Clock & Data Signaling

Overview

Signaling is the electrical connection between the Card Reader and the Control Panel.
Magstripe Card Readers typically utilize the "clock/data" signaling method and is supported by many Access Control Panels. When developed for Access Control applications, Magstripe Readers also support Wiegand signaling for compatibility with Wiegand only systems.

Magstripe signaling uses two wires, "clock" and "data".

- The data line is used to send all of the binary data to the panel by changing the state of the voltage on the line. Five (5V) volts is equivalent to a "1" bit and zero (0V) volts is equal to a "0" bit. By changing the state from high to low, the coded binary data from the stripe on the Card is sent to the panel.
- The second wire, the clock line, is used to tell the panel when to sample the data line. Each time a bit of data is sent down the data line, a pulse is sent down the clock line, instructing the panel to take a "sample" of the data line and record the next bit.

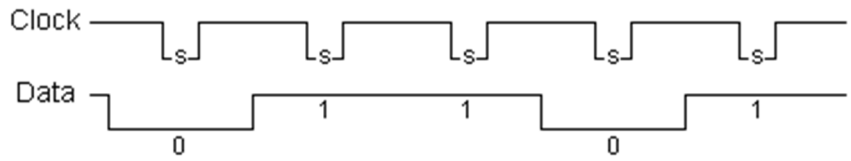

Figure 1 Clock / Data Signaling (01101)

Wiegand signaling is significantly different. It uses two separate data lines ("Data 1" and "Data 0") to pass data to the panel. As the name suggests, Data 1 is used to carry the "1" bits to the panel and the Data 0 line carries the "0" bits. For both data lines, the voltage is normally high (5V). When a bit is signaled, the voltage on the appropriate line is pulsed to zero (0V) volts. The Control panel listens on both data lines and records the bits as they arrive.

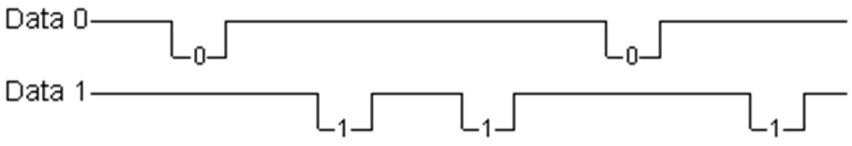

Figure 2 Data1 / Data0 signaling (01101)