



Documentation
for
Keypad format
of
W110 Wiegand-Interface Contactless Smart Card reader

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The keypad can be configured to be Buffered or Unbuffered. During the boot-up sequence the keypad identifies itself as either Buffered or Unbuffered by inspecting the configuration byte in the reader EEPROM. The keypad format of W110 series reader can be programmed by Cox Control.

1. Unbuffered Mode Wiegand With 4-Bit Burst

This is an output format that is supported now in the W110 series keypad readers. In this mode every key press is sent to the host as 4-bit data, The [*] and [#] keys also output codes.

The output from the reader is shown in Table 4

Key	Output in Hex	Output in Binary
[0]	0	0000
[1]	1	0001
[2]	2	0010
[3]	3	0011
[4]	4	0100
[5]	5	0101
[6]	6	0110
[7]	7	0111
[8]	8	1000
[9]	9	1001
[*]	A	1010
[#]	B	1011

Table 1 4-Bit Burst Output From Reader

2. Buffered Mode

The following 26 bit Wiegand data format is sent each time a PIN number is entered. But the user can enter a smaller size PIN, by using the # key as the terminator. E.g. A PIN of 123 should be entered as [1][2][3][#]. Use the * key to clear your entry. Each key press is confirmed with a tone.

P _s	F	F	F	F	F	F	F	F	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	P _e
1	2							9	10														25	26

Bit 1 is even parity for the following 12 bits. The sum of bits 1-13 is even.

Bits 2-9 are the Facility Code. This can range from 0-255 and is selected using ProxSmith™.

Bits 10-25 is the binary value of the PIN entered. Leading zeroes are added as required.

Bit 10 is the MSB.

Bit 26 is odd parity over the previous 12 bits. The sum of bits 14-25 is odd.

Example: A facility code of 99 and a PIN of [1][2][3][4] will generate the following output:

0 01100011 0000010011010010 0



Note that 99d = 63h = 01100011b and that 1234d = 04D2h = 0000010011010010b

Pressing the # key with no preceding digits is equivalent to pressing any number of only zeroes. Do not program your panel to accept a PIN of all zeroes.

3. Unbuffered Mode Wiegand with 8-Bit Burst

Unbuffered mode sends data to the host as each key is pressed in either an 8-bit or a 4-bit burst format.

In this mode every key press is sent to the host as 8-bit data, The [*] and [#] keys also output code =

The output from the reader is shown in Table 2

<i>Key</i>	<i>Output in Hex</i>	<i>Output in Binary</i>
[0]	F0	11110000
[1]	E1	11100001
[2]	D2	11010010
[3]	C3	11000011
[4]	B4	10110100
[5]	A5	10100101
[6]	96	10010110
[7]	87	10000111
[8]	78	01111000
[9]	69	01101001
[*]	5A	01011010
[#]	4B	01001011

Table 2 8-Bit Burst Output From Reader

-- To be continued --