

Installation Sheet (Wiegand Interface)

Sentinel-Prox MR-1824 and MR-1824MC Readers



Reader Description

The Sentinel-Prox MR-1824 Reader is a medium-range radio-frequency proximity reader for Gate Control and Access Control Systems. The Reader consists of a transmit/receive antenna and reader electronics in a polycarbonate housing. The reader electronics are potted with epoxy resin to protect against the environment. **MR-1824** may be mounted on any non-metallic surface. **MR-1824MC** is a metal-compensated version of this reader for mounting on or near a metal surface. See page 3 for the Procedure on installing MR-1824MC.

Before you start the installation, download and study the “TR MR-1824–Achieving Max Read Range” document.

Parts List

(a) Installation sheet.....	1	(d) Plastic screw anchor	4
(b) Sentinel-Prox MR-1824 or MR-1824MC Reader	1	(e) Screw-hole plug (1 spare).....	5
(c) #6-20 x 1.375” self-tapping screw.....	4	(f) Cable slot plug.....	2

Installation Procedure

1. Position the 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 10-pin 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 at least 400 milliamperes) and 12.0 volts **maximum** (current rating at least 1 ampere). **Do not power** the MR-1824 from the reader port’s DC voltage terminals on the panel – use a separate DC power supply. (For guaranteed performance, AWID offers P/N PS12-1A power module.) **Tie the ground side of all DC circuits together** – including the reader, the panel’s reader input port, the separate DC power supply, and the door or gate release.
4. Connect the reader’s wires for ground, data-0, data-1, LED, and power, and the silver drain wire (see Figure 2). Connect the *yellow* wire only if used for Beeper control by the panel. Connect the *blue* wire only if used for Hold control by the panel. **Do not connect** the *orange* and *violet* wires. **Tape or cap** the unused wires separately.
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-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. 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. Apply DC power to the reader. The LED is steady amber. (The beeper does not sound.)
8. Present any AWID proximity credential (card, keytag or wafer) briefly to the reader. The beeper sounds a *Long-Short-Short* sequence. 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. Cards and tags from other companies will not read.
9. 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 about 5 seconds, then restore power. While the LED is amber, present the Color Changer card to change the LED’s Standby color. When the color changes, remove the card.
10. When installation is complete and the reader has 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

- MR-1824.....*Non-metallic* material only (Keep the reader at least 3 inches from all metal.)
- MR-1824MC.....Any material including metal (The best read range is about 2/3 of the MR-1824 read range.)

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 & control lines *if* DC power is run in a separate shielded 18 gauge cable.
(b) The number of conductors depends upon use of optional features – LED, Beeper & Hold (see Figure 2).
- Length for Wiegand Interface ... Up to 500 feet

Read Range (Typical)	<u>MR-1824</u>	<u>MR-1824MC</u>
• At 5 VDC	About 12 inches (30 cm)	About 8 inches (20 cm)
• At 12 VDC.....	18 to 24 inches (45 to 60 cm).....	Up to 16 inches (40 cm)

Characteristics

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

Operating Parameters

- Excitation Frequency.....125 kHz
- Wiegand Output26 bits to 50 bits (as programmed in the cards or tags)
- Width of Wiegand Data Pulses.....100 microseconds

Certification and ComplianceISO-9001:2000; FCC Part 15; Industry Canada; UL listed; RoHS

Notes

1. For suggestions on best performance, read the attached 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. The LED, Beeper and Hold lines are at 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 and MR-1824MC readers have simultaneous Wiegand-protocol and RS-232 interfaces. For information on RS-232, contact AWID’s Technical Support.
5. For additional information, please visit AWID’s Web site www.awid.com. For technical support questions, contact www.awid.com/support or **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.

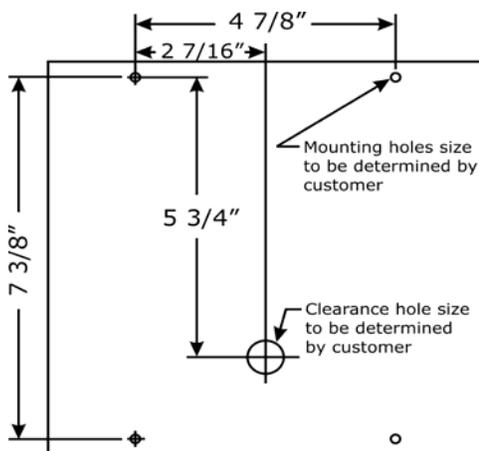


FIGURE 1. Holes Location

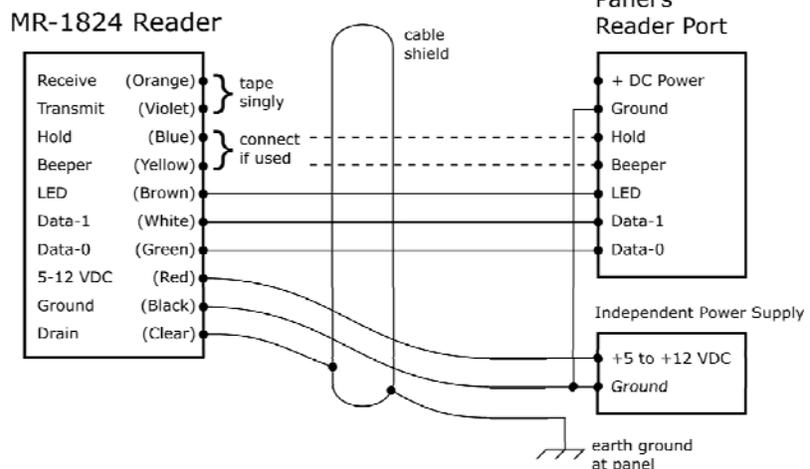


FIGURE 2. Wiring Diagram (Wiegand)

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.

Instructions

Installing MR-1824MC Reader

Notes for MR-1824MC

- Use **MR-1824MC**, the metal-compensated version of the MR-1824 reader, when mounting the reader on a metal surface. Nearby metal will cause the magnetic field around the MR-1824 reader to become smaller. The MR-1824MC reader will sustain the field, but at a reduced strength.
- Follow the steps below in place of steps 1 to 6 on page 1 of the Installation Sheet for the MR-1824.

Before you start the installation, download and study the “TR MR-1824–Achieving Max Read Range” document.

Installation Procedure

1. To mount the **MR-1824MC** reader on the metal surface:
 - a. Remove the 4 screws through the front of the reader’s plastic housing. This reveals the reader body with 4 mounting holes, aligned to the center holes of the 4 ferrite tiles.
 - b. Use the ferrite tiles as templates for mounting holes on the metal surface. These holes are at the center of each 4” X 4” tile. The center of the hole is 2” from each edge.
 - c. If necessary, enlarge the hole in the ferrite tiles slightly by drilling or reaming.
 - d. Screw the reader’s plastic base and the ferrite tiles to the metal surface by inserting the 4 screws (item c in the Parts List on page 1) first through the inside of the plastic base, then through the holes in the ferrite tiles, then into the mounting holes in the wall.
 - e. Re-attach the reader’s plastic cover using the screws that were removed in step 1.a.
 - f. The MR-1824MC reader’s cable exits the reader housing only from the rear of the unit.
2. Clip off the white 10-pin 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 at least 400 milliamperes) and 12.0 volts ***maximum*** (current rating at least 1 ampere). **Do not power** the MR-1824MC from the reader port’s DC voltage terminals on the panel – use a separate DC power supply. (For guaranteed performance, AWID offers P/N PS12-1A power module.) **Tie the ground side of all DC circuits together** – including the reader, the panel’s reader input port, the separate DC power supply, and the door or gate release.
4. Connect the reader’s wires for ground, data-0, data-1, LED, and power, and the silver drain wire (see Figure 2). Connect the *yellow* wire only if used for Beeper control by the panel. Connect the *blue* wire only if used for Hold control by the panel. **Do not connect** the *orange* and *violet* wires. **Tape or cap** the unused wires separately.

(Continue with Installation Procedure on page 1, step 7.)