

Keypad to Wiegand Converter

MA1403 is a Keypad to Wiegand converter. The converter supports 4x3 or 4x4 matrix keypads (Supports keypads having four columns and four rows maximum). When key press is detected, the converter automatically converts the key code to 10 bit Wiegand data format and output on the Wiegand interface.

1. Specification

1.1 Keypad Circuit Diagram

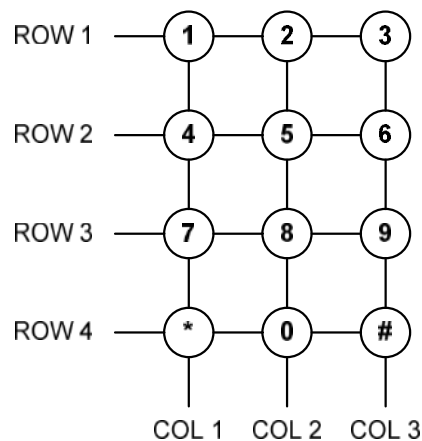


Figure 1: 4x3 keypad

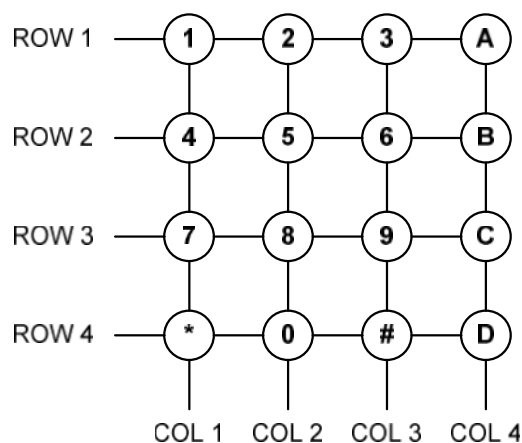


Figure 2: 4x4 keypad

1.2 Key Code to Wiegand Conversion Table

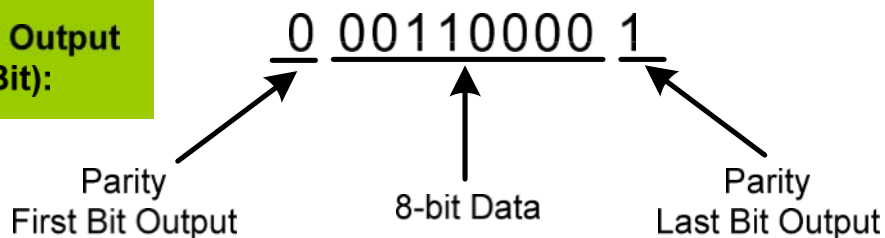
Key Code	Wiegand Data (10-bit)
'0'	0 0011 0000 1
'1'	0 0011 0001 0
'2'	0 0011 0010 0
'3'	0 0011 0011 1
'4'	0 0011 0100 0
'5'	0 0011 0101 1
'6'	0 0011 0110 1
'7'	0 0011 0111 0
'8'	0 0011 1000 0
'9'	0 0011 1001 1
'*'	1 0010 1010 1
'#'	1 0010 0011 1
'A'	1 0100 0001 0
'B'	1 0100 0010 0
'C'	1 0100 0011 1
'D'	1 0100 0100 0

1.3 Conversion Example

Key Pressed:

' 0 '

Wiegand Output
(10-Bit):



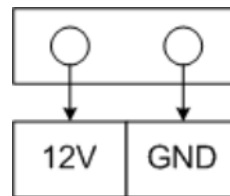
1.4 Sample Wiegand Output Waveform



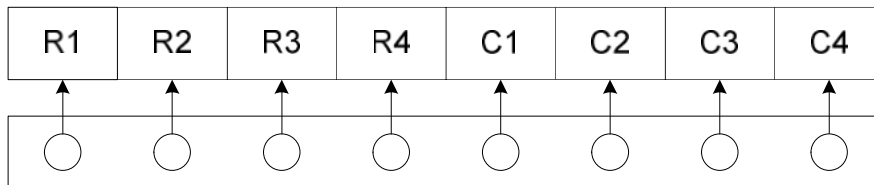
2. Connectors:

2.1 Connector J1

Connector J1 Port Assignment	
Designator	Description
12V	12V DC Power Supply In
GND	Power Supply Ground

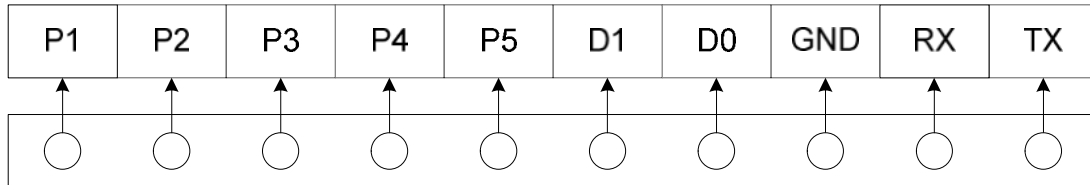


2.2 Connector J2A



Connector J2A Port Assignment	
Designator	Description
R1	Keypad row 1
R2	Keypad row 2
R3	Keypad row 3
R4	Keypad row 4
C1	Keypad column 1
C2	Keypad column 2
C3	Keypad column 3
C4	Keypad column 4

2.3 Connector J2B



Connector J2A Port Assignment	
Designator	Description
P1	General purpose port 1
P2	General purpose port 2
P3	General purpose port 3
P4	General purpose port 4
P5	General purpose port 5
D1	Wiegand Data 1
D0	Wiegand Data 0
GND	Ground
RX	RX data to terminal
TX	TX data from terminal

2.3.1 Alternate Function of General Purpose Port 1

When configured, port P1 can be used to drive externally connected LED. Please refer to Figure 3 for the connection diagram.

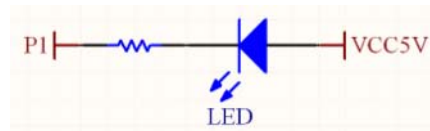


Figure 3