BioKey®

Wiegand Interface 2 Definition

1. Common Information

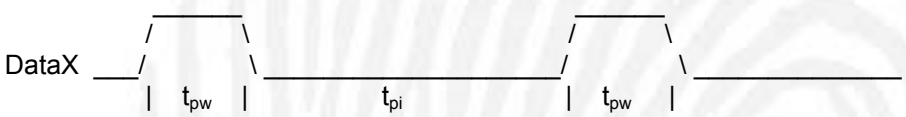
For the BioKey® communication, only three out of five wires of the Wiegand-26 interface are used; these are Data1, Data0 and Ground.

Signal levels are CMOS-compliant (3.3V and 0V). Maximum current is 8 mA per signal line.

Signals are inverted respective to the logic levels defined in the Wiegand specification. This is because the BioKey® 3000 module does not deliver the signals with an open collector output. To realize the open collector feature, a transistor has to be connected to the module's Wiegand outputs. This will automatically invert the signals.

2. Data Pulses and Timing

The Data1 and Data0 signals are normally held at 0V. When data is transmitted, asynchronous high pulses are placed on the appropiate data line. For proper Wiegand function, the signals have to be inverted (see above).



Pulse width time $\mathbf{t_{pw}}$ is 100µs, pulse interval time $\mathbf{t_{pi}}$ is 1ms.

3. Protocol

Data is transmitted according to the standard 26-bit Wiegand format H10301. It is binary encoded data, consisting of 1 bit even parity, 8 bit facility code, 16 bit card number and 1 bit odd parity. Data is transmitted most significant bit and byte first.

To meet the requirements of an embedded fingerprint solution, Idencom has altered the meaning of the 3 data bytes. The bytes will carry the lowest 16 bits of the recognized finger's person-id (PID) and the 8 bits of the finger-id (FID).

The Wiegand telegram is transmitted once after each identification of a finger, but not if the process was triggered by the IDENCOM telegram 0x21 (Identification). However, if a Wiegand telegram is also needed when the identification is to be triggered by a controller device via an IDENCOM telegram, command 0x23 (Identification with signaling) can be used.

The Wiegand telegram transmission can be disabled using command 0x02 (see protocol document). Command 0x23 will still work even if Wiegand is disabled.

If the identification was successful, the PID bytes contain the PID of the identified person.
And the FID byte contains the FID of the identified finger. Otherwise the PID bytes are set to 0xFFFF and the FID to 0xFF for logging purposes. This leads to a valid PID range from 0 to 65535.

Wiegand telegram structure:

even	PID (bits 15 .. 8)	PID (bits 7 .. 0)	FID (bits 7 .. 0)	odd