

MAG AR200U Quick User Manual

(1) Cable Wire assignment

The AR200U has two main cables: Signal cable and power cable. Cable wiring description is shown in the tables below:

| Signal Cable | Description |
|-------------------------|--------------------------------------|
| Green | Wiegand Data 0 |
| White | Wiegand Data 1 |
| Yellow | WG format selection, (see section 2) |
| Pink | WG format selection, (see section 2) |
| Black | Ground |
| | |
| Dark Blue | RS232, RX |
| Brown | RS232, TX |
| Light Blue | RS485, +TR |
| Light Green | RS485, -TR |
| White with black stripe | Not used |
| Orange | Not used |
| Red | Not used |
| Purple | Not used |
| Gray | Not used |

| Power Cable | Function |
|-------------|-------------------------|
| Thick White | +VDC (19.2V) |
| Thick Black | Ground |
| Thin Black | Cable shield – Not used |

(2) Interface selection:

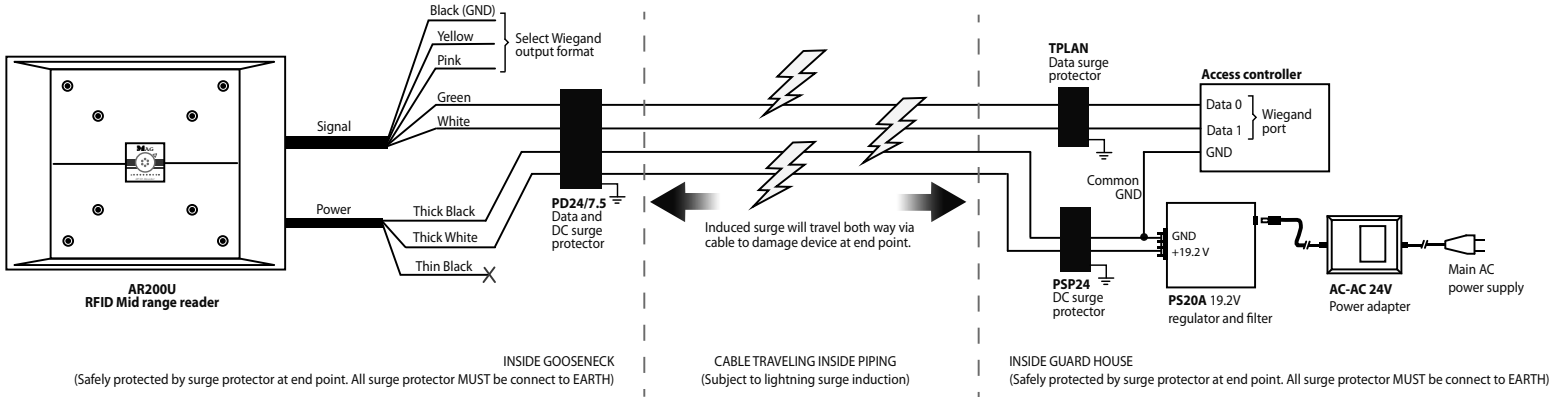
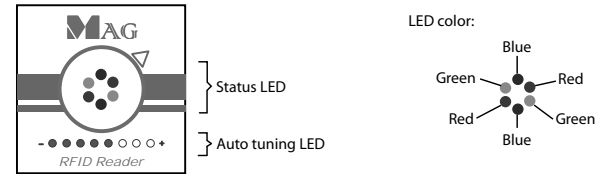
Yellow and pink wire is used to select Wiegand output format on Green and White wire. AR200U's wiegand output format must match controller's input format in order to capture correct card number. Please also ensure that AR200U's GND is connected to controller's GND to achieve "common GND". Otherwise Wiegand data will not be received by controller.

| Yellow wire | Pink wire | Green and White wire (Wiegand format output) |
|-------------|-----------|--|
| Ground | Ground | WG 40 bit (no parity bit at front and back) |
| Open | Ground | WG 26 bit (parity bit at front and back) |
| Open | Open | WG 34 bit (parity bit at front and back) |

(3) LED Indicators

The AR200U has status and tuning LEDs (see figure below).

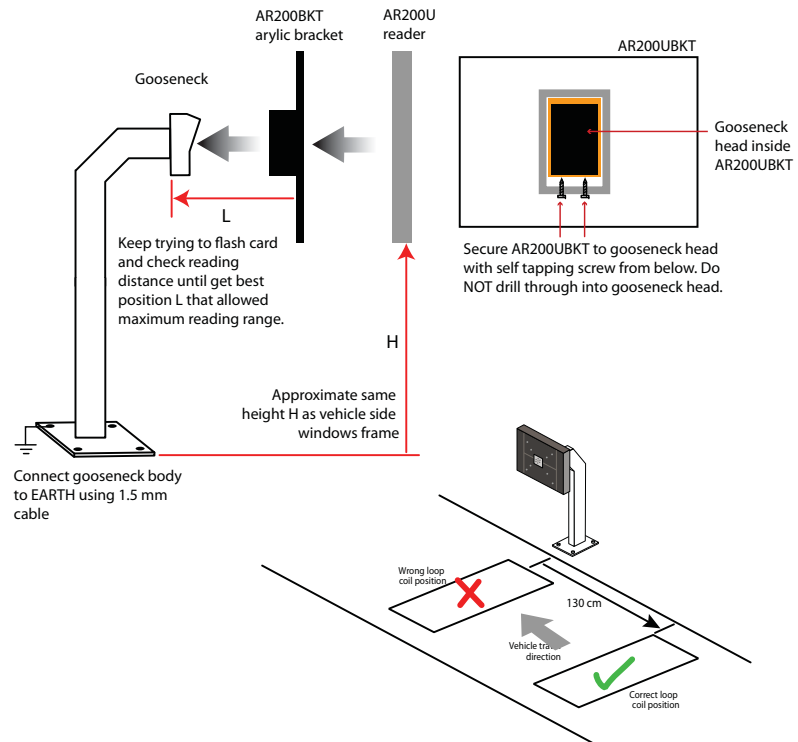
- Blue LED is on whenever the AR200U is powered and ready to read the card
- Red LED blinks once when the good read has been achieved.
- Green LED is only used during the firmware download.
- Auto tuning LED indicate frequency shift position. The ideal 4 to 5 LED turned red color.



(4) Obtaining the best reading range

- a) Typically AR200U will be able to achieve 70 to 120cm reading range depending on the amount of metal/interference presence at site. Reading range experienced by each vehicle might be different depending on the type of solar film installed on vehicle side windows.
- b) Use original MAG CDS18L mid range RFID card. It contains more internal copper coil antenna to achieve maximum distance up to 120cm.
- c) To achieve maximum range, there shall not be any metal, CRT monitor, any interference source or another RFID reader within 180 cm of installed AR200U. All these interfere and inhibit RFID performance.
- d) Before installing, first power up AR200U to check the red LED light bar status at its intended position. Typically a bar of 4 to 5 LED indicates nominal frequency to achieve RFID full potential range. LED bar with less than 4 or more than 5 bars indicate frequency shift that will reduce reading range. Please install the AR200U ONLY after confirming the best position that can achieve longest reading range. Ensure same numbers of LED are remained after installing AR200U.
- e) Do not install loop coil in front of AR200U. The frequency from loop coil will interfere with AR200U reading range. Loop coil has to be at least 130 cm away from AR200U.
- f) AR200U should be installed at a height where entire reader is exposed to the side glass windows of vehicle. Too low will be blocked by car metal door and reduce reading range.
- g) Please use the original power supply that comes with AR200U. The 2 stage power supply is designed to output 19.2 V and special filter circuitry to help AR200U achieve its maximum potential reading range. Using other alternative power supply might reduce reading range and cause permanent damage to AR200U.
- h) Long distance DC power cabling will experience voltage drop and cause insufficient operation power for AR200U. It is recommended to use 1 or 1.5mm cable thickness for 19.2VDC wiring.

(5) Installing the reader



(6) Protecting the reader

- a) AR200U installed outdoor is subject to harsh weather conditioning. Rain water might enter LED display area creating water vapor trapped inside. It is highly recommended to protect the reader with AR200HSE, Acrylic weatherproof housing.
- b) AR200U installed outdoor is also subject to damaged by lightning surge. It is a compulsory to install data and power surge protector as shown in wiring diagram.
- c) Good Earth connection onto the metal gooseneck and all other metal housing will give extra protection against damage by lightning surge.