

# Installation Sheet (Wiegand Interface)

## Sentinel-Prox MR-1824HiLo Reader



### Reader Description

The Sentinel-Prox MR-1824HiLo Reader Set is a pair of medium-range radio-frequency proximity readers with special programming that allows them to work as a set at a single installation site, without interference between the two readers. The readers' firmware coordinates the duty cycles for the two readers. This prevents one reader from transmitting its signal while the other reader is transmitting to, or receiving a reply from, an AWID encoded credential. Reader labels and instructions are special. There is output on the Wiegand data lines only.

### Parts List

(a) Installation sheet .....	1	(d) Plastic anchor .....	8
(b) MR-1824 Reader .....	2	(e) Screw-hole plug.....	10 (2 spare)
(c) #6-20 x 1.375" self-tapping screw .....	8	(f) Cable slot plug.....	4

### Installation Procedure for Each Reader

1. Position the first reader (item b in the Parts List) at the desired location. Observe ADA height requirements. Drill 4 holes for the screws or anchors, and drill 1 clearance hole for the cable (see Figure 1). The installer determines the size of mounting holes and cable clearance hole.
2. Clip off the white inline connector from the end of the reader's cable. Keep the wires as long as possible.
3. Use a **linear regulated** DC power supply, between 5 volts (current rating 800 milliamperes or more) and 12.0 volts **maximum** (current rating 2 amperes or more) for the combined readers. **Do not power** the MR-1824HiLo from the reader port's DC voltage terminals on the panel – use a separate DC power supply. (For guaranteed performance, AWID offers P/N PS-123.3A power module.) **Tie the ground side of all DC circuits together** – including both MR-1824 readers, the panel's reader input port, the separate DC power supply, and the door lock or gate motor contacts.
4. Connect the reader's wires for ground, data-0, data-1, LED and power, and the silver drain wire (see Fig. 2). Connect the *yellow* wire only if used for Beeper control by the panel. Connect the *orange* and *violet* wires to the opposite colors (*violet* and *orange*) on the other reader of the set. Do not connect the *blue* wire. **Tape or cap** the unused wires separately. The MR-1824HiLo set uses a single Wiegand input on the panel.
5. To install the reader's cable through the wall directly behind the reader, insert both cable slot plugs (item f in the Parts List) in the sides of the reader's top cover. To run the cable exiting from the side of the reader, press the cable into the curved channel and guide the cable out of the desired side of the reader. Then insert the cable slot plug in the other side of the top cover. Extend the cable straight away from the reader housing as far as possible.
6. Install the reader on the mounting surface, using screws (item c in the Parts List) and anchors (item d) as necessary.
7. Repeat steps 1 through 6 for the second reader of the MR-1824HiLo set. Readers may be up to 75 ft apart.
8. Apply DC power to both readers. The LED is steady amber. (The beeper does not sound.)
9. Present any AWID proximity credential (card, keytag or wafer) briefly to the reader. The beeper sounds a single *Long* beep. The LED is steady red to indicate Standby mode. The reader is now initialized and can read cards. **Note:** All credentials must be AWID's products. Other companies' cards and tags will not read.
10. The LED color in Standby mode may be changed from red to green, or from green to red, using a *Color Changer* card, available from AWID. Remove power from the reader for a few seconds, and then restore power. While the LED is amber, present the Color Changer card to toggle the LED color at Standby. When the LED color changes, remove the card.
11. When installation is complete and the readers have been tested, insert screw-hole plugs (item e in the Parts List) into the screw clearance holes to conceal the screw heads. Note: Screw-hole plugs are for one-time use. After they are seated, they cannot be removed without damaging the plugs.

## **Product Specifications**

Material of Mounting Surface ... *Non-metallic* material only (Keep readers at least 3 or 4 inches from all metal.)

Note: If a reader must be mounted on a metal surface, use the metal-compensated MR-1824HiLoMC set.

### **Cable to Controller**

- 4 to 6 conductors (not twisted pairs), stranded, 18 AWG, color-coded insulation, overall 100% shielded  
Note: (a) Wire may be 22 gauge for data & control lines *if* DC power is run in a separate shielded 18 gauge cable.  
(b) Number of conductors depends upon use of optional features – LED and Beeper. See Figure 2.
- Length for Wiegand Interface ..... Up to 500 feet

### **Read Range (Typical for AWID's CS-AWID clamshell cards)**

- At 5 VDC ..... About 12 inches (30 cm)
- At 12 VDC ..... 18 to 24 inches (45 to 60 cm)

Note: Read range varies, depending upon the tags used and local conditions.

### **Characteristics**

- Indoor and Outdoor ..... Rated for outdoor installation
- Operating Temperature ..... -35° C to 65° C (-31° F to 150° F)
- Operating Humidity ..... 0 to 95% non-condensing

### **Operating Parameters**

- Current drain for *each* reader in set ..... 250 mA peak at 5 volts ..... 600 mA peak at 12 volts
- Excitation Frequency ..... 125 kHz
- Wiegand Output ..... 26 bits to 50 bits (as programmed in the cards or tags)
- Width of Wiegand data pulses ..... 100 microseconds

Certification and Compliance ..... ISO-9001:2000; FCC Part 15; Industry Canada; UL listed; RoHS

## **Notes**

1. For suggestions on best performance, read AWID's memo "MR-1824 – Assuring Maximum Read Range".
2. When the yellow wire is not used, the beeper remains active and under the reader's internal control.
3. The LED and Beeper lines are logic levels. *Never* apply power to them. They may be pulled to a low level (0 to 1.2 VDC) to enable their function, and left floating at a high level (3.6 to 5.0 VDC) when not used.
4. MR-1824HiLo readers have Wiegand-protocol electrical interface only. (There is no RS-232 interface.)
5. For additional information, please visit AWID's Web site [www.awid.com](http://www.awid.com). For technical support questions, contact [www.awid.com/support](http://www.awid.com/support), or call **1-800-369-5533** in the U.S. or **+1-408-825-1100** from 8:00 a.m. to 5:00 p.m. Pacific Time.

## **Compliance**

**FCC:** This equipment has been tested and found to be in compliance with the limits for FCC part 15, Class A digital device. 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 instruction manual, may cause harmful interference with 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.

The users are prohibited from making any change or modification to this product. Any modification to this product shall void the user's authority to operate under FCC Part 15 Subpart A Section 15.21 regulations.

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.

**Industry Canada:** Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

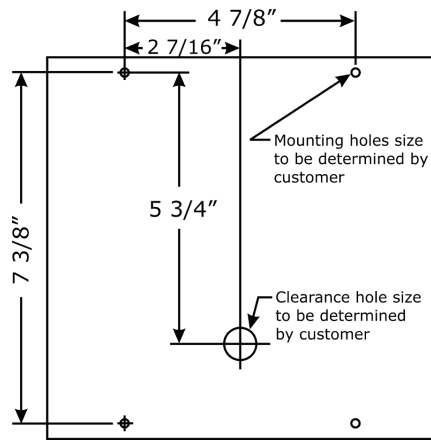


FIGURE 1: Holes Location

## READER A

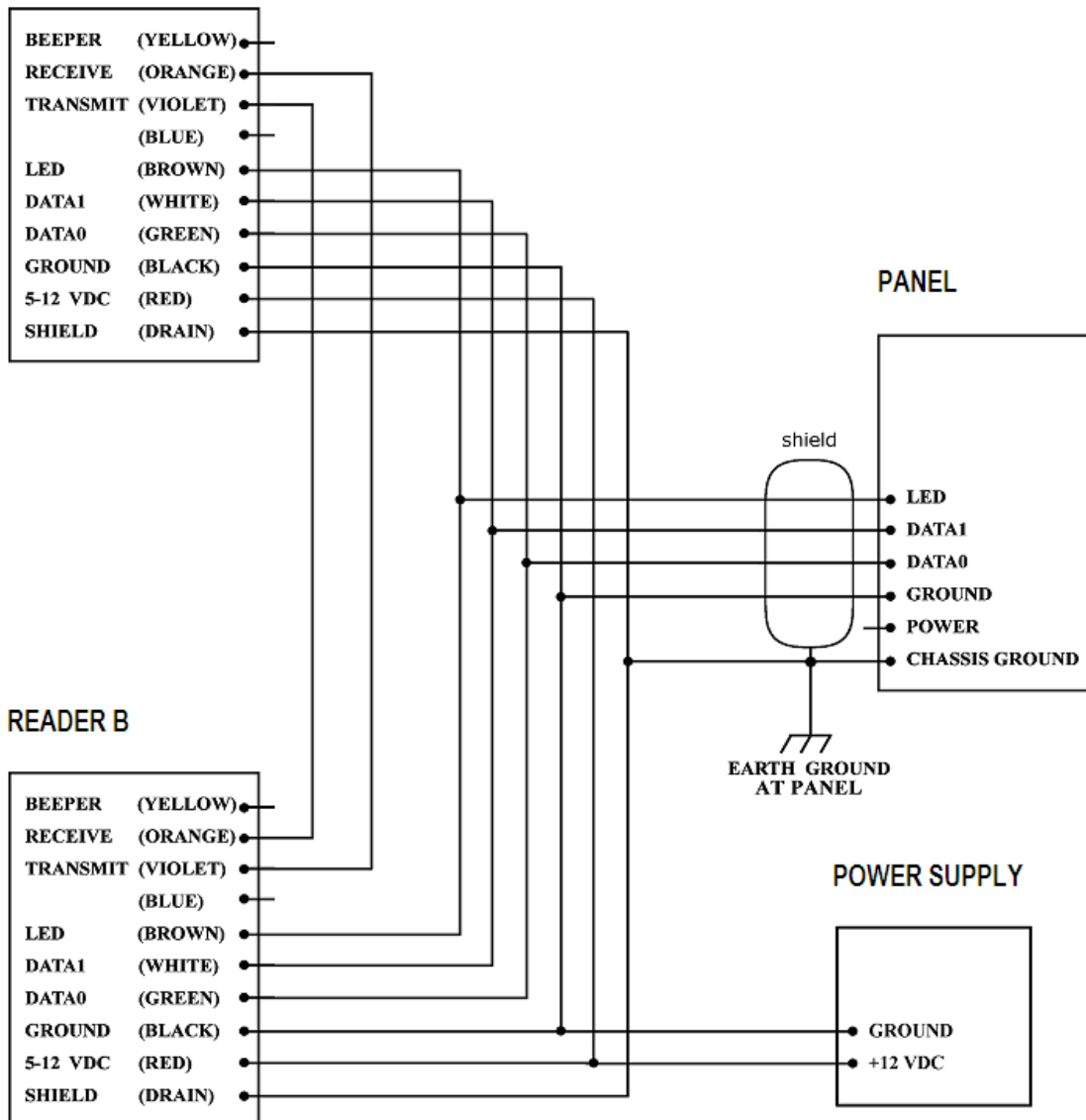


FIGURE 2: Wiring Diagram (Wiegand)