Using IBC Readers with Wiegand Output

It is important to understand the wiegand data format prior to installing barcode or magnetic stripe readers which will have a weigand output. This is because there are limitations in the number sequences that can be used with wiegand.

Normally, the wiegand data stream consists of a number of binary bits; which together, make up two numbers which are unique to the card that you are reading. These two numbers are the site code and the badge number (employee id number). Many access control controllers allow for a wiegand input connection. For years, the industry standard for wiegand input has been 26 bits. This 26 bit sequence consists of 2 parity bits, 8 bits for the site id, and 16 bits for the badge number. Lately, many new controllers support wiegand structures which contain more than the 26 bit standard which was adopted years ago.

The 26 bit standard has some limitations you will need to understand. If you are working with a controller that allows only standard 26 bit wiegand input, then you are limited in your numbering sequence to 8 bits for the site id (a maximum of 255) and 16 bits for the badge number (a maximum of 65535). There is no way around this limitation, other than using a format other than the 26 bit format.

IBC readers are reprogrammable for any bit structure from 16 bits to 64 bits. In addition, you can select any portion of the barcode or magnetic stripe to be put into the site id and badge number fields. This flexibility, however, is not always enough because you may have numbers which are simply too large for your controller to handle. Take a social security number, for example. The SSN contains 9 significant digits - way too large for the 26 bit format because of the 65535 limit on the badge number.

In order to see if your cards will work with your controller - you must first find the number of significant digits that you will need from the card for the badge number. Even if the barcode or magnetic stripe contains 10 or 15 numbers, there may only be 4 or 5 significant digits that are used for the badge number. If you have 4 digits, then the 26 bit format is fine. If you have 5 digits, then you must make sure that none of the numbers will be above 65535, otherwise you will have to use a different format than the 26 bits. 6 digits is not acceptable at all for the 26 bit format.

If you find that your numbers are too large for the particular wiegand format you are using on the controller, there are a few options. One is to break up the badge number into two unique numbers (take 2 digits from the badge, for example, and use them for the site code). Another is to check with the controller manufacturer to see if the controller supports a larger wiegand structure. Another alternative is to use an ABA (magnetic stripe) input if the controller accepts this type of input. With the ABA input, there are usually no restrictions on the size of the data that is input.

Remember that wiegand and ABA are both numeric formats, meaning that you cannot have alphas in the data.