Vandal Resistant Entry Phones with Built-In Keypad and 125KHz Proximity Card Reader

The K-1770-3 Series entry phones provide a tough and attractive handsfree phone for commercial, apartment, and residential door entry or applications requiring a vandal resistant speaker phone with built-in 125 KHz Proximity Card Reader. The card reader outputs industry standard 26-bit Wiegand data, allowing it to be used with a Viking ES-1 door controller or any controller compatible with 26-bit Wiegand format. The K-1770-3 Series entry phones are available in two attractive finishes: “brushed stainless steel” and “oil rubbed bronze.”

When the “Call” button is pressed, the K-1770-3 returns dial tone. The keypad may then be used to dial any number. If no Touch Tone is entered within 8 seconds, CPC is detected, a busy signal is detected, or the programmable maximum call time has elapsed, the K-1770-3 will automatically disconnect. Alternatively, the K-1770-3 may be disconnected by pressing the “Call” button again. The K-1770-3 comes complete with a standard, flush mount, rough-in box. In addition, an optional VE-6x7 weather resistant, surface mount box is available (see DOD 424).

Features

- Built-in 125KHz 26-bit Wiegand proximity card reader with LED, beep card read confirmation, and EWP board protection
- Compatible with the following Viking Proximity Cards and Fobs: PRX-C, PRX-C-ISO and PRX-FOB (DOD 198)
- Vandal Resistant Features: 14 gauge louvered 316 stainless steel faceplate with permanent laser etched graphics, stainless steel “Call” button, heavy duty metal keypad and T-10 Torx security mounting screws, scratch resistant powder coating (K-1770-3-BN)
- K-1770-3-EWP is designed to meet IP66 Ingress Protection Rating (see DOD 859 for more information)
- Available in 2 standard faceplate finishes: 316 brushed stainless steel or oil rubbed bronze powder paint
- Blue “in use” LED
- Telephone line powered
- Volume adjustments for microphone and speaker
- Advanced call progress detection: disconnects on busy signal, return to dial tone, CPC, reorder tone, maximum call time out and 40 second silence time out
- Selectable auto-answer feature for monitoring
- Selectable push button disconnect
- Zinc plated steel rough-in box with (2) 3/4” conduit knockouts
- Optional VE-6x7 Surface Mount Box available (DOD 424)
- Optional VE-LIGHT to illuminate the front panel at night (DOD 428)

Applications

- Apartment entry phone when used with the K-1900-3 Apartment Entry Dialer or C-4000 Apartment/Office Entry Controller or C-3000 Apartment Entry Controller
- Use with a Viking C-500 to control 1 or 2 (expandable to 8) (DOD 177)
- Use with a Viking C-2000B to control 1 or 2 (expandable to 8) (DOD 177)’s and door/gate control on a single phone line
- Use with a Viking C-2000B to control 1 or 4 K-1770’s and door/gate control on a single phone line (DOD 156)
- Courtesy and customer assistance phone
- Automated teller (ATM) phone
- Use with a Viking ES-1 for proximity card reader door control
- Provide unique front and back door chimes and paging when use with a Viking SLP-1 or SLP-4 and C-2000B
- Kiosk phone with (100 number speed dialing) when used with the K-1900-9 Multi-Number Dialer (DOD 321)
- Use with Viking’s Proximity Cards: PRX-C, PRX-C-ISO, PRX-FOB (DOD 198)

Specifications

Entry Phone Power: Telephone line powered 20V DC/20mA minimum
Proximity Card Reader Power: 5 to 14V DC @ 60mA maximum
Dimensions: Overall: 5.5” x 6.5” x 2.6” (140mm x 165mm x 66mm), Rough-in box: 4.5” x 5.5” x 2.5” (114mm x 140mm x 64mm)
Shipping Weight: 3.5 lbs (1.6 kg)
Environmental: -30°F to 150°F (-34°C to 65°C)
Humidity - K-1770-3: 5% to 95% non-condensing
Humidity - K-1770-3-EWP: Up to 100% condensing
Speaker Volume: Approximately 70 db maximum @1m
CPC Disconnect Time: 500ms minimum
REN #: 0.5 A
Connections: Gel-filled tip and ring connectors
**Proximity Card Reader Specifications**

**Power:** 5 to 14V DC @ 60mA maximum  
**Maximum Cable Length:** 500 ft 24 Awg stranded shielded (Belden 9537)  
**Frequency:** 125KHz  
**Format:** 26 bit Wiegand  
**Read Range:** 1.25" to 2.0”  
**Technologies Supported:** Viking PRX-C, PRX-C-ISO, PRX-FOB, certain legacy HID® proximity protocols* and certain AWID 125KHz proximity protocols**

**Transducer:** Beeps during card read  
**LED:** Red, turns off during card read  
**Humidity:** Up to 100% (fully potted EWP)  
**Operating Temperature:** -34° C to 65° C (-30° F to 150° F)  

* HID and the HID logo are registered trademarks of HID Global Corporation, an ASSA ABLOY company. All other trademarks are the property of their respective owners.  
** AWID is a trademark of Applied Wireless Identification Group.

### Features Overview

- **Mounting Screws:** (4) 6-32 X 3/4” Marine grade 316 stainless steel, flat head, T-10 Torx security screws and drive bit (included)
- **Faceplate Material:** 14 gauge 316 stainless steel. The SS model has a #4 brushed finish, the BN models have a powder painted finish.
- **Blue Call LED:** Flashes during dialing, then lights steady when answered.
- **Push Button Switch:** Push to initiate call, push again to disconnect. Solid 316 stainless steel internally sealed per IP67.
- **Laser Etched Graphics:** For long lasting easy to read graphics. (copper metallic lettering on model K-1770-BN-3)
- **Speaker:** Mylar speaker with rubber gasket to maintain water-tight seal and eliminate water deterioration.
- **Speaker Screen:** Speaker screen with 0.018” diameter holes to prevent punctures from paperclips, etc.
- **Faceplate Material:** 14 gauge 316 stainless steel. The SS model has a #4 brushed finish, the BN models have a powder painted finish.
- **Microphone:** Omni-directional microphone with protective water-resistant cloth.
- **Proximity Card Reader:** 26-bit Wiegand, 125KHz, red LED turns off and transducer will beep during card read. Fully potted EWP. Read range 1.25” to 2.0”. Impact resistant polycarbonate lens with water-tight gasket.
- **Condensation Drain Hole**

### Installation

**A. Mounting**

Peel paper liner and adhere gasket to back of panel, centering over mounting holes. **Caution:** For rough surfaces (ie: brick, stucco, etc.) additional caulking may be required.

- **Mounting Screws:** (4) 6-32 X 3/4” Stainless steel, flat head, T-10 Torx security screws (included)
- **3/4” Conduit Knockouts**
- **3.25” Condensation Drain Hole**
- **Optional VE-6x7 Surface Mount Box:** (not included)  
  - (4) 0.38” diameter  
  - (2) 0.2 x 0.43 slots  
- **Optional VE-6x7 Surface Mount Box:** (not included)  
  - (1) .74” diameter
- **K-1705-3-EWP shown with VE-6x7 Surface Mount Box and VE-GNP Gooseneck Pedestal** (not included)

The optional VE-6x7 Surface Mount Box (above) is designed to be surface mounted to a single gang box, double gang box, or VE-GNP Gooseneck Pedestal (shown right). For more information on the VE-6x7 and VE-GNP, see DOD 424.
B. Wiring the K-1770-3 Phone

* Note: When installing a line powered phone on a low voltage and/or low loop current phone system extension, a TBB-1B Talk Battery Booster may be required (DOD 632).

*** Note: To increase surge protection, loosen the PCB mounting screw labeled (shown right) and fasten a wire with spade terminal (included) from the mounting screw to Earth Ground (grounding rod, water pipe, etc.)

To Optional Viking Entry Controllers (not included)

<table>
<thead>
<tr>
<th>Model</th>
<th>DOD#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-500</td>
<td>177</td>
<td>Advanced 2 Door Controller (see page 5)</td>
</tr>
<tr>
<td>C-2000B</td>
<td>156</td>
<td>Advanced 4 Door/Gate Controller (see page 6)</td>
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<tr>
<td>C-3000</td>
<td>162</td>
<td>Multi-Tenant Entry System (see page 7)</td>
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<td>C-4000</td>
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<tr>
<td>K-1900-3</td>
<td>312</td>
<td>Apartment Entry Dialer (see page 6)</td>
</tr>
</tbody>
</table>

** Note: The gel-filled (water-tight) butt connectors are designed for insulation displacement on 19-26 gauge wire with a maximum insulation of 0.082 inches. Cut off stripped wire ends prior to terminating.

C. Wiring the K-1770-3 Proximity Card Reader

** 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.
A. DIP Switches

<table>
<thead>
<tr>
<th>Switch 1</th>
<th>Switch 2</th>
<th>Maximum Call Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>Disabled (default)</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>1 Minute</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>3 Minutes</td>
</tr>
<tr>
<td>ON</td>
<td>ON</td>
<td>9 Minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch 3</th>
<th>Disconnect on Dial Tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Off</td>
</tr>
<tr>
<td>ON</td>
<td>On (default)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch 4</th>
<th>VOX Switching Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Fast, 0.2 sec. (default)</td>
</tr>
<tr>
<td>ON</td>
<td>Slow, 0.7 seconds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch 5</th>
<th>Switch 6</th>
<th>Audio Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>ON</td>
<td>Normal audio detection</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>Increase audio detect sensitivity for low level lines. Useful in applications in which voice or busy signals have trouble breaking over the speaker.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch 7</th>
<th>Auto Answer Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Automatic answer disabled</td>
</tr>
<tr>
<td>ON</td>
<td>Automatic Answer enabled (default)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch 8</th>
<th>Push Button Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Connects calls only</td>
</tr>
<tr>
<td>ON</td>
<td>Connects/disconnects calls (default)</td>
</tr>
</tbody>
</table>

B. Volume Adjustments

1. Microphone
   Certain noisy locations (background traffic, machinery or wind) may cause one way talk path (only microphone audio is heard). In this case, the microphone volume may need to be decreased as shown.

2. Speaker
   To increase, decrease or turn off the speaker (for monitoring purposes only), adjust the speaker volume control as shown.

C. Auto-Answer Feature (DIP Switch 7)

With DIP switch 7 in the “ON” position (default), the K-1700-3 will automatically answer the line during the first incoming ring. This feature is useful for monitoring entrances. In the “OFF” position, the K-1770-3 will not automatically answer incoming calls.

D. Push Button Hang Up (DIP Switch 8)

With DIP switch 8 in the “ON” position (default), the “Call” button alternately connects and disconnects calls. In the “OFF” position, the “Call” button is only used to connect and the K-1770-3 must rely on call progress (busy, return to dial tone, silence time-out, or maximum call time) for an automatic disconnect.

E. VOX (Talk/Listen) Switching Speed (DIP Switch 4)

With DIP switch 4 in the “OFF” position (default), the VOX switching speed (delay time between talk and listen mode) is set to fast (0.2 seconds). In the “ON” position, it is set to slow (0.7 seconds).

F. Advanced Call Progress Detection

The K-1770-3 will output 3 beeps and automatically hang-up after detecting any of the following: busy signal (standard or fast/reorder), CPC (short break in line current when called party hangs up), return to dial tone, maximum call time or silence time out.
A. C-500 Advanced Two Door/Gate Entry Phone Controller with Call Forwarding

The C-500 allows up to 2 entry phones (expandable to 8 entry phones, see DOD 177) to call into your existing residential or business phones or phone system. Tenants may answer the call, converse with the visitor and activate a contact closure to control electronic gates or door strikes. The C-500 provides user programmable entry phone, “Caller ID,” and “Call Waiting” tone when the phone line is in use. The C-500 also has built in five number dialer to call your cell phone or an outside line if there is no answer on the inside phone. If the outside call is busy or ring no answer, the C-500 can call up to four more numbers. Tenants may gain entry at each gate by entering a Touch Tone keyless entry code. Tenants may call out to each entry phone for monitoring purposes. An auxiliary input is also available for connecting a common garage door opener/receiver and auxiliary keyless entry keypads.

Operation

When the push button is pressed, the K-1770-3 phone goes off-hook, much like a standard speaker phone. The keypad may then be used to dial any number. In the event that the line is busy, the K-1770-3 will hang-up. The K-1770-3 will also automatically hang up on CPC, silence, busy signal, return to dial tone or time out. If programmed to auto-answer (DIP switch 7 ON), the K-1770-3 will also answer any incoming call.

Applications
B. K-1900-3 Apartment/Office Entry Dialer

The K-1900-3 converts any Touch Tone phone into a multi-number auto dialer that will store up to 250 telephone numbers in non-volatile memory. Use with Viking’s K-1770-3 phone to provide vandal resistant handsfree or handset communication. When a call initiated by the K-1900-3 is answered by an apartment or business tenant, a built-in contact closure may be activated to control an electric gate or door strike. Up to 250 keyless entry codes may also be programmed, providing tenants with keyless entry. The K-1900-3 can be programmed locally or remotely using a standard Touch Tone phone. The K-1900-3 has built-in user dialing restriction to help prevent unauthorized calls and toll fraud.

Model K-1900-3 (not included)

For more information on the K-1900-3, see DOD 312.

C. C-2000B Advanced Door/Gate and Entry Phone Controller

The C-2000B allows up to 4 entry phones to call into your existing residential or business phones or phone system. Tenants may answer the call, converse with the visitor and activate a contact closure to control electronic gates or door strikes. The C-2000B provides “Caller ID,” “Call Waiting ID” and “Call Waiting” tone when the phone line is in use. Tenants may gain entry at each gate by entering a Touch Tone keyless entry code. Tenants may call out to each entry phone for monitoring purposes. An auxiliary input is also available for connecting a common garage door opener/receiver and auxiliary keyless entry keypads.

Model C-2000B (not included)

For more information on the C-2000B, see DOD 156.
D. Provide 4 Door Entry Points with Keyless Entry (or Optional Card Readers) for up to 250 Apartments or Offices

The C-4000 converts any four Touch Tone phones into multi-number auto dialers that will store up to 250 telephone numbers in non-volatile memory. Use with Viking’s K-1770-3 phone to provide vandal resistant handsfree or handset communication from entry points to apartments or offices. When a call initiated by the C-4000 is answered by an apartment or business tenant, a built-in contact closure may be activated to control an electric gate or door strike. Up to 250 entry codes may also be programmed providing tenants with keyless entry or optional 125KHz proximity card readers may be added for proximity card entry. The C-4000 can be programmed locally or remotely using a standard Touch Tone phone. The C-4000 has built-in user dialing restriction to help prevent unauthorized calls and toll fraud.

**Viking D-Series Directory**

(not included, DOD 158)

**Viking D-Series Directory**

(not included, DOD 158)

**Viking D-Series Directory**

(not included, DOD 158)

**Viking D-Series Directory**

(not included, DOD 158)

**Viking D-Series Directory**

(not included, DOD 158)

If some tenants do not have C.O. phone service, the Viking model C-3000 can be added to ring up to 12 tenant’s phones. Up to eight C-3000 units can be cascaded to support a total of 96 “No C.O.” tenants.

**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.

* Note: Maximum Wiegand run length is 1000 feet using 24 gauge wire when using the Viking model PRX-1 proximity card reader, 300 feet for the PRX-2 card reader/keypad, 1000 feet for the PRX-3 (using 3 wire pairs for power), and 2000 feet for the PRX-4 keypad. Run length is reduced to half if two share the same wire run from the same C-4000 entry point. Run lengths can be doubled by doubling up on the BLACK and RED 24 gauge wire, or using 21 gauge (or larger) wire. Certain electrically noisy locations might require shielded wire.
Warranty

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

Our Technical Support Department is available for assistance Monday 8am - 4pm and Tuesday through Friday 8am - 5pm central 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. Packaging: 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 PO 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 products 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 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.

TWO YEAR LIMITED WARRANTY

We warrant this product to be free from defects in the workmanship or materials, under normal use and service, for a period of two years from the date of purchase from any authorized Viking distributor. 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 the product by the purchaser or other. This warranty does not cover non-EWP products that have been exposed to wet or corrosive environments. This warranty does not cover stainless steel surfaces that have not been properly maintained.

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. The digits represented by ## are the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the digits represented by ## are 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 local telephone company.

Remain on the line and clearly 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 its own expense.

Due to the dynamic nature of the product design, the information contained in this document is subject to change without notice. Viking Electronics, its affiliates and/or subsidiaries assume no responsibility for errors and omissions contained in this information. Revisions of this document or new editions of it may be issued to incorporate such changes.

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