WHAT IS WIEGAND?
The Wiegand interface uses three wires, one of which is a common ground and two of which are data transmission wires usually called DATA0 and DATA1.

- Data0 sends 0’s
- Data1 sends 1’s
- Wiegand ground is a reference ground
WHAT IS WIEGAND

- Users ID’s, templates, identifiers, credentials, card numbers, authorization all having the same meaning.

- Which means a sequence of characters used to identify, such as a variable or a set of data.

- Example, when someone credentials are 123 in Decimal its 1111011 in binary.

- In this example:
  - Data 0 sends 0
  - Data 1 sends 111111
The control panel compares the credential's number to an access control list, grants or denies the presented request, and sends a transaction log to a database. When access is denied based on the access control list, the door remains locked. If there is a match between the credential and the access control list, the control panel operates a relay that in turn unlocks the door.

In the example previous:
- User 123 sends 1111011 in binary to ACP
- Access Control panel converts 1111011 to User 123 and verifies if this user is granted or denied
The original Wiegand format had one parity bit, 8 bits of facility code, 16 bits of ID code, and a trailing parity bit for a total of 26 bits. The first parity bit is calculated from the first 12 bits of the code and the trailing parity bit from the last 12 bits.

26 bit Wiegand looks like this:

![Diagram of 26-bit Wiegand Format]
With this 26 bit wiegand

PFFFFFFFFFNNNNNNNNNNNNNNNNNP
P=Parity =1 bit
F=Facility code =8 bits long
N=Card number =16 bits long
P=Parity =1 bit

Total 1+8+16+1=26 Bits
COMMON WIEGAND 26 BIT

- PFFFFFFFFFNNNNNNNNNNNNNNNNNP
- P=Parity 1 bit
- F=Facility code =8 bits long=11111111=255
- N=Card number =16 bits
  long=1111111111111111=65535
- P=Parity 1 bit

- In this example the Facility code biggest number can be 255
- The ID, Card number etc biggest number can be 65535
Wiegand gets sent to an ACP

- Data0
- Data1

Our example from before: User 123 = 1111011

- Data0 = 0
- Data1 = 111111

Control Panel verifies User 123

User 123
EXAMPLE OF A FULL SYSTEM

- Wiegand lines from card reader to ACP
- ACP sends signal to Door contact
RECOMMEND WIRING

- For 18 AWG, the maximum cable distance is 500 ft. (150m); for 20 AWG, the maximum is 300 ft. (90m); for 22 AWG, the maximum is 200 ft. (60m).

- Three-conductor wire (shielded recommended) is required for Data 0, Data 1, and WGND.*

- Connect WGND* to ACP reader common (0VDC).
TROUBLESHOOTING

- When no data is being sent, both DATA0 and DATA1 are pulled up to the "high" voltage level — usually +5 VDC.
- Using a meter, check VDC between Data0 and Wiegand ground and Data1 and Wiegand ground.