Value through Innovation

OMNI™
HEAVY-DUTY SLOT READER
Wiegand Interface Addendum

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Revision History

Date	Rev	Changes	By
11/10/2022	E	Reimplemented revision history. Updated formatting and style. Updated installation steps: corrected clip connection colors, revised for clarity.	CB

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1. Introduction

The Omni heavy-duty slot reader can read a single track (1, 2, or 3) of magnetic stripe information, as well as bar codes. In addition, it has flexible configuration settings and data editing capabilities.

The Wiegand interface for the Omni fully complies with the standard established by the Security Industry Association, as defined in "Access Control Standard Protocol for the 26-BIT Wiegand Reader Interface."

1.1. Example 1

The data on a bar code label (or a magnetic stripe card) is `12345678`. The Wiegand unit is set to the factory default (No Preamble/Post-amble, Data Editing is disabled).
The data for output is: `12345678`
The Wiegand output is:
Site Code: `123`
User Code: `45678`

1.2. Example 2

The data on a bar code label is `67890`. You set the preamble to be `222`.
The data for output is: `22267890`
The Wiegand output is:
Site Code: `222`
User Code: `2354` (`67890` Mod `65536` = `2354`)

1.3. Example 3

The data on a bar code label is `1234`. You set the preamble to be `0` and postamble to be `9AB8765`.
The output data is: `012349AB8765`
The Wiegand output is:
Site Code: `012`
User Code: 34987 (34 from the bar code label and 987 from the postamble. AB in the postamble are not numeric, and are therefore ignored.)

1.4. Example 4

The data on a bar code label is `IDT123000USER45678`. Data editing functions are used to change the output data to: `12345678`
The Wiegand output is:
Site Code: `123`
User Code: `45678`

2. Installation

The Wiegand specification does not identify a standard connector. The Wiegand version of the Omni reader comes with five stripe-and-tined wires. The colors comply with the color codes defined in the Wiegand specification:

Wire Configuration	
Color	Function
Red	VCC (+5V)
Black	GND
White	Data 1
Violet*	Data 0
Brown	LED Control / RS-232

From November 2006, the cable changed to green for the Data 0 signal wire.

LED control operates using a control voltage level:
5 Volts = Red
0 Volts = Green
NO Connection = Red

Note: The "source data" for each swipe should come only from a single track or bar code. If the magnetic card contains multiple track data, the unused track(s) must be blocked with configuration settings.

3. Configuration

For users who need to read or output data in a custom format, ID TECH supplies an optional RS-232 configuration cable with three alligator clips and a 5V DC power adaptor.

Configure the unit using the optional cable and the following steps:

1. Plug the configuration cable's DB9S female connector into a serial port (such as COM1) on your PC.
2. Connect the following alligator clips to the following reader wires:
    a. programming cable **red alligator clip** to the reader's **red wire**
    b. programming cable **black alligator clip** to the reader's **black wire**
    c. programming cable **yellow alligator clip** to the reader's **brown wire**
3. Make sure the sets of wires and clips DO NOT TOUCH.
4. Plug the 5V DC power adapter into an AC outlet, then plug the output from the 5V DC power adaptor to the power jack on the DB9S connector. When power is applied, the unit should beep.
5. Run a serial communication program, such as HyperTerminal (HyperTerminal comes with Windows 95 or later versions) or Pro-Comm. Set the communication parameters to 9600 baud rate, 8 data bits, None parity, and 1 stop bit.

3.1. Wiegand Output Rules

The Omni reader may be configured to suit your application. Configuration settings enable the reader to work with the host system. For instance, preambles and postambles can be added to scanned data prior to output. Refer to the Omni User's Manual (key-board/USB version) for full details on setting the Omni's configuration settings and data editing functions.

The Wiegand output format consists of a 3-digit "site code" and a 5-digit "user code." The unit will take the first eight numeric characters of the output data and ignore any character that is not a numeric character. The first three digits will be sent as the site code and the next five digits will be sent as the user code.

The site code can only be from 0 to 255. If the first three digits are greater then 255, then the modular 256 result will be used as the site code. For example, 356 will be changed to 100.

The user code can only be from 0 to 65535. If the next five digits are greater then 65535, then the modular 65536 result will be used as the user code. For example, 75536 will be changed to 10000.

If there are fewer than eight numeric characters in the output data, additional 0s (zeros) will be added to the beginning.