. Enter programming (see section B).
2. Enter two digits (**01-99**) for the Message Repeat count [**MR**]. -----
3. Enter a single digit, (**1**) if the first phone number is a Pager number or (**0**) if it is not [**P**]. -----
4. Enter a single digit, (**0**) to dial the pager number First or (**1**) to dial the pager number last [**F**]. -----
5. Enter a single digit, (**0**) if the Contact input is normally open, or (**1**) if the input is normally closed [**C**]. -----
6. Enter a single digit, (**0**) if the contact input Trigger is disabled, (**1**) if the input trigger requires a momentary closure or (**2**) if the input trigger requires a continuous closure [**T**]. -----
7. Enter a **#, X, 9** (**X** = input contact # 1-8). -----

**MR P F C T #X9**

8. Two beeps indicate that the parameters have been accepted, three beeps indicate that an error has been made.
9. Programming examples for input specific parameters:

Programming the K-2000-DVA to...	Enter Digits
1. ...play the message twice, using a pager number, dialing the pager number first, using a normally closed input, with a momentary trigger, on input 2.	<b>021011 # 29</b>
2. ...play the message 34 times, no pager number, dialing the number first, using a normally closed input, with a continuous trigger, on input 1.	<b>340012 #19</b>

## H. Recording Messages

Eight messages or brief moments of silence must be recorded corresponding to one of the eight inputs. When an input is triggered, only the corresponding message will be played. When recording messages, each input must have a recording. For example, if only the seventh input is used, you must make six recordings before input seven's recording can be made. If an announcement is not required, record a one or two second moment of silence. The maximum record time for all messages is 60 seconds.

1. Enter programming (see section B).
2. To start the first recording, enter **★ 1**. One beep should be heard, indicating you may begin speaking into the handset. **Note:** *You must always start with the first recording.*
3. To stop recording, enter any Touch Tone and the recording will be saved (minus the Touch Tone entered).
4. To make recordings 2-8, enter **★ 2**. One beep should be heard and the recording can be made. To stop recording repeat step 3.
5. When recording is complete, enter **★ 3**, and the messages will be played back beginning with the first recording. To stop playback simply enter any Touch Tone.

**Note:** *After entering ★ 3, additional recordings may not be made using ★2. Any modifications or additions will require re-recording of all messages (see step 2).*

## I. Programming Features Quick Reference

	Enter digits	Memory Position
Accessing programming .....	<b>★</b>	<b>+ Security Code</b>
Programming the security code (factory set to 845464) .....	6 digits ( <b>0 - 9</b> )	<b>+ #91</b>
Programming the access code (factory set to 123456) .....	6 digits ( <b>0 - 9</b> )	<b>+ #92</b>
To add a <b>★</b> at any point in the dialing string .....	<b>★★</b>	
To add a <b>#</b> at any point in the dialing string .....	<b>★#</b>	
To add a 4 second pause at any point in the dialing string .....	<b>★7</b>	
Ring Delay [1 digit (1-9) = <b>D</b> ], Mode [ <b>M</b> 0 = dialer, 1 = store caster]		
Lap Counter [2 digits (01-99) = <b>LC</b> ] .....	<b>D+M+LC</b>	<b>+ #93</b>
** Programming the 32 digit phone number .....	1 - 32 digits	<b>+ #XY</b>
** Programming the 16 digit phone number .....	1 - 16 digits	<b>+ #XY</b>
** Message Repeat Count [2 digits (01-99) = <b>MR</b> ], Pager [ <b>P</b> , 1=yes, 0=no], Pager First [ <b>F</b> , 0=first, 1= last], Contact Input [ <b>C</b> , 0=N/O 1=N/C], Trigger Input [ <b>T</b> , 0=Disabled, 1=Momentary Closure, 2=Continuous Closure] .....	<b>MR+P+F+C+T</b>	<b>+ #X9</b>
To start recording for message 1 .....	<b>★1</b>	
To make additional recordings for messages 2 - 8 .....	<b>★2</b>	
To playback all recordings .....	<b>★3</b>	
To stop recording or playback .....	<b>Any Touch Tone</b>	

\*\* **X** = input contact number 1 - 8, **Y** = phone number memory position 1 - 8.

**Note:** See **Programming**, sections **A - H** for complete descriptions.

# P.C. Programming

**Important:** *Viking Electronics will NOT support computer software or hardware problems. If you experience these problems, research your hardware/software instruction manuals or contact the manufacturer's technical support department.*

As an alternative method for programming the **K-2000-DVA**, Viking has provided several methods of programming via your P.C. All of these require the use of the 9-pin serial communications port on the **K-2000-DVA**. Using a P.C. and a serial cable, all parameters may be easily programmed, with the exception of the voice recordings. For more information, retrieve **Fax Back Document 843**.

### A. Windows 9x Software

Viking has released, at no charge, programming software for Windows 9x. After being properly installed, the software will provide complete programmability of the **K-2000-DVA**, both locally or remotely. The software is available only via download from Viking's web site: <http://www.vikingelectronics.com>. Click on "**Software Downloads**" and select **K-2000-DVA**. Complete installation and programming instructions are also available.

### B. Serial Communication Software

The **K-2000-DVA** may be programmed through any P.C. with standard serial communication software (such as Terminal or HyperTerminal) using a standard ASCII text file. A sample ASCII text file form and programming environment files are available only from Viking's web site: <http://www.vikingelectronics.com>. Click on "**Software Downloads**" and select **K-2000-DVA**. Complete installation and programming instructions are also available.

## Operation

### A. A Multi-Input Voice Dialer

When one of the eight dry contact inputs has been triggered for at least 100ms, the **K-2000-DVA** will begin dialing the first phone number associated with that input. Three seconds after dialing a phone number, the **K-2000-DVA** will begin repeating the recorded message associated with the tripped input. The **K-2000-DVA** will repeat the message for the programmed repeat count.

Once the message repeat count has been met, the **K-2000-DVA** will provide a single "beep" tone to indicate that the last current message has been delivered. The **K-2000-DVA** will then pause for five seconds to allow the called party a final opportunity to exercise one of the following four options:

Touch Tone	Result
1	Stops the current message and plays all messages associated with all tripped inputs in order, from first to last.
2	Stops the current message and plays the next message, if applicable.
3	Stops the current message, hangs up and continues dialing if applicable.
9	Stops the current message and resets the tripped input.

If no one answers a call initiated by the **K-2000-DVA**, it will continue to cycle through all the phone numbers assigned to the triggered input until the programmable lap counter is exceeded.

The **K-2000-DVA** can also be called into and polled for any past or current triggered inputs. Simply call the phone line connected to the **K-2000-DVA**, and it will answer after the programmed ring delay. Enter a "★" followed by the six digit "Access Code" (see **Programming** section **D.**); two beeps should be heard and the unit can be polled for information as described in the chart above.

Note that if a Touch Tone "★" is entered while connected to the call, the **K-2000-DVA** will exit its current mode, and if no Touch Tones are entered within 20 seconds, it will hang up and proceed. This 20 second wait is important, so that an **RC-2A** or **RC-3** can be used in conjunction with the **K-2000-DVA**. For further information, see the individual technical practices for the **RC-2A** and **RC-3** and the application note using the **RC-2A** or **RC-3** with the **K-2000-DVA** (**Fax Back Document 830**).

### B. Store Caster

If configured as a store caster (see **Programming**, section **E**), the **K-2000-DVA** will not attempt to dial, but instead only play the message corresponding to the tripped input. In this mode, the 600 ohm audio output can be tied into a paging system for playing promotional or assistance announcements. Only the message repeat counter is in effect for this mode of operation; the lap counter is ignored.

In this mode, any input trigger will cause the **K-2000-DVA** to begin playing the message assigned to the triggered input for the assigned repeat count.

**Product Support Line...(715) 386-8666**

**Fax Back Line...(715) 386-4345**

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