

# Farpointe Data Readers

This Installation Guide is intended for experienced installing technicians. It is a basic reference to ensure all connections are properly made. See the appropriate Product Manual for detailed information on installing Pyramid Series or Cobra readers. These documents may be downloaded from the Farpointe Data website: [www.farpointedata.com](http://www.farpointedata.com)<sup>1</sup>.

*NOTE: All Pyramid Series include standard 125-kHz HID proximity compatibility allowing them to read both Pyramid Series and HID proximity cards and tags.*

All Farpointe Data Readers are compliant with the following organizations:



FCC compliance Statement: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:  
(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received, including interference that may cause undesired operation.

Product can be used without license conditions or restrictions in all European Union countries, including Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Luxembourg, The Netherlands, Portugal, Spain, Sweden, and the United Kingdom, as well as other non-EU countries, including Iceland, Norway, and Switzerland.

## 1.0 Cable Requirements

All readers 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.

## 2.0 Output Formats

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

## 3.0 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.

## 4.0 Power

A reader may be powered by the access panel, so 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.

## 5.0 Voltage

- Typically 5 to 14 VDC

<sup>1</sup>Such as models P-300-H, P-400-H, P-403-H, P-405-H, P-410-H or P-453-H, P-455-H, P-500H, P-503-H, P-610-H, P-700-H, P-710-H, P-900-H, EM-30 and EM-50.

# Farpointe Data

## 6.0 Reader Wiring

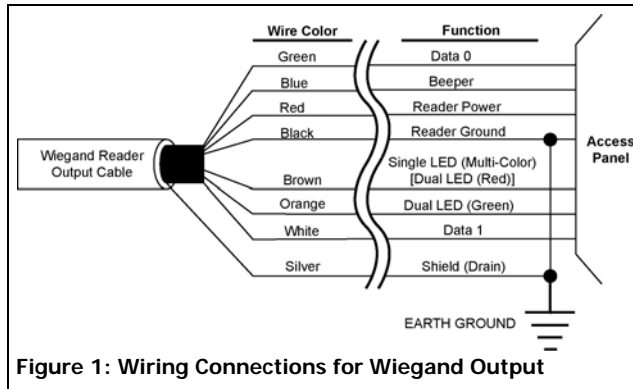


Figure 1: Wiring Connections for Wiegand Output

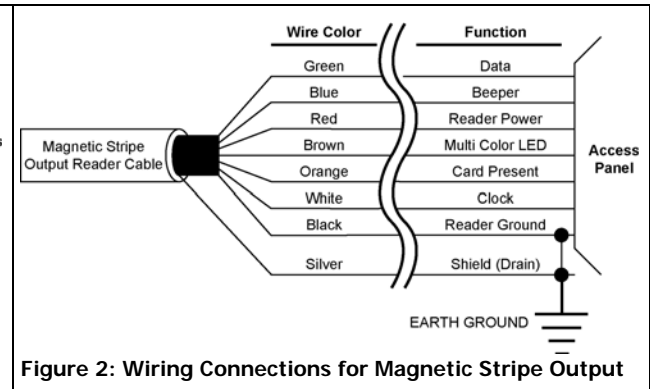


Figure 2: Wiring Connections for Magnetic Stripe Output

## 7.0 Troubleshooting the Reader Installation

Problem	Possible Cause	Corrective Action
The reader does not recognize a card/tag (no beep, no LED flash)	1. One or more of the reader's wiring connections are incorrect	Power down the reader/access panel and verify the wiring connection are correct for the reader/access panel combination.
	2. The reader is not receiving proper power from the access panel	Verify the voltage supplied to the reader is between 5 and 14 VDC. <sup>a</sup>
	3. The reader is mounted too close to a device that radiates electromagnetic interference	Devices such as computer monitors radiate electromagnetic interference that affects read range. When possible, relocate either the reader or the device to provide greater separation between the two.
	4. You are using an incorrect type of card.	Make sure you are using an access card that is compatible with the reader.
The reader has a short read range.	1. The reader/access panel is not properly grounded.	Ensure there is a quality earth ground connection made to the access panel. Refer to the access panel's documentation for information regarding the earth ground connection.
	2. The shield wire for the reader's cable has opened somewhere between the reader and the access panel.	Verify the shield line from the access panel to the reader is one continuous, connected line. Refer to the access panel's documentation and verify the shield line is correctly connected to the access panel.
	3. The reader is mounted too close to a device that radiates electromagnetic interference.	Devices such as computer monitors radiate electromagnetic interference that affects read range. When possible, relocate either the reader or the device to provide greater separation between the two.
	4. The power supply is generating electromagnetic interference	The power supply on the access panel must be a regulated, linear supply. Do not use switching supplies as they are often sources of electromagnetic interference.

a. A supply voltage of 12 VDC at the reader is recommended for best operation.

NOTE: The user is cautioned that making changes not approved by Farpointe Data may void the user's authority to use this equipment.

Products covered by patent number 6,611,198, 6,411,199 and D417,443. Other patents pending may apply.