

Wiegand to RS485 Bidirectional Converter

MA1409 is a Wiegand to RS485 bidirectional converter. When Wiegand data is used as input, the converter can convert Wiegand data from 26-bit up to 130-bit to a formatted serial data on the RS485 port. In a reverse process, when the formatted serial data is used as input to the RS485 port of the converter, the converter can convert the formatted serial data to Wiegand data format. Commands can also be sent to the MA1409 to control the on board Relays and attached Wiegand reader's beeper and green LED.



Fig. 1 MA1409 board.

Technical Specification

Power Input	9V - 12V DC
Board Size	80mm x 60mm x 23mm (L x W x H)
Reader Interface	One reader port, supports 26-130 bits wiegand format
Communications	RS485, 9600bps, 8 data bits, 1 stop bit, no parity
Relay Outputs	Two relays; Form C; 120VAC/24VDC, 1A max.
Inputs	Two inputs; not used for MA1409.
LED Indicators	Power, communication status

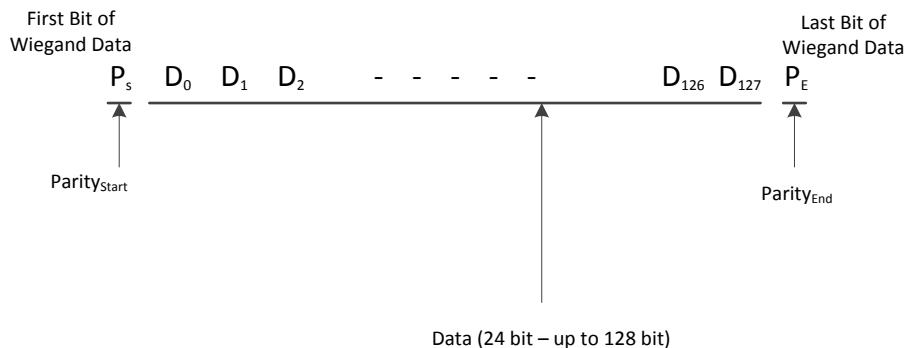
1. Specification

1.1 Communications:

9600 BPS ASYNC, 8 bits, 1 Stop, No Parity.

1.2 Wiegand Data Format

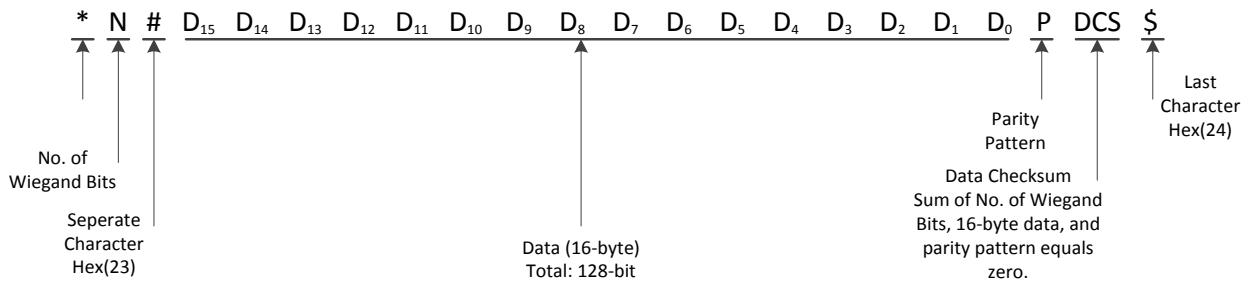
The format of the Wiegand data is shown as follows:



The Parity Character P is defined as follow.

RS485 Side	Wiegand Side	
P	P_s	P_E
0	0	0
1	0	1
2	1	0
3	1	1

1.3 RS485 Serial Data Format



1.4 Command Data

Command (4 Byte Hex Value)	Description
02 _H 31 _H 30 _H 03 _H	Turn on Reader Green LED
02 _H 31 _H 31 _H 03 _H	Turn off Reader Green LED
02 _H 32 _H 30 _H 03 _H	Turn on Reader Buzzer
02 _H 32 _H 31 _H 03 _H	Turn off Reader Buzzer
02 _H 34 _H 30 _H 03 _H	Turn on Converter Relay A
02 _H 34 _H 31 _H 03 _H	Turn off Converter Relay A
02 _H 35 _H 30 _H 03 _H	Turn on Converter Relay B
02 _H 35 _H 31 _H 03 _H	Turn off Converter Relay B

1.5 Switch Settings

1	2	3	4	Mode
OFF	OFF	OFF	OFF	Normal Operation
Other Values				Reserve for future use.
ON	ON	ON	ON	Field upgrade.

2. Boar Layout



2.1 Reader Port

Port Name	Description
D1	Wiegand reader D1
D0	Wiegand reader D0
GLED	Wiegand reader green led
BUZ	Wiegand reader beeper
GND	Ground
12V	12V output to reader

2.2 Power Port

Port Name	Description
12V	12V Power input
GND	Power ground

2.3 Relay 1 Port

Port Name	Description
NO	Normally open
C	Common
NC	Normally close

2.4 Relay 2 Port

Port Name	Description
NO	Normally open
C	Common
NC	Normally close

2.5 Input 1 Port

Port Name	Description
+	Dry contact input.
-	

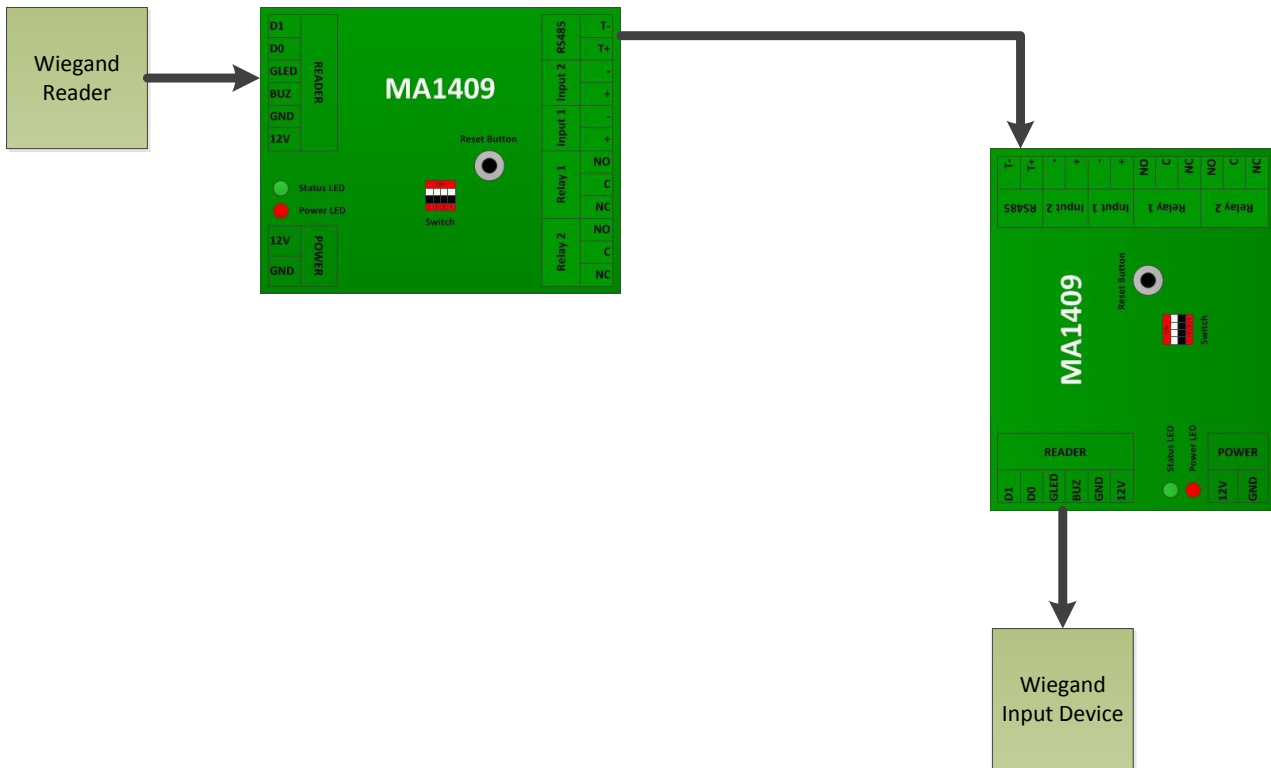
2.6 Input 2 Port

Port Name	Description
+	Dry contact input.
-	

2.7 RS485 Port

Port Name	Description
T+	RS485 +
T-	RS485 -

3. Sample Application – Wiegand Extension



The sample application extends the distance between the Wiegand Reader and the Wiegand Input Device.