

# 736-52 Rev 4 USB 125kHz Desktop Reader

## Data Sheet

The USB Desktop proximity reader connects to a PC via USB. It reads the code from an RFID transponder and outputs the code in the form of keystrokes which enables the user to capture the transponder code into any PC application which accepts keyboard entry.



A 10 way DIP switch on the back of the unit is used to select the required output format. A green LED and a beeper are used to indicate a successful read and a red LED indicates an error condition.

The reader has a mini B USB socket and when connected to the PC the device enumerates as a Human Interface Device (HID class).

### Specifications

- Power requirements: USB bus powered. Current consumption 60 mA (typical)
- Operating Frequency: 125 kHz
- 40 bit read only transponders supported: EM4001 family, TEMIC e5550 and equivalent devices
- Output formats supported: Hexadecimal or decimal digits with or without leading zeros, Crosspoint decoding, Wiegand format
- Length formats: 40, 32, 24 or 16 bit number
- Termination options: None, ENTER
- Operating temperature range: 0 °C to +50 °C
- Weight: 55 grams
- Dimensions: Reader 100 x 59 x 21 mm

## Connections

To install the Desktop reader:  
Connect the reader to the PC with a mini B USB cable.

## Output Mode Selection

The 10 way switch is used to select the output format, length and termination as per the following tables:

### Leading zeros (SW1)

	<b>SW1</b>
Leading zeros included	ON
Leading zeros suppressed	OFF

### Decimal/hexadecimal (SW2)

	<b>SW2</b>
Decimal format	ON
Hexadecimal format	OFF

### Length (SW3 and SW4)

	<b>SW3</b>	<b>SW4</b>
40 bit	OFF	OFF
32 bit	OFF	ON
24 bit	ON	OFF
16 bit	ON	ON

The reader reads all 40 bits of the card ID but many applications require a shorter number. The length of the number is determined by the number of bits taken from the card and the format chosen (hexadecimal or decimal).

## Special formats

	Note	SW5	SW6	SW7	SW8
Standard	1	OFF	OFF	OFF	OFF
Crosspoint encoding	2	OFF	OFF	OFF	ON
Wiegand (site code/card number)	3	OFF	OFF	ON	OFF
Custom format 1	4	OFF	OFF	ON	ON
Custom format 2	4	OFF	ON	OFF	OFF
Custom format 3	4	OFF	ON	OFF	ON
Custom format 4	4	OFF	ON	ON	OFF
Custom format 5	4	OFF	ON	ON	ON
Custom format 6	4	ON	OFF	OFF	OFF

### Notes:

1. SW1-4 will determine the exact output. See examples below
2. When Crosspoint encoding is selected output is always decimal (SW2 is ignored) and only length settings of 24 or 32 bits are valid
3. When Wiegand is selected site code is always 8 bits and card number is always 16 bits. SW1, SW3, SW4 are ignored.
4. When custom formats 1 – 6 are selected SW1 – SW4 are ignored.

## Termination (SW9)

	SW9
None	OFF
ENTER	ON

## Keyboard layout (SW10)

	SW10
English keyboard	OFF
International keyboard	ON

If SW10 is ON the Desktop reader outputs ASCII codes instead of scancodes. This has the advantage of being keyboard independent, but the output speed is slower.

## Examples

When a transponder with the ID number of 041A25EB74 is read the reader will output the following:

40 bit dec with leading zeros (always 13 digits)	0017618561908
40 bit hex without leading zeros (max 10 digits)	41A25EB74
32 bit hex (always 8 digits) with leading zeros	1A25EB74
32 bit dec without leading zeros (max 10 digits)	438692724
24 bit hex without leading zeros (max 6 digits)	25EB74
24 bit dec with leading zeros (always 8 digits)	02485108
16 bit hex with leading zeros (always 4 digits)	EB74
16 bit dec without leading zeros (max 5 digits)	60276
24 bit crosspoint with leading zeros (always 9 digits)	001292762
32 bit crosspoint without leading zeros (max 9 digits)	363614298
Hexadecimal Wiegand format (always 2 + 4 digits)	25 EB74
Decimal Wiegand format (always 3 + 5 digits)	037 60276
Custom format 1	8x[DELETE]18561908
Custom format 2	000000004386927240
Custom format 3	T041A25EB74
Custom format 4	07432226
Custom format 5	16455086
Custom format 6	017618561908

### Custom format 1

When this format is selected the following keyboard sequence is output:

8 x [DELETE] key

8 decimal digits (the last 8 digits of the full 40 bit decimal number on the card)

### Custom format 2

When this format is selected the following keyboard sequence is output:

19 decimal digits which include 8 zeros, the 10 digit decimal conversion of the last 32 bits of the card number and a modulus 10 checksum digit

### Custom format 3

When this format is selected the following keyboard sequence is output:

11 characters which include 'T' followed by a 10 digit hex number

### Custom format 4

When this format is selected the following keyboard sequence is output:

SAHO 24 bit Wiegand site/card format: 24 least significant bits, upper 8 bits are site code, lower 16 bits are card number; reverse bits within nibble; convert site code to decimal 3 digits and card number to decimal 5 digits; concatenate

### Custom format 5

When this format is selected the following keyboard sequence is output:

ASSA ABLOY 24 bit Wiegand site/card format: 24 least significant bits, upper 8 bits are site code, lower 16 bits are card number; reverse bits within byte; convert site code to decimal 3 digits and card number to decimal 5 digits; concatenate

### Custom format 6

When this format is selected the following keyboard sequence is output:

37 bit card number converted to decimal and output as 12 digits with leading zeros