# Data Signals

Figure 1 displays the timing pattern for data bits sent by the reader to the access control panel. This timing pattern falls within the Wiegand guidelines as proscribed by the SIA's Access Control Standard Protocol for the 26-Bit Wiegand Reader Interface (a Pulse Width time between 20 uS and 100 uS, and a Pulse Interval time between 200 uS and 20 mS).

The Data 1 and Data 0 signals are held at a logic high level (above the Voh level) until the reader is ready to send a data stream. The reader places data as asynchronous low-going pulses (below the Vol level) on the Data 1 or Data 0 lines to transmit the data stream to the access control panel (the "saw-teeth" in Figure 1). The Data 1 and Data 0 pulses will not overlap or occur simultaneously. Table 2 provides the minimum and maximum allowable pulse width times (the duration of a pulse) and pulse interval times (the time between pulses) for Pyramid Series Readers.
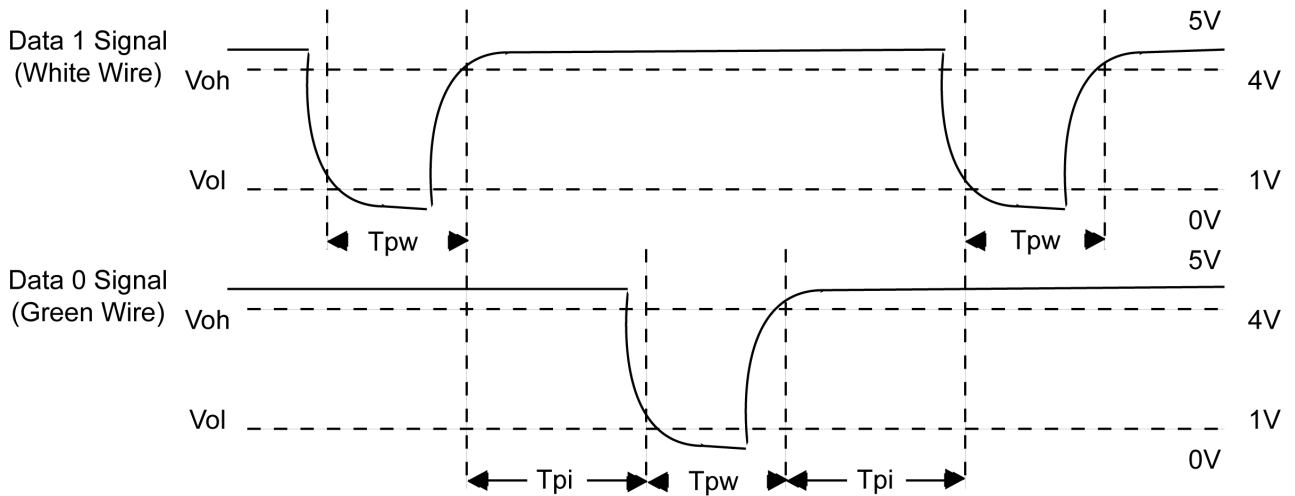
Figure 1: Data Bit Timing Pattern

Table 1: Pulse Times

Symbol	Description	Pyramid Series Reader Typical Time
Tpw	Pulse Width Time	100 µs
Tpi	Pulse Interval Time	1 ms

Wiegand Formats

Pyramid Series readers feature pass-through technology. This means that any reader will read any and all formatting data programmed to any of the Pyramid Series credentials. Pyramid Series readers can be shipped from stock because unlike other proximity manufacturers, there is no format matching between readers and credentials.

26-Bit Wiegand Format

The composition of the open de facto industry standard 26 Bit Wiegand format contains 8 bits for the facility code field and 16 bits for the ID number field. Mathematically these 8 facility code bits allow for a total of just 256 (0 to 255) facility codes, while the 16 ID number bits allow for a total of only 65,536 (0 to 65,535) individual ID's within each facility code. Due to the mathematical limitations of the 26-bit Wiegand format, code duplication might occur. Table 2 provides a summary the 26-bit Wiegand format.

Table 2: 26-bit Wiegand Format

Bit Number	Purpose
Bit 1	Even parity over bits 2 to 13
Bits 2 to 9	Facility code (0 to 255); Bit 2 is MSB
Bits 10 to 25	ID Number (0 to 65,535); Bit 10 is MSB
Bit 26	Odd parity over bits 14 to 25