

Installation Sheet (Wiegand Interface) (Part No. 004-97-A)

Sentinel-Prox MR-1824-HiLo Reader



Reader Description

The Sentinel-Prox MR-1824-HiLo 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. Only the Wiegand interface functions.

Parts List

(a) Installation sheet, P/N 004-99-A (Rev. T/TS)	1	(d) Plastic anchor, P/N 004-30-B.....	8
(b) MR-1824 Reader, P/N 004-20-A (HiLo firmware)	2	(e) Screw-hole plug, P/N 004-27-A.....	10 (2 spare)
(c) #6-20 x 1.375" self-tapping screw, P/N 004-30-A.....	8	(f) Cable slot plug, P/N 004-27-B.....	4
		(g) Ferrite clamp, P/N FC.....	2

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 four holes for the screws or anchors, and drill one 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. Connect the reader's cable to the controller panel as shown in Figure 2. Connect **yellow** wire only if used for Beeper control by the panel. Connect **orange** and **violet** wires to the opposite colors (*violet* and *orange*) on the other reader of the set. **Tape or cap all unused wires singly.**
4. Use a **linear regulated** DC power supply, between 5 volts (rated 0.5 amp) and 12.0 volts **maximum** (rated 1 amp), for each of the readers. **Do not power** the MR-1824 from the panel's internal power supply – use a separate DC power supply. For guaranteed performance, order a P/N PS12-1A from AWID – one for each reader. **Tie the ground side of all DC circuits together** – include both readers, the panel's reader input port (shared by both MR-1824 readers), the external power supply, and the door or gate release.
5. Install a ferrite clamp (Parts List item g) on the +DC power, DC ground, and drain wires. See instructions.
6. 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-fit 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.
7. Install the reader on the mounting surface, using screws (item c) and anchors (item d) as necessary.
8. Repeat steps 1 through 7 for the second reader of the MR-1824-HiLo set.
9. Power up both readers. The LED should be steady amber. (The beeper does not sound yet.)
10. Present a valid 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' credentials will not read.
11. 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.
12. 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 the mounting surface *Non-metallic* material only (Keep readers at least 3 inches from all metal.)

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

Cable to Controller

- 4 to 7 conductors (not twisted pairs), stranded, 18 AWG, color-coded insulation, overall 100% shielded
Note: (a) Wire may be 22 gauge for data and control lines, if DC power is run in a separate 18 gauge cable.
(b) Number of conductors depends upon use of optional features – LED, Beeper and Hold. See Figure 2.
- Length for Wiegand Interface Up to 500 feet

Read Range (Typical with AWID's CS card)

- At 5 VDC About 12 inches (30 cm)
- At 12 VDC 8 to 24 inches (45 to 60 cm)

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* MR-1824 reader 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)

Certifications FCC Part 15; Industry Canada; UL listed

Notes

1. For suggestions on best performance, read AWID's memo "MR-1824 – Achieving Maximum Read Range".
2. When the yellow wire is not used, the beeper remains active and under the reader's internal control.
3. LED, Beeper and Hold 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-1824-HiLo 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. For technical support questions visit 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. PST.
6. FCC Compliance: 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.
7. Industry Canada Compliance: 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.

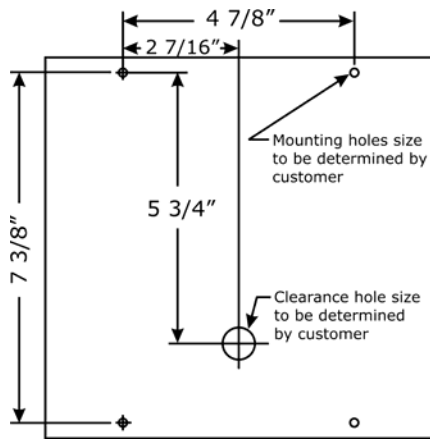


FIGURE 1. Holes Location

READER A

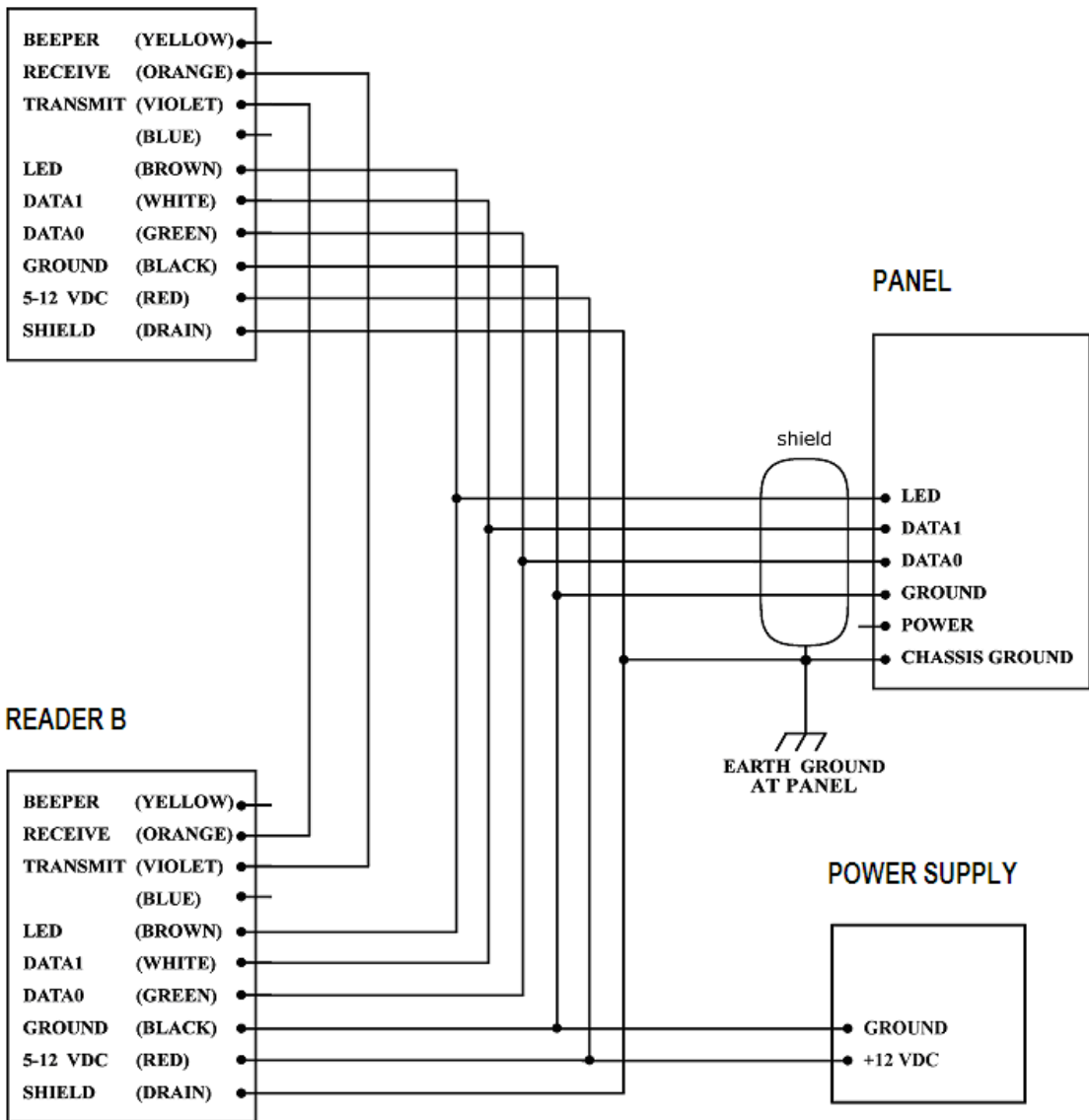


FIGURE 2: Wiring Diagram (Wiegand)

Instructions

INSTALLING FERRITE CLAMP ON POWER SUPPLY CABLE

To meet the requirements of the FCC, AWID supplies a “ferrite clamp” for installation on the power supply wiring. The clamp can be installed by hand, easily and quickly, at the site, without removing the reader or its wiring. This procedure may be used on a power supply that was installed earlier, or on one being newly installed.

Three wires must pass through the ferrite’s channel when it is snapped closed – (a) the positive DC, (b) the DC ground, and (c) the drain wire from the reader and the cable’s shield to earth-ground.

1. Locate the low-voltage DC power supply and the wires that connect it to the MR-1824 reader or the MR-1824-MC reader.
2. Arrange for enough excess wire length so that the wires can loop through the ferrite clamp with two turns of the wires inside the channel of the clamp.
3. Hold the open clamp (Figure 3) at a place where the three wires are accessible.
4. Loop the wires twice around the channel in the ferrite. Pull the wire loop *tightly* around the ferrite clamp.
5. Press the ferrite clamp around the wires until the latch at one end of the clamp snaps over the ears on the other end of the clamp. (See Figure 4.)



FIGURE 3. Ferrite clamp (open)

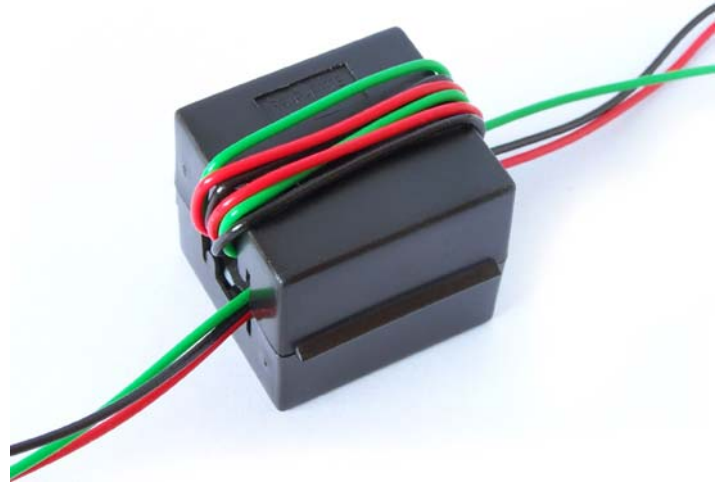


FIGURE 4. Ferrite clamp locked on 3 wires

Note: If it is necessary to remove the ferrite clamp from the wires, insert a fingernail under the latch and lift it off the ears. The clamp will then swing open.