Installation Sheet (Wiegand Interface)
MR-1824HiLo and MR-1824HiLoMC LF Reader Sets

These instructions are for Model MR-1824HiLo and MR-1824HiLoMC readers, using compatible proximity credentials from AWID. The "**MC**" model is compensated to mount the readers directly on large metal surfaces.

<u>**Parts List**</u> (a) 1 Installation sheet for MR-1824HiLo | (d) 8 Plastic screw anchor
and MR-1824HiLoMC Reader Sets | (e) 10 Screw-hole plug for reader's cover (2 spares)
(b) 2 MR-1824HiLo or MR-1824HiLoMC Reader | (f) 4 Cable slot plug (pre-installed in
(c) 8 #6-20 × 1.375" self-tapping screw | MR-1824HiLoMC readers)

<u>**Preparation**</u>

Reader Location: Select the readers' mounting locations. Mount **MR-1824HiLo** reader units 4 inches away from metal. Mount **MR-1824HiLoMC** reader units on flat metal surfaces at least 8 inches square. Observe ADA height requirements. The units may be installed outdoors, but they need protection (a non-metal housing) if they are exposed directly to rain or snow, or to bright sunlight in a hot environment.

The two "HiLo" units may be up to 30 feet apart. (In practice, the units may work well up to 75 feet apart. *Test this* before making the final decision on extended distance between the two units.)

DC Power Supply: Use a separate power supply – 12 volts DC, current rating **2** amperes or more, linear-rated, regulated DC output. Do ***not*** connect the reader units' red wires to the panel's +DC terminal. When the 2 "HiLo" units are connected to the separate power supply, voltage on the units' red and black wires should be **12.0** volts. The two units may share a single 2 ampere power supply, or they may have separate 1 ampere power supplies.

Cable to Controller and Power Supply: 5 to 7 conductors from the "HiLo" set to the system (2 wires for DC power, 3 wires for Wiegand data, and 1 or 2 wires for external LED and Beeper/Alarm, if used). 18 gauge. Overall 100% <u>*shield for both power and data*</u>. 500 feet maximum length. Both "HiLo" units share this cable.

- The "HiLo" units' black wire <u>*must*</u> be connected to *both* (a) the DC power supply's Negative terminal *and* (b) the panel reader port's Ground or Negative or Common terminal (for Wiegand Data Common).

- If the DC power supply is close to the "HiLo" units, you may run two cables – (a) 2 wires, 18 gauge for DC power, and (b) 3 to 5 wires, 22 gauge for Wiegand data, and for the external control lines, if used.

- Additional wires connect the units' orange and violet wires (crossed over) – 2 wires, 22 gauge, unshielded.

- *All* cables must be overall-shielded and earth-grounded at the ends far from the reader.

- Conduit: If cables are pulled through metal conduit, the conduit should be earth-grounded (like the cables).

<u>**Installation**</u>

1. **Connector** – Cut off the 10-pin female connectors from the end of the reader units' cables. Discard the connectors. All further wiring junctions will use the reader cables' individual wires.

2. **Open the Units** – Remove the 4 screws in the cover's beveled edges. Lift the cover off the base. Pull the cable behind the cover gently and remove the LED assembly. Save the 4 screws for final assembly in step 5.e.

3. **Mark the Mounting Holes** – Use the reader unit's base as a template. Level the base. Mark the 4 mounting holes on the wall or surface. Mark and drill the cable's clearance hole (if used). Pull the cable through the clearance hole.   (continued)

4. **Wire Connections** – Connect the "HiLo" units' wires to the cables for power, data, and controls.
   a. Start the wiring by connecting together these corresponding wires (same insulation color) on the two reader units:
      - 3 Wiegand data lines – green, white and black.
      - 1 or 2 external control lines – brown for LED, yellow for beeper/alarm, if they are used. (Do *not* use blue.)
      - 2 DC power lines – black and red. (If each "HiLo" unit has its own DC power supply, omit this step.)
   b. Next, connect the reader's black wire to the panel port's Ground or Negative or Data Common terminal, *and also* to the power supply's Negative terminal.
   c. Connect the reader's green wire to the Data-0 terminal. Connect the **white** wire to the Data-1 terminal.
   d. For alternating control of the two units, connect one unit's orange wire to the violet wire of the other unit; also, connect the first unit's violet wire to the other unit's orange wire.
   e. Connect the **gray** drain wire to the shield of the connecting cable.
      If power and data are in separate cables, connect all three drains/shields together near the reader.
   f. If the LED and/or Beeper/Alarm features are used, connect the brown and/or yellow wires.
   g. At the end of the cable(s) near the panel and near the power supply, connect the cables' **shield** to a verified earth-ground.
   h. Last, connect red to the DC power supply's Positive terminal.
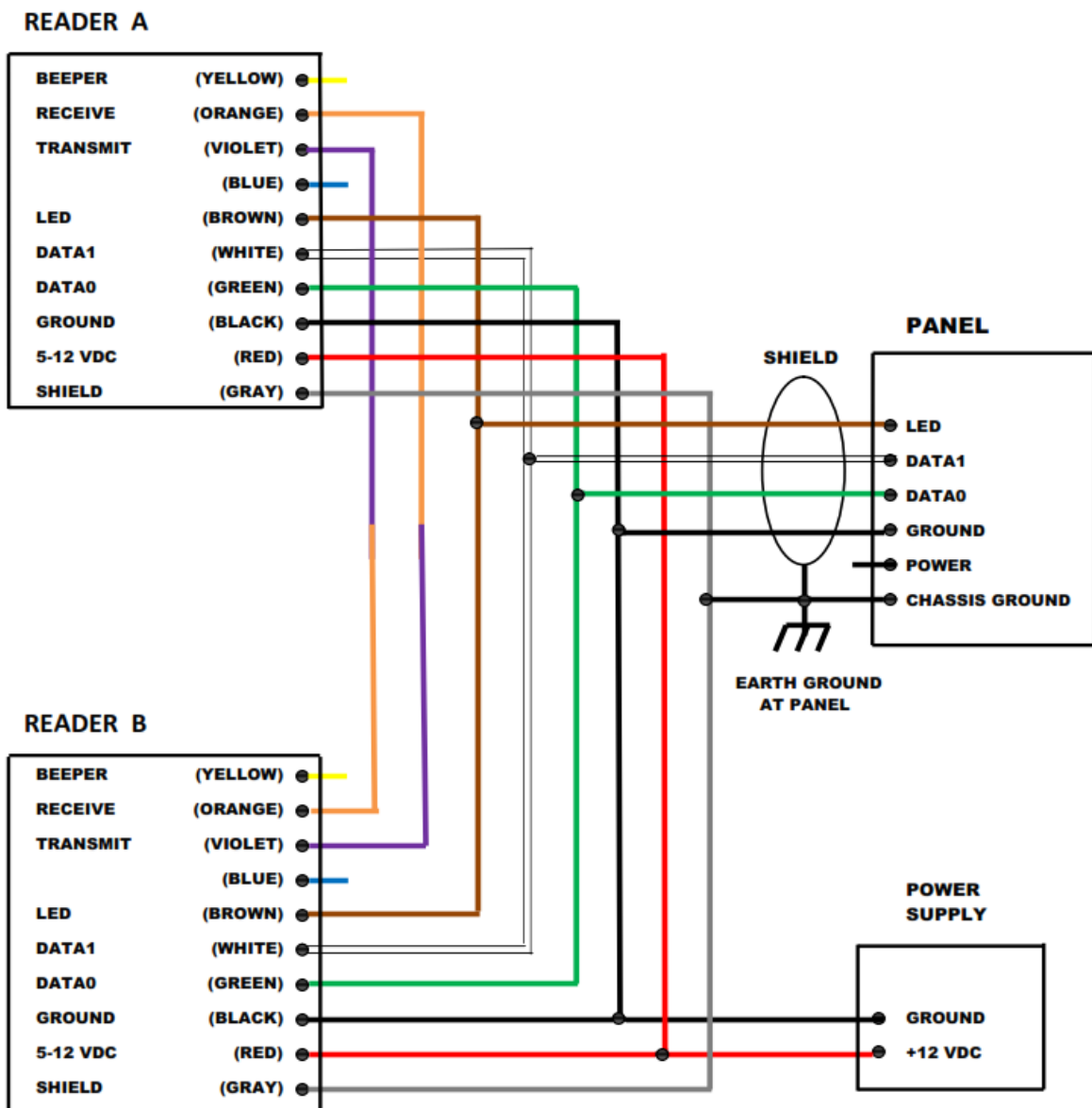
5. **Mounting the MR-1824HiLo or MR-1824HiLoMC**

    Note: Be careful not to touch the copper antenna or the electronic components.
    In the **MR-1824MC** units, do *not* remove the 4 ferrite plates from the back of the reader.

    a. Drill lead holes in the wall, if needed. Insert the 4 screw anchors (supplied), if needed.

    b. For **MR-1824** (not MC): If the reader's cable is to exit either right or left edge of the reader base, lay the cable in the serpentine slot. Insert one of the cable slot plugs in the other edge of the reader base.

    c. Fasten the reader base to the wall using the 4 supplied screws, or other fasteners that you select.

    d. Re-insert the LED assembly into the lens recess on the cover. Position the cover on the reader base.

    e. Using the 4 screws that you removed in step 2, fasten the cover securely to the reader base on the wall.

    f. After you test the reader, insert the 4 screw-hole plugs in the cover over the fasteners.

6. **Reader Test** – When power is applied to the MR-1824HiLo, the LED initializes to steady-red for standby, and the beeper sounds. With every presentation of an AWID proximity card to the reader, the LED changes color momentarily, and the beeper sounds briefly. Read range with a compatible AWID card is up to 24 inches for the MR-1824HiLo units, and up to 16 inches for the MR-1824HiLoMC units.

7. **System Test** – Wire the reader to the system's controller. Program the code for the AWID proximity card or tag into the host system, with full priority, all doors groups, and all time zones. Present the card or tag to the reader. Observe door unlock or gate opening, indicating "Access Granted" by the system.

Suggestions

- For best performance, please read Technical Reference "MR-1824 – Assuring Maximum Read Range". Download this memo from www.awid.com > "Access Control" tab > "Readers".

- When the brown (LED) and yellow (Beeper/Alarm) wires are not connected, these features are active under reader control. When these wires are connected to the panel, the host system adds control of these features.

- The blue wire for Hold control does not function in the MR-1824HiLo and MR-1824HiLoMC reader sets.

- These MR-1824HiLo/MC reader sets have Wiegand data interface only. There is no RS-232 interface.

Technical Support   ●   Call 408-825-1100, option 1. E-mail Support@awid.com.

MR-1824HiLo has been evaluated to the following Access Control Performance Levels for UL standard 294:

1. Destructive Attack –   Level I (No Attack).
2. Line Security –   Level I (No Line Security).
3. Endurance –   Level IV (100,000 cycles).
4. Standby Power –   Level I (No Standby Power).

Access Control Reader, General Signaling Type **NM.**