

1.1 Description

MD12-W is a RFID Proximity card reader module for PCB mounting for general application in the 125KHz range. The reader implements proximity EM4002 RFID transponders or compatible.

The reader outputs the Data via 2 pins as WiegandTM 26 bit interface.

1.2 Futures

- WiegandTM 26 bit interface
- **Radio Frequency (RF)** 100kHz to 150kHz
- Very small dimensions
- Operation Voltage: 5VDC

2.1 Definitions and Glossary

Card A portable media that carries data that is associated with the identity of an individual or property. The media may include a photo, printed matter, bar code, magnetic stripe, but must have radio frequency identification device EM4002 or compatible.

Common Signal Ground The voltage reference used to determine all signal/data voltage measurements.

Control Panel A device that accepts and process data from a reader and controls any or all input devices contained in a reader.

Data One The signal line that is designated as the output that delivers the pulses that are interpreted as binary ones.

Data Zero The signal line that is designated as the output that delivers the pulses that are interpreted as binary zeros.

Pulse Interval Time (T_{pi}) The time interval between data pulses. The interval is determined from when the signal reaches the lower threshold for the high voltage level (V_{oh}) until the signal reaches the upper threshold for the low voltage level (V_{ol}).

Pulse Width (T_{pw}) The time interval of the data signal that indicates a binary one or zero. The interval is determined from when the signal reaches the upper threshold for low voltage level (V_{ol}) until the signal reaches the lower threshold for the high voltage level (V_{oh}).

3.2.2 PIN 2 - Common

Provides electrical common (data return) between the reader and the panel. All other voltage levels are compared against this conductor.

3.2.3 PIN 3 – Data One

This is a signal from the reader to the panel. A pulse on this conductor indicates a data bit with the binary value of one.

3.2.4 PIN 4 – Data Zero

This is a signal from the reader to the panel. A pulse on this conductor indicates a data bit with the binary value of zero.

4. Electrical Interface

4.1 Power

The control panel shall provide power to the readers at 5 VDC linear type recommended.

Operating Voltage Range:

4.5 – 5.5 VDC

Absolute Maximum (Not Operating):

5.8 VDC

Current @ 5V:

Standby: 20mA

Read: 25mA

Card Read Distance

2" (5cm)

Operating Temperature Range:

32° F to 145° F (0° C to 63° C)

Operating Humidity:

0 – 95% (non condensing)

Mechanical Dimensions:

Diameter: 23.5mm

Height: 9mm

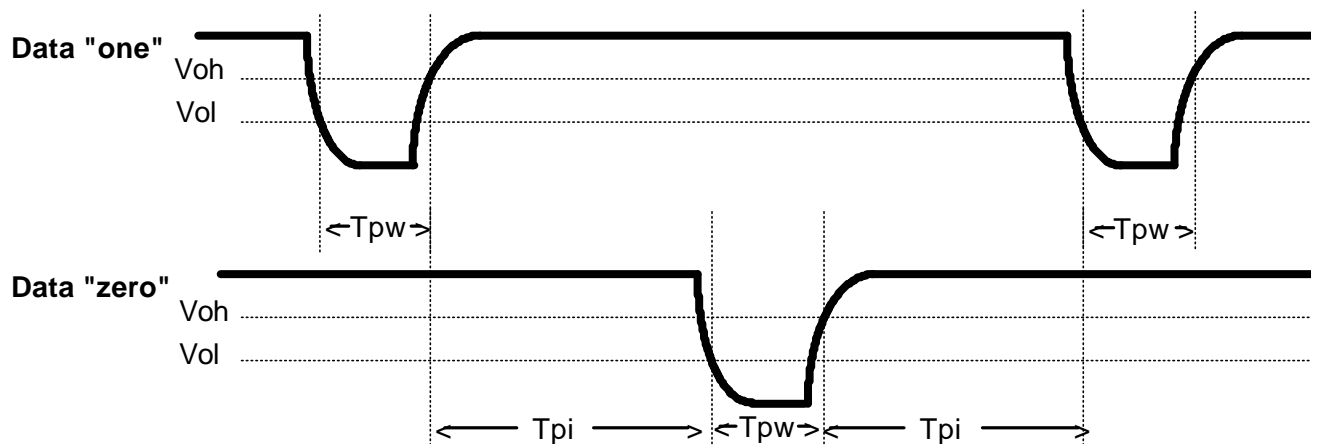
4.2 Signal Levels

The Data One and Data Zero provide logic signals between the reader and the panel. The logic voltage levels are measured at the reader. Both Data One and Data Zero have 1kΩ resistor in output series. The logic voltage levels are defined as follows:

Voltage Levels	Data Outputs (Data 1 and 0)	
	Minimum	Maximum
Voh	Power Supply - 0.7	- V
Vol	-	0.7 V
Ioh	4.5	5.5 mA
Iol	-1.0	-10 μA

4.3 Data Pulses

The Data One and Data Zero signals are normally held at a logic high level until the reader is ready to send a data stream. The reader places asynchronous low going pulses on the appropriate data lines to transmit the data stream to the panel. The data pulses for the Data One and Data Zero shall not overlap or occur simultaneously. The following timing parameters shall be observed:



<u>SYMBOL</u>	<u>DESCRIPTION</u>	<u>MINIMUM</u>	<u>MAXIMUM</u>
TPW	Pulse Width Time	20μs	60μs
TPI	Pulse Interval Time	1500μs	2500μs

