125KHz Proximity Card Readers for Door Access, gate Entry and Parking Barriers

The model **PRX-1** is a 125KHz proximity card reader and is designed to be mounted directly to a metal door or window frame (mullions), making it ideal for applications requiring an access credential. The proximity card reader transmits data in 26-Bit Wiegand format, making it compatible with any of the Wiegand equipped Viking entry controllers.

The **PRX-1** delivers non-contact read ranges up to 6 inches (152 mm), and operates from 5 to 14 VDC. Mounting is simplified with horizontal and vertical mounting slots, which allow the reader to be conveniently adjusted and leveled. Concealing the mounting hardware, the **PRX-1** ships with both Black and Ash (Off-White) covers standard.

The **PRX-1** is equipped with Enhanced Weather Protection (EWP) for outdoor installations where the unit is exposed to precipitation or condensation. The **PRX-1** features sealed connections, as well as an epoxy potted circuit board. For more information, see DOD 859.

### Features

- Read range of up to 6 inches
- Standard 26-bit Wiegand interface
- Technologies supported: Viking **PRX-C**, **PRX-C-ISO**, **PRX-FOB**, **LRT-4** certain legacy HID® proximity protocols* and certain AWID 125Khz proximity protocols**
- Compact size allows mounting to mullion, door or window frame
- Designed for outdoor use, the **PRX-1** comes standard with Enhanced Weather Protection (EWP) (see DOD# 859 for more information)
- **PRX-1** is designed to meet IP66 Ingress Protection Rating (see DOD 859)
- Pigtail connection for easy installation
- Red LED indicates power and flashes off during card read
- Transducer provides beep during card read
- CE marked

*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.

### Applications

- Compatible with these Viking products:

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>DOD#</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES-2000</td>
<td>Accessible Entry System</td>
<td>202</td>
</tr>
<tr>
<td>AES-2005</td>
<td>Accessible Video Entry System</td>
<td>204</td>
</tr>
<tr>
<td>C-4000</td>
<td>Apartment/Office Entry Controller</td>
<td>164</td>
</tr>
<tr>
<td>ES-1</td>
<td>Stand Alone Keyless Entry System</td>
<td>193</td>
</tr>
<tr>
<td>PRX-C</td>
<td>Proximity Card</td>
<td>198</td>
</tr>
<tr>
<td>PRX-C-ISO</td>
<td>Thin Proximity Card</td>
<td>198</td>
</tr>
<tr>
<td>PRX-FOB</td>
<td>Proximity Key Fob</td>
<td>198</td>
</tr>
<tr>
<td>LRT-4</td>
<td>Long Range Transmitter with Proximity Module</td>
<td>226</td>
</tr>
</tbody>
</table>

### Specifications

- **Power**: 5-14V DC 45mA - average, 80mA - peak.
- **Dimensions**: 3.2” x 1.7” x 0.7”(80mm x 43mm x 17mm )
- **Shipping Weight**: 1 lb (0.45 kg)
- **Environmental**: -40° F to 150° F(-40° C to 65° C) with 5% to 95% non-condensing humidity
- **Connections**: 18” long pigtail leads, 24 gauge
- **Technologies Supported**: Viking **PRX-C**, **PRX-C-ISO**, **PRX-FOB**, certain legacy HID® proximity protocols* and certain AWID 125Khz proximity protocols**

Information: 715-386-8861
www.VikingElectronics.com
Requirements

Cable Requirements: The PRX-1 can operate at up to *500 feet (152 m) of cable, using seven-conductor, shielded, stranded cable. Per the Security Industry Association’s Wiegand specification, AWG 24 (such as Belden 9537) is the minimum gauge required for data transfer in a 500-foot run length. However, the proper wire gauge to use must be determined by the current draw requirements of the reader, the length of the cable run, and the voltage applied to the reader.

If the reader is to be operated at 5 VDC, 5 VDC must be available at the reader (long cable runs have a voltage drop due to the resistance in the cable). A larger gauge of wire (having less resistance) or a separate power supply near the reader may be required to ensure 5 VDC is available at the reader.

Output Formats:  
- Wiegand (industry standard 26-bit Wiegand)  
- Magnetic Stripe (ABA Track II, clock and data, with card present)

Grounding: Shield (drain) continuity must run from the reader to the access panel. Shield (drain) and reader ground must be tied together at the access panel and connect to an earth ground at one point.

Power: The PRX-1 may be powered by the access panel. As such, the reader is powered on when the access panel is powered on. However the best case is to power the reader by a separate, linear power supply.

Voltage: 5 to 14 VDC  
*Note: For maximum read range, a minimum of 12VDC is recommended.

FleaPower™ Control Line: The PRX-1 can be placed in a special lower power mode by pulling the purple colored fleaPower Control Line low. This special low power mode reduces the average power required by the reader.

*Note: When used with a Viking Entry System/Controller, see the Entry System’s Technical Practice for the maximum wire run length.

Installation

Note 1: Read range is stated in a clean RF and electrical environment using Viking Proximity Cards presented parallel to the reader surface with the reader operating at 12 VDC. Additionally, read range may be affected by local installation conditions. Range will be less when mounted to metal.  
Note 2: Use of a linear power supply is always recommended.  
Note 3: Minimum current draw is obtained by operating the reader in the fleaPower mode at 5 VDC with the LED off. Peak current draw occurs when reading a card or tag.
Wiring

**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.

![Typical Wiegand Connections](image)

**Note:** If powering the reader from its own power supply, the negative lead of the power supply must be connected to the BLACK lead on both the reader and the controller.

Troubleshooting

1. When the reader is powered up a victory beep (4-quick beeps) is heard and the LED stays Red.
2. Present the correct card and the reader will beep once and LED will flash on and off. It is up to the control panel to control dual LED and have the LED turn green when an enrolled card is presented.

If reader does not recognize the card/tag (no beep, no LED flash) or reader has short read range, please see table below for possible causes and solutions.

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect wiring</td>
<td>Verify wiring connection</td>
</tr>
<tr>
<td>Not enough power</td>
<td>12 VDC suggested</td>
</tr>
<tr>
<td>Mounted near electromagnetic interference</td>
<td>Relocate or provide greater separation from</td>
</tr>
<tr>
<td>Incorrect card used</td>
<td>Verify card compatibility from model number</td>
</tr>
<tr>
<td>Reader/access panel not properly grounded</td>
<td>Quality Earth Ground needed. Verify shield line from the access panel to the reader is one continuous, connected line.</td>
</tr>
<tr>
<td>Supply generating electromagnetic interference</td>
<td>Linear power supply recommended</td>
</tr>
</tbody>
</table>

If any of the corrective actions mentioned above don’t work, please disconnect the reader from panel and power it with a separate power supply or 9V battery and test card functionality. By powering it individually and off the installation most variables that can cause malfunction are eliminated. If after the reader is powered by a separate power source the failure persist, please contact Viking Electronics Product Support.
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 PO Box.
4. RA number on carton: In large printing, write the R.A. number on the outside of each carton being returned.
5. Return the equipment to your distributor, referencing the R.A. number. All equipment must be accompanied by a Return Authorization (R.A.) number.
6. Replacement: 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.
7. After obtaining the R.A. number, return the approved equipment to your distributor, referencing the R.A. number. Your distributor will then replace the Viking product using the same R.A. number.
8. If 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.

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. The customer must contact Viking's Technical Support at 715-386-8666 to obtain a Return Authorization (RA) number.
3. Ensure that you have all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.
5. After obtaining the R.A. number, return the approved equipment to your distributor, referencing the R.A. number. Your distributor will then replace the Viking product using the same R.A. number.
6. 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.

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.

Product Support: 715-386-8666

Due to the dynamic nature of the product design, the information contained in this document is subject to change without notice. Viking Electronics, and 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.