# AWID

MR-1824™
Sentinel-Prox™
Proximity Reader

AWID's MR-1824 Proximity Card Reader is a high-power reader for mid-range proximity reading distance, in a small self-contained package. Read range with cards is up to 24 inches. (Read range varies, depending upon the tag used and local conditions.) The MR-1824 reader is used frequently in parking facilities, for driver identification and vehicle access.

<u>Metal-Compensation</u> This reader is available in an optional **MR-1824MC** version, which includes metal-compensation. It has best read range when it is mounted on a metal surface at least as large as the reader (8 x 8 inches). Mount the **MR-1824** version at least 4 inches from *all* metal for best read range.

<u>Installation</u> The **MR-1824** reader is fastened by 4 screws on any non-metal wall or other surface.* The **MR-1824MC** reader starts by fastening the ferrite plates behind the reader's plastic base to the metal surface, and then fastening the reader's cover to its base. When installing the reader on a pedestal, either mount the **MR-1824** on a 4-inch-thick plastic housing as a spacer from the metal, or mount the **MR-1824MC** on a metal-plate adapter between the reader and the flange on the pedestal.
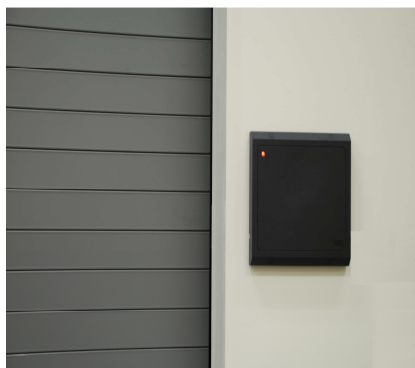
<u>Features</u> These readers contain (a) a 3-color LED to indicate successful card read and access-granted, (b) a 4 kilohertz beeper for attention and alarm, and (c) a "hold" circuit to delay data transmission. Both LED and beeper are controlled by the reader itself. All three functions can be controlled externally by the host system.

<u>Testing</u> The reader is *self-testing* – using its own LED and beeper, it needs no interface to a controller to assure the installer and cardholder of correct performance. The reader is also *self-diagnostic* – if DC power is unstable, or if electrical noise is induced in the cable, the reader resets and its LED changes to amber.

<u>Operation</u> AWID's proximity readers use a re-present mode that requires that the user remove the card from the reader's field before the card can be read again. This feature eliminates multiple reads from a single presentation of the card. The MR-1824 has both Wiegand data interface for basic 4-wire connection (7 wires when all features are controlled), and also RS-232 serial interface. Code transmission from both interfaces is simultaneous.

<u>Environment</u> The MR-1824 reader is ready for installation indoors and outdoors.* The ABS plastic two-part enclosure, quickly installed when its cover is removed, provides a secure package when the cover is fastened to the base. Epoxy resin potting protects the electronic circuits.

(*) NOTE: IF EXPOSED TO RAIN OR SNOW, UNIT MUST BE INSIDE A MINIMUM IP64-RATED HOUSING.

FEATURES

Right size for pedestal or door…
Big enough for easy card presentation

Clean, unobstrusive appearance…
Matches good architecture at site

Ready for heavy use at all sites…
Non-contact reading of cards and tags

Perfect for wall, cabinet, pedestal…
Strong two-part ABS plastic enclosure

Easy mounting…
4 screws through reader's cover

Big read range in a mid-sized unit…
Up to 24 inches with clamshell cards

Visual and audible indicators…
3-color LED and beeper inside reader

Controllable functions in reader…
LED, beeper, hold can be wired to panel

Easy power from independent source…
All MR-1824 units use 1 power supply

Quick wiring to host panel…
Basic 4-wire hook-up; 7 wires maximum

Standard Wiegand data output…
Data-0 & Data-1 panel connection

Alternative RS-232 data output…
Interface to PC or special controller

Compatible with other readers…
Wiegand interface used in other readers

Uniform code format…
Standard 26-bit plus special codes

No programming in reader…
MR-1824 is ready to read all AWID codes

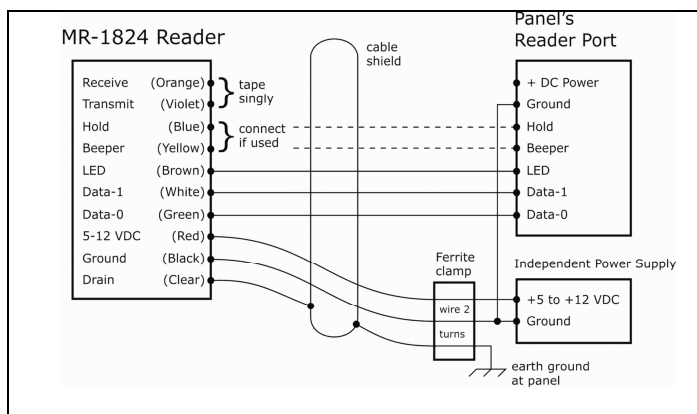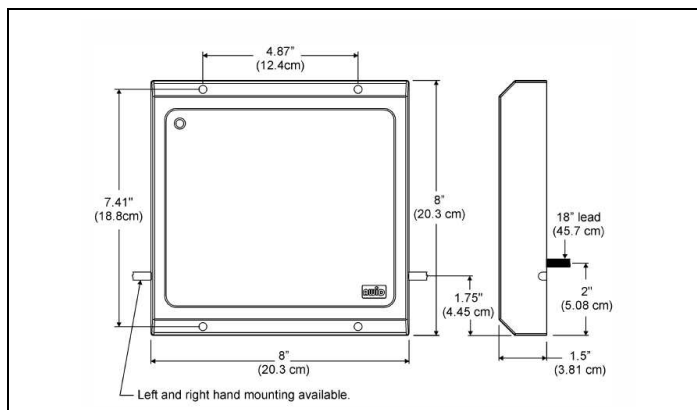**Self-testing for good operation…**
LED & beeper indicate performance

High value ratio…
Excellent performance; modest cost

Sentinel-Prox™ Proximity Reader

MR-1824 Reader — Panel's Reader Port wiring diagram

OPERATING CHARACTERISTICS

Reading Distance:
  MR-1824 – Up to 24 inches (60 cm)
  MR-1824MC – Up to 16 inches (40 cm)
  (varies with mounting or housing, voltage applied to reader, and credential type)
Excitation Frequency:
  Transmit and Receive - 125 kHz
Antenna Output:
  Omni-directional low-frequency RF field
Indicators (Control by Reader and Panel):
  LED – 3 colors, red-amber-green
  Beeper – piezo-electric, 4kHz tone
Power Supply:
  +5 volts to max +12 volts DC, linear, regulated; current rating: 400 mA at 5 volts, 1 A at 12 volts
Communication Protocols:
  Wiegand electrical interface
  RS-232 serial interface
Code Formats:
  Determined by AWID's credentials programmed with 26 bits to 50 bits
Cable (for Wiegand Interface):
  4 to 7 conductors (not twisted pairs), stranded, 18 gauge, color-coded, overall 100% shielded, plastic sheath, to 500 ft.

PHYSICAL CHARACTERISTICS

Dimensions:
  MR-1824: 8.0 x 8.0 x 1.0 inches
    (20.3 x 20.3 x 2.54 cm)
  MR-1824MC: 8.0 x 8.0 x 1.35 inches
    (20.3 x 20.3 x 3.43 cm)
Weight:
  MR-1824: 25 ounces (709g)
  MR-1824MC: 57 ounces (1,617g)
Material:
  ABS 2-part enclosure, dark gray only. Epoxy resin potting on reader electronics
  MR-1824MC: Ferrite plates behind base
Cable (Integrated with Reader):
  10 conductors, 22 gauge, 18 inches long. Overall shielded, gray plastic sheath
Mounting:
  Pedestal, wall, cabinet, housing, etc.

ENVIRONMENT

Operating Temperature:
  -31˚F to 150˚F (-35˚C to 65˚C)
Operating Humidity:
  0% to 95% non-condensing
Protection from Environment:
  Use Lexan housing when reader must be away from moisture, sunlight, view or damage.
Avoiding Interference:
  Optimize reader performance by spacing or shielding reader from neighboring readers, including reader on other side of wall at door.

CERTIFICATION

ISO-9001:2000; FCC Part 15; IC; UL listed

ACCESSORIES AND SUPPLIES

Mounting hardware – 4 #6-20 x 1.375" self-tapping screws, 4 plastic screw anchors (supplied). Use other fasteners as needed for mounting.

Power supply – Reader operates with voltage between +5 volts and +12 volts DC. An external linear, regulated DC power supply is required (current rating: 400 mA or more at 5 volts, 1 A or more at 12 volts). Optimum read range occurs when 12 volts DC is applied to reader.

Cable for power and data – 18 gauge, stranded, color-coded, overall shielded, not twisted pair. 4 to 7 conductors depending on connection of reader's controllable functions (LED, beeper and "hold"). For Wiegand, up to 500 feet long.

Protective housing – MR-1824 and MR-1824MC readers are suitable for outdoor installation in most cases. If a reader is to be removed from direct precipitation, bright sunlight in a hot environment, view or abuse, install the reader inside a Lexan housing. AWID suggests The Housing Company's Model PCH196 housing. Use this housing also to space the **MR-1824** away from metal, such as a pedestal or pole.

Mounting devices – Consult with supplier for utility boxes, adapter plates, spacers, poles, posts, pedestals, bollards.

Installation Sheet – Download full instructions and Technical Reference "MR-1824 – Assuring Maximum Read Range" from AWID's web site http://www.awid.com.

CREDENTIALS

Proximity cards, keytags and wafers – AWID offers a selection of cards, tags and wafers for use with the MR-1824 and MR-1824MC readers. All credentials for these readers must be AWID's products.

Ask AWID about credentials. Download the product sheet with cards, keytags, hangtags, and adhesive wafers for all of AWID's proximity readers.