



LR-2000HiLo™

UHF Long-Range Reader

AWID's LR-2000HiLo™ Long-Range Reader set is for applications with both small and large vehicles, with varied locations of UHF tags and cards, or with special conditions of the roadway. The "HiLo" reader set contains a specially prepared LR-2000 master reader and a remote antenna, in separate enclosures. The two units are connected to each other by a coaxial cable. The master reader is programmed so that the RF fields transmitted by each unit alternate with a 50% duty cycle. The two units of the "HiLo" set may be close to each other with no interference between their RF fields. When installed using AWID's mounting brackets, the two units may be up to 4 feet apart.

The LR-2000HiLo reads the same vehicle-mounted tags and hand-held cards and tags that AWID offers for all UHF long-range readers. The system may use the single-unit LR-2000 at one gate and the LR-2000HiLo reader set at another gate, reading the same tags or cards for both readers.



The LR-2000HiLo provides all of the features and benefits of the LR-2000 single reader. In addition, it spreads out the effective RF field so that the field covers a larger space, extended either vertically or horizontally, according to the needs of the application. The read range for the "HiLo" set is the same as for the LR-2000 single reader. But with the "HiLo" set, the cross-section of the field's area can be twice as large. This makes the "HiLo" set ideal for special site conditions. These conditions are:

- *Combination of big trucks or buses with passenger cars* – Vehicle tags are different types and attached at different locations in or on the vehicles. Each unit of the "HiLo" set is aimed optimally for the tags on either the big trucks or the passenger cars.

- *Vehicles with combination of tags and cards* – Some cars have tags inside the vehicles; in other cars drivers hold cards at the side window. One "HiLo" unit is high, aimed through the windshield; the other unit is low facing across the lane toward the side of the car.
- *Turning or merging lanes, or a wide lane* – The two units of the "HiLo" set are aimed to spread out the RF field horizontally at the tag reading location. This creates either a single wide zone, or two separated zones, in which tags are read.
- *Change in grade at the reading location* – When the slope or grade of the roadway changes as the tag passes through the reader's reading zone, as in a parking ramp, vertical spreading of the effective RF field assures reliable reading of the tags.

The LR-2000HiLo reader set uses the same power, cable, wiring, and input reader port in the host system as a single LR-2000 reader. The two units of the LR-2000HiLo set share the same reader address in the access control system.

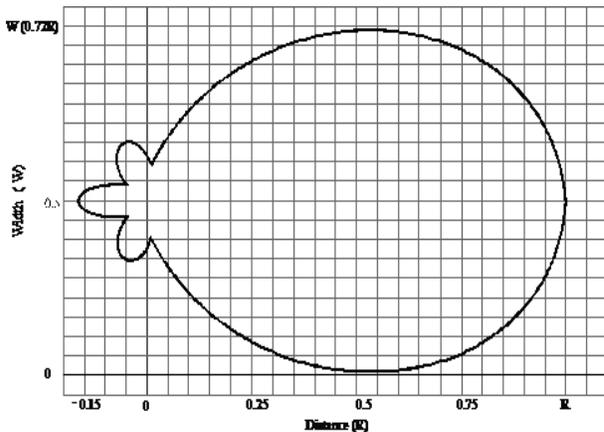
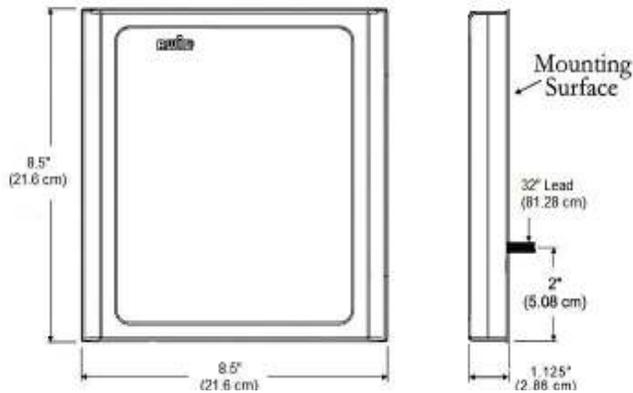
FEATURES

- **Longer reading distance ...**
Up to 25 feet between reader and tag
- **Small, attractive units ...**
Reader plus antenna, 8.5 inches square
- **Easy reader installation ...**
No reader programming; simple wiring
- **Wide selection of credentials ...**
Varied vehicle tags and hand-held cards
- **Unlimited tag or card life ...**
Passive, battery-free credentials
- **Data output to fit the system ...**
Selectable read repeat rate
- **No interference between readers, and no cross-reading between lanes ...**
Programmable RF field strength
- **RF transmission only as needed ...**
Optional buried loop arms the RF circuit
- **Dual antennas in special conditions ...**
Set of two units aimed individually
- **"HiLo" set mixes with other readers ...**
Same code format as proximity readers
- **Easy interfacing to control systems ...**
Both Wiegand and RS-232 data output
- **Complies with certifications ...**
FCC Part 15; IC; RoHS
- **Ideal upgrade from old systems ...**
Hands-free car ID; cards for people ID
- **Eliminates stop-and-wait entry ...**
Cars may continue moving past reader
- **For outdoor applications ...**
*Housing required for direct rain and sun **
- **Easy to buy and own ...**
Installer needs no FCC registration

* NOTE: WHEN INSTALLED OUTDOORS AND EXPOSED TO RAIN OR SNOW, OR TO DIRECT SUN IN A HOT ENVIRONMENT, THE LR-2000HiLo UNITS MUST BE MOUNTED INSIDE POLYCARBONATE HOUSINGS WITH MINIMUM IP54 RATING.

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UHF Long-Range Reader Set



ACCESSORIES AND SUPPLIES

- LR test/demo kit -- The LR-TEK-0-0 kit is an effective way to demonstrate the LR-2000HiLo reader set, to prove its operation, to measure its performance, to locate tags, and to aim the reader. A one-time purchase requirement for all installers.
- Power supply -- Each LR-2000HiLo set requires a separate, independent, dedicated power supply. Ask AWID for specifications. AWID offers PS-123.3A-0-0 plug-in DC module.
- Cable for power and data -- Correct cable assures good reader performance. Ask AWID for specifications.
- Protective housing -- To avoid rain, snow, hot sunlight and vandalism, AWID suggests Model PCH196 polycarbonate housing from The Housing Company. (2 required)
- Mounting devices -- Ask your supplier about poles, posts, pedestals, clamps, arms, etc.
- System components -- Ask your supplier about the access control system, gates, vehicle sensors, bollards, barriers, etc.
- Installation & operation -- Download additional information from www.AWID.com.

CREDENTIAL OPTIONS (See Credentials Product Sheets for Full Part Numbers)

- Vehicle-mounting tags -- For permanent or movable applications, inside or outside vehicles. Tags for Windshield (**WS-UHF**), Rearview Mirror (**RV**), Sunvisor (**VT**), Sideview Mirror (**SV**) and Metal-Mount (**MT**). Also, Portable tag (**PT**), Hangtag (**HT**) and Supertag (**ST**).
- Hand-held cards -- For presenting to reader. *Cards:* Clamshell (**CS-UHF**) and Graphics (**GR-UHF**). *Tags:* Keytag (**KT-UHF**) and Hangtag (**HT**). Use these cards also with AWID's **uAccess** readers.

Ask AWID about tag selection and mounting methods.

OPERATING CHARACTERISTICS

Reading Distance:

Up to 25 feet (7.6 meters)

Frequency Band:

902 to 928 MHz

Frequency Hopping technology

Antenna Output:

Circular-polarized RF field

Power Supply: **One for each LR-2000HiLo set**

7 to 15 volts DC, linear rated, regulated output

At 12 VDC, rated for 2 amperes or more

Separate and dedicated to each "HiLo" set

Communications Protocols:

Wiegand and RS-232, simultaneous

Code Formats:

Determined by AWID's tags & cards

programmed with 26 bits to 50 bits

Cables: **All cables MUST be overall-shielded**

Power -- 2 conductors, 18 gauge, shielded

Data -- 3 conductors, 22 gauge, shielded

Stranded, color-coded, not twisted pairs

Up to 500 feet for Wiegand, 75 feet for RS-232

Field-Programmable Features:

Read repetition rate; RF power level

PHYSICAL CHARACTERISTICS

Dimensions of Each Unit:

8.5 x 8.5 x 1.125 inches (21.6 x 21.6 x 2.86 cm)

Weight of Each Unit:

37.5 oz (1.06 kg)

Material (Color):

ABS enclosure (beige); aluminum back-plate

Cable (Integrated with Master Reader):

10 conductors, 32 inches (81 cm) long

Overall shielded, plastic jacket

Coaxial Cable for Remote Antenna (Included)

Type RG-58 cable, 6 feet (1.8 m) long

2 RP-SMA connectors, gold-plated

Mounting (Supplied by Installer):

Pan-and-tilt adjustable aiming, min. 6 in. long

ENVIRONMENT

Operating Temperature:

At 50% Duty Cycle --

-35°C to +65°C (-31°F to +150°F)

At 100% Duty Cycle --

-35°C to +45°C (-31°F to +115°F)

Operating Humidity:

0% to 95% non-condensing

Protection Class:

IP54 – Limited protection *

CERTIFICATION

FCC Part 15; IC; RoHS



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<http://www.awid.com>