



Dual Wiegand to RS232 Converter Module

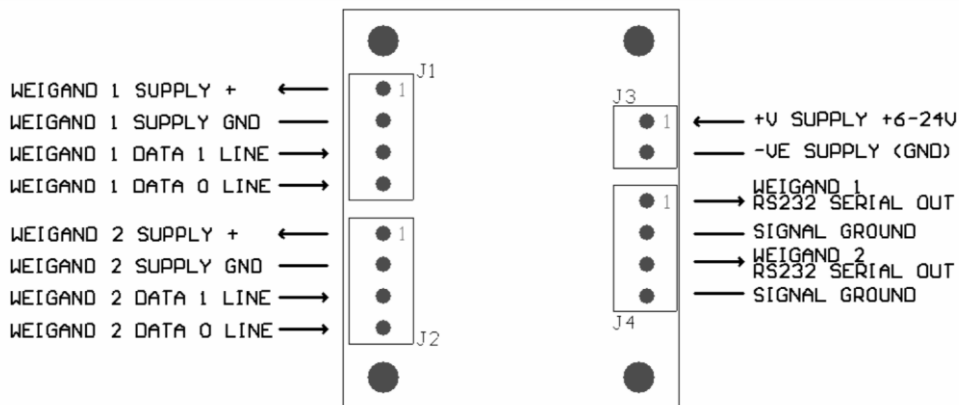
Designed for embedding into products manufactured by third-parties, this Wiegand to RS232 converter is designed with 2 ports for taking up to 2 Wiegand sources using Wiegand 26, or Wiegand 37 bit format and converting it to a RS232 data stream at 9600 Baud.

Specifications

- 2 x Wiegand reader input
- 2 x RS232 output ports.
- Power: 6.0V - 24.0V dc.
- Wiegand 26 bit format (enquire for 37 bit)
- Outputs hexadecimal ASCII characters at 9600 Baud.
- Small unit size of 53 x 63mm
- 4 mounting holes



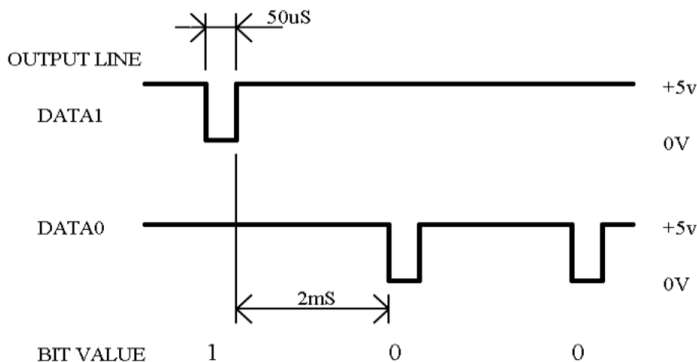
Connections and Pin-out





Wiegand Input Format

Wiegand protocol provides 2 lines for data transfer. A pulsed transition on the DATA1 line indicates a logic 1 bit, while a pulsed transition on the DATA0 line indicates a logic 0 bit. In their idle state both lines are held high. During data transfer the appropriate logic line will pulse low for 50uS followed by a period of 2ms where both lines are held high. In this fashion each bit is transmitted in sequence until all bits are sent. The end of the transmission is signalled by both lines being held high for more than 50mS. The following figure shows an example of the timing sequence for Wiegand protocol.



26 bit Format Mode

Wiegand 26 protocol is defined as a stream of 26 bits, consisting of 1 Even parity bit, 24 data bits, and 1 odd parity bit.

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Note	P	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	P
	P	E	E	E	E	E	E	E	E	E	E	E	E													
															O	O	O	O	O	O	O	O	O	O	O	P

Note:

E: Even O: odd P: parity bit D: DATA

The WIE232-A will read a signal presented in Wiegand 26 format and after checking for parity and bit length will convert the data stream to a serial RS232 output on the corresponding output connector. As only 24 bits of the 26 bit stream is data the string is converted to 6 ASCII coded characters representing 24bits in hexadecimal coding.

The format for this is:

XXYYZZ<crn> where XX are the hexadecimal representation of bits 1-8
 YY are the hexadecimal representation of bits 9-16
 ZZ are the hexadecimal representation of bits 17-24
 <crn> is a carriage return character \$0D



37 bit Format Mode

Wiegand 37 protocol is defined as a stream of 37 bits, consisting of 1 Even parity bit, 35 data bits, and 1 odd parity bit.

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36		
Note	P	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	P
	P	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	P

Note: E : Even O: odd P: Parity bit D: data

The WIE232-A will read a signal presented in Wiegand 37 format and after checking for parity and bit length will convert the data stream to a serial RS232 output on the corresponding output connector. As only 35 bits of the 37 bit stream is data the string is converted to 9 ASCII coded characters representing 35 bits in hexadecimal coding.

The format for this is:

MKKXXYYZZ<crn> where M is the hexadecimal representation of bits 1-3
 KK are the hexadecimal representation of bits 4-11
 XX are the hexadecimal representation of bits 12-19
 YY are the hexadecimal representation of bits 20-27
 ZZ is the hexadecimal representation of bits 28-35
 <crn> is a carriage return character \$0D

For example:

1AA005322<crn> represents the wiegand data of 1AA005322 arriving on port 2.

The serial output stream is sent at 9600 Baud, 8 data bits, no parity, 1 stop bit.

Generic Wiegand Mode

Generic Wiegand input mode allows the unit to detect Wiegand protocol streams that may not be standard 26 bit or 37 bit protocols. In this mode the unit reports the data bit stream read without checking and removing check bits. The first two characters of the output string are hexadecimal numbers that indicate the number of bits detected. Data is sent on 8 bit boundaries with zeros padded on the left for unused bits. The data shown also includes any check bits that may be included in the wiegand input string. A maximum of 48 bits of wiegand data can be detected in this mode.

The format for this is:

SSnnnnnn<crn> where SS is the hex value representing the number of bits received.
 nnnnnn are the hexadecimal data output and will vary in size depending on the number of bits detected. 2 characters are needed to represent 8 binary bits.
 <crn> is a carriage return character \$0D



For example:

1A033C0C64 = "this is a 26 bit stream"
1A033C0BE1
2A0064CE0010B2 "this is a 42 bit stream"
2A0064CE0010B4

Protocol Selection

The Protocol is selected via the LK1 dip switches on the main PCB. Table 1 describes the available settings.

SW1	SW2	SW3	SW4	Protocol
Off	Off	Off	Off	Wiegand 26
On	Off	Off	Off	Wiegand 37
Off	On	Off	Off	-
On	On	Off	Off	-
Off	Off	On	Off	-
On	Off	On	Off	-
Off	On	On	Off	-
On	On	On	Off	-
Off	Off	Off	On	Generic mode
On	Off	Off	On	-
Off	On	Off	On	-
On	On	Off	On	-
Off	Off	On	On	-
On	Off	On	On	-
Off	On	On	On	-
On	On	On	On	-