

Technical Reference

MR-1824HiLo Proximity Reader Set

Change History

Version	Date	Author	Comments
1.0	10 Jan 2008	L. Hickcox	First release.
1.1	31 Aug 2012	L. Hickcox	Product name, applications, and software description updated.

*AWID's standard MR-1824 and metal-compensated MR-1824MC proximity readers perform well when a single medium-range proximity reader is required at a door or gate. When the application requires two such readers close to each other, or interfaced into a single Wiegand reader port on the panel, the **MR-1824HiLo** may be a perfect solution.*

Applications

The standard MR-1824 proximity reader generates a large RF field – much larger than the maximum read range at which an AWID proximity card or tag or wafer may be held from the reader. Two standard MR-1824 readers may interfere with each other if they are as far as 12 feet from each other.

An installation for MR-1824 readers may require *two* readers at a location if –

- Readers are to be installed back-to-back on the two sides of the wall at a door.
- There are neighboring doors or turnstiles, as in a large commercial or industrial facility.
- There are neighboring vehicle lanes, as in a parking facility or a gated community.
- There is a mixture of vehicles sizes, such as passenger cars and large trucks, and the drivers hold their cards out of the side windows at different heights.

Allowing Multiple MR-1824 Readers at a Location

The simplest solution for these special applications is to use two or more regular MR-1824 readers at the location. This is possible if –

- A separate reader input port on the controller panel is available for each MR-1824 reader. (Note: The MR-1824HiLo reader set uses only a *single* reader port.)
- The two MR-1824 readers may be separated by 8 feet to 12 feet, depending upon the voltage of their power supplies, and on the way that the readers are mounted and aimed and RF-shielded.

If these conditions are *not* possible, the **MR-1824HiLo** reader set should be selected.

What Makes the MR-1824HiLo Work

The MR-1824HiLo set is a pair of standard MR-1824 readers that are specially programmed by AWID as identical “HiLo” units. Using the RS-232 interface wires, RF output of the units is coordinated so that only one of the units is active at any point in time. This alternation occurs about 3 times per second. Either one unit or the other unit is functional at any time, but never both at the same time. Therefore there is no interference between the two readers, even when they are close together.

Installation

The MR-1824HiLo Installation Sheet shows that the **power wires** and the **Wiegand data wires** for the two reader units are connected in parallel at the readers. Therefore the connections to the host system are identical to the wiring of a single MR-1824 reader. This makes the MR-1824HiLo set an easy replacement for a single MR-1824 reader.

There is also a twisted-pair connection for the coordination signal between the two reader units. This assures that the two readers alternate (approximately 0.3 second *on* and 0.3 second *off* for each unit).

The maximum distance between the two reader units is limited by the RS-232 serial interface protocol. This is nominally 30 feet on the twisted-pair coordination lines (but commonly up to 75 feet if the connection is by high-quality shielded cable).

Notes

- A MR-1824HiLoMC version of this reader set is available. It uses two metal-compensated MR-1824MC readers to make up the “HiLo” set.
- The MR-1824HiLo reader set requires a linear, regulated power supply with **two times** the rated current capacity of a single MR-1824 reader (or two separate power supplies with the current capacity of a single MR-1824 reader). For a 12 volt DC power supply, have a current rating of **2 amperes** or more. For best read range, apply exactly **12.0 volts** at the readers. (Read range drops if the voltage is either more or less than 12.0 volts.)
- The MR-1824HiLo reader set has no RS-232 data output. It transmits data by Wiegand interface only.

References

- Product sheet for MR-1824 reader
- Installation Sheet for MR-1824HiLo reader set
- Technical Reference, “MR-1824 -- Assuring Maximum Read Range”