Application Guide for Product HTD-010

Wiegand RFID to RS232 Conversion Cable

The HeitechCS Wiegand to RS232 Serial conversion cable allows RFID readers with Wiegand output to be translated to a RS232 serial interface. This allows the device to recognize serial input from an RFID reader with Wiegand data output.

Cable Specifications:

- Input Voltage Range: 10 – 30VDC
- Input Enable Voltage Range: 2-5VDC
- Operating Temperature Range: -25C to 85C
- Output Voltage: 9VDC

Wiring Tables:

RFID Side

Connector	Color	Description
6-pin	Red	Power output line
6-pin	Black	Ground
6-pin	Blue	LED control line
6-pin	Green	Buzzer control line
6-pin	Orange	Data 0
6-pin	White	Data 1

1-Wire Side

Connector	Color	Description
5-pin	Red	Power input line
5-pin	Orange	3.3V power enable
5-pin	Black	Ground
5-pin	Blue	RS232 serial line
Flying lead	Green	Buzzer control line
Flying lead	White	LED control line

UART Serial Output Data Output:

Baud Rate = 9600, Data Bits = 8, Parity = None, Stop bits = 1, Flow Control = None

Decoding Examples for Different RFID Tags:

The serial output conversion cables will output a 6-byte Hexadecimal value of the RFID tag that is read by the reader. This value could be read in ASCII by the device as 12 characters from the serial port.

- Standard 26-bit EM125kHz card example (RFID Reader example for reference HTA-015)
    - Example ASCII ID received from the serial line = 343635443539383030303030
    - Converting these ASCII characters to HEX = 465D59800000
        - Example ASCII 30 ➔ '0'
    - Convert from HEX to Binary = 010001100101110101011001100000000000000000000000
        - Take the first 26-bits = 01000110010111010101100110
        - Remove the parity bits = 100011001011101010110011
        - Convert this binary value to decimal to get ID value of 9222835
- Generic HID 26-bit card example (RFID Reader example for reference HTA-018)
    - Example ASCII ID received from the serial line = 383538313632343030303030
    - Converting these ASCII characters to HEX = 858162400000
        - Example ASCII 38 ➔ '8'
    - Convert from HEX to Binary = 100001011000000101100010010000000000000000000000
        - Take the first 26-bits = 10000101100000010110001001
        - Remove the parity bits = 000010110000001011000100
        - This card format, the Facility Code is the first 8-bits = 00001011
            - Convert to decimal gives Facility Code = 011
        - This card format, the Card ID is the last 16 bits = 0000001011000100
            - Convert to decimal gives Card ID = 00708
- Keypad Reader manual input example (RFID Reader Example for reference HTA-017)
    - Example ASCII ID received from the serial line = 31323334353637383930313230
    - Converting these ASCII characters to Decimal = 1234567890120
        - The user input value of "123456789012"
        - Note the length of the ID is different for manually input IDs
            - Length of the manually input ID is 13
            - Length of scanned ID is 12

Application Notes:

Enable Line Option:

The default option on the conversion cable utilizes a 3.3V enable line to control when the conversion cable and the RFID reader are powered on. There is a product variant available that removes the requirement of the enable line voltage to power the converter. For this variant, we recommend that power be connected to a variable source in order to limit the current draw when the reader is inactive.